

FITTING & OPERATING INSTRUCTIONS



RAMSEY HYDRAULIC WINCH MODELS H246 & HY246

3600kgf (31.5kN) Line Pull Capacity

Part Nos: 3653, 3654

CONFORMING TO
EN14492-1 Cranes – Power driven winches and hoists – Part 1: Power Driven Winches

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INTRODUCTION

Thank you for purchasing a RAMSEY HYDRAULIC WINCH from the BHW Group. Ramsey winches are recognised as being the finest in their class and widely used for commercial purposes throughout the world.

PLEASE READ THIS MANUAL CAREFULLY BEFORE INSTALLATION OR OPERATION OF THE WINCH

As the new owner / operator of a Ramsey winch it is important that you read and digest the information contained in this handbook. Further help and advice can be obtained from the BHW Group's trained sales engineers.

This winch is of the highest quality and has been designed to give robust and efficient service for many years if care and attention are given to correct installation, safe operation and maintenance.

PLEASE KEEP THIS OWNERS MANUAL WITH THE WINCH.

WARNING:

YOU SHOULD NOT UNDER ESTIMATE THE POTENTIAL DANGER IN WINCHING OPERATIONS, NEITHER SHOULD YOU FEAR THEM. RESPECT FOR THE WINCH AND COMMON SENSE IN ITS OPERATION WILL ENSURE SAFETY AND RELIABILITY.

Please note:

- **THE USER SHALL ENSURE THAT THE OPERATING PERSONNEL ARE GIVEN THE NECESSARY TRAINING.**
All users of the equipment shall be fully trained in the safe use of winches. Training shall be conducted by BHW Group or by a competent winch trainer qualified for the particular application.
- **THE OPERATOR SHALL ALWAYS WORK IN COMPLIANCE WITH THE OPERATING INSTRUCTIONS.**
- **A CLOSED CENTRE DIRECTIONAL CONTROL VALVE IS REQUIRED FOR FULL BRAKING.**
- **CLUTCH MUST BE FULLY ENGAGED BEFORE STARTING THE WINCH.**
- **DO NOT DISENGAGE CLUTCH UNDER LOAD.**
- **STAY OUT FROM UNDER AND AWAY FROM RAISED LOADS.**
- **STAND CLEAR OF ROPE WHILE PULLING. DO NOT TRY TO GUIDE ROPE.**
The winch may be operated by a fixed workstation and / or by a mobile workstation (e.g. wanderlead or radio remote). As the positioning of the winch rope depends on the particular application of the job, the operator shall be aware of the 'Guide to Safe Winching' section to ensure they and others are positioned safely.
- **A MINIMUM OF 5 WRAPS OF ROPE AROUND THE DRUM BARREL IS RECOMMENDED TO HOLD THE LOAD.**
- **AVOID CONDITIONS WHERE LOAD SHIFTS OR SNATCHES OCCUR.**
- **EXCESSIVE "INCHING" SHALL BE AVOIDED.**
- **THE WINCH IS NOT TO BE USED AS A LOAD SECURING DEVICE.**
- **DO NOT USE WINCH TO LIFT, SUPPORT, OR OTHERWISE TRANSPORT PERSONNEL.**
Any such use shall invalidate the warranty.
Neither Ramsey nor BHW Group Limited shall be responsible for any claims arising from such use.

Installers are advised to carry out a risk assessment on each individual application - and the pressure valve needs to be adjusted to act as a load limiter following installation.

NEW EUROPEAN STANDARDS & BHW GROUP LIMITED

The new harmonised European standard: EN14492-1 for power driven winches 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 Limited products are fully compliant and carry a CE mark.
A Declaration of Conformity is also supplied with each winch.

Selecting the correct winch for the application is very important not only from the health and safety aspect, but also to maximise product life and value for money.

Our aim at BHW Group Limited 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.

This winch is to be used only for the purpose of vehicle recovery when fitted to equipment designed for the purpose, or the loading of wheeled vehicles upon bodies designed for the purpose, or used for a purpose specifically agreed with the BHW Group Limited.

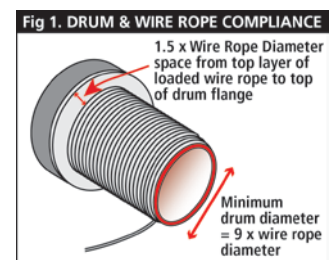
For recovery vehicles the permissible standard of wire rope MBF** to winch rating can be a minimum 2:1 and the ratio of wire rope to mean drum diameter* only 10:1. This minimum standard is permitted because the running time is so short and the winch rarely sees maximum load. Whilst this standard is very reduced compared to lifting winches it imposes a much higher standard of safety than on many products currently being supplied.

Winches with capacities over 1000kg must be load limited.

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

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

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



INSTALLER RESPONSIBILITY FOR CE COMPLIANCE



1. The winch is operated using a wanderlead or/and a radio control - refer to Hydraulic System Specifications (Page 9) for Emergency Stop components to be installed.
2. Adjust system relief pressure as per Hydraulic System Specifications (Page 9).
3. Mount winch as per winch installation instructions (Pages 11-12).
4. Install 10mm, 1960N/mm² grade, 6 x 36 wire core rope, with minimum breaking strain of 69.8kN (7115kgf). Maximum rope length of 18m for Short Drum and 30m for Long Drum – both x 3 layers maximum.
5. Attach rope to the drum as per wire rope installation instructions (Page 13).
6. Hook must have a safety latch and a minimum rated capacity of 2 tonne. Use only high tensile grade 80 or 100. These hooks are rated and stamped for lifting and have a safety factor of 4:1. A 2 tonne hook has therefore a minimum yield of 2 x 4 = 8 tonne. For pulling applications with a 2:1 factor of safety they are suitable for up to 4.0 tonne line pull.

GUIDE TO SAFE WINCHING

The following safety precautions must be observed at all times whilst using the winch. Failure to do so could result in serious injury to personnel or damage to the winch.

Locate position of Emergency Stop before use. The clutch must be fully engaged before starting to haul a load. Never attempt to disengage the freespool clutch when winch is under load.

Winches shall only be used by persons trained in their use and in the user's particular application. (BHW Group Limited offer winch courses to suit most user applications.)

Keep yourself and others at a safe distance to the side of the wire rope when pulling under load.

Never step over, stand near or guide a rope under tension.

Always use heavy-duty rigger type gloves when handling the wire rope to protect against cuts or possible burrs. Use the wire rope webbing strap supplied attached to the hook.

Take care of the wire rope. Check regularly for signs of wear in the form of broken strands or severe kinks along its length. If there are more than 10 strands broken in any length of the rope equal to 10 times the rope diameter, then it will be significantly weakened and must therefore be replaced. Wear and tear can be prevented by regular application of rope dressing available in aerosol form from BHW Group. Oil and grease should never be used.

Always ensure that the rope is rewound neatly back onto the drum after use. If the rope is tensioned whilst unevenly wound, then loose coils can become trapped and badly damaged.

If the winch is being operated at maximum capacity, drape a heavy blanket or tarpaulin over the wire rope, halfway along its length. The blanket will reduce the whiplash effect of a failed rope or load attachment point.

When recovering a vehicle, the winch hook should be attached to the towing hitch, if available, or to a strap or chain around a chassis leg or cross member. NEVER anchor the winch hook onto bumpers, or shipping/transit anchorage. It is the operator's responsibility to ensure load attachment points are of sufficient strength to withstand the winch pull.

Do not use the winch as a tow rope.

