



STANDARDS & BHW GROUP LTD

The British Standard: BS EN14492-1 for power driven winches, BS EN14492-2 for power driven hoists provides the means for conformity to essential Health and Safety requirements of the EN Machinery Directive and the essential Health & Safety at Work Act 1974.



BHW Group Ltd products are fully compliant and carry a CE and UKCA mark. A Declaration of Conformity is also supplied with each winch.

Our aim at BHW Group Ltd is to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be pulled - and approximate frequency of use can be provided.

An AC1000 Mk2 winch requires a safety factor of 3:1 and a wire rope to mean drum diameter* of not less than 12. The maximum length of wire rope on the drum is determined by the guideline that when all the rope is wound on, a distance of 1.5 x the wire rope diameter should be remaining from the top layer to the outer edge of the drum flange.

Winches with the potential to apply forces over 1000kg must be load limited to prevent them applying loads above the safe working capacity.

Maximum wire rope length permissible on the drum must leave 1.5 x wire rope diameter from the top layer to drum flange.

The standard BS EN14492-1 considers all types of winches used for all applications and suggests guards are fitted if there is a chance an operator may become entangled. It is also important for the safety and ease of operation for the user to clearly see the wire rope wrapping onto the drum to ensure serious bunching and resulting jamming does not occur.

In an application where hand tension is applied to the hook whilst the rope is being wound back on to the drum for storage, there is a risk of the hand being pulled into the roller guide or drum. A short webbing strap should be used that is looped onto the hook to prevent the risk of this occurring.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

** MBF = the Minimum Breaking Force of the wire rope.

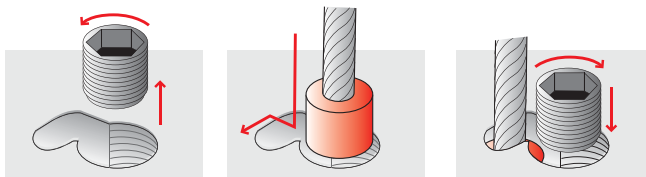
AC1000 Mk2 1000kgf Pulling Winch with Freespool

110V, 240V x 1ph or 415V x 3ph, AC

Typical uses include: Production line - Movement of loads; Servicing departments - Recovery of machinery for inspection; Installation - Positioning and movement of new equipment; Movement of rolling loads - including boats with trailers.

FEATURES INCLUDE

- **Powerful series wound, high torque motor options**
A choice of 110V, 240V x 1ph or 415V x 3ph
- **Automatic fail safe electric brake on the end of the motor**
- **Low profile**
Allows winch to be installed in narrow spaces
- **Freespool clutch**
Enables easy unspooling of wire rope
- **Heavy duty mounting plate and roller guide**
For quick and simple installation
- **2 metre pendant control**
Pre-wired to the winch with 2 buttons and emergency stop. Low voltage (24V) control supplied as standard on 3ph models
- **2 metre power lead**
Pre-wired to the winch with commercial type plug
- **Wire rope positively secured to drum**
Using fixed plug and grub screw engagement



OPTIONAL EXTRAS

- **Wire or synthetic rope**
- **Roller guides**
- **Mounting plate**
- **Low voltage control (Standard on 415V x 3ph)**
- **Radio remote control - via low voltage control**
- **Weather proof enclosure**
- **Skid frame**

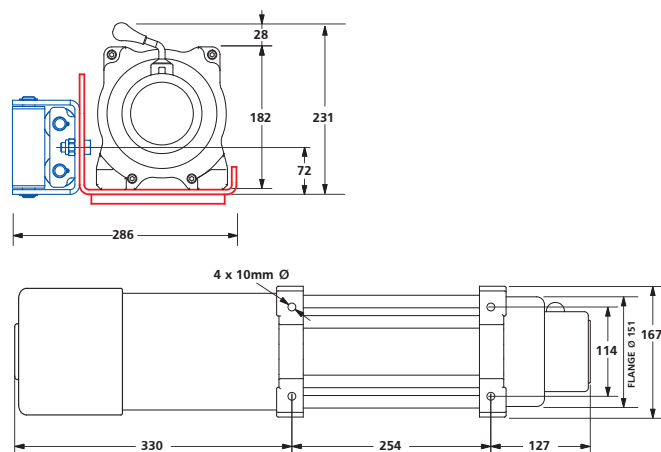
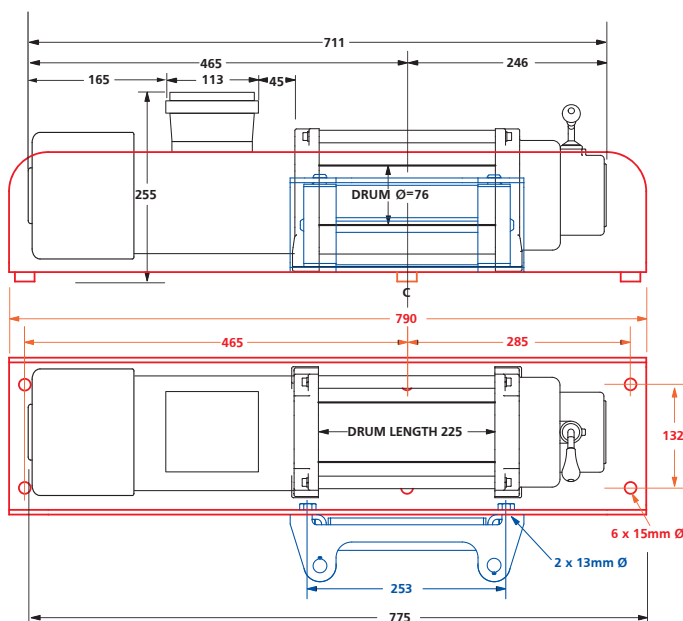
Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

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Bushey Hall Winchmaster is a division of BHW Group Limited. Registered in England No. 1342461 VAT No. 301 7915 80





LINE PULL AND LINE SPEED PERFORMANCE

AC1000 Mk2

110V / 240V / 415V

		LAYER			
		1	2	3	4
Maximum Rated Line Pull by Layer	kN	9.8	8.0	6.9	5.9
	kgf	1000	844	731	644
Rope Capacity Cumulative by Layer (7mm Dia. Wire Rope)	m	7.6	16.7	27.2	30
	m/min	3.1	3.4	3.8	4.2

* Based on recommended 7mm diameter wire rope, 1960N/mm² grade, 6 x 19 wire core construction



Low voltage (24V) pendant control is supplied as standard on 3ph models, and as an option for 1ph.

SPECIFICATIONS

Voltage options:	110V, 1ph	240V, 1ph	415V, 3ph
Standard working length:	30 metres		
Weight: Total kit average	55kg		
Motor:	High torque, series wound either 1ph or 3ph with 3 stage planetary gearbox		
Outputs: Kilowatts	1.5kW	1.5kW	1.5kW
Amperes	24A	12A	4.5A
Braking:	Electronic via motor		
Drum & flange dimensions:	225mm length, Drum ϕ = 76mm, Flange ϕ = 151mm		
Wire rope: ϕ x length	7mm x 40m		
Construction	1960N/mm ² grade, 6 x 19 wire core for maximum flexibility. Minimum factor of safety 3:1		
	Rope ϕ to drum ϕ ratio: 12:1		

NOTES

These winches must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

WM21 / 30.09.25

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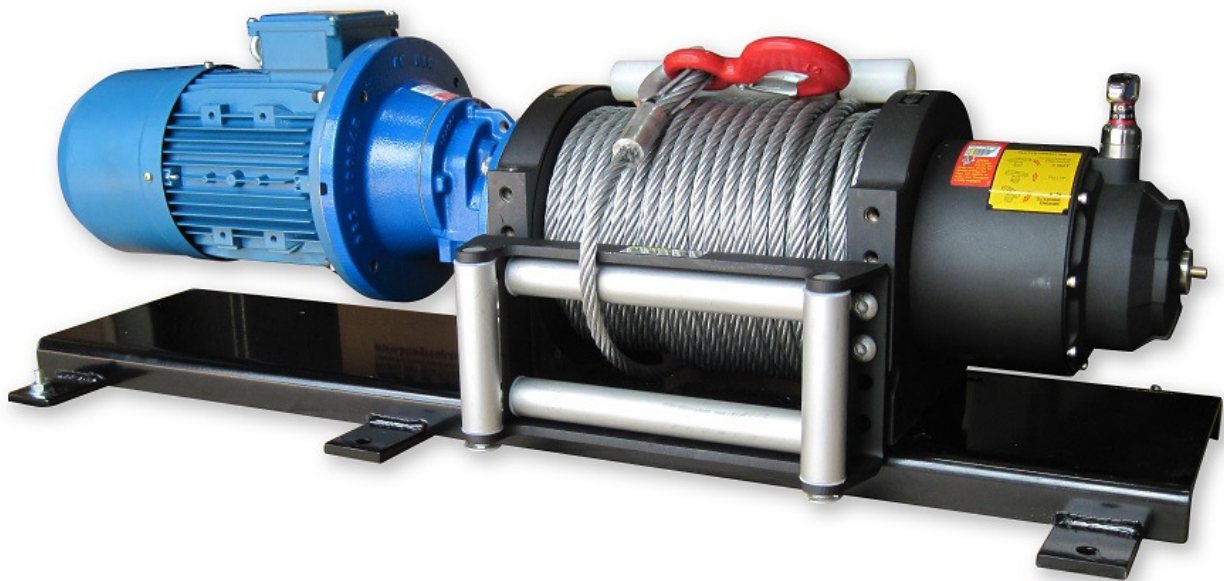
AC2000 Mk4

HEAVY DUTY 240V x 1ph / 415V x 3ph AC WINCH

2000kg (19.6kN) Line Pull

TYPICAL USES: Plant Moving, Slipways, Machine Movement

Compliant with BS EN14492-1 Power Driven Winches



AC2000 KIT

Heavy Duty Electric Winch, Low Voltage Controls with 3m Wanderlead and Load Limiter.

OPTIONS

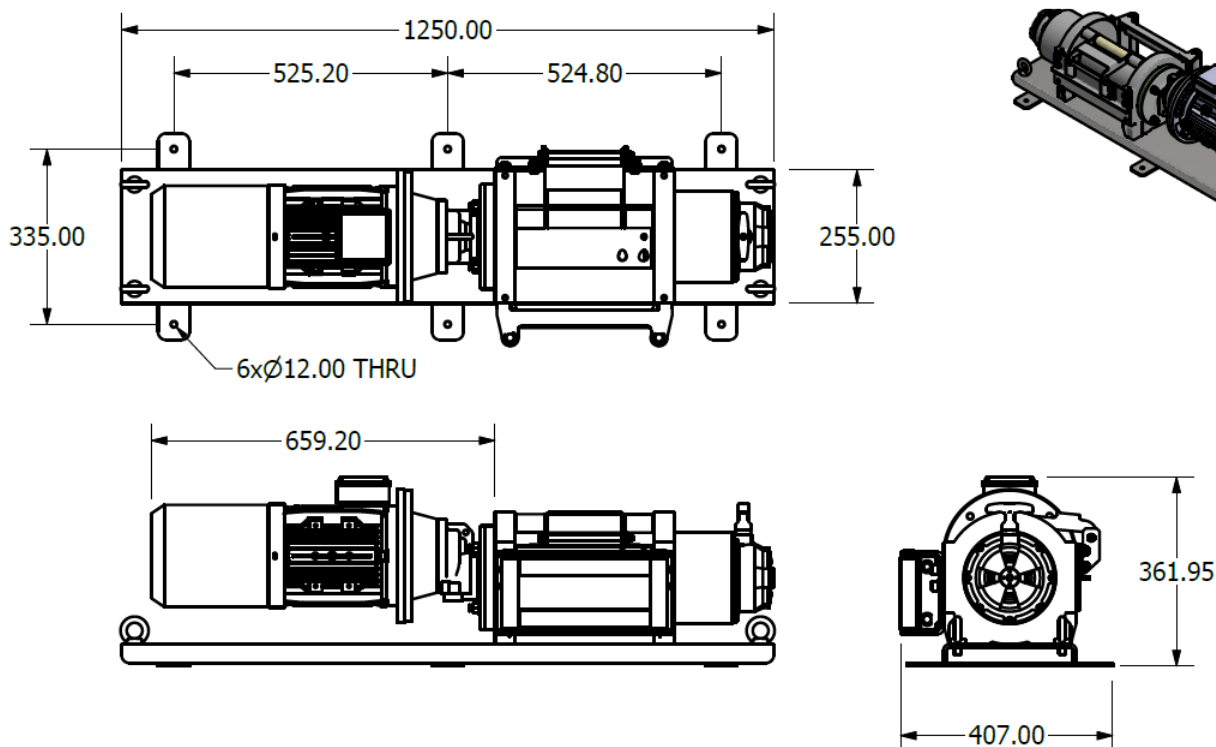
Mounting Plate, Roller Guide, Tension Roller, Wireless IN-OUT Control, Wire Rope.

FEATURES INCLUDE

- **4 Stage Heavy Duty Machined Planetary Gearing** - Providing long life and high mechanical efficiency.
- **Induction Braked Motor** – Provides instant, safe braking.
- **Electronic Load Limiter** - Supplied as standard.
- **Freespool Manual Clutch** – Supplied as standard.
- **Secure Wire Rope Anchorage** - Providing full load holding.
- **Low Voltage Controls** - With Low voltage in the handset – Includes Emergency stop and 3m cables pre-wired to the winch as standard.

AC2000 Mk4 HEAVY DUTY 240V x 1ph / 415V x 3ph AC WINCH

WINCH DIMENSIONS



LEGAL COMPLIANCE

The British Standard for pulling winches BS EN14492-1, states that any winch sold in the UK or the EU must comply with the essential Health and Safety requirements of the UK Health and Safety at Work Act 1974 and the EN Machinery Directive. To achieve this the following conditions must be met:

The rope used must provide a minimum breaking force (MBF) of 3:1 compared to the Working Load Limit of the winch. Example - for a 2 tonne rated winch the MBL of the rope must be at least 4 tonne.

The maximum diameter of the wire rope that can be used must have a minimum ratio of 10:1 compared with the pitch circle diameter of the first layer of rope on the drum. Example - for a winch with drum diameter 90mm and rope 10mm the pitch circle is 100mm so the minimum permissible ratio is 10:1.

The maximum rope length wound on the drum that is permitted must provide a freeboard from the top layer to the edge of the drum flange of 1.5 x rope diameter. Example - a 10mm diameter wire rope would require a 15mm freeboard from the top layer.

All winches applying a force above 1000kg must be load limited.

AC2000 Mk4

HEAVY DUTY 240V x 1ph / 415V x 3ph AC WINCH

AC2000 Mk4 WINCH VARIANTS

No.	Voltage	Rated Load per Layer (kg / kN)				Line speed m/min				Wire rope			Rope Length m/layer				Motor Amps	Gear Ratio
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	Ø mm	Length		1st	2nd	3rd	4th		
20282	240V	2000/19.6	1732/17	1527/15	1365/13.4	3.7	4.3	4.9	5.5	10	50m	6370kg	10.2	21.6	32	47.3	10.8	304.2:1
20283	415V	2000/19.6	1732/17	1527/15	1365/13.4	3.6	4.3	4.9	5.2	10	50m	6370kg	10.2	21.6	32	47.3	4.8	164.4:1
20284	415V	2000/19.6	1732/17	1527/15	1365/13.4	7	8.1	9.2	10.4	10	50M	6370kg	10.2	21.6	32	47.3	7.8	164.4:1

SPECIFICATIONS

- Rated Line Pull AC:** 2000kgf (19.6kN).
- Motor Gearbox:** Powerful induction type braked motor IP54 rating.
- Brake:** 4 stage planetary machined gears to transfer high power and torque to the winch drum.
- Drum size:** Heavy duty automatic in-motor electronic fail-safe brake.
119mm diameter x 264mm length. Flange diameter 240mm.
- Wire Rope:** 10mm Ø galvanised 1960Nmm² tensile grade, 6 x 36 wire core construction, 6370kg (69.8kN) minimum braking strain. Maximum length 50 metres. This rope provides the 3:1 Working Load Limit (WLL) required by British standard BS EN14492-1.
Rope to drum ratio 12.9:1.
- Freespool Clutch:** Spring-loaded sliding ring gear engaged and disengaged by rotating lever on gear housing.
- Load Limiting Device:** Electronic limiting device to provide 3:1 working load limit (WLL), for compliance with BS EN14492-1.
- Low voltage Controls:** Providing extended service life. They are pre-wired to accept optional wireless control saving significant installation time.
- Wanderlead Control:** 3m control lead supplied as standard. Other wanderlead / extensions options available on request.
- Wire Rope Tensioner:** **Optional.** Spring loaded roller tensioner to assist wrapping.
- Roller Guides:** **Optional.** Heavy duty 4-way commercial type.
- Mounting Plate:** **Optional.** Ensures securing holes are all in alignment and not oversized.
- Winch Weight:** 135kg approximate.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase. Wire ropes are not included under warranty.

NOTES

Not be used for the movement of personnel.
Five wraps of wire rope must be maintained on the drum at all times. Date shown is approximate and intended as a guide only.

WM22 / 01.08.24

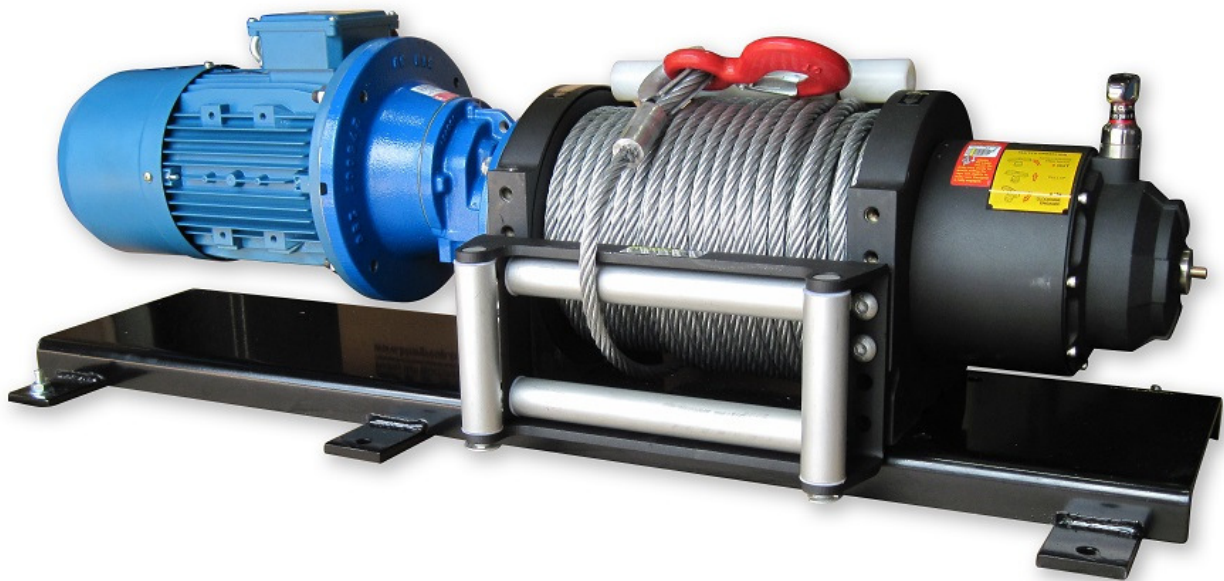
AC3000 Mk4

HEAVY DUTY 415V x 3ph AC WINCH

3000kg (24.9kN) Line Pull

TYPICAL USES: Plant Moving, Slipways, Machine Movement

Compliant with BS EN14492-1 Power Driven Winches



AC3000 KIT

Heavy Duty Electric Winch, Low Voltage Controls with 3m Wanderlead and Load Limiter.

OPTIONS

Mounting Plate, Roller Guide, Tension Roller, Wireless IN-OUT Control, Wire Rope.

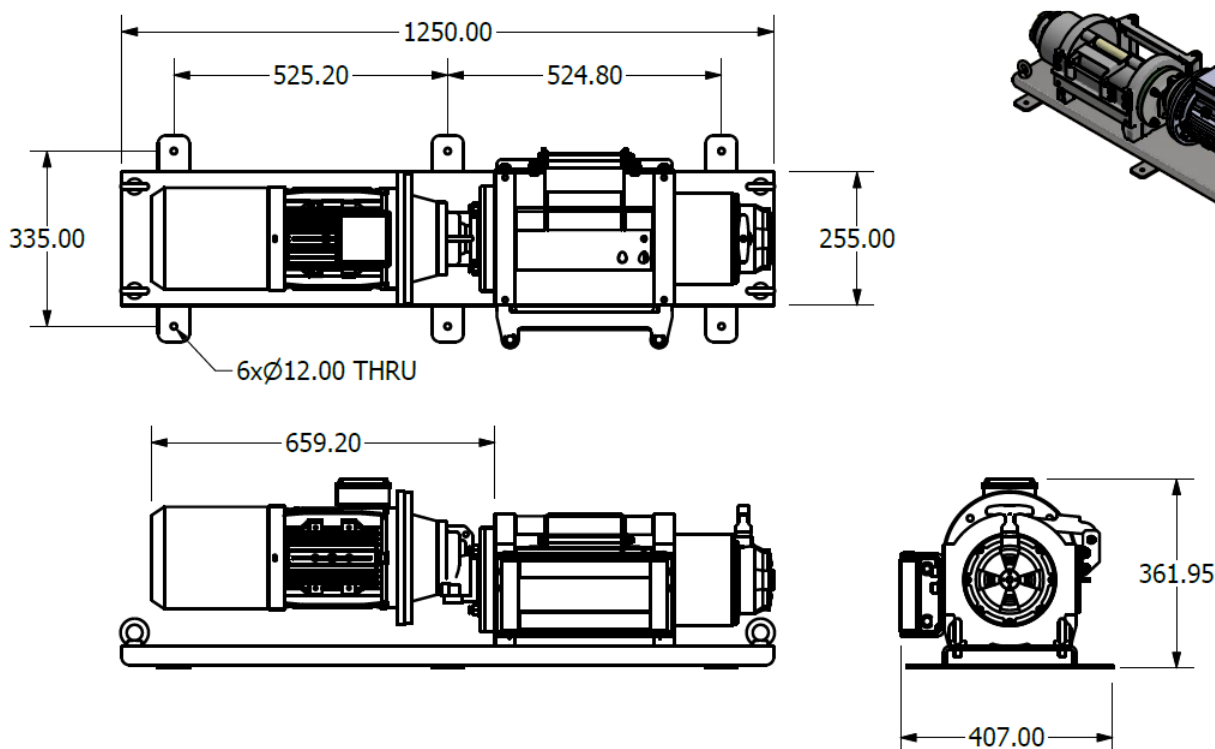
FEATURES INCLUDE

- **4 Stage Heavy Duty Machined Planetary Gearing** - Providing long life and high mechanical efficiency.
- **Induction Braked Motor** – Provides instant, safe braking.
- **Electronic Load Limiter** - Supplied as standard.
- **Freespool Manual Clutch** – Supplied as standard.
- **Secure Wire Rope Anchorage** - Providing full load holding.
- **Low Voltage Controls** - With Low voltage in the handset – Includes Emergency stop and 3m cables pre-wired to the winch as standard.

AC3000 Mk4

HEAVY DUTY 415V x 3ph AC WINCH

WINCH DIMENSIONS



LEGAL COMPLIANCE

The British Standard for pulling winches BS EN14492-1, states that any winch sold in the UK or the EU must comply with the essential Health and Safety requirements of the UK Health and Safety at Work Act 1974 and the EN Machinery Directive. To achieve this the following conditions must be met:

The rope used must provide a minimum breaking force (MBF) of 3:1 compared to the Working Load Limit of the winch. Example - for a 2 tonne rated winch the MBL of the rope must be at least 4 tonne.

The maximum diameter of the wire rope that can be used must have a minimum ratio of 10:1 compared with the pitch circle diameter of the first layer of rope on the drum. Example - for a winch with drum diameter 90mm and rope 10mm the pitch circle is 100mm so the minimum permissible ratio is 10:1.

The maximum rope length wound on the drum that is permitted must provide a freeboard from the top layer to the edge of the drum flange of 1.5 x rope diameter. Example - a 10mm diameter wire rope would require a 15mm freeboard from the top layer.

All winches applying a force above 1000kg must be load limited.

AC3000 Mk4

HEAVY DUTY 415V x 3ph AC WINCH

AC3000 Mk4 WINCH VARIANTS

No.	Voltage	Rated Load per Layer (kg / kN)				Line speed m/min				Wire rope Ø mm Length	Rope Length m/layer				Motor Amps	Gear Ratio
		1st	2nd	3rd	4th	1st	2nd	3rd	4th		1st	2nd	3rd	4th		
20285	415V	3000/29.4	2535/24.9	2196/21.5	1936/19	3.9	4.6	5.3	6.1	12 30m 10197kg	8.1	17.8	30	N/A	4.5	304:1

SPECIFICATIONS

- Rated Line Pull AC:** 3000kgf (29.4kN).
- Motor Gearbox:** Powerful induction type braked motor IP54 rating.
- Brake:** 4 stage planetary machined gears to transfer high power and torque to the winch drum.
- Drum size:** Heavy duty automatic in-motor electronic fail-safe brake.
119mm diameter x 264mm length. Flange diameter 240mm.
- Wire Rope:** 12mm Ø galvanised 1960Nmm² tensile grade, 6 x 36 wire core construction, 10197kg (100kN) minimum braking strain. Maximum length 30 metres. This rope provides the 3:1 Working Load Limit (WLL) required by British standard BS EN14492-1.
Rope to drum ratio 10.9:1.
- Freespool Clutch:** Spring-loaded sliding ring gear engaged and disengaged by rotating lever on gear housing.
- Load Limiting Device:** Electronic limiting device to provide 3:1 working load limit (WLL), for compliance with BS EN14492-1.
- Low voltage Controls:** Providing extended service life. They are pre-wired to accept optional wireless control saving significant installation time.
- Wanderlead Control:** 3m control lead supplied as standard. Other wanderlead / extensions options available on request.
- Wire Rope Tensioner:** **Optional.** Spring loaded roller tensioner to assist wrapping.
- Roller Guides:** **Optional.** Heavy duty 4-way commercial type.
- Mounting Plate:** **Optional.** Ensures securing holes are all in alignment and not oversized.
- Winch Weight:** 135kg approximate.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase. Wire ropes are not included under warranty.

NOTES

Not be used for the movement of personnel.
Five wraps of wire rope must be maintained on the drum at all times. Date shown is approximate and intended as a guide only.

WN23 / 01.08.24

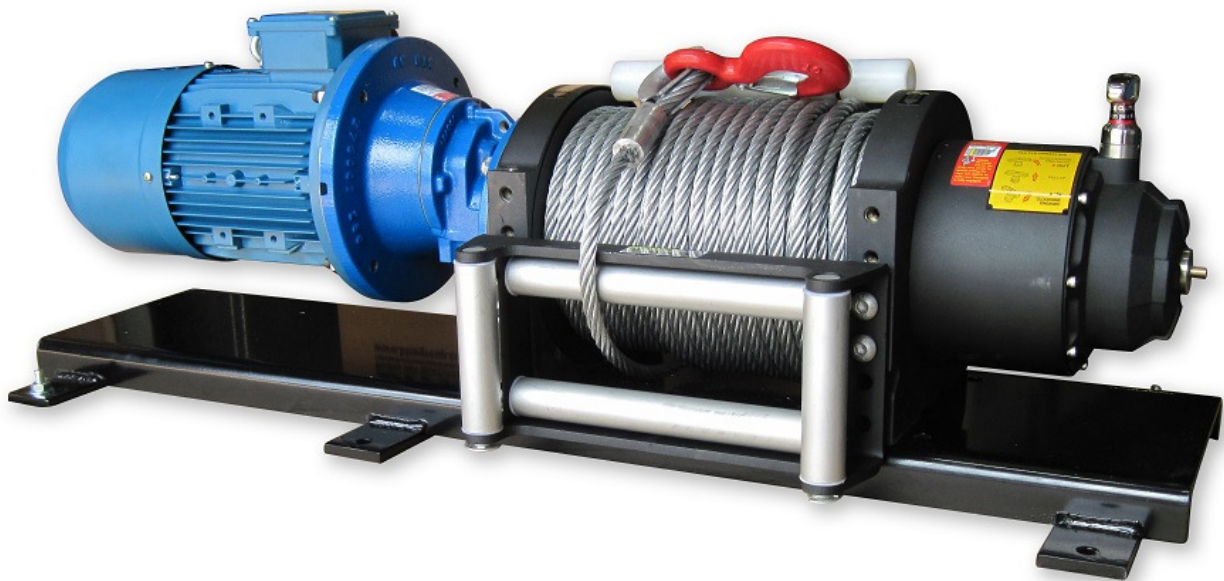
AC4000 Mk4

HEAVY DUTY 415V x 3ph AC WINCH

4000kg (39.2kN) Line Pull

TYPICAL USES: Plant Moving, Slipways, Machine Movement

Compliant with BS EN14492-1 Power Driven Winches



AC3000 KIT

Heavy Duty Electric Winch, Low Voltage Controls with 3m Wanderlead and Load Limiter.

OPTIONS

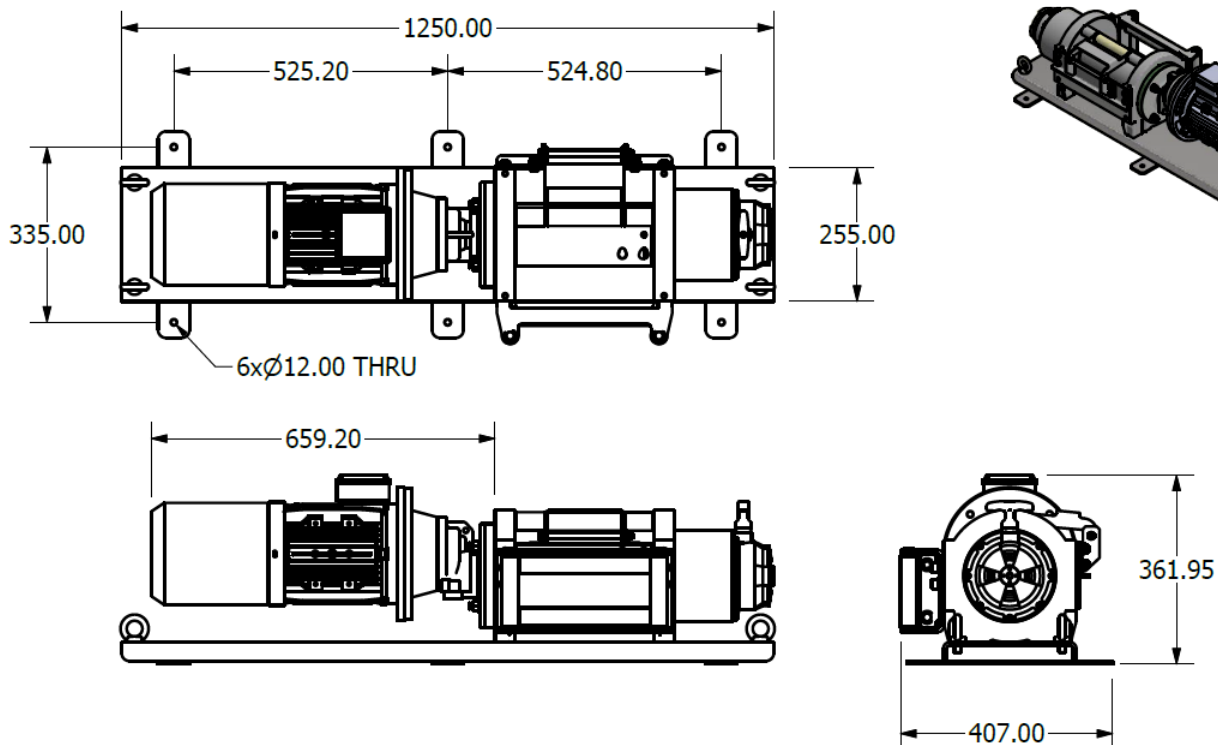
Mounting Plate, Roller Guide, Tension Roller, Wireless IN-OUT Control, Wire Rope.

FEATURES INCLUDE

- **4 Stage Heavy Duty Machined Planetary Gearing** - Providing long life and high mechanical efficiency.
- **Induction Braked Motor** – Provides instant, safe braking.
- **Electronic Load Limiter** - Supplied as standard.
- **Freespool Manual Clutch** – Supplied as standard.
- **Secure Wire Rope Anchorage** - Providing full load holding.
- **Low Voltage Controls** - With Low voltage in the handset – Includes Emergency stop and 3m cables pre-wired to the winch as standard.

AC4000 Mk4 HEAVY DUTY 415V x 3ph AC WINCH

WINCH DIMENSIONS



LEGAL COMPLIANCE

The British Standard for pulling winches BS EN14492-1, states that any winch sold in the UK or the EU must comply with the essential Health and Safety requirements of the UK Health and Safety at Work Act 1974 and the EN Machinery Directive. To achieve this the following conditions must be met:

The rope used must provide a minimum breaking force (MBF) of 3:1 compared to the Working Load Limit of the winch. Example - for a 2 tonne rated winch the MBL of the rope must be at least 4 tonne.

The maximum diameter of the wire rope that can be used must have a minimum ratio of 10:1 compared with the pitch circle diameter of the first layer of rope on the drum. Example - for a winch with drum diameter 90mm and rope 10mm the pitch circle is 100mm so the minimum permissible ratio is 10:1.

The maximum rope length wound on the drum that is permitted must provide a freeboard from the top layer to the edge of the drum flange of 1.5 x rope diameter. Example - a 10mm diameter wire rope would require a 15mm freeboard from the top layer.

All winches applying a force above 1000kg must be load limited.

AC4000 Mk4

HEAVY DUTY 415V x 3ph AC WINCH

AC4000 Mk4 WINCH VARIANTS

No.	Voltage	Rated Load per Layer (kg / kN)				Line speed m/min				Wire rope			Rope Length m/layer				Motor Amps	Gear Ratio
		1st	2nd	3rd	4th	1st	2nd	3rd	4th	Ø mm	Length		1st	2nd	3rd	4th		
20286	415V	4000/39.2	3345/32.7	2872/28	2517/21.7	3.9	4.7	5.5	6.3	12	30m	13872kg	8.1	17.8	30	N/A	7.5	304:1

SPECIFICATIONS

- Rated Line Pull AC:** 4000kgf (39.2kN).
- Motor Gearbox:** Powerful induction type braked motor IP54 rating.
- Brake:** 4 stage planetary machined gears to transfer high power and torque to the winch drum.
- Drum size:** Heavy duty automatic in-motor electronic fail-safe brake.
119mm diameter x 264mm length. Flange diameter 240mm.
- Wire Rope:** 12mm Ø galvanised 2160Nmm² tensile grade, 35 x 7 wire core construction, 13872kg (135kN) minimum braking strain. Maximum length 30 metres. This rope provides the 3:1 Working Load Limit (WLL) required by British standard BS EN14492-1.
Rope to drum ratio 10.9:1.
- Freespool Clutch:** Spring-loaded sliding ring gear engaged and disengaged by rotating lever on gear housing.
- Load Limiting Device:** Electronic limiting device to provide 3:1 working load limit (WLL), for compliance with BS EN14492-1.
- Low voltage Controls:** Providing extended service life. They are pre-wired to accept optional wireless control saving significant installation time.
- Wanderlead Control:** 3m control lead supplied as standard. Other wanderlead / extensions options available on request.
- Wire Rope Tensioner:** **Optional.** Spring loaded roller tensioner to assist wrapping.
- Roller Guides:** **Optional.** Heavy duty 4-way commercial type.
- Mounting Plate:** **Optional.** Ensures securing holes are all in alignment and not oversized.
- Winch Weight:** 135kg approximate.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase. Wire ropes are not included under warranty.

NOTES

Not be used for the movement of personnel.
Five wraps of wire rope must be maintained on the drum at all times. Date shown is approximate and intended as a guide only.

WN85 / 01.08.24



CWG LIFTING WINCHES

1000-6000kg

CWG30375 1000kg
CWG30565 1500kg
CWG30750 2500kg
CWG31500 3500kg, 4200kg
CWG34000 5000kg, 6000kg
415V x 3ph AC

WINCH STANDARDS & BHW GROUP LTD

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Conformity to these standards is the joint responsibility of the supplier, the installer and the company operating the product.



BHW Group Ltd products are fully compliant and carry a CE and UKCA mark. A Declaration of Conformity is also supplied with each winch or hoist.

Our aim at BHW Group Ltd is to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be lifted or pulled - and approximate frequency of use can be provided.

For hoisting applications, the minimum breaking force (MBF**) of the wire rope must be 5x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

Wire rope capacities the maximum amount of wire rope on the drum must leave a freeboard to the top of the drum flange of 1.5x wire rope diameters to prevent the wire rope coming off the drum.

Winches and hoists with capacities over 1000kg must be load limited.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

** MBF = the Minimum Breaking Force of the wire rope.

ADDITIONAL OPTIONS

- Grooved drum
- Spilt drum
- Dual anchor point (push/pull system)

FEATURES INCLUDE

- **Failsafe Electromagnetic Brake, spring applied**
Provides instant, safe braking
- **Bi-rotational**
CWG winches can be installed with wire rope coming off the top or bottom of the drum
- **Enclosed drum flange**
Prevents rope becoming trapped between drum and support casing
- **Cast steel foot mounting**
For easy installation
- **Low voltage control supplied as standard**
24V AC, pre-wired to the winch with IP67
2 button control and emergency stop
- **Thermal overload protection**
Prevents overheating
- **Quiet running**
Conforms to noise pollution regulations
- **Load limiter**
Via current sensor in the low voltage controls
- **Motors to IP55 as standard**
Further options available on request
- **2 metre power lead**
Pre-wired to the winch with commercial plug

ADDITIONAL EQUIPMENT

- Wire rope
- Radio remote control
- Weatherproof enclosure
- Inverter

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LINE PULL AND LINE SPEED PERFORMANCES - WINCH VARIANTS

CWG SERIES WINCH VARIANTS - SPECIFICATION

Part No.	Model	Rated Load per Layer [kgf/kN]				Line Speed [m/min]				Rope Length [m/layer]				Wire Rope			Drum Ø [mm]	Motor [Amps]	Motor [kW]
		1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th	1 st	2 nd	3 rd	4 th	Ø [mm]	Length [m]	SWL [kg]			
CWG30375 – 1000kg Rated on the 3 rd layer																			
16479	A	1386/13.6	1220/12	1091/10.7	985/9.6	12	14	15.3	17	10	21	33	45	9	33	1062	127	8.3	4
16480	B	1386/13.6	1220/12	1091/10.7	985/9.6	8	9.8	11	12.2	10	21	33	45	9	33	1062	127	5	2.2
16481	C	1386/13.6	1220/12	1091/10.7	985/9.6	3.7	4.1	4.6	5	10	21	33	45	9	33	1062	127	3.5	1.5
16482	D	1386/13.6	1220/12	1091/10.7	985/9.6	1	1.2	1.6	2	10	21	33	45	9	33	1062	127	1.7	0.55
CWG30565 – 1500kg Rated on the 3 rd layer																			
16483	A	1800/17.7	1650/16.2	1500/14.7	N/A	20	22.5	24.6	N/A	20	40	60	N/A	11	40	1586	219	15.5	7.5
16484	B	1800/17.7	1650/16.2	1500/14.7	N/A	14	15.5	17	N/A	20	40	60	N/A	11	40	1586	219	10	5.5
16485	C	1800/17.7	1650/16.2	1500/14.7	N/A	4.2	4.6	5.1	N/A	20	40	60	N/A	11	40	1586	219	5.3	2.2
16486	D	1800/17.7	1650/16.2	1500/14.7	N/A	1	1.2	1.8	N/A	20	40	60	N/A	11	40	1586	219	1.7	0.55
CWG30750 – 2500kg Rated on the 4 th layer																			
16487	A	3410/33.4	3072/30.1	2795/27.4	2567/25.2	7.7	8.6	9.4	10.3	16	34	54	75	14	54	2568	219	11	5.5
16488	B	3410/33.4	3072/30.1	2795/27.4	2567/25.2	5	5.5	6.3	6.8	16	34	54	75	14	54	2568	219	9.5	4
16489	C	3410/33.4	3072/30.1	2795/27.4	2567/25.2	2.5	2.8	3.1	3.4	16	34	54	75	14	54	2568	219	5.6	2.2
16490	D	3410/33.4	3072/30.1	2795/27.4	2567/25.2	1.1	1.3	1.5	1.8	16	34	54	75	14	54	2568	219	3	1.1
CWG31500 – 3500kg Rated on the 4 th layer																			
16491	A	5000/49	4600/45.1	4259/41.8	3965/38.9	5.5	6	6.4	6.8	29	61	95	131	16	95	3651	356	13.5	5.5
16492	B	5000/49	4600/45.1	4259/41.8	3965/38.9	4	4.4	4.7	5	29	61	95	131	16	95	3651	356	9.5	4
16493	C	5000/49	4600/45.1	4259/41.8	3965/38.9	2.9	3.2	3.5	3.7	29	61	95	131	16	95	3651	356	6.8	3
16494	D	5000/49	4600/45.1	4259/41.8	3965/38.9	1.2	1.4	1.6	1.8	29	61	95	131	16	95	3651	356	3.7	1.5
CWG31500 – 4200kg Rated on the 3 rd layer																			
16495	A	5000/49	4600/45.1	4259/41.8	N/A	5.8	6.4	7	N/A	25	51	78	N/A	18	78	4243	356	13	5.5
16496	B	5000/49	4600/45.1	4259/41.8	N/A	4.3	4.8	5.2	N/A	25	51	78	N/A	18	78	4243	356	9.5	4
16497	C	5000/49	4600/45.1	4259/41.8	N/A	3.1	3.4	3.7	N/A	25	51	78	N/A	18	78	4243	356	6.8	3
16498	D	5000/49	4600/45.1	4259/41.8	N/A	1.2	1.4	1.6	N/A	25	51	78	N/A	18	78	4243	356	3.7	1.5
CWG34000 – 5000kg Rated on the 4 th layer																			
17227	A	7320/71.8	6655/65.3	6050/59.3	5500/53.9	7.2	8.1	8.9	9.8	35	72	111	153	20	111	5242	324	24	11
17228	B	7320/71.8	6655/65.3	6050/59.3	5500/53.9	5.2	5.5	6.1	6.7	35	72	111	153	20	111	5242	324	16	7.5
17229	C	7320/71.8	6655/65.3	6050/59.3	5500/53.9	2.7	3	3.4	3.7	35	72	111	153	20	111	5242	324	8.5	4
17230	D	7320/71.8	6655/65.3	6050/59.3	5500/53.9	1	1.1	1.3	1.5	35	72	111	153	20	111	5242	324	4.8	2.2
CWG34000 – 6000kg Rated on the 3 rd layer																			
17231	A	7320/71.8	6655/65.3	6050/59.3	N/A	7.2	8.4	9.3	N/A	32	66	103	N/A	22	103	6344	324	22	11
17232	B	7320/71.8	6655/65.3	6050/59.3	N/A	5.2	5.9	6.6	N/A	32	66	103	N/A	22	103	6344	324	17.6	7.5
17233	C	7320/71.8	6655/65.3	6050/59.3	N/A	2.7	3.3	3.7	N/A	32	66	103	N/A	22	103	6344	324	9	4
17234	D	7320/71.8	6655/65.3	6050/59.3	N/A	1	1.2	1.4	N/A	32	66	103	N/A	22	103	6344	324	4.5	2.2

Data shown is approximate based on winch and motor variants and intended as a guide only.

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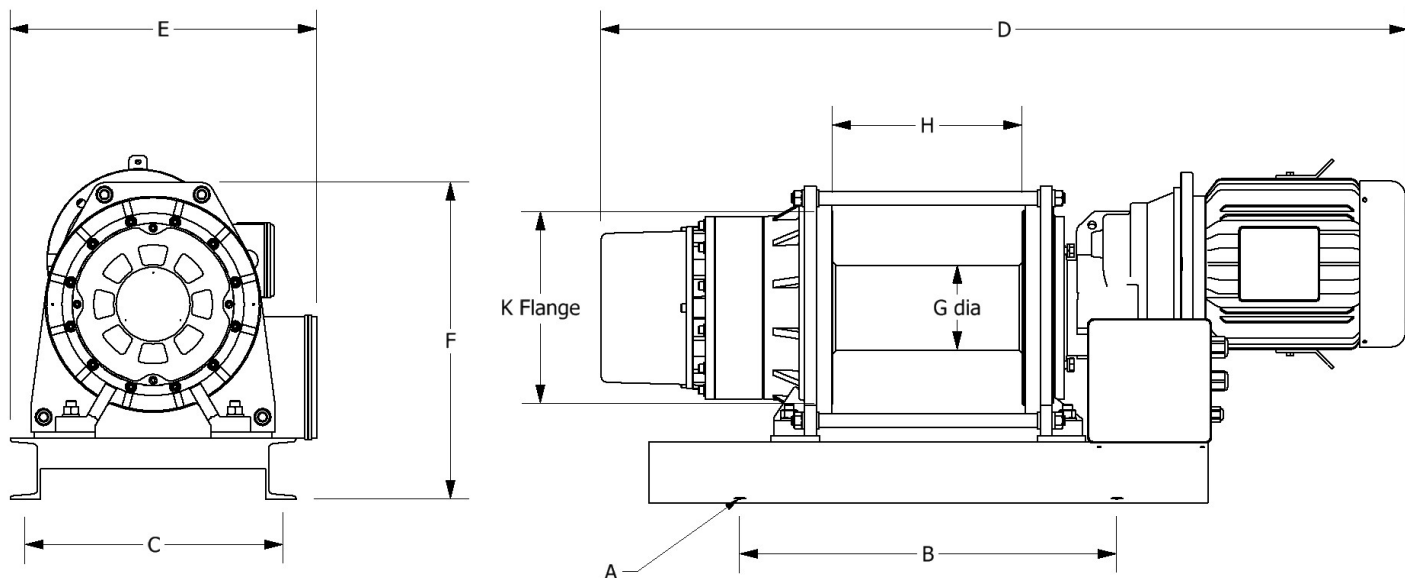
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WINCH DIMENSIONS



WINCH DIMENSIONS mm

No	MODEL	VERSION	A	B	C	D	E	F	G	H	K
16479	CWG30375	A	4 off Ø 19	500	370	960	400	445	124	239	275
16480	CWG30375	B	4 off Ø 19	500	370	960	400	445	124	239	275
16483	CWG30565	A	4 off Ø 19	620	495	1100	470	520	219	312	320
16484	CWG30565	B	4 off Ø 19	620	495	1100	470	520	219	312	320
16487	CWG30750	A	4 off Ø 22	600	199	1160	565	658	219	312	410
16488	CWG30750	B	4 off Ø 22	600	199	1160	565	658	219	312	410
16491	CWG31500	A	4 off Ø 30	847	689	1431	740	860	356	405	570
16492	CWG31500	B	4 off Ø 30	847	689	1431	740	860	356	405	570
16495	CWG31500	A	4 off Ø 30	847	689	1431	740	860	356	405	570
16496	CWG31500	B	4 off Ø 30	847	689	1431	740	860	356	405	570
17227	CWG34000	A	4 off Ø 32	920	680	1860	740	905	324	680	570
17228	CWG34000	B	4 off Ø 32	920	680	1860	740	905	324	680	570
17231	CWG34000	A	4 off Ø 32	920	680	1860	740	905	324	680	570
17232	CWG34000	B	4 off Ø 32	920	680	1860	740	905	324	680	570

Data shown is approximate based on winch and motor variants and intended as a guide only.

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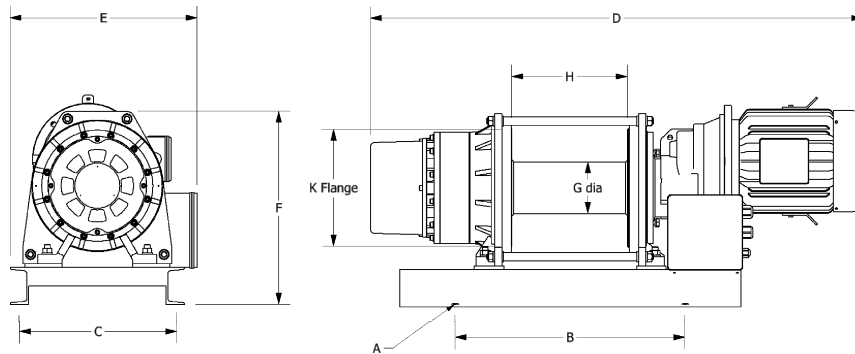
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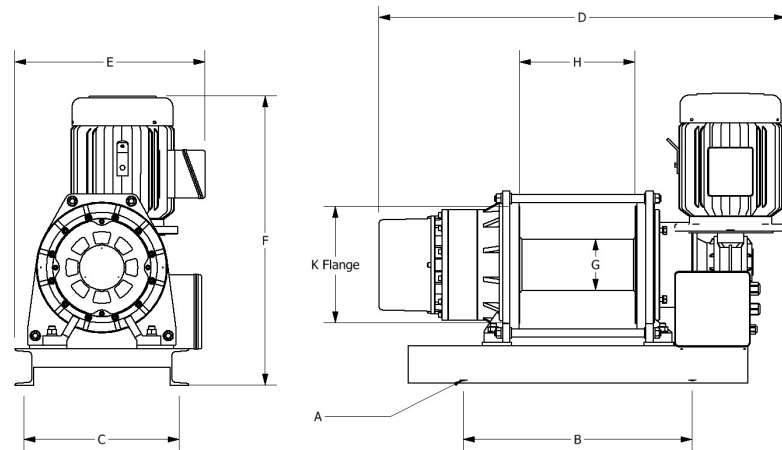


WINCH DIMENSIONS



WINCH DIMENSIONS mm

No	MODEL	VERSION	A	B	C	D	E	F	G	H	K
16481	CWG30375	C	4 off Ø 19	500	370	960	400	445	124	239	275
16485	CWG30565	C	4 off Ø 19	620	495	1100	470	520	219	312	320
16489	CWG30750	C	4 off Ø 22	600	199	1160	565	658	219	312	410
16493	CWG31500	C	4 off Ø 30	847	689	1431	740	860	356	405	570
16497	CWG31500	C	4 off Ø 30	847	689	1431	740	860	356	405	570
17229	CWG34000	C	4 off Ø 32	920	680	1860	740	905	324	680	570
17233	CWG34000	C	4 off Ø 32	920	680	1860	740	905	324	680	570



WINCH DIMENSIONS mm

No	MODEL	VERSION	A	B	C	D	E	F	G	H	K
16482	CWG30375	D	4 off Ø 19	500	370	942	400	445	124	239	275
16486	CWG30565	D	4 off Ø 19	620	495	1100	470	520	219	312	320
16490	CWG30750	D	4 off Ø 22	600	199	1142	565	658	219	312	410
16494	CWG31500	D	4 off Ø 30	847	689	1413	740	860	356	405	570
16498	CWG31500	D	4 off Ø 30	847	689	1413	740	860	356	405	570
17230	CWG34000	D	4 off Ø 32	920	680	1842	740	905	324	680	570
17234	CWG34000	D	4 off Ø 32	920	680	1842	740	905	324	680	570

Data shown is approximate based on winch and motor variants and intended as a guide only.

NOTES

These winches must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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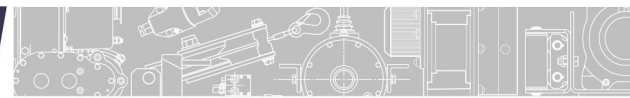




BHW

Bushey Hall Winchmaster

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CABLE•PULLER

1500kg - 2500kg

AC2500a 110V x 1ph

AC2500b 240V x 1ph

*Available as 110V or 240V options, the **CABLE•PULLER** provides the perfect solution to installing long or heavy lengths of cable in difficult locations.*

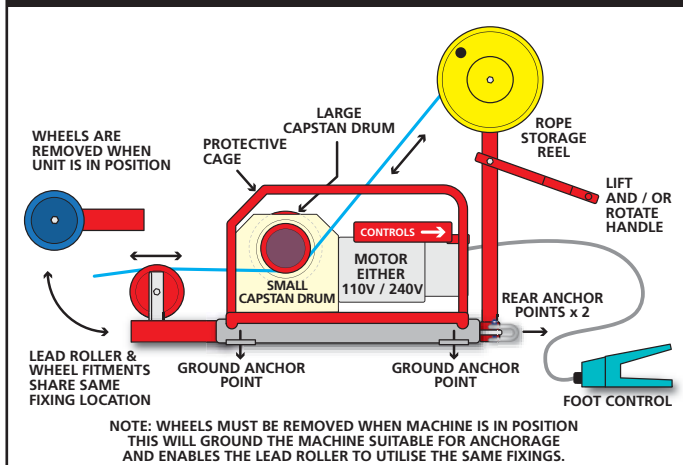
***CABLE•PULLER** takes the strain and makes the job easier. It reduces manpower hours required to meet installation deadlines, and is safer and faster.*

Suitable for continuous pulling to tackle the toughest pulling applications.

FEATURES INCLUDE

- **Dual capstan heads**
Will haul up to 2500kg and 1500kg
- **Two speed options**
According to the capstan head selected
- **Easily transportable on site**
Using either the removable wheels or carry handles
- **All round tubular frame**
Strong and makes it simple to hold by attaching restraining straps to the shackles provided or using ground stakes through the integral side lugs
- **Foot controlled**
For efficient control - leaves the hands free for cable spooling
- **Cable storage reel**
- **Case hardened gear train for maximum efficiency**
- **High efficiency heavy-duty ball bearings on all running surfaces**
- **Overload protection ensures automatic shut down**
- **Electromagnetic spring-applied fail safe brake**
- **Rugged high power induction motor to ensure reliability**

BHW CABLE•PULLER - SIDE VIEW



ADDITIONAL EQUIPMENT

- **Pulling socks**
- **Cable support rollers**
- **Double braid high tensile flexible rope with minimal elongation**

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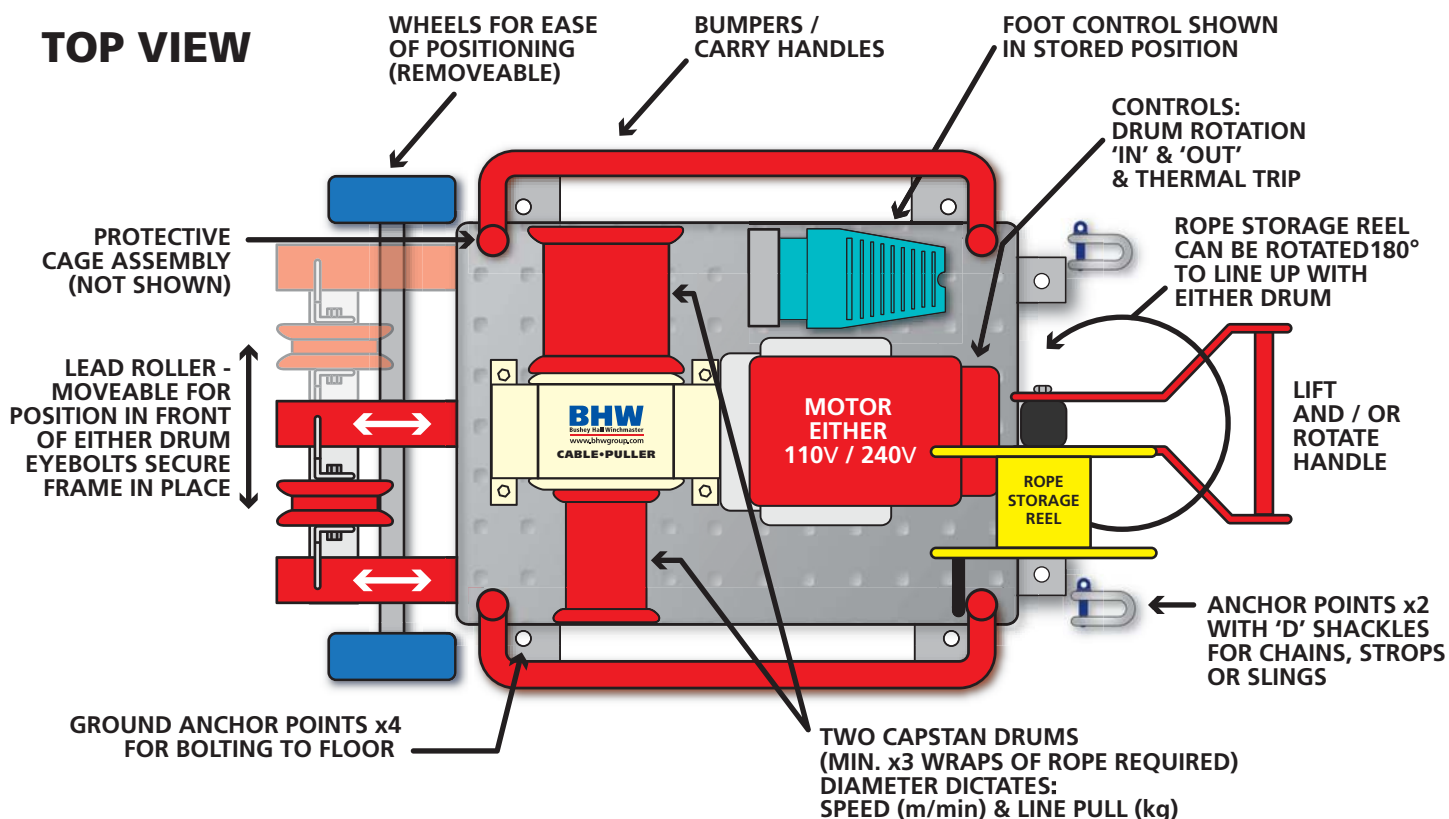
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TOP VIEW



SPECIFICATIONS

AC2500a

AC2500b

Voltage:	110V, 1ph	240V, 1ph
Cable weight pulling capacity:	Large capstan: 1500kg / Small capstan: 2500kg	
Rope speed:	Small capstan: 2.5m/min / Large capstan: 4m/min	
Average total kit weight:	80kg	
Brake type:	Electromagnetic spring applied failsafe	
Motor outputs: Kilowatts	0.6kW	0.6kW
Amperes	8A	4A
Dimensions:	655mm length x 550mm width x 440mm height	

Recommended rope option

Ropes are sold separately - variable lengths as required:
(30m / 50m / 100m / 150m / 200m / 250m / 300m / 500m and 1000m long).

A High Strength Double Braid Soft Rope ideally suited to these machines.

10mm, 8 strand Polyester core with 16 plait cover. Minimum breaking strain 2160kg

The special properties of this rope makes it ideal for cable pulling applications - easy to handle, very flexible and easy to knot.

NOTES

These winches must not be used for the movement of personnel.

The weight of cable that can be hauled will vary depending on site conditions, length and other friction factors.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new CABLE•PULLER is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Ropes are not included under warranty.

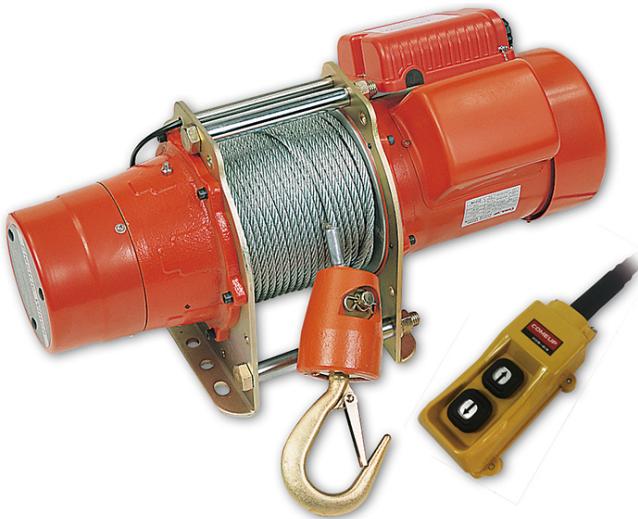
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CWG LIFTING WINCHES 300kg

CWG10077 (300kg)

CWG30075 (300kg)

110V or 240V x 1ph, or 415V x 3ph AC

FEATURES INCLUDE

- **Single or 3 phase options**
CWG10077 = 110V or 240V x 1ph
CWG30075 = 415V x 3ph (Includes low voltage control)
- **Electromagnetic, spring applied, failsafe brake**
Provides instant, safe braking
- **Bi-rotational**
CWG winches can be installed with wire rope coming off the top or bottom of the drum
- **Enclosed drum flange**
Prevents rope becoming trapped between drum and support casing
- **Complete with wire rope**
Galvanised for longer life
- **Compact design**
For easy installation
- **360° weighted safety hook**
Swivel type with safety catch
- **2 metre power lead**
Pre-wired to the winch with commercial type plug
- **Motor to IP44 as standard**
Brush type motor, no options

OPTIONAL EXTRAS

- **Low voltage control (Supplied as standard on 3ph)**
- **Radio remote control - via low voltage control**
- **Weather proof enclosure**

WINCH STANDARDS & BHW GROUP LTD

The British Standard: BS EN14492-1 for power driven winches, BS EN14492-2 for power driven hoists provides the means for conformity to essential Health and Safety requirements of the EN Machinery Directive and the essential Health & Safety at Work Act 1974.

Conformity to these standards is the joint responsibility of the supplier, the installer and the company operating the product.



BHW Group Ltd products are fully compliant and carry a CE and UKCA mark. A Declaration of Conformity is also supplied with each winch or hoist.

Our aim at BHW Group Ltd is to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be lifted or pulled - and approximate frequency of use can be provided.

For hoisting applications, the minimum breaking force (MBF**) of the wire rope must be 5 x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

For pulling applications, as a general rule, winches used in pulling applications rarely see their maximum rated capacity and are used intermittently for short running periods. In these applications the wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* as low as 10:1.

In applications where the winch is used for longer running times and more frequently sees higher loading conditions the wire rope to MBF** should be 3:1 and the ratio of wire rope to mean drum ratio* 12:1.

For recovery vehicles the permissible standard of wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* only 10:1. This minimum standard is permitted because the running time is so short and the winch rarely sees maximum load.

Wire rope capacities the maximum amount of wire rope on the drum must leave a freeboard to the top of the drum flange of 1.5x wire rope diameters to prevent the wire rope coming off the drum.

Winches and hoists with capacities over 1000kg must be load limited.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

** MBF = the Minimum Breaking Force of the wire rope.

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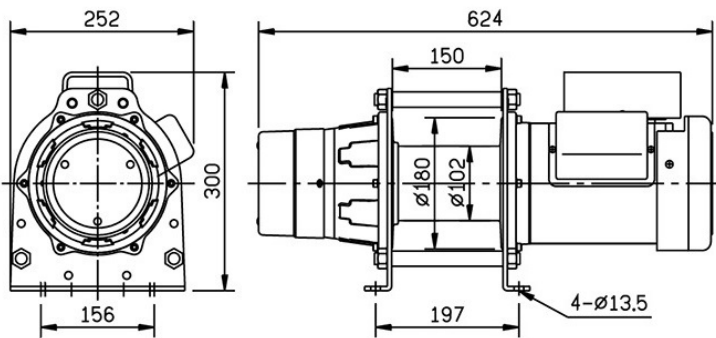
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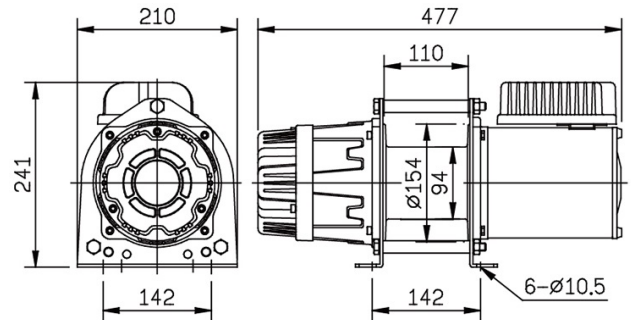
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CWG10077



CWG30075



SPECIFICATIONS

CWG10077

CWG30075

Voltage options:	110V, 1ph	240V, 1ph	415V, 3ph
Lifting: Capacity	300kg	300kg	300kg
Height of lift	43m		29m
Weight: Winch only	42kg		32kg
Total kit average	44kg		34kg
Line speed: 1st layer	12m/min		10m/min
Last layer	18m/min		15m/min
Duty cycle:	1ph have a duty cycle of 25%, with a max. of 60 starts per hour		
Wire rope: ϕ x length	6mm x 45m		5mm x 30m
Safety factor	Minimum factor of safety 5:1		
Motor type:	Induction motor		
Outputs: Kilowatts	1.5kW	1.5kW	0.75kW
Amperes	20A	10.6A	1.8A
Braking:	Electromagnetic spring applied failsafe		
Drum: Length	150mm		110mm
Diameter	102mm		94mm
ϕ Flange	180mm		154mm
Rope ϕ to mean drum ϕ ratio:	18:1		20:1

* Mean drum diameter = the drum diameter plus the diameter of the wire rope

NOTES

These winches must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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BHW

Bushey Hall Winchmaster

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CP SERIES LIFTING WINCHES 250-500kg

CP250 (250kg), CP300 (300kg)
CP500 (500kg), CP500T (500kg)

110V or 240V x 1ph / 415V x 3ph AC

WINCH STANDARDS & BHW GROUP LTD:

The British Standard: BS EN14492-1 for power driven winches, BS EN14492-2 for power driven hoists provides the means for conformity to essential Health and Safety requirements of the EN Machinery Directive and essential Health & Safety at work Act 1974.

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For hoisting applications, the minimum breaking force (MBF**) of the wire rope must be 5 x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

For pulling applications, as a general rule, winches used in pulling applications rarely see their maximum rated capacity and are used intermittently for short running periods. In these applications the wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* as low as 10:1.

In applications where the winch is used for longer running times and more frequently sees higher loading conditions the wire rope to MBF** should be 3:1 and the ratio of wire rope to mean drum ratio* 12:1.

For recovery vehicles the permissible standard of wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* only 10:1. This minimum standard is permitted because the running time is so short and the winch rarely sees maximum load.

Wire rope capacities the maximum amount of wire rope on the drum must leave a freeboard to the top of the drum flange of 1.5x wire rope diameters to prevent the wire rope coming off the drum.

Winches and hoists with capacities over 1000kg must be load limited.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope. ** MBF = the Minimum Breaking Force of the wire rope.

FEATURES INCLUDE:

- **Single or 3 phase options**
CP250 = 110V & 240V x 1ph
CP300 = 240V x 1ph
CP500 = 240V x 1ph
CP500T = 415V x 3ph (Includes Low Voltage Control)
- **Electromagnetic, spring applied, failsafe brake**
Provides instant, safe braking
- **Bi-rotational**
CP winches can be installed with wire rope coming off the top or bottom of the drum
- **Enclosed drum flange**
Prevents rope becoming trapped between drum and support casing
- **Complete with wire rope**
Galvanised for longer life
- **Compact design**
For easy installation
- **Quiet running**
- **360° weighted safety hook**
Swivel type with safety catch
- **3 metre pendant control**
Pre-wired to the winch with 2 buttons and emergency stop
- **2 metre power lead**
Pre-wired to the winch with commercial type plug
- **Motor to IP44 as standard**

OPTIONAL EXTRAS

- **Low voltage control (supplied as standard on 3ph)**
- **Radio remote control - via low voltage control**
- **Weather proof enclosure**

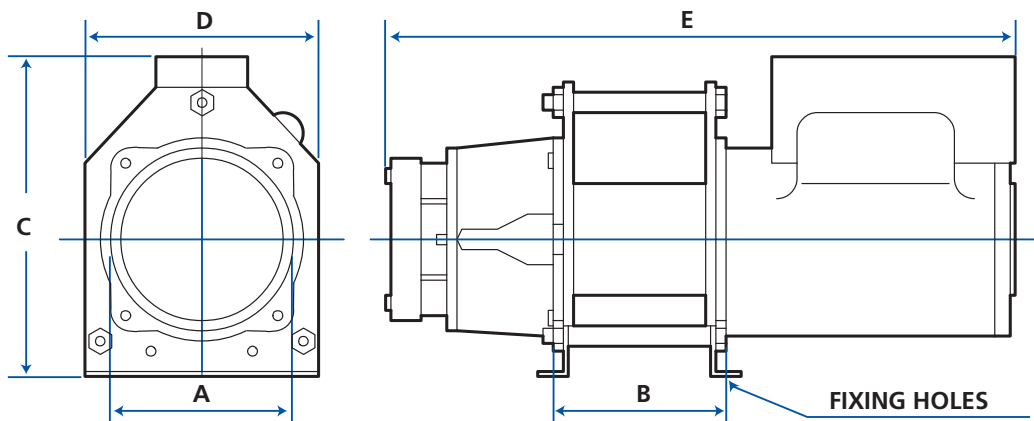
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WINCH DIMENSIONS mm						
MODEL	A	B	C	D	E	Fixing holes
CP250	142	142	241	210	548	4 off Ø 10.5
CP300	142	142	241	210	576	4 off Ø 10.5
CP500	156	267	299	260	694	4 off Ø 13.5

SPECIFICATIONS		CP250		CP300	CP500	CP500T
Voltage options		110V, 1ph	240V, 1ph	240V, 1ph	240V, 1ph	415V, 3ph
Lifting:	Capacity	250kg		300kg	500kg	500kg
	Height of lift	28m		28m	42m	42m
Weight:	Winch only	34kg		38kg	55kg	54kg
	Total kit average	36kg		40kg	57kg	56kg
Line speed:	1st layer	10m/min		10m/min	10m/min	11.6m/min
	Last layer	15m/min		15m/min	15m/min	18.3m/min
Duty cycle:		1ph have a duty cycle of 25%, with a maximum of 60 starts per hour				
Wire rope:	Diameter ø x length	5mm x 30m		5mm x 30m	7mm x 45m	7mm x 45m
	Factor of safety	Minimum factor of safety 5:1 (for lifting)				
Motor type:		Induction motor				
Motor outputs:	Kilowatts	0.75kW		1.15kW	1.8kW	1.58kW
	Amperes	10A	5A	7.6A	12.8A	4A
Braking:		Electromagnetic spring applied failsafe.				
Drum:	Length	110mm		110mm	220mm	220mm
	Diameter Ø	94mm		94mm	102mm	102mm
	Flange Diameter Ø	154mm		154mm	180mm	180mm
Rope ø to mean drum ø ratio:		20:1		20:1	18:1	18:1

NOTES

These winches must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

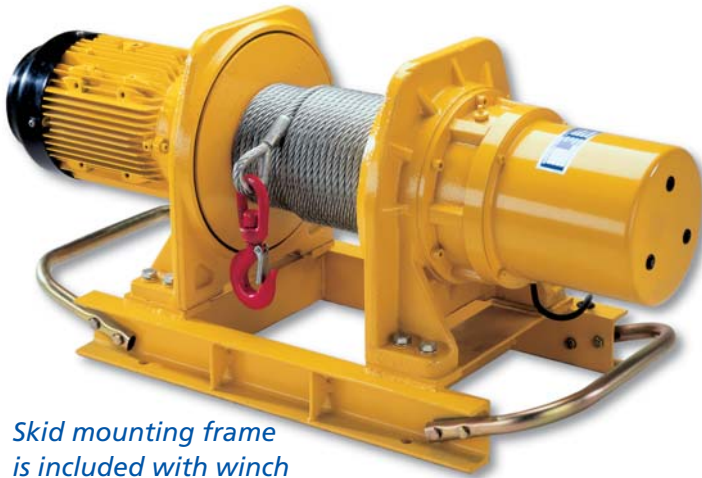
Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050

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Skid mounting frame
is included with winch

NEW EUROPEAN STANDARDS & BHW GROUP

New Harmonised European Standards: EN14492-1 for power driven winches, EN14492-2 for power driven hoists provide the means for conformity to essential Health and Safety requirements of the EC Machinery Directive.

Conformity to these standards is the joint responsibility of the supplier, the installer and the company operating the product.



BHW Group products are fully compliant and carry a CE mark. A Declaration of Conformity is also supplied with each winch or hoist.

Our aim at BHW Group is to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be lifted or pulled - and approximate frequency of use can be provided.

For hoisting applications the minimum breaking force (MBF**) of the wire rope must be 5 x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

For pulling applications. As a general rule winches used in pulling applications rarely see their maximum rated capacity and are used intermittently for short running periods. In these applications the wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* as low as 10:1.

In applications where the winch is used for longer running times and more frequently sees higher loading conditions the wire rope to MBF** should be 3:1 and the ratio of wire rope to mean drum ratio* 12:1.

For recovery vehicles the permissible standard of wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* only 10:1. This minimum standard is permitted because the running time is so short and the winch rarely sees maximum load.

Wire rope capacities the maximum amount of wire rope on the drum must leave a freeboard to the top of the drum flange of 1.5 x wire rope diameter to prevent the wire rope coming off the drum.

Winches and hoists with capacities over 1000kg must be load limited.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

** MBF = the Minimum Breaking Force of the wire rope.

CWG LIFTING WINCHES 400-600kg

CWG10151 (400 - 480kg)

CWG30151 (400 - 600kg)

Rated on 3rd layer of rope

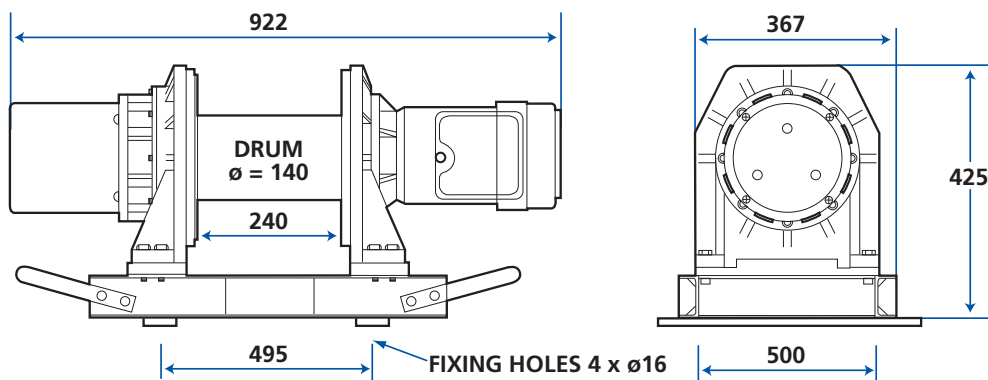
240v x 1ph or 415v x 3ph AC

FEATURES INCLUDE

- **Single or 3 phase options**
A choice of 240v or 415v across the range
- **Electromagnetic, spring applied, failsafe brake**
Provides instant, safe braking
- **Bi-rotational**
CWG winches can be installed with wire rope coming off the top or bottom of the drum
- **Enclosed drum flange**
Prevents rope becoming trapped between drum and support casing
- **Includes skid mounting frame**
- **Low voltage control supplied as standard**
For both 240v and 415v versions
24v AC, pre-wired to the winch with 2 button control and emergency stop
- **Quiet running**
Conforms to noise pollution regulations
- **Cast steel foot mounting**
For easy installation
- **2 metre power lead**
Pre-wired to the winch with commercial type plug
- **Motor to IP54 as standard**
(other options available on request)

ADDITIONAL EQUIPMENT

- **Galvanised wire rope - 9mm x 42m**
7 x 18 wire core 1960N/mm² grade.
- **360° weighted safety hook**
Swivel type with safety catch
- **Radio remote control**
- **Weatherproof enclosure**



LINE PULL AND LINE SPEED PERFORMANCES - WINCHES ARE LOAD RATED ON THIRD LAYER

CWG10151a 240v x 1ph

		LAYERS				
		1	2	3	4	5
Maximum Rated Line Pull by Layer	kN kgf	4.9 500	4.5 454	3.9 400	3.6 372	3.5 360
CWG10151a Rope Capacity Cumulative by Layer (9mm Dia. Wire Rope)	m	13.2	27.3	42	57.5	73.6
Line Speed*	m/min	22	25.3	28	30.3	34

CWG10151b 240v x 1ph

		LAYERS				
		1	2	3	4	5
Maximum Rated Line Pull by Layer	kN kgf	5.9 600	5.2 530	4.7 480	4.3 435	3.9 400
CWG10151b Rope Capacity Cumulative by Layer (9mm Dia. Wire Rope)	m	13.2	27.3	42	57.5	73.6
Line Speed*	m/min	11.5	12.8	14	15.8	17.3

CWG30151 Series 415v x 3ph

		LAYERS 30151a					LAYERS 30151b					LAYERS 30151c				
		1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Maximum Rated Line Pull by Layer	kN kgf	4.9 500	4.4 450	3.9 400	3.4 350	2.9 300	7.4 740	6.5 661	5.9 600	5.3 544	4.9 500	7.4 740	6.5 661	5.9 600	5.3 544	4.9 500
CWG30151 Rope Capacity Cumulative by Layer (9mm Dia. Wire Rope)	m	13.2	27.3	42	57.5	73.6	13.2	27.3	42	57.5	73.6	13.2	27.3	42	57.5	73.6
Line Speed*	m/min	24	27	30	33.6	36.8	11.6	12.8	14.3	15.8	17.3	7.8	8.7	9.6	10.5	11.5

* Based on recommended 9mm diameter wire rope, 1960N/mm² grade, 7 x 18 wire core construction

CWG SPECIFICATIONS

10151a

10151b

30151a

30151b

30151c

Voltage options:	240v 1ph		415v 3ph		
Lifting capacity	400kg	480kg	400kg	600kg	600kg
Weight: Winch only	120kg				
Total kit average	148kg				
Wire rope: ø x length	9mm x 42m				
Construction	7 x 18 wire core 1960N/mm ² grade. Minimum factor of safety 5:1				
Motor type:	Induction motor				
Outputs: Kilowatts	2.2kw	1.5kw	2.2kw	1.5kw	1.5kw
Ampères	14.5amp	10.6amp	4.6amp	3.5amp	2.9amp
Braking:	Electromagnetic spring applied failsafe				
Drum & flange dimensions:	240mm length, drum ø = 140mm, flange ø = 280mm				
	Rope ø to mean drum ø ratio:16.5:1				

NOTES

These winches must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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CERT. No. 1769

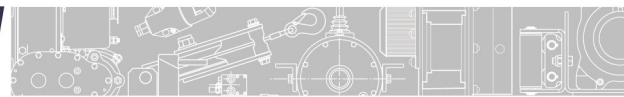
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BHW

Bushey Hall Winchmaster

www.bhwgroup.com



COMPACT WINCHES 200-300kg

CWL200 / 200L (200kg)

CWL301 / 301L (300kg)

110V or 240V x 1ph AC on most models

These lightweight, fast and efficient single phase winches are the ideal general purpose machines - and cannot be beaten for portable applications.

WINCH STANDARDS & BHW GROUP LTD

The British Standard: BS EN14492-1 for power driven winches, BS EN14492-2 for power driven hoists provides the means for conformity to essential Health and Safety requirements of the EN Machinery Directive and the essential Health & Safety at Work Act 1974.

Conformity to these standards is the joint responsibility of the supplier, the installer and the company operating the product.



BHW Group Ltd products are fully compliant and carry a CE and UKCA mark. A Declaration of Conformity is also supplied with each winch or hoist.

Our aim at BHW Group Ltd is to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be lifted or pulled - and approximate frequency of use can be provided.

For hoisting applications, the minimum breaking force (MBF**) of the wire rope must be 5 x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

For pulling applications, as a general rule, winches used in pulling applications rarely see their maximum rated capacity and are used intermittently for short running periods. In these applications the wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* as low as 10:1.

In applications where the winch is used for longer running times and more frequently sees higher loading conditions the wire rope to MBF** should be 3:1 and the ratio of wire rope to mean drum ratio* 12:1.

For recovery vehicles the permissible standard of wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* only 10:1. This minimum standard is permitted because the running time is so short and the winch rarely sees maximum load.

Wire rope capacities the maximum amount of wire rope on the drum must leave a freeboard to the top of the drum flange of 1.5x wire rope diameters to prevent the wire rope coming off the drum.

Winches and hoists with capacities over 1000kg must be load limited.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

** MBF = the Minimum Breaking Force of the wire rope.

FEATURES INCLUDE:

- **Available in 110V and 240V, 1phase**
CWL200 & CWL200L = 110V & 240V
CWL301L = 240V only
- **Operates on standard household power supply**
In case of 110V version via transformer
- **Dynamic and mechanical brake**
Provides instant and safe braking
- **Lightweight and compact design**
For easy installation
- **Foot mounted**
Can be installed upside down
- **Enclosed drum flange**
Prevents ropes becoming trapped between drum and support castings
- **Complete with wire rope**
Galvanised for longer life
- **360° weighted safety hook**
Swivel type with safety catch
- **10 metre pendant control**
Plug-in, with 2 buttons and emergency stop
- **3 metre power lead**
Pre-wired to the winch with commercial type plug
- **Motor rating IP44**
Brush type motor - no options

OPTIONAL EXTRAS

- **Pendant control extension**
Plug in for additional 10 metre length
- **Radio remote control**
WK100L plug and play radio remote

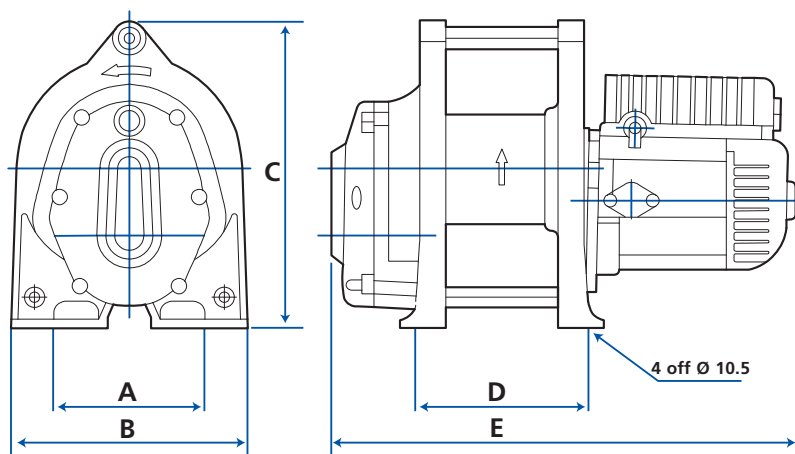
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WINCH DIMENSIONS mm						
MODEL	A	B	C	D	E	Fixing holes
CWL200 / 301	135	210	270	152	415	4 off Ø 10.5
CWL200L / 301L	135	210	270	207	470	4 off Ø 10.5

SPECIFICATIONS		CWL200		CWL200L		CWL301	CWL301L
Voltage options		110V	240V	110V	240V	240V only	240V only
Lifting:	Capacity	200kg		200kg		300kg	300kg
	Height	45m		69m		29m	53m
Weight:	Hoist only	30kg		33kg		38kg	40kg
	Total kit (average)	32kg		35kg		40kg	42kg
Line speed:	1st layer	11m/min		11m/min		16m/min	16m/min
	Last layer	16m/min		16m/min		25m/min	25m/min
Duty cycle:		All CWL hoists have a duty cycle of 25%, with a maximum of 60 starts per hour					
Wire rope:	Diameter Ø	5mm		5mm		6mm	6mm
	Length	46m		71m		30m	55m
	Rope construction	6 x 19 wire core, galvanised for longer rope life. Factor of safety = 5:1 (for lifting)					
Motor type:		Induction motor					
Motor outputs:	Kilowatts	1.2kW		1.2kW		2.3kW	2.3kW
	Amperes	12A	6A	12A	6A	11A	11A
Braking:		Motor: Electronic via resistor Gears: Mechanical ratchet brake					
Drum:	Length	97mm		147mm		97mm	147mm
	Diameter Ø	95mm		95mm		95mm	95mm
	Flange Diameter Ø	190mm		190mm		190mm	190mm
Rope ø to mean drum ø ratio:		20:1		20:1		17:1	

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

NOTES

These winches must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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BH DELTA 2250 KIT COMPRISES

Electric Winch, 4.5m heavy duty 2 button wanderlead, mounting plate, roller guides and 8mm x 23m galvanised 1960Nmm² grade 6x36 core wire rope with safety latch hook.

Total kit weight 40kg.