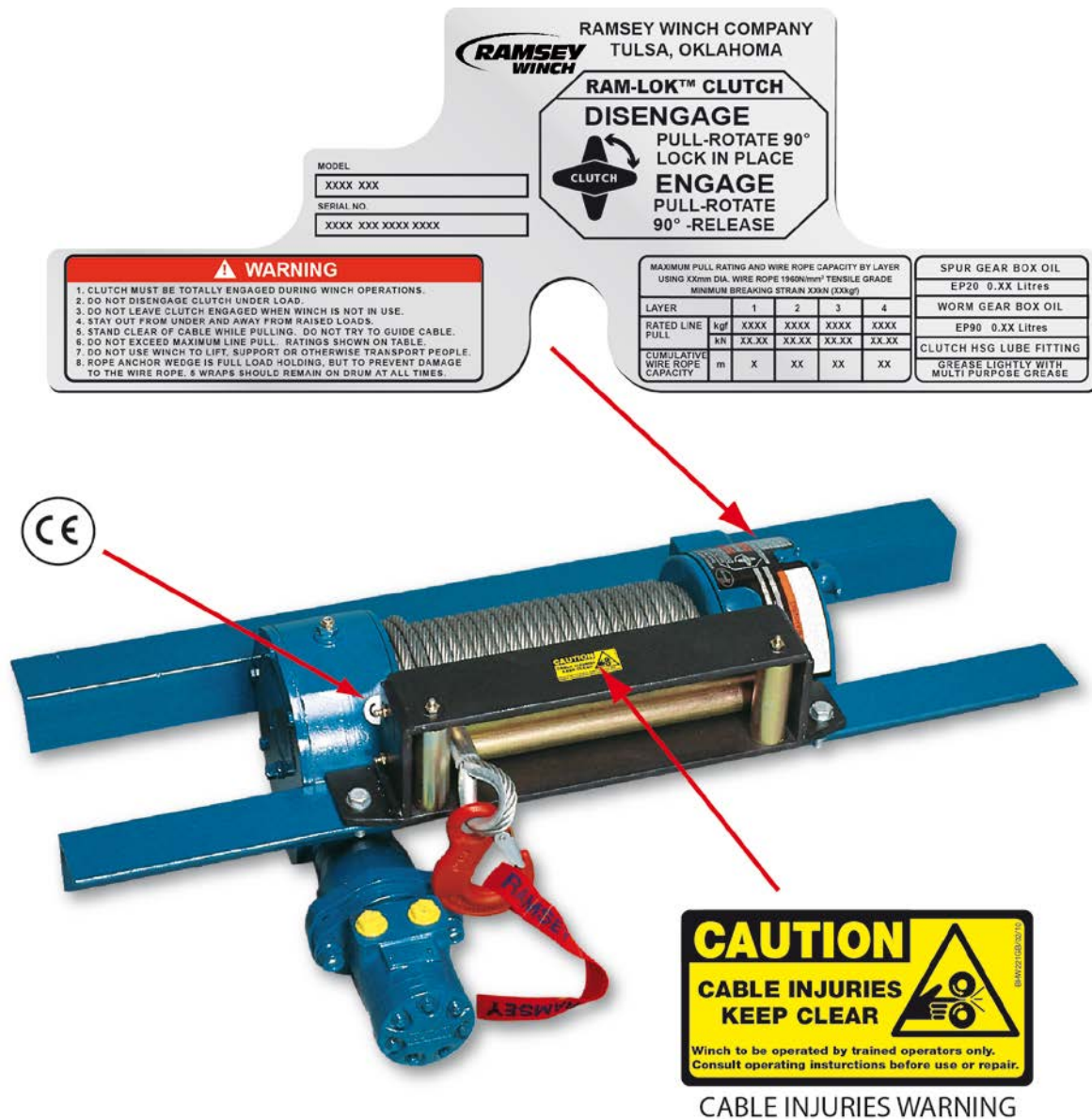
Do not allow the load to 'snatch' during a pull, as this can momentarily double or even treble the load on the rope.

Try to position either your vehicle or position a snatch block to ensure as straight a pull as possible. Use a snatch block to turn any corners with the rope.

When attaching the hook to the load, always double check that the hook is secure and the safety catch is fully closed. Remember that if the hook breaks away under tension, serious injury can result as the hook will travel through the air at speed. For operations where the wire rope is being used at length, it is a good idea to place a blanket or similar material on the centre of the rope, as this will reduce the returning speed of the wire rope should a breakage occur.

A minimum of five wraps of rope around the drum is necessary to support the rated load. The rope to drum attachment system is not designed to hold the rated load.

WINCH LABELS



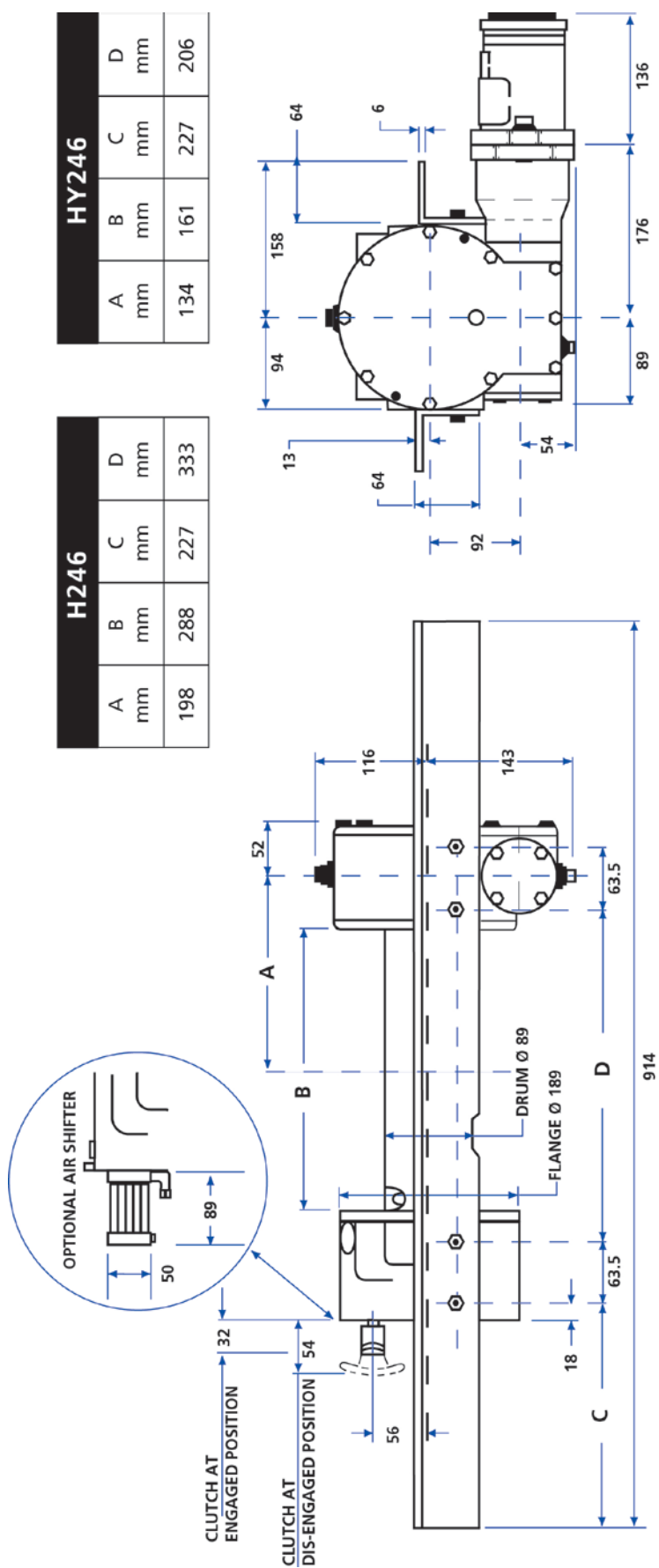
WINCH SPECIFICATIONS

Models	Ramsey H246 (Long Drum) or HY246 (Short Drum) 3.6 Tonne Low Mount Hydraulic Winch EN 14492-1 Compliant																						
Construction	Aluminium cast housings with steel drum.																						
Gear Type	Worm with phosphor bronze heavy duty wheel providing self braking, running in oil bath																						
Gear Reduction	46:1																						
Type of Use	Intermittent recovery type																						
Motor	Hydraulic																						
Brake	Self braking through the gear box																						
Freespool Clutch	Manual operation																						
Weight	H246 Winch only: 50kg. With roller guides, mounting bracket and wire rope: 74kg HY246 Winch only: 52kg. With roller guides, mounting bracket and wire rope: 76kg																						
Rated Line Pull (First layer)	31.5 kN (3600kgf)																						
Line Pull and Line Speeds	<table><tr><th rowspan="2">PERFORMANCE</th><th rowspan="2">LINE PULL kgf / kN</th><th colspan="2">ACCUMULATED ROPE LENGTH m</th><th rowspan="2">SPEED m/min</th></tr><tr><th>H246</th><th>HY246</th></tr><tr><td>FIRST LAYER</td><td>3600</td><td>9.5</td><td>4.5</td><td>4.5</td></tr><tr><td>SECOND LAYER</td><td>3000</td><td>20.0</td><td>10.0</td><td>5.5</td></tr><tr><td>THIRD LAYER</td><td>2600</td><td>35.0</td><td>16.0</td><td>7.0</td></tr></table> <p>Speed shown is with hydraulic flow at 35 lt/min.</p>	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
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Recommended Wire Rope	10mm x 1960N/mm ² grade 6 x 36 wire core																						
Drum Maximum Storage Capacity (10mm rope)	H246 Long Drum = 30m HY246 Short Drum = 18m																						
Minimum Breaking Strain	100kN (10,190kgf)																						
Rope to Mean Drum Ratio	10:1																						
Drum Dimensions	H246 Long Drum = 90mm Ø x 288mm length HY246 Short Drum = 90mm Ø x 161mm length Flange Ø for both = 189mm																						
Drum Rotation	Clockwise or Anticlockwise as required																						
Gearbox Oil Type	EP 140																						
Hydraulic Oil Flow Maximum	50 l/min																						
Recommended Oil Flow	35-40 l/min																						
Hydraulic Fluid	Viscosity 20-43 cSt (100-200 SUS) Maximum operating temperature 85°C Cleanliness level of ISO 17-14 or better																						
Operating Pressure	176 bar max.																						
Roller Guides (optional)	Extra Heavy Duty with greaseways																						
Mounting Rails (Supplied)	64 x 64 x 6mm steel angles A mounting bracket fixing kit is also available from BHW Group (Part no. 3745)																						
Noise Level	81db																						
Ambient Temperature Range	-28° to 60°C																						

BHW
Bushey Hall Winchmaster
www.bhwgroup.com

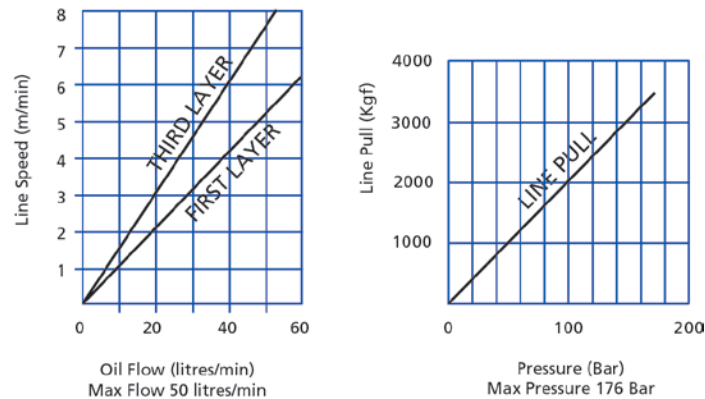
HY246				
	A	B	C	D
	mm	mm	mm	mm
	134	161	227	206

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



HYDRAULIC PERFORMANCE

Refer to the performance charts below to match the hydraulic system to the performance of the winch.



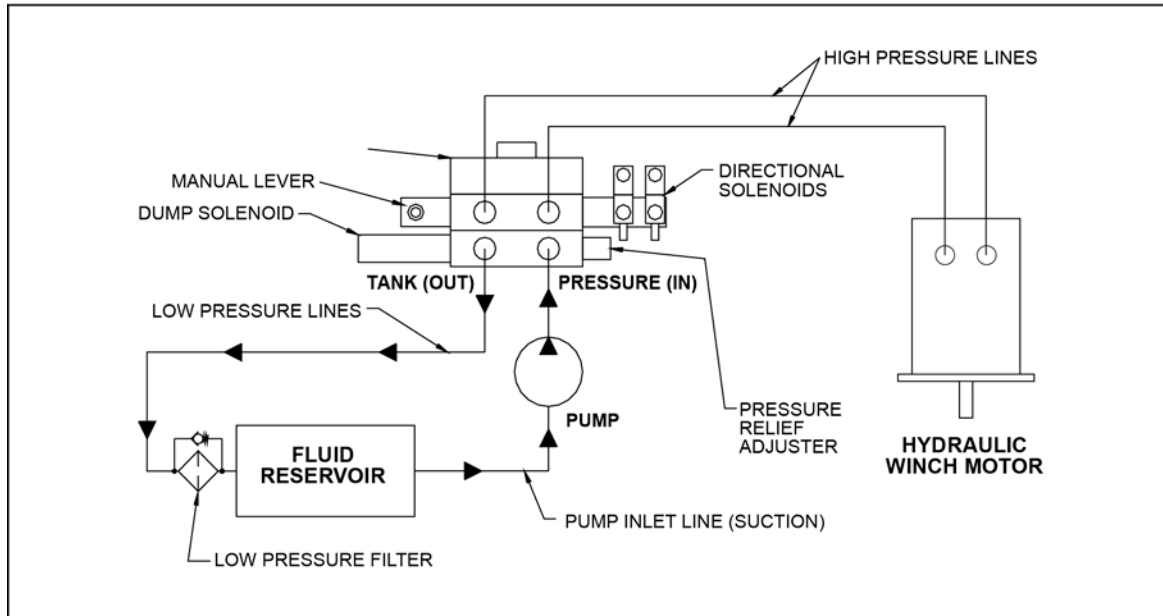
HYDRAULIC SYSTEM SPECIFICATIONS

General	Open System with low pressure return line filter.
Reservoir	Minimum capacity 35lt. must be fitted with 250 micron suction strainer, sight gauge and filler breather. Do not fill the tank, as space must be left for the oil to expand.
Hoses	Working pressure rating of hoses must be a minimum of 250 bar. Minimum internal diameter of hoses and pipes:- Pressure hoses from pump to control valve and control valve to winch motor ½". Return to tank ¾". Reservoir to pump 1"
Hydraulic Motor	½" BSP ports.
Control Valve	4-way 3-position self-centring type. Open centre spool type should be used with inlet relief. The valve must be specified to ensure it meets the winch operating pressure and maximum flow requirements for satisfactory performance to be achieved. BHW GROUP LIMITED CAN SUPPLY A WIDE SELECTION OF CONTROL VALVES INCLUDING ELECTRIC AND ELECTRO-PNEUMATIC. THIS ENABLES THE WINCH TO BE OPERATED WITH A WANDERLEAD OR RADIO CONTROL. VALVES ARE SUPPLIED FULLY WIRED READY TO INSTALL.
Emergency Stop	To ensure compliance with the EU Machinery Directive an emergency stop must be included This will generally be in the hydraulic circuit and take the form of an electrically operated dumping valve. INCLUDED AS STANDARD ON BHW GROUP CONTROL VALVES.
Oil Reservoir Suction Strainer	250 microns (Approximately)
Return Line Filter	25 microns (Approximately)
IMPORTANT:	Keep hose lengths to a minimum to reduce backpressure. If hose lengths exceed 4 metres, increase nominal bore size. Cleanliness within the hydraulic system is essential to ensure correct function and long life of the winch and all other components.

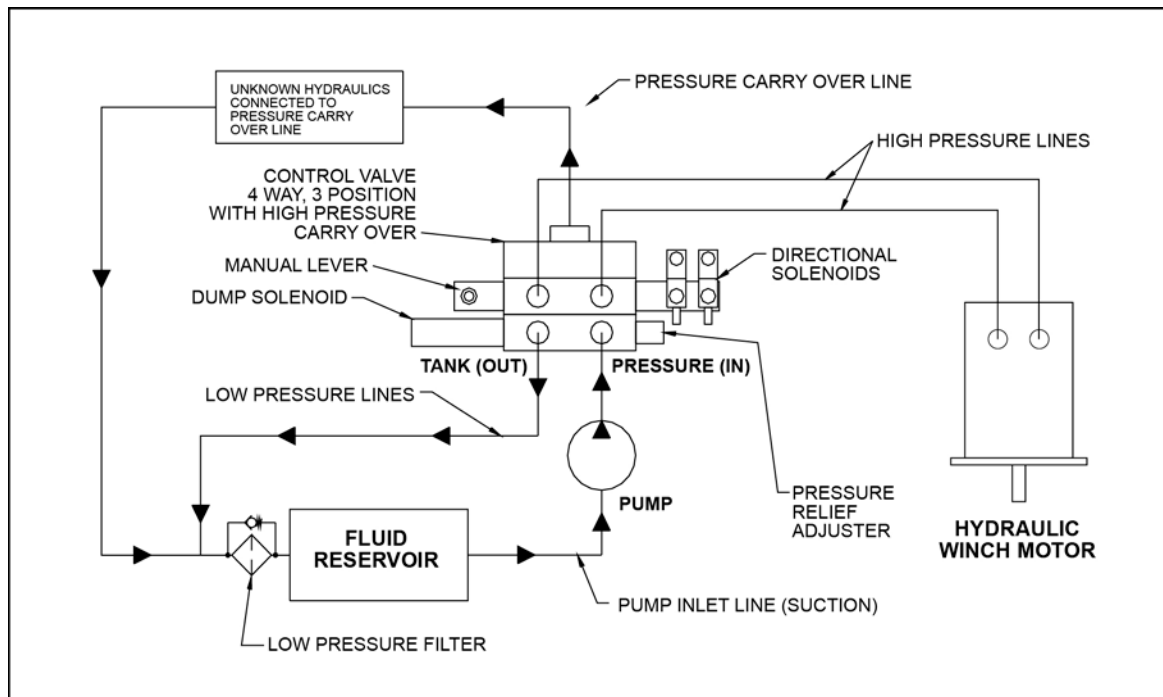
If other hydraulic equipment, (i.e. lorry loader crane), is also being included in the system, the selection of the PTO/PUMP is very important. This should be specified to meet the operating requirements of both the winch and crane. In some installations this will require a dual pump system. **Please contact BHW Group for further information if required.**

HYDRAULIC SCHEMATICS

VALVE WITHOUT PRESSURE CARRY OVER



VALVE WITH PRESSURE CARRY OVER



WINCH INSTALLATION

The H246 or the HY246 is supplied complete with heavy mounting angles. An optional Mounting Bracket Fixing kit is also available from BHW Group (Part no. 3745) – call +44 (0)20 8953 6050.