Can also be supplied with:
Emergency Stop, Safety Solenoid
and In-Cab Switch (not shown)

ADDITIONAL EQUIPMENT & SERVICES

- BHW WINCH CONTROL SYSTEM (see below)
- Electric isolator switch
- Auxiliary industrial 16 amp plug and socket kit for wanderlead connection
- Fuse and fuse holder
- Snatch block
- Radio Control Unit
- Full or partial fitting can be provided, including load testing and certification

BH DELTA 2250

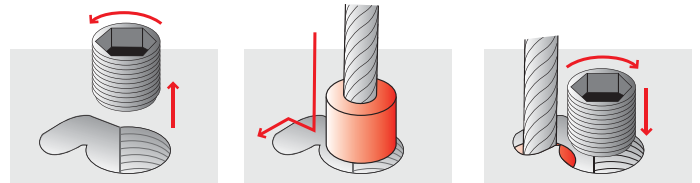
12v or 24v DC Electric Recovery Winch 2250kg Line Pull

**Light Duty Car Transporters, Plant Moving
Vehicles with GVW up to 3500kg, Spec-Lifts, 4x4's**

This low profile planetary winch has been developed for light industrial use. It incorporates a large electric motor, ensuring good service life.

FEATURES INCLUDE

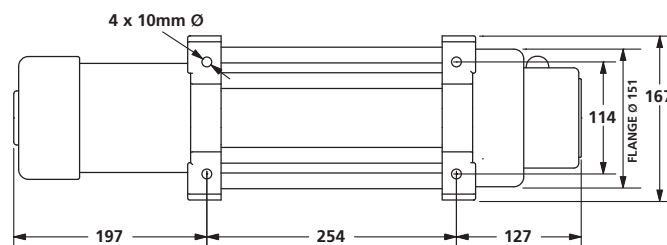
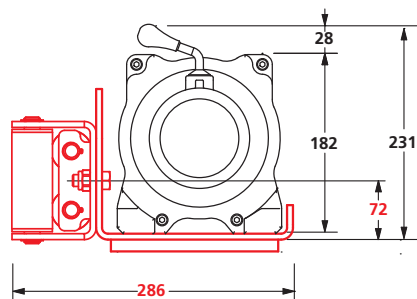
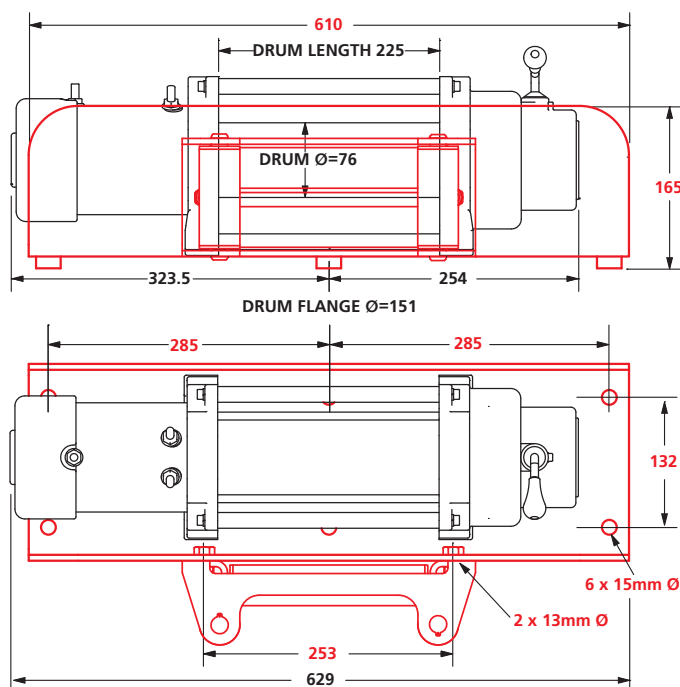
- **2250kg line pull**
(22.07kN)
- **EN14492-1 compliant**
- **Powerful series wound, high torque motor options**
12v or 24v
- **Optional electronic load limiting device**
Pre wired to solenoid for safer winch operation
- **3 stage planetary gearing**
Providing high mechanical efficiency
- **Automatic braking action in drum**
- **Freespool clutch lever**
Easy to operate lever for disengaging drum
- **Power in / power out**
Fine control ensures load will not overrun
- **4 way roller guides and mounting plate**
- **Heavy duty 4.5m wanderlead control**
Two button supplied a standard, alternative lengths and additional emergency stop button available on request
- **Wire rope positively secured to drum**
Using fixed plug and grub screw engagement



UPGRADE TO A BHW WINCH CONTROL SYSTEM

Save time and money on installation - Ready to fit.

A choice of three alternative winch control kits designed to provide all in one emergency stop, isolator switch, safety solenoid and power outlets.



		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf	2250	1860	1584
	kN	22.07	18.24	15.53
Cable Drum Capacity Cumulative by Layer (8mm dia. cable)	m	7	15	23

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL kgf	LINE SPEED (approx)		AMP DRAW (approx)	
	12v m/min	24v m/min	12v	24v
0	8	8	66	32
500	6	7	120	60
1000	4.5	5	170	85
1500	4	4.2	204	102
2000	3.2	3.5	240	120
2500	2.6	2.8	280	140

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull (single line): Maximum recommended working capacity 2,200kgf to comply with EN14492-1.
Stall capacity 4300kg.

Gear Ratio: 216:1 for either 12v or 24v.

Motor: High torque series wound 12v (6hp) or 24v (4.7hp).

Switching: Heavy duty, double acting solenoids can be mounted adjacent to winch or on to the winch tie bars with straps provided.

Load Limiting Device Optional, pre-wired and fitted to underside of solenoid pack.
Can be calibrated to shut down winch when maximum load limit is reached.

Wanderlead Control: Commercial heavy duty type with 2 operating buttons and 4.5m cable.
Other lengths and additional emergency stop button versions available on request.

Roller Guides: Heavy duty, 4 way commercial type with greaseways.

Wire Rope: 8mm diameter galvanised 1960Nmm² grade, 6 x 36 wire core construction with 44.7kN minimum breaking strain.

Freespooling: Lever on gear housing to disengage clutch.

Complete Kit Weight: 40kg.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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BH DELTA S2300 or S3300 WINCH KITS

BH DELTA S2300 kit includes

Electric winch, solenoid kit, aluminium hawser fairlead, 4.5m heavy duty 2 button wanderlead, mounting plate and 9mm x 23m UHMPE (Ultra High Modulus Polyethylene) high tensile Marlow Winchline Dynaline® rope with safety latch hook.

BH DELTA S3300 kit includes

As S2300 kit but comes with 9mm x 23m UHMPE high tensile pre-stretched Marlow Dynaline Max® rope with safety latch hook.

Total approximate kit weight: 40kg

MARLOW ROPES SUPPLIED BY BHW GROUP

Features of Marlow Dynaline® and Dynaline Max® ropes:

- 8 times lighter than wire ropes
- 70% stronger than comparable wire ropes
- Will not kink
- No wire splinters
- No strength loss when overlapped on winch drum
- Ropes will float
- Virtually no recoil in unlikely event of rope failure

ADDITIONAL EQUIPMENT & SERVICES

- Alternative roller guide in place of hawser fairlead
- Electric isolator switch
- Auxiliary industrial 16 amp plug and socket kit for wanderlead connection
- Fuse and fuse holder • Snatch block • Radio Control
- Full or partial fitting can be provided, including load testing and certification

BH DELTA S2300 & S3300

12v or 24v DC Electric Recovery Winches

Prepared for use with high tensile synthetic ropes
 2300kg or 3300kg Line Pull

Light GVW Car Transporters, Fire & Rescue, Utility Vehicles, Spec-Lifts, 4x4's

Low profile planetary winches incorporating a large electric motor, ensuring good service life.

FEATURES INCLUDE

- **2300kg (22.6kN) or 3300kg (32.4kN) line pull**
- **Supplied with Marlow Winchline Dynaline® or Dynaline Max® synthetic ropes**
- **EN14492-1 compliant**
- **Powerful series wound, high torque motor options**
12v or 24v
- **Optional electronic load limiting device**
Pre wired to solenoid, switches off winch at rated line pull
- **Automatic braking action in drum**
- **Aluminium hawser fairlead**
Minimum protrusion, a major benefit on lightweight transporters with short bed lengths or 4x4 vehicles.
- **Rope positively secured to drum**
Positively secured to drum with a rope end stock engaged into a slot on the drum.

NOTES ON HIGH TENSILE SYNTHETIC ROPES

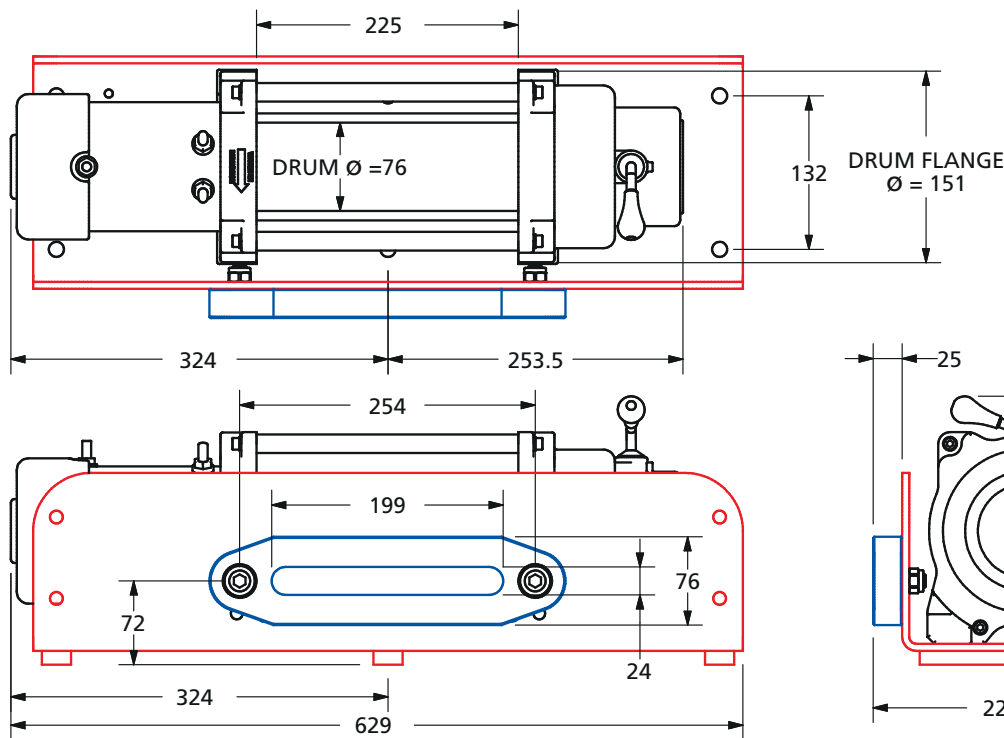
High tensile UHMPE Synthetic Ropes are popular for a wide range of vehicle winching applications where the user prefers handling these soft pliable ropes.

They are very light to manoeuvre and the overall weight saving can be very important in applications such as 4x4's and on light GVW car transporters.

The ropes used on the BH Delta 'S' winches have a tensile strength in excess of the strength of comparable wire ropes. The winch rating is calculated on a 3:1 factor of safety at the maximum winch pulling capacity (compared to requirements for a wire rope of only 2:1).

In the right applications the BH Delta 'S' series winches with a Marlow Dynaline® or Dynaline Max® rope make a great combination.

Please note: In applications where ropes are regularly subjected to sharp edges or excessive abrasion, use of UHMPE Synthetic ropes is not advised.



Can also be supplied with Emergency Stop, Safety Solenoid and In-Cab Switch (not shown).

Roller guides also available on request.

			LAYER		
			1	2	3
Maximum Rated Line Pull by Layer*	S2300	kgf	2300	1910	1634
		kN	22.6	18.7	16
	S3300	kgf	3300	2740	2344
		kN	32.4	26.9	23
Cable Drum Capacity Cumulative by Layer	S2300 & S3300	m	7	15	23

By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL	LINE SPEED (approx)		AMP DRAW (approx)	
kgf	12v m/min	24v m/min	12v	24v
3000	2	2.1	320	160
3300	1.5	1.6	360	180

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull (single line)	Maximum recommended working capacity 2300kg (S2300) and 3300kg (S3300) to comply with EN14492-1. Stall capacity 4300kg without load limiter installed and calibrated. Note: A fast action load limiter must be fitted. If a BHW load limiter is not specified, an alternative load limiter must be provided for EN14492-1 compliance.
Gear Ratio	216:1 for either 12v or 24v.
Motor	High torque series wound 12v (6hp) or 24v (4.7hp).
Switching	Heavy duty, double acting solenoids can be mounted adjacent to winch or on to the winch tie bars with straps provided.
Wanderlead Control	Commercial heavy duty type with 2 operating buttons and 4.5m cable. Other lengths and additional emergency stop button versions available on request.
Aluminium Hawser Fairlead	Supplied as standard. Alternatively, a roller guide can be provided.
Synthetic Ropes (High Tensile UHMPE)	S2300: 9mm x 23m Marlow Winchline Dynaline®. Minimum breaking strain 68.83kN (7020kkg) S3300: 9mm x 23m Marlow Winchline Dynaline Max®. Minimum breaking strain 98.45kN (10,035kg)
Freespooling	Lever on gear housing to disengage clutch.
Approximate Weights	Winch with mounting plate, aluminium hawser fairlead and soft rope: 35kg Solenoid pack, connecting wiring and 4.5m wanderlead: 5kg
Load Limiting Device (Option)	Pre-wired and fitted to underside of solenoid pack. Can be calibrated to shut down winch when maximum load limit is reached.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

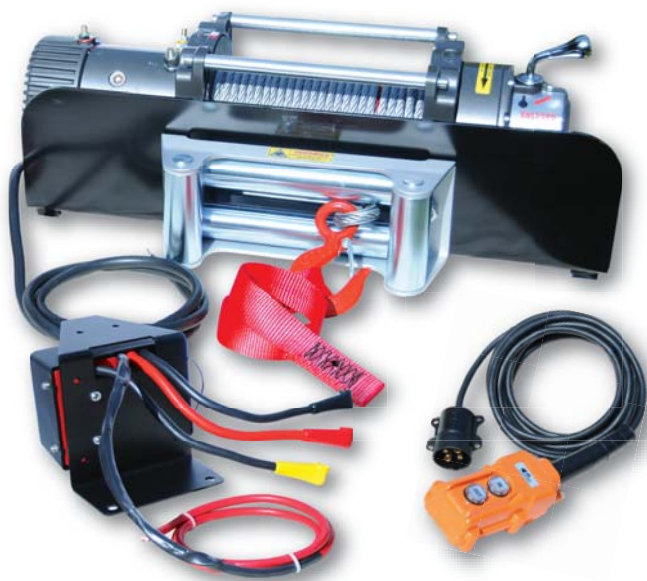
Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Ropes are not included under warranty.

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BH DELTA 3200 KIT COMPRISES

Electric Winch, 4.5m heavy duty 2 button wanderlead, mounting plate, roller guides and 8mm x 23m galvanised 2160N/mm² grade 6x36 core wire rope with safety latch hook.

Total kit weight 40kg.



Can also be supplied with:
Emergency Stop, Safety Solenoid
and In-Cab Switch (not shown)

ADDITIONAL EQUIPMENT & SERVICES

- BHW WINCH CONTROL SYSTEM (see opposite)
- Electric isolator switch
- Auxiliary industrial 16 amp plug and socket kit for wanderlead connection
- Fuse and fuse holder
- Snatch block
- Radio Control Unit
- Full or partial fitting can be provided, including load testing and certification

BH DELTA 3200

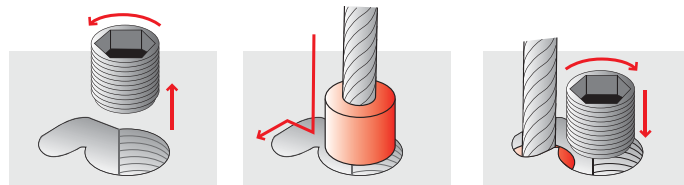
12v or 24v DC Electric Recovery Winch
3200kg Line Pull

Light Duty Car Transporters, Plant Moving
Vehicles with GVW up to 3500kg, Spec-Lifts, 4x4's

This low profile planetary winch has been developed for light industrial use. It incorporates a large electric motor, ensuring good service life.

FEATURES INCLUDE

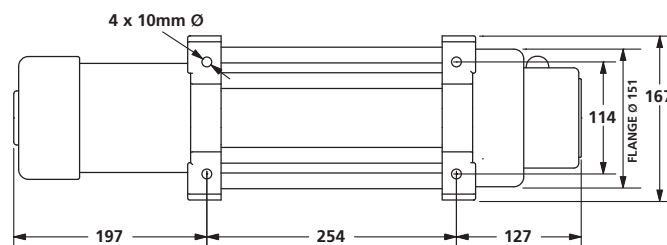
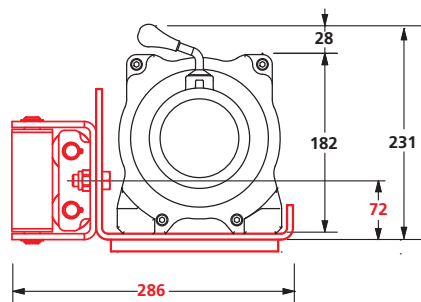
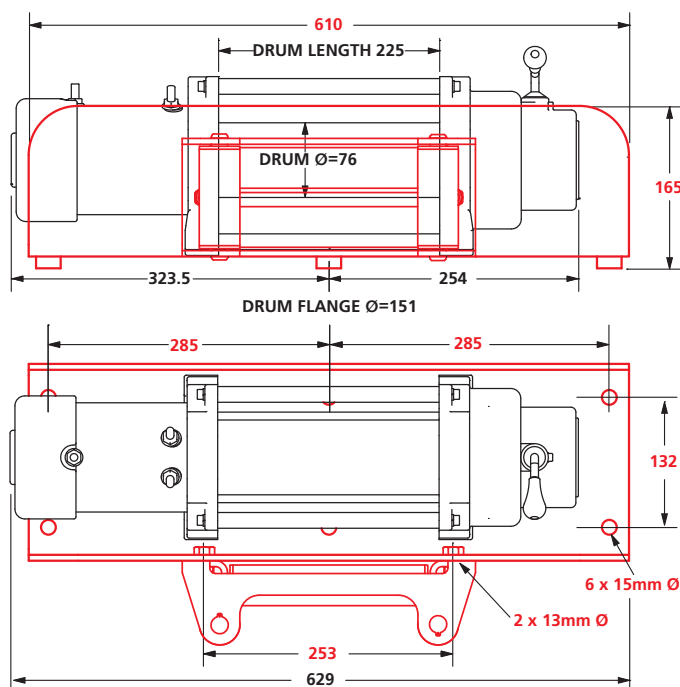
- **3200kg line pull**
(31.4kN)
- **EN14492-1 compliant**
- **Powerful series wound, high torque motor options**
12v or 24v
- **Optional electronic load limiting device**
Pre wired to solenoid for safer winch operation
- **3 stage planetary gearing**
Providing high mechanical efficiency
- **Automatic braking action in drum**
- **Freespool clutch lever**
Easy to operate lever for disengaging drum
- **Power in / power out**
Fine control ensures load will not overrun
- **4 way roller guides and mounting plate**
- **Heavy duty 4.5m wanderlead control**
Two button supplied a standard, alternative lengths and additional emergency stop button available on request
- **Wire rope positively secured to drum**
Using fixed plug and grub screw engagement



UPGRADE TO A BHW WINCH CONTROL SYSTEM

Save time and money on installation - Ready to fit.

A choice of three alternative winch control kits designed to provide all in one emergency stop, isolator switch, safety solenoid and power outlets.



		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf	3200	2646	2254
	kN	31.38	25.95	22.10
Cable Drum Capacity Cumulative by Layer (8mm dia. cable)	m	7	15	23

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL kgf	LINE SPEED (approx)		AMP DRAW (approx)	
	12v m/min	24v m/min	12v	24v
0	8	8	66	32
500	6	7	120	60
1000	4.5	5	170	85
1500	4	4.2	204	102
2000	3.2	3.5	240	120
2500	2.6	2.8	280	140

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull (single line): Maximum recommended working capacity 3,200kgf to comply with EN14492-1. Stall capacity 4300kg.

Gear Ratio: 216:1 for either 12v or 24v.

Motor: High torque series wound 12v (6hp) or 24v (4.7hp).

Switching: Heavy duty, double acting solenoids can be mounted adjacent to winch or on to the winch tie bars with straps provided.

Load Limiting Device Optional, pre-wired and fitted to underside of solenoid pack. Can be calibrated to shut down winch when maximum load limit is reached.

Wanderlead Control: Commercial heavy duty type with 2 operating buttons and 4.5m cable. Other lengths and additional emergency stop button versions available on request.

Roller Guides: Heavy duty, 4 way commercial type with greaseways.

Wire Rope: 8mm diameter galvanised 2160N/mm² grade, 6 x 36 wire core construction with 65.6kN minimum breaking strain.

Freespooling: Lever on gear housing to disengage clutch.

Complete Kit Weight: 40kg.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.com www.bhwwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050

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RE34.9 KIT COMPRISES

Electric Winch with emergency stop and safety solenoid; load limiting switch; 4.5m heavy duty 2 button wanderlead control; mounting bracket; industrial roller guides with greaseways; 10mm dia. x 30m galvanised wire rope (1960N/mm² grade) with safety latch hook.



Supplied with:
Emergency Stop, Safety Solenoid
and In-Cab Switch (not shown)

ADDITIONAL EQUIPMENT & SERVICES

- BHW Group Ltd winch control system (see below)
- Electric isolator switch
- Auxiliary industrial 16A plug and socket kit for wanderlead connection
- Fuse and fuse holder
- Snatch block
- Radio Control Unit
- Full or partial fitting can be provided, including load testing and certification

UPGRADE TO A BHW WINCH CONTROL SYSTEM

Save time and money on installation - ready to fit.

A choice of three alternative winch control kits designed to provide all in one emergency stop, isolator switch, safety solenoid and power outlets.

RAMSEY RE34.9

3.56 Tonne DC Electric Winch (12V or 24V)

For General Recovery Work

Heavy duty electric DC winch, designed for general commercial applications. Rugged construction and low profile design enables fitting almost flush with, or above, the vehicle floor as required.

A 90mm x 215mm deep flange drum with rope anchor wedge ensures good rope life expectancy.

Fully compliant with BS EN14492-1 regulations.

FEATURES INCLUDE

- **3558kgf line pull**
Rated line pull of 34.9kN
- **BS EN14492-1 compliant**
- **Emergency stop switch & safety solenoid**
Ensures shut down if control solenoid fails to open
- **Load limiting switch**
Pre set to provide mechanical overload protection
- **Worm & wheel drive**
Holds load safely without relying on a separate internal brake
- **RAM-LOK freespool clutch mechanism**
Spring loaded for positive engagement
- **Wedge pocket rope anchor on drum**
Major safety benefit - prevents rope release from drum
- **10mm x 30m (1960N/mm² grade) wire rope**
6 x 36 wire core construction for maximum flexibility
- **Heavy duty series wound motor**
12V and 24V models available
- **All gearing running in oil bath**
- **Mounting frame or cradle mount options**
- **Heavy duty roller guides**
Industrial design for rugged commercial use
- **Heavy duty wanderlead control**
Industrial quality two button with 4.5m lead
- **Low amperage draw**
Practical and obtainable at rated line pull
- **12 months warranty**
On parts and service (excluding wire rope)
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.

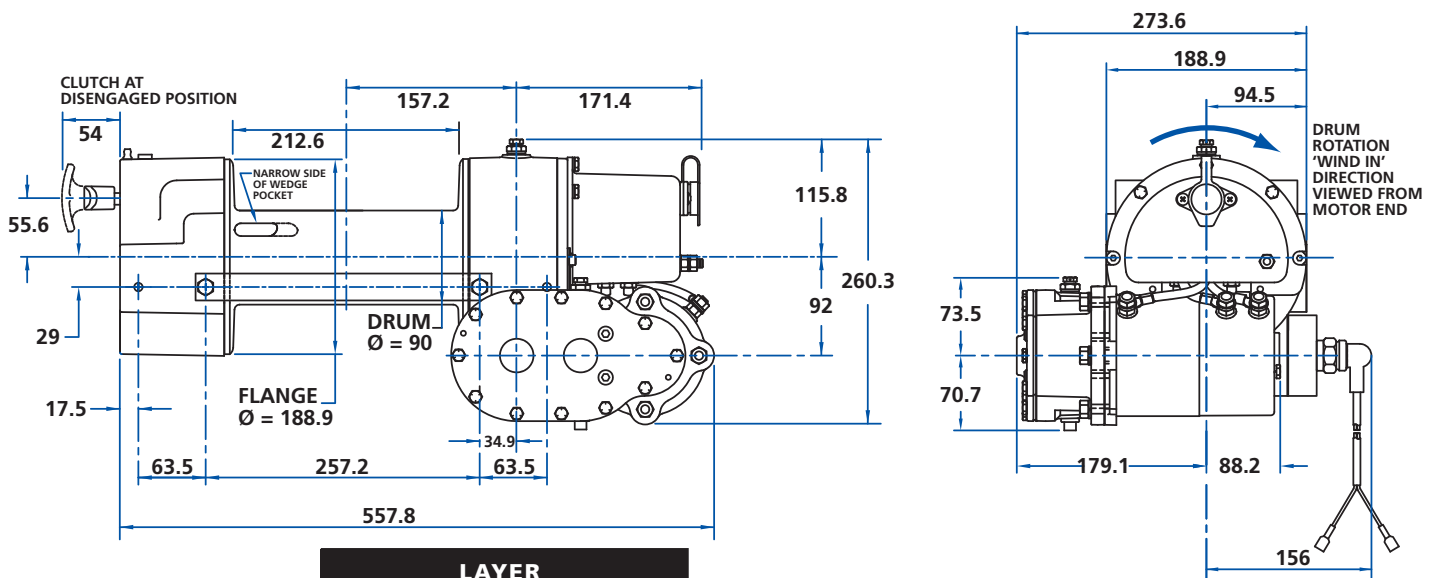
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		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer	kN	34.9	29.3	25.3
	kgf	3558	2987	2574
RE34.9 Rope Capacity Cumulative by Layer (10mm Dia. Wire Rope)	m	9	20	32

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL kgf	LINE SPEED (approx.)		Amp Draw (approx.)	
	12V m/pm	24V m/pm	12V	24V
0	6	5	90	35
900	3	2	170	75
1810	2	2	235	105
2720	1.5	1	305	140
3620	1	1	370	170

All figures are based on battery maintaining normal voltage and use of recommended wire rope at 10mm dia., 1960N/mm² grade.

SPECIFICATIONS

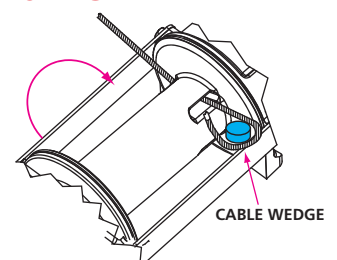
- Rated line pull:** 34.9kN (3560kgf). BS EN14492-1 compliant
- Line Speed:** 12V: 6m/min; 24V: 4.5m/min
- Wire Rope:** 10mm dia. x 30m 1960N/mm² grade. 6x36 wire core construction. Min. breaking strain 68.9kN (7027kgf)
- Weight:** Weight of machine 53kg. Complete kit: 68kg
- Gear reduction:** 470:1
- Winch Construction:** Aluminium housings with steel drum
- Motor: Drum:** 1.9HP (12V); 2.5HP (24V) DC
- Protection:** 90mm diameter x 213mm
- Braking:** Load limiting switch for mechanical overload protection
- Lubrication:** H/D self locking worm & wheel holds load until winch is powered out Worm and wheel and spur gears all run in oil baths
- Wanderlead Control:** Tough two button hand control with 4.5m lead. Other lengths or with emergency stop on request
- Roller Guides:** Heavy duty commercial type with greaseways

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

SECURE WIRE ROPE ANCHORAGE



LOAD LIMITING DEVICE

Electro/mechanical load limiting device provides overload protection
Electronic load limiting device also available (supplies as standard on cradle bracket versions)

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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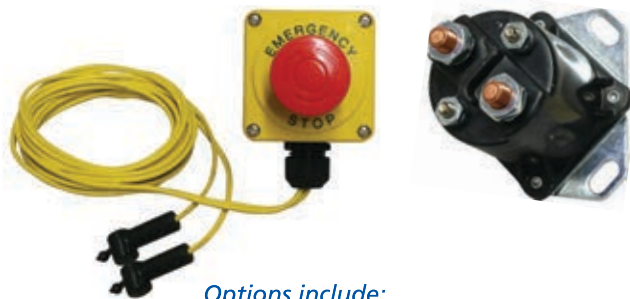




T-MAX EW6500 KIT COMPRISES

Electric Winch, 3.7m wanderlead, roller guides and 15m x 8mm galvanised 1960Nmm² grade 6x36 core wire rope with safety latch hook.

Weight of winch: 21kg.



Options include:
Emergency Stop, Safety Solenoid
and In-Cab Switch (not shown)

ADDITIONAL EQUIPMENT & SERVICES

- BHW WINCH CONTROL SYSTEM
- Electric isolator switch
- Auxiliary industrial extension plug and socket kit for wanderlead connection
- Fuse and fuse holder
- Snatch block
- Radio Control Unit
- Full or partial fitting can be provided, including load testing and certification

T-MAX EW6500

12v or 24v DC Electric Recovery Winch 2250kg Line Pull

Conforming to EN14492-1 Cranes – Power Driven Winches & Hoists – Part 1: Power Driven Winches

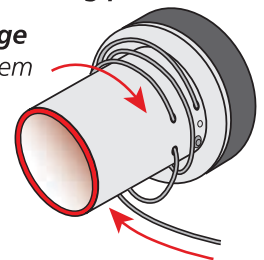
TYPICAL USES

For Light Duty Car Transporters, Plant Moving Vehicles with GVW up to 3500kg, Spec-Lifts, 4x4's

This low profile planetary winch has been developed for light industrial use. It incorporates a large electric motor, ensuring good service life.

FEATURES INCLUDE

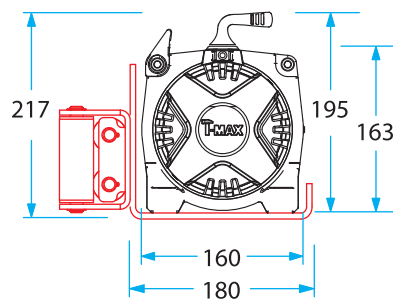
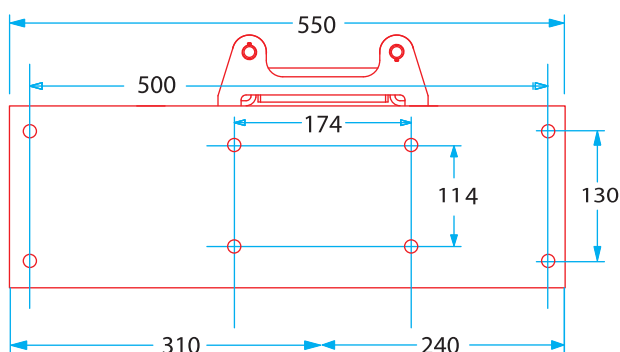
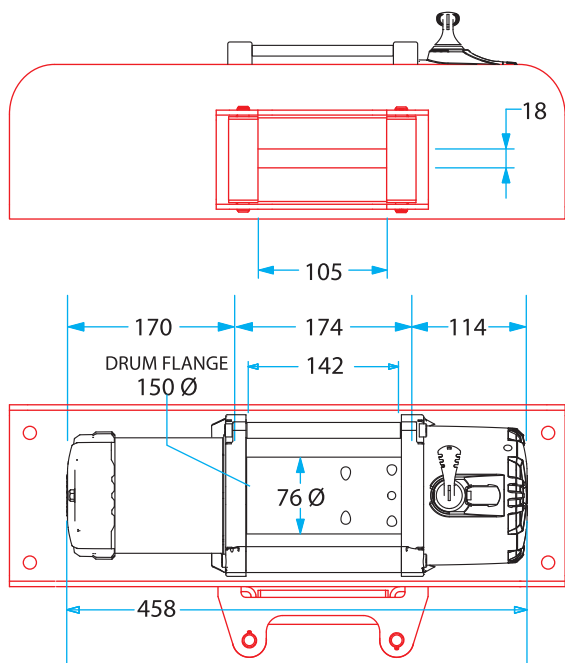
- **EN14492-1 compliant**
- **Electric Limiter**
Supplied as standard
- **3 stage planetary gearing**
Providing high mechanical efficiency
- **Sealed Heavy Duty Solenoid**
- **Powerful series wound, high torque motor options**
12v or 24v
- **Power in / power out**
Fine control ensures load will not overrun
- **Automatic failsafe brake**
- **Freespool clutch lever**
Easy to operate lever disengages drum
- **4 way roller guides and mounting plate**
- **Secure wire rope anchorage**
Simple thread and wrap system for safe installation of wire rope



UPGRADE TO A BHW WINCH CONTROL SYSTEM

Save time and money on installation - Ready to fit.

A choice of three alternative winch control kits designed to provide all in one emergency stop, isolator switch, safety solenoid and power outlets.



RATED LINE PULL & PERFORMANCE

		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf kN	2250 22	1860 18	1584 15.5
Cable Drum Capacity Cumulative by Layer (8mm Ø wire rope)	m	5	10	15

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL kgf	LINE SPEED (approx)		AMP DRAW (approx)	
	12v m/min	24v m/min	12v	24v
0	10.2	10.6	95	40
500	6.3	5.9	150	68
1000	5.5	5.2	205	76
1500	4.6	4.8	186	94
2000	4.2	4.3	227	116
2500	3.7	3.7	268	136

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull (single line): Maximum recommended working capacity 2250kgf to comply with EN14492-1.

Gear Ratio: 161:28 for either 12v or 24v.

Motor: High torque series wound 12v (5.6hp) or 24v (6.6hp).

Switching: Sealed, heavy duty double acting solenoids can be mounted adjacent to the winch, or on to the winch.

Wanderlead Control: Single switch with 3.7m lead supplied as standard.
Other wanderleads / lengths and additional emergency stop button options available on request.

Roller Guides: 4 way supplied as standard.

Wire Rope: 15m x 8mm Ø supplied as standard. Galvanised 1960Nmm² grade, 6 x 36 wire core construction with 44.7kN minimum breaking strain. Synthetic rope also available.

Freespooling: Sliding ring gear - lever on gear housing disengages clutch (in or out).

Weight: 21kg plus wire rope and mounting bracket.

Electric Limiting Device: To comply with EN14492-1 and a 2:1 factor of safety for the wire rope.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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T-MAX EW9500

12v or 24v DC Electric Recovery Winch 2250kg Line Pull

Conforming to EN14492-1 Cranes – Power Driven Winches & Hoists – Part 1: Power Driven Winches

TYPICAL USES

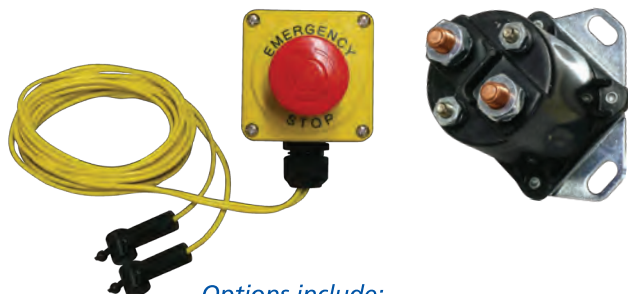
For Light Duty Car Transporters, Plant Moving Vehicles with GVW up to 3500kg, Spec-Lifts, 4x4's

This low profile planetary winch has been developed for light industrial use. It incorporates a large electric motor, ensuring good service life.

T-MAX EW9500 KIT COMPRISES

Electric Winch, 3.7m wanderlead, roller guides and 8mm galvanised 1960Nmm² grade 6x36 core wire rope with safety latch hook.

Total kit weight 48kg.



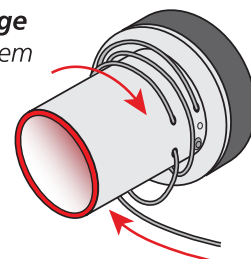
*Options include:
Emergency Stop, Safety Solenoid
and In-Cab Switch (not shown)*

ADDITIONAL EQUIPMENT & SERVICES

- BHW WINCH CONTROL SYSTEM (see below)
- Electric isolator switch
- Auxiliary industrial extension plug and socket kit for wanderlead connection
- Fuse and fuse holder
- Snatch block
- Radio Control Unit
- Full or partial fitting can be provided, including load testing and certification

FEATURES INCLUDE

- **EN14492-1 compliant**
- **Torque Load Limiter**
Supplied as standard
- **3 stage planetary gearing**
Providing high mechanical efficiency
- **Sealed Heavy Duty Solenoid**
- **Powerful series wound, high torque motor options**
12v or 24v
- **Power in / power out**
Fine control ensures load will not overrun
- **Automatic failsafe brake**
- **Freespool clutch lever**
Easy to operate lever disengages drum
- **4 way roller guides and mounting plate**
- **Secure wire rope anchorage**
Simple thread and wrap system for safe installation of wire rope



UPGRADE TO A BHW WINCH CONTROL SYSTEM

Save time and money on installation - Ready to fit.

A choice of three alternative winch control kits designed to provide all in one emergency stop, isolator switch, safety solenoid and power outlets.

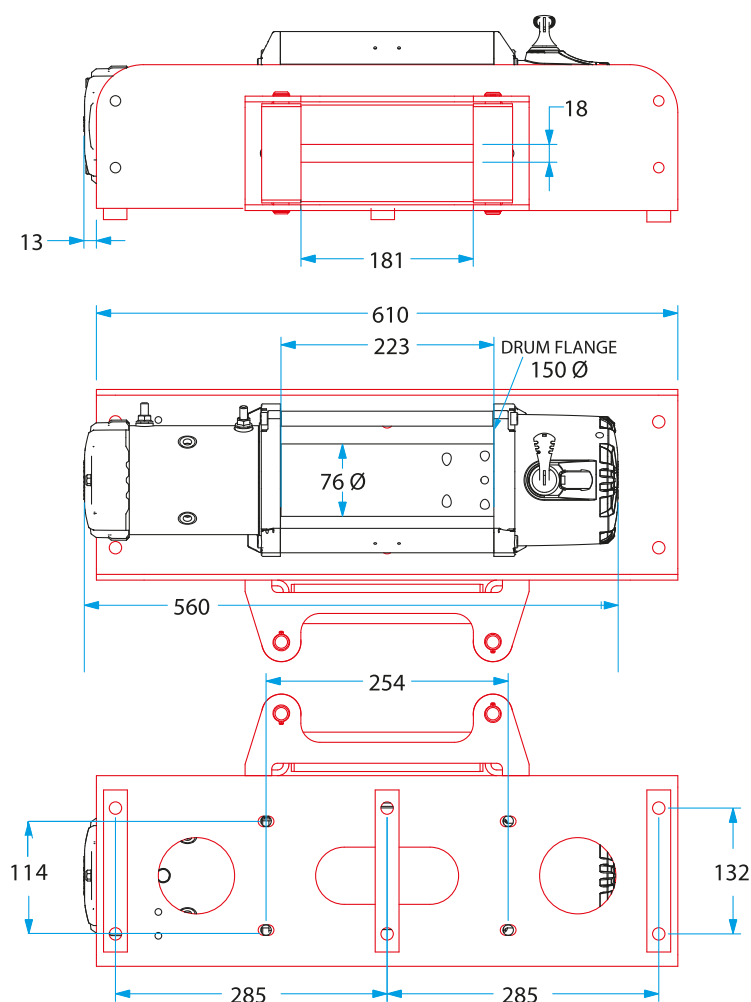
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RATED LINE PULL & PERFORMANCE

		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf kN	2250 22	1860 18	1584 15.5
Cable Drum Capacity Cumulative by Layer (8mm Ø wire rope)	m	7	15.5	23

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL kgf	LINE SPEED (approx)		AMP DRAW (approx)	
	12v m/min	24v m/min	12v	24v
0	8.8	8.2	63	36
500	6.8	5.9	104	56
1000	5.6	5.2	145	76
1500	4.6	4.8	186	96
2000	4.2	4.3	227	116
2500	3.7	3.7	268	136

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull (single line): Maximum recommended working capacity 2250kgf to comply with EN14492-1.

Gear Ratio: 161:28 for either 12v or 24v.

Motor: High torque series wound 12v (6hp) or 24v (4.7hp).

Switching: Sealed, heavy duty double acting solenoids can be mounted adjacent to the winch, or on to the winch.

Wanderlead Control: Single switch with 3.7m lead supplied as standard. Other wanderleads / lengths and additional emergency stop button options available on request.

Roller Guides: 4 way supplied as standard.

Wire Rope: 8mm Ø galvanised 1960Nmm² grade, 6 x 36 wire core construction with 44.7kN minimum breaking strain, supplied as standard. Synthetic rope also available.

Freespooling: Sliding ring gear - lever on gear housing disengages clutch (in or out).

Complete Kit Weight: 48kg.

Torque Limiting Device: To comply with EN14492-1 and a 2:1 factor of safety for the wire rope.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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DC3500 HEAVY DUTY 12v or 24v DC WINCH

3500kg (34.39kN) Line Pull with Standard Drum or Long Drum options

TYPICAL USES: Commercial Recovery, Plant Moving and Utilities Vehicles

Compliant with EN14492-1 Power Driven Winches



DC3500 KIT

T-MAX Heavy Duty Electric Winch, 3.7m wanderlead, roller guides, tension roller, load limiter and 10mm diameter high tensile galvanised wire rope with grade 80 safety latch hook.

Options: Standard or long drum models, mounting plate. wireless IN-OUT control, circuit Isolator switch, In line slow burn fuse, heavy duty extension kit for wanderlead, air-shift freespool clutch., Emergency Stop.

FEATURES INCLUDE

- **4 Stage Heavy Duty Planetary Machined Gearing** - Providing long life and high mechanical efficiency.
- **Series Wound, 12v 4.8hp or 24v 7hp High Torque Motor** - Custom manufactured for extended service life.
- **Electronic Load Limiter** - Supplied as standard.
- **Freespool Manual Clutch** - Can also be operated by air-shift control.
- **10mm Diameter Wire Rope** - With grade 80 safety hook. Standard drum up to 23m, long drum up to 30m length.
- **Secure wire rope anchorage** - Providing full load holding.
- **Tension Roller** - Spring loaded to aid rope wrapping.
- **Heavy Duty Solenoids** - With silver layer on contacts to reduce heating and extend service life. Pre-wired to accept wireless control, reducing installation time.
- **4 Way Roller Guides** - The horizontal rollers are wide spaced to extend wire rope life.

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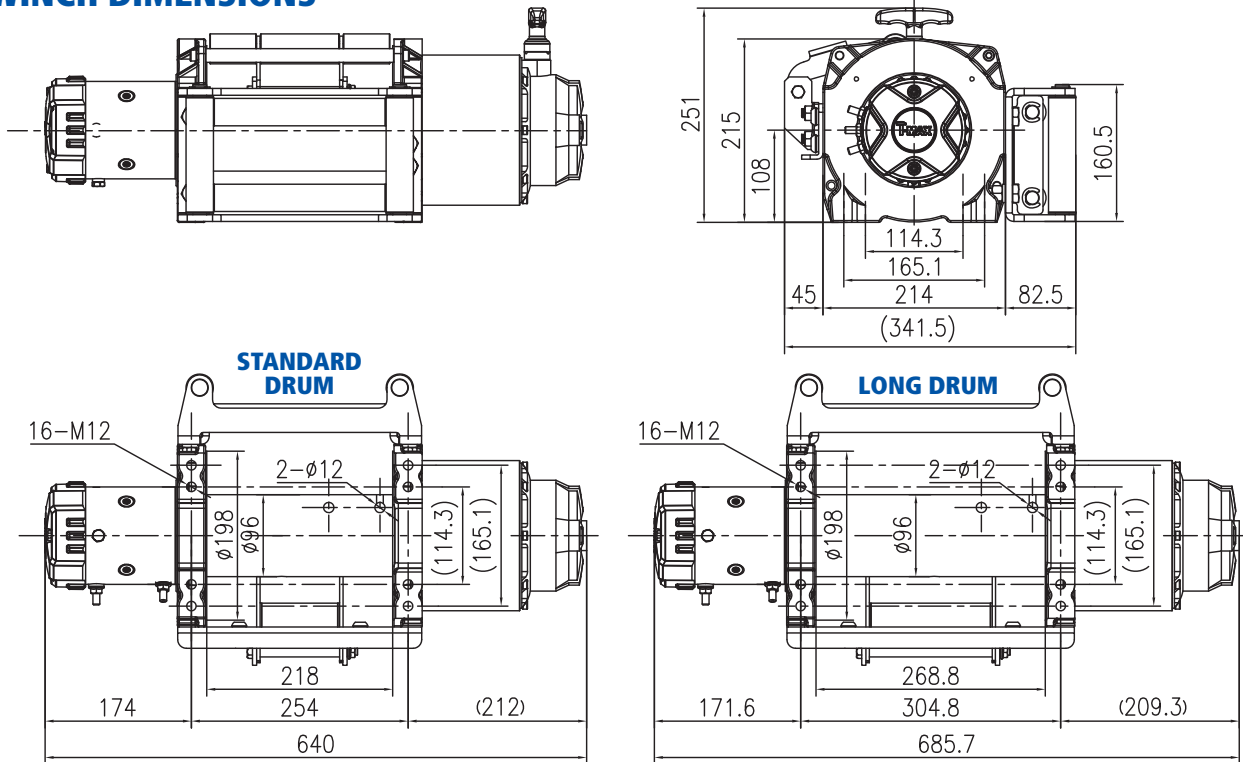
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DC3500

HEAVY DUTY 12v or 24v DC WINCH

WINCH DIMENSIONS



KEY DIMENSIONS

Standard Drum: Length 218mm, Diameter 94mm, Flange Diameter 198mm

Long Drum: Length 269mm, Diameter 94mm, Flange Diameter 198mm

Winch Fixing Centres: 254mm on length, 165mm on depth

Winch Fixing Centres: 305mm on length, 165mm on depth

RATED LINE PULL

		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf	3500	2935	2527
	kN	34	29	25
Cable Drum Capacity Cumulative by Layer (10mm Ø wire rope)	Standard Drum	m	6.5	14.5
	Long Drum	m	8	17.5

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE

PERFORMANCE FIRST LAYER OF CABLE				
LINE PULL kgf	LINE SPEED (approx)		AMP DRAW (approx)	
	12v m/min	24v m/min	12v	24v
0	6.2	7.8	80	48
750	4	5.3	146	85
1500	3.1	4	184	106
2250	2.8	3.3	222	127
3000	2.4	3.4	261	148
3500	2.2	3.3	286	162

All figures are based on battery maintaining normal voltage.

LEGALLY COMPLIANT

The Harmonised European Standard for pulling winches EN14492-1, states that any winch sold in the EU must comply with the essential Health and Safety requirements. To achieve this the following conditions must be met:

The rope used must provide a minimum breaking force (MBF) of 2:1 compared to the Working Load Limit of the winch.

Example - for a 3 Tonne rated winch the MBL of the rope must be at least 6 Tonne.

The maximum diameter of the wire rope that can be used must have a minimum ratio of 10:1 compared with the pitch circle diameter of the first layer of rope on the drum. Example - for a winch with drum diameter 90mm and rope 10mm the pitch circle is 100mm so the minimum permissible ratio is 10:1.

The maximum rope length wound on the drum that is permitted must provide a freeboard from the top layer to the edge of the drum flange of 1.5 x rope diameter. Example - a 10mm diameter wire rope would require a 15mm freeboard from the top layer.

All winches applying a force above 1000kg must be load limited.



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DC3500 HEAVY DUTY 12v or 24v DC WINCH



SPECIFICATIONS

Rated Line Pull Motor

3500kgf 34.39kN.

Powerful 12v, 4.8hp or 24v, 5.4hp purpose made series wound motors ensure constant high power and torque. Roller bearings instead of bushes provide higher efficiency. Casing sealed against water ingress with IP 65 rating.

Gear Ratio

329:1. 4 stage planetary machined gears to transfer high power and torque to the winch drum.

Brake

Heavy duty automatic In-The-Drum brake.

Drum Sizes

Standard Drum: Length 218mm, Drum diameter 94mm, Flange diameter 198mm.

Long Drum: Length 269mm, Drum diameter 94mm, Flange diameter 198mm.

Wire Rope

10mm Ø galvanised 1960N/mm² tensile grade, 6/36 wire core construction with 69.8kN 7.12 Tonne Minimum Breaking Load (MBL). This rope provides the 2:1 Working Load Limit (WLL) required by EN winch standard EN14492-1. Rope to drum ratio 13:1

Max. Rope Lengths

Standard drum: 23m.

Long drum: 30m.

Freespool Clutch

Spring loaded sliding ring gear engaged and disengaged by rotating lever on gear housing. Can also be operated by optional air-shift control.

Load Limiting Device

Electronic limiting device to provide 2:1 working load limit (WLL), for compliance with EN14492-1.

Wire Rope Tensioner

Spring loaded roller tensioner to assist wrapping.

Solenoids

Integrated Solenoid Module (ISM) manufactured for military and industrial use. Silver layer on the contactor surface ensures much lower surface temperature during operation, providing extended service life. They are pre-wired to accept optional wireless control saving significant installation time.

Wanderlead Control

3.7m control lead supplied as standard. Other wanderleads / extensions and emergency stop button options available on request.

Roller Guides

4 way supplied as standard.

Mounting Plate

Optional. Ensures securing holes are all in alignment and not oversized.

Complete Kit Weights

Standard drum: with roller guides, tension roller and 23m wire rope = 50kg approx.

Long drum: with roller guides, tension roller and 30m wire rope = 56kg approx.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Not be used for the movement of personnel. Five wraps of wire rope must be maintained on the drum at all times.

Data shown is approximate and intended as a guide only.

Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050

Northern Office: 6 South Orbital Trading Park, Hedon Road, Hull, East Yorkshire, HU9 1NJ Tel: +44 (0)1482 223 663

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Heavy Duty 24V Electric Winch, 3.7m wanderlead, roller guides, tension roller, load limiter and 12mm diameter x 30m high tensile galvanised Python Compac wire rope with grade 80 safety latch hook.

Options: Mounting plate, radio control (see below), circuit Isolator switch, heavy duty extension kit for wanderlead, air-shift freespool clutch, emergency stop.

Radio control option: *This winch is pre-wired to accept either "LODAR" or "FM Connect" wireless controls that can be simply plugged directly into the electrical pack. This provides significant time saving to install a radio control facility in the system.*

- *Electric isolator switch*
- *Auxiliary industrial extension plug and socket kit for wanderlead connection*
- *Fuse and fuse holder*
- *Snatch block*
- *Radio Control Unit*
("LODAR" or "FM Connect" with T-MAX 8-pin plug)
- *Full or partial fitting can be provided, including load testing and certification*

**Extra Heavy Duty
24V DC Electric Winch
6340kg (62kN) Line Pull
Long Drum – Large Capacity**

Plant Moving and Commercial Recovery Vehicles

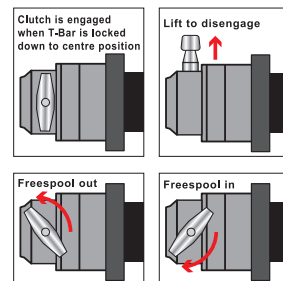
Long drum planetary winch specifically developed for professional use.

The large electric motor ensures good service life.

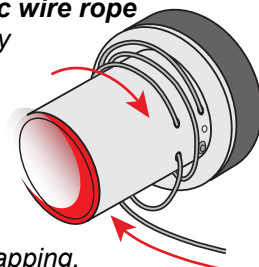
Compliant with BS EN14492-1 Power Driven Winches.

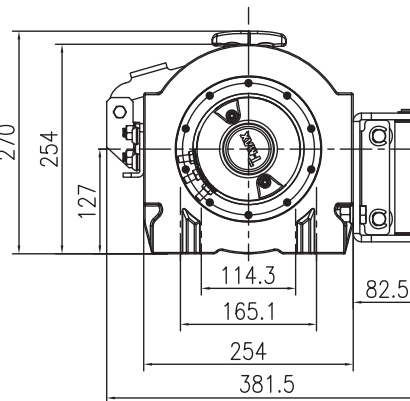
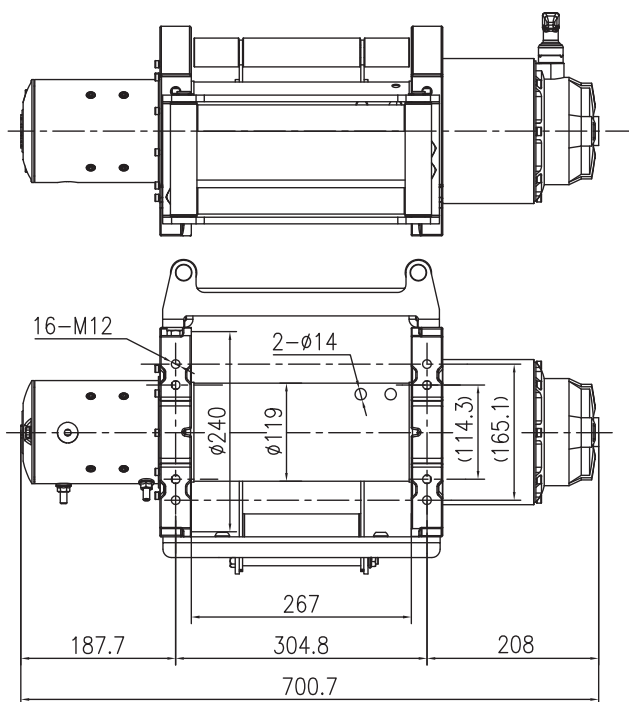
FEATURES INCLUDE

- **Fully BS EN14492-1 compliant**
- **Electronic load limiter**
Supplied as standard
- **4 Stage Heavy Duty Machined Planetary Gearing**
Providing high mechanical efficiency
- **Powerful series wound, 24V high torque motor**
freespool clutch lever Easy to use T-Bar handle. Can also be adapted for freespool air-shift clutch, providing pneumatic control of the freespool from the side of the vehicle.
- **Power in / power out**
Fine control ensures load will not overrun
- **Automatic fail-safe brake**
- **4-way roller guides**
- **Clutch is engaged when T-Bar is locked down to centre position**
- **12mm diameter Python Compac wire rope**
Spin resistant with grade 80 safety hook. 30m length.



- **Secure wire rope anchorage**
Simple thread and wrap system for safe installation of wire rope.
 - **Tension roller**
Spring loaded to aid wire rope wrapping.
 - **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts dispatch and fast repairs.
- 





KEY DIMENSIONS

Drum length: 267mm
 Drum diameter: 119mm
 Flange diameter: 240mm
 Fixing centres: 304.8mm on length
 254mm on depth

RATED LINE PULL

		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf	6340	5300	4390
	kN	62	52	43
Cable Drum Capacity Cumulative by Layer (12mm Ø wire rope) 2160N	m	8	11	30

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE

PERFORMANCE FIRST LAYER OF CABLE		
LINE PULL	LINE SPEED (approx.)	AMP DRAW (approx.)
kgf	m/min	24V Battery
0	8.2	40
1000	4.7	72
2000	4	98
3000	3.2	122
4000	2.8	146
5000	2.5	170
6340	1.5	210

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull: 6340kg (62kN).

Motor: Powerful 24V, 7hp series wound motor. Ensures constant high power and torque. Roller bearings provide higher efficiency. Casing sealed against water ingress with IP65 rating.

Gear Ratio: 329:1. 4 stage planetary machined gears to transfer high power and torque to the winch drum.

Brake: Heavy duty automatic in-the-drum brake.

Drum Size: 119mm diameter x 264mm length. Flange diameter 240mm.

Wire Rope: 12mm dia. x 30m, Python Compac (35 x 7) Galv., RHLL 2160N tensile compacted, spin resistant wire rope with thimble eye one end, other end fused and tapered. MBL 138.27kN (14.10T). Working Load Limit 6.34 tonnes @ 2:1 FOS. Rope to drum ratio 11:1.

Freespool Clutch: Spring loaded sliding ring gear engaged and disengaged by rotating lever on gear housing. These winches can be easily adapted to air-shift control of the freespool from the side of the vehicle.

Load Limiting Device: Electronic limiting device to provide 2:1 Working Load Limit (WLL), for compliance with BS EN14492-1.

Wire Rope Tensioner: Spring loaded roller tensioner to assist wrapping.

Solenoids: Integrated Solenoid Module (ISM) manufactured for military and industrial use. Pre-wired to accept optional wireless control saving significant installation time.

Wanderlead Control: 3.7m control lead supplied as standard. Other wanderleads / extensions and emergency stop button options available on request.

Roller Guides: 4-way supplied as standard.

Mounting Plate: Optional. Ensures securing holes are all in alignment and not oversized.

Complete Kit Weight: 91kg.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase. Wire ropes are not included under warranty. Not be used for the movement of personnel. Five wraps of wire rope must be maintained on the drum at all times. Data shown is approximate and intended as a guide only. Data shown is approximate and intended as a guide only.

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Heavy Duty 24V Electric Winch, 3.7m wanderlead, roller guides, tension roller, load limiter and 12mm diameter x 30m galvanised wire rope with grade 80 safety latch hook.

Options: Mounting plate, radio control (see below), circuit Isolator switch, heavy duty extension kit for wanderlead, air-shift freespool clutch, emergency stop.

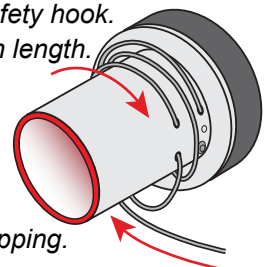
Radio control option: *This winch is pre-wired to accept either "LODAR" or "FM Connect" wireless controls that can be simply plugged directly into the electrical pack. This provides significant time saving to install a radio control facility in the system.*

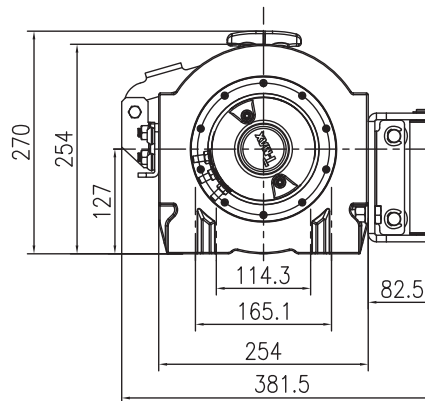
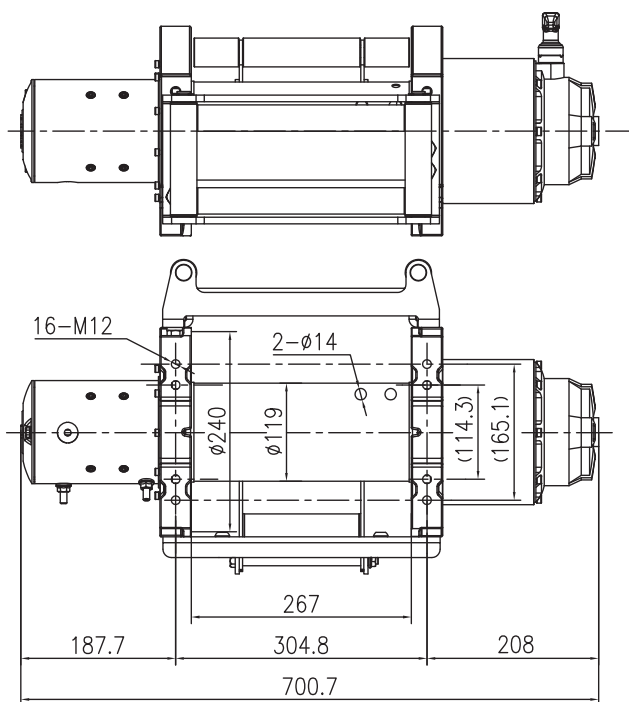
- *Electric isolator switch*
- *Auxiliary industrial extension plug and socket kit for wanderlead connection*
- *Fuse and fuse holder*
- *Snatch block*
- *Radio Control Unit*
("LODAR" or "FM Connect" with T-MAX 8-pin plug)
- *Full or partial fitting can be provided, including load testing and certification*

The diagrams show the following states:

- Clutch is engaged when T-Bar is locked down to centre position:** The T-bar is in the center, and the clutch is engaged.
- Lift to disengage:** The T-bar is lifted upwards, indicated by a red arrow, to disengage the clutch.
- Freepool out:** The T-bar is rotated outwards, indicated by a red arrow, to engage the freepool.
- Freepool in:** The T-bar is rotated inwards, indicated by a red arrow, to disengage the freepool.

- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts dispatch and fast repairs.





KEY DIMENSIONS

Drum length: 267mm
 Drum diameter: 119mm
 Flange diameter: 240mm
 Fixing centres: 304.8mm on length
 254mm on depth

PERFORMANCE

RATED LINE PULL		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer*	kgf kN	5000 49	4225 41	3660 36
Cable Drum Capacity Cumulative by Layer (12mm Ø wire rope) 1960N	m	8	11	30

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE FIRST LAYER OF CABLE		
LINE PULL kgf	LINE SPEED (approx.) m/min	AMP DRAW (approx.) 24V Battery
0	8.2	40
1000	4.7	72
2000	4	98
3000	3.2	122
4000	2.8	146
5000	2.5	170

All figures are based on battery maintaining normal voltage.

SPECIFICATIONS

Rated Line Pull: 5000kg (49kN).

Motor: Powerful 24V, 7hp series wound motor. Ensures constant high power and torque. Roller bearings provide higher efficiency. Casing sealed against water ingress with IP65 rating.

Gear Ratio: 329:1. 4 stage planetary machined gears to transfer high power and torque to the winch drum.

Brake: Heavy duty automatic in-the-drum brake.

Drum Size: 119mm diameter x 264mm length. Flange diameter 240mm.

Wire Rope: 12mm Ø galvanised 1960N/mm² tensile grade, 6 x 36 wire core construction, 10245kg (105kN) minimum braking strain. Maximum length 30 metres. This rope provides the 2:1 Working Load Limit (WLL) required by EN winch standard BS EN14492-1. Rope to drum ratio 11:1.

Freespool Clutch: Spring loaded sliding ring gear engaged and disengaged by rotating lever on gear housing. These winches can be easily adapted to air-shift control of the freespool from the side of the vehicle.

Load Limiting Device: Electronic limiting device to provide 2:1 Working Load Limit (WLL), for compliance with BS EN14492-1.

Wire Rope Tensioner: Spring loaded roller tensioner to assist wrapping.

Solenoids: Integrated Solenoid Module (ISM) manufactured for military and industrial use. Pre-wired to accept optional wireless control saving significant installation time.

Wanderlead Control: 3.7m control lead supplied as standard. Other wanderleads / extensions and emergency stop button options available on request.

Roller Guides: 4-way supplied as standard.

Mounting Plate: Optional. Ensures securing holes are all in alignment and not oversized.

Complete Kit Weight: 91kg.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase. Wire ropes are not included under warranty. Not be used for the movement of personnel. Five wraps of wire rope must be maintained on the drum at all times. Data shown is approximate and intended as a guide only. Data shown is approximate and intended as a guide only.

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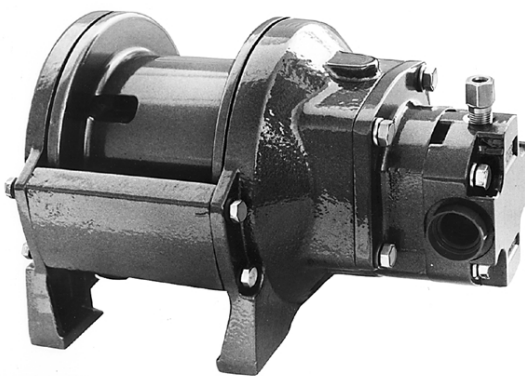
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THE INTRAVENT

PL 1

PLANETARY, HYDRAULIC WINCH



MASTER

THE LOGICAL CHOICE

**EQUAL SPEED
EQUALS TONNAGE**

MODEL PL1 PLANETARY HYDRAULIC WINCH

The **PULLMASTER** Model PL1 is a high performance, high efficiency planetary winch, having equal speed in both directions of rotation. Designed for applications where a load is raised and lowered with infinite speed control and complete safety, the **PULLMASTER** Model PL1 conforms to safety regulations everywhere.

Two planetary reduction stages establish a reduction ratio of 34:1. The automatic disc brake is spring applied-pressure released and has static and dynamic brake function. A counter-balance or brake valve is not required for positive speed control of a decelerating load.

During "lowering" operation, the temperature generated by friction of the disc brake is dissipated by a flow of hydraulic fluid supplied from the hydraulic motor. This circulation flow is vented internally through an "inravit" system.

All moving parts of the **PULLMASTER** Model PL1 are totally enclosed and run in an oil bath lubrication. Anti-friction bearings are used on all turning components, assuring long, trouble free service with a minimum requirement for maintenance.

Model Number: PL1-12-4-1	
Maximum operating volume:	6.0 (US) gpm
Maximum operating pressure:	1700 psi
Line pull at max. pressure: (bare drum)	1100 lb
Line pull at max. pressure: (full drum)	812 lb
Line speed at max. volume: (bare drum)	88 fpm
Line speed at max. volume: (full drum)	121 fpm
Cable storage capacity of drum:	87 ft 1/4 in wire rope
	170 ft 3/16 in wire rope
	343 ft 1/8 in wire rope

Le treuil **PULLMASTER** Modèle PL1 est conçu à partir d'un réducteur à trains planétaires à haut rendement ayant une vitesse identique à l'enroulement comme au déroulement. Partout où une charge doit être levée et descendue avec un contrôle parfait et en toute sécurité, le **PULLMASTER** Modèle PL1 apporte une solution en conformité avec toutes les normes de sécurité existantes.

Le réducteur dispose de deux étages de trains planétaires qui totalisent une réduction de 34:1. Le frein, du type automatique à manque de pression, assure un freinage dynamique et statique. Il n'est pas nécessaire de monter une valve d'équilibrage (ou de freinage) dans le circuit hydraulique pour obtenir une décélération et un contrôle parfait de la charge.

En phase descendante de la charge, le frein est refroidi par le débit de fuite du moteur hydraulique. Cette circulation d'huile est assurée d'une façon interne au moteur grâce au système "inravit".

Toutes les pièces mobiles du treuil **PULLMASTER** Modèle PL1 sont internes au treuil et lubrifiées par bain d'huile.

Toutes les parties tournantes sont montées sur roulements à billes assurant ainsi performance, fiabilité et entretien minimum.

Code: PL1-12-4-1	
Débit pour vitesse maximum:	23 l/min
Pression pour effort maximum:	117 bar
Effort en lère couche:	489 daN 4.9 kN
Effort en dernière couche:	365 daN 3.6 kN
Vitesse en lère couche:	27 m/min
Vitesse en dernière couche:	37 m/min
Capacité du tambour:	35 m de câble 6 mm
	51 m de câble 5 mm
	85 m de câble 4 mm

Die **PULLMASTER** Type PL1, ist eine Planetenwinde mit grosser Leistung und hohem Wirkungsgrad bei gleicher Geschwindigkeit in beiden Drehrichtungen. Entwickelt für Einsätze überall dort, wo Lasten mit stufenloser Geschwindigkeitsregelung absolut sicher gehoben und gesenkt werden müssen, entspricht die **PULLMASTER** Type PL1, überall den Sicherheitsvorschriften.

Zwei Planeten-Untersetzungsstufen schaffen ein Untersetzungsverhältnis von 34:1. Die selbsttätige Lamellenbremse wird durch Fedruck gesperrt und durch hydraulischen Druck gelüftet mit statischer und dynamischer Bremsfunktion. Für stufenlose Geschwindigkeitsregelung beim Abbremsen der Last wird kein Bremsventil benötigt.

Die während des "Absenken"-Vorgangs durch Reibung der Lamellenbremse erzeugte Wärme wird durch einen vom Hydraulikmotor gelieferten Ölstrom abgeleitet. Dieser interne Kreislauf wird durch ein "Inravit" System ventiliert.

Alle beweglichen Teile der **PULLMASTER** Type PL1, befinden sich in einem völlig geschlossenen Gehäuse und werden durch ein Ölbad geschmiert. Alle Drehteile laufen in Nadel- oder Kugellager und gewährleisten so einen langen, störungsfreien Betrieb mit einem Minimumaufwand an Wartung.

Typennummer: PL1-12-4-1	
Hydraulikmenge bei Höchstgeschwindigkeit:	23 l/min
Öldruck bei max. Seilzug:	117 bar
Seilzug (Erste Seillage):	500 kg
Seilzug (Volle Trommel):	368 kg
Seilgeschwindigkeit (Erste Seillage):	27 m/min
Seilgeschwindigkeit (Volle Trommel):	37 m/min
Länge des Seiles auf der Trommel:	35 m 6 mm Drahtseil
	51 m 5 mm Drahtseil
	85 m 4 mm Drahtseil

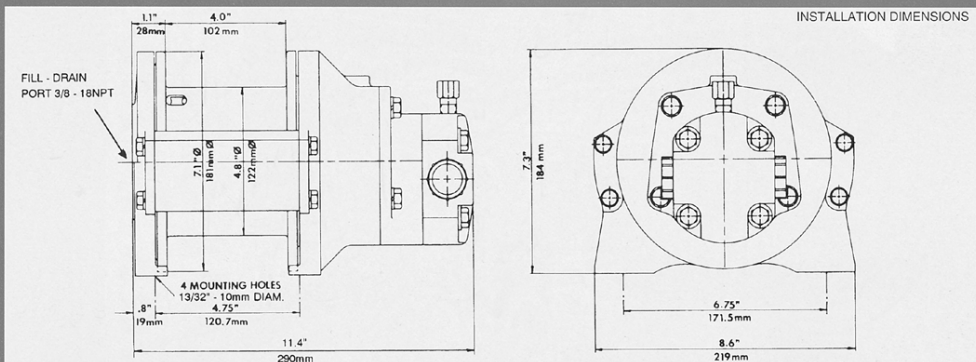
El **PULLMASTER** Modelo PL1 es un cabrestante planetario de alta eficiencia y elevado rendimiento, que posee igual velocidad en ambos sentidos de giro. Diseñado para aplicaciones en las que la carga se suba y baje con control de velocidad infinita y seguridad total, el **PULLMASTER** Modelo PL1 cumple los reglamentos de seguridad en cualquier país.

Las etapas de reducción planetaria establecen una relación de reducción de 34:1. El freno de disco automático funciona por actuación del muelle-liberación de la presión y posee una función de frenado estático y dinámico, no se requiere una válvula de contrabalance o de freno para el control efectivo de la velocidad de una carga en arriado.

Durante la operación de arriado, la temperatura generada por la fricción del freno de disco es disipada por un caudal de fluido hidráulico proporcionado por el motor hidráulico. Este caudal de circulación se purga internamente a través del sistema "inravit".

Todas las partes móviles del **PULLMASTER** Modelo PL1 son enteramente estancas y trabajan lubricadas por un baño de aceite. Se utilizan rodamientos anti-fricción en todos los componentes giratorios, garantizando un servicio exento de problemas durante un largo periodo con un mínimo mantenimiento.

Número del modelo: PL1-12-4-1	
Volumen hidráulico a velocidad max:	23 l/min
Presión hidráulica en tiro máximo:	117 bar
Tiro (a 1/3 capa de cable):	500 kg
Tiro (a tambor lleno):	368 kg
Velocidad (a 1/3 capa de cable):	27 m/min
Velocidad (a tambor lleno):	37 m/min
Capacidad de cable del tambor:	35 m cable 6 mm
	51 m cable 5 mm
	85 m cable 4 mm



* Standard cable anchor is suitable for 1/8 - 1/4 inch diameter wire rope. For safety, 3 - 4 wraps of wire rope must be maintained at all times.

DISTRIBUTOR



For more information write to:

PULLMASTER WINCH CORPORATION

8247 - 130 STREET, SURREY, B.C. CANADA V3W 7X4

TELEPHONE: (604) 594-4444 • FAX: (604) 591-7332

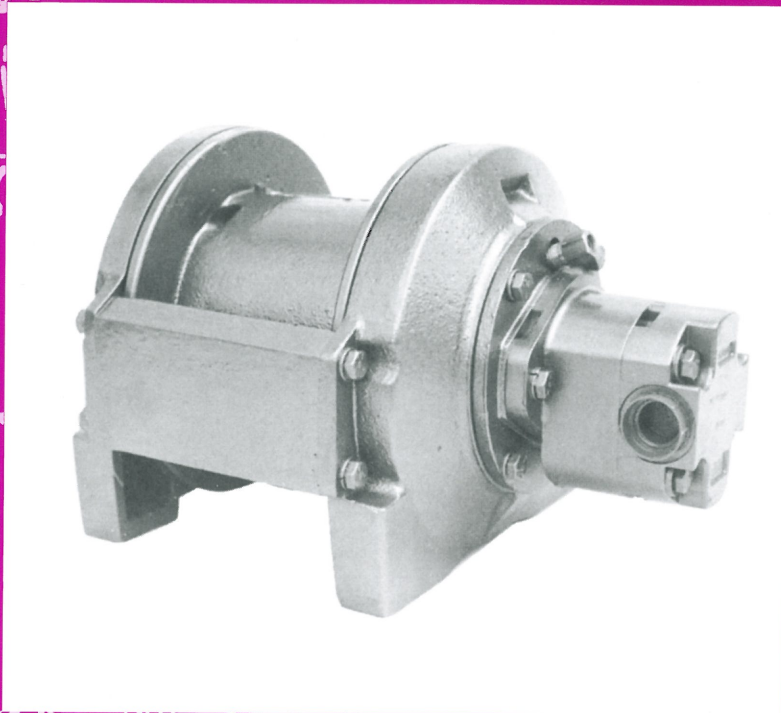
http://www.pullmaster.com E-mail: info@pullmaster.com

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THE INTRAVENT

PL2

PLANETARY, HYDRAULIC WINCH



MASTER

A DOVER COMPANY

THE LOGICAL CHOICE

**EQUAL SPEED
EQUAL TONNAGE**

MODEL

PL2

PLANETARY HYDRAULIC WINCH

DESCRIPTION

The **PULLMASTER** Model PL2 is a high performance, high efficiency planetary winch, having equal speed in both directions of rotation. The cable drum of this unit conforms with OSHA recommendations, making this winch especially suitable for applications where a load is raised or lowered.

The **PULLMASTER** Model PL2 is powered by a hydraulic gear motor and a reduction ratio of 40.5:1 is established by two planetary stages. The automatic multi-disc brake is "Spring Applied - Pressure Released". An over-running clutch, between the motor drive shaft and the brake assembly, permits free rotation in the "Hoisting" direction without affecting the brake. During "Lowering" operation the over-running clutch locks, causing the brake discs to rotate between a series of divider discs. Dynamic braking is then achieved by modulation of the winch control valve handle. When the control is returned to neutral position the brake applies automatically. During lowering of a load, temperature generated by the disc brake is dissipated by a flow of hydraulic fluid supplied from the hydraulic motor. This circulation flow is vented internally and therefore, there is no need for an external vent line. A counter-balance valve is not required for smooth and positive "Down" control of the **PULLMASTER** Model PL2 planetary winch.

All moving parts of the **PULLMASTER** Model PL2 planetary winch are totally enclosed and run in an oil bath. Anti-friction bearings are used on all turning components, assuring long, trouble free service with a minimum requirement for maintenance.

PERFORMANCE

- Maximum operating volume = 7.7 (US) gpm (29 l/min)
 - Drum rpm at maximum volume = 49
- Maximum operating pressure = 2200 psi (152 bar)
 - Drum torque at maximum pressure =7095 lb-in (802 Nm)

MODEL NUMBER	BARE DRUM		MEAN DRUM (THEORETICAL)		FULL DRUM	
	LINE PULL	LINE SPEED	LINE PULL	LINE SPEED	LINE PULL	LINE SPEED
PL2-12-228-1-B	2204 lb	83 fpm	1925 lb	96 fpm	1633 lb	111 fpm
	9.8 kN	25 m/min	8.6 kN	29 m/min	7.3 kN	34 m/min

When the **PULLMASTER** Model PL2 is installed in an existing hydraulic circuit with a lesser volume or pressure the performance will change. Maximum pressure and maximum hydraulic volume must not be exceeded. Performance graphs for line pull vs. oil pressure and line speed vs. oil volume, are available upon request.

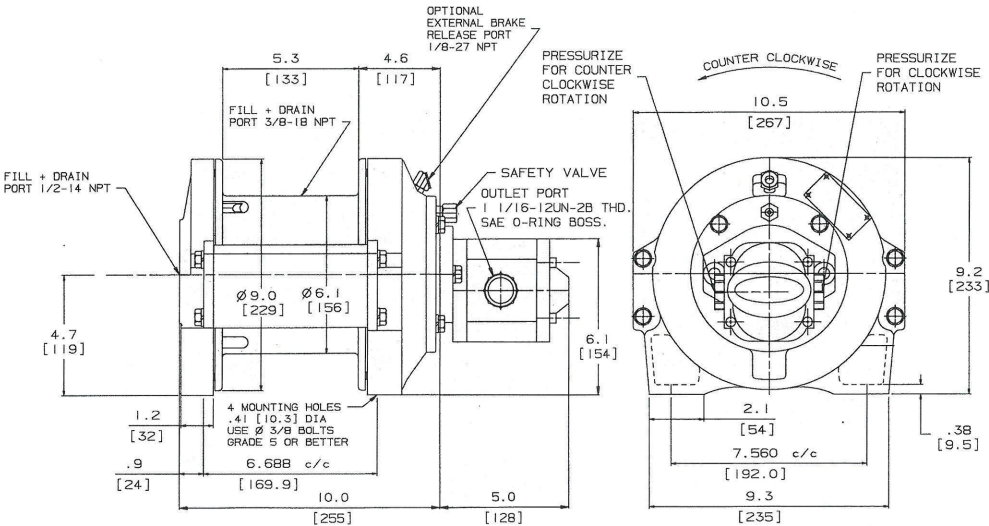
CABLE STORAGE

CABLE STORAGE CAPACITY FOR WIRE ROPE

MODEL NUMBER	DRUM SIZE			WIRE ROPE DIAMETER*				
	BARREL	FLANGE	LENGTH	1/8 in	3/16 in	1/4 in	5/16 in	3/8 in
PL2-12-228-1-B	6 1/8 in	9 in	5 1/4 in	745 ft	318 ft	172 ft	122 ft	84 ft
	156 mm	229 mm	133 mm	227 m	97 m	52 m	37 m	25 m

* Standard cable anchor is suitable for 1/4 - 3/8 inch diameter wire rope. For safety, 5 wraps of wire rope must be maintained at all times.

DIMENSIONS



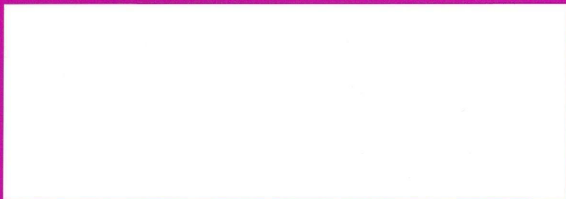
PULLMASTER planetary winches are covered by a liberal warranty. Parts and repair service are available from authorized **PULLMASTER** distributors throughout Canada, the United States and most overseas areas.

IMPORTANT

PULLMASTER planetary winches are neither designed nor intended for installation on equipment used in lifting or moving of personnel.

PULLMASTER planetary winches are available for larger line pull capacities. Options are provided on some models for "Rapid Reverse", "Freespooling", "External Brake Release" and different drum sizes.

DISTRIBUTOR

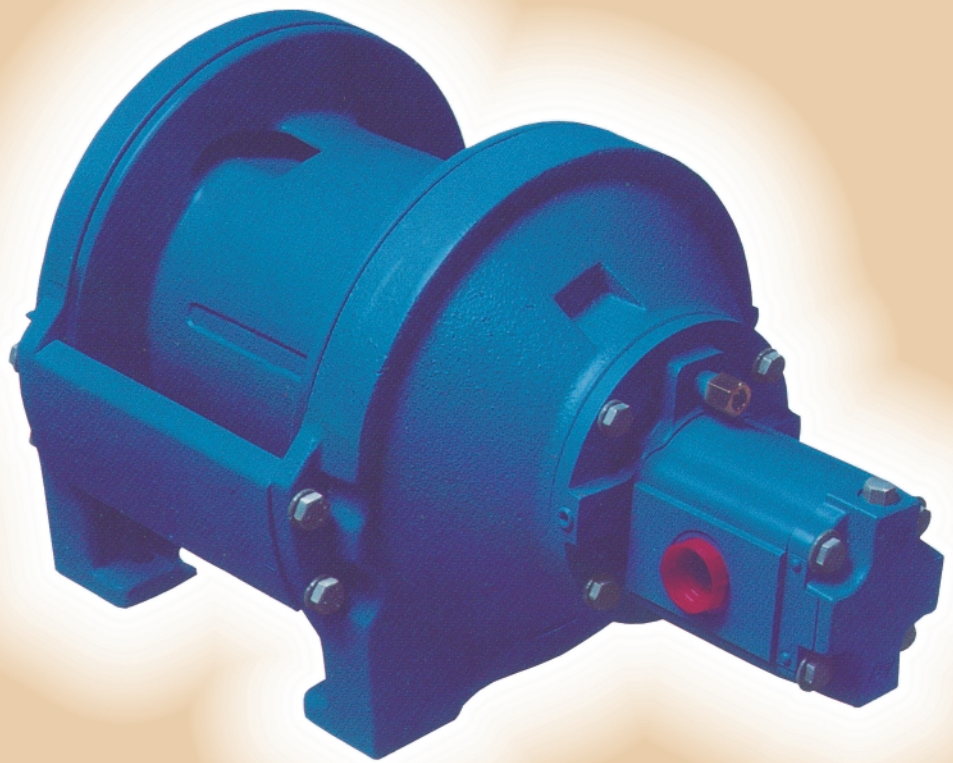


For more information write to:
TWG Canada
19350 - 22nd Avenue, Surrey, BC V3S 3S6 Canada
Tel: 604-547-2100 | Fax: 604-547-2147

PL5

pull

MASTER



HYDRAULIC PLANETARY WINCH

The Logical Choice

MODEL PL5 HYDRAULIC PLANETARY WINCH

The PULLMASTER Model PL5 is a high performance, high efficiency planetary winch, having equal speed in both directions. The cable drum of this unit conforms with OSHA recommendations making this winch especially suitable for application where a load is raised and lowered.

The PULLMASTER Model PL5 is powered by a hydraulic gear motor and a reduction ratio of 39:1 is established by two planetary stages. The automatic, multi-disc brake is spring applied - pressure released. An over-running clutch, between the motor shaft and the brake assembly, permits free rotation in the "Hoisting" direction without affecting the brake. During "Lowering" operation the over-running clutch locks, causing the brake discs to rotate between a series of divider discs. Dynamic braking is then achieved by modulation of the winch control valve handle. When the control is returned to neutral position the brake applies automatically. A counter-balance valve is not required for smooth and positive "Down" control of the Model PL5 planetary winch. During lowering of a load the temperature generated by the disc brake is dissipated by a flow of hydraulic fluid supplied from the hydraulic motor. This circulation flow is vented internally and therefore, there is no need for an external vent line.

PULLMASTER now incorporates the use of **heavy duty stainless steel rings** on all drum seal surfaces for prolonged seal life. All moving parts of the PULLMASTER Model PL5 planetary winch are totally enclosed and run in an oil bath. Anti-friction bearings are used on all turning components, assuring long, trouble free service with a minimum requirement for maintenance.

FEATURES

- **Replaces Existing Model PL4 Winches** - The Model PL5 has the same physical mounting dimensions as the industry standard Pullmaster Model PL4. This will allow for the interchange of this new model to be made without modifying the existing mounting surfaces.
- **Improved Performance** - Bare drum line pulls of 5000 lb. (22.2 kN) and line speed of 142 ft/min (43 m/min) can now be attained through the selection of the gear reduction and motor displacement.
- **Stainless Steel Drum Seal Surfaces** - To complement our industry leading usage of rubber coated seals in the manufacture of Pullmaster winches, heavy duty stainless steel drum seal surfaces have now been incorporated into every Pullmaster winch. This will ensure that the optimum life of the seals is obtained by providing a lasting rotating seal surface that is resistant to corrosion. Both service life and serviceability of the product is increased.
- **Three Piece Motor Construction** - The motor used in the Model PL5 is of a three piece construction which will facilitate easier repairs. All brake release passages are internally ported within the winch. This feature eliminates the use of hoses or tubing being mounted externally from the motor which are vulnerable to damage from external sources.
- **Designed for Field Service** - Conversions for the addition of the external brake release feature and the changing of brake rotation can be made without purchasing specific modified components.