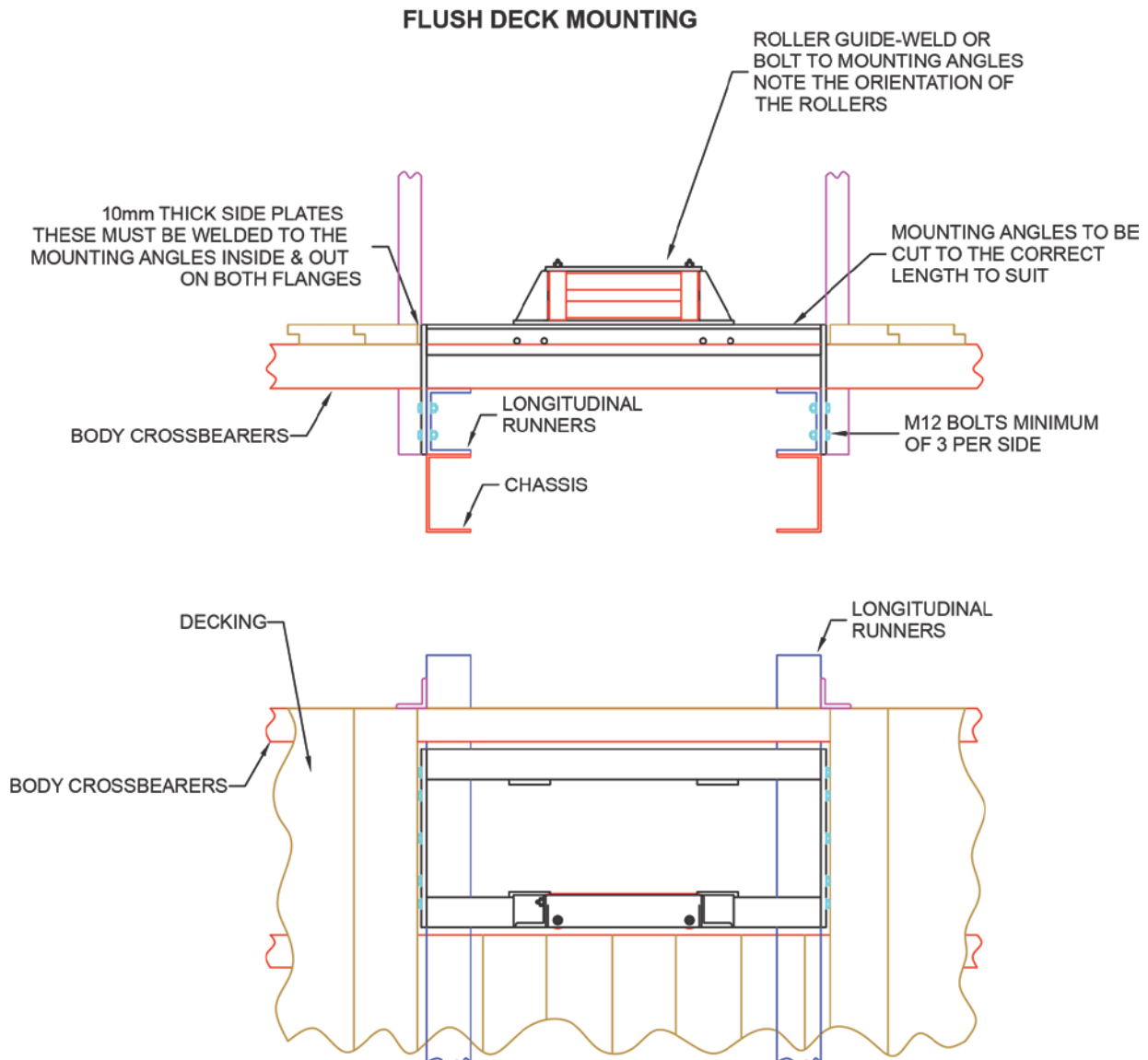
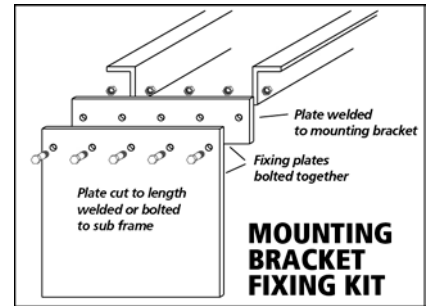
Irrespective of how the winch is mounted it is important that adequate provision is made so that the load is transmitted into the body of the vehicle and then into the chassis.

Never weld to chassis or drill top or bottom flanges.

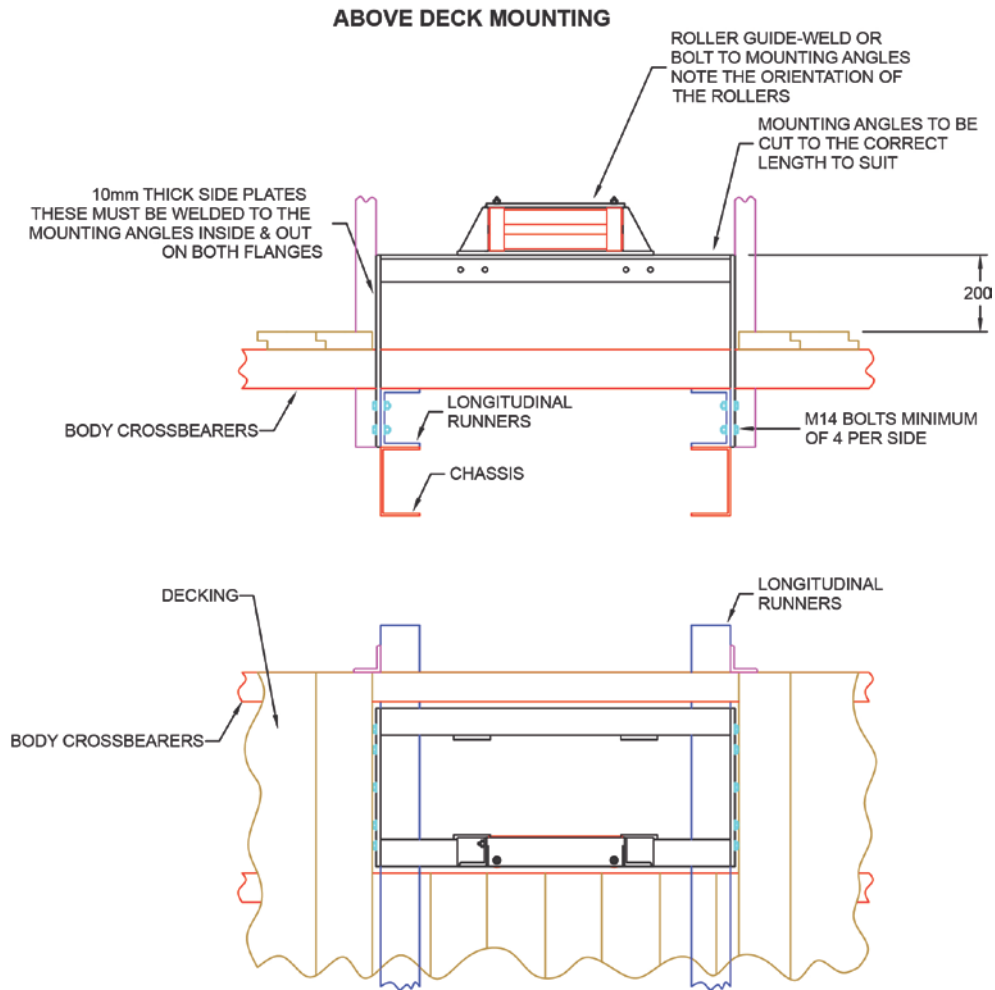
It is most important that the winch is mounted securely so that the three major sections the clutch housing end, cable drum and the gear housing end are properly aligned. Misalignment will cause the drum to bind and will lead to rapid wear of major components.

Mounting angles should be cut to length each end to suit the application and the angles butt-welded to a 10mm plate each end. NOTE both sides of the angle are welded and good weld penetration is essential. The plate is bolted through the longitudinal runner using 3 x M12 x 40mm bolts each side with nylock washers each side.

The following diagrams show flush mounting and mounting above the deck:



WINCH INSTALLATION

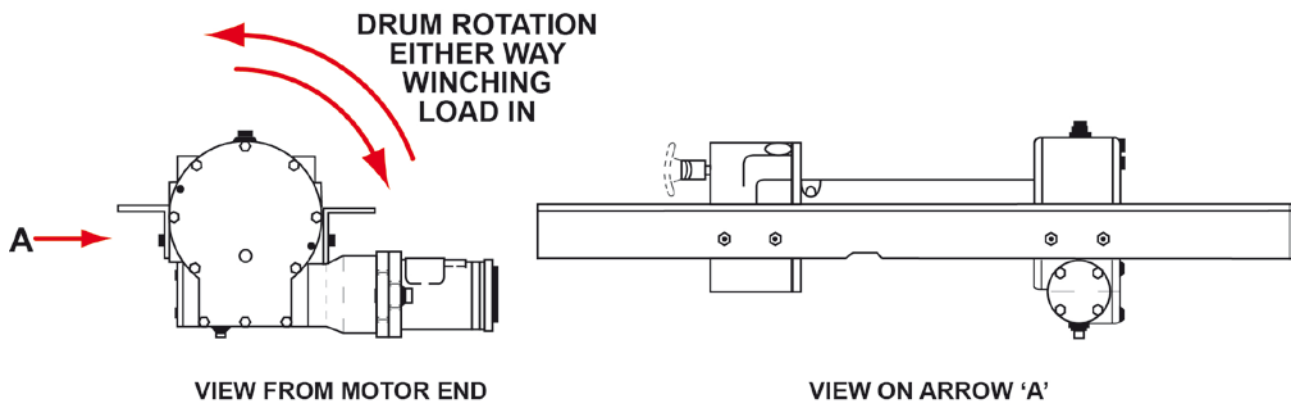


IMPORTANT NOTES: Installers must always ensure the winch can easily be removed for service and repair. For these types of installation, the longitudinal runner must be substantial enough to take the full winch loading

ROLLER FAIRLEAD

A roller fairlead should always be fitted in front of the winch to help prevent the wire rope passing over the drum flanges and becoming trapped between the drum and the end casing.

WINCH ROTATION



WIRE ROPE INSTALLATION

BEFORE COMMENCING ENSURE HOST CHASSIS ENGINE IS STOPPED AND EMERGENCY STOP CONTROLS ARE ACTIVATED.

Wear rigger style work gloves and suitable protective clothing.