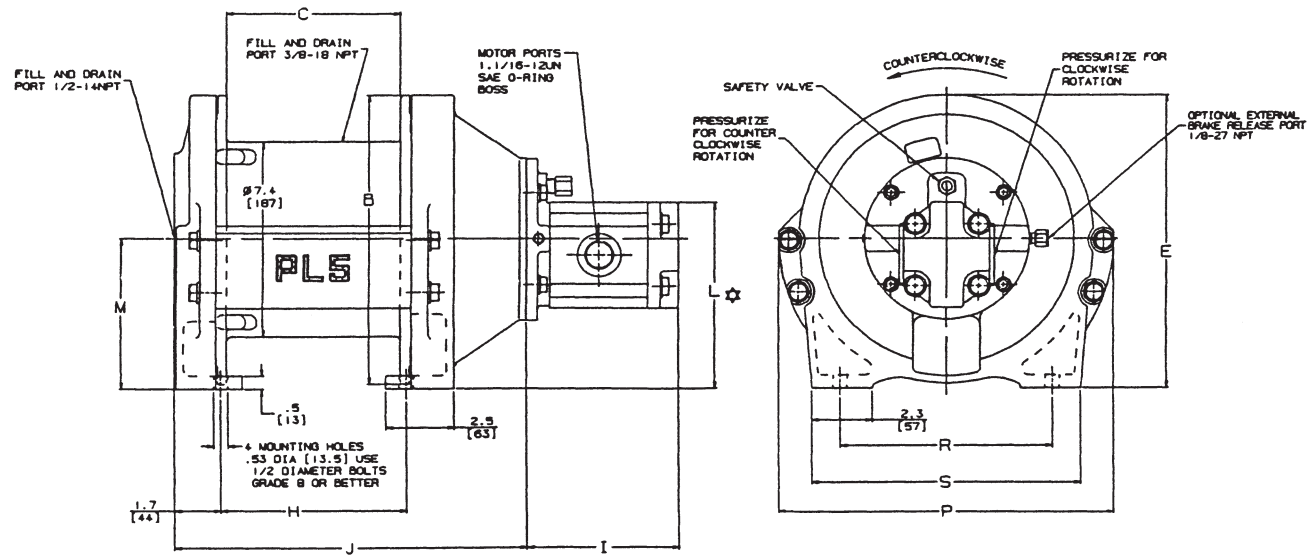
The conversion for an external brake release model involves the addition of a shuttle and a fitting in an existing drilled port.

The changing of the brake rotation involves the rotating of the motor sub-assembly 180 degrees and the reconfiguring of the sprag clutch in the brake hub assembly.

OPTIONS

- **Cable Drums** - A wide range of optional drum sizes are available for PULLMASTER planetary winches to accommodate larger wire rope storage and also to conform with prevailing safety regulations relating to the ratio between wire rope diameter and drum diameter.
- **Drum Rotation** - Since the automatic disc brake of PULLMASTER winches is activated only when a load is lowered or in reverse rotation, a definite direction of rotation for hoisting is established. The direction of rotation is determined by looking at the motor side of the winch. Standard rotation for hoisting on the PL5 is counterclockwise. As an option, PULLMASTER winches are offered with the direction of rotation for hoisting a load opposite to the standard rotation.
- **Drum Grooving** - All cable drums of PULLMASTER planetary winches can be supplied with wire rope grooving. For such requirements, it is important to specify the size of wire rope used. Contact your local PULLMASTER representative for further details.
- **Emergency Free Fall** - This option permits the full release of a load. Once the emergency 'free fall' has been released, the load cannot be stopped before reaching the ground. Aside from an emergency load release, this option is important for an operation where a load has to be dropped at high velocity.
- **External Brake Release** - The disc brake of PULLMASTER planetary winches functions automatically. For operations where it is necessary to release the disc brake independently, an external brake release option is available for the PL5.
- **Hydraulic Motor** - PULLMASTER planetary winches are powered by hydraulic gear motors for hydraulic systems up to 2500 psi (147 bar). For operations in high pressure hydraulic systems, winch models can be made available with hydraulic piston motors.

DIMENSIONS



Drum	B	C	E	H	J	L	M	P	R	S	UNITS
-1	11.0	6.6	11.2	7.000	13.2	7.1	5.7	12.5	7.875	10.0	ln.
	279	167	284	177.80	335	180	144	318	200.0	254	mm
-2	12.4	6.6	12.6	7.000	13.2	7.8	6.4	13.9	11.500	13.6	ln.
	314	167	319	177.80	335	197	162	352	292.10	346	mm

Motor Code	Displacement cc/rev	I (in.)	I (mm)
-210	33	5.7	145
-211	27	5.3	135
-212	23	5.1	129
-213	14	4.5	116

The cable anchor of the drum is made for 1/2" wire rope maximum. The cable anchor of the **PULLMASTER** Model PL5 planetary winch is not designed to hold the rated maximum load. The cable drum requires 5 wraps of wire rope for security.

PERFORMANCE

Model Number	Hydraulic Requirement		Drum Torque	Drum RPM	Bare Drum		Mean Drum		Full Drum	
	Flow	Pressure			Line Pull	Line Speed	Line Pull	Line Speed	Line Pull	Line Speed
PL5-12-210-1	24 (us) gpm	2100 psi	17,578 lb-in	66	4500 lb	135 fpm	3914 lb	159 fpm	3328 lb	183 fpm
	91 l/min	145 bar	1986 Nm		20.0 kN	41 m/min	17.4 kN	48 m/min	14.8 kN	56 m/min
PL5-12-210-2	24 (us) gpm	2100 psi	17,578 lb-in	66	4500 lb	135 fpm	3723 lb	171 fpm	2945 lb	206 fpm
	91 l/min	145 bar	1986 Nm		20.0 kN	41 m/min	16.6 kN	52 m/min	13.1 kN	63 m/min
PL5-12-211-1	11 (us) gpm	2250 psi	15,625 lb-in	35	4000 lb	72 fpm	3479 lb	85 fpm	3098 lb	92 fpm
	42 l/min	155 bar	1765 Nm		17.8 kN	22 m/min	15.5 kN	26 m/min	13.8 kN	28 m/min
PL5-12-211-2	11 (us) gpm	2250 psi	15,625 lb-in	35	4000 lb	72 fpm	3309 lb	91 fpm	2695 lb	106 fpm
	42 l/min	155 bar	1765 Nm		17.8 kN	22 m/min	14.8 kN	28 m/min	12.0 kN	32 m/min
PL5A-12-212-1	11 (us) gpm	2400 psi	19,532 lb-in	29.5	5000 lb	60 fpm	4349 lb	71 fpm	3698 lb	82 fpm
	42 l/min	165 bar	2207 Nm		22.2 kN	18 m/min	19.3 kN	22 m/min	16.4 kN	25 m/min
PL5A-12-212-2	11 (us) gpm	2400 psi	19,532 lb-in	29.5	5000 lb	60 fpm	4136 lb	76 fpm	3272 lb	92 fpm
	42 l/min	165 bar	2207 Nm		22.2 kN	18 m/min	18.4 kN	23 m/min	14.6 kN	28 m/min
PL5-12-213-1	11 (us) gpm	2250 psi	7,813 lb-in	69	2000 lb	142 fpm	1740 lb	166 fpm	1479 lb	191 fpm
	42 l/min	155 bar	883 Nm		8.9 kN	43 m/min	7.7 kN	51 m/min	6.6 kN	58 m/min
PL5-12-213-2	11 (us) gpm	2250 psi	7,813 lb-in	69	2000 lb	142 fpm	1655 lb	177 fpm	1309 lb	216 fpm
	42 l/min	155 bar	883 Nm		8.9 kN	43 m/min	7.4 kN	54 m/min	5.8 kN	66 m/min

When the **PULLMASTER** PL5 is installed in an existing hydraulic circuit with a lesser volume and pressure the performance will change. Maximum pressure and maximum hydraulic volume must not be exceeded. Performance graphs for line pull vs. oil pressure and line speed vs. oil volume, are available upon request.

CABLE STORAGE

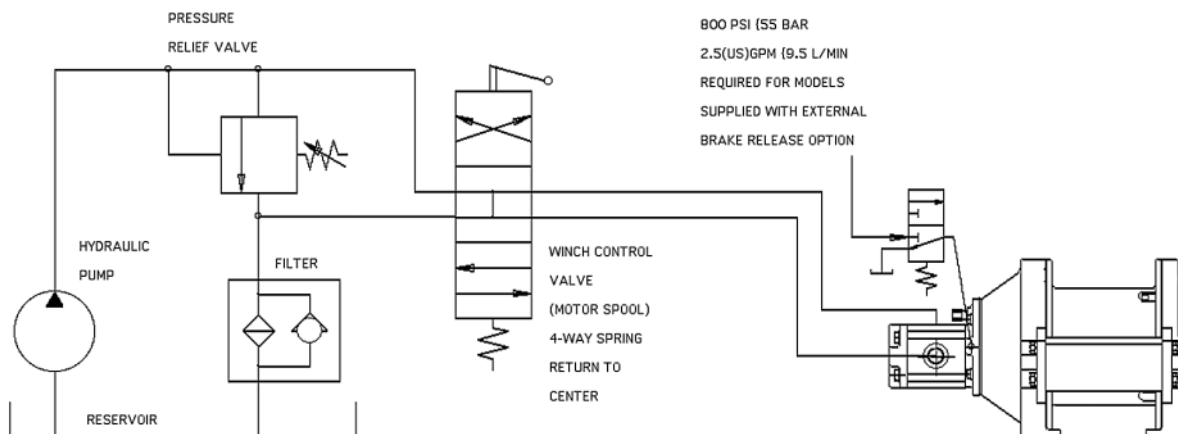
Drum Code	Barrel Dia.	Flange Dia.	Length	Wire Rope Diameter						
				1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"
-1	7.38"	11.00"	6.56"	1382 ft.	670 ft.	348 ft.	218 ft.	157 ft.	110 ft.	100 ft.
	187 mm	279 mm	167 mm	421 m	204 m	106 m	67 m	48 m	34 m	31 m
-2	7.38"	12.38"	6.56"	2146 ft.	975 ft.	510 ft.	354 ft.	234 ft.	177 ft.	130 ft.
	187 mm	314 mm	167 mm	654 m	297 m	155 m	108 m	71 m	54 m	40 m

EXPLANATION OF MODEL CODING

BASIC UNIT SERIES	PL 5	X	- XX	- XX	- XX	X	- XXXX
SIZE OF UNIT							
REDUCTION RATIO							
Only used for non-standard ratios							
TYPE OF BRAKE							
- 12	Automatic brake, counterclockwise hoisting, intravent - STANDARD						
- 13	Automatic brake, external brake release, counterclockwise hoisting, intravent						
- 14	Automatic brake, external brake release, clockwise hoisting, intravent						
- 15	Automatic brake, clockwise hoisting, intravent						
HYDRAULIC MOTOR							
- 210	Gear Motor - 33 cc displacement - STANDARD						
- 211	Gear Motor - 27 cc displacement						
- 212	Gear Motor - 23 cc displacement						
- 213	Gear Motor - 14 cc displacement						
DRUM SIZE							
- 1	7.38 inch drum diameter x 11.00 inch flange diameter x 6.56 inch length - STANDARD						
- 2	7.38 inch drum diameter x 12.38 inch flange diameter x 6.56 inch length						
OPTIONS							
SPECIFICATION NUMBER							
-	Describes features not identified by preceding codes						

NOTE: Clockwise and counterclockwise drum rotation is the direction of rotation for pulling or hoisting, established by looking at the hydraulic motor.

TYPICAL HYDRAULIC CIRCUIT



TYPICAL HYDRAULIC CIRCUIT - STANDARD CONTROL VALVE - Refer to above hydraulic circuit for installations where the winch is controlled by an individual control valve. Note that the valve must have a motor spool (both winch ports open to tank in neutral position). A motor drain line is not required. Refer to installation manual for alternate circuits.

Other models of PULLMASTER planetary winches are available for different lifting capacities and also with a "Rapid Reverse" feature. Parts and repair service are available from authorized PULLMASTER distributors throughout Canada, the United States and most overseas areas.

IMPORTANT:

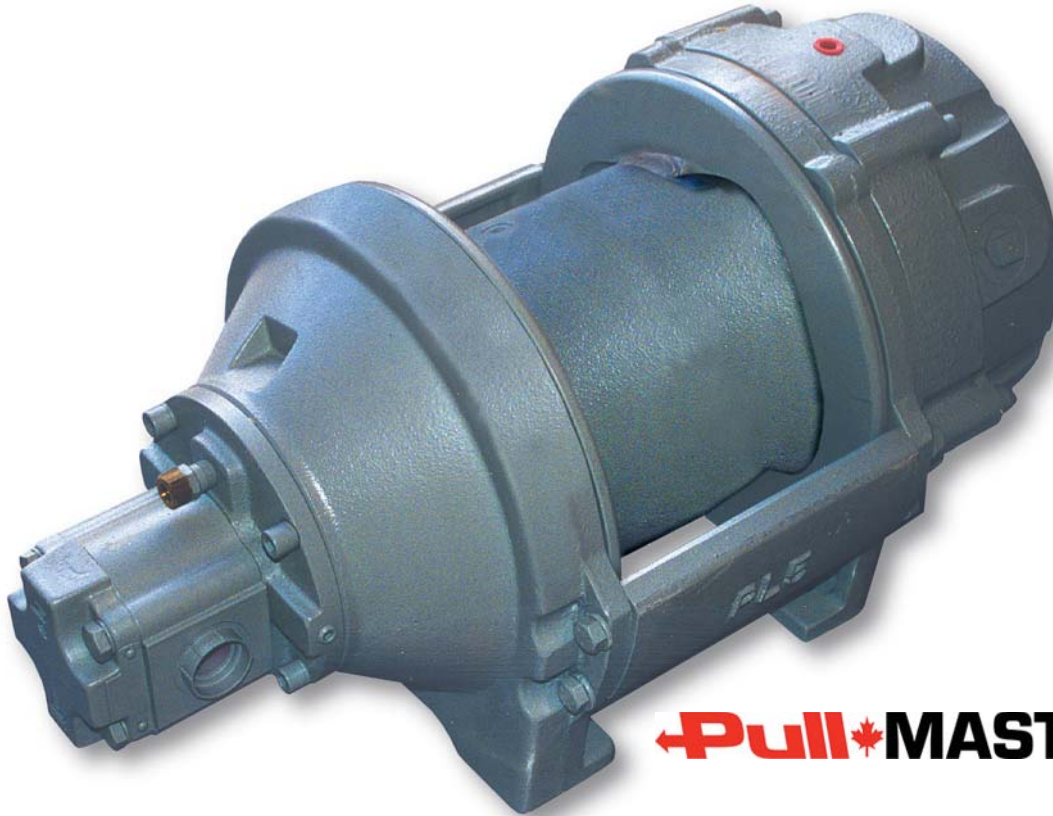
PULLMASTER planetary winches are neither designed nor intended for installation on equipment used in lifting or moving personnel.

DISTRIBUTOR



PULLMASTER WINCH CORPORATION
 8247 - 130th Street, Surrey, B.C. Canada V3W 7X4
 Telephone: 604-594-4444 • Fax: 604-591-7332
<http://www.pullmaster.com> • E-mail: info@pullmaster.com

PULLMASTER PL5D Freefall Hydraulic Winch

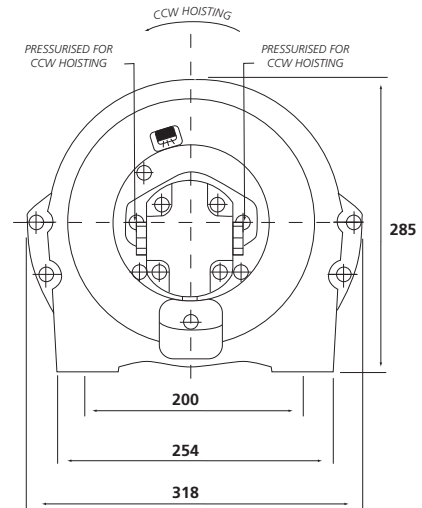
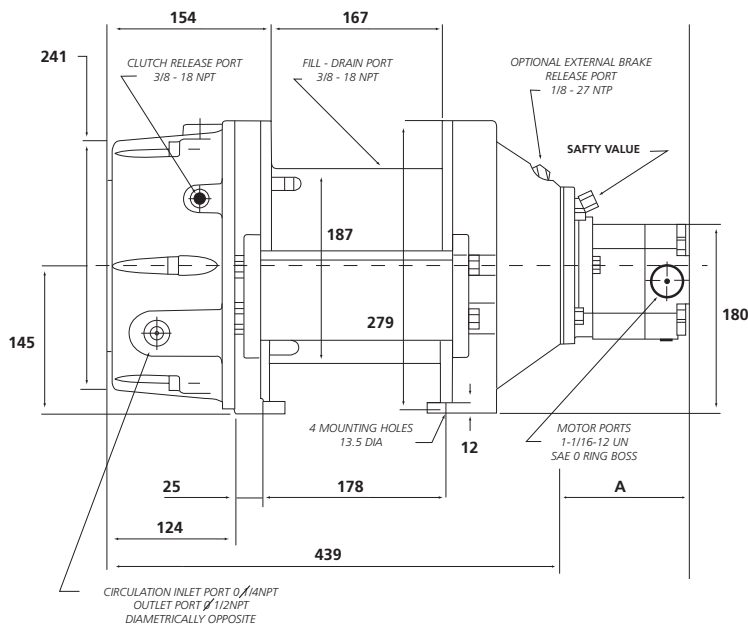


PULLMASTER®

Unique Mini-Piling Freefall Planetary Hydraulic Winch

FEATURES INCLUDE

- *500kg and 1000kg hammer weight lifting capacities available*
- *Long service life*
- *Compact design – totally enclosed*
- *Can be used for raising and lowering a load when FREEFALL is not activated*
- *Automatic multi – disc brake*
- *High speed operation*
- *Built to operate in marine environment*



ROTATION COUNTERCLOCKWISE WHEN LIFTING
(VIEWED FROM MOTOR END)

PERFORMANCE

MODEL NUMBER	HYDRAULIC REQUIREMENTS		DRUM		BARE DRUM		MEAN DRUM		FULL DRUM	
	FLOW Lt/min	PRESSURE Bar	TORQUE Nm	R.P.M.	LIFTING CAPACITY Kg	LINE SPEED m/min	LIFTING CAPACITY Kg	LINE SPEED m/min	LIFTING CAPACITY Kg	LINE SPEED m/min
PL5 -12-211-ID	42	155	1765	35	1815	22	1580	26	1340	30
PL5 -12-213-ID	42	155	883	69	910	43	790	51	670	58
PL5 -12-210-ID	91	145	1986	66	2000	41	1775	48	1500	56

DIMENSIONS

MODEL NUMBER	A	
PL5 -12-211-ID	135	Alu: 83mm
PL5 -12-213-ID	116	Alu: 63.5mm
PL5 -12-210-ID	145	Alu: 92.5mm

CABLE STORAGE m

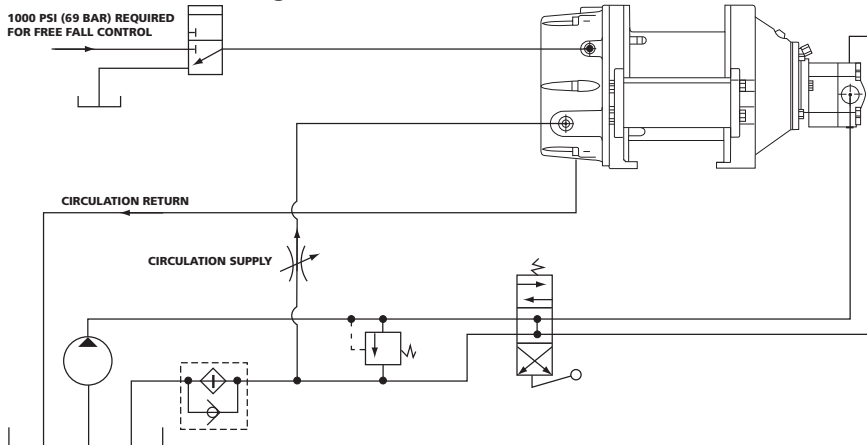
DRUM DIA	FLANGE DIA	DRUM LENGTH	WIRE ROPE DIA mm			
			6	8	10	12
187	279	167	106	66	40	30

MAXIMUM RECOMMENDED HAMMER WEIGHT

PL5 -12-211-ID -1000Kg

PL5 -12-213-ID -500Kg

PL5 -12-210-ID -1100Kg



NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

NORMAL OPERATION

The winch is set to permanent lift mode.

When the hammer reaches required height above pile it is released using manual or electric control valve.

Maximum operating pressure 155 Bar.

Free fall clutch release 52 Bar.

TYPICAL HYDRAULIC CIRCUIT

SHOWING HYDRAULIC FLOW

- 42 Lt/min to winch motor (max.)
– PL5 -12-211-ID & PL5 -12-213-ID
91 Lt/min to winch motor (max.)
– PL5 -12-210-ID
 - 8 Lt/min cooling oil to free fall clutch
 - 2.0 Lt/min to release clutch
- Total weight (Wire rope not included) 100kg

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050

Northern Office: 6 South Orbital Trading Park, Hedon Road, Hull, East Yorkshire, HU9 1NJ Tel: +44 (0)1482 223 663

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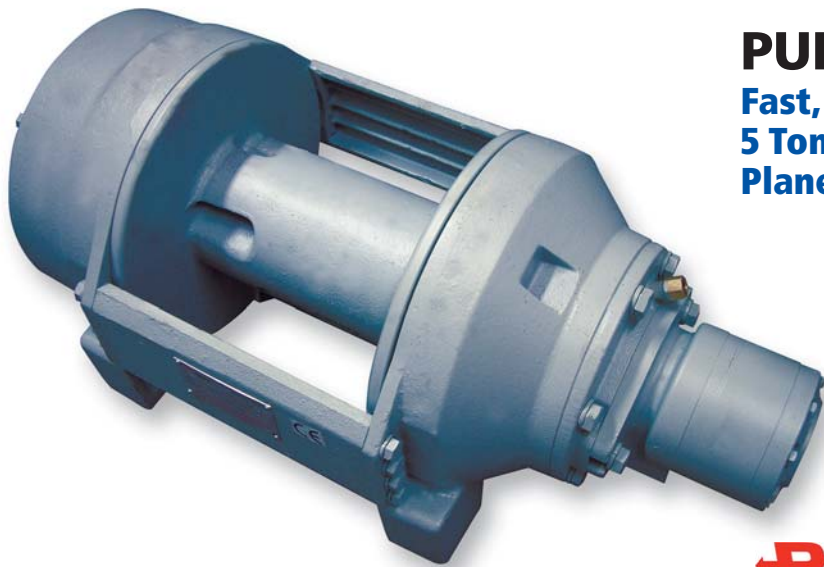




BHW

Bushey Hall Winchmaster

www.bhwgroup.com



PULLMASTER R5

**Fast, Extra Heavy Duty
5 Tonne Line Pull
Planetary Hydraulic Winch**

PullMASTER®

SPECIALIST RECOVERY WINCH

This machine is of the very highest quality, built to operate in tough environments, including marine. Recommended for use when very long life and virtually no maintenance is required. Also designed for pulling and lifting, typical applications include Rescue, Military and Utility Vehicles.

OPTIONAL EXTRAS

- **Hydraulic freespool clutch**
- **Electro pneumatic control valve**
with manual lever and including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection. Also includes dump valve with emergency stop button ensuring compliance with EU machinery directive.
- **Radio control system**
to give flexibility in operating the winch up to 65m distance.
- **Hydraulic oil reservoir tank**
with filter sight gauge and filler cap, PTO and pump.

FEATURES INCLUDE

- **5000kgf line pull**
(BS7901 and DIN 15020 rating)
- **Fast line speeds**
*Up to 11m/min on bare drum,
22m/min on full drum*
- **Fail safe multi disc brake**
*Enables winch to be used for lifting applications
(Counter Balance Valve not required)*
- **Manual freespool clutch**
- **All seals in stainless steel sleeves**
- **Designed to operate in marine environment**
- **Rope capacity**
63m x 13mm diameter
- **Rope secured with anchor wedge**
- **12 months warranty**
On parts and service (excluding wire rope)
- **Fitting service**
Full or partial fitting can be provided, including load testing and certification
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs

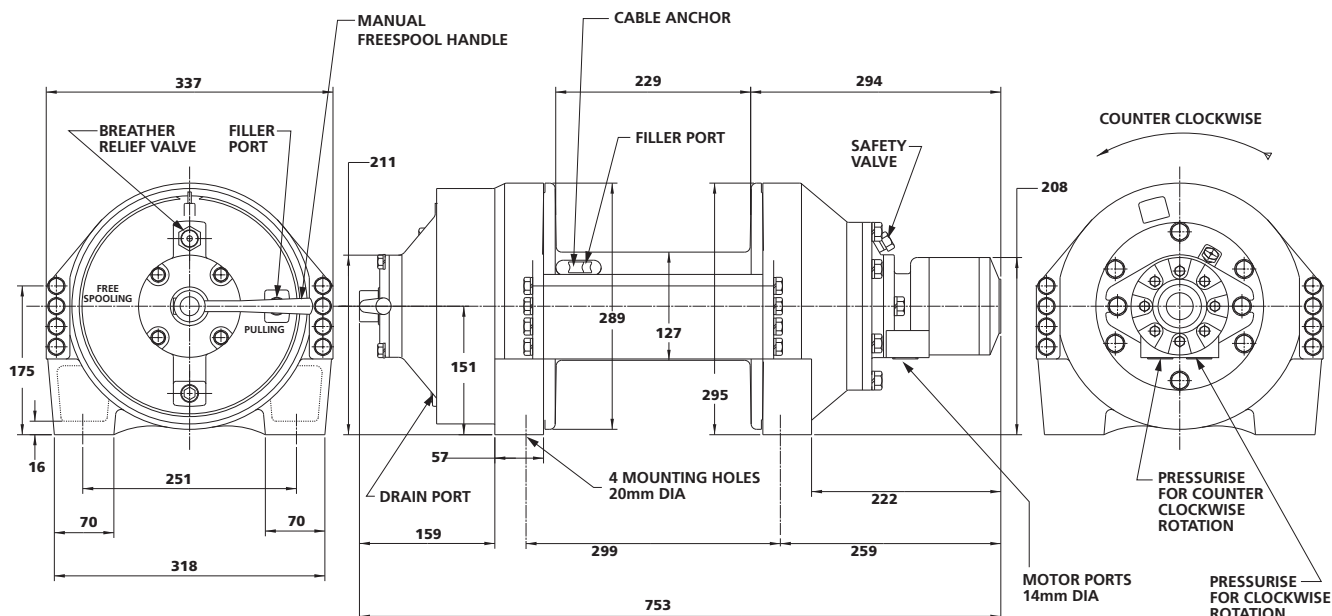
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PERFORMANCE	BARE DRUM	MEAN DRUM	FULL DRUM
LINE PULL	5000kg	3500kg	2600kg
LINE SPEED	11 m/min	17 m/min	22 m/min

Performance based on 57lt/min @162 Bar

SPECIFICATIONS

Rated Line Pull:	5000kgf at BS7901 rating for pulling 2000kgf at BS9701 rating for lifting
Line Speed:	Up to 11m/min on bare drum, 22m/min on full drum
Wire Rope:	13mm diameter x 63m length
Weight with roller guides:	125kg
Drum:	127mm diameter
Freespool Clutch:	Manual with remote controlled release as standard. Hydraulic clutch as an option
Braking:	Fail safe multi disc brake for lifting purposes (Counter Balance Valve not required)
Seals:	All in stainless steel sleeves
Drum Rotation:	Counter clockwise, viewed from motor end



**PULLMASTER HYDRAULIC
LIFTING WINCHES ARE AVAILABLE
FROM 500kg to 22 Tonne LINE PULL
PLEASE ASK BHW SALES FOR DETAILS**

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.com www.bhwwgroup.com

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PULLMASTER M12 Freefall Hydraulic Winch



Unique Piling Freefall Planetary Hydraulic Winch

PULLMASTER®

FEATURES INCLUDE

- *1,600kg / 15.7KN hammer weight lifting capacity*
- *High velocity release of load*
- *Long service life*
- *Can be used for raising and lowering a load when FREEFALL is not activated*
- *Automatic multi – disc brake*
- *Controlled free fall uses 1/3 of the winch capacity to control the rate of decent, bringing load to a smooth stop at any point*
- *Built to operate in marine environment*



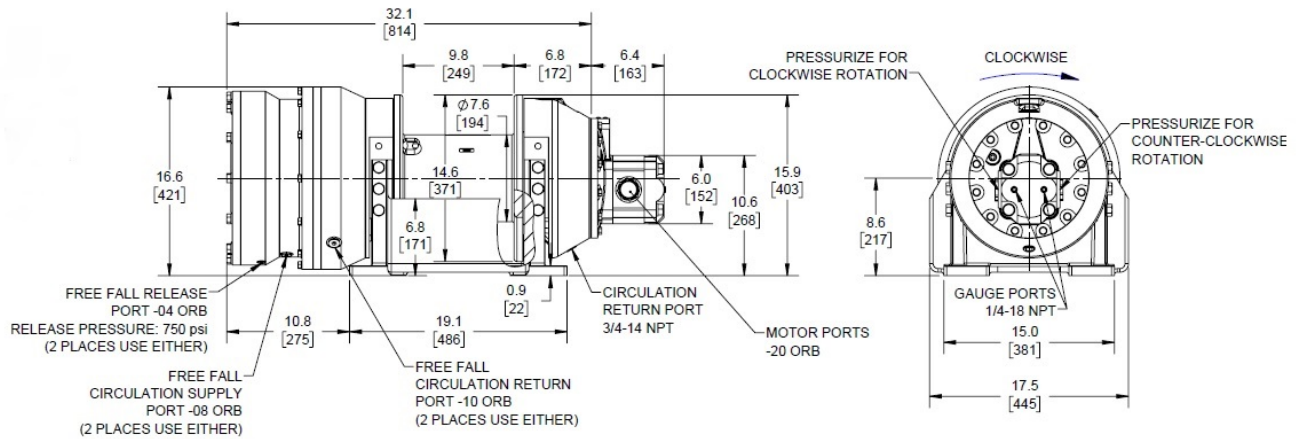
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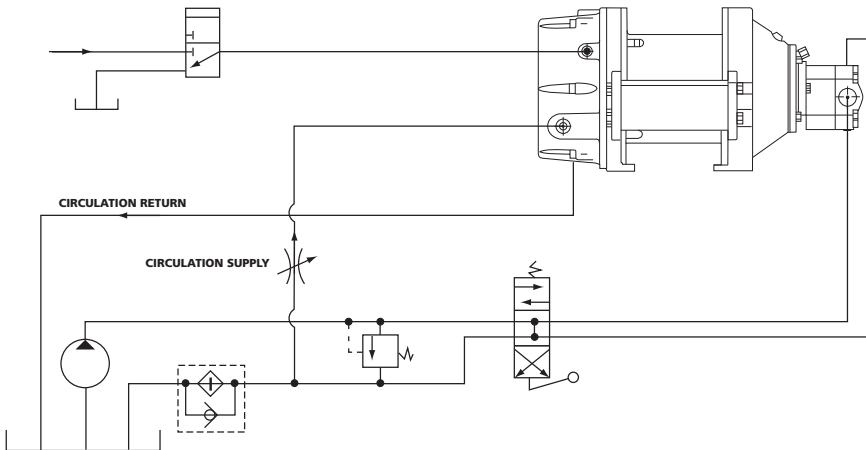
ROTATION COUNTERCLOCKWISE WHEN LIFTING
(VIEWED FROM MOTOR END)

PERFORMANCE								
MODEL	HYDRAULIC REQUIREMENTS		BARE DRUM		MEAN DRUM		FULL DRUM	
NUMBER	FLOW Lt/min	PRESSURE Bar	LIFTING CAPACITY KN	LINE SPEED m/min	LIFTING CAPACITY KN	LINE SPEED m/min	LIFTING CAPACITY KN	LINE SPEED m/min
PM-M12 FREEFALL	189	152	53.4	33	42.8	43	31.8	54

MAXIMUM RECOMMENDED HAMMER WEIGHT
15.7KN

CABLE STORAGE m				
WIRE ROPE DIA 16mm by Layer				
1	2	3	4	5
11	23	36	52	69

TYPICAL HYDRAULIC CIRCUIT



NORMAL OPERATION

The winch is set to permanent lift mode. When the hammer reaches required height above pile it is released using manual or electric control valve. Maximum operating pressure 145 Bar. Freefall clutch release 55-62 Bar.

TYPICAL HYDRAULIC CIRCUIT

SHOWING HYDRAULIC FLOW

- 189 Lt/min to winch motor (max.)
- 6.0 Lt/min cooling oil to free fall clutch
- 3.0 Lt/min to release clutch

Total weight (Wire rope not included) 404kg

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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INSTRUCTION AND PARTS MANUAL
MODEL H18
PLANETARY HYDRAULIC WINCH



THE LOGICAL CHOICE

PULLMASTER WINCH CORPORATION
8247-130th Street, Surrey, B.C. V3W 7X4, Canada
Telephone: 604-594-4444 Fax: 604-591-7332
Website: www.pullmaster.com
E-mail: sales@pullmaster.com



READ THIS MANUAL BEFORE INSTALLING, OPERATING OR
SERVICING THIS PRODUCT. THIS MANUAL CONTAINS IMPORTANT
INFORMATION. MAKE THIS MANUAL AVAILABLE TO ALL PERSONS
RESPONSIBLE FOR THE OPERATION, INSTALLATION, SERVICING
AND MAINTENANCE OF THIS PRODUCT.

PULLMASTER LIMITED WARRANTY

Effective 1/1/2002

SUPERSEDES ALL PRIOR WARRANTIES

Seller warrants that each article sold under this order shall at the time of shipment (i) conform to applicable specifications, and (ii) be free from defects in material and workmanship during normal and ordinary use and service (the "Warranty").

Buyer's exclusive remedy and Seller's sole obligation under this Warranty shall be, at Seller's option, to repair or replace any article or part thereof which has proven to be defective, or to refund the purchase price of such article or part thereof.

This Warranty shall expire one (1) year from the date the article is first shipped by Seller. Notice of claimed breach of this Warranty must be given by Buyer to Seller within the applicable period. Such notice shall include an explanation of the claimed warranty defect and proof of date of purchase of the article or part thereof for which warranty coverage is sought. No allowances shall be made by Seller for any transportation, labor charges, parts, "in and out" costs, adjustments or repairs, or any other work, unless such items are authorized in writing and in advance by Seller. Nor shall Seller have any obligation to repair or replace items which by their nature are expendable.

If an article is claimed to be defective in material or workmanship, or not to conform to the applicable specifications, Seller will either examine the article at Seller's site or issue shipping instructions for return to Seller. This Warranty shall not extend to any articles or parts thereof which have been installed, used, or serviced otherwise than in conformity with Seller's applicable specifications, manuals, bulletins, or instructions, or which shall have been subjected to improper installation, operation, or usage, misapplication, neglect, overloading, or employment for other than normal and ordinary use and service.

This Warranty shall not apply to any articles or parts thereof furnished by Seller to Buyer's specifications and/or furnished by Buyer or acquired from others at Buyer's request.

SELLER MAKES NO EXPRESS WARRANTIES AND NO IMPLIED WARRANTIES OF ANY KIND, OTHER THAN THE WARRANTY EXPRESSLY SET FORTH ABOVE. SUCH WARRANTY IS EXCLUSIVE AND IS MADE AND ACCEPTED IN LIEU OF ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedies for this Warranty shall be only those expressly set forth above, to the exclusion of any and all other remedies of whatsoever kind. The limited remedies set forth above shall be deemed exclusive, even though they may fail their essential purpose. No agreement varying or extending the foregoing Warranty, remedies, exclusions, or limitations shall be effective unless in a writing signed by an executive officer of Seller and Buyer. This Warranty is non-transferable.

Under no circumstances shall Seller be liable (i) for any damage or loss to any property other than the warranted article or part thereof, or (ii) for any special, indirect, incidental, or consequential damage or loss, even though such expenses, damages, or losses may be foreseeable.

The foregoing limitations on Seller's liability in the event of breach of warranty shall also be the absolute limit of Seller's liability in the event of Seller's negligence in manufacture, installation, or otherwise, with regard to the articles covered by this Warranty, and at the expiration of the Warranty period as above stated, all such liabilities shall terminate.



WARNING

PULLMASTER planetary winches/drives are not designed for operations involving lifting or moving personnel. The **PULLMASTER WINCH CORPORATION** cannot be held liable or responsible for any accident resulting from such use of **PULLMASTER** planetary winches/drives.

Note: Specifications contained in this Instruction and Parts Manual are subject to change without notice.

SAFETY RECOMMENDATIONS



DANGER

FAILURE TO COMPLY WITH THE FOLLOWING SAFETY RECOMMENDATIONS AND LOCAL RULES AND REGULATIONS WILL RESULT IN PROPERTY DAMAGE, SEVERE INJURY OR DEATH.



Definition: **Caution** indicates a potentially hazardous situation which, if not avoided may result in minor or moderate injury.



Definition: **Warning** indicates a potentially hazardous situation which, if not avoided could result in death or serious injury.



Definition: **Danger** indicates a potentially hazardous situation which, if not avoided will result in death or serious injury.

The planetary hydraulic winches are made for hoisting and lowering loads and to be operated by trained and professional personnel. They are not designed for operations involving lifting or moving personnel. The winches are powered by hydraulic power. The ropes / cables for hoisting operations are not supplied by PULLMASTER. The winches are always assembled in an application, they do not function as an independent machine and it is not allowed to use them as such.

The winches are to be used within the specifications as listed in the manual under "SPECIFICATIONS". Other use as foreseen in the functional description of the hydraulic winch is not allowed without written permission from PULLMASTER.

1. Do not install, operate or service winch before reading and understanding manufacturer's instructions.
2. The winch described herein is not designed for operations involving lifting or moving personnel.
3. Do not lift or carry loads over people.
4. Do not exceed recommended operating pressure (psi) and operating volume (gpm).
5. Do not jerk the winch. Always smoothly accelerate and decelerate load.
6. Do not operate a damaged, noisy or malfunctioning winch.
7. Do not leave a load suspended for any extended period of time.
8. Never leave a suspended load unattended.
9. Winch should be maintained and operated by qualified personnel.
10. Inspect winch, rigging, mounting bolts and hoses before each shift.
11. Warm-up equipment before operating winch, particularly at low ambient temperatures.
12. Verify winch function by raising and lowering a full test load to a safe height before each shift.
13. Do not weld any part of the winch.
14. Verify gear lubrication and brake circulation supply and return before operating winch.
15. Be sure of equipment stability before operating winch.
16. Wear proper clothing to avoid entanglement in rotating machinery.
17. Always stand clear of the load.
18. Use only recommended hydraulic oil and gear lubricant.
19. Keep hydraulic system clean and free from contamination at all times.
20. Maintain winch and equipment in good operating condition. Perform scheduled maintenance regularly.
21. Keep hands clear when winding wire rope onto the winch drum.
22. Do not use the wire rope as a ground for welding.
23. Rig the winch carefully. Ensure that the wire rope is properly anchored to the correct cable anchor slot at the cable drum.
24. Do not lift a load with a twisted, kinked or damaged wire rope.
25. Consult wire rope manufacturer for size, type and maintenance of wire rope.
26. Maintain three wraps of wire rope on the cable drum at all times.
27. In case of a power failure or breakdown leading to an unexpected stop of the hydraulic power circuit, stand clear of the area and the load being hoisted, take the necessary precautions to prevent access to area where the load is halted.
28. The noise level of the winch is 86 dBA measured on a distance of 1.00 meter, 1.60 meters high. The measuring equipment used was: Realistic #42-3019.
29. Clean up any oil spillage immediately.
30. Wear proper clothing and personal protection equipment such as, footwear, safety goggles and a hard hat. Read manual first.



DESCRIPTION OF THE MODEL H18

GENERAL DESCRIPTION:

The PULLMASTER Model H18 is a planetary, hydraulic winch with reversing or lowering speed 4.6 times faster than forward or hoisting speed. The main components of this unit are:

- + hydraulic gear motor
- + multi-disc brake with static and dynamic function
- + primary planet reduction
- + final planet reduction
- + brake housing
- + final drive housing
- + cable drum

FUNCTION IN FORWARD ROTATION (HOISTING):

In forward rotation, the output torque and rpm of the hydraulic motor are transmitted to the sungear of the primary planet reduction. The output torque and rpm of the primary reduction stage are transmitted to the final reduction stage by the final sungear shaft, which is splined to the primary planet hub. In forward rotation, or when a load is raised, an over-running clutch, which connects the motor drive shaft to the automatic brake assembly, permits free rotation of the sungear without effecting the brake. When the winch rotation is stopped, the load on the cable drum causes the over-running clutch to lock and the maximum load is held safely by the disc brake.

FUNCTION IN REVERSE ROTATION (LOWERING):

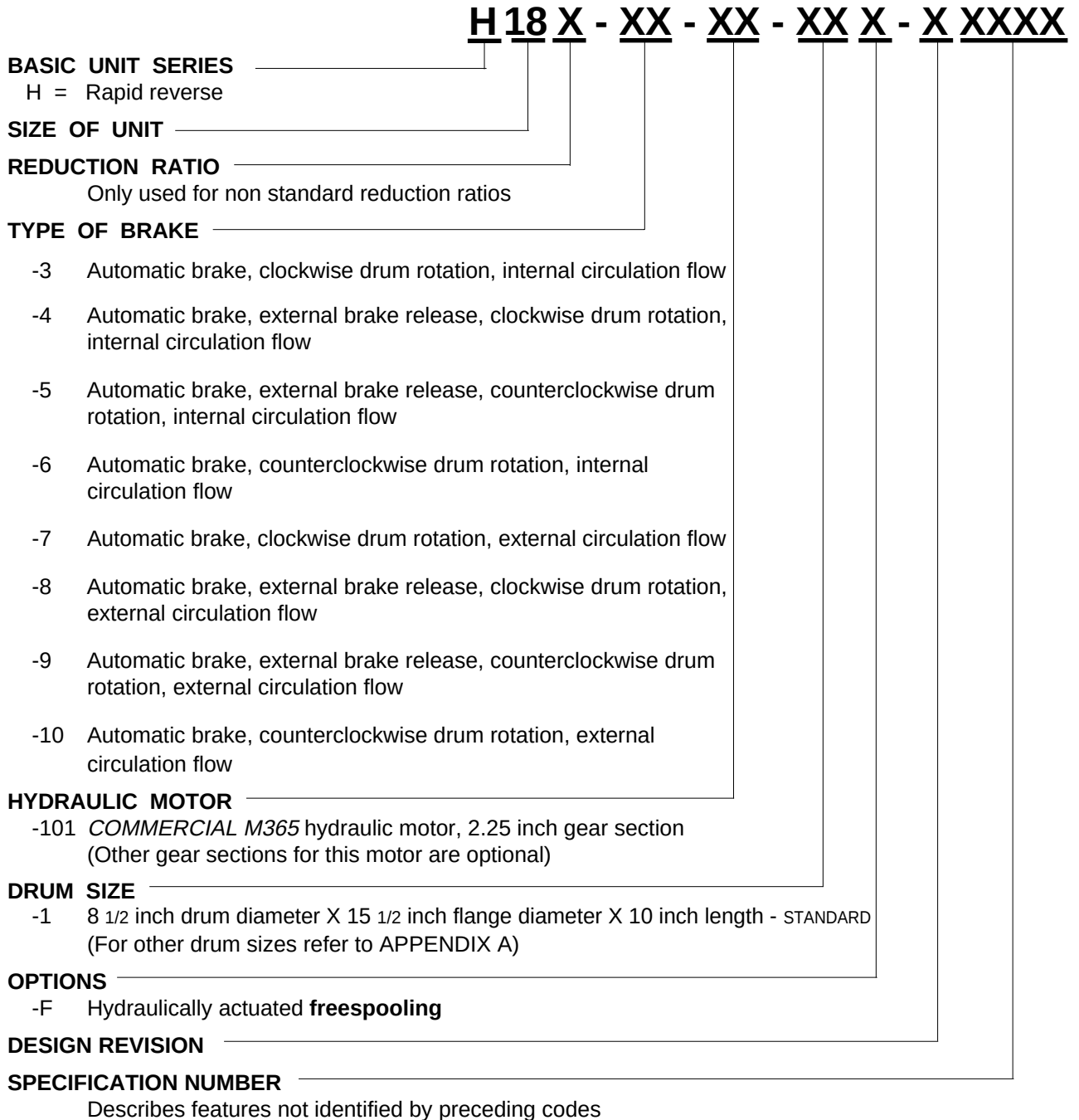
In reverse rotation, hydraulic pressure from the reversing side of the hydraulic motor is channelled to the brake piston, causing the brake piston to release the multi-disc brake against a number of brake springs. The over-running clutch, connecting the motor drive shaft with the internal gear of the primary planet reduction locks, causing the internal gear to rotate at the same rpm as the primary sungear. Thus, the primary reduction stage is eliminated and the output torque and rpm of the hydraulic motor are transmitted directly to the final planet reduction stage. With the primary reduction stage eliminated, the reduction is reduced to a ratio of 8.6:1 and the cable drum will rotate 4.6 times faster than in forward or hoisting speed.

If the load on the cable drum tends to effect the lowering speed, the resulting pressure drop in the brake piston causes friction between the brake discs and divider plates. In this way, a completely smooth lowering speed can be achieved in a stepless operation by modulation of the winch control handle. When the control handle is returned to neutral position, rotation stops and the disc brake applies automatically.

During the lowering operation of the winch, the friction created by the brake discs results in temperature. This temperature is dissipated by an internal circulation flow, supplied out of the hydraulic motor or from an external source. For models with external circulation the required flow is approximately 7 (US) gpm - 26 l/min. This circulation flow must be returned directly to the reservoir with a permissible back pressure of 30 psi (2 bar).

IMPORTANT: Under no circumstances must the back pressure in the brake housing be permitted to exceed 30 psi (2 bar). Excessive pressure in the brake housing will damage the oil seal separating the brake housing from the drum interior. Damage to this seal will cause the drum to fill up with hydraulic fluid. In order to prevent potential damage to the drum seals and the end cover of the winch, when the cable drum fills up with hydraulic fluid, a breather relief (see PARTS REFERENCE, item 130) is installed on the end cover. The breather relief bleeds to atmosphere and serves as a warning signal that the oil seal between the brake housing and drum has been damaged.

EXPLANATION OF MODEL CODING



NOTE: Clockwise and counterclockwise drum rotation is the direction of rotation for pulling or hoisting, established by looking at the hydraulic motor.

OPTIONS

COUNTERCLOCKWISE ROTATION:

The drum rotation of the standard PULLMASTER Model H18 planetary winch is clockwise for hoisting when looking at the hydraulic motor of the winch. Drum rotation for counterclockwise hoisting direction is available as an option.

EXTERNAL BRAKE RELEASE:

PULLMASTER planetary winches can be supplied with an **external brake release** which permits release of the automatic disc brake from an external pressure source.



FAILURE TO PROPERLY VENT EXTERNAL BRAKE RELEASE PORT WILL TRAP BRAKE PRESSURE AND ALLOW THE LOAD TO DROP, CAUSING PROPERTY DAMAGE, SEVERE INJURY OR DEATH. WINCHES SUPPLIED WITH EXTERNAL RELEASE OPTION MUST BE CONNECTED ACCORDING TO TYPICAL HYDRAULIC CIRCUIT.

CABLE DRUM SIZES:

Aside from the standard drum sizes listed in APPENDIX A, the PULLMASTER Model H18 planetary winch can be supplied with optional drums to accommodate large wire rope storage capacity.

DRUM GROOVING:

Cable drums for the PULLMASTER Model H18 planetary winch can be grooved. Where this option is a requirement, it is necessary to state the size of wire rope which is to be used with the winch.

OPTIONAL GEAR SECTION FOR THE HYDRAULIC MOTOR:

The performance of the standard PULLMASTER Model H18 planetary winch may be changed by using a different displacement motor. (Contact the factory for performance information.)

HYDRAULIC MOTORS FOR HIGH PRESSURE HYDRAULIC SYSTEMS:

The operating pressure of the PULLMASTER Model H18 planetary winch is limited to 2300 psi (159 bar). For hydraulic systems operating with a higher range of hydraulic pressure, the winch can be supplied with a hydraulic piston motor, which will provide for the same basic performance in terms of line pull and line speed capacity. (Contact the factory for this requirement.)

FREESPOOLING:

This option permits wire rope being pulled off the cable drum by an operator. **Freespooling** should not be confused with **free fall**. The **freespool** clutch cannot be disengaged or re-engaged with a load on the wire rope or while the cable drum is turning.

The PULLMASTER WINCH CORPORATION will consider other options for quantity requirements.

SPECIFICATIONS

Performance specifications are based on standard hydraulic motor, gear ratio and cable drum with 3/4 inch diameter wire rope. For other cable drums refer to APPENDIX A. For other reductions or motors, refer to supplement inside back cover. Performance specifications for winches supplied with optional motors are provided in attached supplement.

CABLE DRUM DIMENSIONS (STANDARD DRUM):

Barrel diameter	8.50 in	216 mm
Flange diameter	15.50 in	394 mm
Barrel length	10.00 in	254 mm

CABLE STORAGE CAPACITY:

(Size of wire rope)	3/8 in	615 ft	187 m
	7/16 in	494 ft	151 m
	1/2 in	332 ft	101 m
	9/16 in	310 ft	94 m
	5/8 in	239 ft	73 m
	3/4 in	170 ft	52 m
	7/8 in	113 ft	34 m

MAXIMUM OPERATING PRESSURE: 2300 psi 159 bar

MAXIMUM OPERATING VOLUME: 76 (US) gpm 288 l/min

MINIMUM OPERATING VOLUME: 20 (US) gpm 76 l/min

DRUM TORQUE AT MAXIMUM PRESSURE: 83,250 lb-in 9,406 Nm

DRUM RPM AT MAXIMUM VOLUME: Hoisting 50.5 rpm
Lowering 232 rpm

HOISTING LINE PULL AT MAXIMUM PRESSURE:

Bare drum	18,000 lb	80.1 kN
Full drum	11,288 lb	50.2 kN

HOISTING LINE SPEED AT MAXIMUM VOLUME:

Bare drum	122 fpm	37 m/min
Full drum	195 fpm	59 m/min

PERMISSIBLE LOAD WHEN LOWERING

AT MAXIMUM VOLUME:	Bare drum	3,913 lb	17.4 kN
	Full drum	2,506 lb	11.1 kN

LOWERING LINE SPEED AT MAXIMUM VOLUME:

Bare drum	563 fpm	171 m/min
Full drum	897 fpm	273 m/min

PERMISSIBLE SYSTEM BACK PRESSURE AT MOTOR RETURN PORT:

65 psi 4.5 bar

PERMISSIBLE PRESSURE AT CIRCULATION SUPPLY PORT:

30 psi 2 bar

LUBRICATING OIL: Refer to RECOMMENDATIONS for viscosity and instructions.
Refer to APPENDIX A for oil volume required.

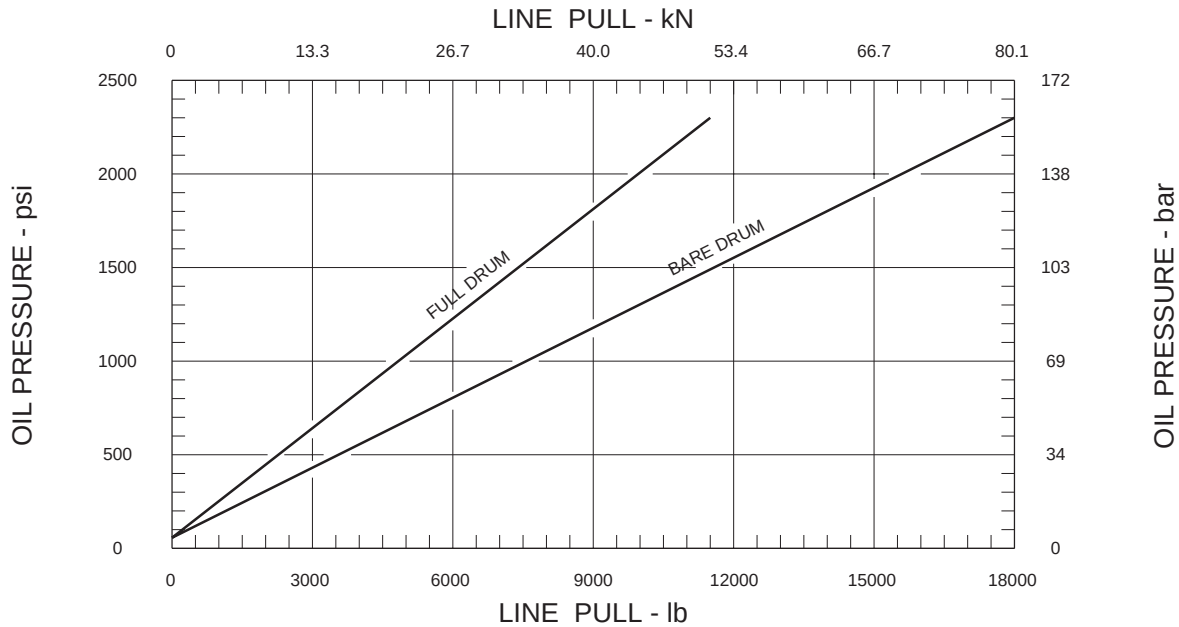
PERFORMANCE GRAPHS

PG-H18-A

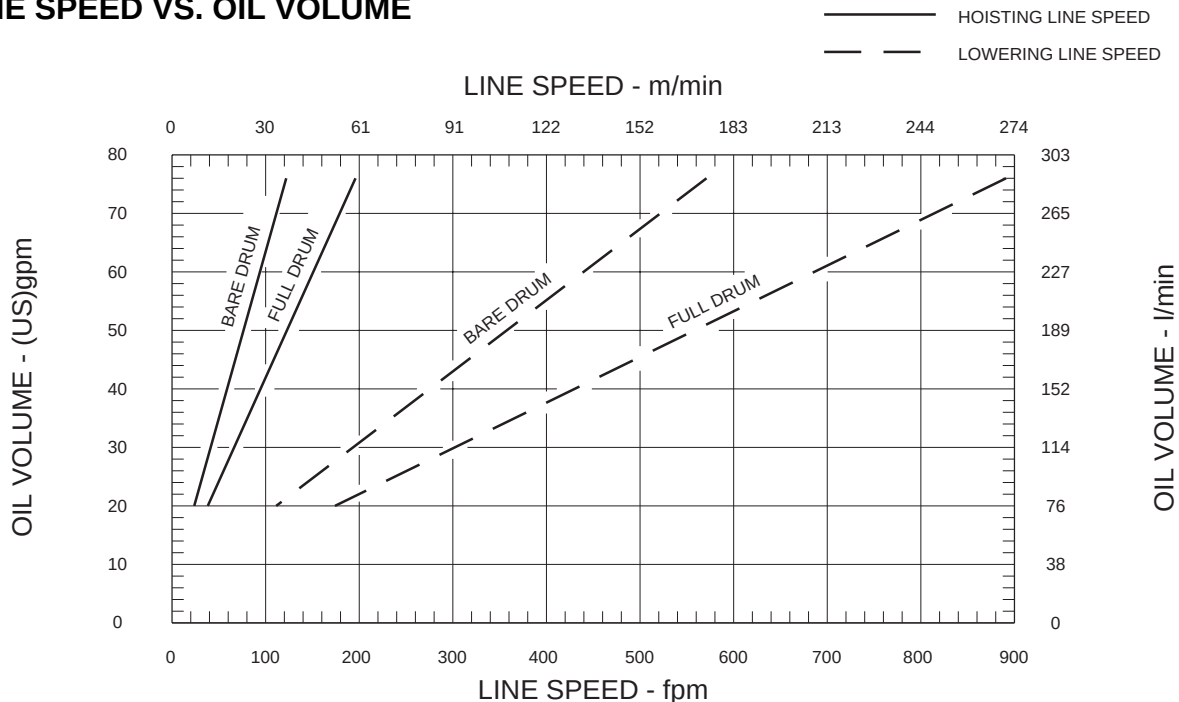
LINE PULL VS. OIL PRESSURE

NOTE: MAXIMUM ALLOWABLE LINE PULL WHEN LOWERING

Bare drum	3,913 lb	17.4 kN
Full drum	2,506 lb	11.1 kN



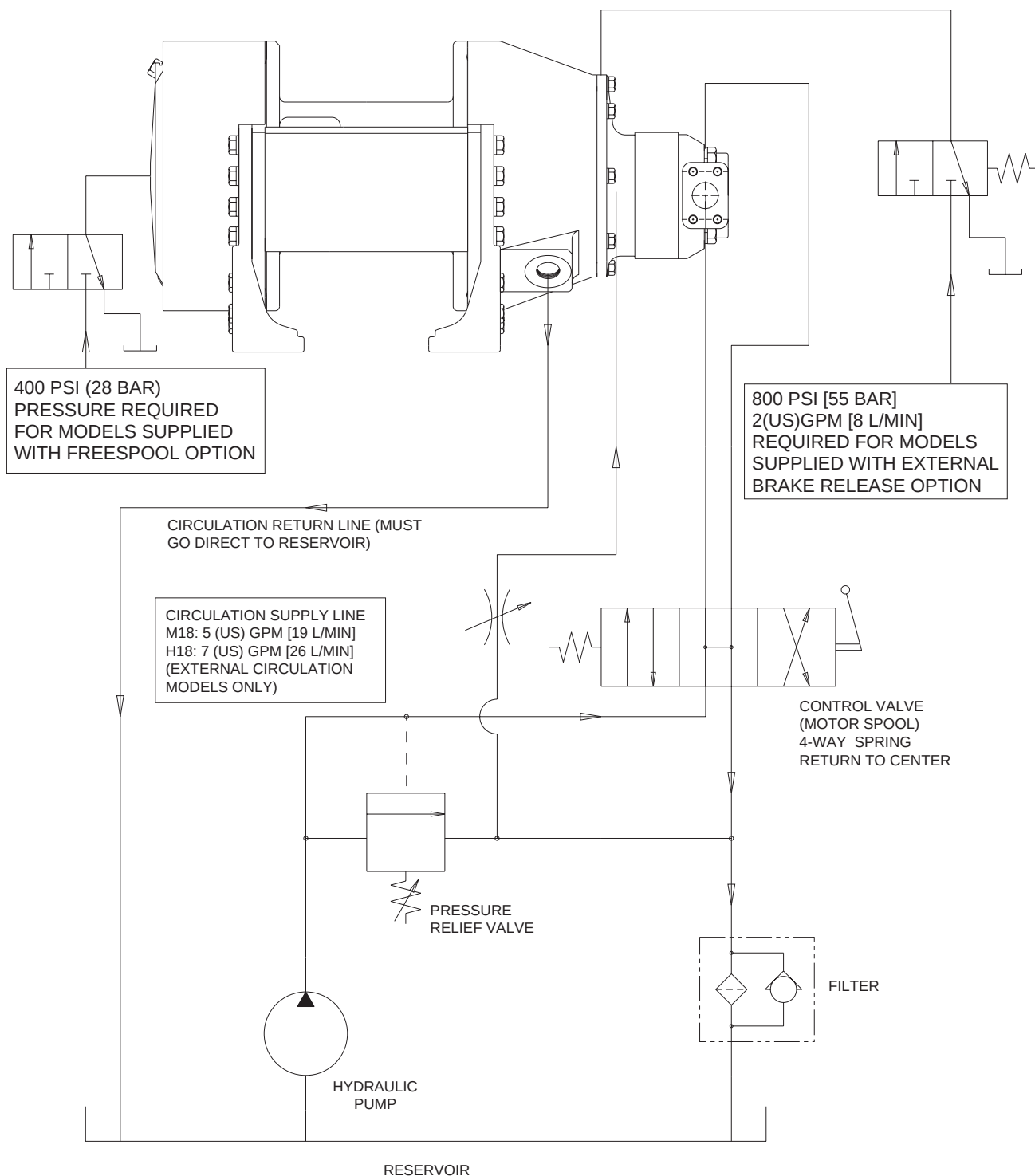
LINE SPEED VS. OIL VOLUME



Performance graphs are based on standard hydraulic motor, gear ratio and cable drum with 3/4 inch diameter wire rope.

TYPICAL HYDRAULIC CIRCUIT

HC-H18-C



RECOMMENDATIONS

HYDRAULIC FLUID:

The hydraulic fluid selected for use with PULLMASTER planetary winches should be a high grade, petroleum based fluid, with rust, oxidation and wear resistance. Fluid cleanliness and operating viscosity are critical to winch reliability, efficiency and service life.

For optimum performance, the recommended viscosity range at operating temperature is 81 - 167 SUS (16 - 36 CS). For extreme operating conditions of short duration, the maximum viscosity range of 58 - 4635 SUS (10 - 1000 CS) should not be exceeded.

For optimum performance, the winch recommended hydraulic fluid temperature operating range is 80 - 150F (27 - 66 C). For extreme operating conditions of short duration, the maximum temperature range of -5 - 180F (-21 - 82 C) should not be exceeded.

LUBRICATION:

The winch gear train requires oil bath lubrication. The winch is shipped from the factory without lubricating oil.

IMPORTANT: ADD LUBRICATING OIL BEFORE RUNNING WINCH.

Refer to INSTALLATION DIMENSIONS for location of lubricating oil fill port. Refer to APPENDIX A for quantity of oil required. For normal operating temperature use SAE 90 lubricating oil. For temperatures beyond normal operating range, consult lubricating oil supplier or factory.

HYDRAULIC PUMP:

For maximum performance of the PULLMASTER planetary winch, the hydraulic pump must supply the maximum flow of hydraulic fluid at the hydraulic pressure stated in SPECIFICATIONS.

HYDRAULIC CONTROL VALVE:

The standard control valve used for operation of the PULLMASTER planetary winch must have a four-way, spring return to neutral feature, which provides for open flow from the pressure ports of the winch to the reservoir in neutral position of the control (motor spool). It is important to point out that good speed control, especially when lowering a load, depends on the "metering" characteristics of the control valve. The better the oil flow is "metered" the better will be the speed control.

HYDRAULIC PRESSURE RELIEF:

The hydraulic circuit for the PULLMASTER planetary winch requires a pressure relief set at the operating pressure (see SPECIFICATIONS). Usually, a pressure relief is part of the hydraulic control valve. Where this is not the case, a separate pressure relief valve must be installed and set at the recommended maximum pressure.

HYDRAULIC RESERVOIR:

It is recommended that the hydraulic reservoir has sufficient capacity to provide good heat dissipation in order to prevent over-heating of the hydraulic fluid. The hydraulic reservoir should be made from clean and scale-free material to prevent contamination of the hydraulic fluid. In order to prevent air from being mixed with the hydraulic fluid, the reservoir should have an over-flow baffle separating the return lines from the suction line and all return lines should enter the reservoir below the fluid level. The reservoir should be mounted close to and above the hydraulic pump in a location which provides for free air circulation around the reservoir.

HYDRAULIC HOSES:

The following hydraulic hoses are recommended for maximum efficiency of the PULLMASTER Model H18 planetary winch:

Pressure lines:	Equivalent to SAE 100R10-24
Circulation return line:	Equivalent to SAE 100R4-16
Circulation supply line*:	Equivalent to SAE 100R6-6

*Only for models with external circulation

It is recommended that a larger size of hydraulic hose is installed where the pressure lines or the circulation lines are excessively long.

HYDRAULIC FILTER:

Hydraulic filter recommendations for the hydraulic circuit of the PULLMASTER planetary winch, based on a return line filter, are given as follows:

Average Atmosphere:	10 microns
Dusty Atmosphere:	5 microns

USE OF AN E STOP:

(FOR EUROPEAN MACHINERY DIRECTIVE APPLICATIONS)

The use of an E stop (emergency) is mandatory in the controls circuit. The E stop is to be placed in the operator's control panel. The E stop must be designed and placed in line with EN 60204 and EN 418.

INSTALLATION INSTRUCTIONS



DANGER

**FAILURE TO FOLLOW INSTALLATION INSTRUCTIONS WILL
RESULT IN PROPERTY DAMAGE, SEVERE INJURY OR DEATH.**

The initial installation or mounting of a PULLMASTER planetary winch is critically important for proper operation and performance. If the winch is mounted to an uneven surface, the centre line of the unit can be distorted to a point where the winch will not operate in either direction. It is therefore very important that the following instructions are observed when a PULLMASTER planetary winch is installed:

- 1) Make certain that the mounting platform is sufficiently strong in order to avoid deflection when a load is lifted.
- 2) Set the winch on the mounting platform and check for surface contact on all mounting pads of the winch.
- 3) If there is a space between the mounting surface and one of the mounting pads, the mounting surface is not even and the space below the mounting pad must be shimmed. If this condition exists, proceed as follows:
 - a) Install mounting bolts snug tight on the three mounting pads which are in contact with the mounting surface. (For mounting bolt size and grade see INSTALLATION DIMENSIONS.)
 - b) Measure the space underneath the fourth mounting pad with a feeler gauge and use shim stock of equivalent thickness in the space between the mounting pad and the mounting surface.
 - c) Only after this procedure should the fourth mounting bolt be installed. Tighten all four bolts per BOLT TORQUE CHART.
- 4) Fill the winch with lubricating oil. (See APPENDIX A for oil volume required.)
- 5) Use recommended circuit components and hydraulic hoses.
- 6) The circulation return line of the winch should be plumbed in such a manner that the brake housing remains full of oil at all times. Connect the return line directly to reservoir. Do not connect to a common return line.
- 7) Before operating the winch with a load, verify adequate circulation flow through the circulation return line as stated in TYPICAL HYDRAULIC CIRCUIT. Verify that pressure measured at the circulation supply port does not exceed the permissible pressure stated in SPECIFICATIONS. Winches equipped with the internal circulation option will supply circulation flow only when the winch is run in the lowering direction.
- 8) Verify that breather relief, item 130, is in place on end cover above oil level. Rotate end cover if breather relief is below oil level.

IMPORTANT: Do not replace breather relief with a pipe plug. The breather relief does not prevent oil seal failure but serves as an indicator or warning that the oil seals between brake housing and the cable drum interior have failed and must be replaced immediately. If these oil seals are changed, additional failure of the drum seal and potential damage to the end cover is prevented.

OPERATING INSTRUCTIONS



DANGER

**FAILURE TO FOLLOW OPERATING INSTRUCTIONS WILL
RESULT IN PROPERTY DAMAGE, SEVERE INJURY OR DEATH.**

After the PULLMASTER planetary winch has been installed in accordance with the INSTALLATION INSTRUCTIONS, the wire rope can be fastened to the cable drum.

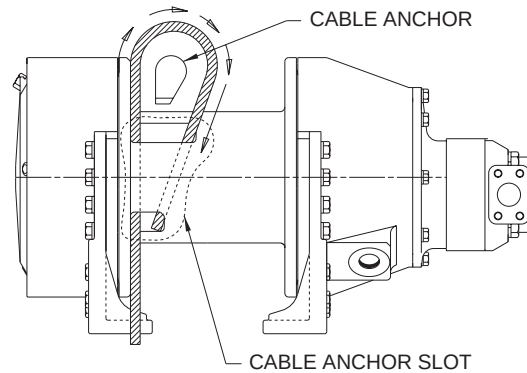
IMPORTANT: The ropes, chains, slings, etc. are not part of the winch and are not covered by this manual. Refer to manufacturer's handling, inspection and maintenance recommendations to avoid potential accidents. For selection of ropes, etc. please check following product standards: DIN 15020, prEN818-1/9, prEN 1492-1/2, prEN 1677-1/3 and other relevant product standards.

- 1) The cable drum of the PULLMASTER planetary winch has two cable anchor slots, one for clockwise and one for counterclockwise hoisting. Standard rotation for hoisting is clockwise when looking at the hydraulic motor of the unit. It is critical to select the cable anchor slot which will permit winding of the wire rope on the drum in the correct direction of rotation. If the wire rope is wound on the cable drum in the wrong direction of rotation, the winch will have no braking capacity. Each winch is shipped from the factory with a label on the drum indicating the correct cable anchor slot.

WIRE ROPE INSTALLATION

Clockwise hoisting winch shown.
(Use cable anchor slot on opposite side of drum for counterclockwise hoisting winch.)

Feed the wire rope through the cable anchor slot. Loop rope back into slot as shown. Insert cable anchor into slot, small end first and long side nearest the drum flange. Pull rope tight to wedge rope in slot.



SI1013-18

- 2) On wire rope installation, care must be taken that the wire rope is wrapped completely around the cable anchor and properly pulled into the cable anchor slot in the cable drum. The cable drum requires 3-4 wraps of wire rope for safety.
- 3) The winch operation is controlled by a single control valve lever which has a **forward**, a **reverse** and a **neutral** position. Speed control in either direction is obtained by modulation of the control valve lever. Maximum line speed in either direction is obtained when the control valve lever is moved as far as it can go. The disc brake of the winch will come on automatically when the winch control lever is returned to **neutral**.
- 4) Always warm up equipment prior to operating winch, particularly in low ambient temperature. Circulate hydraulic oil through the winch control valve for several minutes to warm the hydraulic system. To prime the winch with warm oil, operate the winch at slow speed, forward and reverse, several times.
- 5) Prevent corrosion damage to winch interior. If not used regularly, run winch up and down at least once every two weeks.
- 6) To ensure proper winch installation and function, raise and lower a full test load to a safe height before using winch for regular operation at the start of each shift.

If, after a new installation, the winch does not function properly, refer to the TROUBLESHOOTING section of this manual.

TROUBLE SHOOTING

GENERAL:

In most cases, when the hydraulic winch does not perform satisfactorily, the cause of malfunction is found somewhere in the hydraulic circuit. Before the winch is removed from its mounting and disassembled, all of the hydraulic circuit components should be checked for proper function.

IMPORTANT:

The hydraulic oil volume relates to the line speed or rpm of the winch.

Therefore, if the winch does not produce the specified maximum rated line speed or drum rpm, a loss of hydraulic flow somewhere in the hydraulic circuit can be analysed. If this condition exists, install a flow meter into the hydraulic circuit to check the volume of oil supplied to the pressure port of the hydraulic winch motor when the winch control is completely opened. The flow meter should indicate the maximum operating volume. If this test indicates a loss of hydraulic flow, check the hydraulic pump, the relief valve and the control valve. If the pump is driven by V-belts, check for belt slippage.

The hydraulic pressure relates to the line pull or lifting capacity of the winch.

If the winch will not produce the specified maximum line pull, install a pressure gauge in the pressure line leading to the hoisting port on the hydraulic winch motor. Stall the winch to prevent rotation of the drum and then open the control valve. Check the hydraulic pressure reading of the installed pressure gauge. If the pressure reads below the specified maximum operating pressure, look for trouble in the hydraulic pump, the relief valve and the control valve. If the hydraulic pump is driven by V-belts, check for belt slippage. When checking oil pressure and volume in the hydraulic circuit, verify that the hydraulic reservoir is filled to the top level and the hydraulic pump is running at maximum operating rpm.

Only if the hydraulic system has been checked and found to be in order, use the following indications for probable causes of failure in the winch:

FAILURE	PROBABLE CAUSE
Winch will not produce line pull at maximum pressure as listed in SPECIFICATIONS.	a) Winch is mounted to an uneven surface (see INSTALLATION INSTRUCTIONS). b) Cable sheaves or block purchase operated with the winch are not turning freely. c) Damage or wear in the hydraulic motor. d) Excessive back pressure in the hydraulic system. e) Relief valve may be set too low (see SPECIFICATIONS for maximum operating pressure).
Winch does not produce line speed at maximum volume as listed in SPECIFICATIONS.	a) Winch is mounted to an uneven surface (see INSTALLATION INSTRUCTIONS). b) Cable sheaves or block purchase operated with the winch are not turning freely. c) Damage or wear in the hydraulic motor d) Excessive back pressure in the hydraulic circuit.
Winch will not reverse.	a) Leakage out of the brake piston prevents the disc brake from being released against the brake springs. This is caused by damaged O-ring seals on the brake piston. b) The O-ring seals, on the brake release channel between the motor adaptor and the brake housing, is damaged. If this failure occurs there will be substantial leakage from between the motor adaptor and brake housing. c) Insufficient hydraulic pressure (see SPECIFICATIONS for minimum operating pressure). d) Winch is mounted to an uneven surface (see INSTALLATION INSTRUCTIONS). e) Hydraulic pressure is not reaching the brake piston due to plugged brake release orifice in the brake housing.

TROUBLE SHOOTING CONTINUED

FAILURE	PROBABLE CAUSE
Brake will not hold.	a) Brake plates or divider plates have been damaged by contamination in the hydraulic fluid, or lack of circulation flow in the brake housing. b) Brake piston is seized in the brake housing because of contamination in the hydraulic fluid. c) Excessive back pressure in the return line causes the brake to be released. d) Control valve has incorrect spool, which traps hydraulic pressure in the brake piston when the control valve handle is returned to neutral position. For proper function of the automatic brake, both pressure ports of the winch must be open to the reservoir in neutral position of the control valve. e) Wire rope is fastened to the incorrect cable anchor slot. f) Sprag clutch is damaged or surfaces where sprag clutch engages on motor drive shaft or connecting shaft are worn or indented. g) Winch supplied with external brake release option is not plumbed per HYDRAULIC CIRCUIT. Failure to vent external brake release port to reservoir may trap pressure and cause winch brake to slip.
Brake vibrates when lowering a load.	a) Pump is too slow. Pump rpm must be maintained at normal operating speed when a load is lowered. b) Brake is running too hot. This is caused by a complete lack of, or insufficient, circulation flow. To check the circulation, observe the flow of oil from the circulation return line of the winch (see TYPICAL HYDRAULIC CIRCUIT) when the winch is reversed. c) Control valve has poor metering characteristics. d) Damaged brake plates or divider plates. e) The over-running clutch, which connects the motor shaft with the brake assembly, is damaged. f) Air mixed with hydraulic oil (foamy oil).
Oil leaks.	a) Oil leaks from the hydraulic motor flange and the motor adaptor are caused by damaged O-ring seals. b) Oil leaks occurring between the cable drum flanges and housings are caused by excessive pressure in the brake housing. Excessive pressure will damage the oil seal which separates the brake housing from the cable drum interior. c) If the breather relief on the end cover leaks, the seal between the drum interior and the brake housing is damaged and must be replaced. This condition is caused by excessive pressure in the brake housing of the winch, operation with the incorrect hydraulic fluid during cold weather, or a restriction in the circulation return line leading back to tank.

Refer to the SERVICE INSTRUCTIONS if it becomes necessary to disassemble the Model H18 winch.

SERVICE INSTRUCTIONS

GENERAL:

Before attempting disassembly of the PULLMASTER Model H18 planetary winch, the following instructions for disassembly and reassembly should be read and understood:

It is suggested that all expendable parts, such as O-rings and oil seals, are not reused on reassembly. It is therefore important to have a seal kit (Part No. 23135) and, providing the hydraulic motor has to be serviced, a seal kit (Part No. 23139) on hand before the unit is taken apart.

NOTE: Backup washers may be included with seal kit. Install with oil seals as per instructions. If not present in seal kit, the oil seals supplied do not require backup washers.

A clean working area is of prime importance, similar to conditions used for service work on any other hydraulic component. All parts, as they are removed from the winch assembly, should be inspected for wear and damage. Worn or damaged parts must be replaced. Thoroughly clean parts before reassembly. Do not use solvent to clean the brake friction plates.

During reassembly, lubricate all O-rings and oil seals with grease before installation.

In the following service instructions, reference to parts is made by numbers and shown on the applicable group drawings.

DISASSEMBLY

For the majority of required service or repair work, disassembly is required only on the brake housing of the PULLMASTER Model H18 planetary winch. There are no special tools needed for the service or repair work and no adjustments or calibrations are necessary. Proceed with the disassembly as follows:

DISASSEMBLY OF HYDRAULIC MOTOR ASSEMBLY:

If the analysed service or repair work requires access to the interior of the brake housing, the hydraulic motor should not be disassembled. In this case, the hydraulic motor should be removed together with the motor adaptor as a complete assembly. If a problem has been analysed to be in the hydraulic motor, proceed with the disassembly as follows:

- 1) Remove the four hex capscrews, item 951, together with the lockwashers, item 953, from the motor assembly.

IMPORTANT: Failure to exercise care when removing the motor port end cover or gear housing could permanently damage the machined surfaces of these motor components. Take care not to damage machined surfaces of motor components at disassembly.

- 2) Remove (pry loose if necessary) port end cover, item 870, together with two bushings, item 875. Two dowel pins, item 865, which are hollow for the capscrews to go through, will stay in either the port end cover or in the gear housing, item 861.
- 3) Remove gear set, item 881, which consists of two gears which are a matched set.
- 4) As the gears are removed, so is a thrust plate, item 885, two end seals, item 887, two side seals, item 891, and a backup seal, item 897. Discard end, side and backup seals.
- 5) Remove gear housing, item 861, together with gasket seals, item 869, and the remaining thrust plate with its end, side and backup seals. Discard the gasket, end, side and backup seals.

End, side, backup and gasket seals in the hydraulic motor assembly are not part of the winch seal kit. The seal kit for the hydraulic motor can be ordered from the factory under Part No. 23139. All parts of the hydraulic motor, with the exception of the motor adaptor, item 800, and the port end cover, item 870, are standard parts of the *COMMERCIAL M365* hydraulic motor, having a 2.25 inch gear section. All of these parts can be ordered from *COMMERCIAL INTERTECH* dealers in Canada, the United States and in most overseas areas. If there is no *COMMERCIAL INTERTECH* representation, all parts for the hydraulic motor can be ordered from the factory.

SERVICE INSTRUCTIONS CONTINUED

REMOVAL OF HYDRAULIC MOTOR ASSEMBLY:

If disassembly of the hydraulic motor is not necessary, proceed as follows:

- 1) Remove eight hex head capscrews, item 821, with lockwashers, item 823, from motor adaptor, item 800. Since the brake springs, item 752, apply pressure against the inside of the motor adaptor, it is recommended that the hex capscrews are unscrewed, one turn at a time, until the spring pressure has been released. The complete motor assembly, including the motor adaptor, can now be removed from the brake housing assembly.
- 2) Remove and discard three O-rings, item 801, and O-ring, item 707. (O-rings, item 801, seal the pressure transfer hole for the automatic brake release and are situated on the flange of the brake housing.)

DISASSEMBLY OF BRAKE HOUSING ASSEMBLY:

- 1) After the motor assembly has been removed, all parts of the brake assembly are accessible. Remove 14 brake springs, item 752. Thoroughly examine springs for damage and measure overall length. Overall spring length should be 2.27 inch. If any spring measures less than 2.21 inch, replace all springs as a set.
- 2) Pull motor drive shaft, item 730, out of brake hub assembly. The surface of the motor drive shaft which engages the sprag clutch, item 723, should be inspected for wear or indentations. If the motor drive shaft shows any surface damage, it should be replaced.
- 3) Sprag clutch aligner, item 724, and sprag clutch, item 723, can now be removed from the bore of the brake connecting shaft, item 600. Inspect both parts for wear or damage and replace if necessary.



DANGER

MINOR SURFACE DEFECTS WHERE THE SPRAG CLUTCH ENGAGES THE MOTOR DRIVE SHAFT AND CONNECTING SHAFT, WILL RESULT IN BRAKE FAILURE AND ALLOW THE LOAD TO DROP, CAUSING PROPERTY DAMAGE, SEVERE INJURY OR DEATH. THOROUGHLY INSPECT THESE AREAS AND, IF NECESSARY, REPLACE MOTOR DRIVESHAFT, SPRAG CLUTCH AND CONNECTING SHAFT AS A SET.

- 4) Pull brake piston, item 750, out of brake housing using two 5/8-11NC bolts screwed into two puller holes in piston and discard O-rings, item 751 and item 753.
- 5) Thoroughly examine the inner bores of the brake housing and the outer diameters of the brake piston for scoring caused by hydraulic fluid contamination. Minor surface damage may be repaired by polishing with a fine emery cloth.



DANGER

DAMAGED FRICTION OR DIVIDER PLATES WILL REDUCE BRAKING CAPACITY AND ALLOW THE LOAD TO DROP, CAUSING PROPERTY DAMAGE, SEVERE INJURY OR DEATH. SOLVENT MAY DAMAGE THE FRICTION PLATES. DO NOT USE SOLVENT TO CLEAN THE FRICTION PLATES. PERFORM THOROUGH INSPECTION AND, IF NECESSARY, REPLACE FRICTION AND DIVIDER PLATES AS A SET.

- 6) Remove 12 friction plates, item 715, together with 13 divider plates, item 713, and inspect for damage or wear. Plates should be flat and smooth. Plates should not show heat discoloration. Paper material on friction plates

SERVICE INSTRUCTIONS CONTINUED

should be intact and grooved. If any damage is detected, replace friction and divider plates as a set.

- 7) Remove brake spacer, item 712.

All parts have now been removed from brake housing and there is no need for further disassembly unless a failure has been analyzed in the remaining winch assembly. If continuing, remove pipe plug, item 121, from the end cover, item 120, and tip winch to drain lubricating oil from inside of the final drive housing and cable drum.

DISASSEMBLY OF FINAL DRIVE:

- 1) Remove retaining ring, item 124, and pull end cover, item 120, out of final housing, item 100.
- 2) Discard O-ring, item 123, and inspect planet hub stopper, item 126, and sungear stopper, item 122, for excessive wear. Replace if less than .21 inch thick.
- 3) Remove final planet hub assembly from final housing, item 100.
- 4) Inspect three final planet gears, item 320, for damage or wear. If it is necessary to remove final planet gears, remove circlip, item 311, and press planet pin, item 310, out of planet hub, item 300. Inspect loose rollers, item 323, and two thrust washers, item 321, and replace if damaged.
- 5) Remove final sungear, item 340, from cable drum, item 500.

DISASSEMBLY OF PRIMARY DRIVE:

If primary drive requires service or repair, proceed as follows:

- 1) Turn winch over to sit flat on end of final housing, item 100. Remove four hex capscrews, item 555, with lockwashers, item 553, from each side of both tie bars, item 556, and take tie bars from the assembly.
- 2) Remove access plug, item 734, using a 1/2-13NC bolt (motor adaptor bolt, item 821, works nicely), from inside brake housing and discard O-ring, item 735.
- 3) Remove eight hex capscrews, item 537, along with lockwashers, item 541, from bearing flange, item 530, by rotating brake housing until access hole is over top of them.
- 4) Lift brake housing, together with bearing flange and primary planet hub assembly, out of cable drum, item 500, and discard O-ring, item 539.
- 5) Remove retaining ring, item 401, and remove primary planet hub assembly from inside internal gear, item 430.
- 6) Inspect three primary planet gears, item 420, for damage or wear. If it is necessary to remove primary planet gears, remove circlip, item 411, and press planet pin, item 410, out of planet hub, item 400. Inspect loose rollers, item 423, and two thrust washers, item 421, and replace if damaged.
- 7) Remove primary sungear, item 440, from center of connecting shaft, item 600.
- 8) Remove circlip, item 431, and internal gear, item 430, from connecting shaft spline.
- 9) Remove and inspect two thrust washers, item 433, and thrust bearing, item 435. Replace if cracked or otherwise damaged.
- 10) The connecting shaft, item 600, can now be pulled out of the brake housing. Remove and inspect two thrust washers, item 615, and thrust bearing, item 617. Replace if cracked or otherwise damaged.
- 11) Remove needle bearing, item 603, inspect and replace if damaged.
- 12) Remove and discard oil seal, item 607, and if present, backup washer, item 606, from inside of connecting shaft.

SERVICE INSTRUCTIONS CONTINUED

- 13) Remove and discard oil seal, item 711, and if present, backup washer, item 710, from bore of brake housing. Inspect two need bearings, item 605, and replace if necessary.
 - 14) To separate bearing flange, item 530, and brake housing, item 700, use a standard bearing puller or insert two heel bars in the slot between the bearing flange and the brake housing and pry brake housing out of ball bearing, item 533.
 - 15) Remove internal retaining ring, item 534, to remove ball bearing, item 533. Remove and discard oil seal, item 531.
 - 16) To separate final drive housing, item 100, and cable drum, item 500, first remove external circlip, item 513, off the end of the cable drum then insert two heel bars in the slot between the final drive housing and the cable drum and pry the cable drum out of ball bearing, item 103.
 - 17) Remove internal circlip, item 109, to remove ball bearing, item 103. Remove and discard oil seal, item 105.
- The PULLMASTER Model H18 has now been completely disassembled.

REASSEMBLY

Thoroughly clean all parts. Use only new, well-greased O-rings and oil seals. Unless otherwise specified, torque fasteners per BOLT TORQUE CHART at back of manual.

REASSEMBLY OF FINAL DRIVE:

Reassemble final drive end of winch as follows:

- 1) Press new, well-greased oil seal, item 105, into final housing, item 100.
- 2) Press ball bearing, item 103, into final housing and secure with circlip, item 109.
- 3) Press cable drum, item 500, into ball bearing, item 103, and secure with circlip, item 513.
- 4) Reassemble final planet hub assembly. Use grease to temporarily hold 22 loose rollers, item 323, in the bore of planet gear, item 320. Position thrust washers, item 321, on either side of planet gear and press planet pin, item 310, into final planet hub, item 300. Retain with circlip, item 311.
- 5) Insert final planet hub assembly into final housing, item 100. Ensure that planet hub spline is fully engaged with cable drum, item 500.
- 6) Install new, well-greased O-ring, item 123, into end cover, item 120. Verify that planet hub stopper, item 126, and sungear stopper, item 122, are installed into end cover.
- 7) Gently insert end cover into final housing, item 100, and fasten with retaining ring, item 124.
- 8) Temporarily remove breather relief valve, item 130, from end cover. Turn winch up on end with cable drum opening upwards.

REASSEMBLY OF PRIMARY DRIVE:

Reassemble primary drive as follows:

- 1) Press new, well-greased oil seal, item 531, into bearing flange, item 530. Press ball bearing, item 533, into bearing flange and secure with retaining ring, item 534.
- 2) Press bearing flange assembly onto brake housing, item 700, and install new, well-greased O-ring, item 539.
- 3) Press new, well-greased oil seal, item 711, into bore of brake housing, item 700.
- 4) Press new, well-greased oil seal, item 607, into bore of connecting shaft, item 600, followed by needle bearing, item 603.

SERVICE INSTRUCTIONS CONTINUED

- 5) Slide brake hub, item 720, onto connecting shaft and secure with circlip, item 721. Place thrust bearing, item 617, sandwiched between two thrust washers, item 615, against brake hub and slide connecting shaft into brake housing.
- 6) Place thrust bearing, item 435, sandwiched between two thrust washers, item 433, onto internal gear, item 430, and fasten internal gear onto connecting shaft using circlip, item 431.
- 7) Reassemble primary planet hub assembly. Use grease to temporarily hold 20 loose rollers, item 423, in the bore of the planet gear, item 420. Verify placement of sungear stopper, item 444. Position thrust washers, item 421, on either side of the planet gear and press planet pin, item 410, into final planet hub, item 400. Retain with circlip, item 411.
- 8) Insert primary sungear, item 440, between three planet gears and insert sungear shaft into connecting shaft, engaging planet gears with internal gear. Fasten with retaining ring, item 401.
- 9) Insert final sungear, item 340, into cable drum and engage three planet gears, item 320.
- 10) Lower brake housing assembly onto cable drum, while engaging spline of final sungear with primary planet hub, item 400. Line up mounting holes of bearing flange, item 530, with those in the cable drum.
- 11) Rotate brake housing to line up access hole and fasten bearing flange using six capscrews, item 537, and lockwashers, item 541.
- 12) Install new, well-greased O-ring, item 735, into access plug, item 734. Install access plug into access hole inside brake housing.
- 13) Fasten two tie bars, item 556, using 16 capscrews, item 555, and lockwashers, item 553.

REASSEMBLY OF BRAKE HOUSING ASSEMBLY:

Reassemble brake housing assembly as follows:

- 1) Install brake spacer, item 712, into brake housing.



DANGER

INCORRECT ASSEMBLY OF THE FRICTION PLATE AND DIVIDER PLATE STACK WILL REDUCE BRAKING CAPACITY AND ALLOW THE LOAD TO DROP, CAUSING PROPERTY DAMAGE, SEVERE INJURY OR DEATH. REASSEMBLE PER INSTRUCTIONS.

- 2) Starting and finishing with a divider plate, alternately install 13 divider plates, item 713, and 12 friction plates, item 715.
- 3) Liberally grease O-ring, item 751, and O-ring, 753, and install on brake piston, item 750.
- 4) Slide the brake piston into the brake housing with holes for the brake brings facing out of the brake housing assembly.
- 5) Install sprag clutch, item 723, and sprag clutch aligner, item 724, into the bore of connecting shaft, item 600.
- 6) Carefully slide motor drive shaft, item 730, into the connecting shaft until it engages the spline of primary sungear, item 440, and circlip, item 727, is tight against the sprag clutch aligner.

IMPORTANT: For proper brake function, verify that sprag clutch is installed correctly. When viewed from the motor end, the motor drive shaft of a clockwise hoisting winch must turn freely clockwise and lock in the counterclockwise direction.

SERVICE INSTRUCTIONS_{CONTINUED}

- 7) Install 14 brake springs, item 752, in brake piston. The brake piston has 16 holes and the two empty holes should be opposite each other.
- 8) Liberally grease three new O-rings, item 801, and install into the recesses on motor adaptor, item 800. Install new, well-greased O-ring, item 707, on flange of the motor adaptor.
- 9) Slide hydraulic motor assembly onto splined end of motor drive shaft, item 730, and line up pressure transfer holes of brake housing and motor adaptor. Install eight capscrews, item 821, and lockwashers, item 823. Tighten one turn at a time to evenly compress springs.

REASSEMBLY OF HYDRAULIC MOTOR:

If the hydraulic motor was disassembled, the following procedure should be followed for reassembly:

- 1) Clean all parts thoroughly before reassembly and apply grease liberally to all seals. Use only new seals (seal kit Part No. 23139) for hydraulic motor.
- 2) Install two new end seals, item 887, and two new side seals, item 891, into openings in thrust plate, item 885. Install new backup seal, item 897, over top of side and end seals with tabs facing towards thrust plate. Place thrust plate assembly onto motor adaptor, item 800, with backup seal against motor adaptor.
- 3) Install gear set, item 881, into bushings, item 875. Gear with internal splines engages with motor drive shaft, item 730.
- 4) Install well-greased gasket seal, item 869, on each side of gear housing, item 861. Slide gear housing, together with gasket seals, onto motor adaptor, item 800, lined up on two dowel pins, item 865. Tap on tight using a soft headed hammer.
- 5) Install other thrust plate, complete with seals, on top of gear set with backup seal facing upwards.
- 6) Install port end cover, item 870, together with two bushings, item 875, onto the gear housing, lined up on two dowel pins, item 865. Tap on tight using a soft headed hammer. Install and lightly torque four hex capscrews, item 951, and lockwashers, item 953, to approximately 50 ft-lb (70 Nm).
- 7) Plumb winch assembly to a hydraulic supply and torque motor capscrews according to the following procedure:
 - Ensure that circulation supply flow is being supplied to the brake housing.
 - Run the winch , with no load, in the hoisting direction at reduced speed (approximately 30% of maximum hydraulic volume).
 - With winch running, evenly tighten four capscrews, item 951, to 450 ft-lb (610 Nm).
 - Test motor operation by running winch at full speed in both directions.

IMPORTANT: Before operating the winch, add lubricating oil up to the level of the end cover oil fill port.



DANGER

LIFTING A LOAD WITH A NEWLY SERVICED WINCH COULD ENABLE AN INSTALLATION OR SERVICE PROBLEM TO GO UNDETECTED AND WILL ALLOW THE LOAD TO DROP CAUSING PROPERTY DAMAGE, SEVERE INJURY OR DEATH. TO ENSURE PROPER REINSTALLATION, REFER TO PROCEDURES AND TESTS DESCRIBED IN "INSTALLATION" AND "OPERATING INSTRUCTIONS".

RECOMMENDED MAINTENANCE

Winch gear train lubricating oil should be changed after the initial six months or 250 hours of operation, whichever comes first. Lubricating oil should then be changed every 12 months or 500 operating hours, whichever comes first.

Hydraulic system fluid should be changed at least once every 12 months.

For optimum performance over an extended period of time, the following preventive maintenance service should be done every 12 months or 500 operating hours (whichever comes first):

- 1) Disconnect all hydraulic hoses and remove the winch from its mounting.
- 2) Disassemble the winch as per instructions.
- 3) Discard and replace all O-rings and oil seals.
- 4) Clean all parts and inspect for wear and damage as per instructions. Replace worn or damaged parts as required.
- 5) Reassemble the winch as per instructions.
- 6) Follow INSTALLATION and OPERATING INSTRUCTIONS when returning winch to its mounting.

When ordering parts for the PULLMASTER Model H18 planetary winch, always quote the complete model and serial number of the unit.

MODEL NO. _____

SERIAL NO. _____

PULLMASTER WINCH CORPORATION reserves the right to change specifications and the design of PULLMASTER planetary winches at any time without prior notice and without incurring any obligations.

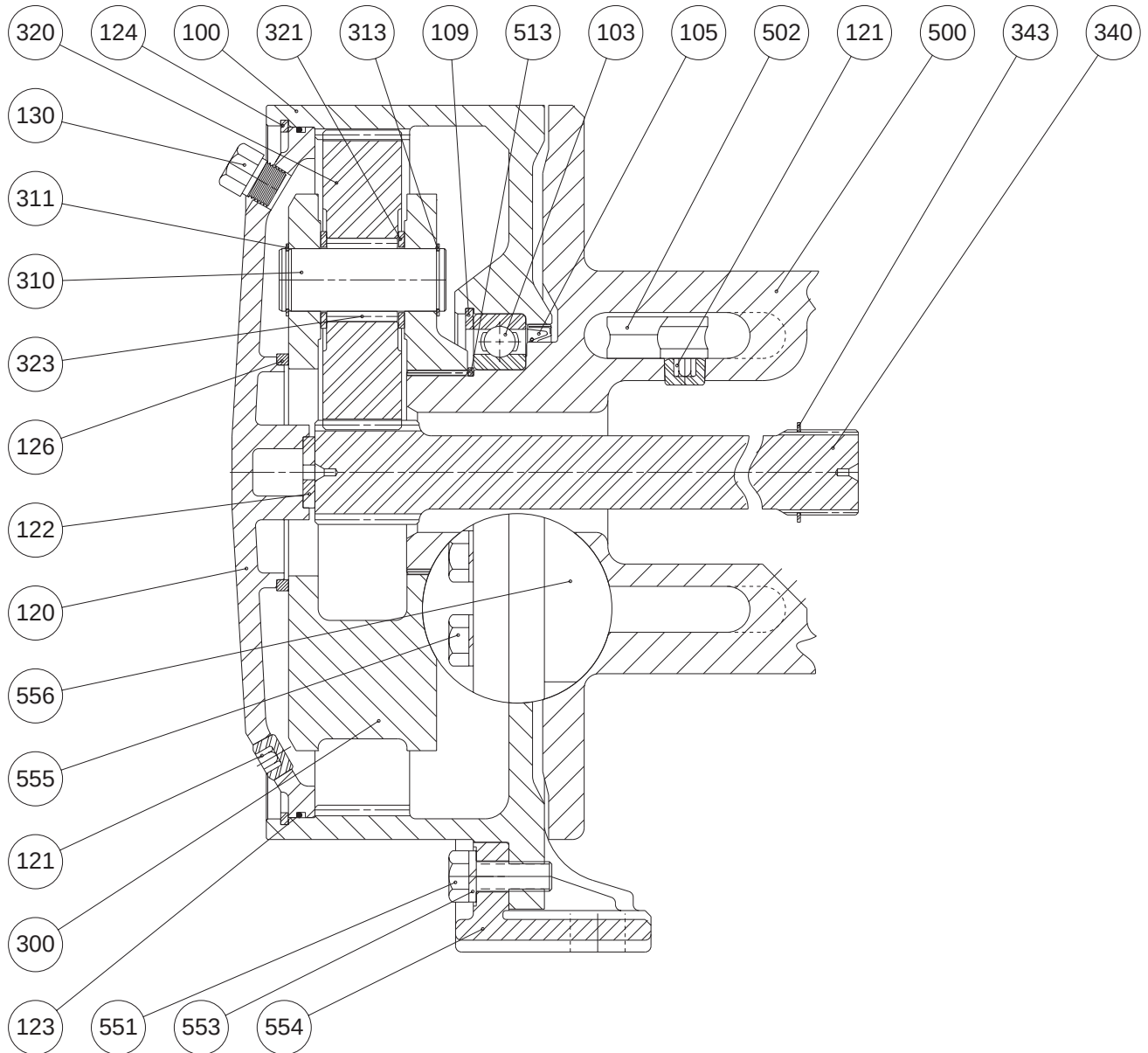
PARTS REFERENCE - FINAL DRIVE

ITEM NO.	QTY.	PART NO.	DESCRIPTION
100	1	*	FINAL HOUSING
103	1	25150	BALL BEARING #6022
105	1	25148	OIL SEAL
109	1	25153	CIRCLIP ROTOR CLIP HO-662
120	1	21968	END COVER
121	3	25032	PIPE PLUG 1/2 - 14 NPT
122	1	19036	SUNGEAR STOPPER
123	1	25488	O-RING -280 14" ID 1/8" CS
124	1	21923	RETAINING RING INT 5/32 X 1/4 X 15.5 OD
126	1	21180	PLANET HUB STOPPER
130	1	20458	BREATHER RELIEF ASSEMBLY 1/2 NPT
300	1	21925	FINAL PLANET HUB
310	3	21940	FINAL PLANET PIN
311	3	25960	CIRCLIP ROTOR CLIP SH-131
313	3	25960	CIRCLIP ROTOR CLIP SH-131
320	3	21937	PLANET GEAR
321	6	25965	THRUST WASHER TORRINGTON #TRD 2233
323	66	25308	LOOSE ROLLER 7/32 DIA X 1.50
340	1	*	FINAL SUNGEAR
343	1	25963	CIRCLIP ANDERTON #N1400 - 0181
500	1	*	CABLE DRUM
502	1	21960	CABLE ANCHOR 3/8" TO 3/4" WIRE
513	1	25489	CIRCLIP ANDERTON #N1400 - 0425
551	*	25139	CAPSCREW - HEX HEAD 5/8 - 11NC X 1.50 GRADE 5
553	*	25359	LOCKWASHER 5/8"
554	2	*	BASE PLATE
555	16	*	CAPSCREW - HEX HEAD 5/8 - 11NC GRADE 5
556	2	*	TIE BAR
* These parts and quantities vary according to drum code. Refer to APPENDIX B.			

Refer to PAGE 22 for winch seal kit and PAGE 28 for ASSEMBLY DRAWING.

FINAL DRIVE GROUP

G1043-A



Groups drawings may reference more parts than are actually present in a specific assembly. Parts that are referenced on the drawing but are not on the PARTS REFERENCE list should be ignored.

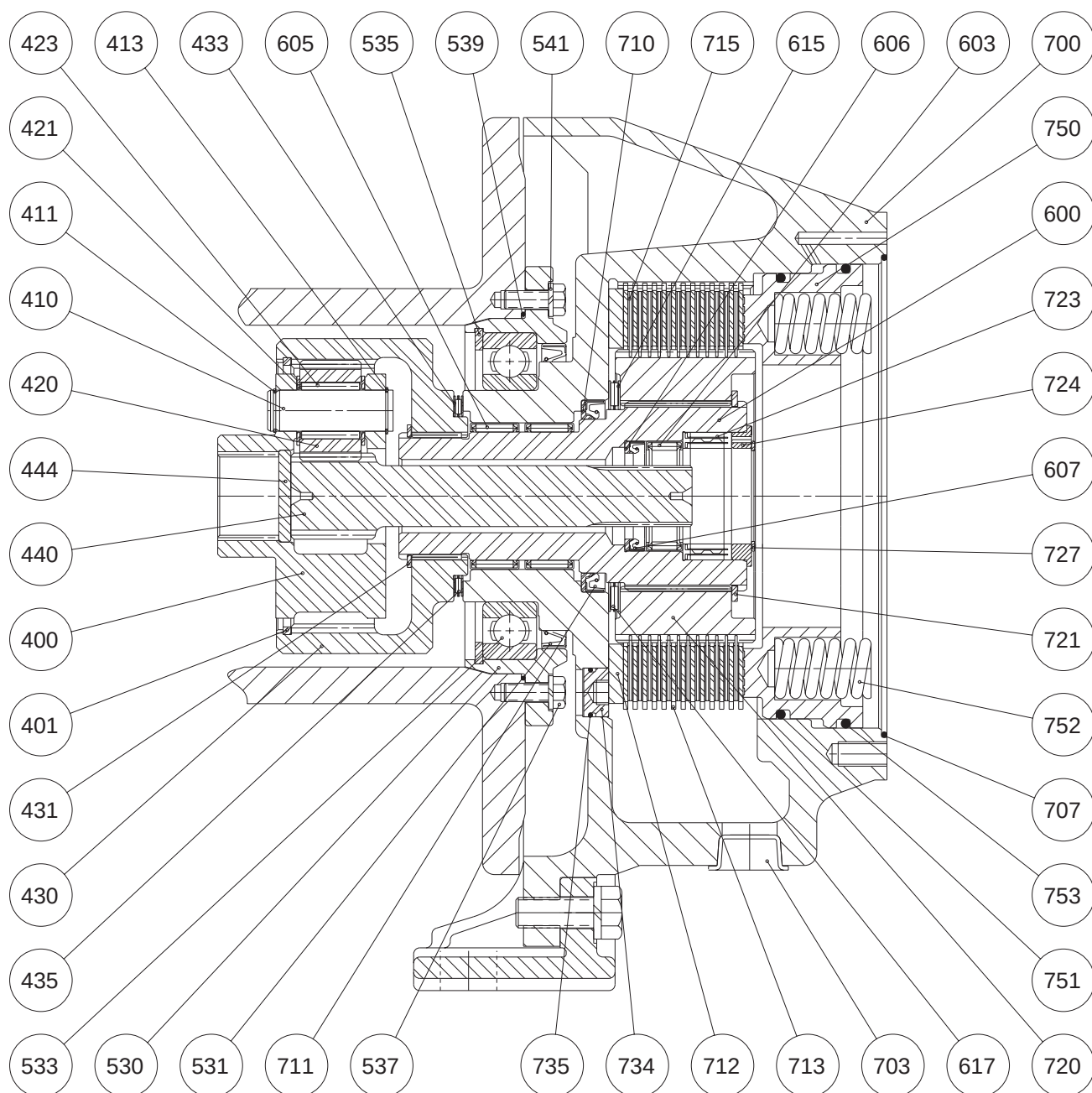
PARTS REFERENCE - BRAKE GROUP

ITEM NO.	QTY.	PART NO.	DESCRIPTION
400	1	21944	PLANET HUB
401	1	22093	RETAINING RING INT
410	3	21966	PLANET PIN
411	3	25961	CIRCLIP ROTOR CLIP C-81
413	3	25962	CIRCLIP ROTOR CLIP SH-81
420	3	21957	PLANET GEAR
421	6	25964	THRUST WASHER TORRINGTON #TRB 1423
423	60	25270	LOOSE ROLLER 5/32 X 1.25 TOR. #E151-Q
430	1	21943	INTERNAL GEAR
431	1	25971	CIRCLIP ROTOR CLIP SH-255
433	2	25176	THRUST WASHER TORRINGTON #TRA 5266
435	1	25177	THRUST BEARING TORRINGTON #NTA 5266
440	1	21963	PRIMARY SUNGEAR
444	1	21962	PRIMARY SUNGEAR STOPPER
530	1	21947	BEARING FLANGE
531	1	25148	OIL SEAL
533	1	25150	BALL BEARING #6022
535	1	25153	CIRCLIP ROTOR CLIP HO-662
537	8	25118	CAPSCREW - HEX HEAD 3/8 - 16NC X 1.25 GRADE 5
539	1	25966	O-RING -168 7-1/4" ID 3/32" CS
541	8	25037	LOCKWASHER 3/8"
600	1	21998	CONNECTING SHAFT
603	1	25361	NEEDLE BEARING TORRINGTON #B - 3012
605	2	25200	NEEDLE BEARING TORRINGTON #B - 4216
607	1	26009	** OIL SEAL
615	2	25365	THRUST WASHER INA #AS 90120
617	1	25364	THRUST BEARING INA # AXK 90120
700	1	*	BRAKE HOUSING
703	1	25347	PLASTIC CAPPLUG 1 - 11.5 NPT THR'D
707	1	25033	O-RING -271 9-1/4" ID 1/8" CS
711	1	25933	** OIL SEAL
712	1	21965	BRAKE SPACER
713	13	25953	DIVIDER PLATE
715	12	25952	FRICTION PLATE
720	1	21955	BRAKE HUB
721	1	25369	CIRCLIP ROTOR CLIP SH-387
723	1	25303	SPRAG CLUTCH BORG WARNER #140373 "B"
724	1	20421	SPRAG CLUTCH ALIGNER
727	1	25335	CIRCLIP ROTOR CLIP SH-196
734	1	21984	ACCESS PLUG
735	1	25967	O-RING -117 13/16" ID 3/32" CS
750	1	21936	PISTON
751	1	25968	O-RING -90 DURO -372 8-3/4" ID 3/16" CS
752	14	20413	BRAKE SPRING
753	1	25969	O-RING -90 DURO -373 9" ID 3/16" CS
		23135	WINCH SEAL KIT, CONTAINS ITEM: 105, 123, 531, 539, 607, 707, 711, 735, 751, 753 AND 801
			* These parts vary according to drum code. Refer to APPENDIX B.
			** Do not substitute. Available from PULLMASTER or Authorized Dealer only.

Refer to PAGE 28 for ASSEMBLY DRAWING.

BRAKE GROUP

G1044



Group drawings may reference more parts than are actually present in a specific assembly. Parts that are referenced on the drawing but are not on the PARTS REFERENCE list should be ignored.

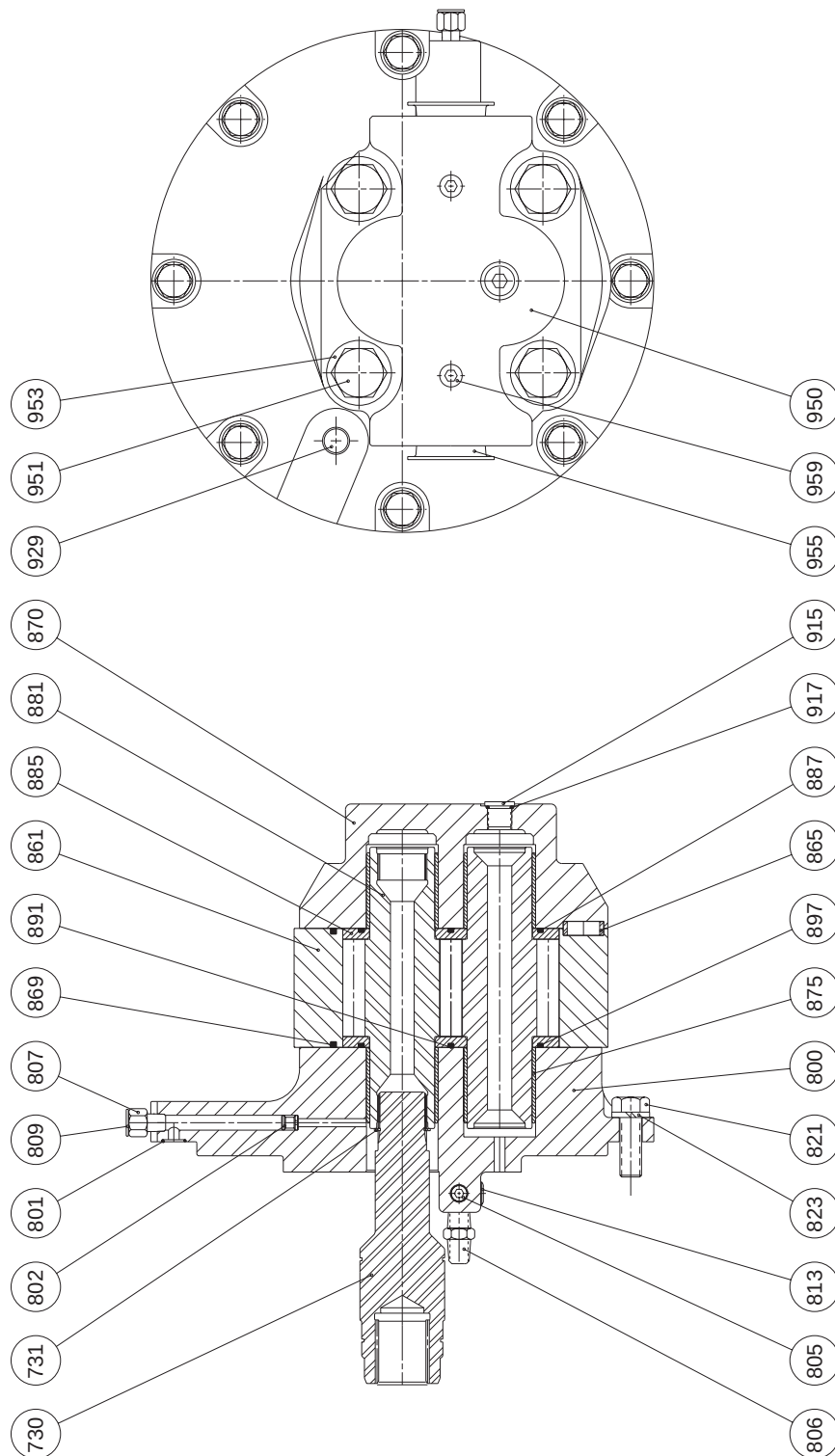
PARTS REFERENCE - MOTOR GROUP

ITEM NO.	QTY.	PART NO.	DESCRIPTION
730	1	21322	MOTOR DRIVE SHAFT
731	1	25288	CIRCLIP ROTOR CLIP C-112
800	1	21952	MOTOR ADAPTOR
801	3	25127	O-RING 90 DURO - 013 7/16"ID 1/16" CS
802	1	*	*
805	2	25040	PIPE PLUG 1/8 - 27 NPT
806	1	*	*
807	1	*	*
809	1	*	*
813	1	25031	PIPE PLUG 1/4 -18 NPT
821	8	25081	CAPSCREW - HEX HEAD 1/2 - 13NC X 1.50 GRADE 5
823	8	25014	LOCKWASHER 1/2"
861	1	25795	GEAR HOUSING -101 COMM. #322 8222 100
865	4	25779	DOWEL PIN - HOLLOW COMMERCIAL #391 2082 069
869	2	25780	SEAL - GASKET COMMERCIAL #391 2884 023
870	1	21993	PORT END COVER M365 (INCLUDES ITEMS: 875 (x 2), 955 (x 2) & 959 (x 2))
875	4	25782	BUSHING COMM. #391 0482 307
881	1	25794	GEAR SET -101 COMM. #322 2822 000
885	2	25774	THRUST PLATE COMM. #391 2185 060
887	4	25775	SEAL - END CHANNEL COMM. #391 2885 070
891	4	25776	SEAL - SIDE CHANNEL COMM. #391 2885 069
897	2	25787	SEAL - BACKUP COMM. #391 2885 071
929	1	*	*
950	1	*	SUB-ASSY MOTOR -101 COMM. M365-2.25
951	4	25793	CAPSCREW - HEX HEAD 3/4 -10NC X 6.0" GRADE 5
953	4	25784	WASHER COMM. #391 3782 114
955	2	25585	PLASTIC CAPLUG 1.625" -12
959	2	25031	PIPE PLUG 1/4 - 18 NPT
		23139	MOTOR SEAL KIT, CONSISTS OF ITEMS: 869, 887, 891 AND 897
			NOTE: ITEM 950 MOTOR SUB-ASSY, CONSISTS OF ITEMS: 800, 802, 805, 806, 807, 809, 813, 861, 865, 869, 870, 875, 881, 885, 887, 891, 897, 929, 951, 953, 955 AND 959
			* These part numbers and descriptions vary according to brake code. Refer to APPENDIX C.

Refer to PAGE 22 for winch seal kit and PAGE 28 for ASSEMBLY DRAWING.

MOTOR GROUP

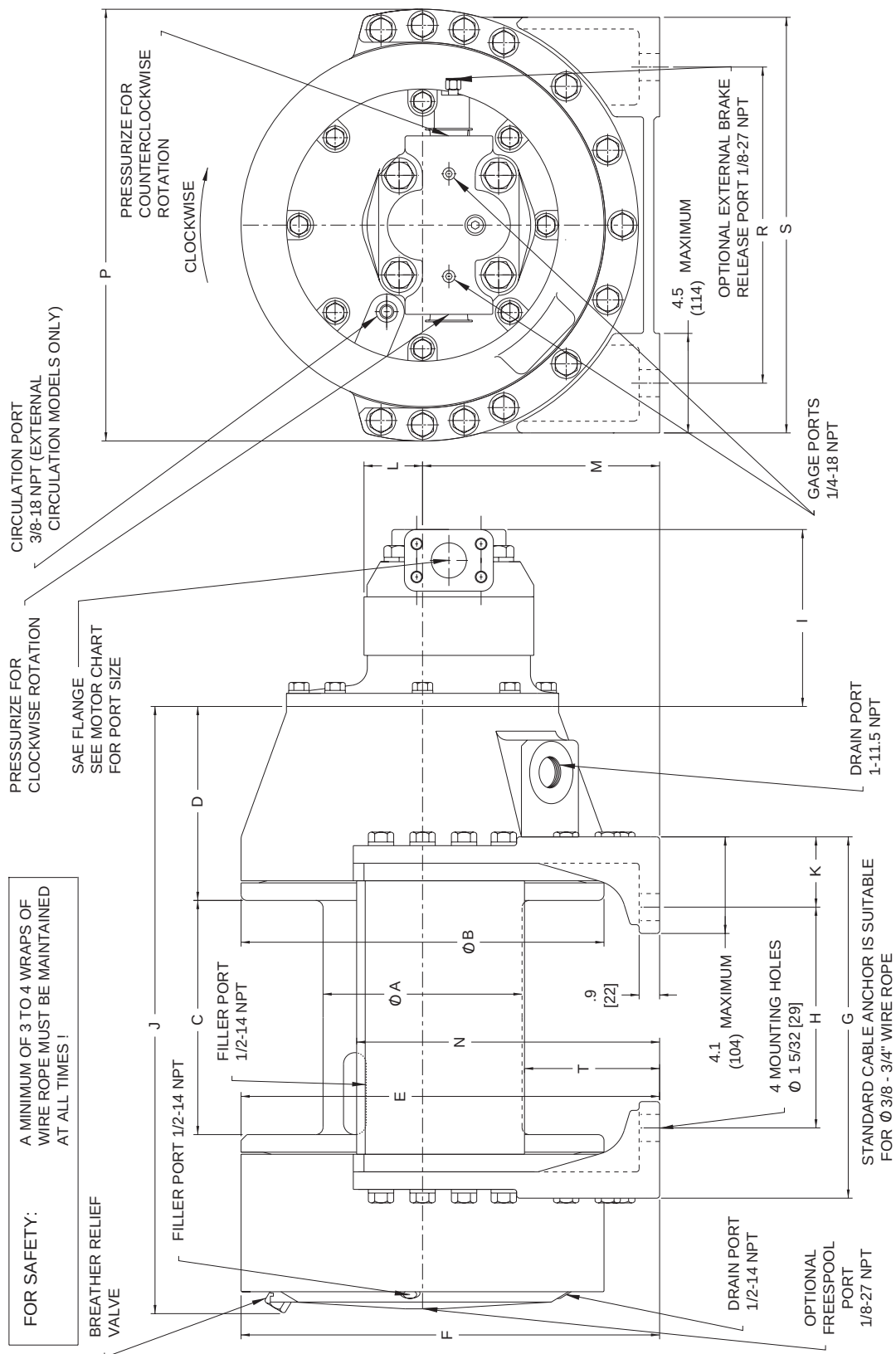
G1017



Group drawings may reference more parts than are actually present in a specific assembly. Parts that are referenced on the drawing but are not on the PARTS REFERENCE list should be ignored.

INSTALLATION DIMENSIONS

11068



INSTALLATION DIMENSIONS

I1023-2-F

**Dimensions in inches
(Dimensions in millimeters)**

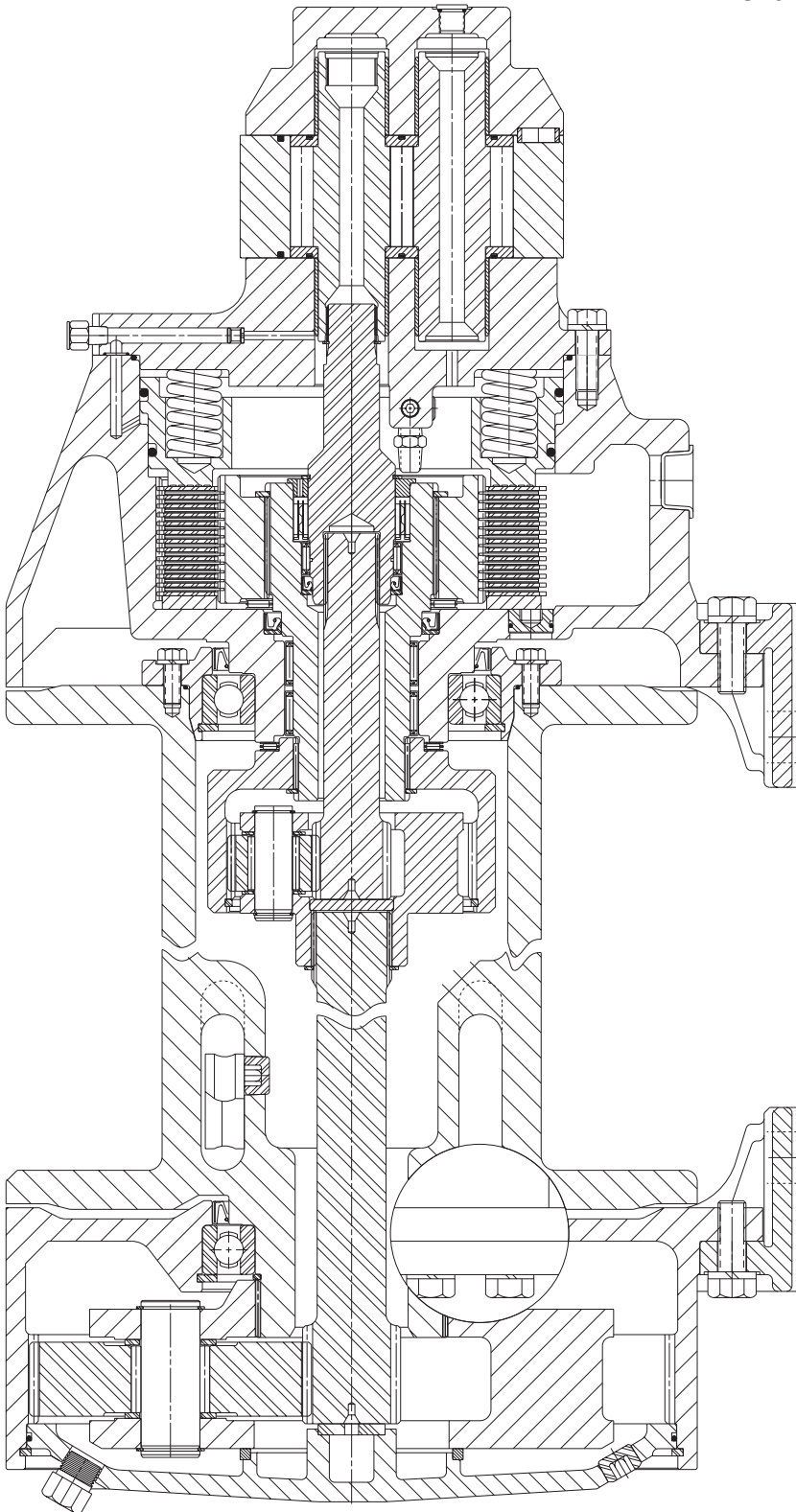
DRUM CODE	A	B	C	D	E	F	G	H	J	K	M	N	P	R	S	T
-1	8.5 (216)	15.5 (394)	10.0 (254)	8.3 (210)	17.9 (454)	17.9 (454)	15.4 (392)	9.430 (239.52)	25.9 (659)	3.0 (76)	10.13 (257.2)	12.9 (329)	18.4 (468)	13.500 (342.90)	17.8 (451)	5.8 (147)
-2	13.0 (330)	20.0 (508)	16.0 (406)	8.4 (214)	20.8 (527)	18.5 (470)	22.0 (559)	18.500 (469.90)	32.2 (817)	1.8 (44)	10.75 (273.1)	13.5 (342)	23.3 (591)	17.250 (438.15)	21.6 (546)	6.3 (159)
-3	8.5 (216)	20.0 (508)	16.0 (406)	8.4 (214)	20.8 (527)	18.5 (470)	22.0 (559)	18.500 (469.90)	32.2 (817)	1.8 (44)	10.75 (273.1)	13.5 (342)	23.3 (591)	17.250 (438.15)	21.6 (546)	6.3 (159)
-4	8.5 (216)	28.0 (711)	21.3 (540)	8.8 (225)	28.8 (730)	22.5 (572)	28.1 (714)	24.187 (614.35)	38.3 (977)	1.9 (49)	14.75 (375)	16.0 (405)	31.3 (795)	20.500 (520.70)	25.0 (635)	8.8 (223)
-6	10.0 (254)	16.0 (406)	16.0 (406)	8.4 (214)	18.8 (478)	18.5 (470)	22.0 (559)	18.500 (469.9)	32.2 (817)	1.8 (44)	10.75 (273.1)	13.5 (342)	23.3 (591)	17.250 (438.15)	21.6 (546)	6.3 (159)

**Dimensions in inches
(Dimensions in millimeters)**

HYDRAULIC MOTORS				
COMMERCIAL M365 GEAR MOTORS				
MOTOR CODE	GEAR WIDTH	MOTOR PORT SIZE SAE 4 BOLT FLANGE	I	L
-042	2.50 (63.5)	1.50 inch Code 61	8.1 (205)	2.5 (64)
-101	2.25 (57.2)		7.8 (198)	2.5 (64)
-102	2.00 (50.8)		7.6 (192)	2.5 (64)
-128	1.75 (44.5)		7.3 (186)	2.5 (64)
-161	1.00 (25.4)		6.6 (167)	2.5 (64)
-163	1.25 (31.2)		6.9 (173)	2.5 (64)

ASSEMBLY DRAWING

G1017 & G1043-A & G1044



APPENDIX A

DRUM	CABLE DRUM SIZES INCHES (MILLIMETERS)			WIRE ROPE STORAGE FEET (METERS)			LINE PULL AT MAXIMUM PRESSURE - HOISTING* POUNDS (KILONEWTONS)		HOISTING LINE SPEED AT MAXIMUM VOLUME* FEET/MINUTE (METERS/MINUTE)		MAXIMUM ALLOWABLE LINE PULL - LOWERING* POUNDS (KILONEWTONS)		LOWERING LINE AT MAXIMUM VOLUME* FEET/MINUTE (METERS/MINUTE)		LUBRICATING OIL VOLUME REQUIRED U.S. GALLONS (LITERS)
	BARREL	FLANGE	LENGTH	7/8 in	3/4 in	5/8 in	BARE DRUM	FULL DRUM	BARE DRUM	FULL DRUM	BARE DRUM	FULL DRUM	BARE DRUM	FULL DRUM	
-1	8.5 (216)	15.5 (394)	10.0 (254)	113 (34)	170 (52)	239 (73)	18000 (80.1)	11288 (50.2)	122 (37)	195 (59)	3913 (17.4)	2506 (11.1)	563 (171)	897 (273)	1.3 (5)
- 2	13.0 (330)	20.0 (508)	16.0 (406)	251 (77)	375 (114)	528 (161)	12109 (53.9)	8649 (38.5)	182 (55)	255 (78)	2632 (11.7)	1910 (8.5)	836 (255)	1171 (357)	3.7 (14)
- 3	8.5 (216)	20.0 (508)	16.0 (406)	372 (113)	500 (152)	747 (228)	18000 (80.1)	8649 (38.5)	122 (37)	255 (78)	3913 (17.4)	1973 (8.8)	563 (171)	1171 (357)	2.1 (8)
- 4	8.5 (216)	28.0 (711)	21.3 (541)	1068 (326)	1479 (451)	2130 (649)	18000 (80.1)	6110 (27.2)	122 (37)	360 (110)	3913 (17.4)	1385 (6.2)	563 (171)	1657 (505)	2.9 (11)

* Performance specifications are based on standard hydraulic motor with 3/4 inch rope.

APPENDIX B

DRUM CODE

ITEM NO.	PART DESCRIPTION	- 1		- 2		- 3		- 4	
		PART NUMBER	QTY.	PART NUMBER	QTY.	PART NUMBER	QTY.	PART NUMBER	QTY.
100	FINAL HOUSING	21916	1	22047	1	22047	1	22047	1
340	FINAL SUNGEAR	21964	1	22050	1	22050	1	22212	1
500	CABLE DRUM	21953	1	22036	1	22398	1	22194	1
551	CAPSCREW 5/8 - 11NC x 1.5	25139	10	25139	26	25139	26	25139	26
553	5/8 LOCKWASHER	25359	26	25359	42	25359	42	25359	42
554	BASE PLATE	21926	2	22046	2	22046	2	22195	2
555	CAPSCREW 5/8 - 11NC x 2.5	25797	16	N/A	-	N/A	-	N/A	-
555	CAPSCREW 5/8 - 11NC x 2.0	N/A	-	25419	16	25419	16	25419	16
556	TIE BAR	21954	2	22045	2	22045	2	22196	2
700	BRAKE HOUSING	21950	1	22048	1	22048	1	22048	1

APPENDIX C

BRAKE CODE

ITEM NO.	PART DESCRIPTION	- 3	- 4	- 5	- 6	- 7	- 8	- 9	- 10
		PART NUMBERS							
802	SHUTTLE	N/A	20849	20849	N/A	N/A	20849	20849	N/A
806	CIRCULATION VALVE	20456	20456	20456	20456	N/A	N/A	N/A	N/A
806	1/4-18 NPT PIPE PLUG	N/A	N/A	N/A	N/A	25031	25031	25031	25031
807	1/8-27 NPT PIPE PLUG	25040	N/A	N/A	25040	25040	N/A	N/A	25040
807	1/8-27 NPT PIPE ADAPTOR	N/A	25622	25622	N/A	N/A	25622	25622	N/A
809	1/8 NPT CAPPLUG	N/A	25374	25374	N/A	N/A	25374	25374	N/A
929	3/8 NPT CAPPLUG	N/A	N/A	N/A	N/A	26276	26276	26276	26276
929	3/8-18 NPT PIPE PLUG	25085	25085	25085	25085	N/A	N/A	N/A	N/A
950	MOTOR SUB-ASSY	22032	22290	22291	22033	22034	22305	22306	22035

BOLT TORQUE CHART

BOLT DIAMETER Inches	TORQUE lb-ft	TORQUE Nm
1/4	9	12
5/16	18	24
3/8	32	43
7/16	50	68
1/2	75	102
9/16	110	149
5/8	150	203
3/4	265	359
7/8	420	569
1	640	868
1 1/8	800	1085
1 1/4	1000	1356
1 3/8	1200	1627
1 1/2	1500	2034

NOTE: Unless otherwise specified, torque bolts per above chart.



BHW

Bushey Hall Winchmaster

www.bhwgroup.com



LARGE DRUM CAPACITIES

DOW-LOK Clutch

Ramsey's unique DOW-LOK Clutch is incorporated as standard on this model providing the user with easy engagement and disengagement of the freespool clutch.

Additionally the clutch mechanism is driven positively into the fully engaged position as the winch is powered, thus ensuring full safe clutch engagement.

ADDITIONAL EQUIPMENT & SERVICES

- Electric / pneumatic control valve with manual lever and including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection also includes dump valve with emergency stop button ensuring compliance with EU machinery directive.
- Wire Rope – up to 60m x 16mm dia. (1960N/mm² grade) fully galvanised flexible, crush resistant with heavy duty safety hook.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap.
- Radio control unit to give flexibility in operating the winch up to 40m distance.
- PTO and pump.
- Diesel or petrol donkey engine power packs.
- Snatch blocks.
- Full or partial fitting can be provided, including load testing and certification.

RAMSEY H-89

Extra Heavy Duty 9 Tonne Hydraulic Winch with DOW-LOK Clutch

Heavy Recovery or Plant Moving Rigid Vehicles, Semi-Trailers

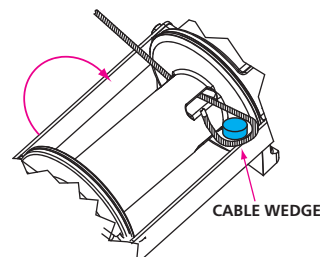
Designed for use on Heavy Recovery Vehicles, 6 & 8 Wheel Rigid Plant Vehicles and Semi Trailers.

The Ramsey H-89 has been specifically designed for heavy commercial recovery vehicles such as underlifts and plant moving vehicles loading in excess of 10 tonne rolling loads. It provides the fine control necessary for commercial recovery or winching on to plant vehicles heavy and / or large items of plant. The gearing and castings are tough enabling the shock loading associated with this type of work to be taken without causing damage.

FEATURES INCLUDE

- **9078kgf line pull**
Rated line pull of 89kN
- **EN14492-1 compliant**
- **Heavy duty worm drive**
Built to take shock loading
- **Hydraulic motor and mounting angles**
Supplied with the winch
- **Wedge pocket rope anchor on drum**
Major safety benefit - prevents rope release from drum fixing
- **Excellent rope storage**
Up to a maximum 60m x 16mm (1960N/mm² grade) wire rope, 6 x 36 wire core construction
- **Fairlead roller guides**
Heavy duty with greaseways
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs. Factory winch installation available

SECURE WIRE ROPE ANCHORAGE



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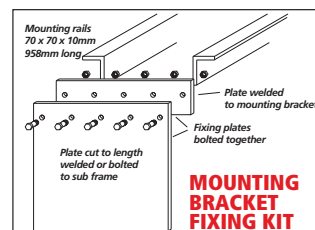
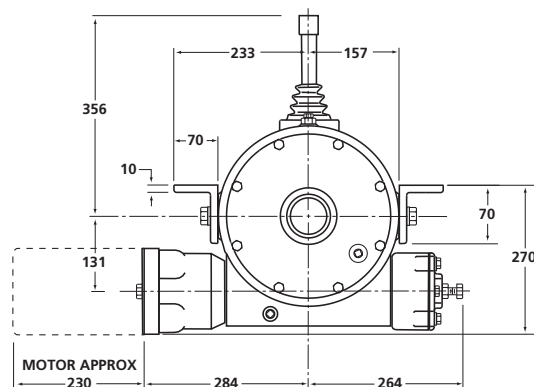
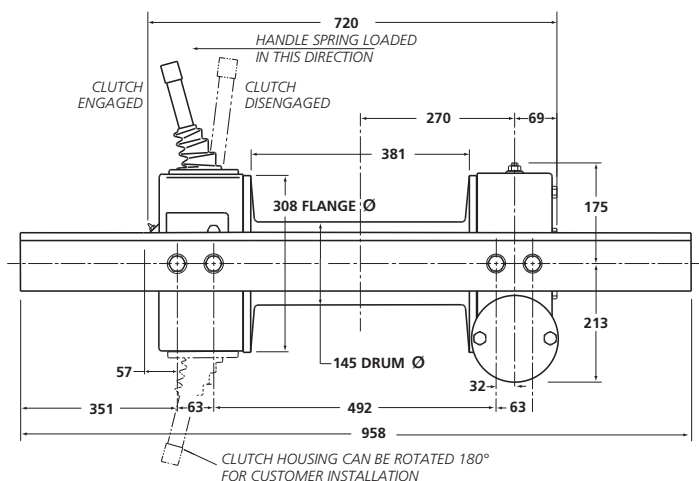
Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050 Fax: +44 (0)20 8207 5308

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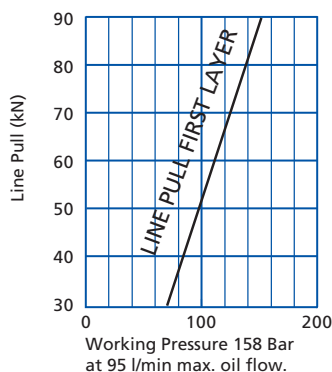
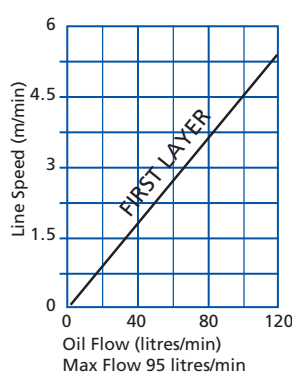
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CERT. No. 1769



HYDRAULIC PERFORMANCE



H-89 Line speed examples

		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer	kN kgf	89 9078	74 7548	63 6426
H-800 Rope Capacity Cumulative by Layer (16mm Dia. Wire Rope)	m	10	23	38
*Line Speed at 95 l/min	m/min	4	5	6

* Based on recommended 16mm wire rope, 1960N/mm² grade and 244cc / rev. motor.

INSTALLATION

The winch is supplied complete with the mounting angles as illustrated. These must be cut to length to suit the installation and the ends bridged with 10mm steel plates. These plates are then bolted through the securing framework on the vehicle. This method of installation ensures the winch can be removed for maintenance purposes if required. A fitting kit including the end plates and longitudinal chassis mounting plates are available as an optional extra see diagram above right.

SPECIFICATIONS ON H-89

Rated Line Pull:	89kN (9078kgf). EN 14492-1 compliant
Hydraulic Requirements:	Operating pressure approximately 158 bar Maximum oil flow 95 lt/min
Line Speed:	4m/min on first layer, at 95 l/min for optimum oil flow
Wire rope:	16mm diameter. Maximum length = 60m. (1960N/mm ² grade. 6 x 36 wire core construction recommended)
Weight:	185kg
Gear Reduction:	40:1
Winch Construction:	Aluminium cast housings with steel drum
Drum:	145mm dia. x 381mm length with wedge pocket rope anchor. Flange diameter 308mm
Braking:	Worm and Wheel gear reduction with additional Worm Brake (Reversible for clockwise or anti-clockwise drum rotation)
Freespooling:	Incorporates unique Dow-Lok clutch. Provides easy engagement and disengagement for the user and drives to full engagement when winch is powered in under load.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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CERT. No. 1769



LARGE DRUM CAPACITY



RAMSEY HDP34.9

3.56 Tonne Planetary Hydraulic Winch

Car and Commercial Recovery
Ideal for Slide Bed and Spec Lift vehicles

This fast, powerful and reliable machine offers the latest in single-stage planetary gear design for quiet reliable operation and is designed for either foot or side mount.

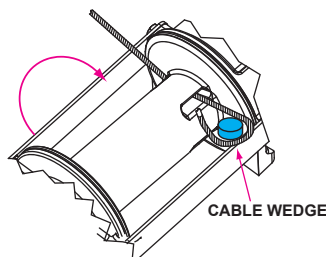
Available in short or long drum options.

Fully compliant with BS EN 14492-1 regulations.

ADDITIONAL EQUIPMENT & SERVICES

- Air shift freespool clutch with remote activation and positive engagement indicator light.
- Radio control system to give flexibility in operating the winch up to 40m distance.
- Wire Rope 10mm diameter 1960N/mm² grade. 6 x 36 wire core construction for maximum flexibility.
- Lengths: 23m (standard drum) 30m (long drum)
- Electric / pneumatic control valve with manual lever and including 7m wanderlead control, heavy duty 16A socket, electrical control system with all wiring in Armaflex protection also includes dump valve with emergency stop button ensuring compliance with EU machinery directives.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap, PTO and pump.
- Fitting service can be provided, including load testing and certification.

SECURE WIRE ROPE ANCHORAGE



FEATURES INCLUDE

- **3560kgf line pull**
Rated line pull of 34.9kN
- **BS EN 14492-1 compliant**
- **Single stage planetary gearing**
Ideally suited to slidebed and spec lift applications
- **Wedge pocket rope anchor on drum**
Major safety benefit - prevents rope release from drum fixing
- **Fast recovery speeds** Up to 15m per minute
- **Short drum and long drum options**
165mm or 248mm lengths
- **Large 100mm diameter drum(s) with deep flanges**
Extends rope life and assists wrapping.
Flange dia. 210mm
- **Excellent rope storage**
Up to 40m capacity (see drum options)
- **Heavy duty roller guide assembly**
With greaseways and large diameter rollers
- **Spring loaded clutch**
Easy to use
- **Braking system**
Spring applied brake and motor counterbalance valve supplied as standard to provide 100% braking efficiency
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs

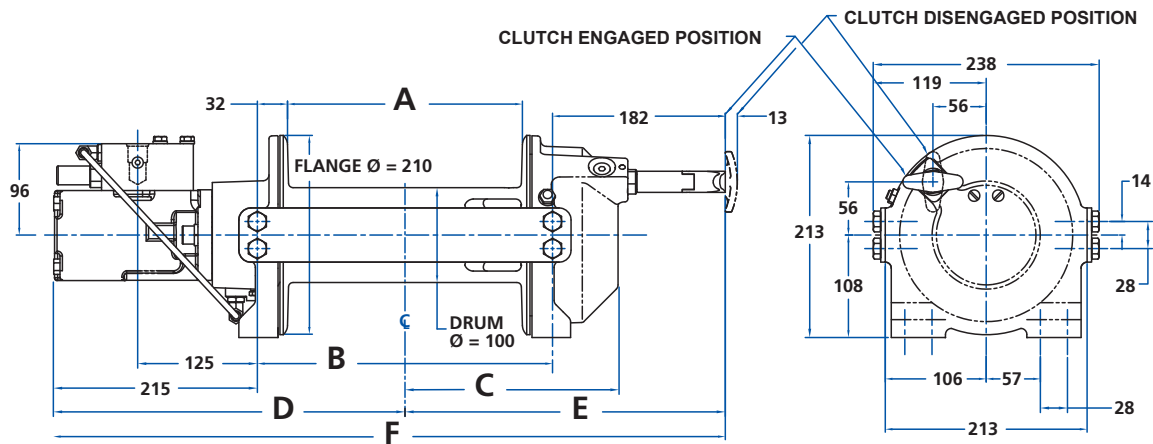
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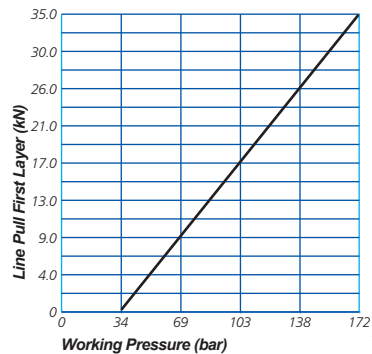
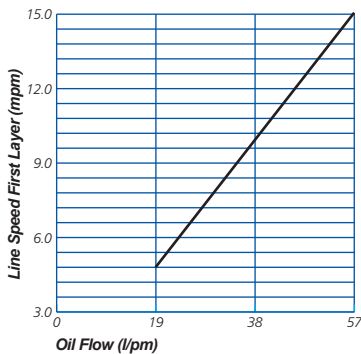
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DIMENSIONS [mm] SHORT & LONG DRUM OPTIONS						
	A	B	C	D	E	F
HDP34.9 (SHORT DRUM)	165	229	184	330	296	626
HDP34.9 (LONG DRUM)	248	311	225	371	337	708

HYDRAULIC PERFORMANCE



LINE PULL AND LINE SPEED PERFORMANCE

PERFORMANCE

		LAYER (LONG DRUM)			
		1	2	3	4
Maximum Rated Line Pull by Layer	kN kgf	34.9 3560	29.4 3000	25.4 2600	22.3 2270
HDP34.9 Rope Capacity Cumulative by Layer (10mm Dia. Wire Rope)	m	7	16	25	38
*Line Speed at 58 l/min	m/min	15	18	20	23

* Based on recommended 10mm wire rope, 1960N grade and 254cc / rev. motor.

SPECIFICATIONS

Rated Line Pull:	34.9kN (3560kgf). BS EN14492-1 compliant.
Line Speed:	15m/min at 58l/min on bare drum.
Wire Rope:	10mm diameter (1960N/mm ² grade, 6 x 36 wire core construction - recommended). Lengths: 23m (standard drum) 40m (long drum).
Weight:	Weight of machine: 38kg. With roller guides and rope: 44kg (short drum) 47kg (long drum).
Gear Reduction:	5.1:1
Gear Type:	Single stage planetary.
Winch Construction:	Die cast aluminium end housings with steel drum
Braking:	Spring applied hydraulic release disc brake and counterbalance valve providing full 100% braking Low speed, high torque.
Motor:	100mm diameter x 248mm with wedge pocket rope anchor.
Drum:	Clockwise, or counter clockwise rotation as required.
Drum Rotation:	Heavy duty commercial type with large diameter rollers and greaseways.
Roller Guides:	Spring loaded lever.
Freespooling:	Option: Air activated clutch using remote switch with engagement indicator light.

NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.



LARGE DRUM CAPACITY



ADDITIONAL EQUIPMENT & SERVICES

- Electric / pneumatic control valve with manual lever and including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection also includes dump valve with emergency stop button ensuring compliance with EU machinery directive.
- Wire Rope – up to 50m x 12mm dia. (1960N/mm² grade) fully galvanised flexible, crush resistant with heavy duty safety hook.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap.
- Radio control unit to give flexibility in operating the winch up to 40m distance.
- PTO and pump.
- Diesel or petrol donkey engine power packs.
- Snatch blocks.
- Full or partial fitting can be provided, including load testing and certification

RAMSEY BH550 or H49.8 5 Tonne Hydraulic Winch

Heavy Plant Moving & Recovery, Rigid Vehicles, Semi-Trailers

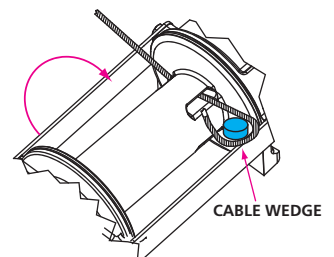
The Ramsey BH550 / H49.8 has set itself apart from the competition by becoming the most popular heavy duty winch with all major plant hire companies.

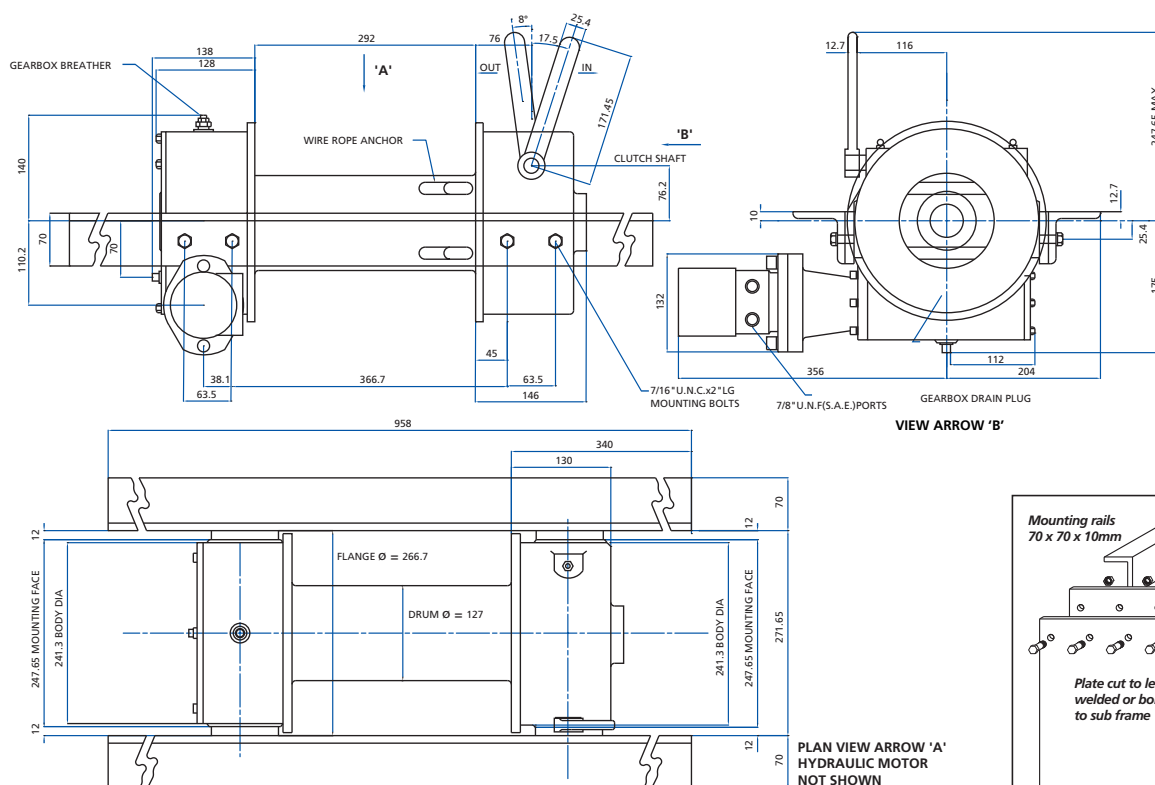
It can be mounted partially into or above floor level and has the ability to withstand sudden shock loading - often associated with this type of work. Featuring a large diameter drum with deep flanges, this robust machine requires very little maintenance. Fully compliant with EN 14492-1 regulations.

FEATURES INCLUDE

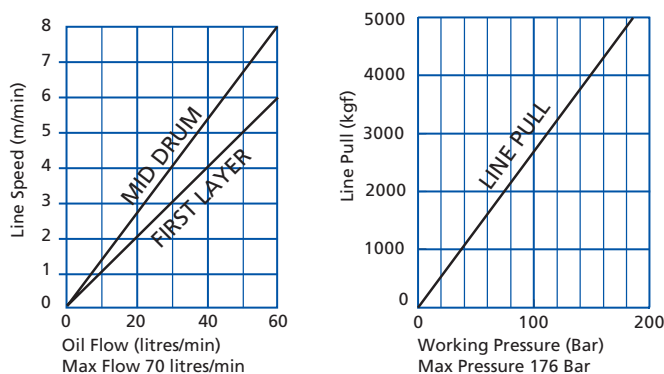
- **5080kgf line pull**
Rated line pull of 49.8kN
- **EN 14492-1 compliant**
- **Heavy duty worm drive**
Built to take shock loading
- **Hydraulic motor and mounting angles**
Supplied with the winch
- **Wedge pocket rope anchor on drum**
Major safety benefit - prevents rope release from drum fixing
- **Excellent rope storage**
Up to a maximum 50m x 12mm (1960N/mm² grade) rope, 6 x 36 wire core construction for maximum flexibility
- **Fairlead roller guides**
Heavy duty with greaseways
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs. Factory winch installation available

SECURE WIRE ROPE ANCHORAGE





HYDRAULIC PERFORMANCE



BH550 is supplied with mounting angles.
A mounting bracket fixing kit is also available as an optional extra.

		LAYER			
		1	2	3	4
Maximum Rated Line Pull by Layer	kN	49.1	42.2	37	32.3
	kgf	5000	4300	3770	3300
BH550 Rope Capacity Cumulative by Layer (12mm Dia. Wire Rope)	m	7.2	17.8	29.7	42.7
*Line Speed at 50 l/min	m/min	5	5.7	6.5	7.3

* Based on recommended 12mm wire rope, 1960N/mm² grade and 102cc / rev. motor.

INSTALLATION

The winch is supplied complete with the mounting angles as illustrated. These must be cut to length to suit the installation and the ends bridged with 10mm steel plates. These plates are then bolted through the securing framework on the vehicle. This method of installation ensures the winch can be removed for maintenance purposes if required. A fitting kit including the end plates and longitudinal chassis mounting plates are available as an optional extra see diagram above right.

SPECIFICATIONS

Rated Line Pull:	49.8 kN (5080kgf). EN 14492-1 compliant
Line Speed:	5 m/min at 50 lt/min. on 1st layer, up to 7.3 m/min. on 4th layer
Wire Rope:	12mm diameter x 50m length (1960N/mm ² grade. 6 x 36 wire core construction recommended)
Weight:	Weight of winch only: 68kg. Including roller guides, mounting bracket and wire rope: 100kg
Gear Reduction:	40:1
Gear Type:	Worm with phosphor bronze heavy duty wheel providing self braking, running in oil bath
Winch Construction:	Aluminium cast housings with steel drum
Motor:	Hydraulic – can be provided to match pressure and flow available to give best performance characteristics
Drum:	127mm dia. x 292mm length with wedge pocket rope anchor. Flange diameter 267mm
Roller Guides:	Extra heavy duty with greaseways

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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CERT. No. 1769

BH15/10.08.12



DEVELOPED FOR TOUGH ENVIRONMENTS

Ramsey H246 and HY246 winches have been developed for use in a tough machinery moving environment.

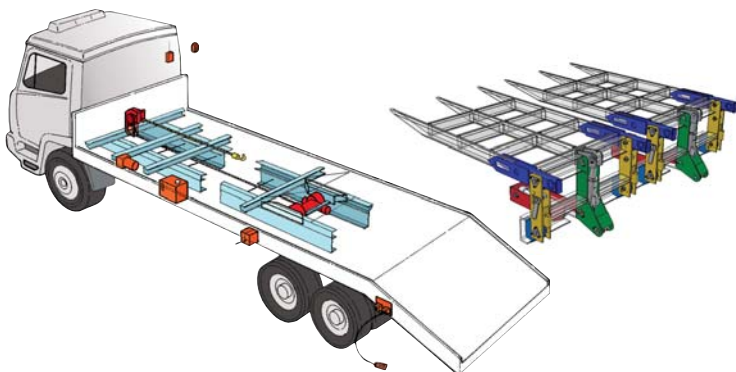
In the 3.6 tonne capacity range there is no equal - even in applications where plant is driven to load or unload - and the winch is used as a steady line.

Other applications are wide and varied - and include recovery vehicles where the application demands heavy duty, such as salvage moving vehicles and underlifts - the self braking feature ensures high levels of safety.

The H246 or HY246 are ideally suited for underfloor mounting. See also BH550 - (5 tonne) and H89 - (9 tonne) hydraulic winches.

OPTIONS

- Electric control valve with wanderlead
- **FM•CONNECT** radio control unit
- Hydraulic tank
- PTO pump
- Diesel or petrol donkey engine power packs
- Accessories and consumables including snatch blocks, wire ropes, roller guides etc.



RAMSEY H246/HY246 3.6 Tonne Hydraulic Winches

**Heavy Plant Moving & Recovery,
 Rigid Vehicles, Semi-Trailers**

H246 or HY246 winches can be mounted partially into or above floor level and are built to handle heavy machinery moving - often associated with plant hire work.

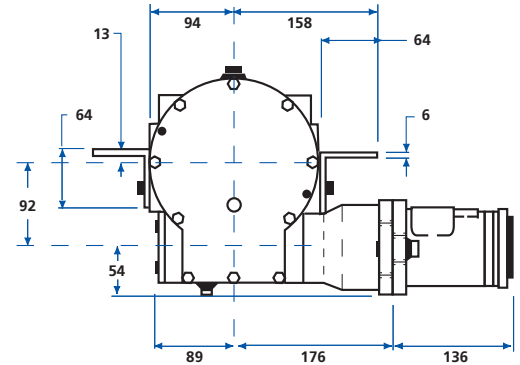
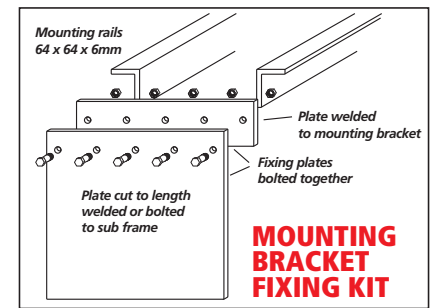
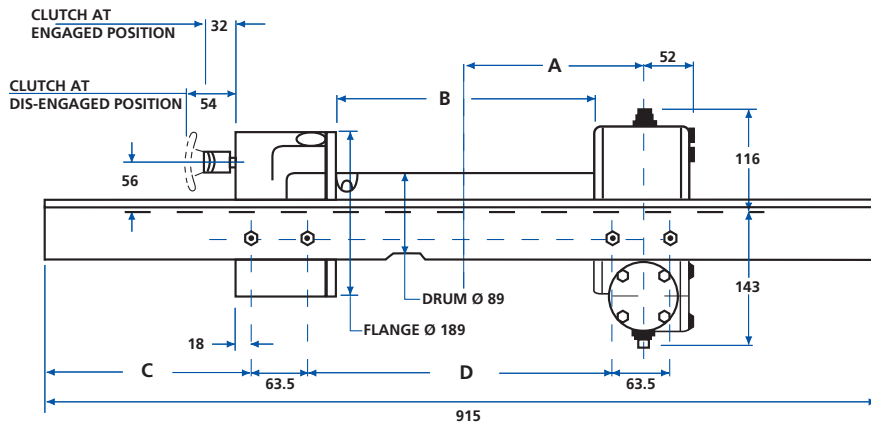
Robust machines with the option of two drum lengths, requiring very little maintenance.

FEATURES INCLUDE

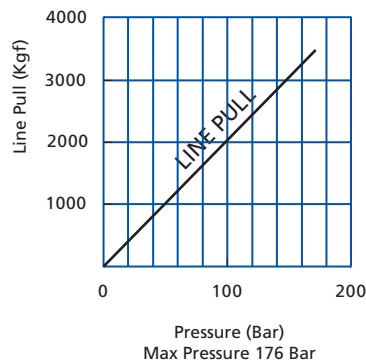
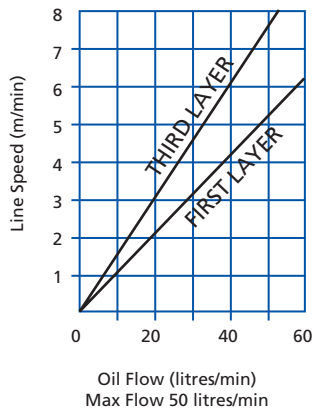
- **3600kgf line pull**
 Rated line pull of 31.5kN
- **EN 14492-1 compliant**
- **Heavy duty worm and wheel drive**
 Built to take shock loading
- **Can be fitted into vehicle floor – less vulnerable**
- **Hydraulic motor and mounting angles**
 Supplied with the winch
- **Long (H246) or short (HY246) drum options**
 See specifications on page 2.
- **Excellent wire rope storage**
 Long drum 30m x 10mm or 18m x 10mm. Based on recommended 1960N/mm² grade, 6 x 36 wire core construction for maximum flexibility
- **'T' handle free spool clutch**
- **Optional fairlead roller guides**
 With heavy duty with greaseways
- **12 months warranty**
 On parts and service (excluding wire rope)
- **Fitting service**
 Full or partial fitting can be provided, including load testing and certification
- **After sales service**
 Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs. Spares carried as stock by the BHW Group.

Also available from BHW Group - **PLANT•MASTER** underfloor winching systems and **RAMP•ASSIST** and **POWER•WEDGE** hydraulically powered beavertail systems.

WINCH DIMENSIONS



HYDRAULIC PERFORMANCE



H246			
A mm	B mm	C mm	D mm
198	288	227	333

HY246			
A mm	B mm	C mm	D mm
134	161	227	206

PERFORMANCE	LINE PULL kgf / kN	ACCUMULATED ROPE LENGTH m		SPEED m/min
		H246	HY246	
FIRST LAYER	3600	9.5	4.5	4.5
SECOND LAYER	3000	20.0	10.0	5.5
THIRD LAYER	2600	35.0	16.0	7.0

Speed shown is with hydraulic flow at 35 lt/min.

INSTALLATION

The winch is supplied complete with the mounting angles as illustrated. These must be cut to length to suit the installation and the ends bridged with 10mm steel plates. These plates are then bolted through the securing framework on the vehicle. This method of installation ensures the winch can be removed for maintenance purposes if required. A fitting kit including the end plates and longitudinal chassis mounting plates are available as an optional extra see diagram above right.

SPECIFICATIONS

Rated Line Pull	31.5kN (3600kgf) EN14492-1 compliant
Line Speed:	4.5 m/min at 35 lt/min. on 1st layer, up to 7 m/min. on 3rd layer
Wire Rope:	10mm Ø x 30m (H246) / 10mm Ø x 18m (HY246) - 1960N/mm ² grade. 6 x 36 wire core construction
Weight:	50kg including motor, mounting angles and roller guides
Gear Reduction:	46:1
Gear Type:	Worm with phosphor bronze heavy duty wheel providing self braking, running in oil bath
Winch Construction:	Aluminium cast housings with steel drum
Motor:	Hydraulic with 1/2" BSP ports. Maximum flow 50 lt/min.
Drum:	H246 – 90mm dia x 288mm / HY246 – 90mm x 161mm. Flange diameter 189mm
Roller Guides:	Optional - Extra heavy duty with greaseways

NOTES

These winches must not be used for the movement of personnel.
A minimum of 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwgroup.co.uk www.bhwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050 Fax: +44 (0)20 8207 5308

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CERT. No. 1769

BH10 / 10.08.12



RAMSEY RPH 133.4 13.6 Tonne Planetary Hydraulic Winch

Heavy Duty Commercial Recovery and Pulling of Loads

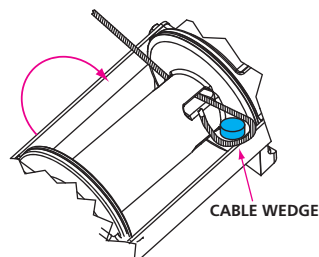
This rugged machine is perfect for under floor lift and rotator vehicles for the heavy duty recovery of larger casualty vehicles.

Fully compliant with EN 14492-1 regulations.

ADDITIONAL EQUIPMENT & SERVICES

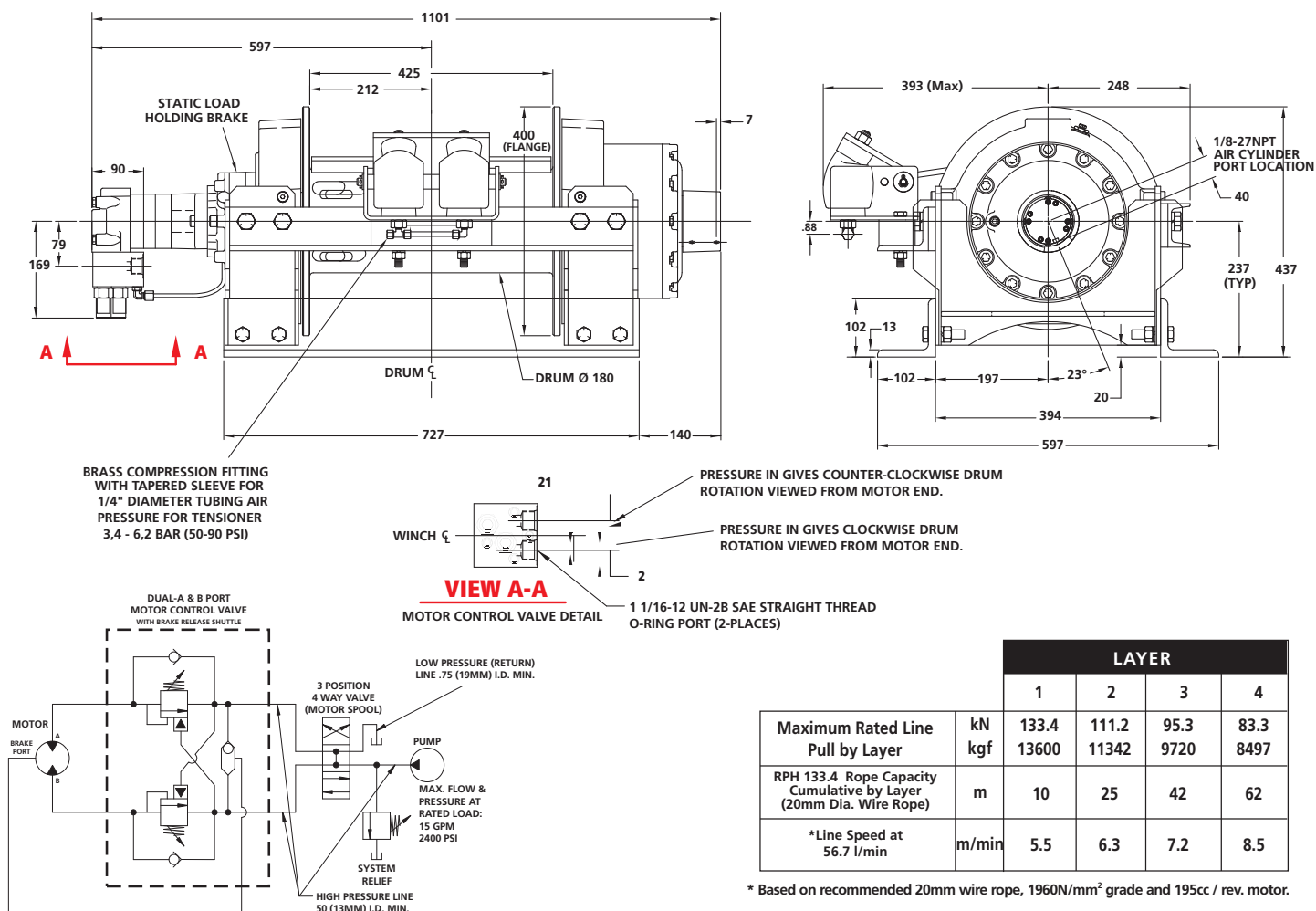
- Radio control system to give flexibility in operating the winch up to 40m distance.
- Wire Rope – up to 50m x 20mm dia. (1960N/mm² grade) fully galvanised flexible, crush resistant with heavy duty safety hook.
- Heavy duty electric / pneumatic control valve with manual lever, including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection. Also includes dump valve with emergency stop button ensuring compliance with EU machinery directives.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap, PTO and pump.
- Full or partial fitting can be provided, including load testing and certification.

SECURE WIRE ROPE ANCHORAGE



FEATURES INCLUDE

- **13,600kgf line pull**
 Rated line pull of 133.4kN on first layer
- **EN 14492-1 compliant**
- **Good recovery speeds**
 Up to 8.5m per minute on 4th layer
- **Air shift freespool clutch** with remote activation and positive engagement indicator light.
- **Bi-rotational drum**
 Clockwise and counter clockwise as required
- **Wedge pocket rope anchor on drum**
 Major safety benefit - prevents rope release from drum fixing
- **Heavy duty roller guide assembly**
 With greaseways and large diameter rollers
- **Heavy duty mounting rails**
 70 x 50 x 10mm mild steel angles supplied with winch
- **Weight 261kg**
 320kg with roller guides, mounting plates and wire rope
- **After sales service**
 Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.



SPECIFICATIONS

Rated Line Pull:	133.4kN (13,600kgf). EN 14492-1 compliant
Line Speed:	5.5m/min at 56.7 l/min on first layer, up to 8.5m/min on 4th layer
Wire Rope Capacity:	20mm diameter x 50m length (1960N/mm ² grade, 6 x 36 wire core construction - recommended)
Weight:	Weight of machine: 261kg. Weight of kit with roller guides and rope: 320kg
Gear Reduction:	32:1
Winch Construction:	Die cast aluminium end housings with steel drum
Brake:	Self braking through gearbox
Motor:	Low speed, high torque. 195cc/rev
Freespooling:	Air activated clutch using remote switch with engagement indicator light
Drum:	180mm diameter x 425mm length with wedge pocket rope anchor. Flange diameter 400mm
Drum Rotation:	Clockwise, or anti-clockwise as required
Roller Guides:	Heavy duty commercial type with large diameter rollers and greaseways
Mounting Rails:	70 x 50 x 10mm mild steel angle - supplied with winch

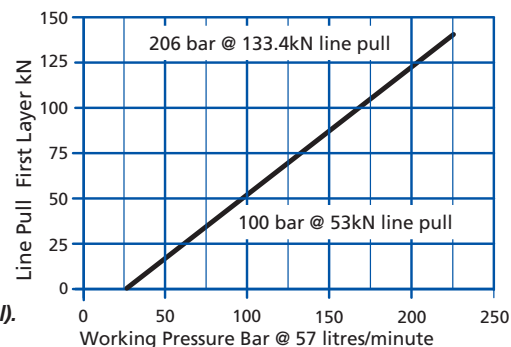
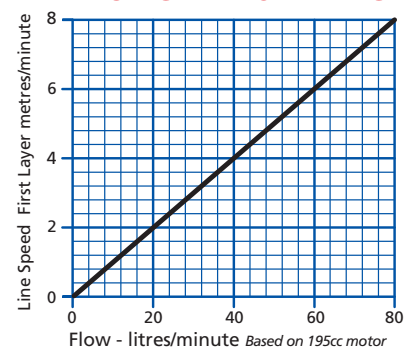
NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

HYDRAULIC PERFORMANCE



WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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REMSA



CERT. No. 1769

BH20/10.07.13



Front bumper mounting on high GVW 4x4 utility vehicles.

ADDITIONAL EQUIPMENT & SERVICES

- Air shift freespool clutch with remote activation and positive engagement indicator light.
- Radio control system to give flexibility in operating the winch up to 40m distance.
- Wire Rope – up to 50m x 12mm dia. (1960N/mm² grade) fully galvanised flexible, crush resistant with heavy duty safety hook.
- Heavy duty Electric / pneumatic control valve with manual lever, including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection. Also includes dump valve with emergency stop button ensuring compliance with EU machinery directives.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap, PTO and pump.
- Full or partial fitting can be provided, including load testing and certification.

RAMSEY RPH 53.3 5.4 Tonne Planetary Hydraulic Winch

Commercial Recovery

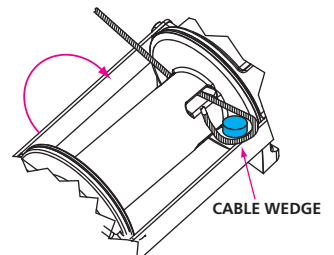
This rugged machine is perfect when fast line speeds are required, designed to be either foot or side mounted.

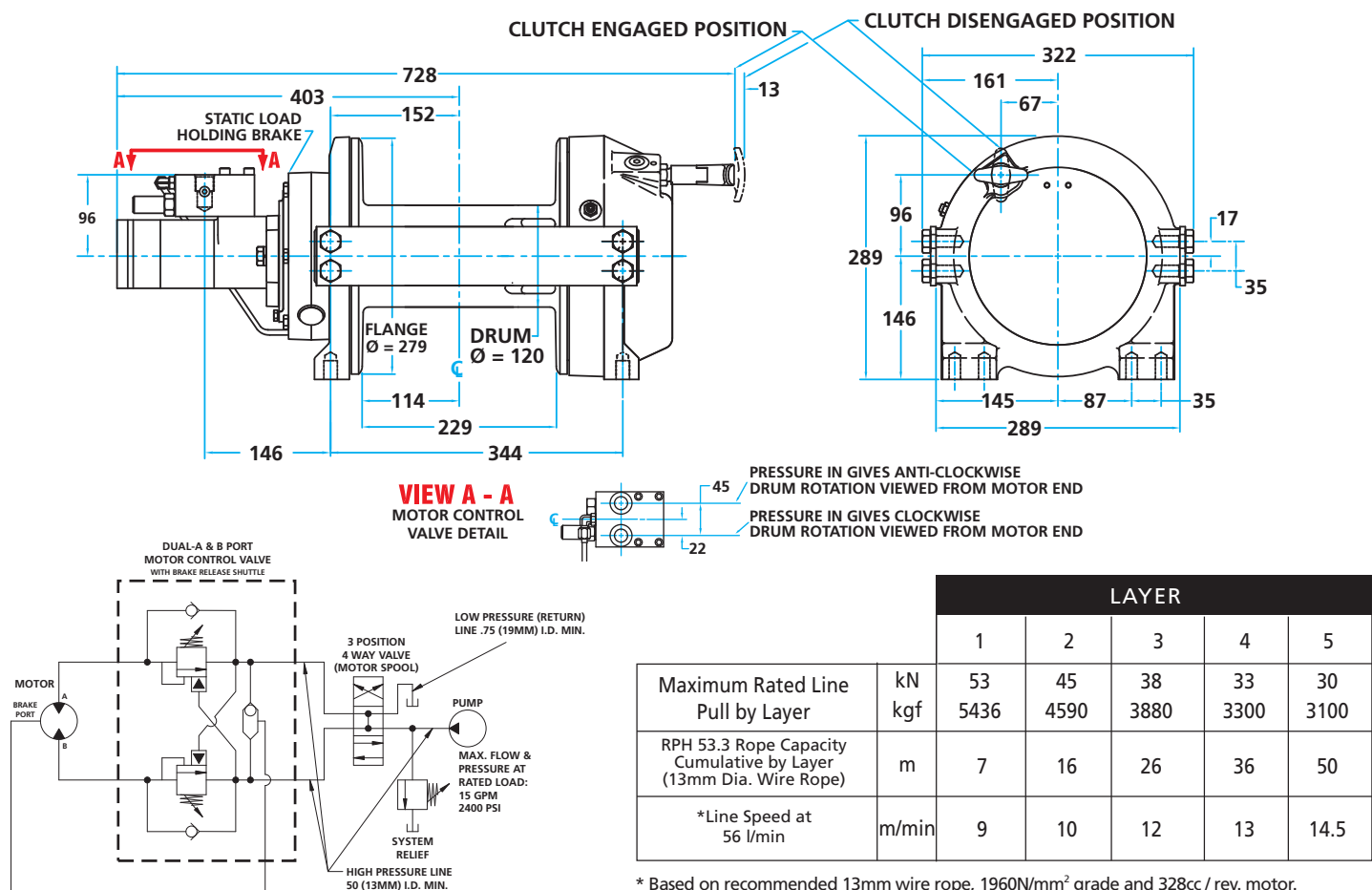
The perfect machine for heavy recovery and for front bumper mounting on high GVW 4x4 utility vehicles. Fully compliant with EN 14492-1 regulations.