1. Remove Rope Drum safety guard.
2. Unwind the cable by rolling it out along the ground with the tapered end nearest to the winch. **NEVER** wind the cable straight onto the drum from a coil.
3. Raise the cable tensioner away from the rope drum (if supplied as part of your kit), and lock in position through the corresponding holes in the tensioner frame and bracket using a suitable pin or bolt.
4. Rotate the rope drum under power until the rope fixing holes run vertically at the front of the winch.
5. Pass the rope end through the roller fairlead, UNDER the drum and back over the top of the drum to pass through the rope hole furthest way from the drum flange. Keep feeding the rope through to wrap around the drum **FOUR TIMES** and into the rope fixing hole nearest the drum flange.
6. Tighten the retaining screw ensuring that the rope end is flush with the exit of the hole and not protruding.
7. Feed back any excess slack to tighten the four wraps neatly on the drum.
8. Remove the locking pin from the cable tensioner to allow the rollers to rest on the rope. Note: This assembly is under tension. Special care should be taken to avoid trapping fingers, clothing etc.
9. Apply moderate tension to the rope. Take care to ensure the layers are neatly wrapped, as this will minimise damage to the lower layers of rope when a load is applied.

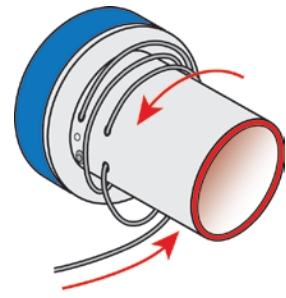
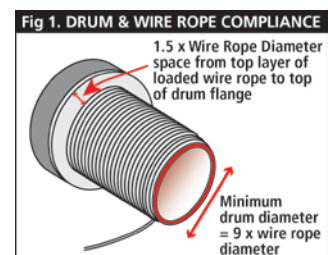


Diagram shows two wraps illustrated for clarity.

The wire rope when fully loaded should allow a space of at least 1.5 x the rope diameter between the edge of the drum flange and the top layer of the loaded wire rope (Fig. 1).

After installing the wire rope, check freespool operation. Disengage clutch using the 'T' bar and pull on wire rope at a walking speed.



CARE OF THE WIRE ROPE

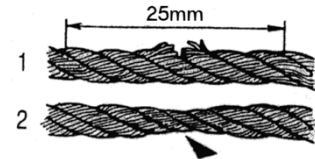
NOTE: ISO 4309:2004/2010 – WIRE ROPES DIRECTIVE

ISO 4309:2004 / 2010 details guidelines for the care, installation, maintenance and examination of wire rope in service on winches, hoists and cranes, and enumerates the discard criteria to be applied to promote the safe use of the machinery. It is important that these guidelines for safe care, installation and ultimately disposal of wire ropes is strictly adhered to according to this directive.

It is most important that the wire rope is inspected on a regular basis, for kinks, flat spots, broken strands and other damage, and if necessary the damaged sections should be cut away and the rope re hooked or completely replaced.

Check both the rope and the hook and replace under any of the following circumstances:

- 10 strands of rope or more broken with a space of 25mm (See fig.1).
- Rope shows visible signs of wasting (See fig.2).
- Deformed or excessively corroded rope.
- Twisted rope.
- Bent rope.



It is good practice to regularly use rope lubricant, obtainable from BHW Group, as this will prevent rust and corrosion, which can seriously reduce the wire rope working life.

A good habit to form is that of rewinding the rope onto the winch drum after it has been used, so that it is evenly layered. To do this, rewind keeping the rope under tension. Normally the tension required can be applied by hand (wear gloves).

Under no circumstances wrap the wire rope around the load being recovered and then attach the hook back onto the rope. This will result in serious rope damage or breakage.

Always employ a chain or webbing strap from the hook to the load.

WIRE ROPES ARE NOT COVERED BY WARRANTY.

OPERATING METHOD

It is very important that all users of this powerful winch equipment receive thorough training. As each winch installation and control method will vary reference should be made to the installers instructions. Particular attention should be paid to PTO engagement, disengagement and correct operating procedures for control valves. Particular attention should also be paid to the position of EMERGENCY STOP controls and the function of these should be tested.

The best way to get acquainted with how your winch operates is to make test runs before you actually use it. Plan your test in advance. Remember, you hear your winch, as well as see it operate. Get to recognise the sounds of a light steady pull, heavy pull, and sounds caused by load jerking or shifting. Gain confidence in operating your winch and its use will become second nature to you.

The uneven spooling of cable, while pulling a load, is not a problem, unless there is a cable pile up on one end of the drum. If this happens reverse the winch to relieve the load and move the anchor position of the hook further to the centre of the load so the winch has a direct pull. After completing the job unspool and rewind the cable neatly onto the drum.

CORRECT PRESSURE SETTING OF THE SYSTEM

Whether using a manual or electric control valve it is essential that the hydraulic pressure in the system is set correctly. This will ensure the winch is able to pull to its full rated capacity but without overloading. To do this secure the wire to a load via a measuring device (load cell) with rope running on the bare drum and operate the winch until the rated pull of the winch is achieved by adjusting the relief valve.

CAUTION: ALWAYS KEEP A MINIMUM OF 5 WRAPS OF ROPE ON THE DRUM.

For adjustment method see valve suppliers instructions.

A 125% proof load test should be carried out on completion to prove the integrity of the installation. The pressure relief valve must then be adjusted to provide the rated line pull of the winch and tamper proof seals must then be fitted.

The winch may be used with a snatch block so it is essential that provision is included for securing the rope hook adjacent to the winch. Note this provision must never be on the winch or winch frame as it would cause overloading.

The suggested method is to use BHW Group's "HOOK RETURN LINE ASSEMBLY" Part No.10629.

FREESPOOL CLUTCH

Ram-Lock Clutch - To release clutch, power out winch until tension is released from cable.

Pull out handle on side of casing and turn 90°.

To re-engage, turn lever back to horizontal position.

Turn drum slowly by pulling out cable.

The handle, which is spring-loaded, will automatically re-engage.

Ensure that handle is fully engaged before imposing load on winch.

MAINTENANCE

Keep to the following maintenance schedule to keep your winch in top condition and performing, as it should, with a minimum of repairs.

MONTHLY

Check for any oil leaks from the gearbox.

Check that all mounting bolts are tight.

Check all unions for hydraulic leaks and tighten if necessary.

Check filter in hydraulic low pressure return line and replace if indicated by colour code indicator.

Check operation of emergency stop controls.

Lubricate all grease nipples.

Carry out full inspection of wire rope.

Check the free spool mechanism for full engagement and disengagement.

ANNUALLY

Drain the oil from the winch by removing the drain plug. Refill to the oil level plug with paraffin and run the winch with no load for 2 minutes in the reel in direction. Drain the paraffin from the winch, and refill with all purpose EP 140 gear oil.

Inspect the winch installation for cracks and deformation.

Tighten all winch-securing bolts.

Inspect hydraulic fluid in system and replace if necessary.

Replace hydraulic tank suction strainer.

TROUBLE SHOOTING

CONDITION	POSSIBLE CAUSES	CORRECTIONS
Clutch inoperative or binds up	1.Dry or rusted shaft 2.Bent yoke or linkage	1.Clean and lubricate 2.Replace yoke or shaft assembly
Clutch does not lock in disengaged position	1.Setscrews loose or worn	1.Remove rubber plug from clutch housing, tighten setscrews or replace Replace rubber plug
Oil leaks from housing	1.Seal damaged or worn 2.Too much oil 3.Damaged gasket	1.Replace seal 2.Drain excess oil 3.Replace gasket
Winch runs too slow	1.Hydraulic motor worn out 2.Low flow rate	1.Replace motor 2.Check flow rate
Load drifts down	1.Safety brake has become worn. 2.Safety brake out of adjustment	1.Replace brake disc 2.Turn adjusting bolt ¼ turn clockwise or until load does not drift
Cable drum will not freespool	1.Winch not mounted squarely, causing end bearing to bind drum	1.Check mounting
Cable 'bird nests' when clutch is disengaged	1.Drags brake disc worn	1.Replace discs
Hydraulic fluid leaks out of hole in motor adaptor	1.Hydraulic motor shaft seal damaged	1.Replace seal



OVERHAUL OF H246 or HY246

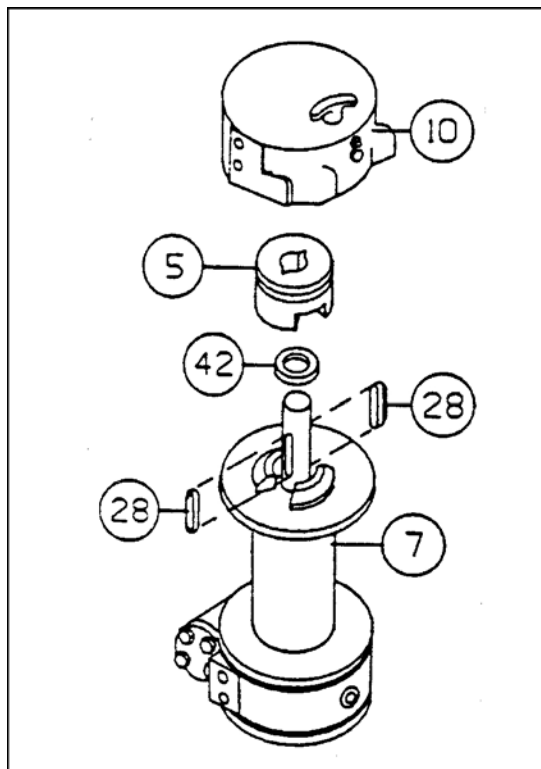
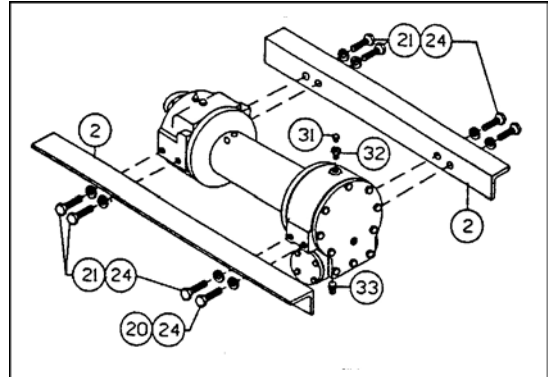
DIS-ASSEMBLY

Refer to parts list and drawings pages for actual item numbers and corresponding part numbers.

1. Drain oil from gear housing by removing (No. 33) plug from bottom of gear housing.

Remove plugs (Nos. 31 & 32) from top of gear housing.

Remove mounting angles from winch by removing hardware shown.



2. Remove clutch housing (No.10) and clutch (No. 5) from winch assembly.

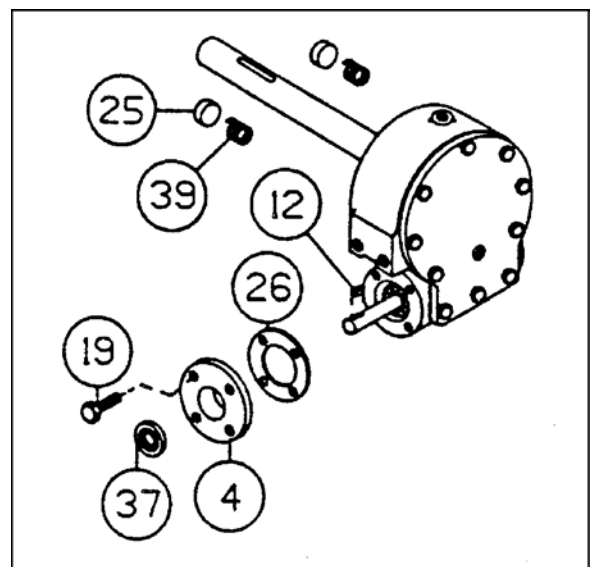
Remove two keys (No. 28) from keyways. A screwdriver can be used, at notch, to aid in the removal of keys.

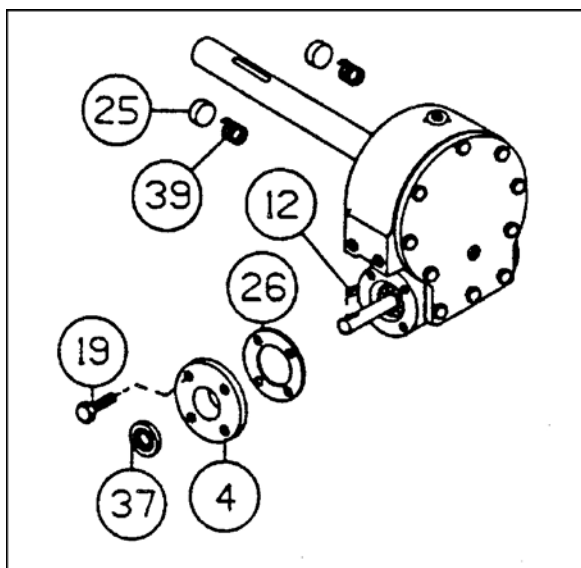
Once keys have been removed, drum (No. 7) and thrust washer (No. 42), can be removed from drum shaft.

3. Remove key (No. 12) from worm shaft. Remove bearing cap (No. 4) and gasket (No. 26) by unscrewing four capscrews (No. 19).

Remove seal (No. 37) from bearing cap and press new seal into place.

Drag brake disc (No. 25) and spring (No. 39) should be examined and replaced if necessary.





3. Remove key (No. 12) from worm shaft. Remove bearing cap (No. 4) and gasket (No. 26) by unscrewing four capscrews (No. 19).

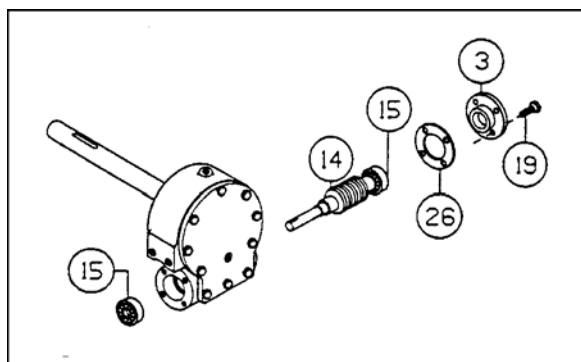
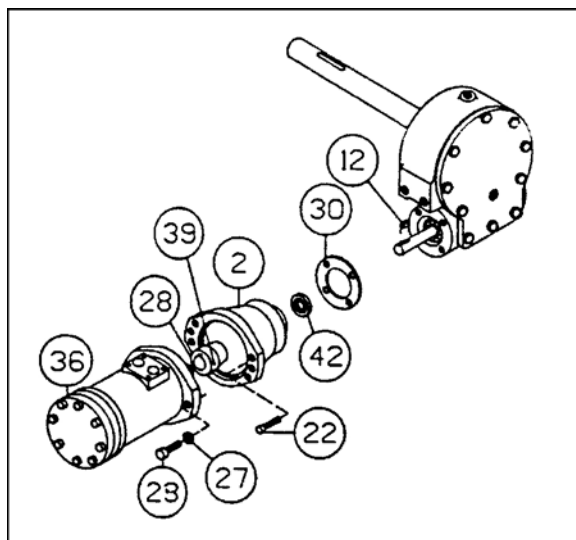
Remove seal (No. 37) from bearing cap and press new seal into place.

Drag brake disc (No. 25) and spring (No. 39) should be examined and replaced if necessary.

4. Remove motor (No.36) and coupling (No. 28) from (No. 2) adapter by unscrewing two (No. 23) capscrews.

Remove key (No. 12) from worm shaft. Unscrew four capscrews (No. 22) and remove adapter from gear housing.

Replace adapter seal (No. 42) and gasket (No. 30).



5. Remove bearing cap (item no. 3) from gear housing by unscrewing four capscrews (No. 19). Remove worm (No. 14) and bearings (No. 15) from gear housing.

Use soft hammer to gently tap input end of worm and drive worm and bearing from gear housing.

Once worm has been removed from housing, bearing can be pressed from end of worm.

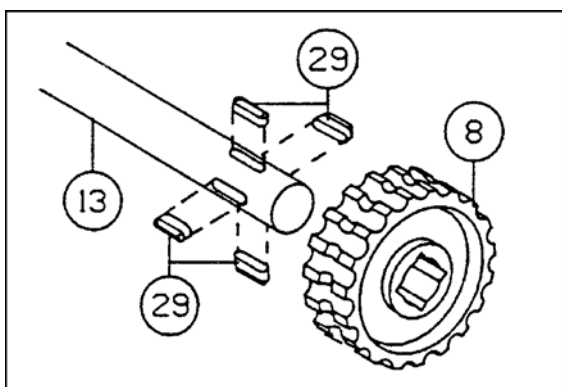
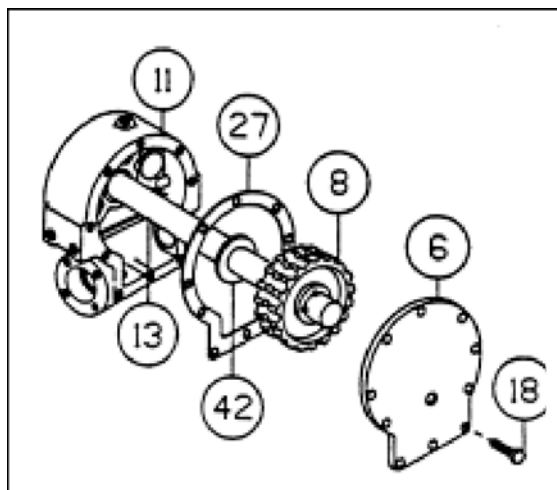
Check for signs of wear or damage to worm (No. 14) and bearing (No. 15).

Replace if necessary.

6. Remove gear-housing cover (No. 6) from gear housing (No. 11) by unscrewing capscrews (No. 18).

Thread two of the capscrews into the two tapped holes of cover and tighten.

This will pull the cover loose from gear housing.