FEATURES INCLUDE

- **5436kgf line pull**
 Rated line pull of 53.3 kN on first layer
- **EN 14492-1 compliant**
- **Fast recovery speeds**
 Up to 14.5m per minute on 5th layer
- **Bi-rotational drum**
 Clockwise and counter clockwise as required
- **Wedge pocket rope anchor on drum**
 Major safety benefit - prevents rope release from drum fixing
- **Heavy duty roller guide assembly**
 With greaseways and large diameter rollers
- **Suitable for foot or side mounting**
- **Dual braking system**
 Mechanical brake and counterbalance valve
- **Weight only 131Kg**
 (171kg with rope and roller guides)
- **After sales service**
 Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.

SECURE WIRE ROPE ANCHORAGE





SPECIFICATIONS

Rated Line Pull:	53.3kN (5436kgf). EN 14492-1 compliant
Line Speed:	9m/min at 56 lt/min. on 1st layer, 14.5m/min. on 5th layer
Wire Rope Capacity:	13mm diameter x up to 50m length (1960N/mm ² grade, 6 x 36 wire core construction - recommended)
Weight:	Weight of machine: 131kg. Weight of kit with roller guides and wire rope: 171kg
Gear Reduction:	7.7:1
Winch Construction:	Die cast aluminium end housings with steel drum
Brake:	Disc brake and counter balance valve providing full 100% braking
Motor:	Low speed, high torque. 328cc/rev
Freespooling:	Spring loaded lever. Option: Air activated clutch using remote switch with engagement indicator light
Drum:	120mm diameter x 229mm length with wedge pocket rope anchor Flange diameter 274.9mm
Drum Rotation:	Clockwise, or anti-clockwise rotation as required
Roller Guides:	Heavy duty commercial type with large diameter rollers and greaseways

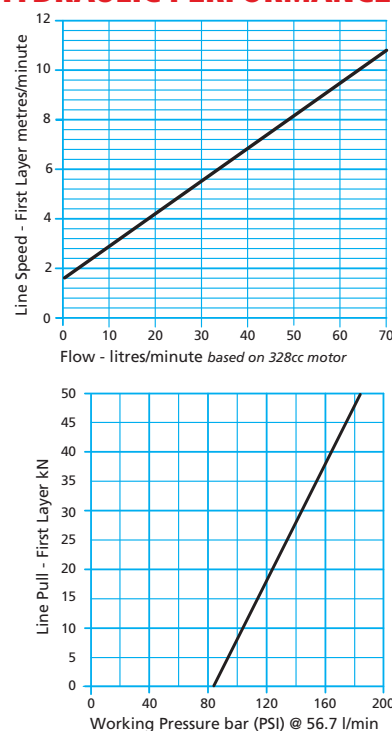
NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

HYDRAULIC PERFORMANCE



WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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CERT. No. 1769



Similar to the RPH 53.3 shown here, the RPH 42.2 can be front bumper mounted on high GVW 4x4 utility vehicles.

ADDITIONAL EQUIPMENT & SERVICES

- Air shift freespool clutch with remote activation and positive engagement indicator light.
- Radio control system to give flexibility in operating the winch up to 40m distance.
- Wire Rope – up to 24m (Short Drum) or 36m (Long Drum) x 11mm dia. (1960N/mm² grade) fully galvanised flexible, crush resistant with heavy duty safety hook.
- Heavy duty Electric / pneumatic control valve with manual lever, including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection. Also includes dump valve with emergency stop button ensuring compliance with EU machinery directives.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap, PTO and pump.
- Full or partial fitting can be provided, including load testing and certification.

RAMSEY RPH 42.2

4.3 Tonne Planetary Hydraulic Winch

Commercial Recovery & Load Pulling

This popular machine is perfect when fast line speeds are required, designed to be either foot or side mounted.

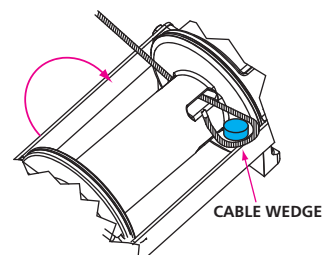
The perfect machine for medium to heavy recovery and for front bumper mounting on high GVW 4x4 utility vehicles.

Fully compliant with EN 14492-1 regulations.

FEATURES INCLUDE

- **4300kgf line pull**
 Rated line pull of 42.2kN on 1st layer
- **EN 14492-1 compliant**
- **Good recovery speeds**
 Up to 12m per minute on 4th layer
- **Bi-rotational drum**
 Clockwise and anti-clockwise as required
- **Short drum and long drum options**
 165mm or 248mm lengths
- **Large 100mm diameter drum(s) with deep flanges**
 Extends rope life and assists wrapping. Flange dia. 220mm
- **Wedge pocket rope anchor on drum**
 Major safety benefit - prevents rope release from drum fixing
- **Heavy duty roller guide assembly**
 With greaseways and large diameter rollers
- **Suitable for foot or side mounting**
- **Dual braking system**
 Mechanical brake and counterbalance valve
- **Weight only 49Kg**
 76kg with wire rope, roller guide and mounting kit
- **After sales service**
 Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.

SECURE WIRE ROPE ANCHORAGE



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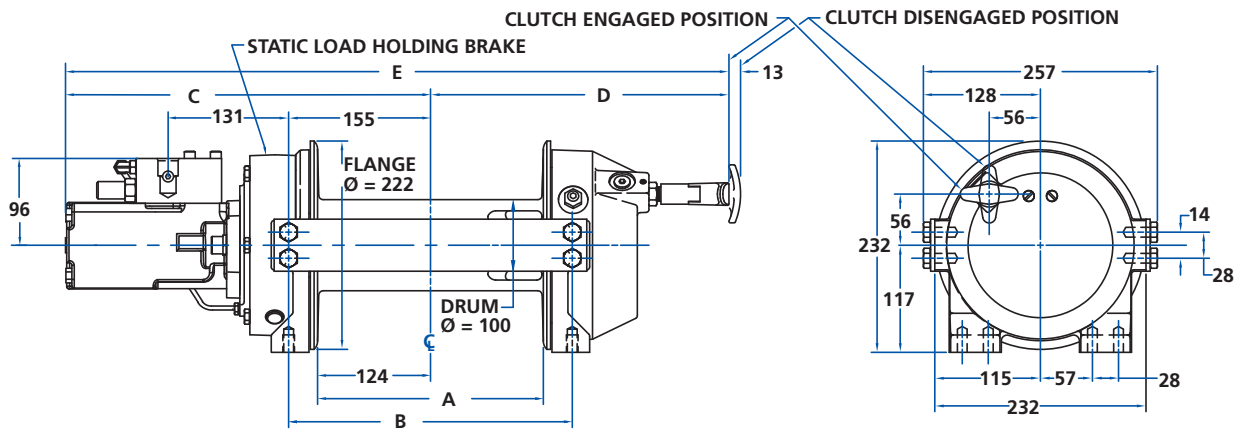
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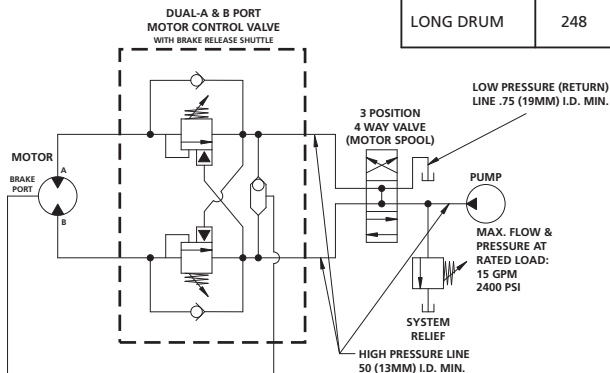
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CERT. No. 1769



RPH 42.2 DRUM TYPE	A	B	C	D	E
SHORT DRUM	165	229	357	296	643
LONG DRUM	248	311	396	337	726



		LAYER LONG DRUM			
		1	2	3	4
Maximum Rated Line Pull by Layer	kN	42.2	35.2	30.2	26.4
	kgf	4300	3590	3080	2690
RPH 42.2 Rope Capacity Cumulative by Layer (11mm Dia. Wire Rope)	m	6	15	24	36
*Line Speed at 50 l/min	m/min	8	9	10	12

* Based on recommended 11mm wire rope, 1960N/mm² grade and 408cc / rev. motor.

SPECIFICATIONS

- Rated Line Pull:** 42.2kN (4300kgf). EN 14492-1 compliant
- Line Speed:** 8 m/min at 50 lt/min. on 1st layer, up to 12 m/min. on 4th layer
- Wire Rope Capacity:** 11mm diameter x 24m length (Short drum) and 36m (Long drum) (1960N/mm² grade, 6 x 36 wire core construction - recommended)
- Weight:** Weight of machine: 49kg.
Weight with mounting kit, roller guides and rope: 76kg
- Gear Reduction:** 5.1:1
- Winch Construction:** Die cast aluminium end housings with steel drum
- Braking:** Disc brake and counter balance valve providing full 100% braking
- Motor:** Low speed, high torque. 409cc/rev
- Freespooling:** Spring loaded lever. Option: Air activated clutch using remote switch with engagement indicator light
- Drum:** 100mm diameter x 165mm length (Short drum) or 248mm (Long drum) with wedge pocket rope anchor
Flange diameter 222mm
- Drum Rotation:** Clockwise, or anti-clockwise rotation as required
- Roller Guides:** Heavy duty commercial type with large diameter rollers and greaseways

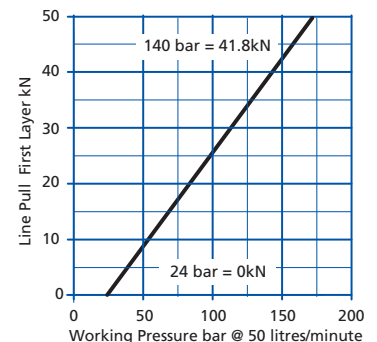
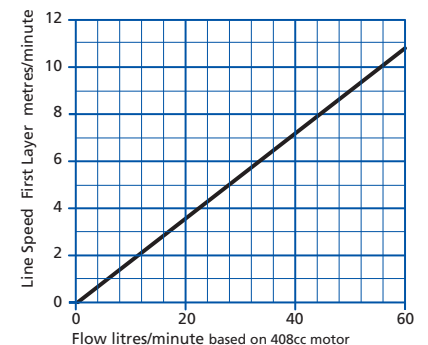
NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

HYDRAULIC PERFORMANCE



WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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CERT. No. 1769

BH19/16.08.11



RAMSEY HDP42 4.3 Tonne Planetary Hydraulic Winch

Car and Commercial Recovery Ideal for Slide Bed vehicles

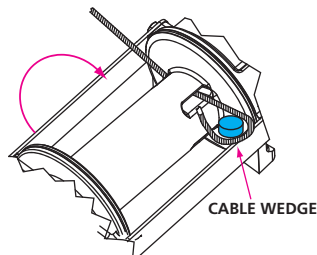
This fast, powerful and reliable machine offers the latest in single-stage planetary gear design for quiet reliable operation and is designed for either foot or side mount.

Fully compliant with EN 14492-1 regulations.

ADDITIONAL EQUIPMENT & SERVICES

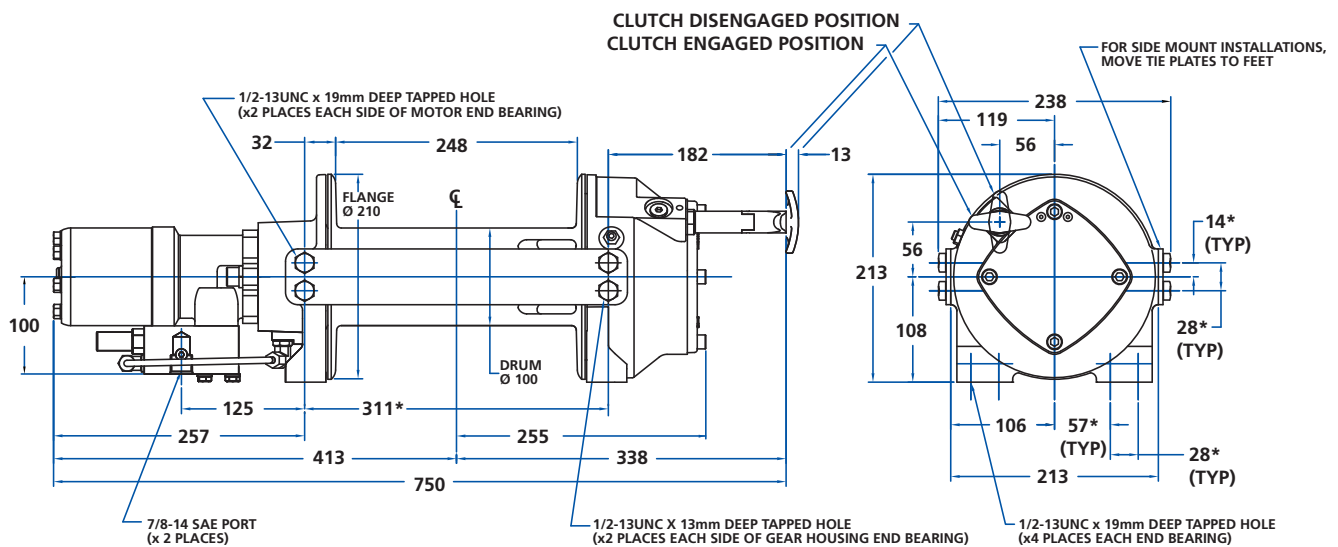
- Air shift freespool clutch with remote activation and positive engagement indicator light.
- Radio control system to give flexibility in operating the winch up to 40m distance.
- Wire Rope 11mm diameter 1960N/mm² grade. 6 x 36 wire core construction for maximum flexibility. Maximum length 24m.
- Electric / pneumatic control valve with manual lever and including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection also includes dump valve with emergency stop button ensuring compliance with EU machinery directives.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap, PTO and pump.
- Fitting service can be provided, including load testing and certification.

SECURE WIRE ROPE ANCHORAGE



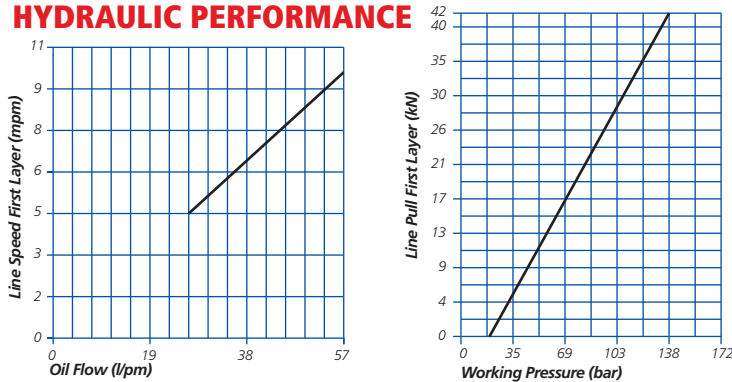
FEATURES INCLUDE

- **4300kgf line pull**
Rated line pull of 42kN
- **EN 14492-1 compliant**
- **Single stage planetary gearing**
Ideally suited to slidebed and spec lift applications
- **Wedge pocket rope anchor on drum**
Major safety benefit - prevents rope release from drum fixing
- **Fast recovery speeds** Up to 13m per minute
- **Large 100mm diameter drum(s) with deep flanges**
Extends rope life and assists wrapping. Flange dia. 210mm
- **Heavy duty roller guide assembly**
With greaseways and large diameter rollers
- **Spring loaded clutch**
Easy to use
- **Braking system**
Spring applied brake and motor counterbalance valve supplied as standard to provide 100% braking efficiency
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.



NOTES:
*THESE HOLE LOCATIONS MUST BE WITHIN $\pm 1\text{mm}$ OF TRUE POSITION.
RECOMMENDED MOUNTING HOLE DIAMETER IS 13mm.
WINCH MOUNTING CAPSCREWS MUST MEET OR EXCEED SAE GRADE 5 SPECIFICATION.

HYDRAULIC PERFORMANCE



LINE PULL AND LINE SPEED PERFORMANCE

		LAYER		
		1	2	3
Maximum Rated Line Pull by Layer	kN kgf	42.2 4300	35.2 3590	30.2 3080
HDP42 Rope Capacity Cumulative by Layer (10mm Dia. Wire Rope)	m	6	15	24
*Line Speed at 58 l/min	m/min	9.7	11.6	13.4

* Based on recommended 11mm wire rope, 1960 grade and 254cc / rev. motor.

SPECIFICATIONS

Rated Line Pull:	42kN (4300kgf). EN14492-1 compliant
Line Speed:	15m/min at 58 lt/min on bare drum
Wire Rope:	11mm diameter (1960N/mm ² grade. 6 x 36 wire core construction - recommended) Maximum length 24m
Weight:	Weight of machine: 39.5kg. With roller guides and rope: 48.5kg
Gear Reduction:	5.1:1
Gear Type:	Single stage planetary
Winch Construction:	Die cast aluminium end housings with steel drum
Braking:	Spring applied hydraulic release disc brake and counterbalance valve providing full 100% braking
Motor:	Low speed, high torque
Drum:	100mm diameter x 248mm with wedge pocket rope anchor
Drum Rotation:	Clockwise, or counter clockwise rotation as required
Roller Guides:	Heavy duty commercial type with large diameter rollers and greaseways
Freespooling:	Spring loaded lever. Option: Air activated clutch using remote switch with engagement indicator light

NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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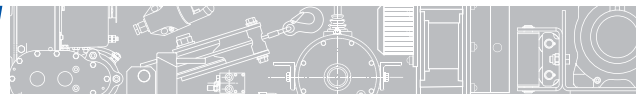
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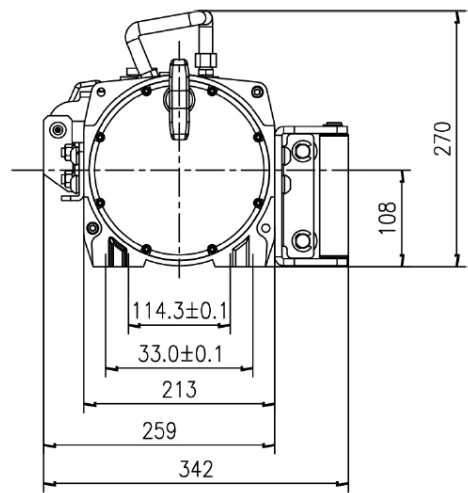
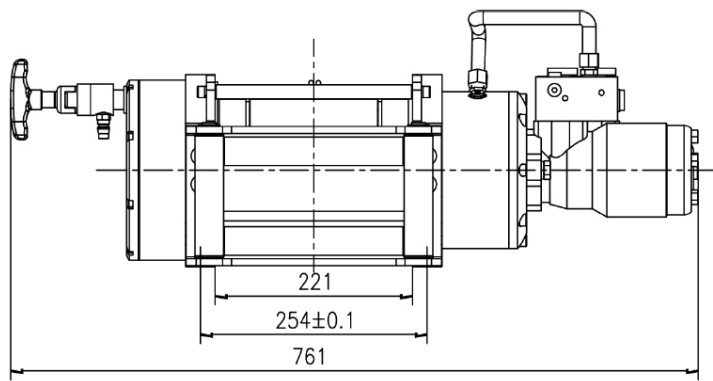


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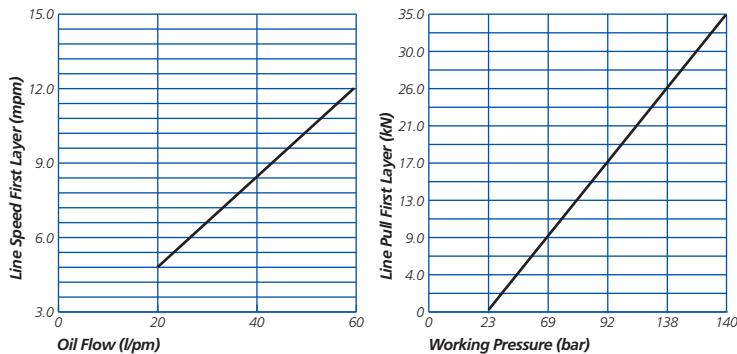


Fully compliant with EN 14492-1 regulations.

Diagram illustrating the probe system, showing the probe tip and the handle assembly. Red arrows indicate the flow of material from the handle into the probe tip.



HYDRAULIC PERFORMANCE



RATED LINE PULL, ROPE CAPACITY, LINE SPEEDS

		LAYER			
		1	2	3	4
Maximum Rated Line Pull by Layer	kN	34.9	29.4	25.4	22.3
	kgf	3560	3000	2600	2270
CHW9000 Rope Capacity Cumulative by Layer*	m	9	15	25	30
*Line Speed at 60 l/min	m/min	12	14	16	18

* Based on recommended 10mm wire rope and 88cc / rev. motor.

SPECIFICATIONS

Rated Line Pull:	34.9 kN (3560kgf). EN14492-1 compliant
Line Speed:	12m/min at 60 l/min on bare drum
Wire Rope:	23m x 10mm diameter (1960N/mm ² grade. 6 x 36 wire core construction - recommended)
Weight:	Weight of machine: 34kg. With roller guides and rope: 47kg
Gear Reduction:	20.56:1
Gear Type:	Single stage planetary
Winch Construction:	Steel end housings with steel drum
Braking:	Spring applied hydraulic release disc brake and counterbalance valve providing full 100% braking
Motor:	Low speed, high torque
Drum:	92mm diameter x 218mm length. Flange diameter 208mm
Drum Rotation:	Clockwise, or counter clockwise rotation as required
Freespool Clutch:	Turn spring loaded T-Bar for freespool in or out
Roller Guides (option):	Heavy duty commercial type with large diameter rollers

NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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BHW

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T-MAX CHW16500 Mk2

**Extra Heavy Duty
Planetary Hydraulic Winch
5000kg (49kN) Line Pull**

**Commercial Recovery Winch
Ideal for Heavy Duty Slide Bed Vehicles**

This fast, powerful and reliable machine offers the latest in two stage planetary gear design for quiet, reliable operation.

Designed for foot mounting.

Compliant with EN14492-1 Power Driven Winches

ADDITIONAL EQUIPMENT & SERVICES

- Radio control - FM•CONNECT or LODAR equipment.
- BHW WINCH CONTROL SYSTEM (see below).
- Wire Rope 12mm diameter x 30m.
1960N/mm² grade. 6 x 36 wire core construction for maximum flexibility.
- Electric / pneumatic control valve with manual lever and including 7m wanderlead control, heavy duty 16 amp socket, electrical control system with all wiring in Armaflex protection also includes dump valve with emergency stop button ensuring compliance with EU machinery directives.
- Hydraulic oil reservoir tank with filter sight gauge and filler cap, PTO and pump.
- Fitting service can be provided, including load testing and certification.

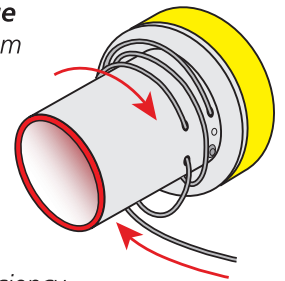
UPGRADE TO A BHW WINCH CONTROL SYSTEM

Save time and money on installation - Ready to fit.

A choice of three alternative winch control kits designed to provide all in one emergency stop, isolator switch, safety solenoid and power outlets. Airshift clutch system parts also available.

FEATURES INCLUDE

- **5000kgf line pull**
Rated line pull of 49kN
- **EN 14492-1 compliant**
- **Two stage planetary gearing**
Ideally suited to slidebed vehicles
- **Good recovery speeds** 5-7.4m per minute
- **Freespool clutch**
Easy to use T-Bar handle.
Can also be adapted for freespool airshift clutch.
- **Large 30m rope capacity**
Based on 12mm diameter
1960N/mm² grade.
6 x 36 wire core construction
- **Secure wire rope anchorage**
Simple thread and wrap system for safe installation of wire rope
- **Braking system**
Spring applied brake and motor counterbalance valve supplied as standard to provide 100% braking efficiency
- **Heavy duty roller guide assembly**
With large diameter rollers
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.



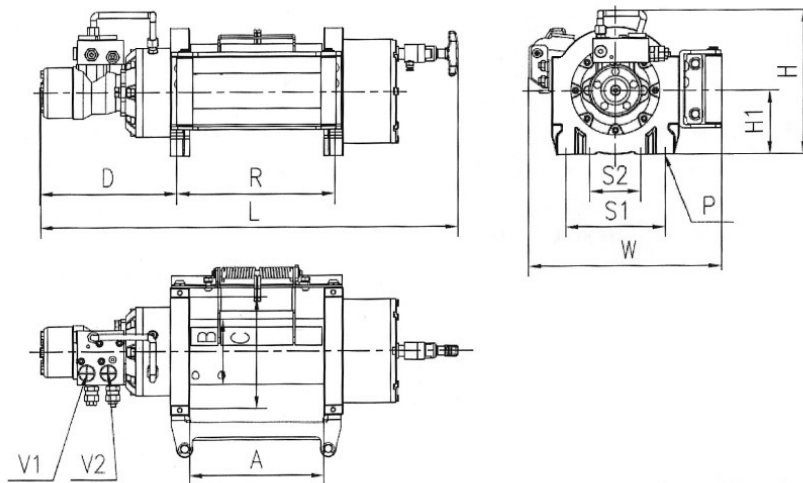
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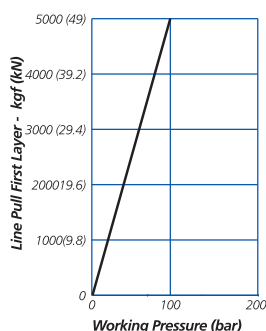
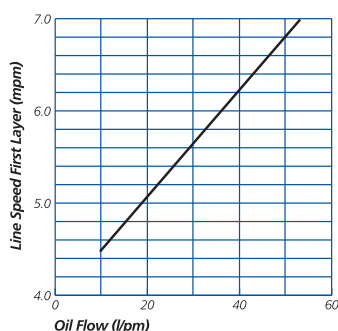




Unit: mm

Model	L	W	H	H1	A	B	C	D	R	S1	S2	P	V1-V2
7133608	839	382	300	127	267	130	240	268	304.80	165.1	114.3	M8-M12 mounting bolts 27depth, 8.8 Grade, torque: 90NM	2-G1/2"

HYDRAULIC PERFORMANCE



RATED LINE PULL, ROPE CAPACITY, LINE SPEEDS

		LAYER			
		1	2	3	4
Maximum Rated Line Pull by Layer	kN kgf	49 5000	42 4300	37 3770	32 3200
CHW16500 Rope Capacity Cumulative by Layer*	m	9	19	30	42
*Line Speed at 60 l/min	m/min	5	5.8	6.6	7.4

* Based on recommended 12mm wire rope and 88cc / rev. motor.

SPECIFICATIONS

Rated Line Pull:	5000kg (49kN).
Line Speed:	5m/min at 60 l/min on bare drum.
Wire Rope:	30m x 12mm diameter (1960N/mm ² grade. 6 x 36 wire core construction - recommended).
Weight:	Weight of machine: 80kg.
Gear Reduction:	23:1.
Gear Type:	Two stage planetary.
Winch Construction:	Steel end housings with steel drum.
Braking:	Spring applied hydraulic release disc brake and counterbalance valve providing full 100% braking.
Motor:	Low speed, high torque.
Drum:	130mm diameter x 267mm length. Flange diameter 240mm.
Drum Rotation:	Clockwise, or counter clockwise rotation as required.
Freespool Clutch:	Spring loaded sliding ring gear engaged and disengaged by rotating lever on gear housing. These winches can be easily adapted to airshift control of the freespool from the side of the vehicle.
Roller Guides:	4 way supplied as standard.

NOTE: An open centre motor spool type control valve must be used (all ports open to tank in neutral).

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.
Wire ropes are not included under warranty.
Not be used for the movement of personnel. Five wraps of wire rope must be maintained on the drum at all times.
Data shown is approximate and intended as a guide only.

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BHW SERIES DELTA HAND WINCHES

500kg - 1200kg

FEATURES INCLUDE

- **Rated for lifting applications**
From 440kg to 1200kg on first layer
- **Compact design**
- **Available in *galvanized (G)*, or *stainless steel (S)* finish**
- **Ratchet Brake**
- **Light weight, simple to use**
- **Base Mounting**

OPTIONAL WIRE ROPE LENGTHS

- **Wire ropes are sold separately**
20m and 13m supplied as standard (see below)
other lengths supplied as required

SPECIFICATIONS	1200G	1200S	1800G	1800S	2600G	2600S
Rated Load 1st Layer	550Kg	440Kg	825Kg	660Kg	1200Kg	960Kg
Working Load 3rd Layer	392kg	314kg	562kg	450kg	844kg	675kg
Max Rope Storage with free board	20m at recommended $\varnothing$				13m at recommended $\varnothing$	
Gear Ratio	4.1:1		5:1		9.8:1	
Drum $\varnothing$	50mm		60mm		76mm	
Wire Rope $\varnothing$ recommended	5mm		7mm		8mm	
Net Weight approx.	3.3kg		8kg		11.5kg	

Use the affixes (G) or (S) to specify galvanised or stainless steel finish

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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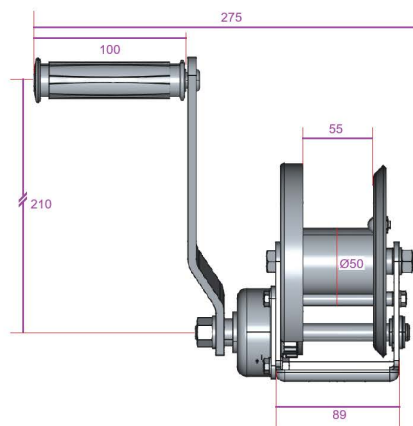
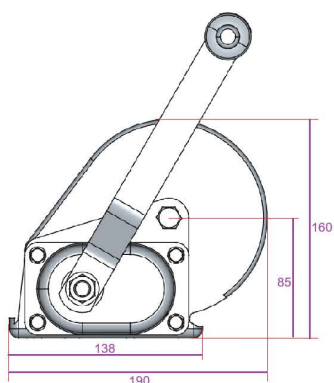
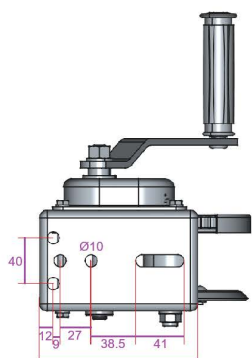
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Bushey Hall Winchmaster

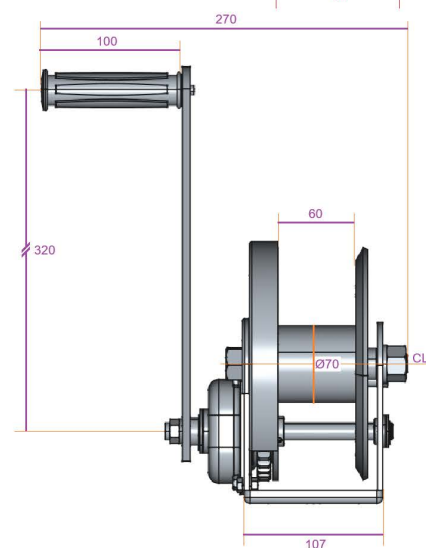
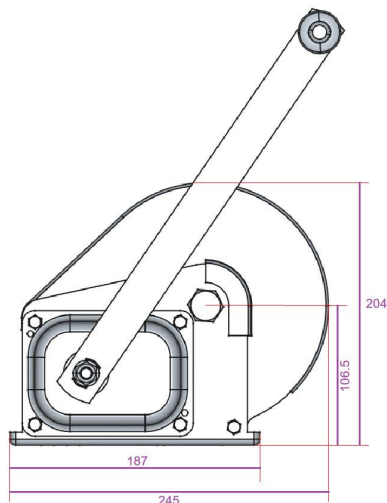
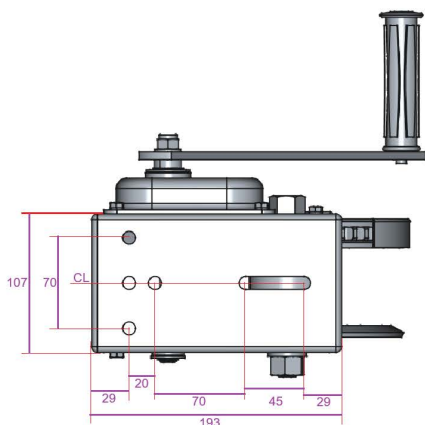
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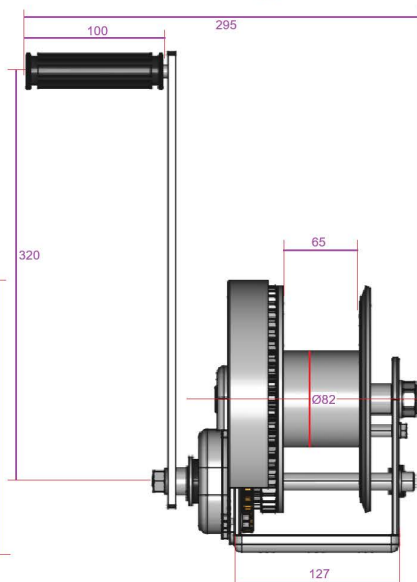
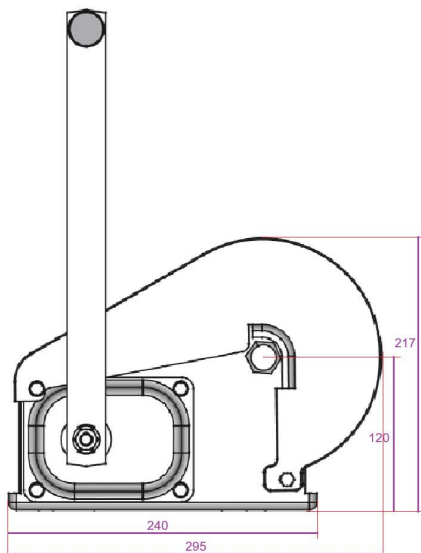
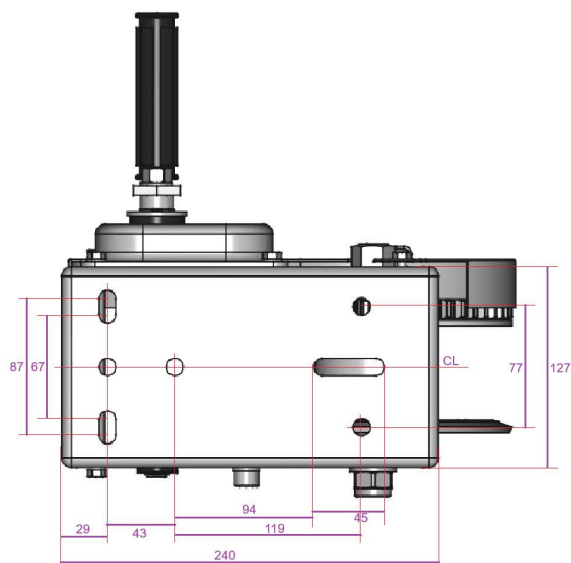
BHW1200



BHW1800



BHW2600



Not to scale

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UK
CA

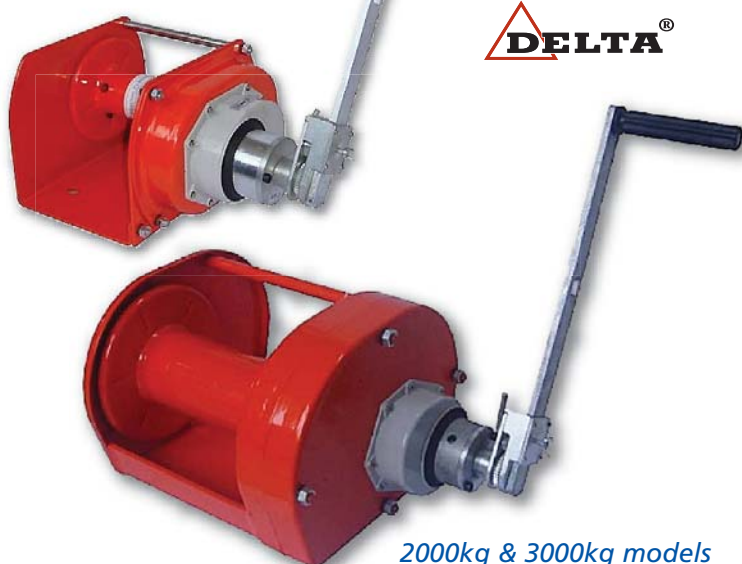
CE



RHW SERIES DELTA HAND WINCHES

500kg / 1000kg / 2000kg / 3000kg

500kg & 1000kg models



2000kg & 3000kg models

FEATURES INCLUDE

- Rated for pulling applications
- Large drum capacity
- Two position handle with short arc ratchet facility
- Available in galvanized (G), or painted (P) finish
- Ratchet brake
- Light weight, simple to use
- Base mounting
- Free wheel payout facility

OPTIONAL WIRE ROPE LENGTHS

- Wire ropes are sold separately
Lengths supplied to suit requirements
up to maximum storage stated below

SPECIFICATIONS

RHW-0500G/P

RHW-1000G/P

RHW-2000G/P

RHW-3000G/P

	RHW-0500G/P	RHW-1000G/P	RHW-2000G/P	RHW-3000G/P
Rated Load 1st Layer	500kg	1000kg	2000kg	3000kg
Working Load 3rd Layer	340kg	718kg	1455kg	2136kg
Maximum Rope Storage (with free board)	22m	25m	30m	
Hand Force Required (min.)	12kg		15kg	20kg
Gear Ratio	4.3:1	12.2:1	22.7:1	29.2:1
Handle Length	380mm on all models			
Drum Ø	60mm	76mm	90mm	100mm
Wire Rope Ø recommended	7mm	8mm	9mm	11mm
Net Weight approx.	14kg	19kg	25kg	44.5kg

Use the affixes (G) or (P) to specify galvanised or painted finish

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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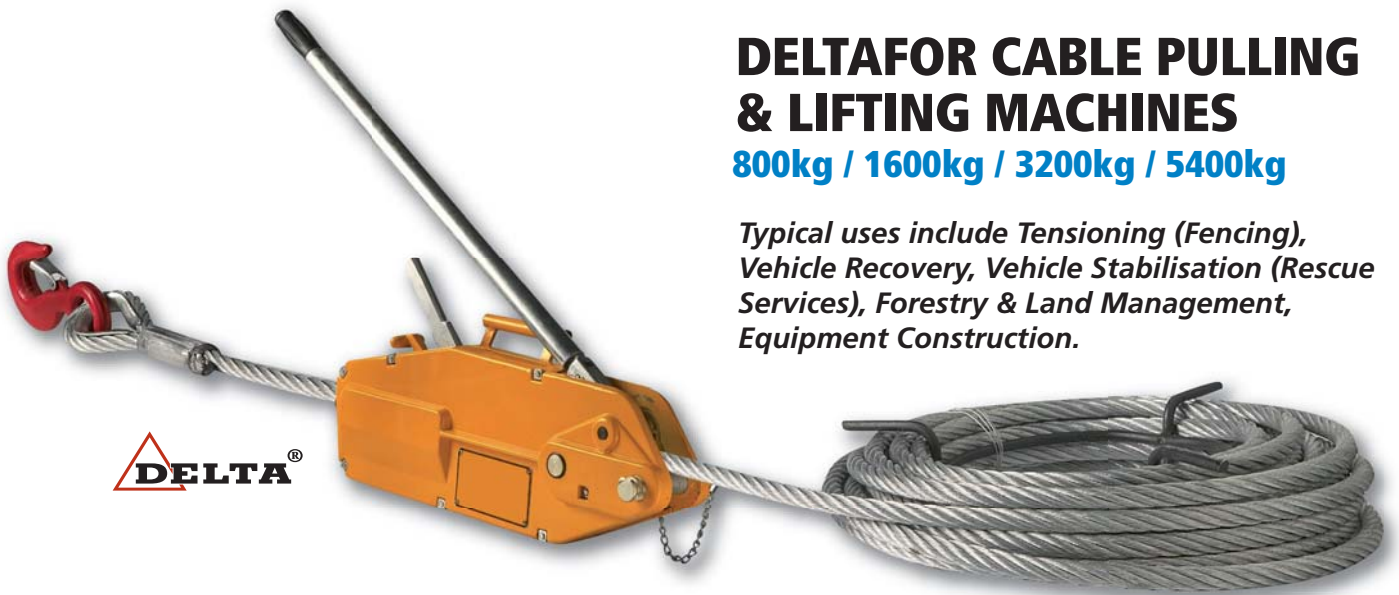


CERT. No. 1769

DELTAFOR CABLE PULLING & LIFTING MACHINES

800kg / 1600kg / 3200kg / 5400kg

Typical uses include Tensioning (Fencing), Vehicle Recovery, Vehicle Stabilisation (Rescue Services), Forestry & Land Management, Equipment Construction.



Simple to use hand lever winches from 800kg to 5400kg lifting capacity - (1200kg to 8000kg pulling capacity).

Suitable for lifting, pulling or tensioning, useable at horizontal, vertical and angled working positions.

High strength, compact machines suitable for virtually any angles, with a built in anchor pin.

Overload protected with calibrated shearing pin incorporated into PULLING IN lever. Spare pins also supplied.

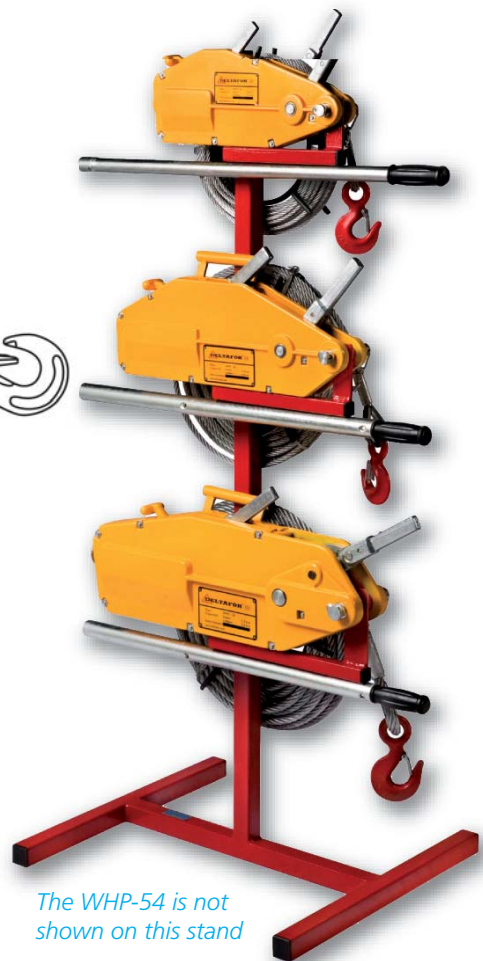
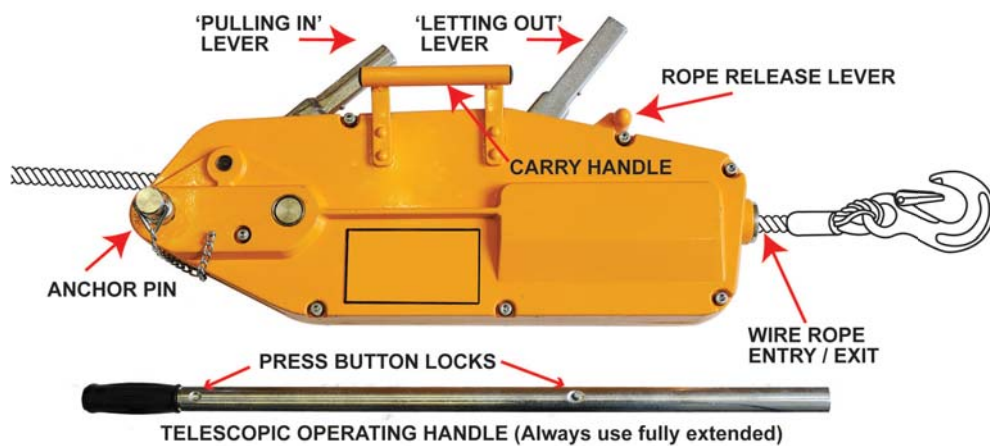
A parallel clamping system ensures evenly distributed grip on the wire rope resulting in less machine stress and wire rope wear compared to lower specification competitor products.

OPTIONAL WIRE ROPE LENGTHS

- *Wire ropes are sold separately, normally a 20m wire rope is available on all models as standard. Other rope lengths supplied as required. No maximum length.*

FEATURES INCLUDE

- **Lightweight manual machines**
Simple and safe to operate - 4 models
- **Compact high-strength**
- **Corrosion free aluminium alloy housing**
Steel version available on request
- **Useable at horizontal, vertical and angled working positions**
- **Rope clamp system**
Easily disengaged, allowing for smooth installation of wire rope
- **Equipped with a double lock anchor pin**
Offers numerous connection possibilities with the use of a suitable strap, chain or shackle
- **Overload protection**
Built in with a shearing pin in the PULLING IN lever
- **2 x spare shear pins**
Located in the yellow carry handle. Further replacements available from BHW Group
- **Secure wire rope feed**
Fed through two sets of wear resistant interlocking jaws by a single lever operation
- **Parallel clamping system**
With a large surface area, providing evenly distributed grip at a lower force, resulting in less rope wear
- **Individually serial numbered for traceability**
- **Supplied with relevant CE certification**



4 MODELS WITH RATED CAPACITIES

Lifting capacities from 800kg to 5400kg.
Pulling capacities from 1200kg to 8000kg.
Easy to transport and operate.

SPECIFICATIONS	WHP-08	WHP-16	WHP-32	WHP-54
Rated Lifting Capacity	800kg	1600kg	3200kg	5400kg
Rated Pulling Capacity	1200kg	2400kg	4000kg	8000kg
Wire Rope Travel (per stroke)	60mm	69mm	40mm	30mm
Operational Effort at Rated Load	29kg	42kg	45kg	76kg
Steel Wire Diameter	8.4mm	11.6mm	16.1mm	20mm
Standard length	20 Metres as standard with safety hook - other lengths available on request			
Max. Breaking Strain	44.5kN	83.3kN	161kN	275kN
Anchor Pin Diameter	22mm	25mm	30mm	40mm
Net Weight Winch only	6kg	13kg	22kg	58kg
Wire Rope & Reel	7.5kg	16kg	25kg	38kg
Max Sizes L x W x H	428 x 65 x 230mm	545 x 97 x 260mm	660 x 116 x 320mm	940 x 180 x 380mm

NOTES

These machines must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a manual machine for any proposed application.

WARRANTY

Each new Deltafor is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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CERT. No. 1769

The Fulton Range of hand operated winches used world wide is tough and reliable providing long service life.

This large range includes models for lifting and pulling/trailer applications. To assist in making the correct choice of winch for specific applications please see below.

SELECTING A HAND WINCH

There are two series of Fulton hand winches from the BHW Group – the 'T' and 'K' series. To assist in making the correct choice of winch for any given application the following points must be taken into consideration. It is important to read this fully before deciding on the specific type and model for your chosen application and please speak with our technical department if you require assistance. Other brands are also available - call sales.

- For any lifting applications select a 'K' series model
- 'K' series models do not include a freespool facility
- In pulling applications where positive load control is required in both directions select a 'K' series model
- When loads are being pulled horizontally on the flat or up an incline select a 'T' series model remembering that if the load is being let down a slope it is restrained by the operator as the winch is wound out. On the two speed models only an optional friction brake is available that will provide some assistance. (Carry out a risk assessment and if there are any concerns about letting out the load then select a 'K' series model)
- All 'T' series winches include a freespool facility
- The winch capacity stated on all models is the force exerted in the rope, wire or strap on its first layer when 18kg is applied by the operator to the winch handle. As the layers on the drum increase the force exerted by the winch for the same applied force will diminish by approximately 10% per layer. For this reason it is essential to select a model that is working well within its rated capacity
- All 'K' series models are designed for use with wire rope. If they are being used with webbing straps they can be modified at the factory for this purpose on request

Always select a winch model that will be operating well within its maximum capacity to ensure easy operation and safety.

GUIDE TO ROLLING LOAD CAPACITY							
Model No	Rated Line Pull Kg	Working Line Pull Kg	Weight of Rolling Load				
			10° (18%)	15° (27%)	20° (36%)	25° (47%)	30° (70%)
T SERIES SINGLE SPEED							
T600	275	138	665	474	368	301	255
T900	410	205	992	707	549	449	380
T1100	500	250	1210	862	670	547	463
T1500	680	340	1645	1172	911	745	630
T1801	820	410	1984	1414	1098	898	759
XLT14	635	318	1536	1095	850	695	588
XLT18	820	410	1984	1414	1098	898	759
T SERIES TWO SPEED							
T2005S	900	450	2177	1552	1205	985	833
T2605S	1180	590	2855	2034	1580	1292	1093
T2625S	1180	590	2855	2034	1580	1292	1093
T3700	1680	840	4065	2897	2250	1839	1556
K SERIES WITH AUTOMATIC BRAKE							
K650	272	136	658	469	364	298	252
K/KX1051	454	227	1098	783	608	497	420
K/KX1550	680	340	1645	1172	911	745	630
K2550	1134	567	2744	1955	1519	1242	1050

This chart gives A GUIDE to the maximum weight of the rolling load for each model of winch. This is based on 50% of the maximum bare drum rated capacity of the winch.



FULTON HAND WINCHES

K Series with Automatic brake

SELECTING THE CORRECT 'K' SERIES MODEL

- In lifting applications it is a legal requirement to use a wire rope with a minimum factor of safety of 5:1. The maximum diameter of the rope that can be used on each model is shown in the table above and is determined by the ratio of rope to drum diameter
- Winch rating and maximum mechanical rating is based on the first layer of rope on the drum. The capacity reduces by approximately 10% for each extra layer of rope on the drum
- K series winches do not include a freespool
- The mechanical force required to achieve the Maximum rated line pull is approximately 18kg
- Always select a winch model that will be operating well within its maximum capacity to ensure easy operation and safety
- For maximum efficiency use only the amount of wire rope on the drum required for the application plus 2.5m
- A minimum of 5 wraps of wire rope must be maintained on the drum at all times

FEATURES

- Designed for lifting and hoisting applications the self-activating automatic brake holds the load when the crank handle is released
- Unlike competitive products, no minimum load is required to activate the brake or wind the cable off the drum
- Brake design enables the load to be wound out under full control with the minimum of effort
- Ideal for pulling a rolling load on an incline where there is concern of a runaway load during the descent
- Designed for commercial use with heavy gauge material, wide gear contact and thick zinc plating
- Large drum diameter providing minimum 10:1 wire rope to drum ratio allowing easier rope wrapping and extended rope life
- Can be supplied modified for use with webbing strap
- KX Series include plated gear cover for protection and a dual ratchet system for added security
- Comfort grip handles

TYPICAL APPLICATIONS INCLUDE

- Manual Hoists • Manual Lift Trucks • CCTV & Lighting Towers, Boat Lifts
- Retractable Swing Keels • Trailer applications for Rolling Loads

K SERIES WITH AUTOMATIC BRAKE									
Winch Model	Maximum Rated Line Pull Kg		Maximum Wire Rope Size			Mechanical Data			Maximum Mechanical Advantage
	1st Layer	Full Drum	Diameter mm	Min Breaking Force Kg	Max Storage m	Gear Ratio	Handle Length	Drum Dia mm	
K650	275.0	90.0	3.0	540.0	26.0	1:1	280	32	16:1
K/KX1051	455.0	230.0	5.0	1500.0	16.0	4.1:1	280	57	29:1
K/KX1550	680.0	320.0	6.0	2160.0	21.0	5.1:1	280	64	32:1
K2550	1140.0	700.0	8.0	1440.0	21.0	15.1:1	280	80	64:1

K SERIES MAXIMUM LIFTING CAPACITY				
Winch Model	Maximum Line Pull Kg	Maximum Wire Rope Diameter mm	Maximum Lifting Capacity based on 5:1 Factor of Safety Kg	Maximum Recommended ** Lifting Capacity based on 50% Maximum Rated Line Pull Kg
K650	275.0	3.0	108.0	136
K/KX1051	455.0	5.0	300.0	227
K/KX1550	680.0	6.0	432.0	340
K2550	1140.0	8.0	822.0	570

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CERT. No. 1769

A full range of single and two speed ratchet winches is available to meet the toughest pulling demands. These are designed for boat and car transporter trailers and similar pulling applications only and allow the load to freewheel when the ratchet is in the neutral position.

Single speed winches take ropes or web strapping. Some two speed models take wire ropes, but not all, please see chart for details.

POINTS TO BE CONSIDERED WHEN CHOOSING YOUR 'T' SERIES WINCH

- The winch capacity stated on the charts for all models is the maximum pulling force that can be exerted in the rope, wire or strap on its first layer and to achieve this a force of 18kg must be applied by the operator to the winch handle. As the layers on the drum increase the line pull force will reduce by approximately 10% per layer. For this reason it is essential to select a model that is easily capable of winching the load without the maximum force being applied. See selection chart for a guide to the winch model best suited to the application.
- Two speed 'T' series models should be selected for heavier applications and where the load is being moved a longer distance.
- To calculate the approximate force required to move a rolling load up an incline the following formulae may be used. Where W is the load in kgs and $\pm$ is the gradient in degrees. As a guide ramp angles are rarely more than 16° and a gradient of 1:8 is only approximately 10° $W/25 + (W \times \pm)/60$ As an example if a rolling load weighing 1750kg is winched up a gradient of 15° the minimum force required will be as follows:-
 $1750/25 + (1750 \times 15)/60 = 507.5\text{kg}$
 If for the exercise it is assumed that this force occurs when the winch is on its third layer then this should be increased by 30% to 624kg being the actual force applied to the bare drum. It must now be remembered that if a winch just capable of doing the job is selected then a force of 18kg will need to be applied to the winch handle. As this is high it will be much easier for the user if a winch with a larger capacity of say 1180 kg is selected.
- Single Speed 'T' series models are only suitable for use with webbing straps or soft rope and are designed for moderate loading and short pull in distances
- If a 'T' series winch is being used with a wire rope then only the following two speed models incorporating larger drum diameters are suitable:- T2025, T2625, T3205, T3205B and T3700

FULTON HAND WINCHES

T Series Ratchet Winches (FOR PULLING APPLICATIONS ONLY)



T SERIES SINGLE SPEED RATCHET WINCHES

All single speed ratchet winches are designed with small drum diameters for use with a webbing straps or soft rope and should not be used with wire rope.

- The XLT Series includes stylised polypropylene shell with strap and hook as standard.
- The T1300 and T1500 models offer optional gear covers for protection and added styling

FEATURES

- Full length drum bearings
- Oil impregnated shaft bearings
- Efficient gear ratios
- High carbon steel gears for superb strength ensuring long life
- Zinc plate finish provides excellent corrosion resistance in all environments
- Comfort grip handles

SINGLE SPEED

Part No	First Layer Line Pull Kg	Gear Ratio	Friction Hand Brake	Drum Storage Capacity		Drum Diameter mm	Handle Replacement Part No
				Soft Rope mm x M	50mm Strap x Length M		
T600	275	3.1:1	Not Available	6 x 11	5	16	586801
T900	410	3.1:1	Not Available	6 x 11	5	16	631201
T1100	500	4.1:1	Not Available	8 x 9	6	19	631201
T1500	680	4.1:1	Not Available	8 x 9	6	19	630201
T1801	820	5.1:1	Not Available	8 x 11	6	23	681701
XLT14	635	4.1:1	Not Available	N/A	6 Included as Standard	19	630201
XLT18	820	5.1:1	Not Available	N/A	6	23	681701

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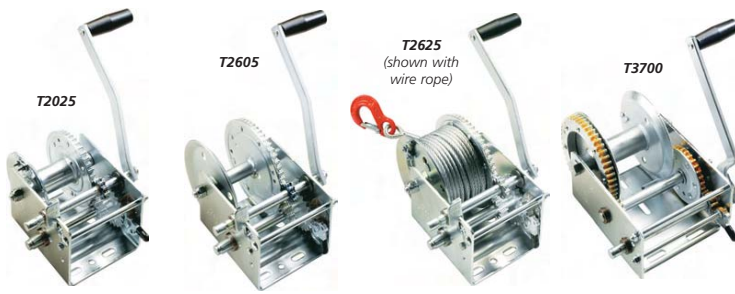
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CERT. No. 1769



FULTON HAND WINCHES

T Series Ratchet Winches

(FOR PULLING APPLICATIONS ONLY)

T SERIES TWO SPEED RATCHET WINCHES

Make light work moving heavy loads with the two speed ratchet winch. These models are designed where higher pulling forces are required and in particular where the distance for the load to be winched is greater.

The fast speed enables quick pull in for lighter loads and a second low speed for increased mechanical advantage.

A good example of this is winching a rolling load onto a trailer where it is relatively easy to move the load on the flat but maximum pulling power is required as it comes up the inclined ramp. The faster speed is also time saving when the strap or rope is being re-wound onto the drum after use.

The shift lock design is also very useful as it allows changing gears without moving the crank handle between shafts.

TWO SPEED								
Part No	First Layer Line Pull Kg	Gear Ratios	Friction Hand Brake Part No	Drum Storage Capacity			Drum Diameter mm	Handle Replacement Part No
				Soft Rope mm x M	Wire Rope mm x M	50mm Strap x Length M		
T2005S	900	4.1:1 & 9.8:1	Option 161901	11 x 6	Not Suitable for Wire Rope	8	25	681701
T2605S	1180	5.1:1 & 12.2:1	Option 161901	11 x 7.5	Not Suitable for Wire Rope	8	25	681701
T2625	1180	5.1:1 & 12.2:1	Option 161901	N/A	6 x 30	N/A	45	681701
T3205B	1450	5.1:1 & 12.2:1	Included	N/A	6 x 30	N/A	45	681701
T3700	1680	5.1:1 & 15.9:1	Included	N/A	6 x 30	N/A	45	923501

*The S series winches have a 50mm wide drum to take 50mm strapping.
 *For maximum efficiency only use the length of wire rope, soft rope or webbing required for the application.
 *All Two Speed Winches use 10" Handles.
 *Winches must not be used with steel wire ropes unless they are shown in the table above to be suitable. Suitable winches include wire rope keeper kit.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a hand winch for any proposed application(s).

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.co.uk www.bhwwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050 Fax: +44 (0)20 8207 5308

Northern Office: 6 South Orbital Trading Park, Hedon Road, Hull, East Yorkshire, HU9 1NJ Tel: +44 (0)1482 223 663 Fax: +44 (0)1482 218 285

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CERT. No. 1769



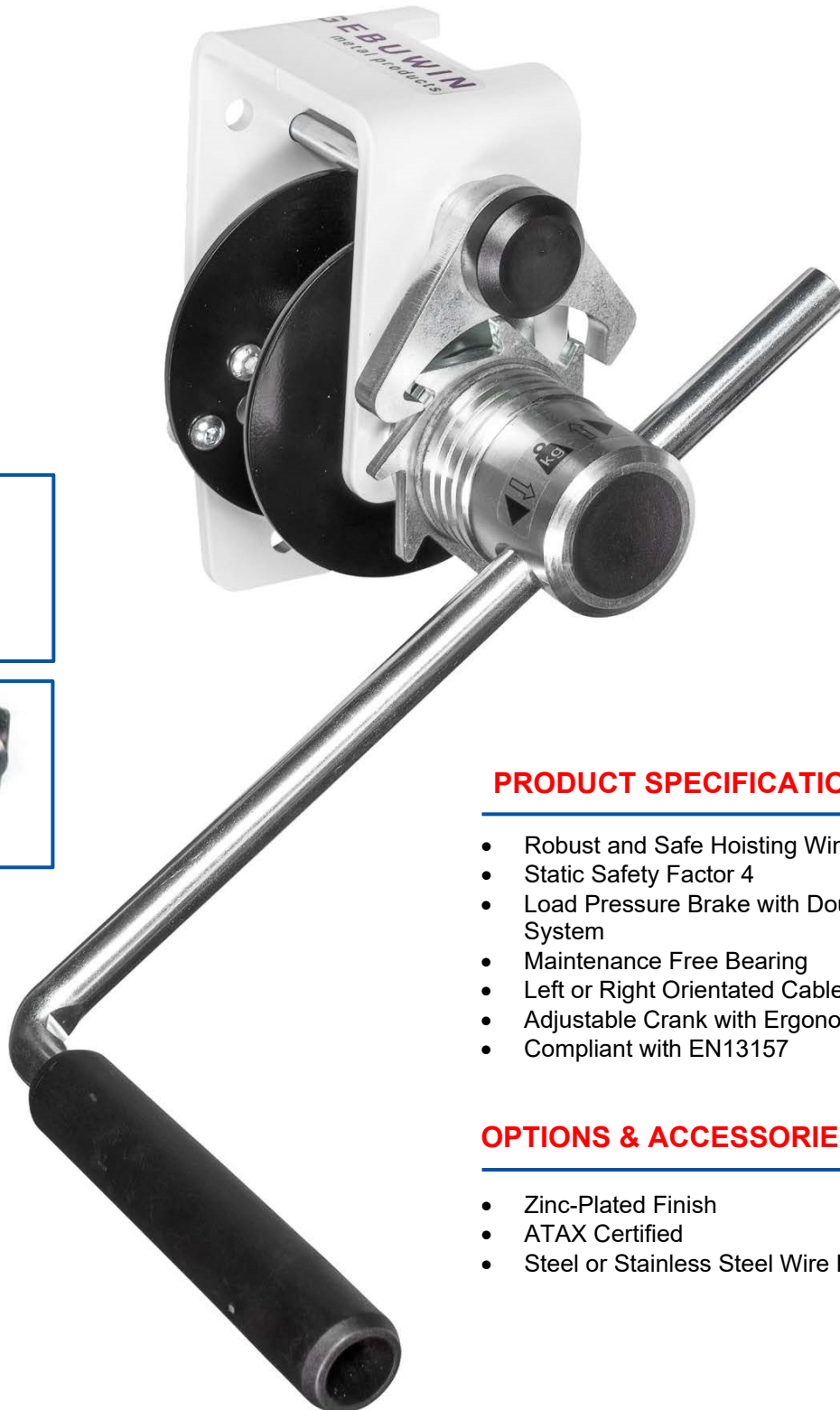
BHW

Bushey Hall Winchmaster

www.bhwgroup.com

GEBUWIN HAND WINCHES

SPUR GEAR WINCH - TL150



PRODUCT SPECIFICATIONS

- Robust and Safe Hoisting Winch
- Static Safety Factor 4
- Load Pressure Brake with Double Ratchet System
- Maintenance Free Bearing
- Left or Right Orientated Cable Outlet
- Adjustable Crank with Ergonomic Grip
- Compliant with EN13157

OPTIONS & ACCESSORIES

- Zinc-Plated Finish
- ATAX Certified
- Steel or Stainless Steel Wire Rope

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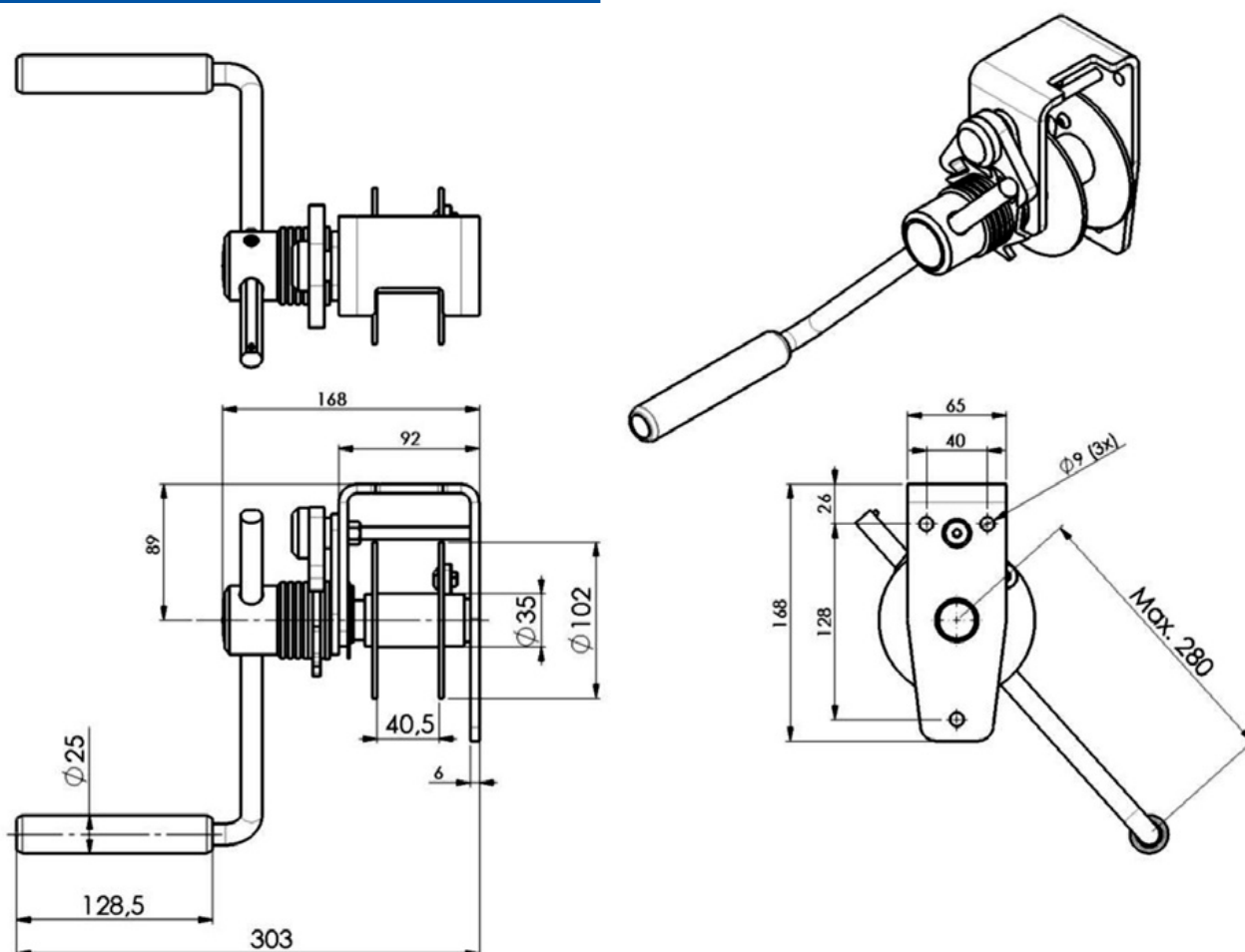
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DIMENSIONS



TECHNICAL SPECIFICATIONS

TYPE	MOUNTING	MATERIAL FINISH	REMARKS
TL150 GR	Wall, 3x M8 Class 8.8	Painted Finish	RAL 7035 (Grey)
TL150 EV	Wall, 3x M8 Class 8.8	Zinc-Plated Finish	

CAPACITY 1 ST CABLE LAYER (kg)	CAPACITY LAST CABLE LAYER (kg)	MAXIMUM CABLE STORAGE (m)	DIAMETER CABLE (mm)	MINIMUM BREAKING LOAD CABLE (kN)	TOTAL UNIT WEIGHT (kg)
150	68	13	4	4,5	4

NOTES

These winches must not be used for the movement of personnel. 4 wraps of wire rope must be maintained on the drum. Data shown is approximate and intended as a guide only. You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in the materials and workmanship for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.



BHW

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www.bhwgroup.com

GEBUWIN HAND WINCHES

SPUR GEAR WINCH – TL300-600



PRODUCT SPECIFICATIONS

- Robust and Safe Hoisting Winch
- Static Safety Factor 4
- Load Pressure Brake with Double Ratchet System
- Maintenance Free Bearings
- Adjustable Crank with Ergonomic Grip
- Cable Outlet Upwards
- Compliant with EN13157

OPTIONS & ACCESSORIES

- Zinc-Plated Finish
- ATAX Certified
- Steel or Stainless Steel Wire Rope

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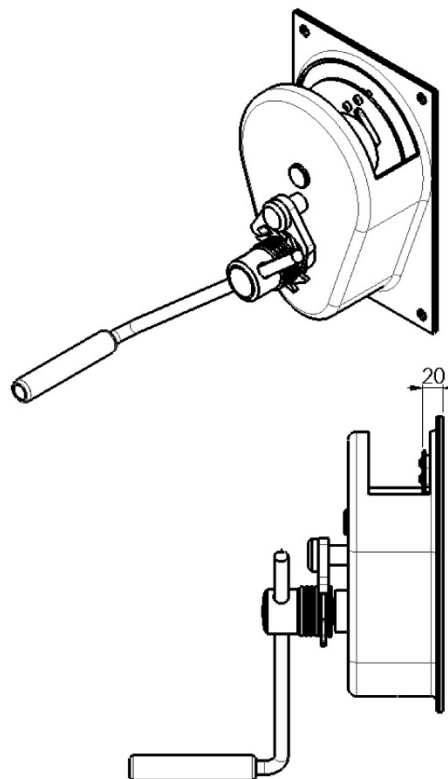
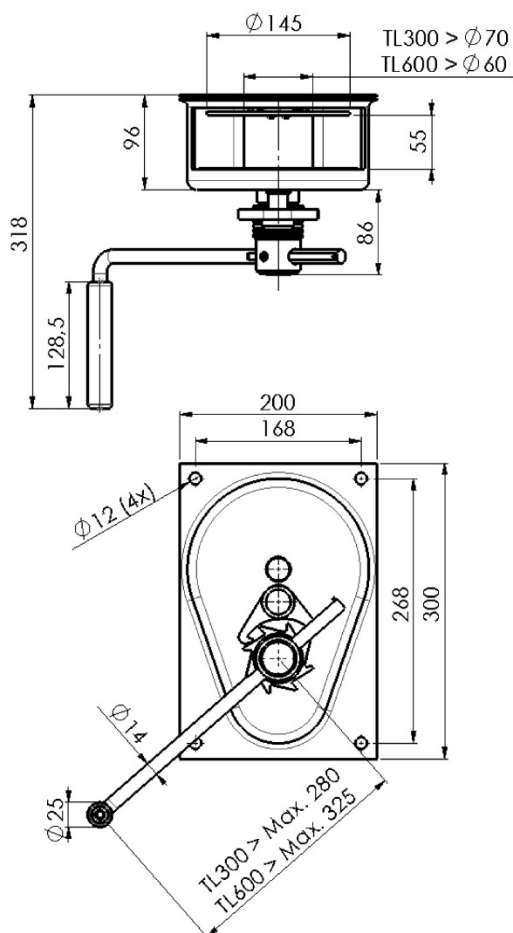
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DIMENSIONS



TECHNICAL SPECIFICATIONS

TYPE	MOUNTING	MATERIAL FINISH	REMARKS
TL300-600 GR	Wall, 4x M8 Class 8.8	Painted Finish	RAL 7035 (Grey)
TL300-600 EV	Wall, 4x M8 Class 8.8	Zinc-Plated Finish	

MODEL	CAPACITY 1 ST CABLE LAYER (kg)	CAPACITY LAST CABLE LAYER (kg)	MAXIMUM CABLE STORAGE (m)	DIAMETER CABLE (mm)	MINIMUM BREAKING LOAD CABLE (kN)	TOTAL UNIT WEIGHT (kg)
TL300	300	172	35	4	9	10
TL600	600	336	12	6	18	11

NOTES

These winches must not be used for the movement of personnel. 4 wraps of wire rope must be maintained on the drum. Data shown is approximate and intended as a guide only. You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in the materials and workmanship for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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WM84/23.01.20



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MAXPULL HAND WINCHES

DUEL DIRECTIONAL CAPSTAN WINCH WITH LATCHING OR MECHANICAL BRAKE

ME-5 – 500kg / ME-10 – 1,000kg



FEATURES INCLUDE

- Grooved Twin Drum Improving Friction
- Two Brake Options L or B (see options)
- Pressure Roller Secures Rope to Drum
- Stable Pulling Power in Two Directions
- Pull in a Choice of One or Two Directions
- Compact and Lightweight Design

EXAMPLE APPLICATIONS

- Factory Environments
- Movement of Heavy Machinery
- Agriculture, Farming, Greenhouses
- Furnace Trolleys with Controlled Speed of Operation
- Steeplejacks, Chimney Cleaning
- Opening/Closing of Silo Ports
- Opening/Closing of Gates
- Gymnasiums, Sports Centres



OPTIONS

B – Mechanical Brake

- Brake works when winch is in operation which makes it ideal for lifting but not for pulling.

L – Latching Brake

- Brake works when engaged. Whilst engaged the winch cannot be operated in either direction. Ideal for pulling, not to be used for lifting.