7. Check for signs of wear on gear teeth.

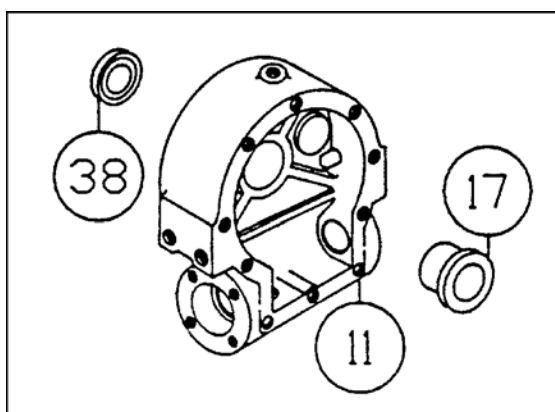
If replacement of gear is necessary, replace as follows:

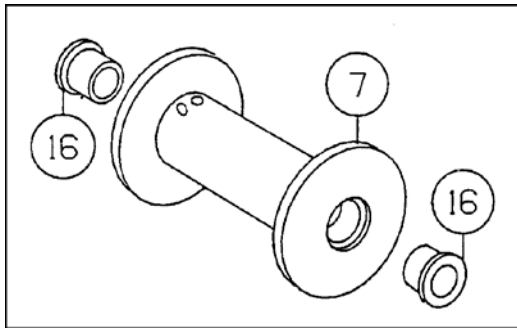
- a) Press gear (No. 8) from shaft (No. 13).
- b) Examine shaft keys and keyways. If distortion of keys and/or keyways is evident, shaft and keys should be replaced.
- c) Use a soft hammer to gently tap keys (No. 29) into keyways. Press gear (No. 8) over shaft and keys. Gear must be centred over keys.

8. Remove seal (item no. 38) from back of gear housing (No. 11).

Press bushing (No. 17) from gear housing.

Press new bushing and seal back into place.





9. Check drum bushings (No. 16) for signs of wear.

Replace if necessary by pressing old bushings from drum.

Press new ones into place.

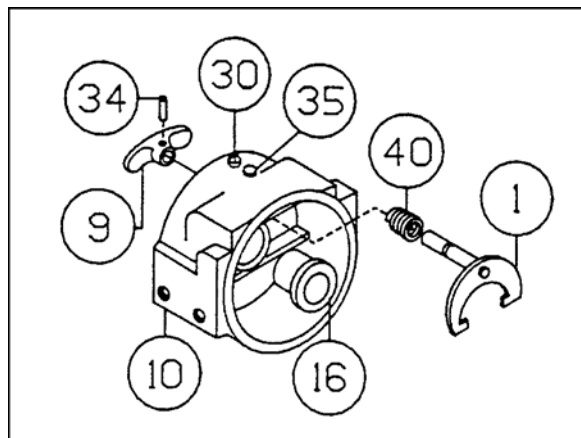
10. Examine shifter assembly (No. 1) for damage to yoke.

Yoke should be firmly attached to shaft, but able to swivel freely around shaft.

Replace if necessary by removing pin (No. 34) from handle (No. 9).

Remove rubber plug (No. 35) from housing.

Unscrew setscrew enough to allow shifter assembly to be removed from housing.



Install new shifter assembly (No.1) by placing end of shaft, opposite yoke, through spring (No. 40) and into housing (No. 10).

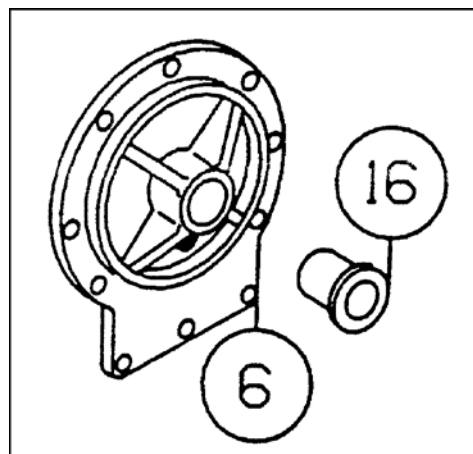
Attach (No. 9) handle to shaft using roll pin (No. 34).

Tighten setscrew, in housing, enough to allow shifter assembly to operate properly.

Replace rubber plug (No. 35).

11. Check cover bushing (No. 16) for signs of wear.

If necessary, remove old bushing and press bushing into place.



RE-ASSEMBLY

15. Press bearing (item no. 15) onto worm and into housing.

NOTE: Be sure that thick shoulder of bearings outer race (side with manufacturer's name and part number) is facing out, away from worm threads.

Place gasket (No. 30) onto adapter (No. 2).

Attach adapter to gear housing using four capscrews (No. 22), tighten to 8ft lbs. (10.8 Nm.) each.

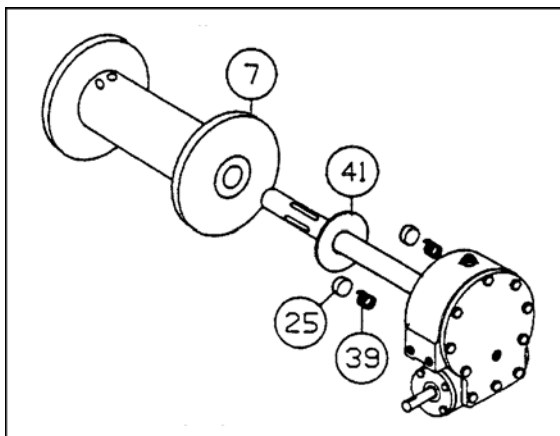
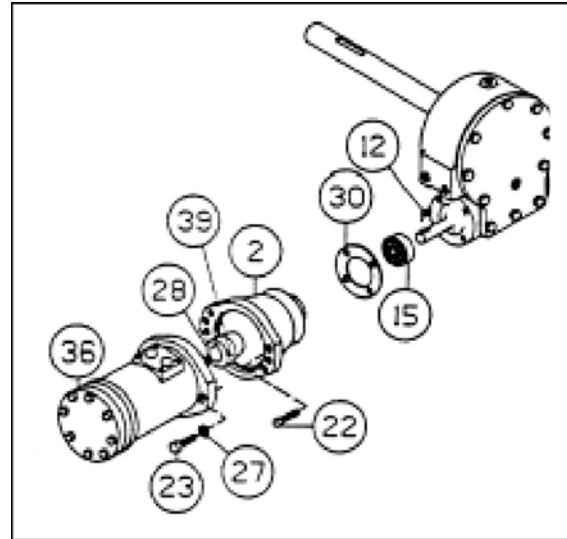
Insert key (No. 12) into keyway of worm shaft.

Slide tapered end of coupling (No. 28) over end of worm shaft.

Check that roll pin (No. 39) is in coupling.

Place motor shaft, with key in keyway, into coupling.

Secure motor (item no. 36) to adapter, using two capscrews (No. 23) and lockwashers. tighten to 75ft lbs. (102 Nm.) each.



16. Place winch with gear housing cover down on workbench.

Drum shaft should be in vertical position.

Slide thrust washer (No. 41) over drum shaft and slide downward until washer rests on gear housing.

Set springs (No. 39) into pockets of gear housing with drag brakes (No. 25) on top of springs.

Slide drum assembly (No. 7) onto drum shaft with drum jaws facing upwards.

17. Place thrust washer (No. 42) over end of drum shaft and slide downward until spacer rests on drum.

Press drum downward to compress springs in gear housing.

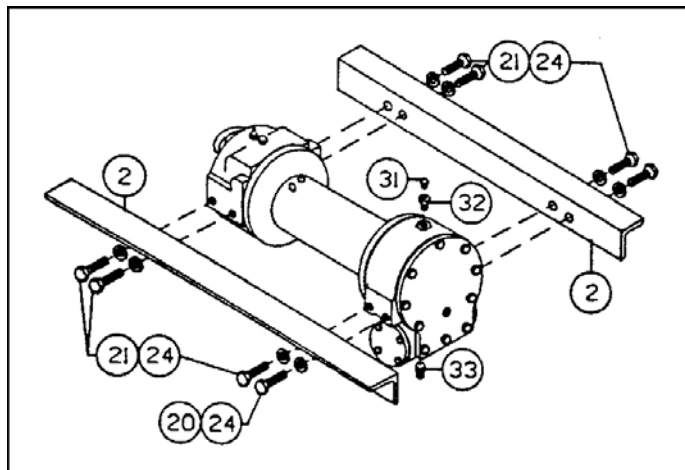
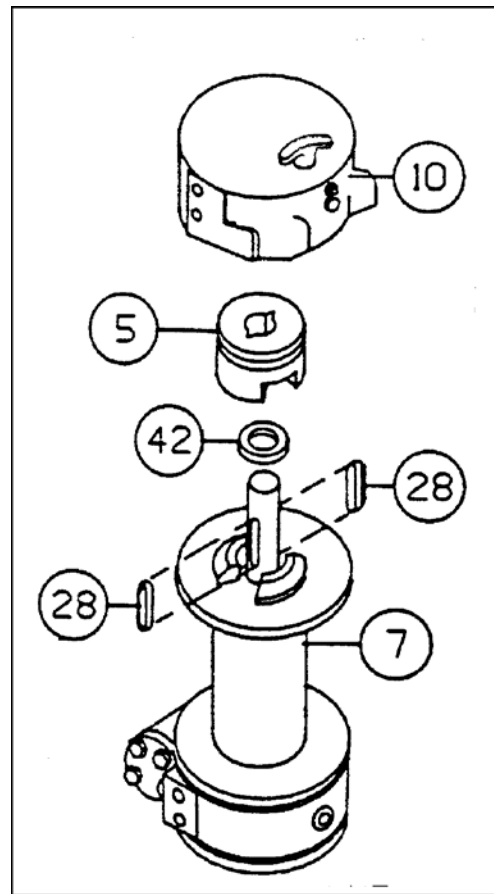
Insert keys (No. 28) into keyways with sharp edge of keys pointing outward and notched end of keys upward. A rubber or brass mallet will be needed to gently tap keys into position.