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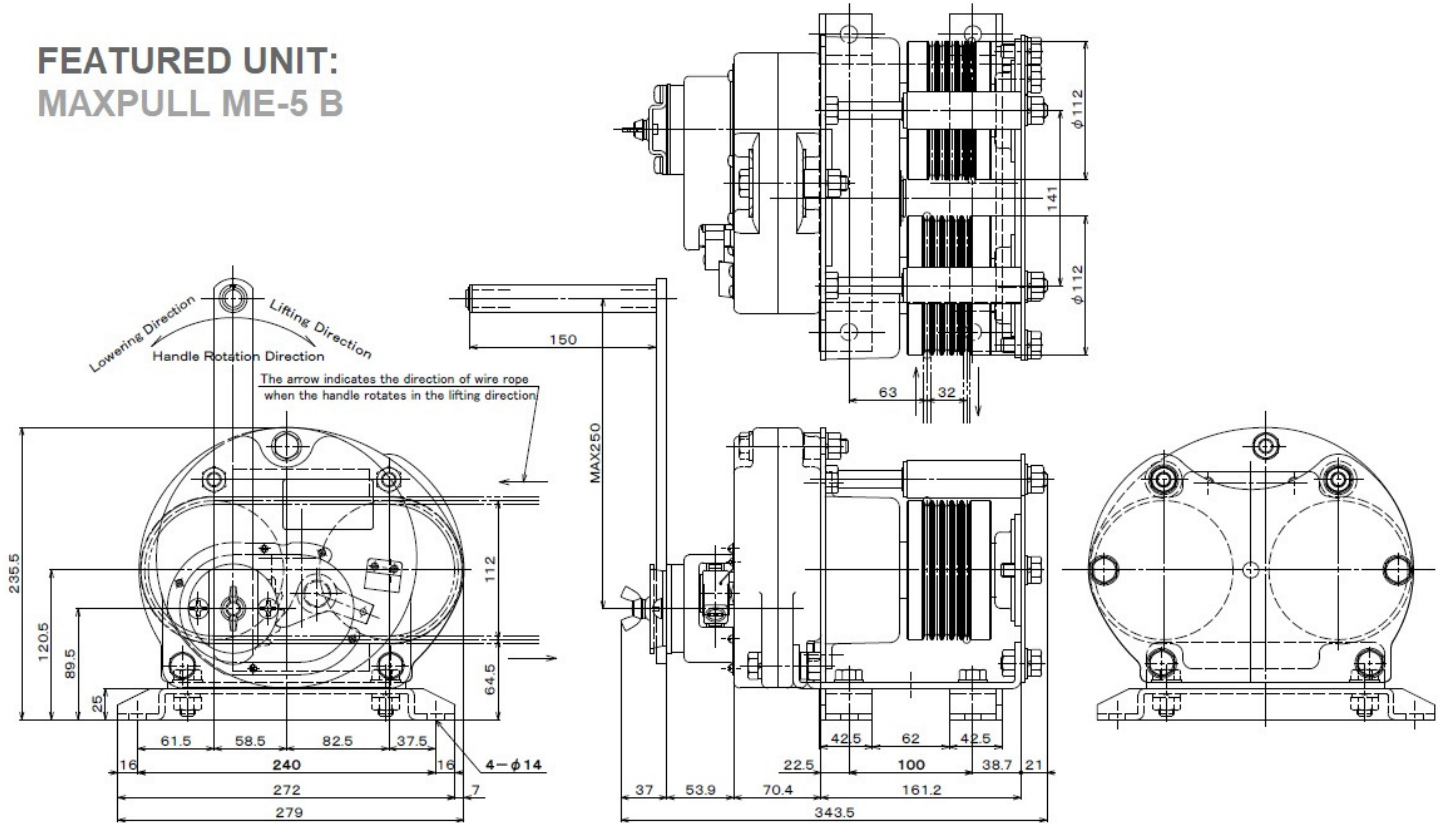
ADVANTAGES

The MAXPULL name is renowned for quality of design, finish and long-life durability:

- Grooved Drum and Pressure Roller System
- Units can be fully overhauled - see parts manual
- Melamine Resin Coating with Semi-Gloss Painted Finish

DIMENSIONS

FEATURED UNIT: MAXPULL ME-5 B



MODEL	WIRE ROPE	HANDLE FORCE (effective max)	GEAR RATIO	WEIGHT	WIRE ROPE TENSION	MINIMUM WRAPS ON DRUM
ME-5	4>6mm	97N (250mm)	1/13.3	30kg	4,900N	4
ME-10	8mm	114N (300mm)	1/19	30kg	9,800N	4

NOTES

These winches must not be used for the movement of personnel. 4 wraps of wire rope must be maintained on the drum. Data shown is approximate and intended as a guide only. You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in the materials and workmanship for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

WM82/29.11.19

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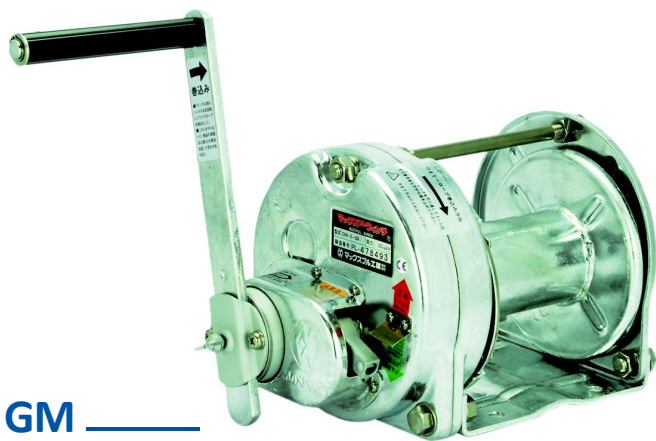




BHW

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GM



SI



MR

MAXPULL HAND WINCHES

ROTATING - GM & GMSI

RATCHET HANDLE - MR

100kg - 3000kg

FEATURES INCLUDE

- Powder Coat or Hot Dip Galvanize
- Enclosed Design
- Adjustable Crank Lever Length
- Freespool - GM Version Only
- Rapid Rope repay - GM20 Model Only
- Hoisting Version - GM-SI
- MR Ratchet Lever – Restricted Lever Accessibility, 0 - 360-Degree Rotation
- Failsafe Brake
- Safety Rope Anchor

OPTIONS

- Sealed Brake – SIC Dust & Water Sealed
- Quiet Action Brake – NSIL Theatre Use
- Handle Rotation – LUSI - Counter Clockwise

Model	Capacity KG	Rope Ø MM	Rope Storage Mtr	Capacity Rating Layer	Handle Force KG/Layer#	Handle Length MM	Gear Ratio	Weight KG
GM-1	100 (4 th Layer)	5	35	4	21.2/4	250	1:1	7.2
GM-3	300 (5 th Layer)	6	32	5	13.3/5	250	6.25:1	14.1
GM-5	500 (5 th Layer)	6	40	5	17.7/5	250	8.9:1	15.4
GM-10	1000 (3 rd Layer)	8	35	3	18.5/3	300	12.6:1	16.4
GM-20	2000 (3 rd Layer)	10	38	3	21.8/3	370	20:1 / 4:1	28.2
GM 30	3000 (3 rd Layer)	12	35	3	20.5/3	370	35.3:1	37.7
MR-1	100 (4 th Layer)	5	35	4	14.6	250	1:1	8.1
MR-3	300 (5 th Layer)	6	32	5	7.7	250	6.25:1	15.0
MR-5	500 (5 th Layer)	6	40	5	11.1	250	8.9:1	16.3
MR-10	1000 (3 rd Layer)	8	35	3	13.5	300	12.6:1	17.3
MR-20	2000 (3 rd Layer)	10	38	3	16.0	370	20:1	29.1
MR-30	3000 (3 rd Layer)	12	35	3	13.9	370	35.5:1	38.6

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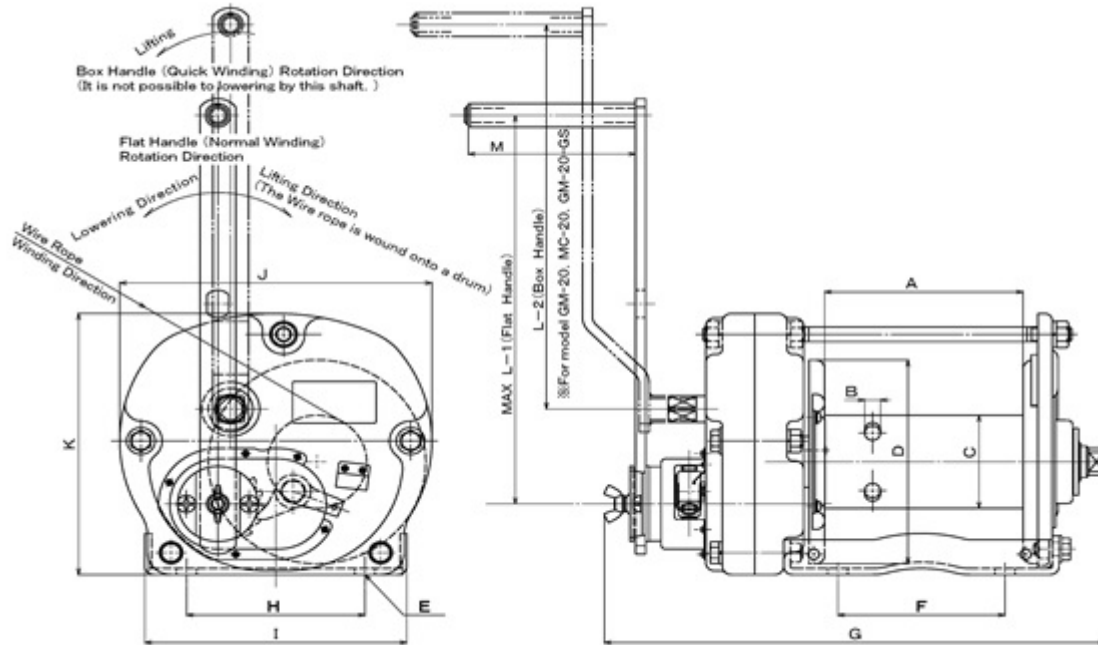


ADVANTAGES

The MAXPULL name is renowned for quality of design, finish and long-life durability:

- Ball bearings throughout
- Units can be fully overhauled - see parts manual
- Hot dip galvanised versions provided with 304 stainless steel fixings

DIMENSIONS



Model	A	B	C	D	E	F	G	H	I	J	K	L-1	L-2	M
GM-1	120	9	60.5	130	4x10.5	100	265.9	100	126	197	157	250		150
GM-3	120	9	60.5	150	4x10	100	336.6	160	192	210	210.5	250		150
GM-5	135	11	76.3	175	4x12	105	352.4	160	192	210	210.5	250		150
GM-10	170	11	76.3	175	4x15	140	401.4	160	192	210	210.5	300		150
GM-20	178	14	89.1	195	4x18	150	449.6	160	235	280	250	370	368	150
MR-1	120	9	60.5	130	4x10.5	100	291.9	100	126	197	157	250		150
MR-3	120	9	60.5	150	4x10	100	362.6	160	192	210	210.5	250		150
MR-5	135	11	76.3	175	4x12	105	378.4	160	192	210	210.5	250		150
MR-10	170	11	76.3	175	4x15	140	427.4	160	192	210	210.5	300		150
MR-20	178	14	89.1	195	4x18	150	475.6	160	235	280	250	370		150

NOTES

These winches must not be used for the movement of personnel. 5 wraps of wire rope must be maintained on the drum. Data shown is approximate and intended as a guide only. You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in the materials and workmanship for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.com www.bhwwgroup.com

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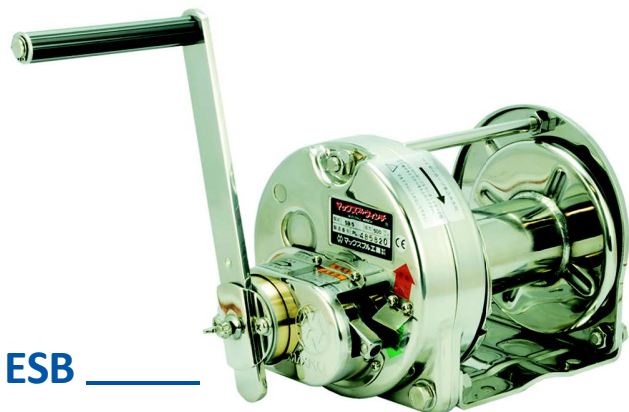




BHW

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ESB



SI



ERSB

MAXPULL HAND WINCHES STAINLESS STEEL

ROTATING – ESB TYPE

RATCHET – ERSB TYPE

100kg, 200kg, 300kg, 500kg, 1000kg

FEATURES INCLUDE

- Electropolished Surface for Excellent Rust, Salt and Chemical Resistance
- Enclosed Design
- Adjustable Crank Lever Length
- Hoist Version – ESB SI
- ERSB Ratchet Lever Restricted Lever Movement 0 – 360 Degree Rotation.
- Failsafe Brake
- Safety Rope Anchor

OPTIONS

- Sealed Brake – SIC Dust & Water Sealed
- Quiet Action Brake – NSIL Theatre Use
- Handle Rotation – LUSI - Counter Clockwise

SPECIFICATIONS

Model	Capacity KG	Rope Ø MM	Rope Storage Mtr	Capacity Rating Layer	Handle Force KG/Layer#	Handle Length MM	Gear Ratio	Weight KG
ESB-1	100 (4 th Layer)	5	35	4	21.2/4	250	1:1	7.4
ESB-3	300 (5 th Layer)	6	32	5	13.3/5	250	6.25:1	14.3
ESB-5	500 (5 th Layer)	6	40	5	17.7/5	250	8.9:1	15.6
ESB-10	1000 (3 rd Layer)	8	35	3	18.5/3	300	12.6:1	16.6
ERSB-1	100 (4 th Layer)	5	35	4	21.2/4	250	1:1	9.0
ERSB-3	300 (5 th Layer)	6	32	5	13.3/5	250	6.25:1	15.9
ERSB-5	500 (5 th Layer)	6	40	5	17.7/5	250	8.9:1	17.2
ERSB-10	1000 (3 rd Layer)	8	35	3	18.5/3	300	12.6:1	18.2

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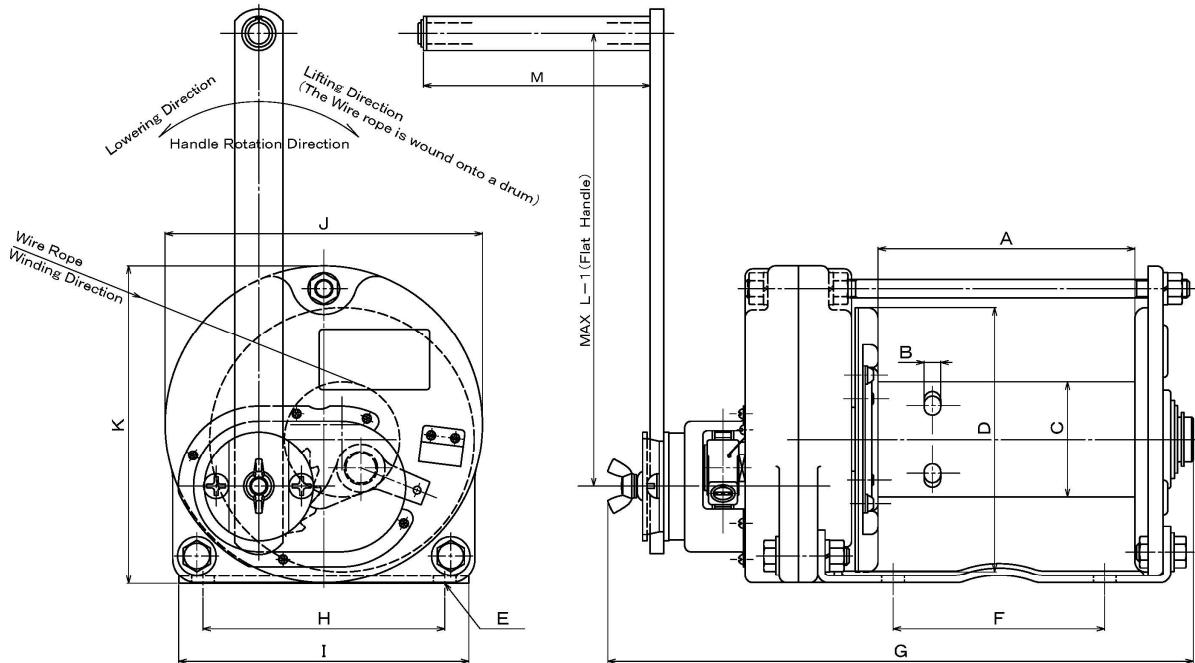


ADVANTAGES

The MAXPULL name is renowned for quality of design, finish and long-life durability:

- Ball bearings throughout
- Units can be fully overhauled

DIMENSIONS



Model	A	B	C	D	E	F	G	H	I	J	K	L-1	M
ESB-1	120	9	60.5	130	4x10.5	100	263.3	100	126	197	157	250	150
ESB-3	120	9	60.5	150	4x10	100	334	160	192	210	210.5	250	150
ESB-5	135	11	76.3	175	4x12	105	349.8	160	192	210	210.5	250	150
ESB-10	170	11	76.3	175	4x15	140	384.8	160	192	210	210.5	300	150
ERSB-1	120	9	60.5	130	4x10.5	100	289.3	100	126	197	157	250	150
ERSB-3	120	9	60.5	150	4x10	100	360	160	192	210	210.5	250	150
ERSB-5	135	11	76.3	175	4x12	105	375.8	160	192	210	210.5	250	150
ERSB-10	170	11	76.3	175	4x15	140	410.8	160	192	210	210.5	300	150

NOTES

These winches must not be used for the movement of personnel. 5 wraps of wire rope must be maintained on the drum. Data shown is approximate and intended as a guide only. You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in the materials and workmanship for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050 Fax: +44 (0)20 8207 5308

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Manual Chain Hoists & Manual Lever Chain Hoists

Each hoist data sheet comprises of two pages - the second page covers hoist dimensions

DELTA® Manual Chain Hoists from 500kg to 20,000kg



CHG SERIES
Standard Green Finish
500kg to 20000kg



CHB SERIES
Overload Protected
500kg to 20000kg

DELTA® Manual Lever Chain Hoists from 250kg to 9,000kg



LHG SERIES
Standard Green Finish
750kg to 9000kg



LHB SERIES
Overload Protected
750kg to 9000kg

CLICK ON PRODUCT IMAGE TO GO TO PRODUCT PAGE

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CHG SERIES - DELTA MANUAL CHAIN HOIST

Standard Green Finish
500kg to 20000kg

FEATURES INCLUDE

- Rated for lifting applications
- Developed for very demanding environments
- Green painted casing and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- All steel construction
- Smooth running gearbox
- Highly engineered for low maintenance

OPTIONS

- Chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
11213	6mm	18m	1.7kg
11214	8mm	24m	2.3kg
11215	10mm	30m	3.2kg
11460	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / CHG Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
BHW Group Ref. No.	11153	11154	11155	11156	11157	11158	11159	11160
Running Load	7.5kN	15kN	22.5kN	30kN	45kN	62.5kN	125kN	250kN
Hand Force - Max Load	221N	304N	340N	410N	343N	414N	414N	828N
No. of Falls of Chain	1	1	1	1	2	2	4	8
Load Chain ø	6mm	6mm	8mm	8mm	8mm	10mm	10mm	10mm
Standard Lift	2.5m	2.5m	2.5m	3m	3m	3m	3m	3m
Net Weight (No Chain)	8.5kg	11kg	18kg	18kg	27kg	42kg	83kg	193kg
Extra Weight / Metre Lift	1.7kg	1.7kg	2.3kg	2.3kg	3.7kg	5.6kg	9.7kg	19.4kg
Packed Size (cm)	26x19x14	26x21x15	33x26x15	33x26x16	36x27x16	43x34x16	50x41x21	64x38x64

Data provided is approximate and intended as a guide only

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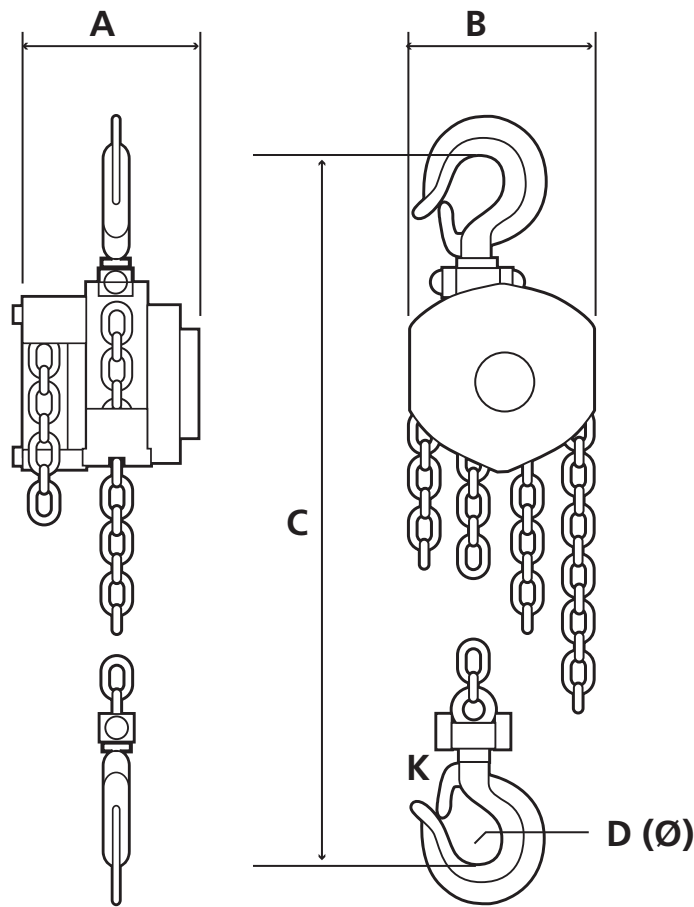
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CERT. No. 1769



DIMENSIONS (mm)

CHG Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
A Depth	113	126	141	141	141	163	163	191
B Width	125	147	183	183	183	215	405	595
C Closed Length	255	306	368	368	486	616	750	1000
D Hook Ø	36	40	45	50	58	64	85	110
K Catch Clearance	30	34	38	41	48	52	64	85

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.com www.bhwwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050 Fax: +44 (0)20 8207 5308

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CERT. No. 1769

**OVERLOAD
PROTECTED**



CHB SERIES - DELTA MANUAL CHAIN HOIST

**Overload Protected
500kg to 20000kg**

FEATURES INCLUDE

- Rated for lifting applications
- Overload protected for safe running
- Developed for very demanding environments
- Blue painted casing and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- All steel construction
- Smooth running gearbox
- Highly engineered for low maintenance

OPTIONS

- Chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
11213	6mm	18m	1.7kg
11214	8mm	24m	2.3kg
11215	10mm	30m	3.2kg
11460	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / CHB Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
BHW Group Ref. No.	11161	11162	11163	11164	11165	11166	11167	11168
Running Load	7.5kN	15kN	22.5kN	30kN	45kN	62.5kN	125kN	250kN
Hand Force - Max Load	221N	304N	340N	410N	343N	414N	414N	828N
No. of Falls of Chain	1	1	1	1	2	2	4	8
Load Chain ø	6mm	6mm	8mm	8mm	8mm	10mm	10mm	10mm
Standard Lift	2.5m	2.5m	2.5m	3m	3m	3m	3m	3m
Net Weight (No Chain)	8.5kg	11kg	18kg	18kg	27kg	42kg	83kg	193kg
Extra Weight / Metre Lift	1.7kg	1.7kg	2.3kg	2.3kg	3.7kg	5.6kg	9.7kg	19.4kg
Packed Size (cm)	26x19x14	26x21x15	33x26x15	33x26x16	36x27x16	43x34x16	50x41x21	64x38x64

Data provided is approximate and intended as a guide only

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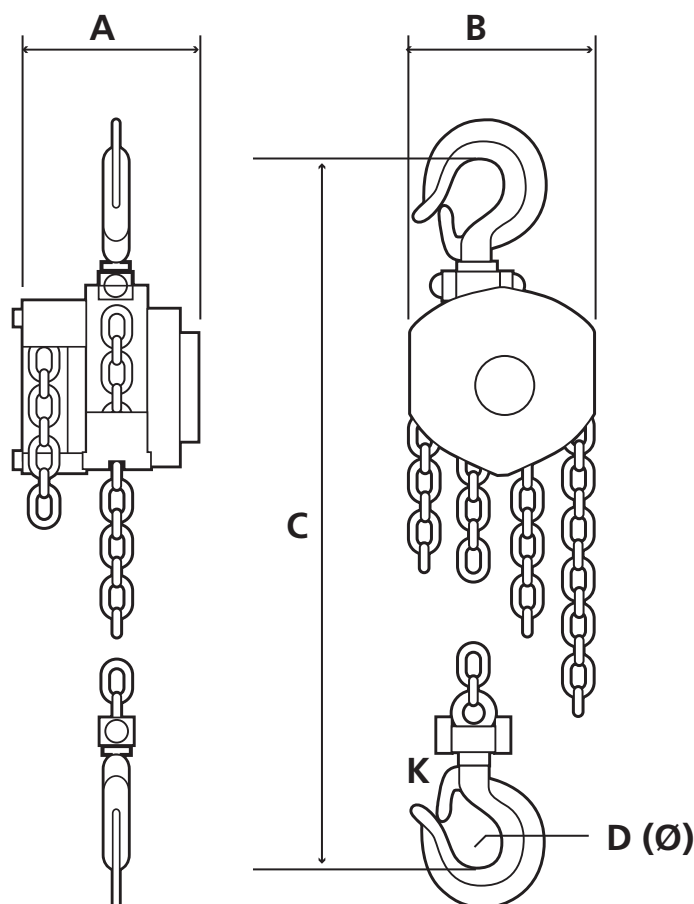
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CERT. No. 1769



DIMENSIONS (mm)

CHB Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
A Depth	113	126	141	141	141	163	163	191
B Width	125	147	183	183	183	215	405	595
C Closed Length	255	306	368	368	486	616	750	1000
D Hook Ø	36	40	45	50	58	64	85	110
K Catch Clearance	30	34	38	41	48	52	64	85

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769



LHG SERIES - DELTA LEVER CHAIN HOIST

Standard Green Finish
750kg to 9000kg

FEATURES INCLUDE

- Rated for lifting applications
- Designed for professional, industrial use
- Can be used for horizontal pulling
- Green painted casing, handle and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- All steel construction
- Smooth running gearbox
- Highly engineered for low maintenance

OPTIONS

- Chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
11213	6mm	18m	1.7kg
11214	8mm	24m	2.3kg
11215	10mm	30m	3.2kg
11460	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / LHG Model	750kg	1500kg	3000kg	6000kg	9000kg
BHW Group Ref. No.	11184	11185	11186	11187	11188
Running Load	11kN	22.5kN	37.5kN	75kN	112.5kN
Hand Force - Max Load	140N	240N	320N	340N	360N
No. of Falls of Chain	1	1	1	2	3
Load Chain ø	6mm	6mm	8mm	8mm	10mm
Net Weight (No Chain)	6.5kg	9.5kg	17.5kg	26kg	39kg
Extra Weight / Metre Lift	0.8kg	1.4kg	2.2kg	4.4kg	6.6kg
Packed Size (cm)	38x14x17	47x16x19	51x19x22	53x22x22	83x32x22

Data provided is approximate and intended as a guide only

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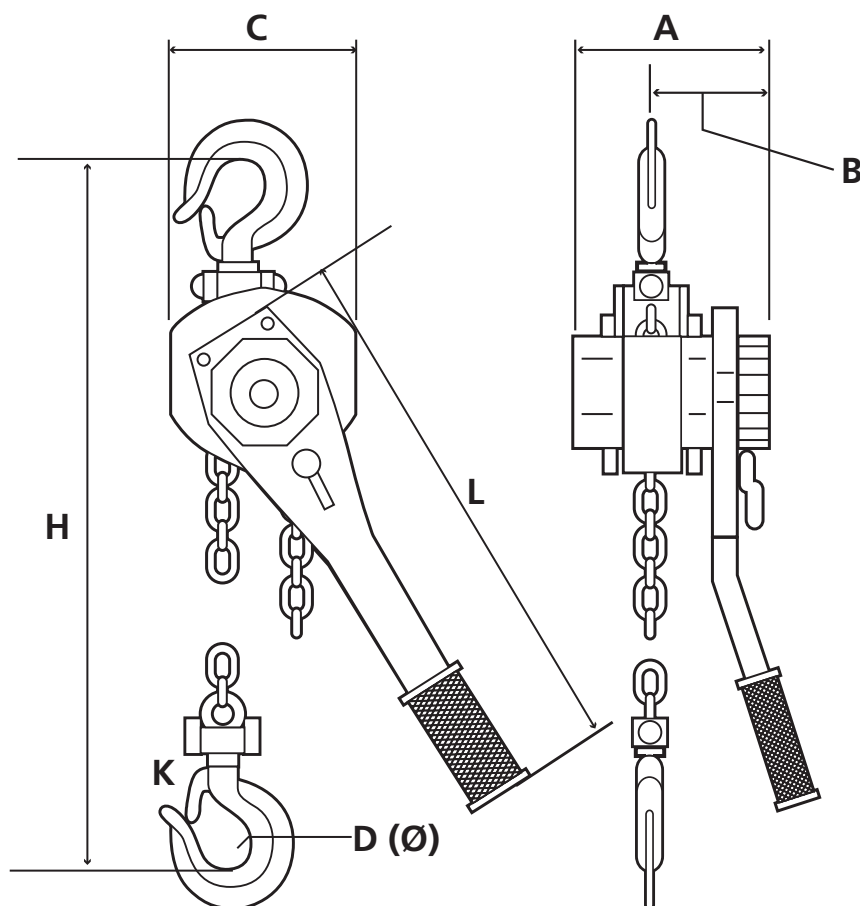
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CERT. No. 1769



DIMENSIONS (mm)

LHG Model	750kg	1500kg	3000kg	6000kg	9000kg
A Depth	155	180	215	215	215
B Depth-Hook to Ratchet	95	105	130	130	130
C Width	135	155	200	200	330
D Hook Ø	37	45	50	64	85
H Closed length	320	380	480	600	700
L Lever Length	265	370	410	410	410
K Catch Clearance	30	36	40	50	58

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

**OVERLOAD
PROTECTED**



LHB SERIES - DELTA LEVER CHAIN HOIST

Stainless Steel with Bronze hooks
Overload Protected
750kg to 6000kg

FEATURES INCLUDE

- Designed for 'sparkless' lifting applications
- Designed for professional, industrial use
- Overload protected for safer use
- Can be used for horizontal pulling
- Blue painted casing, handle and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- Steel / Stainless Steel / Bronze construction
- Smooth running gearbox
- Highly engineered for low maintenance

ALTERNATIVE MANUAL & LEVER CHAIN HOISTS

- **CHG Series** 500kg to 20,000kg - Standard Green
- **CHB Series** 500kg to 20,000kg - Overload Protected
- **LHG Series** 750kg to 9,000kg - Lever Standard Green

OPTIONS

- Sparkless chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
13102	6mm	18m	1.7kg
13103	8mm	24m	2.3kg
13104	10mm	30m	3.2kg
13105	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / LHB Model	750kg	1250kg	2000kg	4000kg	6000kg
BHW Group Ref. No.	11189	11190	11191	11192	11193
Running Load	11kN	15kN	24kN	48kN	72kN
Hand Force - Max Load	140N	240N	320N	340N	360N
No. of Falls of Chain	1	1	1	2	3
Load Chain ø	6mm	6mm	8mm	8mm	10mm
Net Weight (No Chain)	6.5kg	9.5kg	17.5kg	26kg	39kg
Extra Weight / Metre Lift	0.8kg	1.4kg	2.2kg	4.4kg	6.6kg
Packed Size (cm)	38x14x17	47x16x19	51x19x22	53x22x22	83x32x22

Data provided is approximate and intended as a guide only

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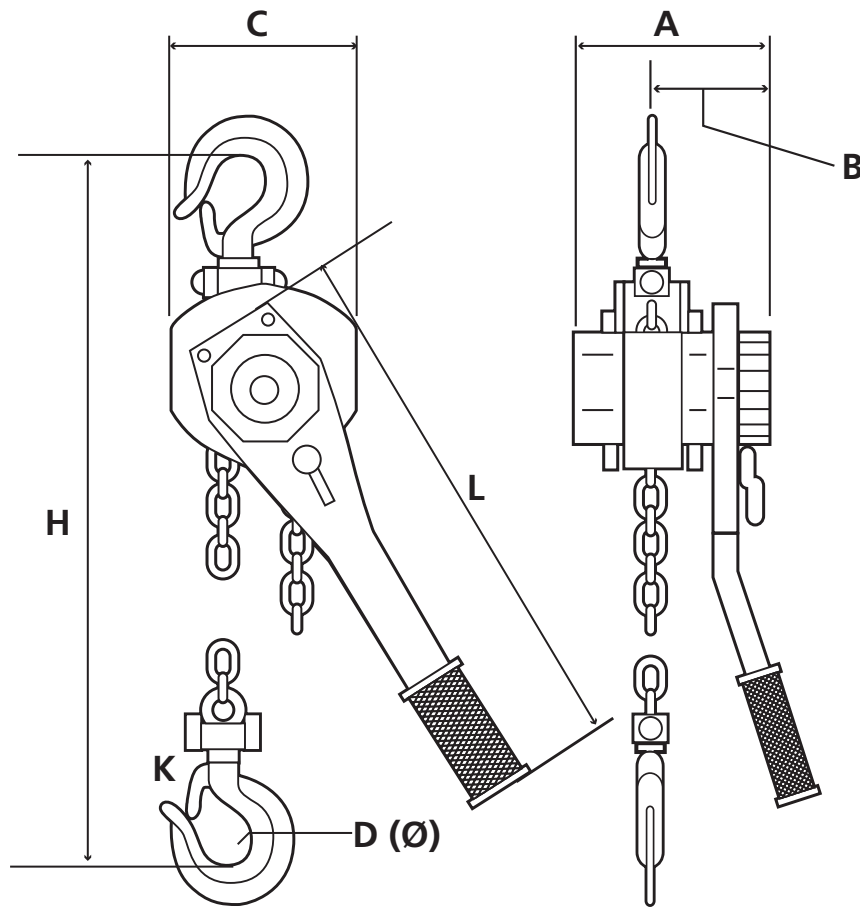
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CERT. No. 1769



DIMENSIONS (mm)

LHB Model	750kg	1500kg	3000kg	6000kg	9000kg
A Depth	155	180	215	215	215
B Depth-Hook to Ratchet	95	105	130	130	130
C Width	135	155	200	200	330
D Hook Ø	37	45	50	64	85
H Closed length	320	380	480	600	700
L Lever Length	265	370	410	410	410
K Catch Clearance	30	36	40	50	58

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

Manual Chain Hoists & Manual Lever Chain Hoists

Each hoist data sheet comprises of two pages - the second page covers hoist dimensions

DELTA® Manual Chain Hoists from 500kg to 20,000kg



CHG SERIES
Standard Green Finish
500kg to 20000kg



CHB SERIES
Overload Protected
500kg to 20000kg

DELTA® Manual Lever Chain Hoists from 250kg to 9,000kg



LHG SERIES
Standard Green Finish
750kg to 9000kg



LHB SERIES
Overload Protected
750kg to 9000kg

CLICK ON PRODUCT IMAGE TO GO TO PRODUCT PAGE

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CHG SERIES - DELTA MANUAL CHAIN HOIST

Standard Green Finish
500kg to 20000kg

FEATURES INCLUDE

- Rated for lifting applications
- Developed for very demanding environments
- Green painted casing and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- All steel construction
- Smooth running gearbox
- Highly engineered for low maintenance

OPTIONS

- Chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
11213	6mm	18m	1.7kg
11214	8mm	24m	2.3kg
11215	10mm	30m	3.2kg
11460	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / CHG Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
BHW Group Ref. No.	11153	11154	11155	11156	11157	11158	11159	11160
Running Load	7.5kN	15kN	22.5kN	30kN	45kN	62.5kN	125kN	250kN
Hand Force - Max Load	221N	304N	340N	410N	343N	414N	414N	828N
No. of Falls of Chain	1	1	1	1	2	2	4	8
Load Chain ø	6mm	6mm	8mm	8mm	8mm	10mm	10mm	10mm
Standard Lift	2.5m	2.5m	2.5m	3m	3m	3m	3m	3m
Net Weight (No Chain)	8.5kg	11kg	18kg	18kg	27kg	42kg	83kg	193kg
Extra Weight / Metre Lift	1.7kg	1.7kg	2.3kg	2.3kg	3.7kg	5.6kg	9.7kg	19.4kg
Packed Size (cm)	26x19x14	26x21x15	33x26x15	33x26x16	36x27x16	43x34x16	50x41x21	64x38x64

Data provided is approximate and intended as a guide only

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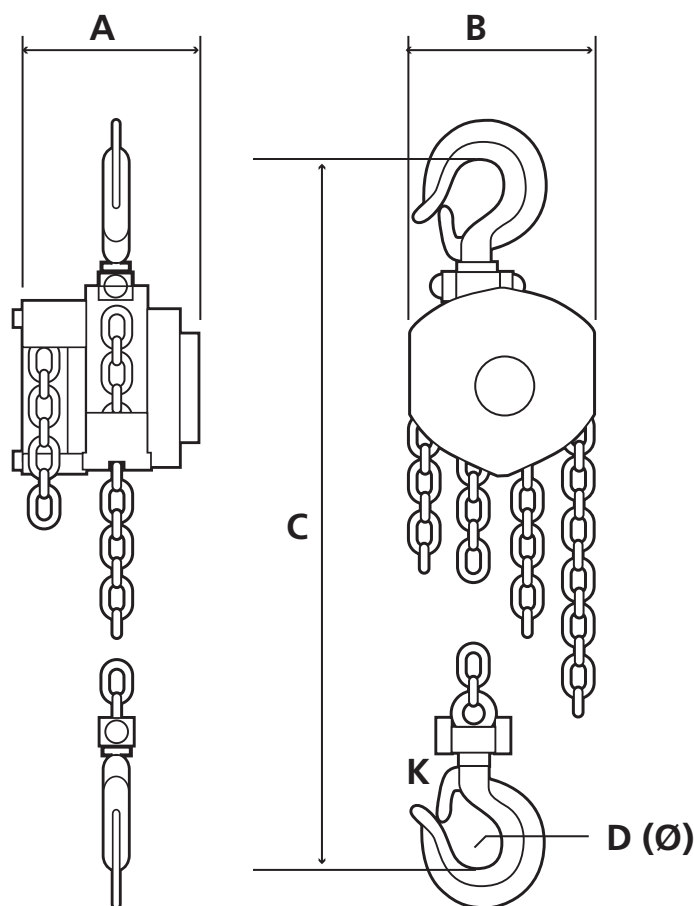
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CERT. No. 1769



DIMENSIONS (mm)

CHG Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
A Depth	113	126	141	141	141	163	163	191
B Width	125	147	183	183	183	215	405	595
C Closed Length	255	306	368	368	486	616	750	1000
D Hook Ø	36	40	45	50	58	64	85	110
K Catch Clearance	30	34	38	41	48	52	64	85

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

**OVERLOAD
PROTECTED**



CHB SERIES - DELTA MANUAL CHAIN HOIST

**Overload Protected
500kg to 20000kg**

FEATURES INCLUDE

- Rated for lifting applications
- Overload protected for safe running
- Developed for very demanding environments
- Blue painted casing and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- All steel construction
- Smooth running gearbox
- Highly engineered for low maintenance

OPTIONS

- Chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
11213	6mm	18m	1.7kg
11214	8mm	24m	2.3kg
11215	10mm	30m	3.2kg
11460	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / CHB Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
BHW Group Ref. No.	11161	11162	11163	11164	11165	11166	11167	11168
Running Load	7.5kN	15kN	22.5kN	30kN	45kN	62.5kN	125kN	250kN
Hand Force - Max Load	221N	304N	340N	410N	343N	414N	414N	828N
No. of Falls of Chain	1	1	1	1	2	2	4	8
Load Chain ø	6mm	6mm	8mm	8mm	8mm	10mm	10mm	10mm
Standard Lift	2.5m	2.5m	2.5m	3m	3m	3m	3m	3m
Net Weight (No Chain)	8.5kg	11kg	18kg	18kg	27kg	42kg	83kg	193kg
Extra Weight / Metre Lift	1.7kg	1.7kg	2.3kg	2.3kg	3.7kg	5.6kg	9.7kg	19.4kg
Packed Size (cm)	26x19x14	26x21x15	33x26x15	33x26x16	36x27x16	43x34x16	50x41x21	64x38x64

Data provided is approximate and intended as a guide only

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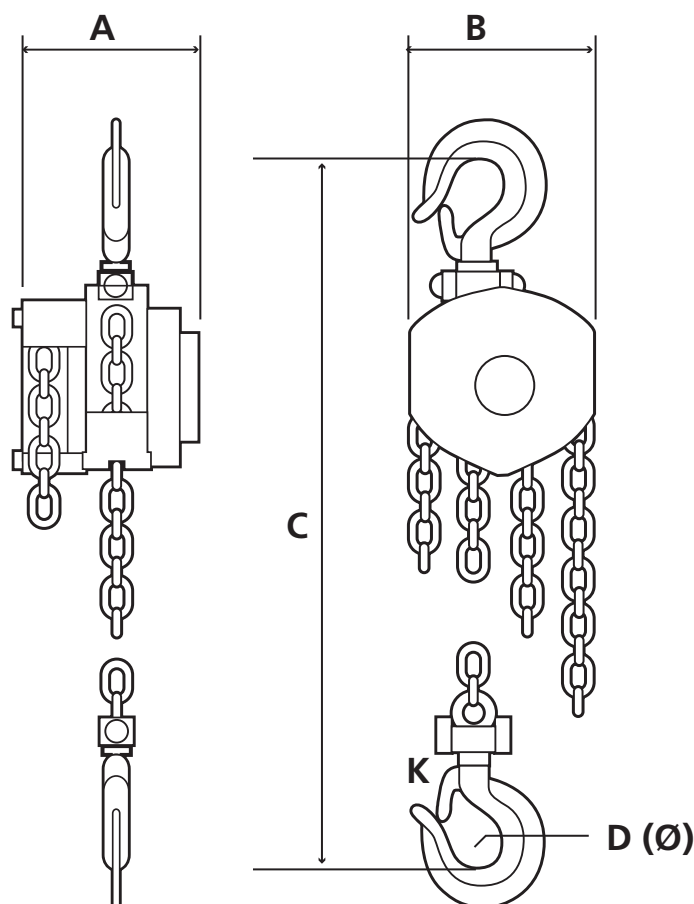
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CERT. No. 1769



DIMENSIONS (mm)

CHB Model	500kg	1000kg	1500kg	2000kg	3000kg	5000kg	10000kg	20000kg
A Depth	113	126	141	141	141	163	163	191
B Width	125	147	183	183	183	215	405	595
C Closed Length	255	306	368	368	486	616	750	1000
D Hook Ø	36	40	45	50	58	64	85	110
K Catch Clearance	30	34	38	41	48	52	64	85

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

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CERT. No. 1769



LHG SERIES - DELTA LEVER CHAIN HOIST

Standard Green Finish

750kg to 9000kg

FEATURES INCLUDE

- Rated for lifting applications
- Designed for professional, industrial use
- Can be used for horizontal pulling
- Green painted casing, handle and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- All steel construction
- Smooth running gearbox
- Highly engineered for low maintenance

OPTIONS

- Chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
11213	6mm	18m	1.7kg
11214	8mm	24m	2.3kg
11215	10mm	30m	3.2kg
11460	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / LHG Model	750kg	1500kg	3000kg	6000kg	9000kg
BHW Group Ref. No.	11184	11185	11186	11187	11188
Running Load	11kN	22.5kN	37.5kN	75kN	112.5kN
Hand Force - Max Load	140N	240N	320N	340N	360N
No. of Falls of Chain	1	1	1	2	3
Load Chain ø	6mm	6mm	8mm	8mm	10mm
Net Weight (No Chain)	6.5kg	9.5kg	17.5kg	26kg	39kg
Extra Weight / Metre Lift	0.8kg	1.4kg	2.2kg	4.4kg	6.6kg
Packed Size (cm)	38x14x17	47x16x19	51x19x22	53x22x22	83x32x22

Data provided is approximate and intended as a guide only

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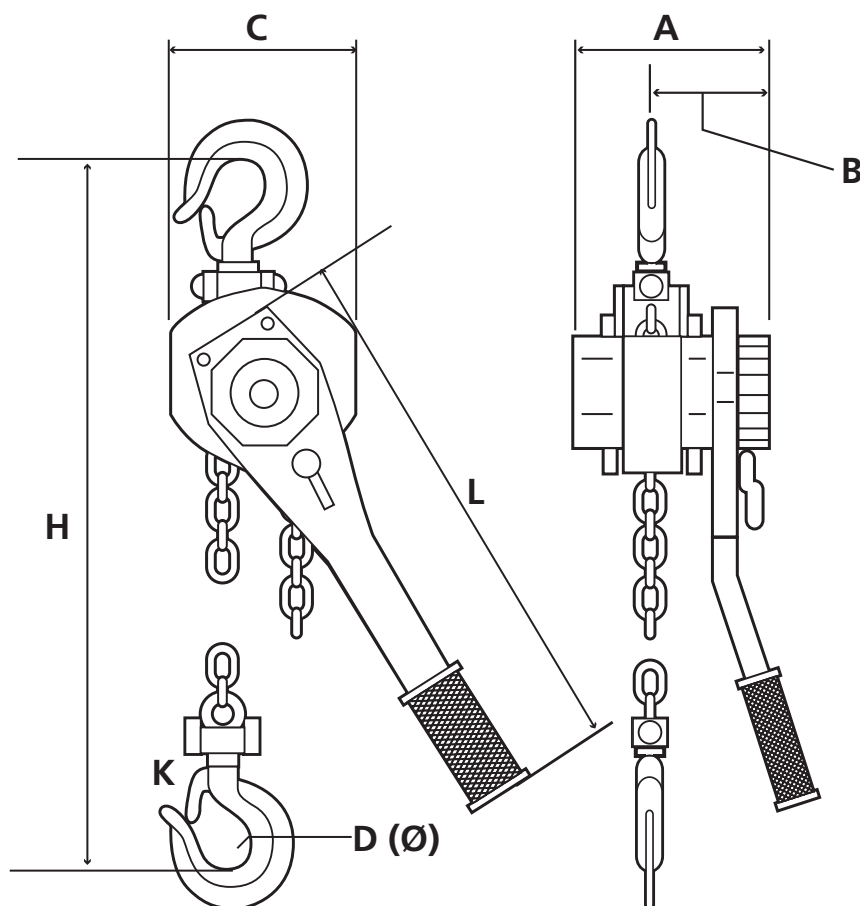
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CERT. No. 1769



DIMENSIONS (mm)

LHG Model	750kg	1500kg	3000kg	6000kg	9000kg
A Depth	155	180	215	215	215
B Depth-Hook to Ratchet	95	105	130	130	130
C Width	135	155	200	200	330
D Hook Ø	37	45	50	64	85
H Closed length	320	380	480	600	700
L Lever Length	265	370	410	410	410
K Catch Clearance	30	36	40	50	58

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

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Chains are not included under warranty.

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CERT. No. 1769

**OVERLOAD
PROTECTED**



LHB SERIES - DELTA LEVER CHAIN HOIST

Stainless Steel with Bronze hooks
Overload Protected
750kg to 6000kg

FEATURES INCLUDE

- Designed for 'sparkless' lifting applications
- Designed for professional, industrial use
- Overload protected for safer use
- Can be used for horizontal pulling
- Blue painted casing, handle and safety hooks
- Ratchet disc brake with double pawl
- Tough, yet light weight
- Single hook suspension mounting
- Steel / Stainless Steel / Bronze construction
- Smooth running gearbox
- Highly engineered for low maintenance

ALTERNATIVE MANUAL & LEVER CHAIN HOISTS

- **CHG Series** 500kg to 20,000kg - Standard Green
- **CHB Series** 500kg to 20,000kg - Overload Protected
- **LHG Series** 750kg to 9,000kg - Lever Standard Green

OPTIONS

- Sparkless chains are sold separately, sizes include:

Item no.	Diameter	Length	Weight
13102	6mm	18m	1.7kg
13103	8mm	24m	2.3kg
13104	10mm	30m	3.2kg
13105	5mm	25m	0.4kg (Hand Chain)

SPECIFICATIONS

Rated Load / LHB Model	750kg	1250kg	2000kg	4000kg	6000kg
BHW Group Ref. No.	11189	11190	11191	11192	11193
Running Load	11kN	15kN	24kN	48kN	72kN
Hand Force - Max Load	140N	240N	320N	340N	360N
No. of Falls of Chain	1	1	1	2	3
Load Chain ø	6mm	6mm	8mm	8mm	10mm
Net Weight (No Chain)	6.5kg	9.5kg	17.5kg	26kg	39kg
Extra Weight / Metre Lift	0.8kg	1.4kg	2.2kg	4.4kg	6.6kg
Packed Size (cm)	38x14x17	47x16x19	51x19x22	53x22x22	83x32x22

Data provided is approximate and intended as a guide only

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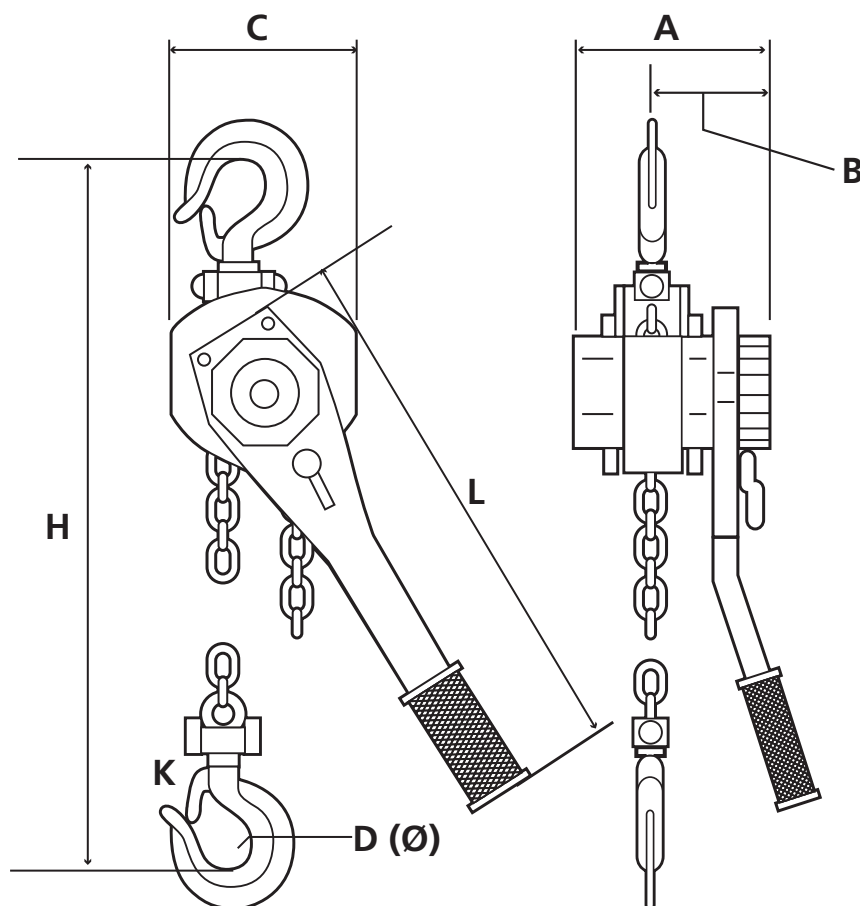
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CERT. No. 1769



DIMENSIONS (mm)

LHB Model	750kg	1500kg	3000kg	6000kg	9000kg
A Depth	155	180	215	215	215
B Depth-Hook to Ratchet	95	105	130	130	130
C Width	135	155	200	200	330
D Hook Ø	37	45	50	64	85
H Closed length	320	380	480	600	700
L Lever Length	265	370	410	410	410
K Catch Clearance	30	36	40	50	58

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769



CTS SERIES DELTA CHAIN HOIST

Suspension Hook Type

500kg to 15000kg

415v AC 3ph @ 50Hz

FEATURES INCLUDE

- *Low headroom design*
- *High duty cycle, 360 starts / hour*
- *Heavy duty motor*
Insulation class H
- *Increased lifting speeds*
- *Dual speeds available (see list on page 2)*
- *Higher horse power*
- *True modular design*
- *Chain bag supplied as standard*
- *Unique DC Brake*
Does not break the kinetic bond between the holding brake and the lifted load
- *Additional manual release on brake*
Incorporated into hoist in case of mains failure
- *Overload protection*
Through advanced external slip clutch
- *Sealed electrical enclosure*
- *24v plug-in pendant control & power cord*

OPTIONS

- **Soft Start**
- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
There are several sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- *Light Duty - LD Jobber 500kg or 1000kg*
- *PlainTrolley - CTY Series 500kg to 15000kg*
- *Motorised Trolley - CTD Series 500kg to 15000kg*
- *Geared Trolley - CTZ Series 500kg to 15000kg*
- *Lug Type Trolley - CTE Series 500kg to 15000kg*
- *Double Girder Trolley - CTH Series 500kg to 15000kg*

SPECIFICATIONS

Model	Capacity	Frame	Dual Speed?	Speed m/min	No. falls of chain	Net weight
CTS.151.001	500kg	C 015A		8	1	37kg
CTS.151.003	500kg	C 015A	Yes	8 & 2.7	1	39kg
CTS.30F.001	1000kg	C 015B		4	1	41kg
CTS.30F.003	1000kg	C 015B	Yes	4 & 1.3	1	43kg
CTS.301.001	1000kg	C 030A		8	1	52kg
CTS.301.003	1000kg	C 030A	Yes	8 & 2.7	1	57kg
CTS.451.001	1500kg	C 050A		9.5	1	118kg
CTS.451.003	1500kg	C 050A	Yes	9.5 & 3.2	1	122kg
CTS.302.001	2000kg	C 030A		4	2	57kg
CTS.302.003	2000kg	C 030A	Yes	4 & 1.3	2	62kg
CTS.601.001	2000kg	C 060A		8	1	118kg
CTS.601.003	2000kg	C 060A	Yes	8 & 2.7	1	122kg
CTS.751.001	2500kg	C 075A		7.3	1	124kg
CTS.751.003	2500kg	C 075A	Yes	7.3 & 2.4	1	128kg
CTS.303.001	3000kg	C 030A		2.7	3	62kg
CTS.303.003	3000kg	C 030A	Yes	2.7 & 0.9	3	67kg
CTS.452.001	3000kg	C 050A		4.8	2	132kg
CTS.452.003	3000kg	C 050A	Yes	4.8 & 1.6	2	136kg
CTS.752.001	5000kg	C 075A		3.7	2	146kg
CTS.752.003	5000kg	C 075A	Yes	3.7 & 1.2	2	150kg
CTS.753.001	7500kg	C 075A		2.5	3	151kg
CTS.753.003	7500kg	C 075A	Yes	2.5 & 0.8	3	155kg
CTS.754.001	10000kg	C 075A		3.7	4	305kg
CTS.754.003	10000kg	C 075A	Yes	3.7 & 1.2	4	313kg
CTS.756.001	15000kg	C 075A		2.5	6	365kg
CTS.756.003	15000kg	C 075A	Yes	2.5 & 0.8	6	373kg

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

WM46/02.04.12



CTD SERIES DELTA CHAIN HOIST

Motorised Trolley Type

500kg to 15000kg

415v AC 3ph @ 50Hz

FEATURES INCLUDE

- **Low headroom design**
- **High duty cycle, 360 starts / hour**
- **Heavy duty motor**
Insulation class H
- **Increased lifting speeds**
- **Dual speeds available** (See list page 2)
- **Higher horse power**
- **True modular design**
- **Chain bag supplied as standard**
- **Unique DC Brake**
Does not break the kinetic bond between the holding brake and the lifted load
- **Additional manual release on brake**
Incorporated into hoist in case of mains failure
- **Overload protection**
Through advanced external slip clutch
- **Sealed electrical enclosure**
- **4 button, 24v plug-in pendant control**
Supplied as standard, 48v versions also available
- **Wrap Around Frames on trolleys**
With safety lugs and bumpers

OPTIONS

- **Soft Start**
- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
There are several sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- **Light Duty - LD Jobber** 500kg or 1000kg
- **Suspension Hook - CTS Series** 500kg to 15000kg
- **Plain Trolley - CTY Series** 500kg to 15000kg
- **Geared Trolley - CTZ Series** 500kg to 15000kg
- **Lug Type Trolley - CTE Series** 500kg to 15000kg
- **Double Girder Trolley - CTH Series**
500kg to 15000kg

SPECIFICATIONS

Model	Capacity	Frame	Dual Speed?	Speed m/min Hoist Trolley		No. falls of chain	Net weight
CTD.151.001	500kg	C 015A		8	20.8	1	71kg
CTD.151.003	500kg	C 015A	Yes	8 & 2.7	16.5 & 5.5	1	73kg
CTD.30F.001	1000kg	C 015B		4	20.8	1	82kg
CTD.30F.003	1000kg	C 015B	Yes	4 & 1.3	16.5 & 5.5	1	84kg
CTD.301.001	1000kg	C 030A		8	20.8	1	93kg
CTD.301.003	1000kg	C 030A	Yes	8 & 2.7	16.6 & 5.5	1	98kg
CTD.451.001	1500kg	C 050A		9.5	21.2	1	158kg
CTD.451.003	1500kg	C 050A	Yes	9.5 & 3.2	16.8 & 5.6	1	162kg
CTD.302.001	2000kg	C 030A		4	21.2	2	105kg
CTD.302.003	2000kg	C 030A	Yes	4 & 1.3	16.8 & 5.6	2	110kg
CTD.601.001	2000kg	C 060A		8	21.2	1	166kg
CTD.601.003	2000kg	C 060A	Yes	8 & 2.7	16.8 & 5.6	1	170kg
CTD.751.001	2500kg	C 075A		7.3	17	1	197kg
CTD.751.003	2500kg	C 075A	Yes	7.3 & 2.4	17.1 & 5.7	1	201kg
CTD.303.001	3000kg	C 030A		2.7	16.6	3	135kg
CTD.303.003	3000kg	C 030A	Yes	2.7 & 0.9	17.1 & 5.7	3	140kg
CTD.452.001	3000kg	C 050A		4.8	16.6	2	205kg
CTD.452.003	3000kg	C 050A	Yes	4.8 & 1.6	17.1 & 5.7	2	209kg
CTD.752.001	5000kg	C 075A		3.7	17.4	2	266kg
CTD.752.003	5000kg	C 075A	Yes	3.7 & 1.2	17.9 & 6.0	2	270kg
CTD.753.001	7500kg	C 075A		2.5	17	3	326kg
CTD.753.003	7500kg	C 075A	Yes	2.5 & 0.8	19.6 & 5.9	3	330kg
CTD.754.001	10000kg	C 075A		3.7	17	4	540kg
CTD.754.003	10000kg	C 075A	Yes	3.7 & 1.2	17.6 & 5.9	4	548kg
CTD.756.001	15000kg	C 075A		2.5	17	6	600kg
CTD.756.003	15000kg	C 075A	Yes	2.5 & 0.8	17.6 & 5.9	6	608kg

NOTES

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

WN47/02.04.12



CTY SERIES DELTA CHAIN HOIST

Plain Trolley Type

500kg to 15000kg

415v AC 3ph @ 50Hz

FEATURES INCLUDE

- **Low headroom design**
- **High duty cycle, 360 starts / hour**
- **Heavy duty motor**
Insulation class H
- **Increased lifting speeds**
- **Dual speeds available** (see list page 2)
- **Higher horse power**
- **True modular design**
- **Chain bag supplied as standard**
- **Unique DC Brake**
Does not break the kinetic bond between the holding brake and the lifted load
- **Additional manual release on brake**
Incorporated into hoist in case of mains failure
- **Overload protection**
Through advanced external slip clutch
- **Sealed electrical enclosure**
- **4 button, 24v plug-in pendant control**
Supplied as standard, 48v versions also available
- **Wrap Around Frames on trolleys**
With safety lugs and bumpers

OPTIONS

- **Soft Start**
- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
There are several sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- **Light Duty - LD Jobber** 500kg or 1000kg
- **Suspension Hook - CTS Series** 500kg to 15000kg
- **Motorised Trolley - CTD Series** 500kg to 15000kg
- **Geared Trolley - CTZ Series** 500kg to 15000kg
- **Lug Type Trolley - CTE Series** 500kg to 15000kg
- **Double Girder Trolley - CTH Series**
500kg to 15000kg

SPECIFICATIONS

Model	Capacity	Frame	Dual Speed?	Speed m/min	No. falls of chain	Net weight
CTY.151.001	500kg	C 015A		8	1	54kg
CTY.151.003	500kg	C 015A	Yes	8 & 2.7	1	56kg
CTY.30F.001	1000kg	C 015B		4	1	60kg
CTY.30F.003	1000kg	C 015B	Yes	4 & 1.3	1	62kg
CTY.301.001	1000kg	C 030A		8	1	71kg
CTY.301.003	1000kg	C 030A	Yes	8 & 2.7	1	76kg
CTY.451.001	1500kg	C 050A		9.5	1	141kg
CTY.451.003	1500kg	C 050A	Yes	9.5 & 3.2	1	145kg
CTY.302.001	2000kg	C 030A		4	2	80kg
CTY.302.003	2000kg	C 030A	Yes	4 & 1.3	2	85kg
CTY.601.001	2000kg	C 060A		8	1	141kg
CTY.601.003	2000kg	C 060A	Yes	8 & 2.7	1	145kg
CTY.751.001	2500kg	C 075A		7.3	1	161kg
CTY.751.003	2500kg	C 075A	Yes	7.3 & 2.4	1	165kg
CTY.303.001	3000kg	C 030A		2.7	3	99kg
CTY.303.003	3000kg	C 030A	Yes	2.7 & 0.9	3	104kg
CTY.452.001	3000kg	C 050A		4.8	2	169kg
CTY.452.003	3000kg	C 050A	Yes	4.8 & 1.6	2	173kg
CTY.752.001	5000kg	C 075A		3.7	2	231kg
CTY.752.003	5000kg	C 075A	Yes	3.7 & 1.2	2	235kg
CTY.753.001	7500kg	C 075A		2.5	3	291kg
CTY.753.003	7500kg	C 075A	Yes	2.5 & 0.8	3	295kg
CTY.754.001	10000kg	C 075A		3.7	4	485kg
CTY.754.003	10000kg	C 075A	Yes	3.7 & 1.2	4	493kg
CTY.756.001	15000kg	C 075A		2.5	6	545kg
CTY.756.003	15000kg	C 075A	Yes	2.5 & 0.8	6	553kg

NOTES

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

WM48/02.04.12

CTZ SERIES DELTA CHAIN HOIST

Geared Trolley Type

500kg to 15000kg

415v AC 3ph @ 50Hz

FEATURES INCLUDE

- **Low headroom design**
- **High duty cycle, 360 starts / hour**
- **Heavy duty motor**
Insulation class H
- **Increased lifting speeds**
- **Dual speed available** (see list page 2)
- **Higher horse power**
- **True modular design**
- **Chain bag supplied as standard**
- **Unique DC Brake**
Does not break the kinetic bond between the holding brake and the lifted load
- **Additional manual release on brake**
Incorporated into hoist in case of mains failure
- **Overload protection**
Through advanced external slip clutch
- **Sealed electrical enclosure**
- **4 button, 24v plug-in pendant control**
Supplied as standard, 48v versions also available
- **Wrap Around Frames on trolleys**
With safety lugs and bumpers



OPTIONS

- **Soft Start**
- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
There are several sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- **Light Duty - LD Jobber** 500kg or 1000kg
- **Suspension Hook - CTS Series** 500kg to 15000kg
- **Motorised Trolley - CTD Series** 500kg to 15000kg
- **Geared Trolley - CTZ Series** 500kg to 15000kg
- **Lug Type Trolley - CTE Series** 500kg to 15000kg
- **Double Girder Trolley - CTH Series**
500kg to 15000kg

SPECIFICATIONS

Model	Capacity	Frame	Dual Speed?	Speed m/min	No. falls of chain	Net weight
CTZ.151.001	500kg	C 015A		8	1	54kg
CTZ.151.003	500kg	C 015A	Yes	8 & 2.7	1	56kg
CTZ.30F.001	1000kg	C 015B		4	1	60kg
CTZ.30F.003	1000kg	C 015B	Yes	4 & 1.3	1	62kg
CTZ.301.001	1000kg	C 030A		8	1	71kg
CTZ.301.003	1000kg	C 030A	Yes	8 & 2.7	1	76kg
CTZ.451.001	1500kg	C 050A		9.5	1	141kg
CTZ.451.003	1500kg	C 050A	Yes	9.5 & 3.2	1	145kg
CTZ.302.001	2000kg	C 030A		4	2	80kg
CTZ.302.003	2000kg	C 030A	Yes	4 & 1.3	2	85kg
CTZ.601.001	2000kg	C 060A		8	1	141kg
CTZ.601.003	2000kg	C 060A	Yes	8 & 2.7	1	145kg
CTZ.751.001	2500kg	C 075A		7.3	1	161kg
CTZ.751.003	2500kg	C 075A	Yes	7.3 & 2.4	1	165kg
CTZ.303.001	3000kg	C 030A		2.7	3	99kg
CTZ.303.003	3000kg	C 030A	Yes	2.7 & 0.9	3	104kg
CTZ.452.001	3000kg	C 050A		4.8	2	169kg
CTZ.452.003	3000kg	C 050A	Yes	4.8 & 1.6	2	173kg
CTZ.752.001	5000kg	C 075A		3.7	2	231kg
CTZ.752.003	5000kg	C 075A	Yes	3.7 & 1.2	2	235kg
CTZ.753.001	7500kg	C 075A		2.5	3	291kg
CTZ.753.003	7500Kkg	C 075A	Yes	2.5 & 0.8	3	295kg
CTZ.754.001	10000kg	C 075A		3.7	4	485kg
CTZ.754.003	10000kg	C 075A	Yes	3.7 & 1.2	4	493kg
CTZ.756.001	15000kg	C 075A		2.5	6	545kg
CTZ.756.003	15000kg	C 075A	Yes	2.5 & 0.8	6	553kg

NOTES

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

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WARRANTY

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Chains are not included under warranty.

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CERT. No. 1769

WM49/02.04.12



BHW

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CTE SERIES DELTA CHAIN HOIST

Lug Type

500kg to 15000kg

415v AC 3ph @ 50Hz

FEATURES INCLUDE

- **Low headroom design**
- **High duty cycle, 360 starts / hour**
- **Heavy duty motor**
Insulation class H
- **Increased lifting speeds**
- **Dual speeds available** (see list page 2)
- **Higher horse power**
- **True modular design**
- **Chain bag supplied as standard**
- **Unique DC Brake**
Does not break the kinetic bond between the holding brake and the lifted load
- **Additional manual release on brake**
Incorporated into hoist in case of mains failure
- **Overload protection**
Through advanced external slip clutch
- **Sealed electrical enclosure**
- **4 button, 24v plug-in pendant control**
Supplied as standard, 48v versions also available
- **Wrap Around Frames on trolleys**
With safety lugs and bumpers

OPTIONS

- **Soft Start**
- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
There are several sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- **Light Duty - LD Jobber** 500kg or 1000kg
- **Suspension Hook - CTS Series** 500kg to 15000kg
- **Plain Trolley - CTY Series** 500kg to 15000kg
- **Motorised Trolley - CTD Series** 500kg to 15000kg
- **Geared Trolley - CTZ Series** 500kg to 15000kg
- **Double Girder Trolley - CTH Series**
500kg to 15000kg

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CERT. No. 1769

SPECIFICATIONS

Model	Capacity	Frame	Dual Speed?	Speed m/min	No. falls of chain	Net weight
CTE.151.001	500kg	C 015A		8	1	54kg
CTE.151.003	500kg	C 015A	Yes	8 & 2.7	1	56kg
CTE.30F.001	1000kg	C 015B		4	1	60kg
CTE.30F.003	1000kg	C 015B	Yes	4 & 1.3	1	62kg
CTE.301.001	1000kg	C 030A		8	1	71kg
CTE.301.003	1000kg	C 030A	Yes	8 & 2.7	1	76kg
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CTE.302.001	2000kg	C 030A		4	2	80kg
CTE.302.003	2000kg	C 030A	Yes	4 & 1.3	2	85kg
CTE.601.001	2000kg	C 060A		8	1	141kg
CTE.601.003	2000kg	C 060A	Yes	8 & 2.7	1	145kg
CTE.751.001	2500kg	C 075A		7.3	1	161kg
CTE.751.003	2500kg	C 075A	Yes	7.3 & 2.4	1	165kg
CTE.303.001	3000kg	C 030A		2.7	3	99kg
CTE.303.003	3000kg	C 030A	Yes	2.7 & 0.9	3	104kg
CTE.452.001	3000kg	C 050A		4.8	2	169kg
CTE.452.003	3000kg	C 050A	Yes	4.8 & 1.6	2	173kg
CTE.752.001	5000kg	C 075A		3.7	2	231kg
CTE.752.003	5000kg	C 075A	Yes	3.7 & 1.2	2	235kg
CTE.753.001	7500kg	C 075A		2.5	3	291kg
CTE.753.003	7500kg	C 075A	Yes	2.5 & 0.8	3	295kg
CTE.754.001	10000kg	C 075A		3.7	4	485kg
CTE.754.003	10000kg	C 075A	Yes	3.7 & 1.2	4	493kg
CTE.756.001	15000kg	C 075A		2.5	6	545kg
CTE.756.003	15000kg	C 075A	Yes	2.5 & 0.8	6	553kg

NOTES

These hoists must not be used for the movement of personnel.

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You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.



CTH SERIES DELTA CHAIN HOIST

Double Girder Top Running Trolley
500kg to 15000kg
415v AC 3ph @ 50Hz

FEATURES INCLUDE

- **Low headroom design**
- **High duty cycle, 360 starts / hour**
- **Heavy duty motor**
Insulation class H
- **Increased lifting speeds**
- **Dual speeds available** (see list page 2)
- **Higher horse power**
- **True modular design**
- **Chain bag supplied as standard**
- **Unique DC Brake**
Does not break the kinetic bond between the holding brake and the lifted load
- **Additional manual release on brake**
Incorporated into hoist in case of mains failure
- **Overload protection**
Through advanced external slip clutch
- **Sealed electrical enclosure**
- **4 button, 24v plug-in pendant control**
Supplied as standard, 48v versions also available
- **Wrap Around Frames on trolleys**
With safety lugs and bumpers

OPTIONS

- **Soft Start**
- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
There are several sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- **Light Duty - LD Jobber** 500kg or 1000kg
- **Suspension Hook - CTS Series** 500kg to 15000kg
- **Plain Trolley - CTY Series** 500kg to 15000kg
- **Motorised Trolley - CTD Series** 500kg to 15000kg
- **Geared Trolley - CTZ Series** 500kg to 15000kg
- **Lug Type Trolley - CTE Series** 500kg to 15000kg

SPECIFICATIONS

Model	Capacity	Frame	Dual Speed?	Speed m/min	No. falls of chain	Net weight
CTH.151.001	500kg	C 015A		8	1	54kg
CTH.151.003	500kg	C 015A	Yes	8 & 2.7	1	56kg
CTH.30F.001	1000kg	C 015B		4	1	60kg
CTH.30F.003	1000kg	C 015B	Yes	4 & 1.3	1	62kg
CTH.301.001	1000kg	C 030A		8	1	71kg
CTH.301.003	1000kg	C 030A	Yes	8 & 2.7	1	76kg
CTH.451.001	1500kg	C 050A		9.5	1	141kg
CTH.451.003	1500kg	C 050A	Yes	9.5 & 3.2	1	145kg
CTH.302.001	2000kg	C 030A		4	2	80kg
CTH.302.003	2000kg	C 030A	Yes	4 & 1.3	2	85kg
CTH.601.001	2000kg	C 060A		8	1	141kg
CTH.601.003	2000kg	C 060A	Yes	8 & 2.7	1	145kg
CTH.751.001	2500kg	C 075A		7.3	1	161kg
CTH.751.003	2500kg	C 075A	Yes	7.3 & 2.4	1	165kg
CTH.303.001	3000kg	C 030A		2.7	3	99kg
CTH.303.003	3000kg	C 030A	Yes	2.7 & 0.9	3	104kg
CTH.452.001	3000kg	C 050A		4.8	2	169kg
CTH.452.003	3000kg	C 050A	Yes	4.8 & 1.6	2	173kg
CTH.752.001	5000kg	C 075A		3.7	2	231kg
CTH.752.003	5000kg	C 075A	Yes	3.7 & 1.2	2	235kg
CTH.753.001	7500kg	C 075A		2.5	3	291kg
CTH.753.003	7500kg	C 075A	Yes	2.5 & 0.8	3	295kg
CTH.754.001	10000kg	C 075A		3.7	4	485kg
CTH.754.003	10000kg	C 075A	Yes	3.7 & 1.2	4	493kg
CTH.756.001	15000kg	C 075A		2.5	6	545kg
CTH.756.003	15000kg	C 075A	Yes	2.5 & 0.8	6	553kg

NOTES

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.co.uk www.bhwwgroup.com

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Northern Office: 6 South Orbital Trading Park, Hedon Road, Hull, East Yorkshire, HU9 1NJ Tel: +44 (0)1482 223 663 Fax: +44 (0)1482 218 285

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CERT. No. 1769



Lightweight, versatile chain hoists offering excellent performance for such compact machines.

These professional jobbing hoists are a 'must have' for all service vans.

Ideal for Civil Contractors, Builders and Factory Service Engineers.

Portable, saves time and effort - and a major contribution to maintaining Health and Safety standards on site.

LD 'JOBBER' SERIES DELTA CHAIN HOIST

**Light Duty Suspended Chain Hoists
500kg or 1000kg**

Both available as 110v or 240v x 1ph AC

FEATURES INCLUDE

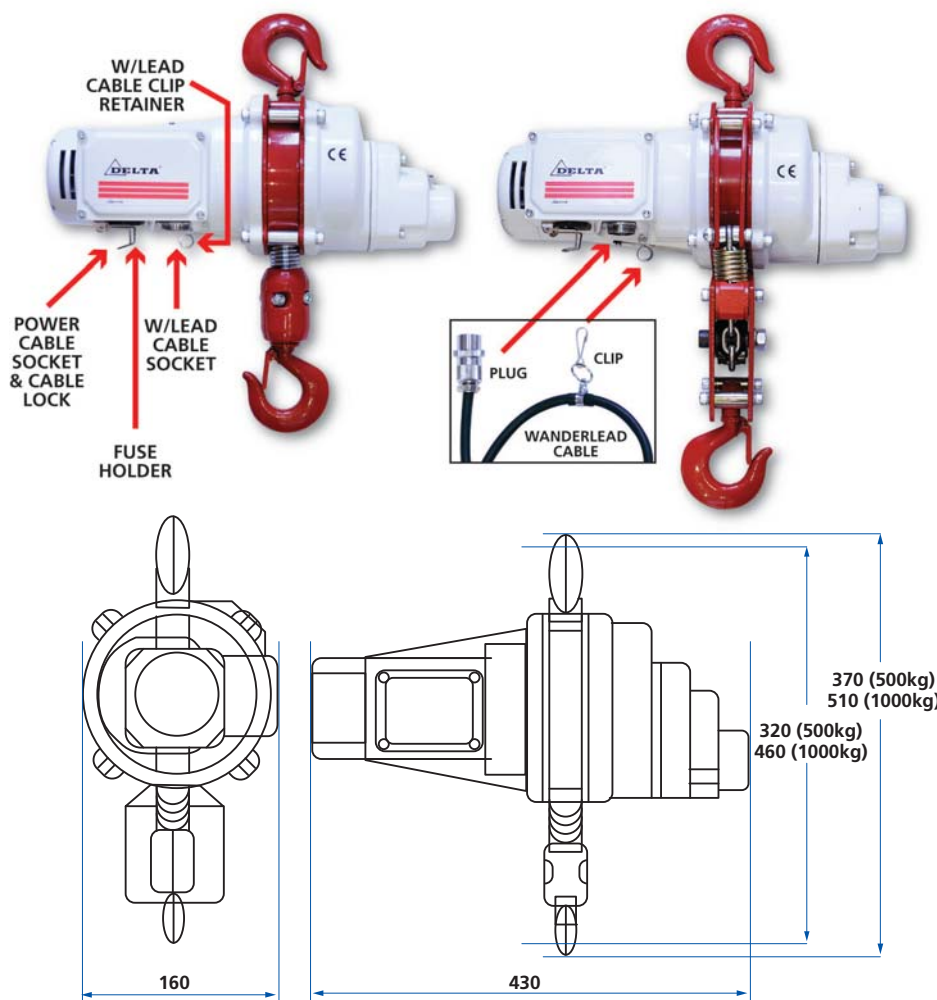
- **Available in either 110v or 240v x 1ph options**
In the case of 110v version - via transformer
- **Lightweight and compact design**
Easy installation, ideal for moving between different locations
- **Safety slipping clutch**
Prevents hook becoming trapped into the hoist in the 'up' direction
- **Supplied with chain bag**
For safe storage of chain - please ask about relevant capacities for length of chain required
- **360° safety hook**
Self latching swivel type
- **6 metre plug in pendant control**
2 button plus emergency stop
- **5 metre power lead with commercial type 3 pin plug**
- **Limited motor draw on amperage**
Rectified brush type limits current draw to 6 amps. This enables hoist to operate from a standard 13amp ring main

OPTIONS

- **Chains are sold separately**
Lengths supplied to suit requirements and fall
- **Chain bags**
Sizes available according to chain length required

ALTERNATIVE CHAIN HOISTS AVAILABLE

- **Suspension Hook - CTS Series** 500kg to 15000kg
- **Plain Trolley - CTY Series** 500kg to 15000kg
- **Motorised Trolley - CTD Series** 500kg to 15000kg
- **Geared Trolley - CTZ Series** 500kg to 15000kg
- **Lug Type Trolley - CTE Series** 500kg to 15000kg
- **Double Girder Trolley - CTH Series**
500kg to 15000kg



SPECIFICATIONS

DU901

DU902

Voltage:	110v	240v	110v	240v
Lifting:	Capacity		500kg	
	Height*		16m	
	Type of fall		Single	
Weight:	Hoist only		9kg	
	Total kit		20kg	
Line speed approx		6m/min	3m/min	
Outputs	Kilowatts		1.3kw	
	Amperes		12amp	6amp
Duty cycle		All have a duty cycle of 25%, with a maximum of 60 starts per hour		
Chain		Grade 80 HT galvanised - Links 6.3mm dia x 19.1mm long		

* The lifting heights shown are the maximum using the standard chain storage bag. For further options please call sales.

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Chains are not included under warranty.

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CERT. No. 1769

WM25/16.08.11



CH100



CH200



CH600

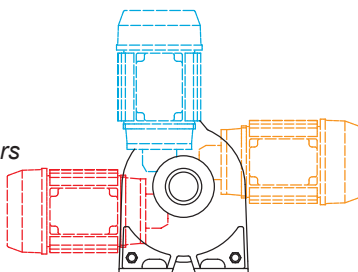


CH300L

CHANDELIER HOIST FEATURES

- **A choice of four hoists - 100kg, 200kg, 300kg or 600kg lifting capacity**
With different capacities for heights of lift Larger hoists for heavier duty can also be supplied
- **Operates on standard 240V, 13A**
- **Efficient load holding**
Dual braking - independent ratchet brake running in oil and electromagnetic motor brake
- **Lightweight and compact design**
Aluminium die-castings to save weight and the compact design enables installation in small areas
- **Available in different drum lengths**
To provide choice for wire rope length
- **Enclosed drum flange**
Prevents the wire rope becoming trapped between the drum and support casing
- **Smooth running gearbox**
Quiet and efficient spur gearbox

Choice of motor position
CH200, CH300 and CH600 motors can be mounted in any of the three positions shown to suit the space available.



**TO ESTABLISH WHICH HOIST IS SUITABLE
FOR YOUR PROJECT, CALL BHW SALES.**

**LARGER SIZES OF CHANDELIER HOISTS
CAN ALSO BE MADE BY BHW GROUP LTD.**

CHANDELIER HOISTS

100-600kg Lifting Capacity

**CH100 (100kg), CH200 (200kg)
CH300L (300kg), CH600 (600kg)
240V x 1ph AC**

FOR SLOW, SAFE LIFTING AND LOWERING OF LIGHTING FIXTURES



Designed specifically to enable lifting and lowering of ceiling fixtures and fittings, including lighting, for safe and easy access.

Built to the highest standards to ensure reliability and

minimum maintenance, these hoists will safely and securely hold ceiling fixtures in place.

Available with spin resistant wire rope.

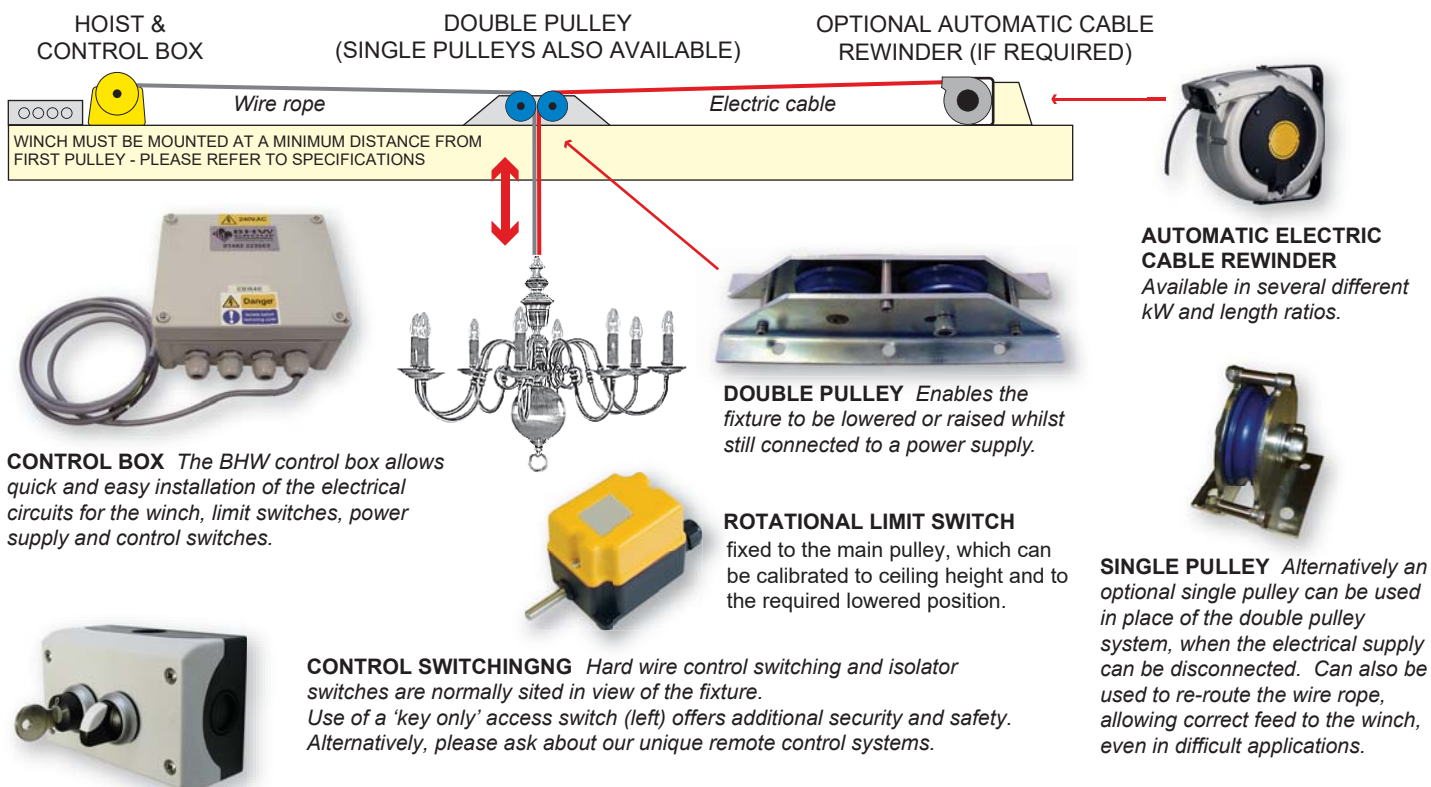
A double pulley system can enable repairs or maintenance without disconnecting power supply.

Can be calibrated to stop at full ceiling height and preferred lowered position.

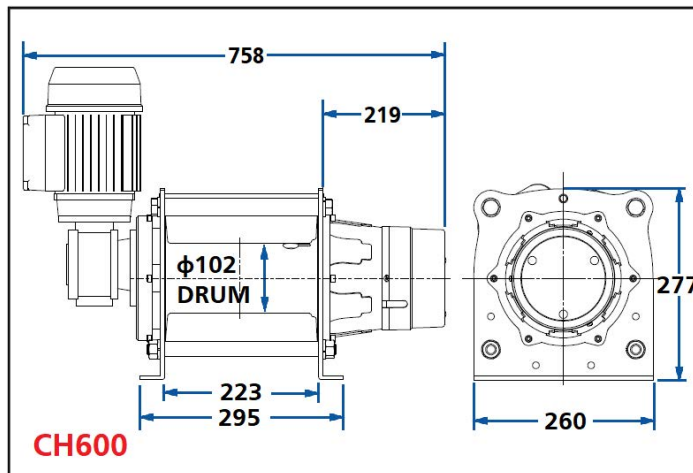
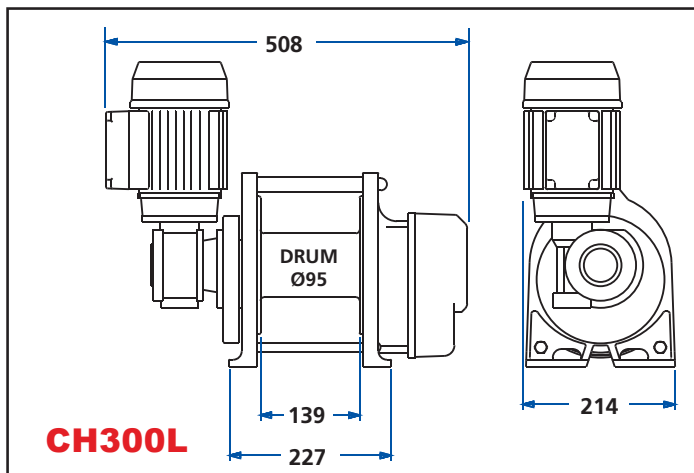
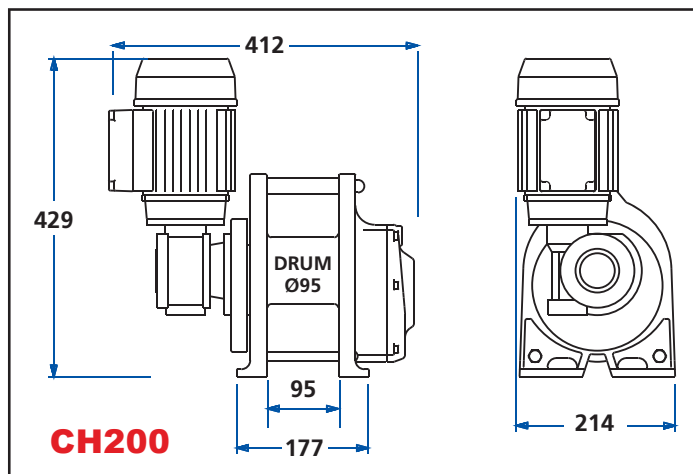
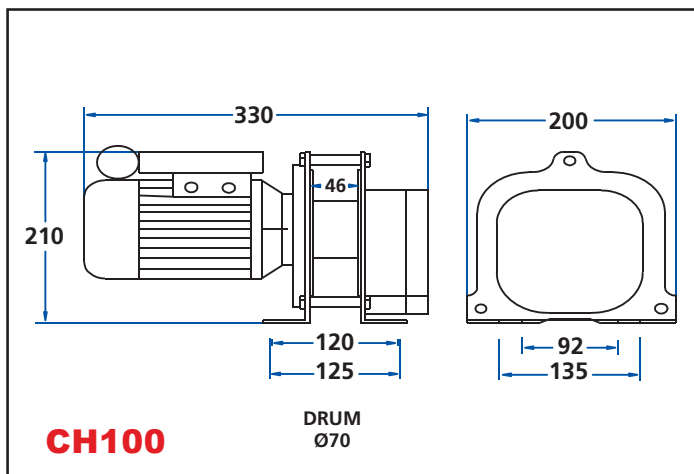
HOIST SYSTEMS OPTIONS:

- **Fully pre-wired control box**
For easy electrical installation - complete with contactors and numbered termination blocks
- **'Key only' access control switch**
For additional security and safety
- **Single pulley - for hoist only applications**
When power is not connected, or fixture only requires wire rope
- **Rotational limit switch with upper and lower stop settings**
Calibrated by the installer to suit individual installation
- **Automatic power cable rewriter (if needed)** *Certified as suitable for the application (the kW rating and circuit details of the light fitting should be specified to BHW Group Ltd at the time of order)*
- **Non rotating wire rope available to correct length**
This is calibrated by BHW Group Ltd to allow for winch requirements and the distance from floor to ceiling
- **Protection covers**
To protect the hoist, pulleys or cable rewinders from falling debris or dust

TYPICAL INSTALLATION LAYOUT



HOIST DIMENSIONS



LINE PULL AND LINE SPEED PERFORMANCES

CH100

Rated lifting capacity
100kg on 4th layer

		NUMBER OF ROPE LAYERS ON DRUM							
		1	2	3	4	5	6	7	8
Maximum Rated Line Pull by Layer	kg	135	121	110	100	92	86	80	75
Rope Capacity Cumulative by Layer (4mm ø Wire Rope)	m	2.5	5.4	8.5	11.9	15.5	19.5	23.8	28.3
Line Speed - m/min		3.5	4.0	4.5	5.1	5.6	6.1	6.6	7.1

CH200

Rated lifting capacity
200kg on 3rd layer

		NUMBER OF ROPE LAYERS ON DRUM							
		1	2	3	4	5	6	7	8
Maximum Rated Line Pull by Layer	kg	243	220	200	185	171	159	149	140
Rope Capacity Cumulative by Layer (5mm ø Wire Rope)	m	5.8	12.2	19.2	27	35	44	53	63
Line Speed - m/min		3.5	3.9	4.3	4.7	5.0	5.4	5.8	6.1

CH300L

Rated lifting capacity
300kg on 3rd layer

		NUMBER OF ROPE LAYERS ON DRUM							
		1	2	3	4	5	6	7	8
Maximum Rated Line Pull by Layer	kg	364	329	300	277	256	238	223	210
Rope Capacity Cumulative by Layer (5mm ø Wire Rope)	m	8.8	18.5	29.1	40.6	53	66.5	81	96
Line Speed - m/min		2.4	2.6	2.9	3.1	3.4	3.6	3.9	4.1

CH600

Rated lifting capacity
600kg on 3rd layer

		NUMBER OF ROPE LAYERS ON DRUM				
		1	2	3	4	5
Maximum Rated Line Pull by Layer	kg	757	671	602	546	500
Rope Capacity Cumulative by Layer (7mm ø Wire Rope)	m	10	21.5	34	48	60
Line Speed - m/min		2	2.3	2.9	3.1	3.5

Cumulative rope capacity denotes total length of rope in metres on the drum according to how many layers.

An assessment of rope length needed for lifting, plus the length required permanently off of the drum is needed to calculate rope lengths for individual applications. Data shown is approximate and intended as a guide only.

SPECIFICATIONS		CH100	CH200	CH300L	CH600
Lifting Capacity (on 3 rd layer):		100kg (0.98kN)	200kg (1.96kN)	300kg (2.94kN)	600kg (5.88kN)
Voltage:		240V (single phase)			
Motor type:		Induction motor			
Motor outputs:	Kilowatts	0.18kW	0.37kW	0.37kW	0.55kW
	Amperes	1.6A	3.6A	3.6A	4A
Braking:		Dual mechanical and electromagnetic motor brake			
Duty cycle:		All chandelier hoists have a duty cycle of 25%, with a maximum of 60 starts per hour			
Weight (Hoist only):		9kg	20kg	25kg	30kg
Drum:	Diameter Ø	70mm	95mm	95mm	102mm
	Length	46mm	97mm	147mm	223mm
	Flange Ø	158mm	190mm	190mm	180mm
Wire rope:	Diameter Ø	4mm	5mm	6mm	7mm
	Rope construction	19x7 spin resistant rope, 1960N Factor of safety = 5:1 (for lifting)			
Rope ø to mean drum ø ratio:		18:1	20:1	20:1	15:1
Minimum recommended distance of hoist from pulley at ceiling aperture (Fleet Angle):		550mm	1165mm	1765mm	2640mm

Before installing any hoist system, it is important to work out what possible stress may be put onto the adjacent ceiling joists. A suitable support must be fitted across the joists to spread the load. If in doubt, consult a builder or structural engineer.

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwwgroup.com www.bhwwgroup.com

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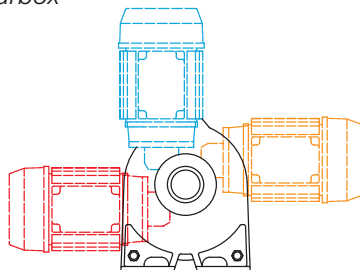


ARCHITECTURAL HOIST FEATURES

- **A choice of four hoists - 100kg, 200kg, 300kg or 470kg lifting capacity**
With different capacities for heights of lift
Larger hoists for heavier duty can also be supplied
- **Operates on standard 240v 13amp supply**
The CH500 is 24v via a supplied transformer
- **Efficient load holding**
Dual braking - independent ratchet brake running in oil and electromagnetic motor brake
- **Lightweight and compact design**
Aluminium die-castings to save weight and the compact design enables installation in small areas
- **Available in different drum lengths**
To provide choice for wire rope length
- **Enclosed drum flange**
Prevents the wire rope becoming trapped between the drum and support casing
- **Smooth running gearbox**
Quiet and efficient spur gearbox

Choice of motor position

CH200 and CH300 motors can be mounted in any of the three positions shown to suit the space available.



TO ESTABLISH WHICH HOIST IS SUITABLE FOR YOUR PROJECT, CALL BHW SALES.

LARGER SIZES OF ARCHITECTURAL HOISTS CAN ALSO BE MADE BY BHW GROUP.

ARCHITECTURAL HOISTS 100-470kg Lifting Capacity

**CH100 (100kg), CH200 (200kg)
CH300 (300kg), CH500 (470kg)**

240v x 1ph AC

FOR SLOW LIFTING AND LOWERING OF ARCHITECTURAL FIXTURES

These hoists have been designed specifically to enable lifting and lowering of fixtures and fittings including lighting, for safe and easy access.

Built to the highest standards to ensure reliability and minimum maintenance, the hoists will safely and securely hold fixtures in place.