Apply grease to keys and end of shaft.

Place jaw clutch (No. 5) over end of shaft and slide jaw clutch over keys.

Set clutch housing (No. 10) over end of drum shaft.

Pull jaw clutch (No. 5) upwards, toward clutch housing, enough to allow yoke, in clutch housing to fit properly in groove around jaw clutch.



18. Attach two mounting angles (No. 2) using six capscrews (No. 21) with lockwashers and two capscrews (No. 20).

Torque capscrews to 34ft.lbs. (46Nm.) each.

Insert plug (No. 33) into bottom of gear housing.

Permatex may be applied to threads to help prevent leakage.

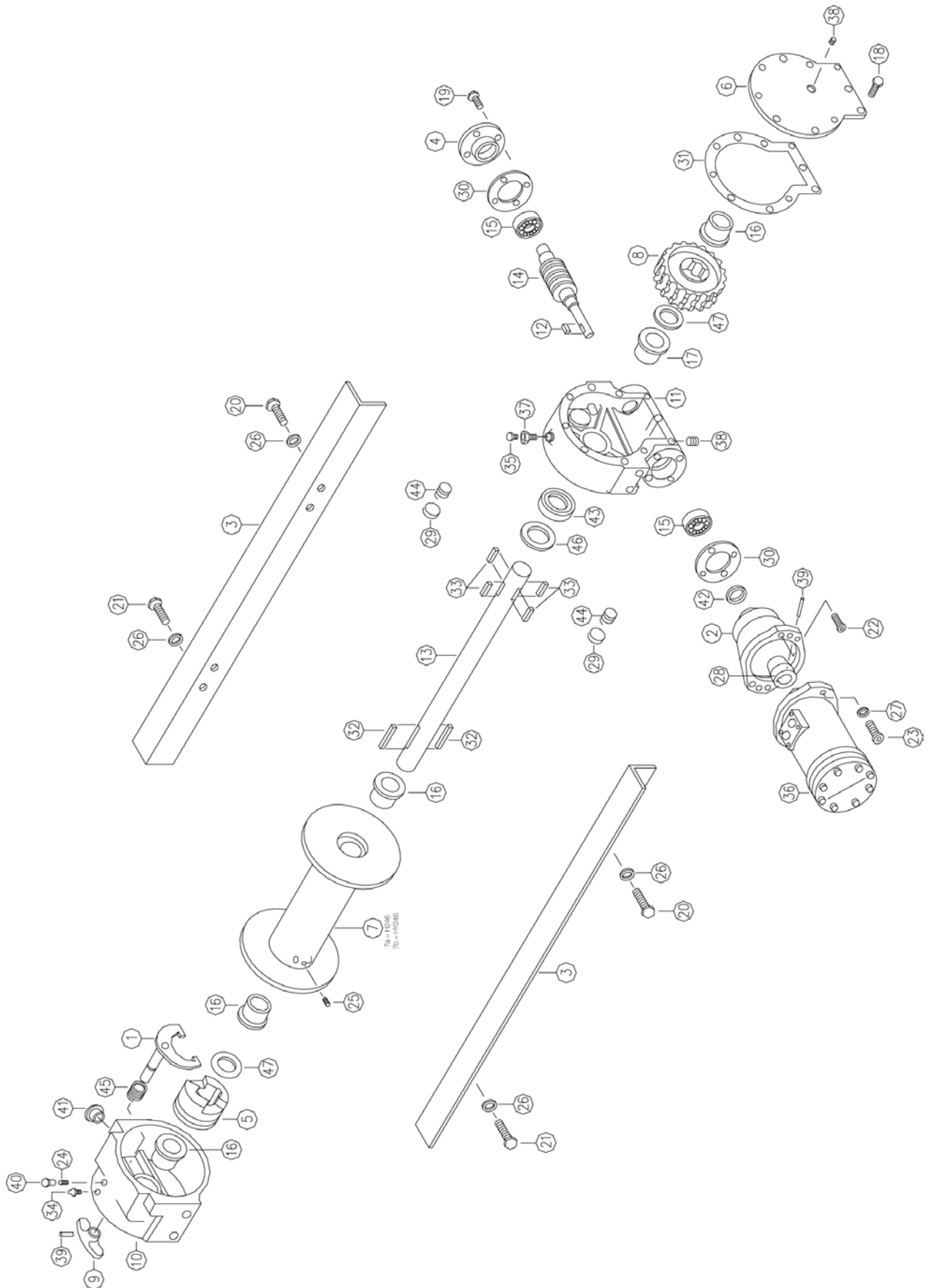
Pour 3/4 pint of SAE 140 EP gear oil (1 pt. if winch has a brake) through hole into top of housing.

Insert relief fitting (No. 31) into reducer (No. 32).

Reducer should then be placed into hole on top of gear housing.

Tighten fitting and reducer securely.

H246 & HY246 PARTS DIAGRAM



H246 & HY246 PARTS LIST

Item No.	Qty	BHW No.	Description
25	1	5317	SETSCREW 3/8 UNC x 3/8 LG. SOC. HD. LESS
26	8	11347	LOCKWASHER 3/8 MED. SECT
27	2	8938	LOCKWASHER 1/2 MED. SECT
28	1	5373	COUPLING
29	2	5351	DISC - BRAKE
30	2	5366	GASKET
31	1	5375	GASKET
32	2	5395	KEY - BARTH
33	4	5396	KEY - BARTH
34	1	5400	FITTING - LUBE
35	1	5402	FITTING - RELIEF
36	1	6212	MOTOR HYDRAULIC
37	1	5429	REDUCER
38	2	5430	PIPE - PLUG
39	2	5435	SPIRAL PIN
40	1	5443	PIPE - RUBBER
41	1	5444	PLUG - PLASTIC
42	1	5466	OIL SEAL
43	1	5467	OIL SEAL
44	2	5485	SPRING
45	1	5493	SPRING
46	1	5513	THRUST WASHER
47	1	5514	THRUST WASHER
48*	1	6962	ROLLER GUIDE
49*	1	9904	WIRE ROPE/ SAFETY HOOK - SHORT DRUM 18m x 10mm
50*	1	9934	WIRE ROPE/SAFETY HOOK LONG DRUM 30m x 10mm

*ITEMS NOT SHOWN ON PARTS DRAWING

Item No.	Qty	BHW No.	Description
1	1	5037	MANUAL SHIFTER ASSEMBLY
2	1	5090	ADAPTOR
3a	2	5088	MOUNTING ANGLE H246 LONG DRUM
3b	2	11372	MOUNTING ANGLE HY246 SHORT DRUM
4	1	5103	BEARING CAP
5	1	5113	JAW CLUTCH
6	1	5126	COVER
7a	1	14971	H246 LONG DRUM
7b	1	5130b	HY246 SHORT DRUM
8a	1	5159	GEAR WHEEL R/H 60:1
8b	1	5160	GEAR WHEEL R/H 46:1
9	1	5170	T' HANDLE FOR FREESPOOL CLUTCH
10	1	5179	CLUTCH HOUSING
11	1	5187	GEAR HOUSING
12	1	14288	KEY
13a	1	5229	H246 LONG DRUM SHAFT
13b	1	5231	HY246 SHORT DRUM SHAFT
14a	1	5249	WORM GEAR R/H 46:1
15	2	5269	BEARING - BALL
16	4	5278	BUSHING
17	1	5285	BUSHING
18	10	11341	SETSCREW 1/4 UNC x 3/4 LG. HX. HD
19	4	11342	SETSCREW 1/4 UNC x 7/8 LG. HX. HD
20	21	11344	SETSCREW 3/8 UNC x 3/4 LG. HX. HD
21	6	11373	SETSCREW 3/8 UNC x 1-1/4 LG. HX. HD
23	2	8934	SETSCREW 1/2 UNC x 1-1/2 LG. SOC. HD
24	1	5316	SETSCREW 1/4 UNC x 3/8 LG. SOC. HD. LESS

RAMSEY H246 & HY246 - ONE YEAR LIMITED WARRANTY

BHW GROUP LIMITED, the authorised Ramsey Servicing Distributor in the UK and Ireland warrants each new winch and ancillary equipment supplied against factory defects in material and workmanship for one year from date of purchase. Responsibility for removing the winch or ancillary equipment is the owner's together with its return, transportation prepaid to BHW Group Limited.

BHW Group 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 product, 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 stamp has been defaced, altered or removed, or if in the view of BHW Group Limited the damage or failure occurred from misuse, negligence or accident.

THIS WARRANTY EXCLUDES THE WIRE ROPE

Ramsey Winch Co. and BHW Group Limited reserve the right to change the design of any product without assuming any obligation to modify any product previously supplied. Winches or equipment returned under warranty should be despatched to the relevant division of the BHW Group Limited service department at the address indicated below, with full name and address of sender, and a statement detailing the defect.

Winch performance figures may vary from those shown as they are dependent on system back pressure, mechanical efficiency of winch motor and length and diameter of hydraulic hoses used for installation.



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Website: www.bhwgroup.com

RAMSEY H246 or HY246 HYDRAULIC WINCH

SERIAL NUMBER.....

DATE OF PURCHASE.....

Ramsey H246 and HY246 Hydraulic Winches are manufactured in the USA.