Available with spin resistant wire rope.

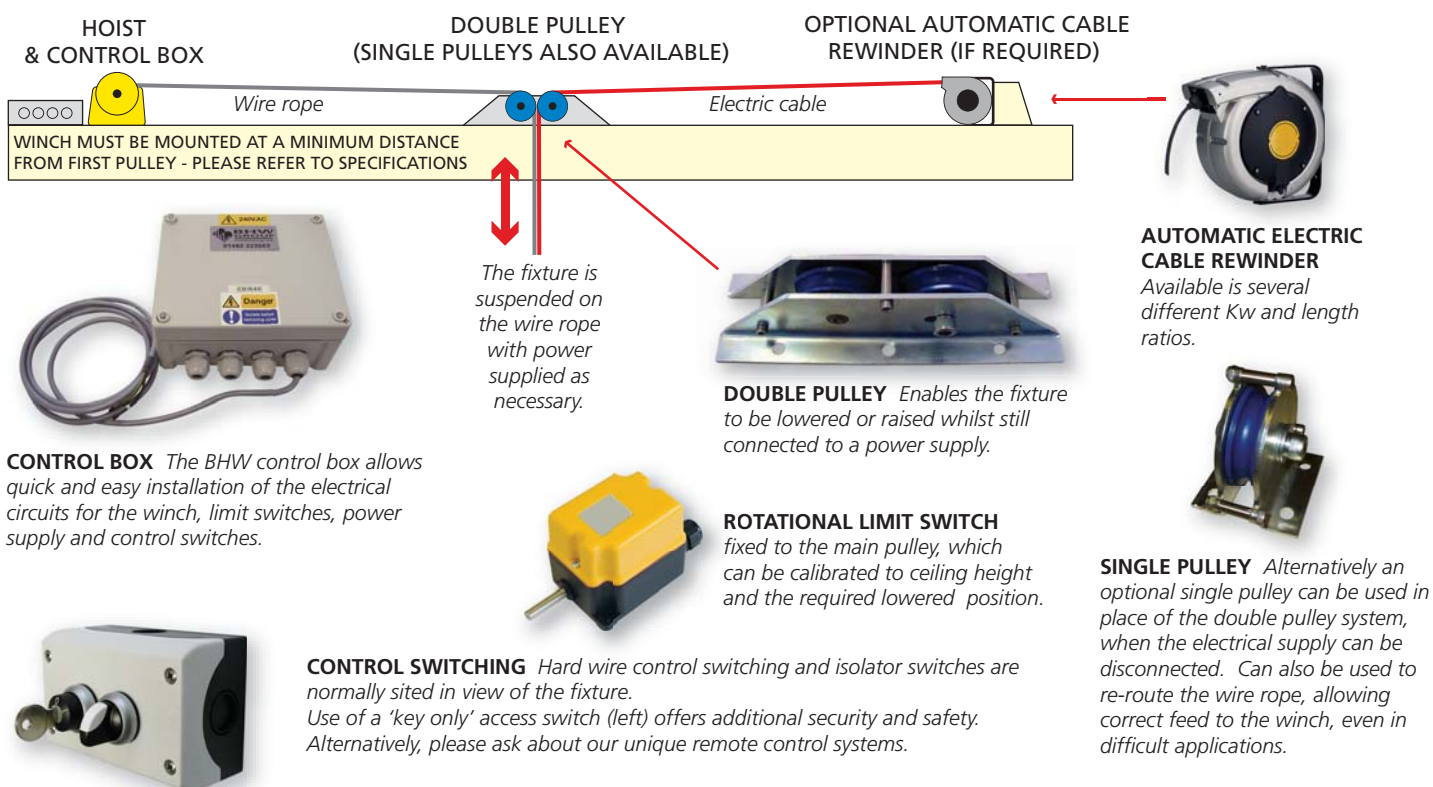
A double pulley system can enable repairs or maintenance without disconnecting power supply.

Can be calibrated to stop at full ceiling height and preferred lowered position.

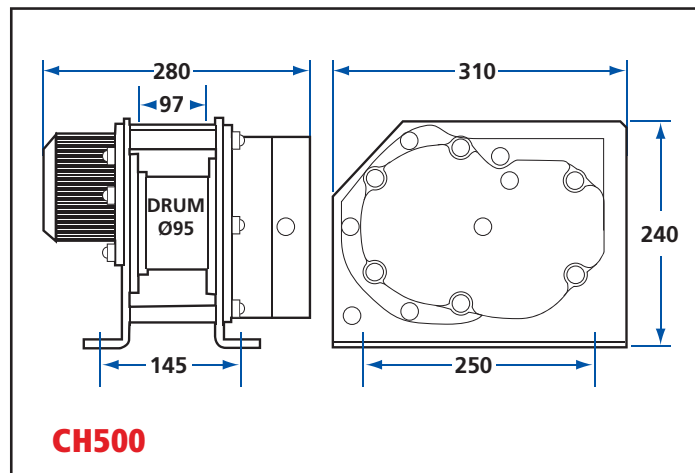
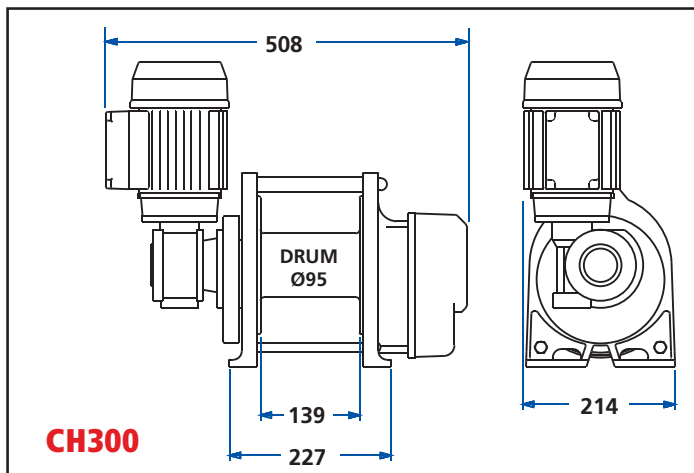
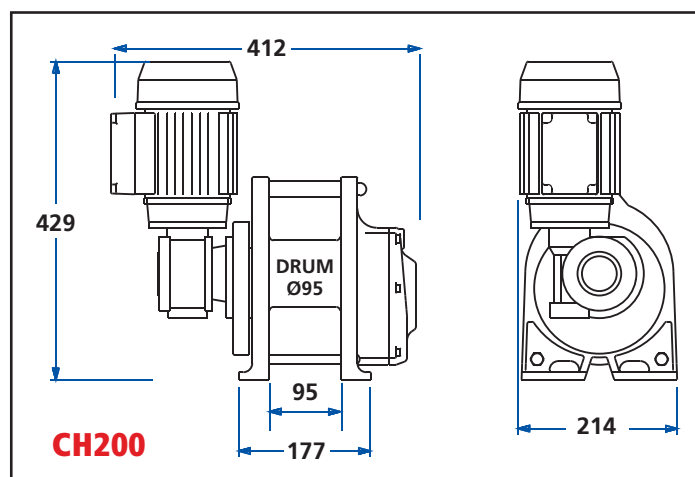
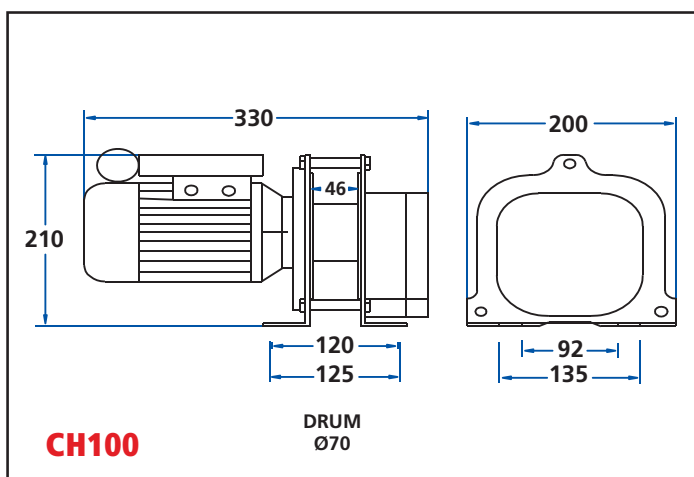
HOIST SYSTEMS CAN INCLUDE:

- **Fully pre-wired control box**
For easy electrical installation - complete with contactors and numbered termination blocks
- **'Key only' access control switch**
For additional security and safety
- **Single pulley - for hoist only applications**
When power is not connected, or fixture only requires wire rope
- **Rotational limit switch with upper and lower stop settings**
Calibrated by the installer to suit individual installation
- **Automatic power cable rewriter (if needed)**
Certified as suitable for the application (The kw rating and circuit details of the light fitting should be specified to BHW Group at the time of order)
- **Non rotating wire rope available to correct length**
This is calibrated by BHW Group to allow for winch requirements and the distance from floor to ceiling
- **Protection covers**
To protect the hoist, pulleys or cable rewinders from falling debris or dust

TYPICAL INSTALLATION LAYOUT



HOIST DIMENSIONS



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CERT. No. 1769

LINE PULL AND LINE SPEED PERFORMANCES

CH100

Rated lifting capacity
100kg on 4th layer

		NUMBER OF ROPE LAYERS ON DRUM							
		1	2	3	4	5	6	7	8
Maximum Rated Line Pull by Layer	kN kg	1.3 135	1.2 121	1.1 110	0.9 100	0.9 92	0.8 86	0.8 80	0.7 75
Rope Capacity Cumulative by Layer (4mm Ø Wire Rope)	m	2.5	5.4	8.5	11.9	15.5	19.5	23.8	28.3
Line Speed - m/min		3.5	4.0	4.5	5.1	5.6	6.1	6.6	7.1

CH200

Rated lifting capacity
200kg on 3rd layer

		NUMBER OF ROPE LAYERS ON DRUM							
		1	2	3	4	5	6	7	8
Maximum Rated Line Pull by Layer	kN kg	2.4 243	2.2 220	2.0 200	1.8 185	1.7 171	1.6 159	1.5 149	1.4 140
Rope Capacity Cumulative by Layer (5mm Ø Wire Rope)	m	5.8	12.2	19.2	27	35	44	53	63
Line Speed - m/min		3.5	3.9	4.3	4.7	5.0	5.4	5.8	6.1

CH300

Rated lifting capacity
300kg on 3rd layer

		NUMBER OF ROPE LAYERS ON DRUM							
		1	2	3	4	5	6	7	8
Maximum Rated Line Pull by Layer	kN kg	3.6 364	3.2 329	2.9 300	2.7 277	2.5 256	2.3 238	2.2 223	2.0 210
Rope Capacity Cumulative by Layer (5mm Ø Wire Rope)	m	8.8	18.5	29.1	40.6	53	66.5	81	96
Line Speed - m/min		2.4	2.6	2.9	3.1	3.4	3.6	3.9	4.1

CH500

Rated lifting capacity
470kg on 3rd layer

		NUMBER OF ROPE LAYERS ON DRUM				
		1	2	3	4	5
Maximum Rated Line Pull by Layer	kN kg	5.7 585	5.1 521	4.6 470	4.1 427	3.8 391
Rope Capacity Cumulative by Layer (6mm Ø Wire Rope)	m	4.8	10.2	16.2	22.8	30.1
Line Speed - m/min		2.3	2.6	2.9	3.1	3.4

Cumulative rope capacity denotes total length of rope in metres on the drum according to how many layers.

An assessment of rope length needed for lifting, plus the length required permanently off of the drum is needed to calculate rope lengths for individual applications.

Data shown is approximate and intended as a guide only.

		CH100	CH200	CH300	CH500
Lifting Capacity (on 3rd layer):		110kg (1.1kN)	200kg (1.96kN)	300kg (2.94kN)	470kg (4.6kN)
Voltage:		240v x 1ph			240v x 1ph from 24v via transformer
Motor type:		Induction motor			Reversible Permanent Magnet Motor
Outputs	Kilowatts: Amperes:	0.18kw 1.6amp	0.37kw 3.6amp	0.37kw 3.6amp	0.3kw 25amp
Braking:		Dual mechanical and electromagnetic motor brake			Mechanical Ratchet Brake
Duty Cycle:		All Architectural Hoists have a duty cycle of 25%, with a maximum of 60 starts per hour			
Weight - hoist only:		9kg	30kg	40kg	34kg
Drum	Diameter: Length: Flange Ø:	70mm 46mm 158mm	95mm 97mm 190mm	95mm 147mm 190mm	97mm 95mm 190mm
Wire rope	Diameter: Construction:	4mm 19 x 7 spin resistant rope, 1960 ² MBL 16.08kN (1640kg) Minimum factor of safety 5:1	5mm	5mm	6mm
Rope to mean drum ratio:		18:1	20:1	20:1	15:1
Minimum recommended distance of hoist from pulley at ceiling aperture:		500mm	1100mm	1650mm	1165mm

Before installing any hoist system, it is important to work out what possible stress may be put onto the adjacent ceiling joists. A suitable support must be fitted across the joists to spread the load. If in doubt, consult a builder or structural engineer.

NOTES

Please ensure that the fixing point for these hoists are capable of supporting the loads required.

These hoists must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

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Wire ropes are not included under warranty.

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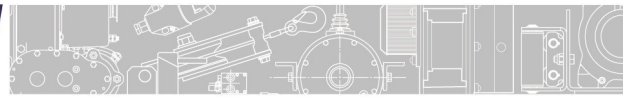
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www.bhwgroup.com



WINCH STANDARDS & BHW GROUP LTD

The British Standard: BS EN14492-1 for power driven winches, BS EN14492-2 for power driven hoists provides the means for conformity to essential Health and Safety requirements of the EN Machinery Directive and the essential Health & Safety at Work Act 1974.

Conformity to these standards is the joint responsibility of the supplier, the installer and the company operating the product.



BHW Group Ltd products are fully compliant and carry a CE and UKCA mark. A Declaration of Conformity is also supplied with each winch or hoist.

Our aim at BHW Group Ltd is to ensure the correct machine is supplied to suit the application and we welcome the opportunity of discussing the proposed application and offer advice. It will help us considerably if information regarding the maximum and average loads to be lifted or pulled - and approximate frequency of use can be provided.

For hoisting applications, the minimum breaking force (MBF**) of the wire rope must be 5 x the lifting capacity of the hoist. The ratio of wire rope diameter to mean drum diameter* is usually at least 15:1. This will vary according to the application, the average operating time per day and the average and maximum weights being lifted.

For pulling applications, as a general rule, winches used in pulling applications rarely see their maximum rated capacity and are used intermittently for short running periods. In these applications the wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* as low as 10:1.

In applications where the winch is used for longer running times and more frequently sees higher loading conditions the wire rope to MBF** should be 3:1 and the ratio of wire rope to mean drum ratio* 12:1.

For recovery vehicles the permissible standard of wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum ratio* only 10:1. This minimum standard is permitted because the running time is so short and the winch rarely sees maximum load.

Wire rope capacities the maximum amount of wire rope on the drum must leave a freeboard to the top of the drum flange of 1.5x wire rope diameters to prevent the wire rope coming off the drum.

Winches and hoists with capacities over 1000kg must be load limited.

* Mean drum diameter = the drum diameter plus the diameter of the wire rope.

** MBF = the Minimum Breaking Force of the wire rope.

HEAVY DUTY HOISTS 120 - 500kg

DH120 (120kg), DH300 (300kg),

DH500 (500kg)

12V or 24V DC

These commercial, 12V or 24V DC machines have been specifically designed for lifting applications on vehicles and boats.

FEATURES INCLUDE

- **12V or 24V reversible permanent magnet motor**
Reliable and low maintenance
- **Dynamic and mechanical brake**
Provides instant, safe braking
- **Lightweight and compact design**
For easy handling and installation
- **Low amp draw**
For higher duty cycle
- **Excellent rope to drum ratio**
Aids wrapping and prolong wire rope life
- **Low sound levels**
Causes less noise pollution
- **Supplied complete with wire rope Galvanised finish for longer life**
- **360° weighted safety hook**
Swivel type with safety catch
- **3.5 metre plug in pendant control**
2 button plus emergency stop
- **Foot mounted**
Can also be installed upside down
- **Quick release power lead**
Plug in with commercial type 2 pole plug

3.5 metre plug in pendant control with 2 buttons plus emergency stop supplied with all heavy duty hoists



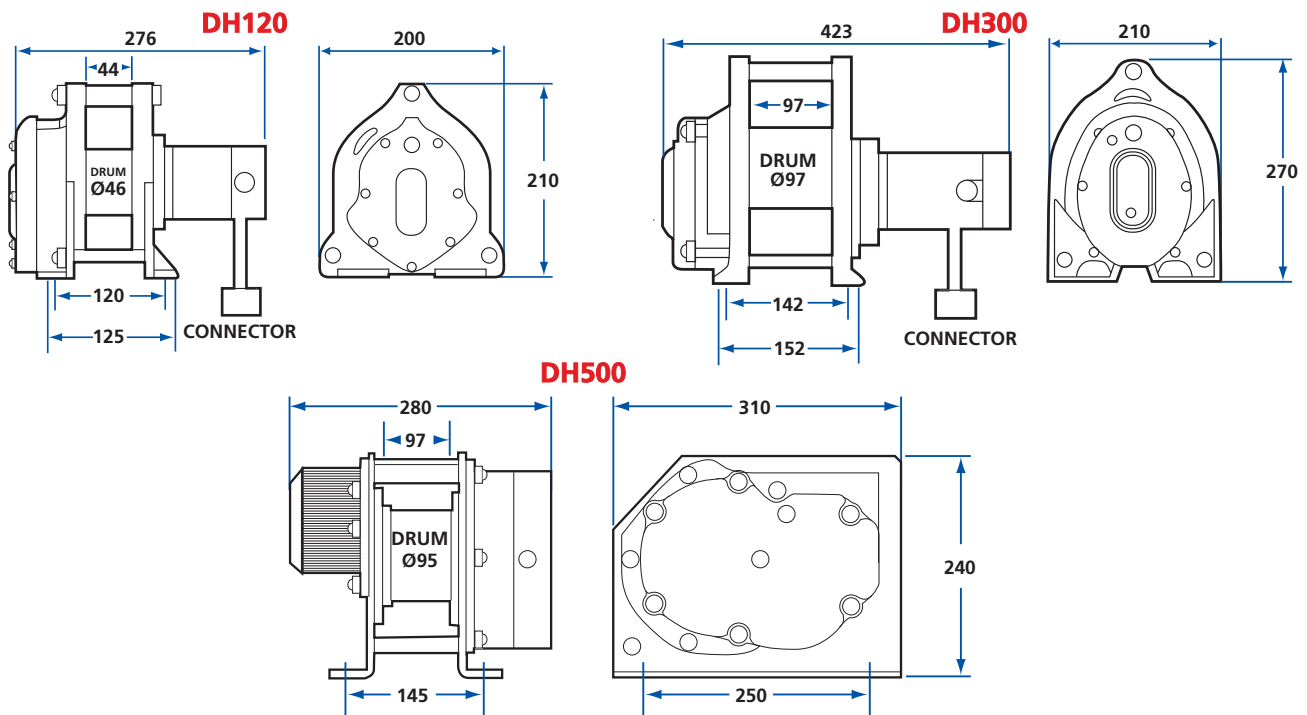
Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

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SPECIFICATIONS

DH120

DH300

DH500

Voltage:		12V	24V	12V	24V	12V	24V
Lifting:	Capacity	120kg		300kg		500kg	
	Height	5m		12m		12m	
Weight:	Hoist only	17kg		27kg		34kg	
	Total kit	19kg		34kg		37kg	
Line speed:1st layer		3.5m/min		2m/min		2m/min	
Last layer		5m/min		3m/min		3m/min	
Duty cycle:		All Heavy Duty Hoists have a duty cycle of 25%, with a maximum of 60 starts per hour					
Wire rope: Diameter		4mm		5mm		6mm	
Length		5m		12m		12m	
Rope construction		6 x 19 wire core, galvanised for longer rope life. Minimum factor of safety = 5:1					
Motor:		Reversible permanent magnet motor					
Outputs:	Kilowatts	0.1kW	0.1kW	0.3kW	0.3kW	0.3kW	0.3kW
	Amperes	20A	10A	30A	15A	50A	25A
Braking:		Mechanical ratchet brake					
Drum:	Length	46mm		97mm		97mm	
	Drum ø	70mm		95mm		95mm	
	Flange ø	155mm		190mm		190mm	
Rope diameter to Drum diameter factor of safety = 15:1							

NOTES

These hoists must not be used for the movement of personnel and 7 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

WARRANTY

Each new hoist is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

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Technical drawings of the 1000W motor showing front and side views with dimensions.

Front View Dimensions:

- Total width: 200
- Motor body width: 104
- Distance from mounting bracket to motor body: 266
- Distance from mounting bracket to base: 339
- Total height: 605 Centres

Side View Dimensions:

- Distance from mounting bracket to motor body: 168
- Motor body height: 270
- Distance from mounting bracket to base: 667
- Maximum diameter of mounting bracket: 60mm Ø Max.

Technical drawings of the 1000W motor unit showing front and side views with dimensions.

Front View Dimensions:

- Overall width: 244
- Motor body width: 115
- Motor body height: 280
- Base height: 360
- Total height (including base): 640 Centres

Side View Dimensions:

- Motor body width: 182
- Motor body height: 270
- Total height (including base): 702
- Hook diameter: 60mm Ø Max.

CWS300

Voltage options		110V	240V	110V	240V	110V	240V	240V only
Lifting:	Capacity	80kg		160kg		230kg		300kg
	Height	23m		30m		24m		24m
Weight:	Hoist only	9kg		14kg		15kg		17kg
	Total kit	18kg		25kg		26kg		28kg
Line speed:	1st layer	18m/min		15m/min		9m/min		9m/min
	Last layer	30m/min		25m/min		14m/min		13m/min
Duty cycle:		All Scaffold Hoists have a duty cycle of 25%, with a maximum of 60 starts per hour						
Wire rope:	Diameter Ø	4mm		5mm		5mm		5mm
	Length	24m		31m		25m		25m
	Rope construction	7 x 18 wire core, spin resistant, galvanised for longer rope life. Factor of safety = 5:1 (for lifting)						
Motor type:		All Scaffold Hoists have a brush type induction motor						
Motor outputs:	Kilowatts	0.8kW		1.2kW		1.2kW		1.5kW
	Amperes	8A	4A	12A	6A	12A	6A	7.5A
Braking:		Motor: Electronic via resistor Gears: Mechanical ratchet brake						
Drum:	Length	46mm		110mm		110mm		110mm
	Diameter Ø	70mm		94mm		94mm		94mm
	Flange Diameter Ø	158mm		155mm		155mm		155mm
Rope ø to mean drum ø ratio:		18:1		20:1				

NOTES

Data shown is approximate and intended as a guide only.

WARRANTY

Wire ropes are not included under warranty.



RAMP•ASSIST

Single & Double Ram Hydraulic Raising & Lowering Systems

FEATURES INCLUDE

- Choice of single or double ram systems
- Bodybuilder produces ramps to suit application
- Safely handles ramps of any weight
- Easy to install
- Easy to use controls
- Functions on uneven ground
- Suitable for any size of plant vehicle

THE RAMP•ASSIST KITS INCLUDE

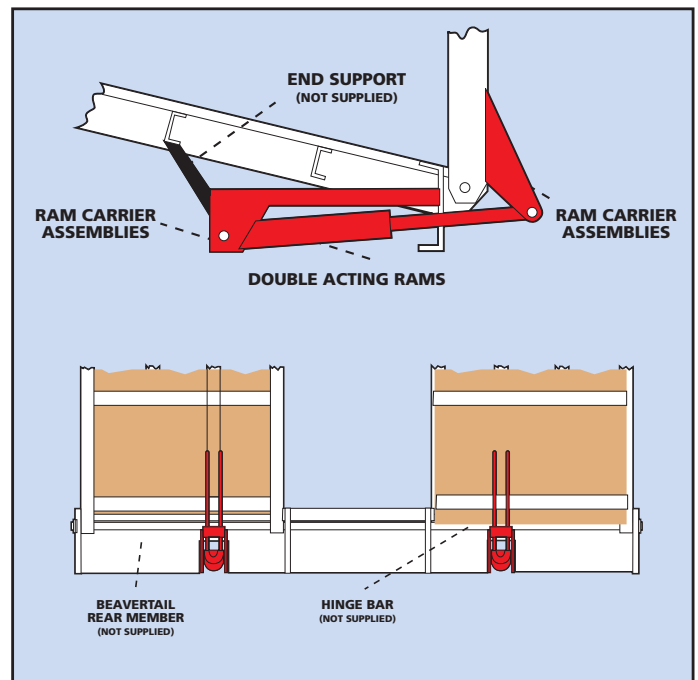
- System mechanism
- Hydraulic ram(s)
- Controls for raising or lowering
- Over centre safety valve
- Full fitting instructions
- Optional DC power pack

POWER

Both systems can use the vehicle's hydraulic power if fitted. Alternatively an independent DC power pack can be supplied.

HELPS EMPLOYERS TO COMPLY WITH EU MANUAL HANDLING REGULATIONS.

ENSURES EASE AND SAFETY FOR THE DRIVER.



OPTIONAL EXTRA

FM•CONNECT REMOTE CONTROL SYSTEM – CONTACT BHW SALES FOR DETAILS.

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BHW

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STABILISER LEGS

**Hydraulic Stowaway Stabilisers
Ensuring Greater Safety Whilst
Loading**

FEATURES INCLUDE

- Supplied fully assembled and ready for installation
- Easy to use controls
- Legs stow neatly away to prevent damage



KIT INCLUDES

- Two stabiliser leg kits with hydraulic rams
- Control for raising or lowering (valve block)
- In line check valve
- Loose foot assembly

POWER

Makes use of any existing hydraulics on the vehicle or can be supplied with independent DC power pack.

Can be integrated with BHW Group Ltd range of hydraulic winches, POWER•WEDGE and RAMP•ASSIST.



MARK II



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UK
CA

CE



BHW23 / 27.03.25



FALLEN STOCK WINCH



FALLEN STOCK WINCH

T-MAX Heavy Duty Electric Winch, 3.7m wanderlead, roller guides, tension roller, load limiter and 9mm diameter x 30m, with high tensile galvanised wire rope with grade 80 safety latch hook.

Options: Mounting plate. wireless IN-OUT control, circuit Isolator switch, heavy duty extension kit for wanderlead, airshift freespool clutch.

FEATURES INCLUDE

- **Compliant With BS EN14492-1 (With Exceptions) - Power Driven Winches, Rated Line Pull**
- **Series Wound, 12V & 24V 7HP High Torque Motor** - Custom manufactured for extended service life.
- **Electronic Load Limiter** - Supplied as standard.
- **Secure wire rope anchorage** - Providing full load holding.
- **Tension Roller** - Spring loaded to aid rope wrapping.
- **Heavy Duty Solenoids** - With silver layer on contacts to reduce heating and extend service life. Pre-wired to accept wireless control, reducing installation time.
- **4 Way Roller Guides** - The horizontal rollers are wide spaced to extend wire rope life.

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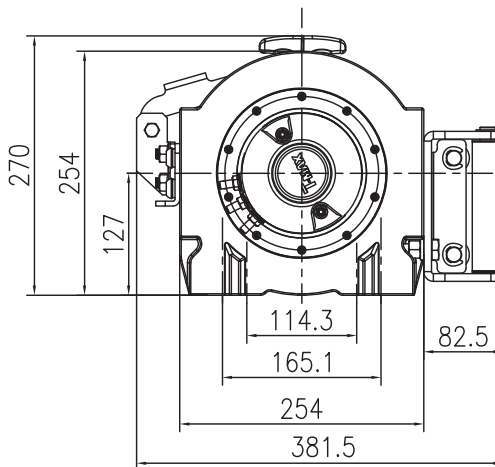
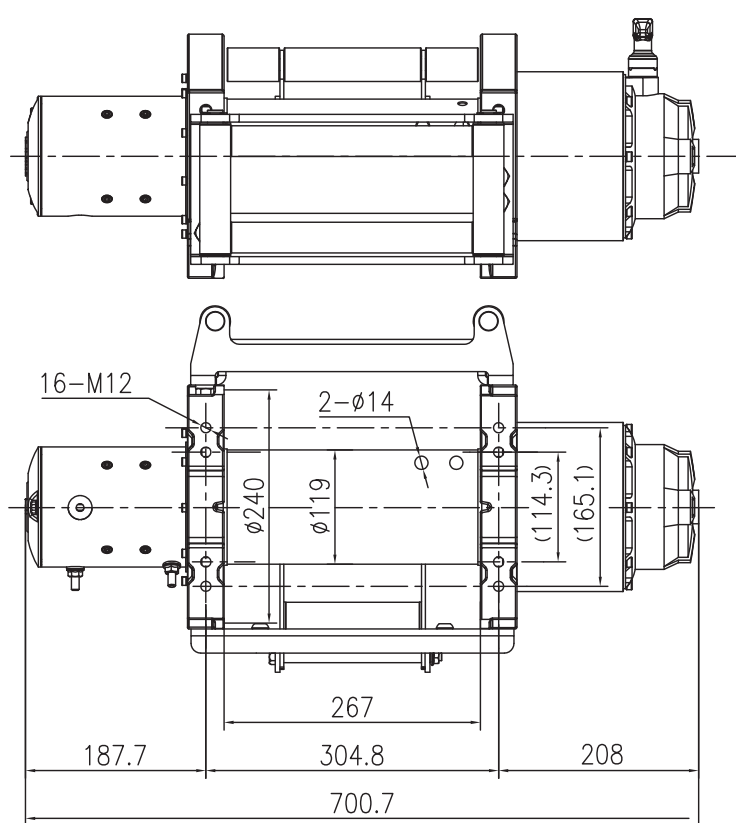
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FALLEN STOCK WINCH

WINCH DIMENSIONS



KEY DIMENSIONS

Drum: Length 267mm
Diameter 119mm
Flange Diameter 240mm
Fixing Centres: 304.8mm on length
254mm on depth

RATED LINE PULL

		LAYER		
		1	2	3
Cable Drum Capacity Cumulative by Layer (9mm Ø wire rope)	m	10	21	33

*By incorporating a snatch block in the line it is possible to double these capacities.

PERFORMANCE 12V

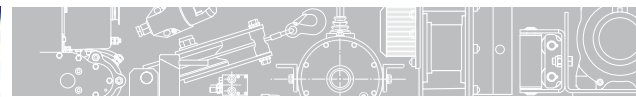
PERFORMANCE FIRST LAYER OF CABLE		
LINE PULL	LINE SPEED (approx)	AMP DRAW (approx)
kgf	m/min	12V Battery
0	27	48
1000	7	210
1550	4	380

All figures are based on battery maintaining normal voltage.

PERFORMANCE 24V

PERFORMANCE FIRST LAYER OF CABLE		
LINE PULL	LINE SPEED (approx)	AMP DRAW (approx)
kgf	m/min	24v Battery
0	32	40
800	16	180
2250	4	300

All figures are based on battery maintaining normal voltage.



FALLEN STOCK WINCH



SPECIFICATIONS

Rated Line Pull **DC Motor**

12V = 1500kg 24V = 2200kg

Powerful 7.0 HP purpose made series wound motor. Ensures constant high power and torque.
Roller bearings instead of bushes provide higher efficiency.
Casing sealed against water ingress with IP 65 rating.

Drum size

119mm diameter x 264mm length. Flange diameter 240mm.

Wire Rope

9mm Ø galvanised 1960Nmm² tensile grade, 6 x 36 wire core construction, 5761kg (28kN) minimum braking strain. Maximum length 30 metres. This rope provides the 2:1 Working Load Limit (WLL) required by BS EN winch standard EN14492-1 (**With Exceptions**). Rope to drum ratio 11:1.

Load Limiting Device

Electronic limiting device to provide 2:1 working load limit (WLL), for compliance with BS EN14492-1 (**With Exceptions**).

Wire Rope Tensioner **Solenoids**

Spring loaded roller tensioner to assist wrapping.

Integrated Solenoid Module (ISM) manufactured for military and industrial use. Silver layer on the contactor surface ensures much lower surface temperature during operation, providing extended service life. They are pre-wired to accept optional wireless control saving significant installation time.

Wanderlead Control

3.7m control lead supplied as standard. Other wanderleads / extensions and emergency stop button options available on request.

Roller Guides

4 way supplied as standard.

Mounting Plate

Optional. Ensures securing holes are all in alignment and not oversized.

Complete Kit Weight

91kg.

WARRANTY

Each new winch is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.
Wire ropes are not included under warranty.

Not be used for the movement of personnel. Five wraps of wire rope must be maintained on the drum at all times. Data shown is approximate and intended as a guide only.

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WINCH•ASSIST 8

NEW ADVANCED TECHNOLOGY

CENTRALLY MOUNTED WINCH

for Wheelchair & Stretcher Vehicles

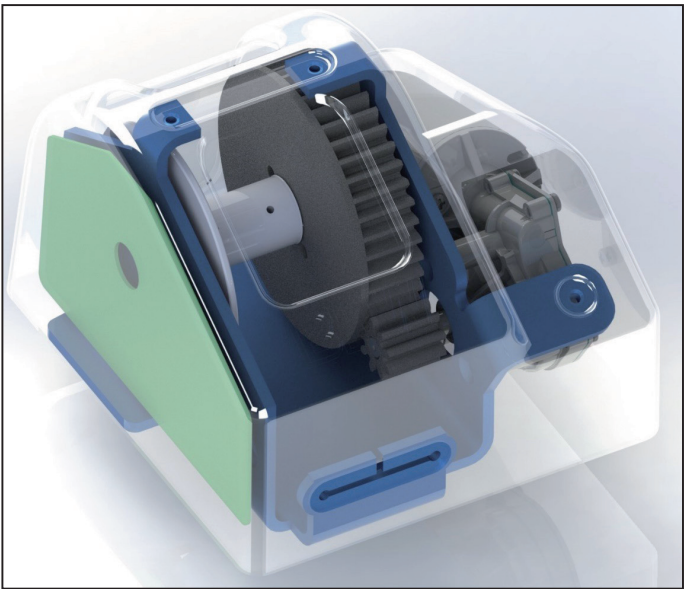
Safe, strong, reliable and smooth running mobility systems to help the carer and ensure compliance with UK and EU manual handling regulations.

Centrally mounted winches with webbing strap and yoke to connect to either stretchers or wheelchairs.

Carers are able to load and unload wheelchairs or stretchers and their occupants with minimum effort.

Systems include multiturn sensors, remote controller, dynamic braking and soft start to ensure smooth running.

There are also optional buffer stops and reset switches or fuses supplied on request.



WINCH•ASSIST 8 FEATURES

- **Multiturn Sensor**
To turn the winch off, if the strap is powered in or out too far..
- **Remote Controller**
Key fob to make control as easy as possible.
- **Dynamic braking**
To ensure that the winch will not back drive.
- **Soft start**
Ensures smooth operation of the winch.

TECHNICAL OVERVIEW

- **Amperage draw:** 10amps
- **Working Load Limit:** (Maximum pulling force on upper layer of strap): 133kg
- **Line Pull** (Bare drum, 30mm diameter): 350kg
- **Typical Rolling Load Capacities on Gradients:**

	5°	10°	15°
	700Kg	370kg	310Kg
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.

For further information or technical advice, please contact our sales team at Bushey Hall Winchmaster on +44 (0)20 8953 6050 or sales@bhwgroup.com

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BHW

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DEMOUNTABLE WINCH SYSTEMS



A Winching Solution Without Impacting Vehicle Sensors

Parking • Lane Detection • Assisted Braking

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OPTIONS AND SPECIFICATIONS

- Optional Mounting Locations
- Variety of Winch Options Including Electric or Hydraulic Units
- Fixed Mounting Points for Secure Fitting to Vehicle
- Lifting Aids for Easy Fixing and Removal of the Winch
- Winch Stowage Solution for use whilst in Transit



NOTES

These winches must not be used for the movement of personnel. 4 wraps of wire rope must be maintained on the drum. Data shown is approximate and intended as a guide only. You are strongly advised to carry out a risk assessment before selecting a manual winch for any proposed application.

WARRANTY

Each new winch is guaranteed against defects in the materials and workmanship for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Plant Hire companies and those involved in moving plant and machinery often require vehicles that will provide flexibility to ensure maximum vehicle utilisation with the least amount of effort and down time.

Beavertail gradients must now be no more than around 10° for loading some equipment so they are long and not ideal for carrying other equipment such as site huts.

The solution is **POWER•WEDGE**.



The clever system enables the bodybuilder to manufacture this sophisticated ramp system with the minimum design effort. The main components are proven and designed in such a way that the ramp length and wedge height required can be accommodated. The bodybuilder carries out the general construction of the ramps to suit the users particular requirements. The equipment supplied with the BHW **POWER•WEDGE** system includes all the hydraulic rams and control equipment, steel connecting assemblies and hinge bearing points.



POWER•WEDGE Double Folding Ramp System

POWER•WEDGE RAMP SYSTEM INCLUDES

- Hydraulic Rams-Nitrotec impregnated for protection against corrosion & stone chipping
- Controls for raising lowering and folding
- Double acting over-centre valves for safety
- System mechanism with all hinge points
- Manual locking
- Full fitting instructions
- Optional DC power pack
- Optional pneumatic locking with indicator light

FEATURES

- Bodybuilder fabricates ramps to suit customers application
- Easy to use controls with each ramp operated independently
- Will function on uneven ground
- Operators can obtain replacement parts quickly to minimise costly down time

POWER

- System uses the vehicles' hydraulic power if available. Alternatively an independent DC power pack can be supplied.

OPTIONAL EXTRA

**FM•CONNECT REMOTE CONTROL SYSTEM –
CONTACT SALES FOR DETAILS**



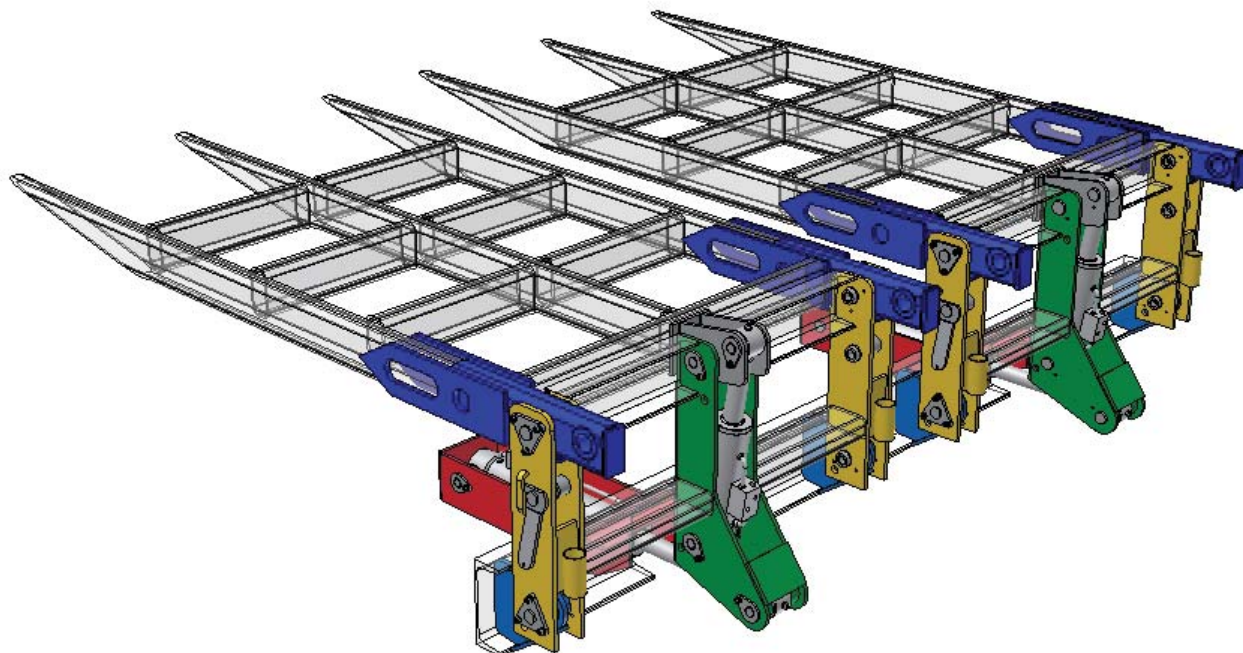
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The **POWER•WEDGE** Ramp System includes the main component parts (shown in colour above) to allow body builders to construct two fully folding power wedge hydraulic loading ramps.

EACH KIT INCLUDES

- Hydraulic lifting and folding rams incorporating over-centre safety valves
- Ram mounting assembly
- Main lift reacting lever and folding assembly
- Ramp pivot lugs
- Ramp pivot pins
- All necessary pivot bosses
- Ramp locking pins
- Main lift ram pivot plates
- Hydraulic control valves
- Full fitting instructions
- Optional DC power pack



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RAMP•ASSIST

Single & Double Ram Hydraulic Raising & Lowering Systems

FEATURES INCLUDE

- Choice of single or double ram systems
- Bodybuilder produces ramps to suit application
- Safely handles ramps of any weight
- Easy to install
- Easy to use controls
- Functions on uneven ground
- Suitable for any size of plant vehicle

THE RAMP•ASSIST KITS INCLUDE

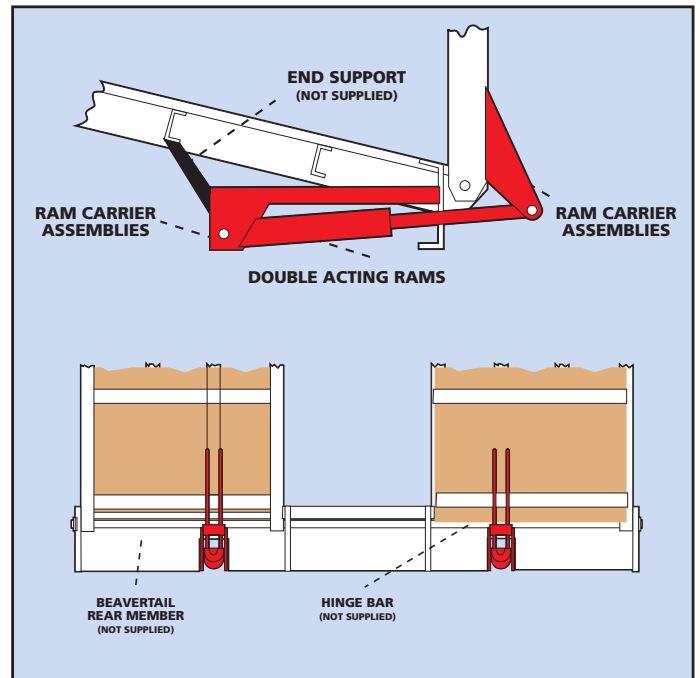
- System mechanism
- Hydraulic ram(s)
- Controls for raising or lowering
- Over centre safety valve
- Full fitting instructions
- Optional DC power pack

POWER

Both systems can use the vehicle's hydraulic power if fitted. Alternatively an independent DC power pack can be supplied.

HELPS EMPLOYERS TO COMPLY WITH EU MANUAL HANDLING REGULATIONS.

ENSURES EASE AND SAFETY FOR THE DRIVER.



OPTIONAL EXTRA

FM•CONNECT REMOTE CONTROL SYSTEM – CONTACT BHW SALES FOR DETAILS.

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WINCH•ASSIST AMBULANCE SYSTEMS for Wheelchairs and Stretchers

A range of safe, reliable and smooth running winch systems that are an important aid to help ensure compliance with EU manual handling regulations.

Unobtrusive systems that can be neatly installed behind the cab area with a wanderlead control.

Ambulance crews are able to load and unload wheelchairs or stretchers with minimum effort.

WINCH•ASSIST systems are Motability accredited.

Each system has UKCA and CE certification and load tested winches and straps.

WINCH•ASSIST FEATURES INCLUDE

- **Complete winch systems provided for all types of emergency or rescue vehicles**
- **Two speed winch option**
For faster 'winch out' operation
- **Relay pack, wiring loom and motor filter**
For easy installation and efficient motor operation
- **Wanderlead control and emergency stop**
3m wanderlead and emergency stop console that fits inside rear of vehicle
- **Straps supplied as standard**
MCF fittings and webbing straps designed for WINCH•ASSIST systems
- **Optional automatic spring stop**
Fitted to webbing strap feed for additional safety
- **Optional circuit breaker / reset button**
16amp circuit breaker with reset facility
- **Choices of strap connections**
Including T Bars and Carabiner Hooks
- **CE marked for EU compliance**
To conform with Machinery & EMC Directives with certificates of conformity issued with every system
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.

WINCH•ASSIST

Comparative Winch Ratings and Specifications for Ambulance Winches

WINCH•ASSIST winches with different load ratings for emergency and rescue vehicles.

Features include a two speed option for faster 'winch out' operation and the 'Bariatric' winch can cope with heavier capacities.

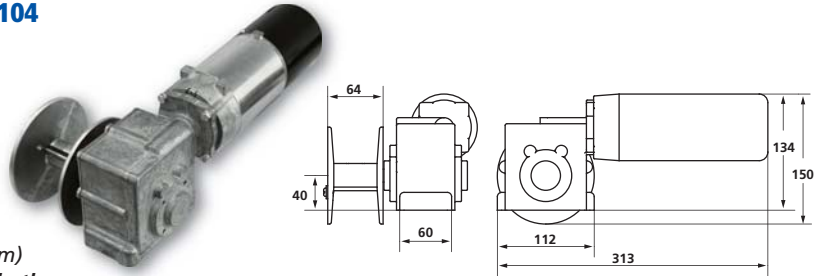
All winches are fully load tested, comply with the latest EMC Machinery Directives and carry UKCA and CE certification. 24v options are also available - please call BHW Group.

Winch Model 6

Part No. 15104

- Drum and gearing at 90° to motor
 - Amperage Draw: 25amps
 - Working Load Limit (Maximum pulling force in strap upper layer): 131kgf
 - Line Pull - Bare Drum (30mm diameter): 200kgf
 - Typical Rolling Load Capacities on Gradients:

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	1500	1070	750	630	500
 - Drum Torque - Motor / Gearbox rating: 45Nm (4.6kgfm)
- Includes electric motor brake and all gears running in oil bath

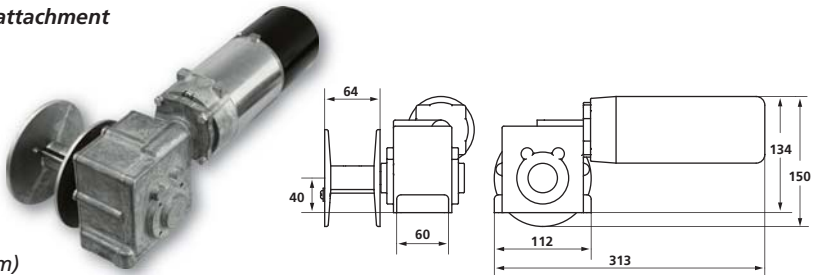


Winch Model 6 / Two Speed

Part No. 12319

- Two speed option enabling fast deployment of strap / attachment to the stretcher (Fail Safe)
 - Drum and gearing at 90° to motor
 - Amperage Draw: 25amps
 - Working Load Limit (Maximum pulling force in strap upper layer): 131kgf
 - Line Pull - Bare Drum (30mm diameter): 200kgf
 - Typical Rolling Load Capacities on Gradients:

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	1500	1070	750	630	500
 - Drum Torque - Motor / Gearbox rating: 45Nm (4.6kgfm)
- Includes motor brake and all gears running in oil bath

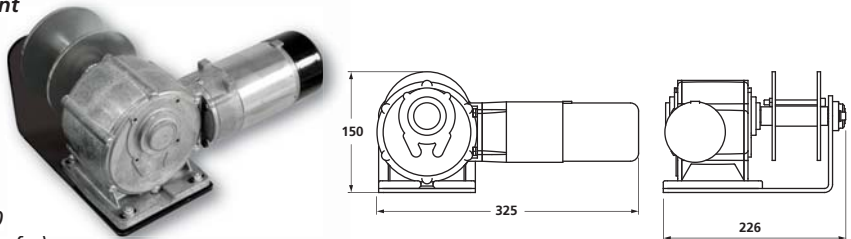


Winch Model 7 'Bariatric'

Part No. 12162

- Heavier capacity winch - up to 1230kg on 12° gradient
 - Drum and gearing at 90° to motor
 - Amperage Draw: 25amps
 - Working Load Limit (Maximum pulling force in strap upper layer): 256kgf
 - Line Pull - Bare Drum (30mm diameter): 360kgf
 - Typical Rolling Load Capacities on Gradients:

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	2900	2100	1475	1230	1000
 - Drum Torque - Motor / Gearbox rating: 88Nm (9.0kgfm)
- Includes motor brake and all gears running in oil bath



LARGER LOAD CAPACITY

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WINCH•ASSIST

Components for Ambulance Installations

Wanderlead



Part No. 13939

Wanderlead control with 3m flexible cable and jack plug.

Relay Pack 1



Part No. 6199

Relay pack with plug in connectors to reduce installation time.

Relay Pack 2



Part No. 12175

Relay pack for 2 speed motors with plug in connectors to reduce installation time.

Wiring Looms with Plugs



3m = Part No. 10240
7.5m = Part No. 6207
9.5m = Part No. 8192
10m = Part No. 6208

Connection looms with plug in connectors to reduce installation time between Relay Pack and Control / Emergency Stop.

16a Circuit Breaker / Reset



Part No. 7432

OPTIONAL EXTRA

16amp circuit breaker and reset switch, normally fitted under the dashboard.

Extension for Wanderlead



Part No. 7758

OPTIONAL EXTRA

Coiled extension lead with jack plug and socket to add a further 2m+ length (fully extended) to Wanderlead.

Control & Emergency Stop



Part No. 6190

Additional control unit.

Emergency Stop, On / Off and Reset buttons.

Control & Emergency Stop



Part No. 14074

Mobility Vehicle Control Unit.

Emergency Stop, On / Off and Reset buttons.

Includes jack plug socket and resting bay for Wanderlead.

'Winch Out' Speed Control

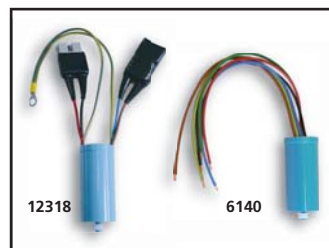


Part No. 12173

For use with Model 6 Two Speed winch.

Control for higher speed on winching out web strapping, automatically resets when 'winch out' has stopped.

Motor Filter



Part No. 12318

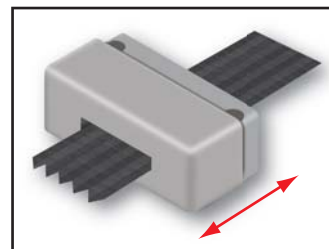
Winch Models: 6 (Single and Two Speed) & 7.

Part No. 6140

Winch Models: 1 & 2.

Motor filters for EU compliance with the EMC Directive.

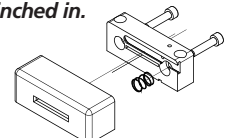
Webbing Strap Stop



Part No. 11033

OPTIONAL EXTRA

Spring loaded electric pressure switch, to cut off winch control when webbing strap is fully winched in.



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WINCH•ASSIST

Web Strapping Options

Below are examples from a range of web strap options available from BHW Group. Strap tongues and buckles are normally MCF or K12. It is important to specify fixtures correctly, especially if adding to an existing system. Adaptors are also available.

Carabiner Hooks to MCF Tongue

Part No. 7349

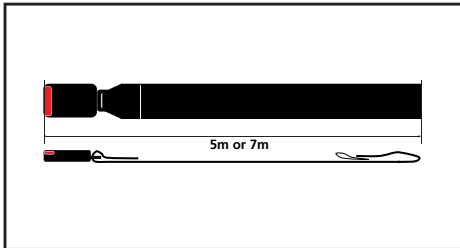
Web strapping with carabiner hooks to an MCF tongue.



Web Strap & K12 Buckle

7m = No. 7308
5m = No. 7315

Web strap to wind on to winch with K12 buckle fitting.



K12 Buckle to MCF Tongue Adaptor

Part No. 12556

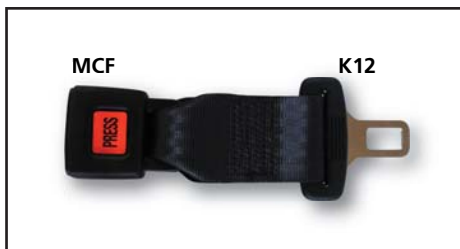
Short strap adaptor with an MCF tongue and a K12 buckle.



MCF Buckle to K12 Tongue Adaptor

Part No. 12557

Short strap adaptor with a K12 tongue and an MCF buckle.

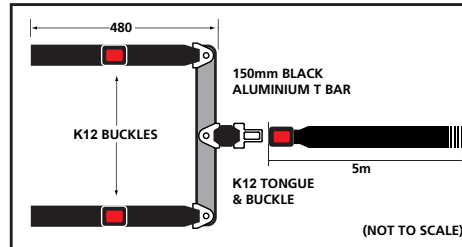


Buckle Straps, T Bar & 5m Strap

Part No. 7302

Web straps with loop overs to K12 buckles, fitted to a 150mm black aluminium T-Bar which has a K12 tongue.

Includes 5m webbing strap to fit to winch.

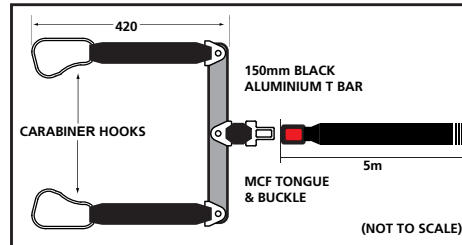


Carabiner Hooks, T Bar & 5m Strap

Part No. 7320

Web strapping with carabiner hooks, fitted to a 150mm black aluminium T-Bar which has an MCF tongue.

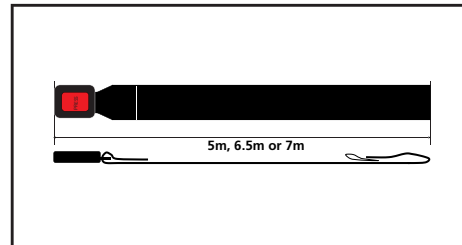
Includes 5m webbing strap to fit to winch.



Web Strap & MCF Buckle

7m = No. 7309
6.5m = No. 7348
5m = No. 13411

Web strap to wind on to winch with MCF buckle fitting.



Floor Anchor to Tongue Adaptor

MCF No. 10575
K12 No. 9393

Short strap adaptor with floor anchor to an MCF or K12 tongue.



For further options or customised strap systems, please contact BHW Group on +44 (0)20 8953 6050.

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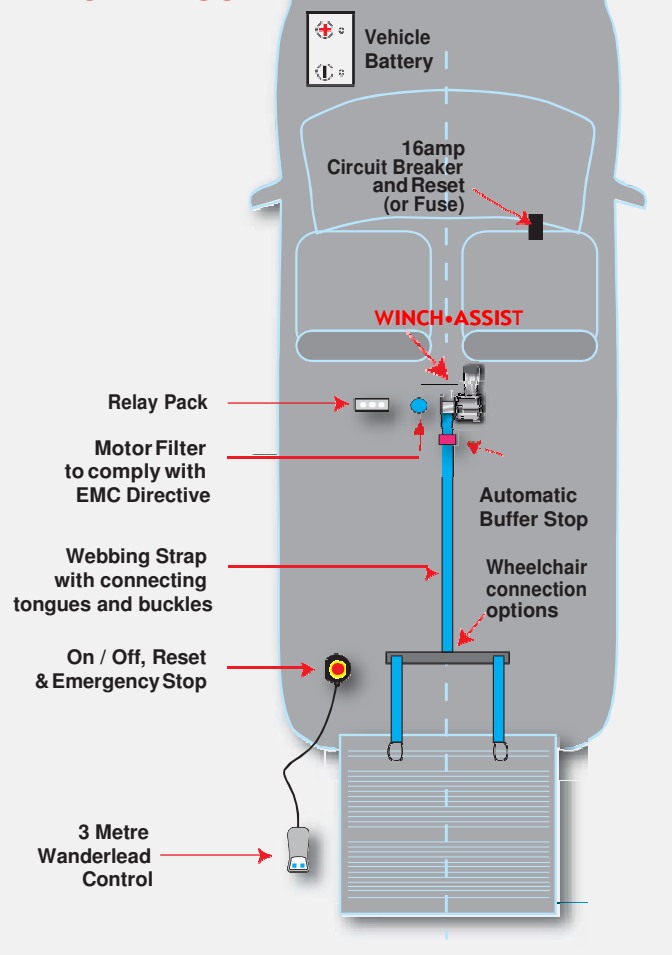
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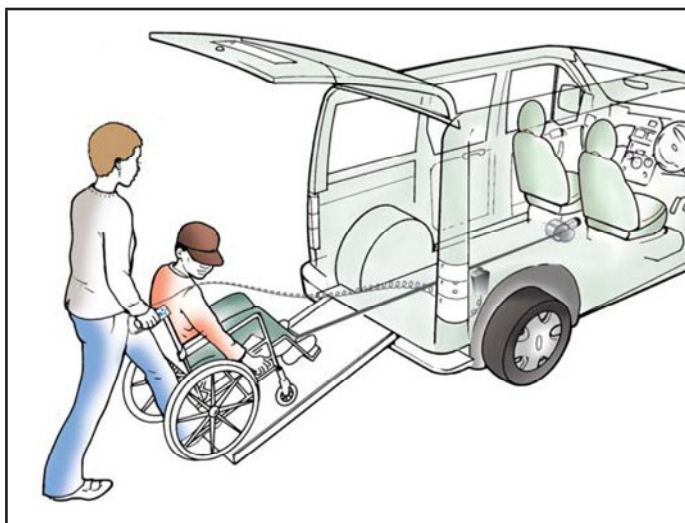




WINCH•ASSIST TYPICAL CENTRALLY MOUNTED WINCH VEHICLE LAYOUT



WINCH•ASSIST systems are easily fitted to several popular makes of mobility compatible vehicles.



WINCH•ASSIST CENTRALLY MOUNTED WINCHES for Wheelchair Access Vehicles

Safe, reliable and smooth running mobility systems that are an important aid to help ensure compliance with EU manual handling regulations.

Centrally mounted winches with either webbing strap or soft rope options to connect to the wheelchair.

Carers are able to load and unload wheelchairs and their occupants with minimum effort.

Systems include wanderlead control, emergency stop control box and motor filter - and optional buffer stops and reset switches or fuses.

WINCH•ASSIST systems are approved by Motability and TUV and are available for left or right hand drive.



WINCH•ASSIST FEATURES INCLUDE

- **Complete winch kits provided for all types of mobility vehicles**
- **Relay pack, wiring loom and motor filter**
For easy installation and efficient motor operation
- **Wanderlead control and emergency stop**
3m wanderlead and emergency stop console that fits inside rear of vehicle
- **Soft rope or webbing strap options**
Polyester rope and webbing straps calibrated for Winch•Assist systems. Several options available
- **Optional automatic buffer stop**
Fitted to rope feed for additional safety
- **Optional circuit breaker / reset button**
16amp circuit breaker with reset facility
- **Optional choices of accessories**
Including additional safety features, T Bars and Carabiner Hooks
- **UK CE marked for UK and EU compliance**
To conform with Machinery & EMC Directives with certificates of conformity issued with every system
- **Motability and TUV approved**
- **After sales service**
Technical advice given on winch fitting and component replacement, plus efficient overnight parts despatch and fast repairs.

WINCH•ASSIST

Comparative winch ratings and specifications for mobility vehicle use.

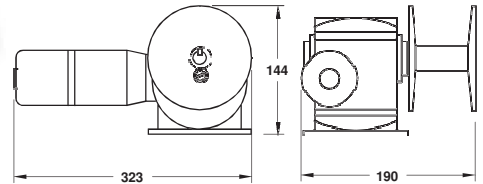
Mobility winches with different load ratings for either soft rope or webbing strap use.

Winch Model 1

Part No.15100

- **Amperage Draw:** 25amps
 - **Working Load Limit**(Maximum pulling force in strap upper layer): 104kgf
 - **Line Pull - Bare Drum (30mm diameter):** 200kgf
 - **Typical Rolling Load Capacities on Gradients:**

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	1190	850	600	500	400
 - **Drum Torque - Motor / Gearbox rating:** 36Nm (3.67kgfm)
- Includes electric motor brake and all gears running in oil bath**

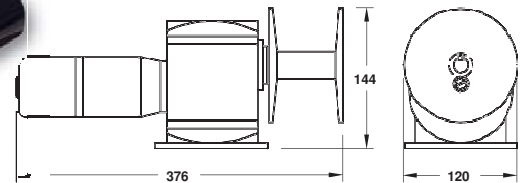


Winch Model 2

Part No.15101

- **Drum and gearing in line with motor**
 - **Amperage Draw:** 25amps
 - **Working Load Limit**(Maximum pulling force in strap upper layer): 104kgf
 - **Line Pull - Bare Drum (30mm diameter):** 200kgf
 - **Typical Rolling Load Capacities on Gradients:**

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	1190	850	600	500	400
 - **Drum Torque - Motor / Gearbox rating:** 36Nm (3.67kgfm)
- Includes motor brake and all gears running in oil bath**

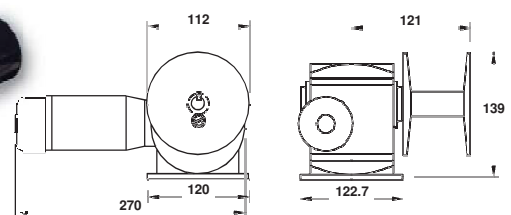


Winch Model 4

Part No.15102

- **Drum and gearing at 90° to motor**
 - **Amperage Draw:** 25amps
 - **Working Load Limit**(Maximum pulling force in strap upper layer): 104kgf
 - **Line Pull - Bare Drum (30mm diameter):** 200kgf
 - **Typical Rolling Load Capacities on Gradients:**

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	1190	850	600	500	400
 - **Drum Torque - Motor / Gearbox rating:** 36Nm (3.67kgfm)
- All gears running in oil bath. (Model 4 is shorter than Model 1)**

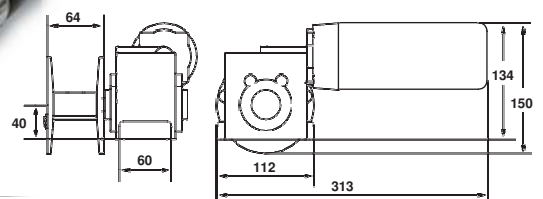


Winch Model 6

Part No.15104

- **Drum and gearing at 90° to motor**
 - **Amperage Draw:** 25amps
 - **Working Load Limit**(Maximum pulling force in strap upper layer): 131kgf
 - **Line Pull - Bare Drum (30mm diameter):** 200kgf
 - **Typical Rolling Load Capacities on Gradients:**

Gradient	5°	7°	10°	12°	15°
Capacity (kg)	1500	1070	750	630	500
 - **Drum Torque - Motor / Gearbox rating:** 45Nm (4.6kgfm)
- Includes electric motor brake and all gears running in oil bath**



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WINCH•ASSIST

Components for Mobility Vehicle Kits

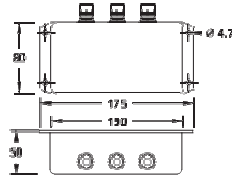
A standard BHW WINCH•ASSIST kit will typically use the components shown below.

Relay Pack



Part No. 6198

12v relay box with thermal cut outswitch.



Relay with Data Cable Link Part No. 14007



12v relay box pre-wired and CAT 5 link control socket for quick connection. (Part No. 14790 and 14205). Includes thermal cut out switch.

Control & Emergency Stop



Part No. 14074

Part No. 14790 Data Link

Mobility Vehicle Control Unit.

Emergency Stop, On / Off and Reset buttons.

Includes jack plug socket and resting bay for wanderlead.

Control & Emergency Stop with Data Cable link



Part No. 14205

Mobility Vehicle Control Unit. Emergency Stop, On / Off and Reset buttons.

Includes locking jack plug socket and Cat 5 cable link for wiring to relay box (Part No. 14007).

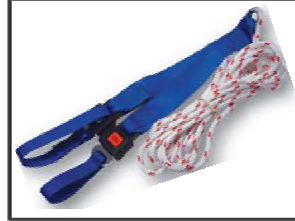
Wanderlead



Part No. 13939

Wanderlead control with 3m flexible cable and jack plug. Universal, works with all models within the BHW Winch-Assist range.

Rope & Webbing Straps



Part No. 7356

5m polyester rope and webbing strap with MCF buckles to fit straps to wheelchair.

This is supplied as standard, other options for web straps are shown on the Web Strapping page.

16a Circuit Breaker / Reset

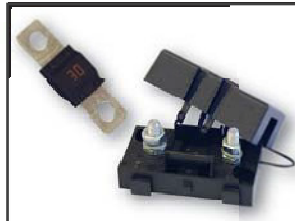


OPTIONAL EXTRA

Part No. 7432

16amp circuit breaker and reset switch, normally fitted under the dashboard.

Fuse & Fuse Holder

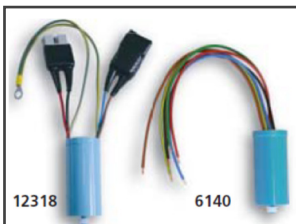


Fuse = Part No. 2408
Holder = Part No. 2412

OPTIONAL EXTRA

30 amp fuse and fuse holder to protect the BHW Winch-Assist system.

Motor Filter



Part No. 6140

Winch Models: 1, 2 & 4.

Part No. 12318

Winch Model: 6.

Motor filters for EU compliance with the EMC Directive.

Automatic Buffer Stop

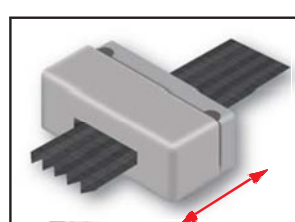


Part No. 6195

OPTIONAL EXTRA

Foam rubber buffer creates pressure sensitive switch with rope feed block, to cut off winch power when soft rope is fully winched in.

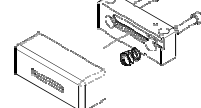
Webbing Strap Stop



Part No. 11033

OPTIONAL EXTRA

Spring loaded electric pressure switch, to cut off winch control when webbing strap is fully winched in.



For webbing straps and connection options, please see following page.

Winch-Assist systems must be fitted with either a suitable circuit breaker or fuse.

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WINCH•ASSIST

Web Strapping Options

Below are examples from a range of web strap options available from BHW.
Strap tongues and buckles are normally MCF or K12. It is important to specify fixtures correctly, especially if adding to an existing system. Tongue and buckle adaptors are also available.

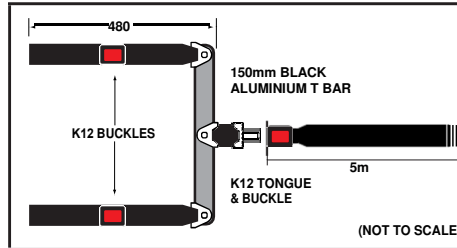
Rope & Webbing Straps



Part No. 7356

5m polyester rope and webbing strap with MCF buckles to fit straps to wheelchair.

Buckle Straps, T Bar & 5m Strap



Part No. 7302

Web straps with loop overs to K12 buckles, fitted to a 150mm black aluminium T-Bar which has a K12 tongue.

Includes 5m webbing strap to fit to winch.

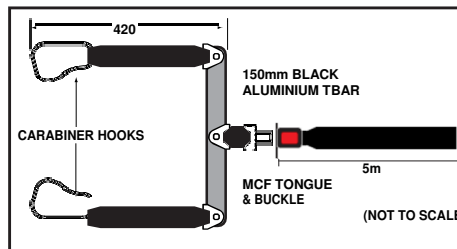
Carabiner Hooks to MCF Tongue



Part No. 7349

Web strapping with carabiner hooks to an MCF tongue.

Carabiner Hooks, T Bar & 5m Strap

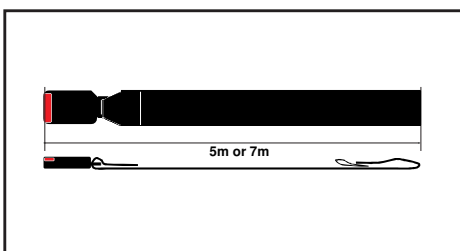


Part No. 7320

Web strapping with carabiner hooks, fitted to a 150mm black aluminium T-Bar which has an MCF tongue.

Includes 5m webbing strap to fit to winch.

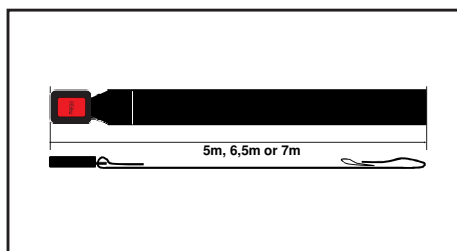
Web Strap & K12 Buckle



7m = No. 7308
5m = No. 7315

Web strap to wind on to winch with K12 buckle fitting.

Web Strap & M7 Buckle



7m = No. 7309
6.5m = No. 7348
5m = No. 13411
Web strap to wind on to winch with MCF buckle fitting.



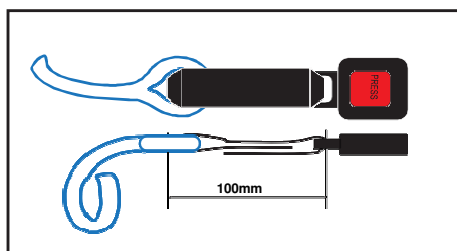
K12 Buckle to MCF Tongue Adaptor



Part No. 12556

Short strap adaptor with an MCF tongue and a K12 buckle.

5m Soft Rope to MCF Buckle



Part No. 7380

5 metre polyester rope attached to MCF buckle.

MCF Buckle to K12 Tongue Adaptor



Part No. 12557

Short strap adaptor with a K12 tongue and an MCF buckle.

Floor Anchor to Tongue Adaptor



MCF No. 10575
K12 No. 9393

Short strap adaptor with floor anchor to an MCF or K12 tongue.

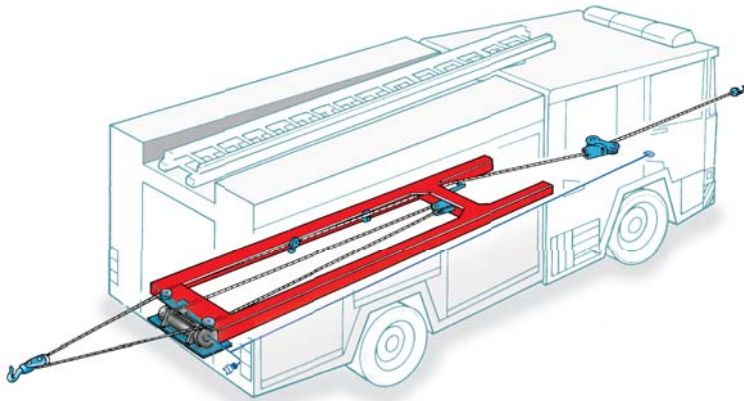
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BHW Group has been a supplier to the Fire Rescue Service for over 25 years. Their range of electric and hydraulic winches is extensive, and includes overload protection and other safety features required by the specialist nature of this work. In addition to the **RESCUE•MASTER** winching system illustrated, BHW provides winches and all ancillary equipment necessary for front bumper mounting.

All machines are rated 2:1 factor of safety in line with MOD requirements BS7901.

The BHW **RESCUE•MASTER** winching system has been developed for use by the Rescue Services on rapid intervention vehicles where maximum flexibility is required. One hydraulic machine provides front and rear winching facility on rescue vehicles, giving up to 9.25 tonnes pulling capacity.



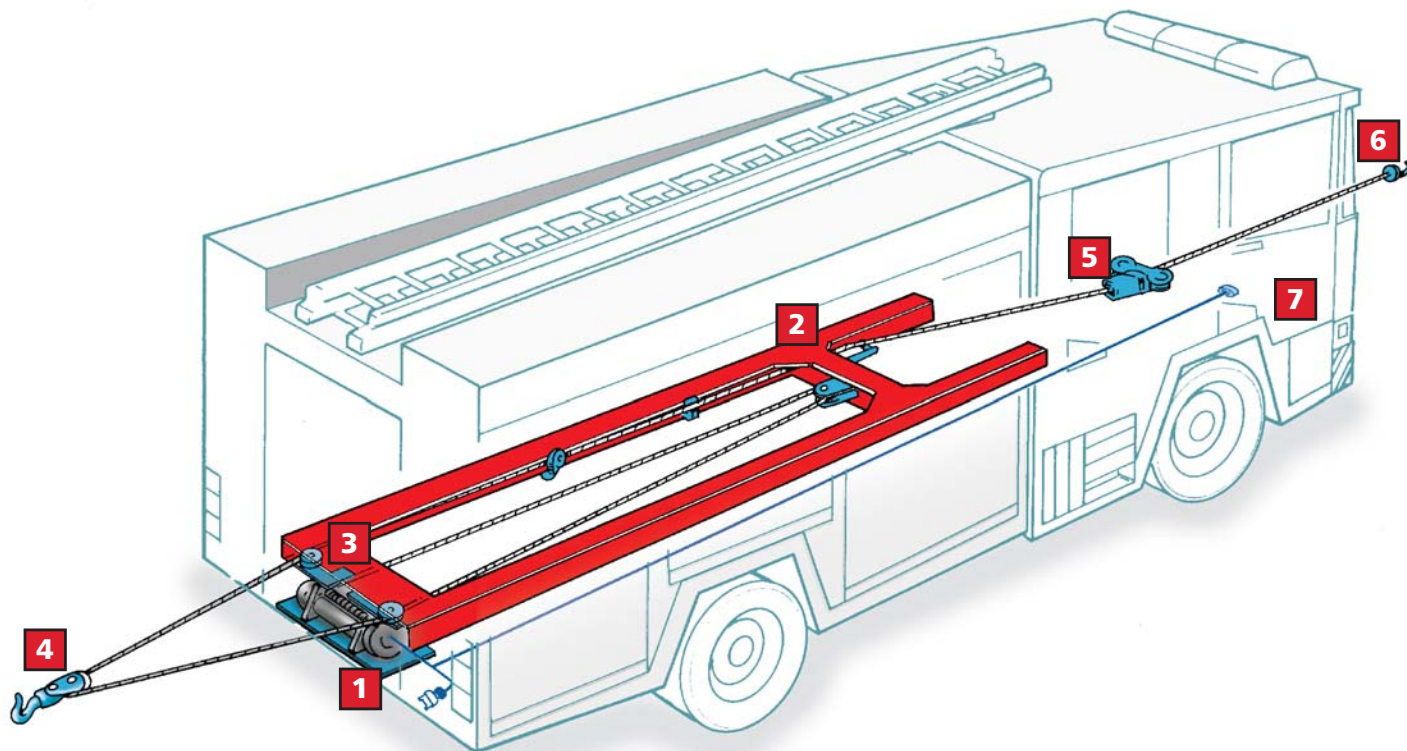
RESCUE•MASTER

Unique Winching System for Rescue Services

FEATURES INCLUDE

- Fully compliant with EN 14492-1 regulations.
- Unique positioning of the winch ensures the wire rope wraps onto the drum without bunching due to the minimum approach angle of the rope to the drum (fleet angle).
- The rear mounted winch is conveniently positioned for easy access to the free spool clutch and for maintenance purposes. The rope is also visible whilst wrapping on the drum. Space is provided for the wire rope to run forward and then return to the rear between the body sub-frame members.
- No reeving is required to achieve pulls from the front or rear. The wire rope can be spooled off the winch drum when the hook is taken to the recovery by simply releasing the free spool clutch on the winch. (Mechanical or hydraulic free spool release is available).
- The rear winching action always incorporates the snatch block thus doubling the winch capacity and pulling power.
- The front rotator enables the wire rope to be pulled at an angle both horizontally and vertically to the rescue vehicle.





- 1** Low profile heavy duty hydraulic winch
5 tonne on front hook, up to 10 tonne on rear.
- 2** Return sheave assembly.
- 3** Return sheave assembly and snatch
block housing.
- 4** Rear heavy duty recovery snatch block
with safety hook.
- 5** Front fairlead.
- 6** Wire rope and hook for front end recovery.
- 7** Plug in wanderlead position (front)
with emergency stop.
- 8** Plug in wanderlead position (rear)
with emergency stop.

Rear winch position provides complete accessibility for:

- ease of control of the free spool clutch
- ease of maintenance
- clear operator view of the winch.

Training courses available and full after sales back up service provided.



OPTIONAL EXTRA

**BHW FM•CONNECT REMOTE CONTROL
SYSTEM – CONTACT SALES FOR DETAILS.**

CONTROL

An electric valve is incorporated enabling a remote wanderlead control to be plugged in at both winching locations. The electric valve can also incorporate a manual lever for very fine control.

A pressure relief valve protects the system against overload.

SYSTEM INCLUDES

- A selection of hydraulic winches to provide:
 - line pull
 - rope capacity
 - line speed, to match vehicles and application.
- Front return sheave block assembly.
- Rear return sheave block and snatch block housing.
- Snatch block.
- Front rotator fairlead and other sheave wheels.
- Wire rope and hook.
- Pneumatic or hydraulic remote free spool clutch release.
- Electric control valve with full wiring harness and wanderlead control.
- PTO/Pumps, hydraulic oil reservoir tanks and cable tensioner can also be provided.
- Emergency stop systems.

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CERT. No. 1769

BHW04/08.05.12

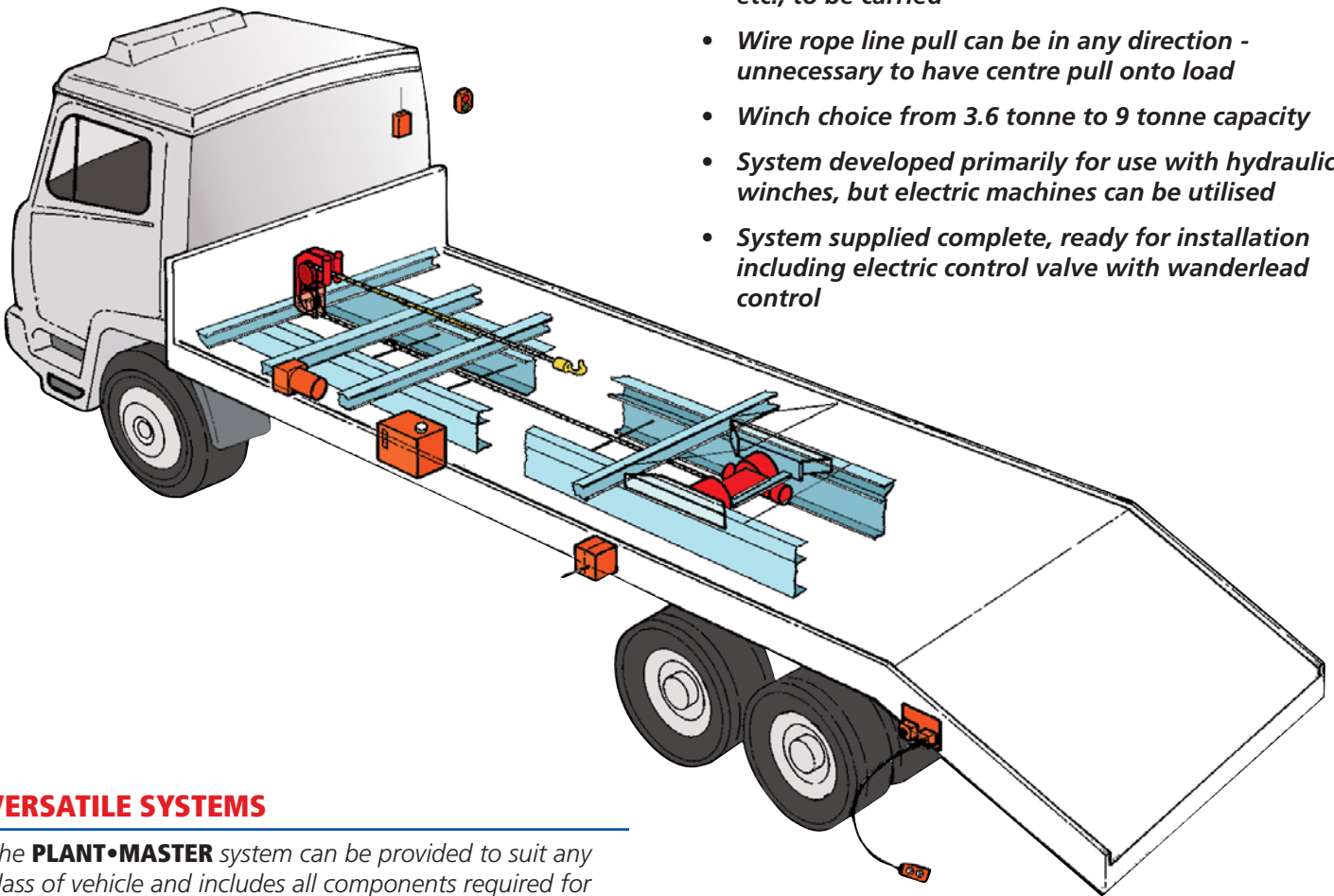
BHW Group has been a major supplier to the Plant Industry for over 30 years. The range of commercial, hydraulic and electric winches is extensive and renowned for their application in this tough environment.

PLANT•MASTER overcomes the problems associated with wire rope wrapping onto the drum on conventional front fitting applications and will also provide uninterrupted bed space on the vehicle body.

PLANT•MASTER Unique Winching System

FEATURES INCLUDE

- *Excellent wire rope wrapping to give longer rope life*
- *Winch not exposed to equipment being loaded*
- *Uninterrupted body floor area, allowing cabins etc., to be carried*
- *Wire rope line pull can be in any direction - unnecessary to have centre pull onto load*
- *Winch choice from 3.6 tonne to 9 tonne capacity*
- *System developed primarily for use with hydraulic winches, but electric machines can be utilised*
- *System supplied complete, ready for installation including electric control valve with wanderlead control*



VERSATILE SYSTEMS

The **PLANT•MASTER** system can be provided to suit any class of vehicle and includes all components required for specific applications.



OPTIONAL EXTRA

BHW FM•CONNECT REMOTE CONTROL SYSTEM – CONTACT SALES FOR DETAILS.

WINCH CHOICES 3.6 to 9 TONNE

3.6 tonne – 9 tonne hydraulic machines dependent upon the chassis gross vehicle weight and the application.

Whilst the system has been developed principally for use with hydraulic machines, an electric winch can be incorporated using the **PLANT•MASTER** principles.



The Ramsey BH550 has set itself apart from the competition by becoming the most popular heavy duty winch with all major plant hire companies.

It can be mounted partially into or above floor level and has the ability to withstand sudden shock loading - often associated with this type of work. Featuring a large diameter drum with deep flanges, this robust machine requires very little maintenance.

SYSTEM INCLUDES

- A selection of hydraulic winches to provide both line pull and rope storage capacities to match vehicles and applications
- Double sheave and fairlead assembly for mounting onto front cross bearer
- Electro/pneumatic control valve with wanderlead and emergency stop
- Wire rope to 1960N/mm² grade, fully galvanised, crush resistant with heavy duty safety hook

OPTIONS

PTO/Pumps, hydraulic oil reservoir tanks, cable tensioner and radio remote control system can also be provided.

NOTES

These winches must not be used for the movement of personnel and 5 wraps of wire rope must be maintained on the drum.

Data shown is approximate and intended as a guide only.

CONTROL

An electric or electro/pneumatic control valve is supplied enabling a remote wanderlead control to be plugged in at one or more points as required.

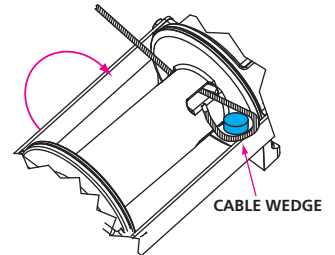
The electric valve also incorporates a manual lever for feathering the winch. A pressure relief valve also protects the system against overload and a dump section is incorporated connected to an emergency stop to ensure compliance with the EU Machinery Directive.

RAMSEY BH550

The BH550, the 5 tonne Ramsey Hydraulic Winch - typical of models used in the **PLANT•MASTER** System.

Fully compliant with EN 14492-1 regulations.

SECURE WIRE ROPE ANCHORAGE



WARRANTY

Each new winch system is guaranteed against defects in workmanship and material defects for a period of twelve months from date of purchase.

Wire ropes are not included under warranty.

Bushey Hall Winchmaster sales@bhwgroup.co.uk www.bhwgroup.com

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CERT. No. 1769



Unloading or reloading with **CARPET•TUG™ 500** is made easy, simply by attaching the wire rope to a webbing harness looped around the end of the carpet roll.



The new powerful DC winch, fed through the patented rotator system, gives added capacity to the **CARPET•TUG™ 500**, handling up to 500kg carpets with ease.

PROVEN, RELIABLE SYSTEMS FROM BHW WITH MORE THAN 12 YEARS INDUSTRY EXPERIENCE



Back problems account for a high percentage of working days lost to industry, particularly in the carpet business.

CARPET•TUG™ 500 reduces the risk of injury and enables a single operator to deliver heavier carpets and flooring efficiently.

EUROPEAN PATENT NO. 98 303456.2 TM CARPET•TUG IS A REGISTERED TRADEMARK OF THE BHW GROUP LIMITED.

CARPET•TUG™ 500 Unique 500kg Winching System

FEATURES INCLUDE

- Supplied as a complete ready to fit kit - easy to install with a simple 8 bolt fixing
- Total weight of **CARPET•TUG™ 500** is only 168kg
- **CARPET•TUG™ 500** applies a force up to 500kg and is load limited for safety
- Reduces risk of back injury or loss of man hours
- Compact size : 260mm high x 460mm deep - adjustable 2340mm to 2515mm length (as standard)
- Fully load tested and compliant with the EN 14492 / 1 & 2 Machinery Directive
- CE marked and issued with a Declaration of Conformity



A MAJOR AID TO ENSURE COMPLIANCE WITH EU MANUAL HANDLING REGULATIONS

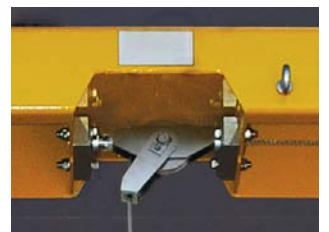
Heavier rolls of flooring have become available making them even more difficult to man handle during delivery. The new **CARPET•TUG™** helps the operator, safely.

New EU regulations regarding machinery and its safe use have also been recently introduced, emphasising the requirement to provide manual handling aids for staff involved with the delivery process. **CARPET•TUG™** is the answer...

ADJUSTABLE TO FIT VEHICLE BODY WIDTHS

Constructed with an adjustable width, low profile steel beam, the **CARPET•TUG™ 500** is easily secured to the vehicle with just 8 bolts (supplied).

Powder coated and robust enough to resist impact damage, the beam also houses the winch and the patented wire rope delivery system, including a central rotator to enable operation in virtually any direction.



OPTIONAL EXTRA

FM•CONNECT REMOTE CONTROL SYSTEM – CONTACT SALES FOR DETAILS.

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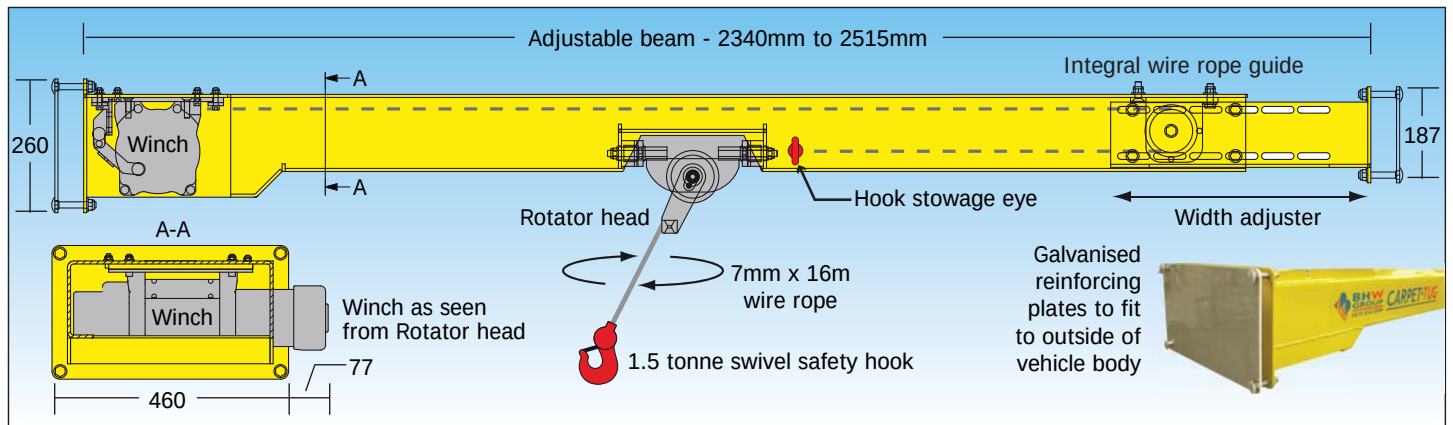
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CERT. No. 1769



All moving parts run on maintenance free nylon bushes for cleanliness and prolonged life. Beam is powder coated steel.

EASY TO INSTALL...

This quick-to-fit system is supplied as a complete kit and secured into the vehicle body with just 8 bolts (supplied).

The slim beam is adjustable in length to suit vehicle body width - and robust enough to resist impact damage.

The beam also houses the electrics, including an isolator switch.

Power cables are routed from the vehicle's battery and secured into the heavy duty connector provided.

The system is operated using a heavy duty 4.5m wanderlead which has a heavy duty plug. The auxiliary socket for this can be positioned either on the Carpet Tug or elsewhere as required.

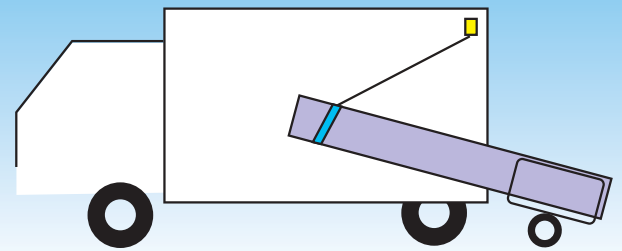
An Emergency Stop button is also provided that activates a third solenoid to cut the power supply to the winch motor.



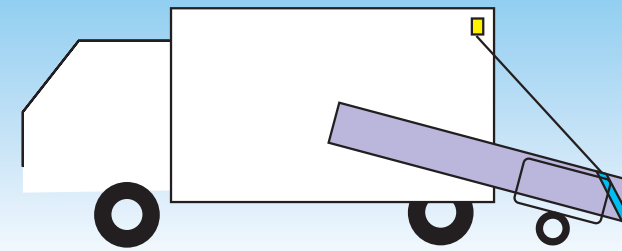
SUPPLIED AS A FULL KIT - READY TO INSTALL

- Powder coated, adjustable steel beam with fitted central rotator, wire rope guides, fitting plates and bolts
- Ready to fit wiring looms and control boxes
- Fitted heavy duty DC electric winch 12v or 24v
- 7mm x 16m wire rope (tested and certificated)
- CE certificated polyester 'round sling' webbing strap
- 4.5m wanderlead and auxiliary socket
- Emergency stop button, isolator switch and fuse
- Heavy duty connectors
- **CARPET•TUG™ 500** operator's manual
- 12 months full warranty (excluding wire rope)

WINCH OUT



WINCH IN



NOW EVEN MORE POWERFUL & FASTER

The new **CARPET•TUG™ 500** includes a more powerful, DC electric winch to enable handling of even heavier carpets.

CARPET•TUG™ 500 also provides a faster line speed to reduce unloading time.

Limited to 500kg of force for safety purposes, the winch is working well within its capacity, ensuring a long life with a minimum of maintenance.

The patented system ensures neat wrapping on to the winch drum, avoiding tangling or damage to the wire rope.

The wire rope is totally visible throughout the unloading or reloading process, which is proven to be a major aid to easy operation.



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CERT. No. 1769

REEL•SMART™

A major breakthrough in winching on slide bed vehicles



The patented REEL•SMART™ system uniquely positions the winch to one side of the slide bed and is able to provide a straight line pull from any angle – even when the connection to the casualty vehicle is offset.

The unique REEL•SMART™ sliding head positions the pull directly in line with the tow eye, reducing its risk of shearing, and limiting damage to the casualty vehicle.

REEL•SMART™ overcomes many time wasting problems in the recovery procedure. The free spool clutch is now easily accessible from the road, and when working over side bollards, the rope still winds on evenly, with absolutely no bunching.

REEL•SMART™ will assist in a 'crabbing' situation, reducing additional stress on the winch or rope, thereby limiting damage.

The REEL•SMART™ winch interface system is supplied ready-to-fit for the body builder, and is shown here with the Ramsey HDP 34.9 3.56 tonne planetary hydraulic winch.

- Guarantees even rope wrapping and eliminates 'bird nesting'
- Less rope breakage or kinks (Saving money on rope replacement)
- Reduces risk of damage during recovery
- Pulls directly in line from any angle
- Reduces loading time - extends winch life
- Provides freespool clutch access from the side of the vehicle

EUROPEAN PATENT
NO. 98 303456.2

REEL•SMART™
IS A REGISTERED TRADEMARK OF THE BHW GROUP LTD



This revolutionary design guarantees even rope wrapping **every time**.

No more 'bird nesting' – less damage to wire ropes.

REEL•SMART™ offers the ideal opportunity to save time and extend the life of winch component parts – an excellent recovery investment all round.



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BENEFITS OF A REEL•SMART™ WINCH SYSTEM

Compared to any other recovery winch system, the benefits of the REEL•SMART™ are clear. On casualty vehicles, only the tow eye assembly has been designed to take the pull during recovery. They are tested to withstand horizontal and vertical forces of 25° and 5° respectively.

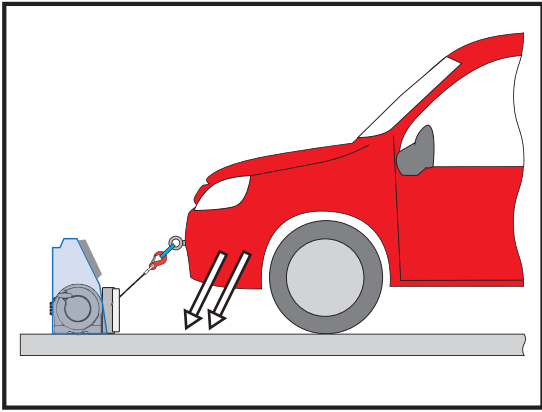
Only REEL•SMART™ is guaranteed to meet these requirements - from virtually any angle. The winch is also under less strain and the wire rope is neatly stored on to the drum, with no snagging or damage.

SIMPLY MOVE THE ROTATOR HEAD - NOT THE WHOLE WINCH.

Sliding winches require the operator to move the whole winch, which can often weigh as much as 80kg+, into line with the casualty vehicle tow eye.

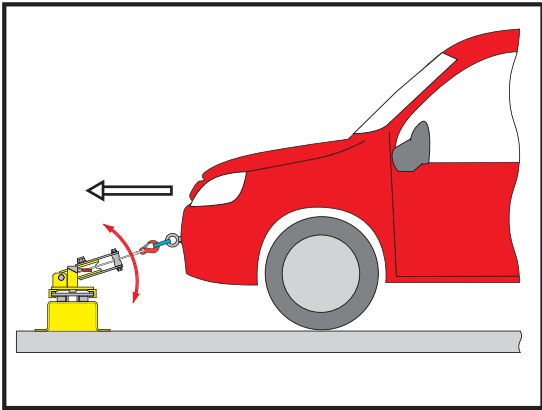
REEL•SMART™ only requires the movement of the 9kg rotator head.

SLIDING OR CENTRALLY MOUNTED WINCHES DO NOT ADJUST FOR TOW EYE HEIGHTS WHEN WINCHING IN.

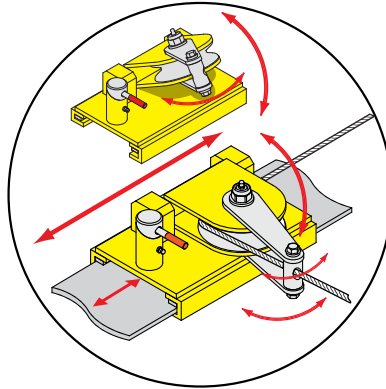


Results in high pull down force on the tow eye and suspension - and strain to the winch as casualty vehicle gets close.

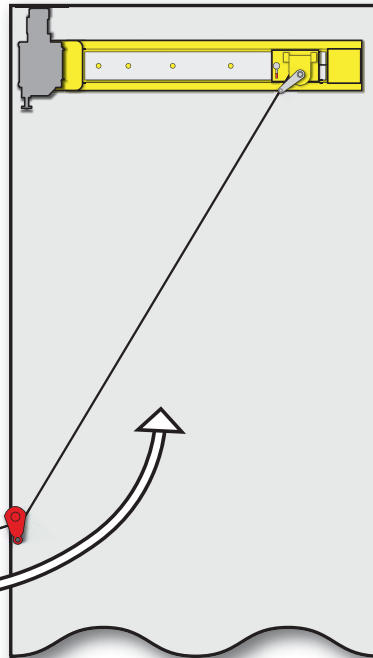
THE REEL•SMART™ ROTATOR HEAD AUTOMATICALLY ADJUSTS TO SUIT THE HEIGHT OF THE TOW EYE.



Rotator pivots upwards as casualty vehicle gets close, reducing pull down bending force to nearly zero. The tow eye, the suspension and the winch are all under less strain.



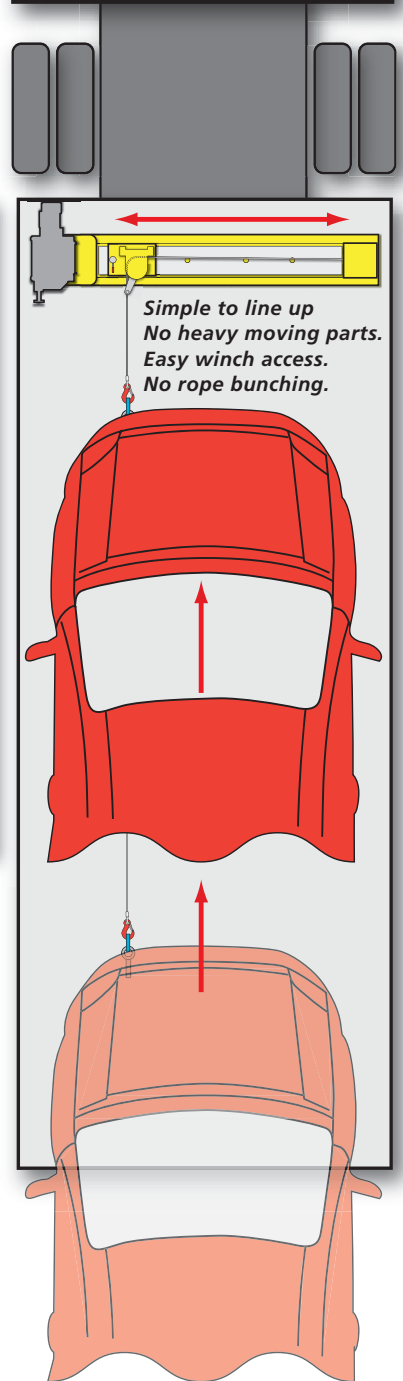
The REEL•SMART™ adjustable rotator head ensures that the wire rope is directly in line with the tow eye and the feed to the winch drum gives perfect wire rope stowage.



SIDEWAYS RECOVERY MADE EASY.

REEL•SMART™ makes recovery from either side of the carrier easy.

Whatever the angle of pull, REEL•SMART™ ensures perfect wrapping on the drum every time, without bunching occurring.



*Simple to line up
No heavy moving parts.
Easy winch access.
No rope bunching.*

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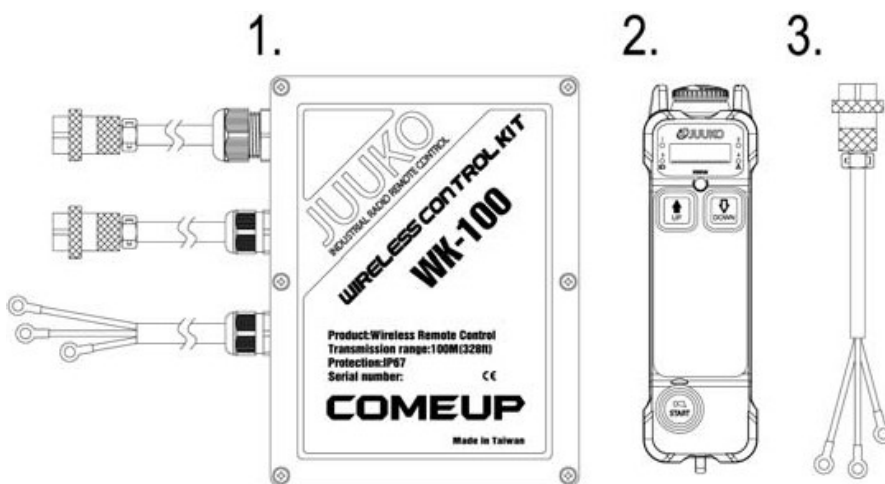


NEW RADIO REMOTE FOR CWL SERIES HOIST



Includes:

1. Wireless Receiver
2. Wireless Transmitter.883844
3. Power cord receptacle.884021



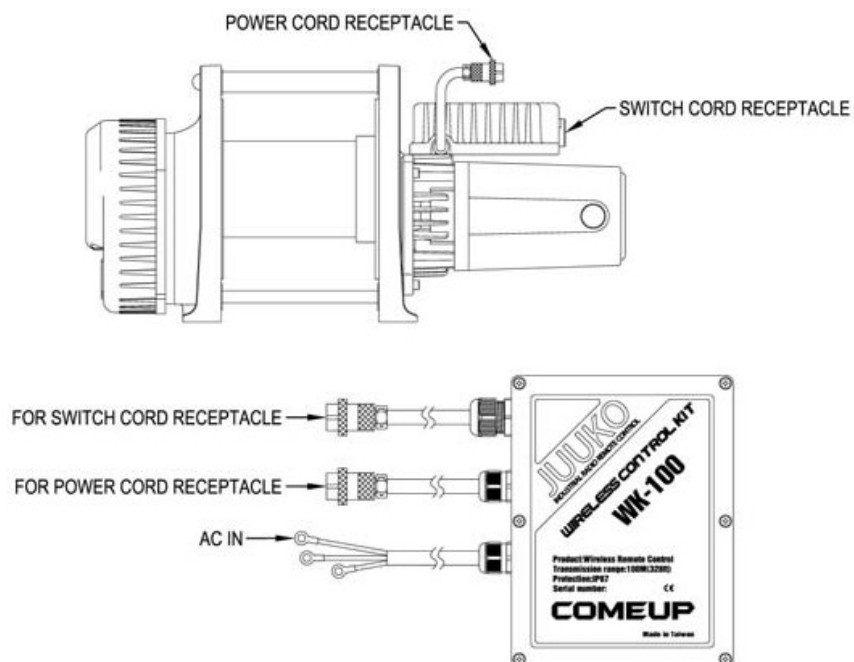
#6862 - Radio remote control kit WK-100L, **110V**, CWL 200, 200L

#6863 - Radio remote control kit WK-100L, **240V**, CWL 200, 200L

#6864 - Radio remote control kit WK-100L, **240V**, CWL 301, 301L

Specifications:

Control module			Indirect control +Wireless Control
Frequency band			433MHz
Typical operating range			100 M (328 ft)
Applicable current			AC 110V 15A / 220V 7.5A / 240V 7.5A
Function			Go up / Go down / Emergency stop
Control Unit	Power Input	Current range	110V OR 220V OR 240V
		Power cord for main power source	2.0 mm × 3C ×1.5M
	Power Output	Power cord for winch	2.0 mm × 3C/3P quick connector
		Control cord	2.0 mm × 6C/6P quick connector
	contactors	Number	3 sets
	Receiver	Power supply	AC 110V / 220V / 240V
		Function	Go up / Go down / built-in buzzer
	Protection degree		IP67
Transmitter	Power supply		DC3V
	Button		Emergency stop switch, Power on switch
	Power consumption		16mA
	Battery		LR6(AA)1.5V*2
	Protection degree		IP65
Environment	Operating temperature		-25°C ~ + 55°C
	Storage temperature		-40°C ~ + 65°C
	Humidity		90%RH
Complied with RED directive			2014/53/EU



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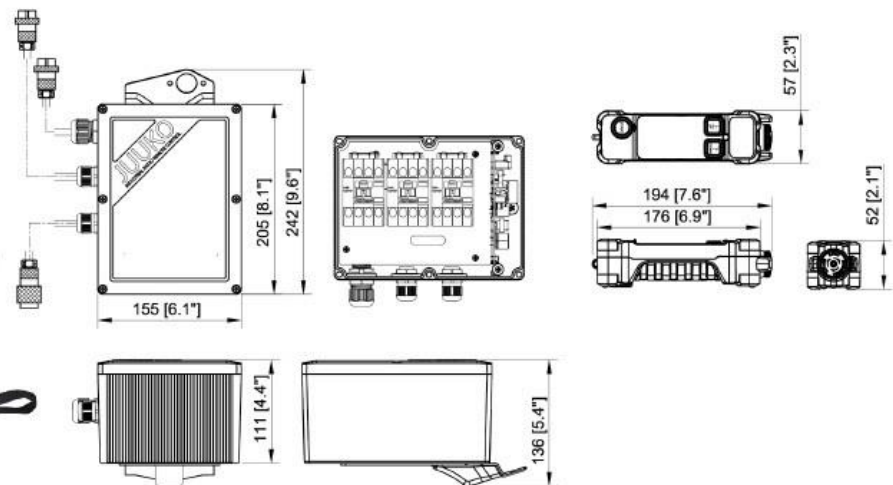
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- Clever designed fitting plate for easy installation on CWS (160,230,300) winches.
- Come with complete connectors for quick plug and play.
- Cut power emergency stop design (built in three relays) meets highest safety standard.
- High performance Industrial radio control module with operating range up to 100M.
- Industrial standard transmitter with mushroom type EMO button and LED operating indicators.
- High IP rating: Transmitter IP65; Receiver: IP67



▲ Features Include:



#21262 - Radio remote control kit WK-100S, **220-230V**, CWS 160, 230, 300



WK-100S SPECIFICATIONS

Control module			Indirect control +Wireless Control
Frequency band			433MHz
Typical operating range			100 M (328 ft)
Applicable current			AC 110V 15A / 220V 7.5A / 240V 7.5A
Function			Go up / Go down / Emergency stop
Control Unit	Power	Current range	110V OR 220V OR 240V
	Input	Power lead for main power source	2.0 mm x 3C/3P quick connector
	Power	Power lead for winch	2.0 mm x 3C/3P quick connector
	Output	Control lead	2.0 mm x 6C/6P quick connector
	Contactors	Number	3 sets
	Receiver	Power supply	AC 110V / 220V / 240V
		Function	Go up/ Go down / built-in buzzer
	Protection degree		IP67
Transmitter	Power supply		DC3V
	Button		Emergency stop switch, Power on switch
	Power consumption		16mA
	Battery		LR6(AA)1.5V*2
	Protection degree		IP65
Environme	Operating temperature		-25°C ~ + 55°C
	Storage temperature		-40°C ~ + 65°C
	Humidity		90%RH
Complied with RED directive			2014/53/EU

Standard Accessories

- Control Box
- Base plate
- Wireless remote control

Package

- Net weight: 3.7 kg / 8.2 lb
- Gross weight: 4.5 kg / 9.9 lb
- Box dimension: 286 x 266 x 170 mm
(12.0" x 10.5" x 6.7 ")

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FITTING & OPERATING INSTRUCTIONS
HP22 ELECTRO PNEUMATIC CONTROL VALVES
WITH PREWIRED LOOMS, WANDERLEAD CONTROL & EMERGENCY STOP
Kit Part Nos: 108547, 108548



Part No. 108549 / 1022

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INTRODUCTION

This manual refers to the installation and operating instructions for the following Bushey Hall Winchmaster Electro Pneumatic kits.

PLEASE READ THIS MANUAL CAREFULLY BEFORE INSTALLATION OR OPERATION OF THE VALVE CONTROLS. KEEP THIS MANUAL WITH THE VALVE CONTROLS FOR REFERENCE.

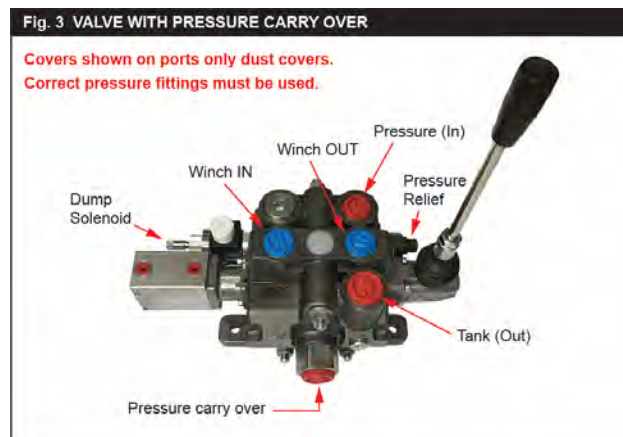
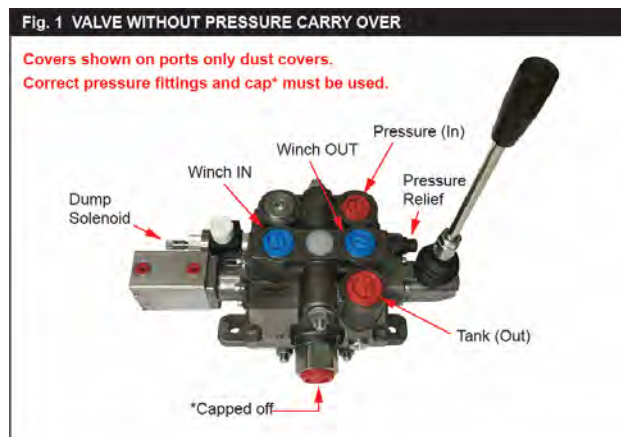
CONTROL VALVE SYSTEMS CAN BE FITTED WITH OR WITHOUT PRESSURE CARRY OVER TO SUPPLY OTHER HYDRAULICS ON THE VEHICLE.

IT IS ESSENTIAL THAT THE CORRECT CONTROL VALVE TYPE IS USED ACCORDING TO THE APPLICATION REQUIREMENTS.

**IF IN DOUBT, PLEASE CONTACT BUSHEY HALL WINCHMASTER
(0)20 8953 6050 or sales@Bushey Hall Winchmastergroup.com.**

STANDARD KITS FOR AN HP22 ELECTRO PNEUMATIC CONTROL VALVE:

KIT Part No.	Description
108548	Directional Valve ½" BSP, Single Spool, WITHOUT Pressure Carry Over with wiring loom, blue wanderlead socket and standard emergency stop button
108547	Directional Valve ½" BSP, Single Spool, WITH Pressure Carry Over with wiring loom, blue wanderlead socket and standard emergency stop button



PLEASE NOTE: The plastic port covers (shown on the diagrams above) are fitted ex-factory and are intended to prevent dust or dirt ingress during order transit and initial first fit to the chassis. They must be removed and replaced with suitable hydraulic fittings to complete the system required.

CONVERTING BETWEEN PRESSURE CARRY OVER AND NON-PRESSURE CARRY OVER

Although they have separate part numbers, these control valves can be easily converted from PCO to non-PCO by exchanging the pressure carry over fitting with a PCO plug.

Non-PCO applications MUST have a blanking plug and seal fitted on the PCO port.

These replace any PCO fitting. Do not use the factory issue dust covers, these are not pressure fittings.

Part Numbers:

No. 108571 ¾" BSP Blanking Plug.

No. 4790 ¾" Dowty Seal.

In all cases it is the fitter's responsibility to ensure that all hydraulic ports on these control valves have suitable fittings to withstand hydraulic pressure, and ALL red covers removed. Bushey Hall Winchmaster accept no responsibility for subsequent damage caused by not using suitable hydraulic pressure fittings when installing the winch control system.

INTRODUCTION contd.

A standard kit is illustrated on the front of this manual. It includes facilities for one wanderlead control and one emergency stop. Additions are available and easily installed with the Bushey Hall Winchmaster plug in wiring loom system (see page 7). You are also advised to ensure there is adequate space is available for connecting looms and access to the manual control lever.

A standard kit would normally comprise of:

- HP22 electro/pneumatic control valve with dump section.
- Control system in enclosure with Armaflex connectors for wanderlead socket and emergency stop.
- Prewired loom with connectors for emergency stop and wanderlead cables. (Part No. 20831).
- Plug in wiring loom for 16amp wanderlead socket (Part No. 12949).
- Plug in wiring loom with emergency stop button (Part No. 12681).
- Armaflex protected power lead 4.5 metre long from control system to connect to vehicle battery.
- Mounting bracket with valve and control system fitted.
- 4 metres x 4mm Ø nylon tubing to connect to air supply at the PTO with the control system.

Wanderleads and emergency stops shown in the kit listings above are those usually supplied as standard. Options are available, please see page 6 for details or refer to the parts section on page 15.

INSTALLATION

The valve control system is supplied by Bushey Hall Winchmaster as a fully wired, plug in kit requiring the minimum installation time by the installer. Connections are waterproof and resistant to impact. The cables are sealed in Armaflex sleeving.

Before commencing installation, check that the correct valve has been specified and that it is being fitted in the correct position within the hydraulic system. It is the installers responsibility to ensure the correct control valve is used to suit the relevant application and that the control valve is correctly installed and tested.

Fitting the wrongly specified valve or positioning it incorrectly within the circuit may cause damage to the valve and other equipment in the circuit. Bushey Hall Winchmaster is unable to accept any liability for damage resulting from the installation of a wrongly specified valve. Warranty details can be found in the back of this manual.

SYSTEM REQUIREMENTS

Bushey Hall Winchmaster electro pneumatic valve control systems require:

- A protected air supply from the PTO actuating pneumatic cylinder. Maximum pressure 10 bar.
- An electrical supply from the chassis, 24v at 10amp rating.
- A hydraulic supply. See hydraulic requirements table on page 8.

FUNCTIONS AND ADVANTAGES

1. To enable the winch to be operated by a wanderlead button control. The system is supplied with one plug in wiring loom with a 16amp socket. This can be positioned as required for the wanderlead to be connected. Additional sockets can be added anywhere on the vehicle using extra Bushey Hall Winchmaster wiring looms on to the system. (See following page for details on Bushey Hall Winchmaster wiring looms and choices on wanderlead sockets).
2. To provide at least one emergency stop control, which is a legal requirement as, defined in the EU machinery directive on safety. Emergency stop buttons are supplied prewired for connection to the wiring loom so they can be fitted onto the vehicle adjacent to the 16amp socket. Additional emergency stop buttons can be added with the use of additional Bushey Hall Winchmaster wiring looms. (See following page for details on Bushey Hall Winchmaster wiring looms and choices on Emergency Stop buttons).
NOTE: If the control valve includes pressure carry over, then any functions downstream from this valve will also have the benefit of an emergency stop function.
3. To protect the winch and hydraulic system from being overloaded. The valve includes an adjustable pressure relief. This limits the maximum pressure that can be obtained in the circuit thereby limiting the winch to its maximum designed line pull capacity.
NOTE: It will be necessary to adjust the pressure setting to obtain the correct line pull rating for the winch being used. This is the responsibility of the installer.

ADDITIONAL OR OPTIONAL EQUIPMENT

ADDITIONAL WANDERLEAD SOCKETS AND EMERGENCY STOPS

Additional Bushey Hall Winchmaster wiring extensions and branch looms can be easily plugged into the standard kit to provide extra wanderlead sockets and emergency stop buttons.

ALTERNATIVE WANDERLEAD CONTROLS AND EMERGENCY STOPS

The most popular wanderlead and emergency stop controls are listed on page 6.

Alternative wanderlead controls are also available.

RADIO CONTROL

A radio control unit can be supplied to add to the control valve kit.

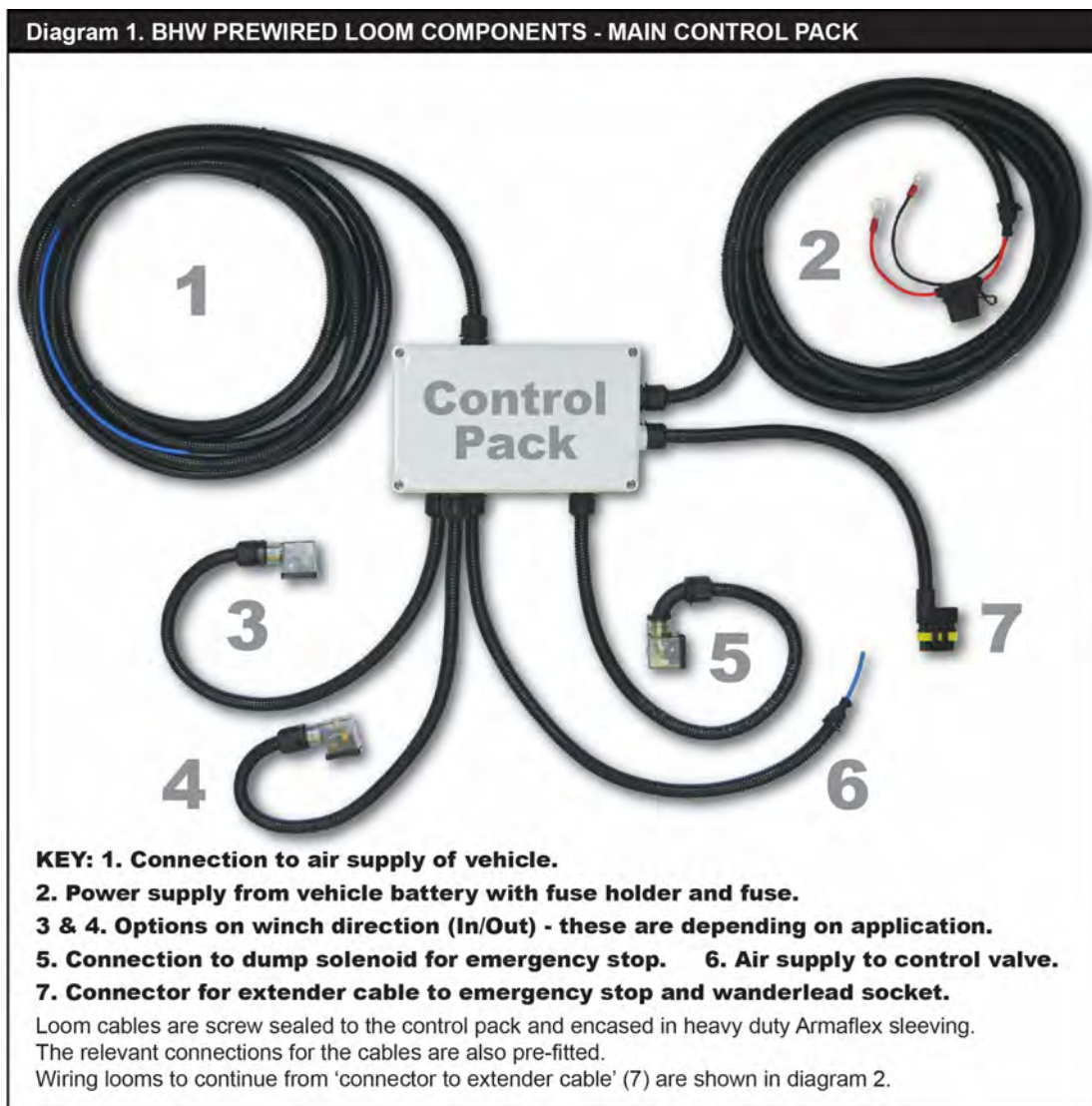
For more information or alternative parts relating to any of the above, please contact the Bushey Hall Winchmaster sales team on +44 (0)20 8953 6050 or sales@bhwgroup.com to discuss specific requirements.

WIRING LOOMS FOR CONTROL VALVES

Bushey Hall Winchmaster wiring looms for control valves are supplied as complete kits (see complete kit part numbers on page 3).

The componentry is shown below. Diagram 1 is the main control pack and diagram 2 on the following page shows the extender cables, branch lines and cables for the wanderlead control and emergency stop.

A full picture of a typical kit is shown on the front cover.



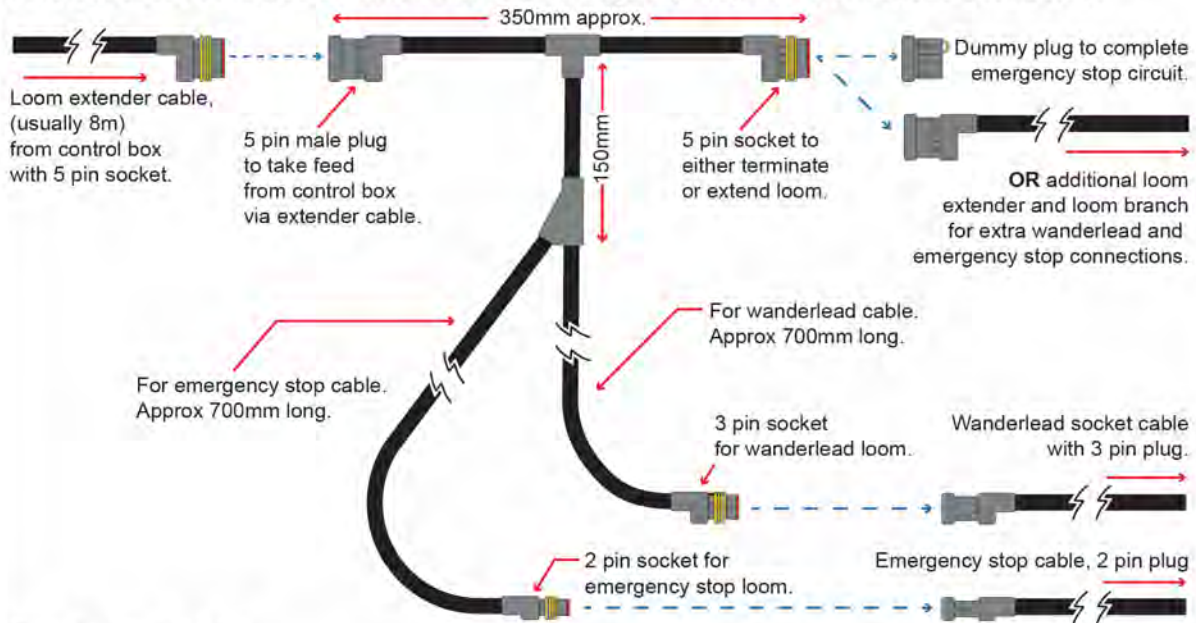
If you require additional components to extend a wiring loom, or replacement parts, please contact the Bushey Hall Winchmaster sales team on +44 (0)20 8953 6050 or sales@bhwgroup.com.

WIRING LOOMS FOR CONTROL VALVES contd.

Diagram 2. BHW PREWIRED CABLES, EMERGENCY STOPS & WANDERLEAD SOCKETS

BHW prewired cables have weatherproof, impact resistant plugs and sockets that lock when connected. Loom cables are sealed to the plugs and sockets and encased in heavy duty Armaflex sleeving. Additional looms can easily be added for extra control connections (see below).

Part No. 20831 Prewired branch loom with emergency stop and wanderlead connectors



Dummy plug

Part No. 20832 - to complete emergency stop circuit at the end of a finished loom assembly.

Loom extender cables - prewired with 5 pin plugs and 5 pin sockets.

Part No. 12681 Loom extender cable x 8 metres - standard issue, typically to go from the front of the vehicle to the rear. This length is supplied as standard for kits, connecting the control box to the branch loom.

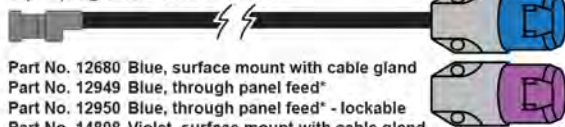


Part No. 14380 Loom extender cable x 2.5 metres - typically to go from one side of the vehicle to the other.



Cables with wanderlead socket

3 pin plug and 400mm cable



- Part No. 12680 Blue, surface mount with cable gland
- Part No. 12949 Blue, through panel feed*
- Part No. 12950 Blue, through panel feed* - lockable
- Part No. 14808 Violet, surface mount with cable gland
- Part No. 12951 Violet, through panel feed*
- Part No. 12952 Violet, through panel feed* - lockable
- Part No. 20037 Violet, with back box (side exit), cable gland and lockable assembly

Cables with emergency stop button

2 pin plug and 400mm cable



- Part No. 12681 standard button type
- Part No. 16649 with boxed finger guard assembly
- Part No. 15629 with metal enclosure
- Part No. 7408 with push pull with bellows and wired/terminated superseal

* Through panel feed - the 3 pin connector and cable is fed through a predrilled aperture in the vehicle chassis. The heavy duty socket is then mounted to the surface over the aperture.

SPECIFICATION OF VALVES

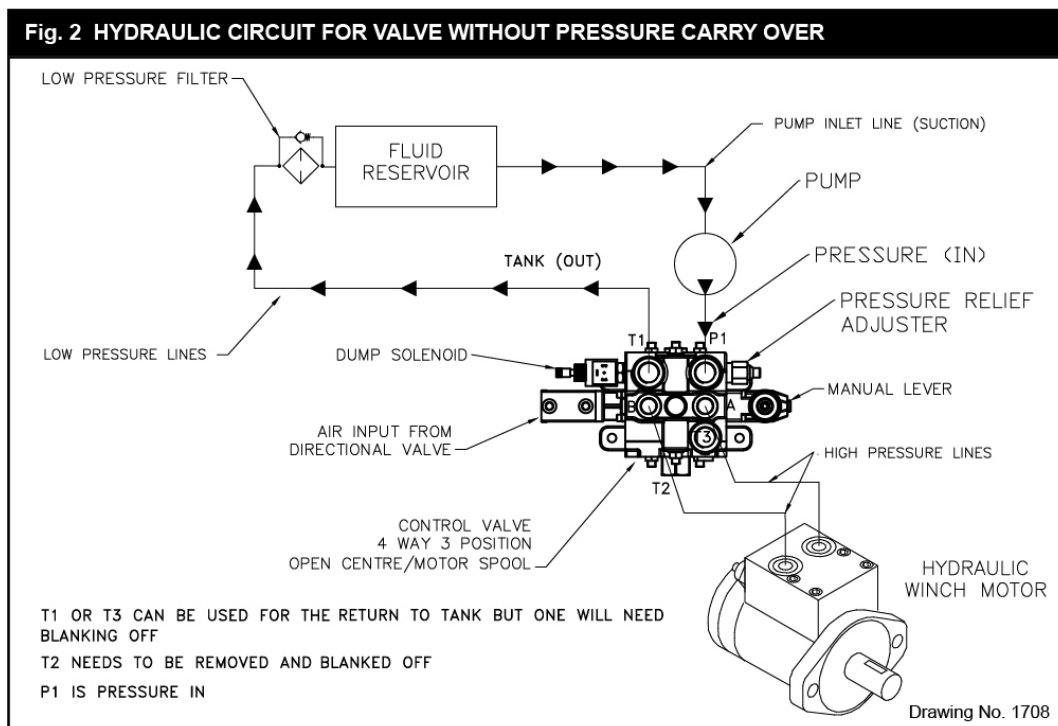
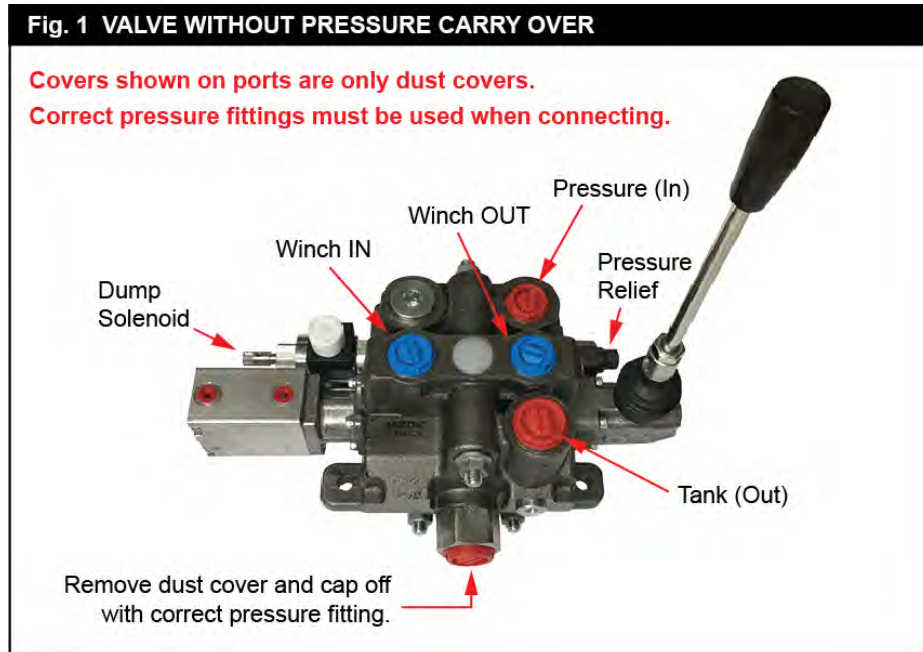
VALVES WITHOUT PRESSURE CARRY OVER

These can only be used in circuits where no other directional valves are fitted beyond this control valve. The return line must go directly to the tank.

OR

Where other directional control valves are fitted. These must be in the circuit before the valve supplied by Bushey Hall Winchmaster and must include pressure carry over. Other valves must be between the supplied valve and the hydraulic pump).

See below for winch control valve without pressure carry over detail and its hydraulic circuit layout.



PLEASE NOTE: If in any doubt about specification, please contact Bushey Hall Winchmaster +44 (0)20 8953 6050 prior to installation.

No liability can be accepted by Bushey Hall Winchmaster for damage to the valve or associated equipment caused due to incorrect installation or specification of the valve and pressure fittings.

SPECIFICATION OF VALVES contd.

VALVES WITH PRESSURE CARRY OVER

These should only be used where other directional control valves are fitted downstream beyond the Bushey Hall Winchmaster supplied valve.

**THE PRESSURE CARRY OVER PORT MUST UNDER NO CIRCUMSTANCES BE BLANKED OFF.
A RETURN LINE TO THE TANK MUST BE FITTED.**

Fig. 3 VALVE WITH PRESSURE CARRY OVER

Covers shown on ports are only dust covers.

Correct pressure fittings must be used when connecting.

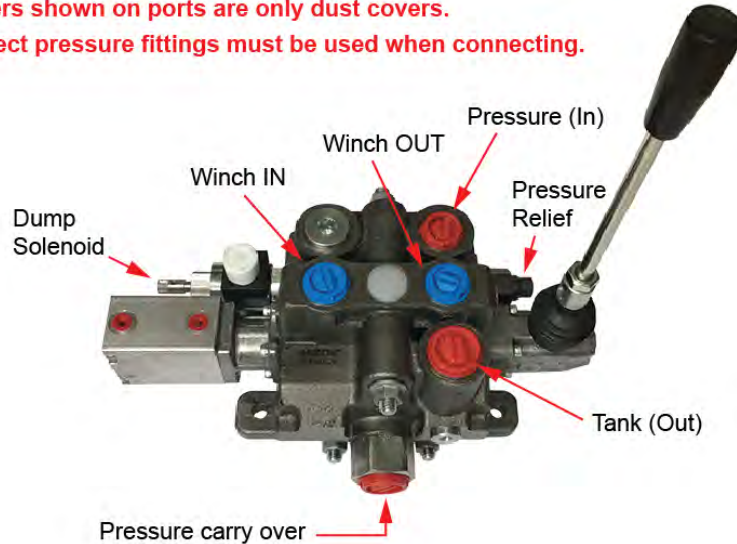
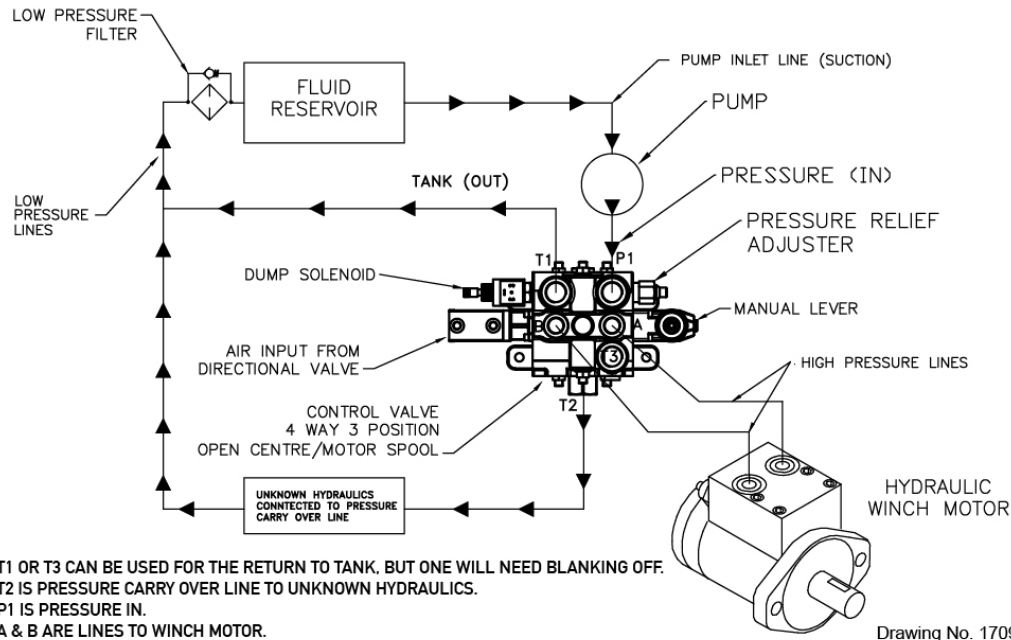


Fig. 4 HYDRAULIC CIRCUIT FOR VALVE WITH PRESSURE CARRY OVER



PLEASE NOTE:

If in any doubt about specification, please contact Bushey Hall Winchmaster +44 (0)20 8953 6050 prior to installation.

No liability can be accepted by Bushey Hall Winchmaster for damage to the valve or associated equipment caused due to incorrect installation or specification of the valve and pressure fittings.

METHOD OF OPERATION

The control valve is supplied “open” and it will not close to allow it to function until it receives an electrical supply. If a permanent electrical supply were provided there would be a constant current draw on the vehicle battery of around 3 amps causing an unacceptable discharge, resulting in vehicle starting difficulties. To prevent this problem the control system includes a pressure-sensing switch connected to the PTO air supply.

When the PTO is engaged the electrical supply is switched on and this activates the solenoid on the dump section of the valve, and it closes to enable the valve to function. The winch will now operate using either the manual lever or by means of the wanderlead buttons. In the case of the wanderlead, this simply operates either the winch “In” or “Out” solenoid.

If an emergency stop button is pressed, this will cut the power supply to the valve dump solenoid, so the valve immediately goes “open.” Hydraulic oil then returns immediately through the dump section to tank preventing any operating functions taking place. This method also has the advantage of failing safe if the electrical supply to the valve should fail i.e., if a supply wire broke away from an emergency stop control.

The connectors onto the three solenoids are to IP65 and include LED indicator lights for checking the system is operating correctly. Notes on LED indicator functions can be found in fault finding on page 14.

HYDRAULIC PUMP REQUIREMENTS

To obtain optimum performance from the winch the pressure and flow available from the pump must be correct and this will depend on the model of winch being installed. (See table below).

If the winch is being fitted in to an existing circuit with a higher flow than the maximum recommended, a priority flow control valve should be installed in the circuit. (Part No.7556).

A filter to achieve a 25-micron level of filtration must be included in the circuit to protect the hydraulic system.

A low pressure return line filter is recommended. (Part No. 4410).

Table 1 Hydraulic requirements:

Winch Model	Recommended flow lt/min (optimum)	Maximum permissible flow lt/min	Operating pressure to obtain correct line pull (approximate bar)
T-Max CHW9000	60	75	140
T-Max CHW16500	60	75	140
Ramsey HDP 34.9	35	50	176
Ramsey RPH 42.2	45	57	155
Ramsey HDP 42	57	75	138
Ramsey 53.3	45	57	176
Ramsey H246	40	50	172
Ramsey BH550 / H49	50	75	176
Ramsey H89	60	100	180
Ramsey H246 / HY246	40	50	176

*A low displacement hydraulic motor is available for the BH 550 / H49 for when oil flows in the system are less than 32lt/min if this motor is used at the pressure requirement of 195 bar.

SETTING ENGINE SPEEDS

IMPORTANT NOTE Modern Commercial vehicles are fitted with electronic Engine Management Systems (EMS). The supplying truck dealer must ensure the engine is set to run at the correct speed automatically when the PTO is engaged. This is carried out by the supplying dealer and generally done at the vehicle PDI. To enable the EMS system to sense the PTO engagement a pressure sensing switch or a microswitch within the PTO will be required. In the case of the pressure switch this should be fitted in the line from the cab switch to the PTO. Many PTO ranges have provision for a microswitch to be fitted quickly and easily and can be supplied with the PTO.

The extent and range of the changes to new vehicle transmissions and their integrated control systems continues to evolve, with ever-more-complex hardware/software control units; some gearboxes even require their own independent CPUs to be re-programmed prior to the installation of a PTO.

In some applications two or three different engine speeds may need to be selected and this facility must be specified at the time the chassis is ordered on the factory. This facility would be required, for example if a crane was fitted requiring 30lt/min and a winch operating from the same PTO required 50lt/min. Each function i.e., crane and winch will need a pressure sensing switch or microswitch, so the engine speed automatically sets when the specific equipment is being used.

We recommend these requirements be discussed with the supplying dealer who should also be advised of the correct engine speed settings prior to setting up the speed control.

FITTING THE CONTROL VALVE

VALVE LOCATION

When selecting the valve location, the following points must be considered:

- Avoid direct road spray off the vehicle wheels.
- Position to prevent accidental operation of the manual lever.
- Ensure the manual lever is free to move through its full travel.
- Easy access by the operator to the manual lever.
- Access to the control box (to enable parts replacement).
- Access to the pressure relief valve to enable adjustment to be made.
- Access to the hydraulic hoses and air pipes to provide easy connection without severe bending.
- Installation is normally to the nearside of the vehicle.

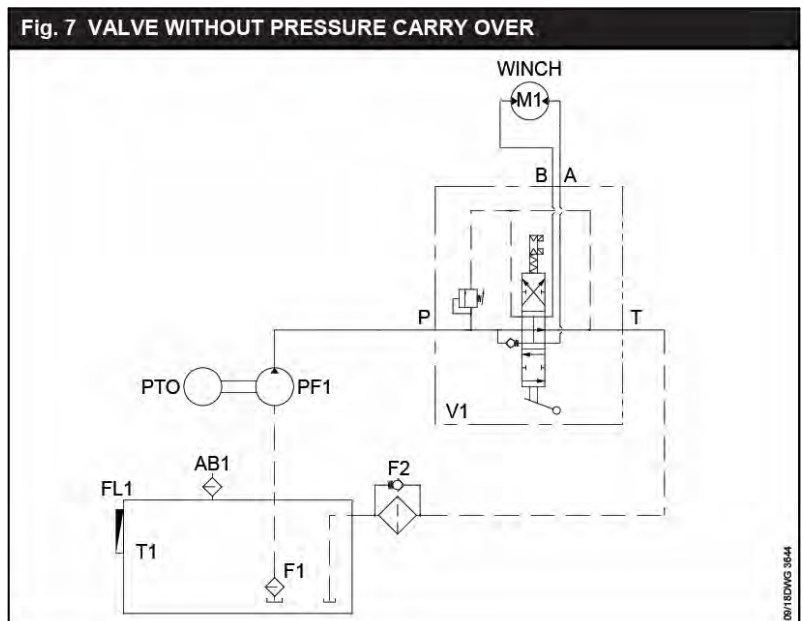
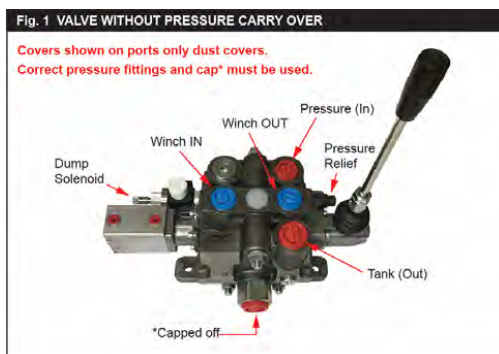
When fitting the valve bracket ensure the valve base remains flat to the mounting. If the valve bracket is distorted due for example to welding, spool "sticking" may impair the action of the valve and cause hydraulic leaks. If the bracket is secured by welding, first remove the control box and the valve to avoid heat damage.

HYDRAULIC CONNECTIONS

VALVE WITHOUT PRESSURE CARRY OVER

This has four ports.

An inlet port for connection to the hydraulic pump pressure port, a return to tank which returns the hydraulic oil back to the tank (including when the pressure relief is activated), and two service ports connected to the winch motor



HYDRAULIC CONNECTIONS contd.

VALVE WITH PRESSURE CARRY OVER

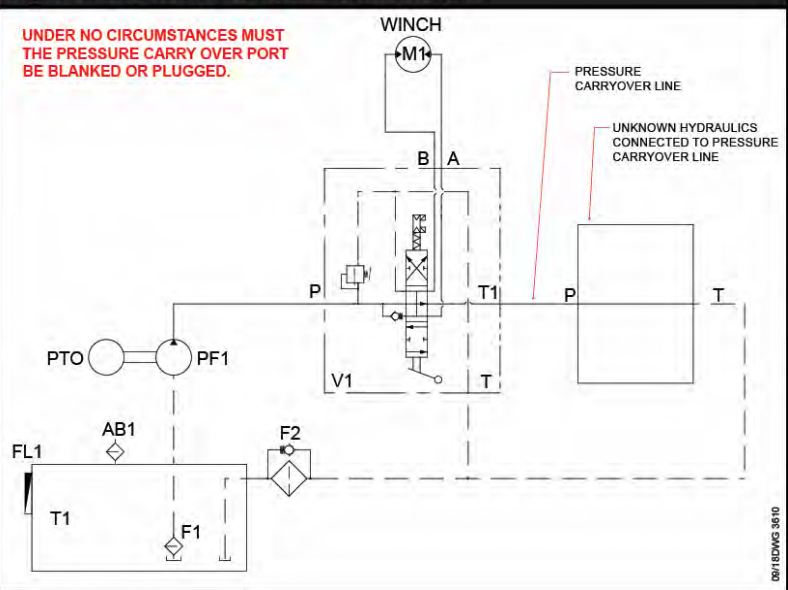
This valve has an additional port, which must be connected to other hydraulic functions.

DO NOT BLANK OFF OR PLUG THIS PORT.

The air actuator has two air ports, one on each solenoid. There are three electrical sockets, one on the dump valve and one on each of the air actuating solenoids.



Fig. 8 VALVE WITH PRESSURE CARRY OVER



HOSES

To select the minimum diameter hydraulic hose sizes that must be used see table below.

Please note that part numbers on the table below refer to the kits as listed on page 3.

Recommended hose sizes (internal diameter)							
KIT Part Nos.	Maximum flow (lt/min)	Port size (inches)	Pressure Carry Over (Y/N)	PTO to control valve (inches)	Valve to motor (inches)	Valve to tank (inches)	Tank to PTO (inches)
107755	60	1/2	NO	1/2	1/2	3/4	1.1/4
107754	60	1/2	YES	1/2	1/2	3/4	1.1/4

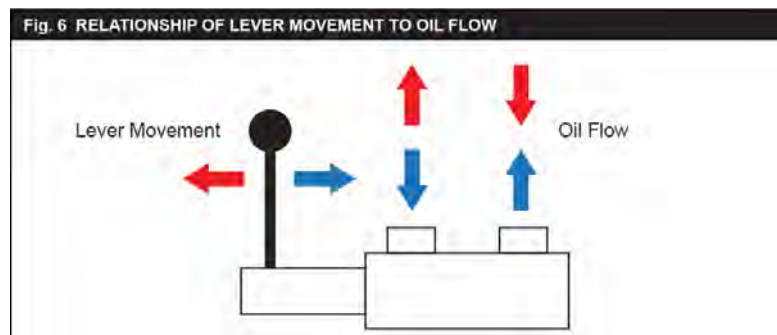
NOTE: If smaller bore sizes are used this may result in back-pressure or cavitation that may damage components in the system and can reduce winch performance.

When connecting the hydraulic hoses to the valve ports use either straight connectors or swept elbows and avoid the use of "compact 90 elbows", as they may create excessive back- pressure.

Hydraulic hoses are fitted to the valve ports using male/male fittings. Depending on the hydraulic flow and therefore the hose sizes selected it may be necessary to fit male/male adapters into the valve ports to facilitate fitment.

RELATIONSHIP OF USE OF LEVER TO OIL FLOW

The relationship between the direction of movement of the manual operating lever "winch in" and "winch out" function is very important. It is accepted practice that pulling the lever towards the operator will perform the "winch in" function and pushing it away will perform the "winch out" function. The relationship between lever movement and oil flow is shown in fig. 6 below.



ELECTRICAL CONNECTIONS contd.

EMERGENCY STOP BUTTON LOOM

The emergency stop is supplied pre-wired on a loom with a 2-pin plug. The plug attaches to a 2-pin socket on the branch loom.

The emergency stop button should be mounted in a prominent position which is easily accessible and in plain sight. It is usually sighted adjacent to the wanderlead socket.

DUMMY PLUG

The dummy plug supplied is fitted to the open end of the branch loom to complete the emergency button circuit.

The emergency stop will not operate unless the dummy plug has been securely fitted. (See page 7 for reference to dummy plug).

ADDITIONAL EXTENSIONS

Extender cables are available for adding further looms to the circuit for additional emergency stop buttons and wanderlead sockets to other sites on the vehicle. Please refer to the wiring looms specifications on page 6.

AIR CONNECTIONS (Reference to air connections are included in circuit diagram on previous page).

An air supply is required at the control junction box. This supply must be from the feed to the air actuator on the vehicle PTO/pump or the PTO switch. This ensures that air is supplied to the system only when the PTO is engaged.

NOTE: The control box houses a pressure sensing switch that effectively switches on the electrical supply to the dump solenoid closing the valve enabling it to function. A permanent air supply would result in the dump solenoid remaining permanently live leading to premature solenoid failure.

Ensure that all air pipes are suitably supported to prevent strain on the end fittings and to prevent chaffing.

Pipes must be routed to clear hot exhaust and exhaust gases.

TESTING AND COMMISSIONING THE SYSTEM

INITIAL CHECKS AFTER INSTALLATION SHOULD BE CARRIED OUT WITHOUT WIRE ROPE ON THE DRUM.

1. Engage the PTO/Pump, check for hydraulic oil leaks between pump and valve or the valve and tank.
2. Check for air leaks in supply feed to control box.
3. Ensure the emergency stop control is not depressed.
4. Operate the manual lever on the valve very slowly and with only the minimum of movement initially and observe rotation of winch. Check for hydraulic oil leaks between valve and winch. Operate the lever in the opposite direction and again check for hydraulic leaks between valve and winch. If winch rotation does not match command by valve lever, i.e., pulling the lever towards the operator should power the winch "in" but if it powers it out then swap pipes over on valve service ports or on the winch motor ports.
5. Plug wanderlead control into socket and press the "winch out" button. Observe rotation of winch. If rotation is in the wrong direction, swap over the solenoids on the valve air actuator. To do this remove screw that retains the electrical connections to the solenoid and swap over and replace. Press "winch in" to confirm rotation of winch drum is now correct.
6. Depress emergency stop control and then check that both manual lever control and wander lead controls are inoperative.

ENSURE THE DRUM ROTATION OF THE WINCH IS CORRECT.

On some winch models the brake is only effective in one direction. Look at the label on the winch or check the manual, if in doubt call Bushey Hall Winchmaster on +44 (0)20 8953 6050.

SETTING PRESSURE RELIEF VALVE TO OBTAIN CORRECT WINCH LINE PULL

First ensure the engine speed is at its optimum, which is normally around 1000 rpm. (See setting speed page 8).

Either of the following two methods may be used:

METHOD 1 – USING A LOAD CELL PHYSICALLY MEASUREMENT THE WINCH LINE PULL

During this procedure ensure all winching safety requirements are observed and we recommend a test rope is used and this must be on the bare drum with a minimum of 5 wraps.

With the winch rope on the bare drum and a minimum of 5 wraps around the drum connect the end of the rope to a load cell. (Check rope-breaking capacity is more than rated line pull of the winch). Connect load cell to substantial anchor point.

Using the manual lever slowly apply load to the load cell. Stop winching if rated load is achieved and reduce the pressure relief valve setting as described below in "Pressure Relief Valve Adjustment". Continue process until pressure relief valve operates at the same time as the rated winch line pull is recorded on the load cell, i.e., when pressure relief valve operates the winch will stop.

This method will also act as a test to check the integrity of the winch mounting. During the process inspect winch mountings for deformation and in particular check to ensure there is no permanent deformation after the load has been removed.

METHOD 2 – MEASUREMENT OF THE PRESSURE

Remove the hydraulic hoses and adapters in the hydraulic valve service ports that go to the winch motor.

Fit high pressure blanking plugs (1/2") into the valve service ports. Fit a pressure gauge (minimum capacity 250 bar), in the line from the pump to the pressure port on the valve. Slowly operate the manual lever and observe the pressure reading on the gauge.

Stop operation when required pressure + 5% is reached. If this is achieved the pressure relief valve setting requires reducing as described below. If the required pressure is not achieved the pressure relief valve setting requires increasing as described below. Continue process until pressure relief valve operates at the correct pressure setting recorded on the pressure gauge (see table 1 on page 8 for pressure references).

PRESSURE RELIEF VALVE ADJUSTMENT

Loosen locking nut (13) and adjust the screw using an allen key.

To increase the pressure setting, wind the screw 'in' (clockwise direction).

To reduce the pressure, wind the screw 'out' (anticlockwise).

When carrying out adjustment, only wind the screw 1/8 of a turn at a time.

On completion of adjustment, tighten the locking nut to set.

CONVERTING BETWEEN PRESSURE CARRY OVER AND NON-PRESSURE CARRY OVER

Although they have separate part numbers, these control valves can be easily converted from PCO to non-PCO by exchanging the pressure carry over fitting with a plug. **Non-PCO MUST have the blanking plug fitted and tested.** Part Nos: PCO Plug No. 22976. Non -PCO Blanking Plug No. 4752 with Dowty Seal No. 3352.

FAULT FINDING

If the winch will not rotate in either direction using the wanderlead control buttons, then try using the manual lever. If the winch still fails to operate in either direction check to see if the LED on the connector to the dump solenoid is illuminated. If it is not illuminated no power is available so the valve is not closing (see control system: method of operation page 7).

This may be due to several factors that should be checked in the following sequence:

1. Ensure the emergency stop button is in the working (out) position
2. Check the in-line fuse positioned between the vehicle battery and control box and replace if necessary.
3. Wires from the vehicles electrical supply should be inspected to ensure they are making good connections and there are no broken wires. These wires are usually connected directly to the vehicle battery.
4. The air supply pipe from the PTO to the control box should be checked for good connections and to ensure there are no leaks. (There is a pressure-sensing switch in the control box that switches on the power supply so if air pressure is unavailable the electrical supply to close the valve will not be available.)
5. If air pressure is available at the pressure sensing switch and it is not switching it must be replaced.

If the LED light is illuminated on the connector to the dump solenoid (see fig. 1, page 3 or fig. 3, page 4), and the winch will not rotate in either direction, then replace the dump solenoid coil, stem and cap (Part Nos. 7532, 7588 respectively).

If the winch only operates in one direction check the LED indicator lights on the connectors to each operating solenoid. If they are both illuminated this indicates that there is power supply available indicating a faulty solenoid which should be replaced (Part No. 7592).

CONTROL OVERRIDE

If the control valve will not operate due to a system or component failure, there is a 'get you home' override, by unscrewing the bolt at the end of the dump solenoid.

This procedure will allow manual operation of the winch only.

THIS PROCEDURE MUST ONLY BE USED IN AN EMERGENCY.

THE SYSTEM MUST BE RETURNED TO NORMAL WORKING CONDITION BEFORE FURTHER USE.

HYDRAULIC TANK CLEANING PROCEDURE

1. Check tank for large foreign objects.
2. Wipe tank with lint free cloth and solvent cleaner.
3. Dry tank out with paper cloth.
4. Using an airline and a clean new Scotch pad, blow the inside of the tank to remove any cloth particles.
5. Clean inside tank with a Tack rag.
6. With clean hands, check inside for any particles.
7. Ensure all holes/ports are blocked until hydraulic hoses are fitted.

REPLACEMENT CONTROL PARTS

Should replacement parts be required, please contact sales at Bushey Hall Winchmaster (0)20 8953 6050 or sales@bhwgroup.com, using the references and part numbers shown below.



Part no. 14878
1/8" BSP
Mark Stud
straight fitting
to 4mm air
pipe.



Part no. 7436
Pressure
Sensing
Switch.



Part no.
108569
24v Solenoid
Coil 20.5w.



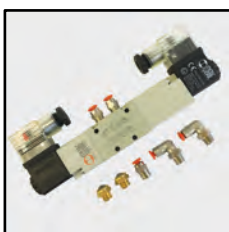
Part no. 14879
1/8" BSP 90°
Mark Elbow
Stud fitting
to 4mm air
pipe.



Part no. 7107
Square
Dumping
Solenoid Coil
Connector
with LED.



Part no.
108568
Solenoid
Cart Valve.
Push/Twist
Override.



Part no.
14725
Valve for
Hydraulic Air
System.



Part no. 7105
Rectangular
Directional
Solenoid Coil
Connector
with LED.



Part no.
107805
Control
Lever.



Part no.
108570
Pressure
Carry Over
fitting for
valve.



Part no.
108567
3 Position
Pneumatic
Cylinder
Actuator.



Part no.
108575
Control
Lever
Base
Assembly.

REPLACEMENT PARTS – contd.



Part no 3867
Two Button
Pendant
Wanderlead
Control with
Emergency
Stop.



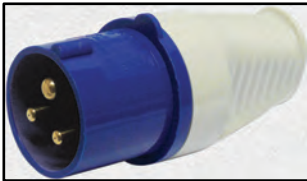
Part no 7392
Two Button
Pendant
Wanderlead
Control.

WANDERLEADS pre-wired with cables and plugs

Bushey Hall Winchmaster wanderleads are available a button, with or without emergency stop. Complete wanderleads with cable and plugs are listed below. Other wanderleads and lengths are available on request.

BLUE 3 PIN PLUG	
TWO BUTTON ONLY	TWO BUTTON + E/STOP
7743 - 4.5m cable	9935 - 4.5m cable
7744 - 7m cable	9936 - 7m cable
7745 - 10m cable	9937 - 10m cable
VIOLET 3 PIN PLUG	
TWO BUTTON ONLY	TWO BUTTON + E/STOP
7741 - 4.5m cable	9948 - 4.5m cable
7742 - 7m cable	9949 - 7m cable
	9950 - 10m cable

PLUGS



Part no 6473
Three Pin
Blue Plug.

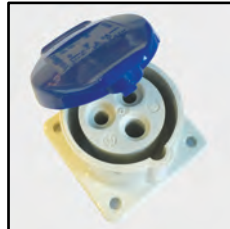


Part no 6474
Three Pin
Violet Plug.

SOCKETS



Part no 7077
Three Pin
Blue Socket.
Surface
mount.



Part no 7076
Three Pin
Blue Socket.
Through
panel feed.



Part no 7084
Three Pin
Violet Socket.
Surface
mount.

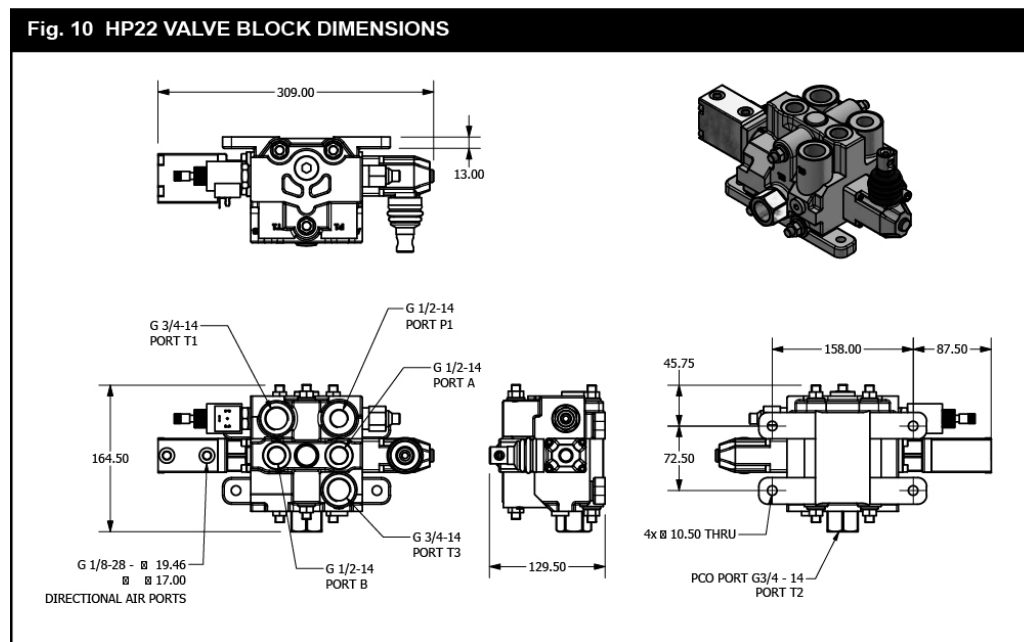


Part no 7085
Three Pin
Violet Socket.
Through
panel feed.

For prewired cables, with sockets and plugs and other pre-wired cable parts, please refer to the diagram on page 6.

Should you require assistance with parts information, please contact Bushey Hall Winchmaster sales on (0)20 8953 6050 or email sales@bhwgroup.com.

VALVE BLOCK DIMENSIONS



When siting the control valve please allow adequate space for wiring loom connections, hoses and access to the manual control lever.

WARRANTY

Bushey Hall Winchmaster Limited warrants each new electro pneumatic control kit and ancillary equipment supplied against factory defects in material and workmanship for one year from date of purchase.

The responsibility for removing the equipment is the owner's, together with its return, transportation prepaid to Bushey Hall Winchmaster Limited.

Bushey Hall Winchmaster Limited will, under this warranty, without charge repair or replace at its option, parts, which on inspection are deemed to be defective. The loss of use of the produce, loss of time, inconvenience, commercial loss, or consequential damages are not covered.

Warranty does not apply where the product has been tampered with or altered in any way, or where the serial number or date stamps has been defaced altered or removed (where this is applicable).

Warranty will also be null and void if in the view of Bushey Hall Winchmaster Limited the damage or failure occurred from misuse, negligence, or accident.

Warranty is also void if the installer has positioned the item in a location contrary to the instructions in the product manual that has resulted in water damage. In the case of hydraulic components, the warranty will also be null and void if damage is caused because of contamination within the hydraulic system.

Bushey Hall Winchmaster Limited reserve the right to change the design of any product without assuming any obligation to modify any product previously supplied.

Equipment returned under warranty should be sent to Bushey Hall Winchmaster Limited service department at the address indicated below, with full name and address of sender, and a statement detailing the defect.



Service Department,
Lismirrane Industrial Park,
Elstree Road, Elstree, Herts WD6 3EE

Telephone: +44 (0)20 8953 6050
Email: sales@bhwgroup.com

Fax: +44 (0)20 8207 5308
Website: www.bhwgroup.com



BHW

Bushey Hall Winchmaster

www.bhwgroup.com



LOW VOLTAGE CONTROL

24v for AC Winches and Hoists
including Emergency Stop



APPLICATIONS

Supplied as standard on all 3ph winch models.

Can be supplied as an option on 1ph models.

IMPORTANT NOTE

All winches must be installed with an emergency stop located in the operator working area to comply with EU regulations.

If a standard 2 button pendant control is used on 1ph machines instead of the low voltage model shown, a wall mounted emergency stop must be incorporated.

SYSTEM INCLUDES

- Enclosure to IP65
- Reversing contactors with interlock
- Transformer
- Pendant control with emergency stop including 4.5m cable
- 2.5m cable with plug for connecting system to power supply
- Thermal overload
- 1.5m Power lead from control box to winch motor
- 12 months warranty
On parts and labour

Bushey Hall Winchmaster sales@bhwgroup.co.uk www.bhwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050 Fax: +44 (0)20 8207 5308

Northern Office: 6 South Orbital Trading Park, Hedon Road, Hull, East Yorkshire, HU9 1NJ Tel: +44 (0)1482 223 663 Fax: +44 (0)1482 218 285

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REMSA



CERT. No. 1769

WM28/16.08.11

AC WINCH ENCLOSURE

**Heavy Duty Protection
from the Elements**



**MODEL A Suitable for use with:
CP200, CP250, CP300, CWG30075**

**MODEL B: Suitable for use with:
CWG10077**

**MODEL C: Suitable for use with:
AC2000 and AC3000 models**

FEATURES INCLUDE

- *Protection from the elements*
- *Heavy gauge steel construction*
- *Integral fairlead assembly for rope exit*
- *See-through top cover enabling user to observe winch operation*
- *Easily bolted through base for quick installation*
- *Controls protected inside enclosure*
- *Painted internally and externally*

ADDITIONAL FEATURES

MODEL C ONLY

- *Hinged lid for access to freespool clutch and winch controls*
- *Provides area for ancillary equipment*
- *Provision for padlocks*



FM•CONNECT

**FM Radio Control System
for DC, AC and Hydraulic Winches**

RELIABLE • EFFICIENT • WEATHERPROOF

Combines all the best features of existing radio control systems currently available – PLUS new, additional benefits.

The **FM•CONNECT** can also be used in conjunction many BHW systems, including:

REEL•SMART

PLANT•MASTER

CARPET•TUG

POWER•WEDGE

RAMP•ASSIST

and several hydraulic and electric winches – ask sales for details.

In consultation with professional users of radio control products, the BHW Group, leading UK winch specialists, are pleased to offer FM•CONNECT a new, tough, reliable radio control system.

Can be used with DC, AC (1PH & 3PH) and HYDRAULIC winches.

The specially designed receiver and transmitter enclosures ensure all weather protection.

Reliable FM Technology, together with easy installation makes FM•CONNECT a favourite choice for commercial and industrial winch users.

Easy installation and replacement - the wiring harness is already installed into the receiver and is connected by simple plug-in connectors.

Freedom of movement and control - FM•CONNECT makes vehicle recovery or the job of loading plant and machinery much easier and safer for the operator. Work is completed quickly and efficiently.

The transmitter can be self-coded, simplifying installation and replacement if this should become necessary.

Compliant to 2014/53/EU



BHW

Bushey Hall Winchmaster

www.bhwgroup.com



EXCEPTIONAL RELIABILITY

- **FM System**

The latest technology by one of Europe's leading industrial radio control specialists.

- **Suitable for DC, AC and HYDRAULIC winches**

- **Weatherproof**

The receiver and transmitter enclosures are custom made to provide protection to IP65. The Heavy Duty material used and its design prevents distortion from rapid climate changes ensuring maximum protection of electronic components.

- **Quick easy installation**

The receiver box is pre-wired with a 500mm tail terminating in a waterproof plug. The 3m harness provided is pre-wired with the mating plug so the job of installing or replacing the receiver is quick and easy.

*In the case of hydraulic winches the BHW Group can supply fully integrated electric pneumatic control valves and **FM•CONNECT** will come supplied pre-wired ready to install saving you time.*

- **Transmitter**

Purpose made for toughness and ease of use, incorporating a bonded rubber surround for additional protection. Loss or damage to the remote control is easily remedied by simply recoding a replacement -should this become necessary.

GIVE OUR TECHNICAL SALES TEAM A CALL TO DISCUSS ANY WINCH INSTALLATIONS YOU ARE CONSIDERING - WE ARE HERE TO ADVISE AND HELP IN ANY WAY WE CAN.

Bushey Hall Winchmaster sales@bhwgroup.com www.bhwgroup.com

Southern Office: Lismirrane Industrial Park, Elstree Road, Elstree, Herts, WD6 3EE Tel: +44 (0)20 8953 6050

Northern Office: 6 South Orbital Trading Park, Hedon Road, Hull, East Yorkshire, HU9 1NJ Tel: +44 (0)1482 223 663

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UK
CA

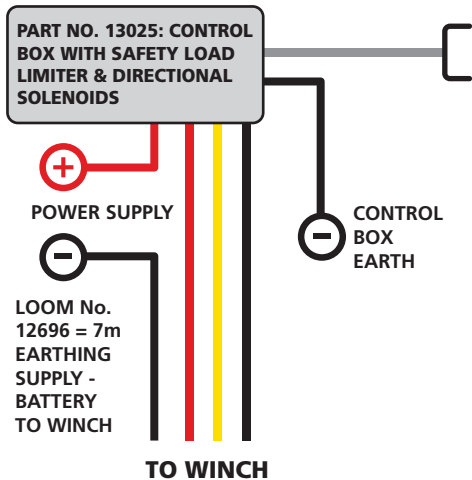
CE



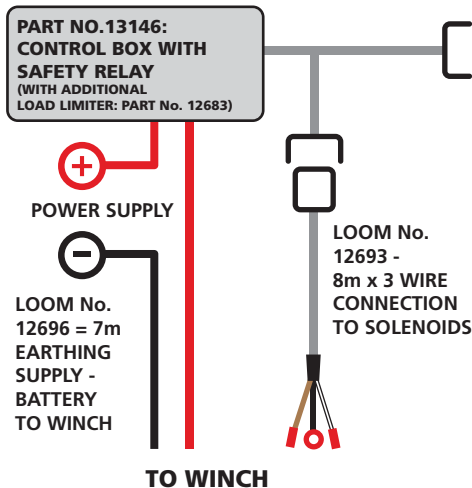
PRE-WIRED CONTROL OPTIONS FOR VEHICLE WINCH SYSTEMS

SAVE HOURS OF FITTING TIME WITH FULLY SLEEVED, READY TO INSTALL WIRING LOOMS IN FLEXIBLE CONDUIT WITH PRE-WIRED MALE / FEMALE CONNECTORS, PLUS SEVERAL OPTIONS ON STOPS, SOCKETS AND WANDERLEADS

WINCHES WITHOUT SOLENOIDS

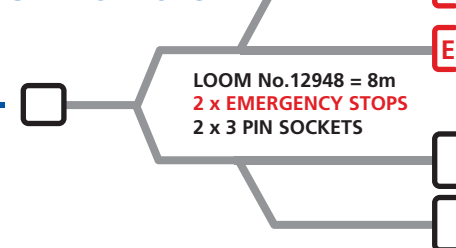


WINCHES WITH SOLENOIDS



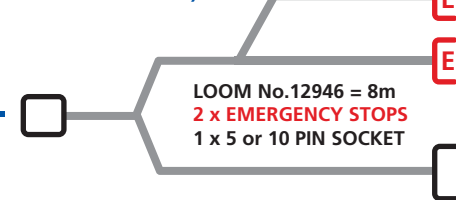
OPTIONS: PRE-WIRED LOOMS WITH CONNECTORS

3 PIN OPTIONS



E = EMERGENCY STOP CONNECTOR

5 OR 10 PIN OPTIONS (FOR INCLUSION OF TRUE EMERGENCY STOP ON WANDERLEADS)



E = EMERGENCY STOP CONNECTOR

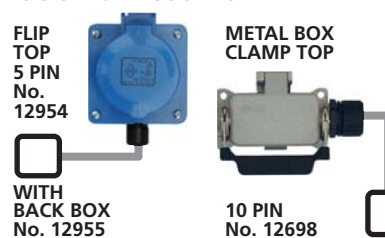
OPTION EXAMPLES: PRE-WIRED x 0.5m LENGTH TO EMERGENCY STOPS



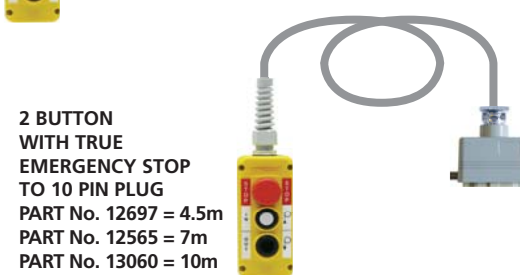
OPTIONS: PRE-WIRED 0.5m LENGTH TO 3 PIN SOCKETS



OPTIONS: PRE-WIRED 0.5m LENGTH TO 5 OR 10 PIN SOCKETS



OPTION EXAMPLES: VARIABLE LENGTHS PRE-WIRED WANDERLEADS TO PLUGS



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