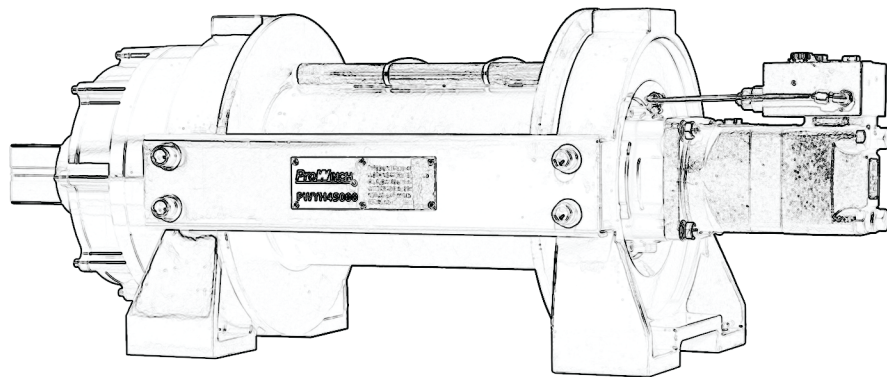




PWYH Hydraulic Winches

User's Manual / Manual de usuario
Safety Warnings / Advertencias de Seguridad



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PWYH11000



PWYH18000



PWYH25000



PWYH45000

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PROPERTY OF PROWINCH® 2018 - V8.2 ALL RIGHTS RESERVED
PROWINCH LLC COMPANY WITH QUALITY MANAGEMENT SYSTEM**

PROWINCH® DISCLAIMER

Prowinch® LLC declares that it has made all safety recommendations related to the purchased product to the customer. As a result, it does not assume any responsibility for any damages or losses that the client or third parties may suffer. These can be caused by or as a direct or indirect result of a breach or omission of instructions or safety warnings in the User Manual and Security Warnings provided with the unit purchased. Prowinch® LLC will not be liable for accidents and/or damages to persons and/or property resulting from the negligent use of the product. In no case does Prowinch® LLC assume any liability arising from using these voluntary recommendations and does not offer any guarantee concerning them. These recommendations do not take precedence over the current safety regulations of the plant. For purposes of enforcing the warranty of the product purchased, Prowinch® LLC, will only be liable for any damage when proven the user has followed each one of the warnings contained in the User Manual and Safety.

1. It is the sole responsibility of the Client / User to verify that the acquired equipment, products, and accessories comply with the characteristics, capacities, requirements, components, accessories, and other conditions for the use that the Client/user intends to give it.
2. It is also the sole responsibility of the Client / User to ensure that the equipment and products purchased are operated and maintained with adequate safety standards and by personnel properly trained in their use. The Client / User is also responsible for implementing all security measures necessary to prevent accidents or damages to people or property and for following the indications and warnings of the corresponding manual.
3. Any assistance provided by Prowinch® LLC in selecting the equipment, capacities, and characteristics required by the client is delivered free of charge and based on the information about the application, use, and requirements provided by the client. It is not the responsibility of Prowinch® LLC to verify the accuracy of the given information. It is the sole and exclusive responsibility of the client -or who will use the equipment and products acquired- to ensure that the specifications comply with the capabilities, characteristics, up-to-date maintenance, and everything necessary for a correct and safe operation about the intended use.
4. Prowinch® LLC recommends using winches with four brakes for personnel lifting. The use of winches with three brakes or less, or operating with safety standards less than required for personnel lifting is not recommended.
5. To guarantee the safety of the equipment's operators, it is necessary to conduct inspections and maintenance of the equipment according to the recommended frequency of its work cycle. It is mandatory to keep records and evidence, including written and photographic reports of: Maintenance, Start-up, Load Tests, Training, Certifications, Inspections, and Reports of failures and accidents.
6. The reports mentioned above must be emailed to registros@prowinch.com within the first seven calendar days after an event.
7. Compliance with timely implementation of mandatory activities described in points 6 and 7, in addition to all the activities mentioned in the corresponding guidelines, are the user's sole responsibility. Failure to comply with the preceding conditions releases Prowinch® LLC from any liability. The information contained in this manual may contain technical errors or inaccuracies. Prowinch® LLC is not responsible for errors, omissions, or incorrect information. This manual is subject to change without prior notice. Download the latest version available at www.prowinch.com. Always check www.prowinch.com for the latest information regarding this product. Please check our warranty policies on our website www.prowinch.com/warranty.

3. GENERAL INFORMATION

The winch’s standard equipment contains a gear reducer, drum, and hydraulic motor. The winch obtains its pressure from the vehicle’s existing power steering pump or other hydraulic power. There are several ways to supply the pressure for the winch. The first way uses an individual pump for engineering use; the second way is the winch’s pressure from the vehicle’s existing power steering pump as an illustration:

1. Use a suitable individual pump that has no oil valve. It supplies pressure for both the steering box and winch.
2. Use a combined pump that integrates an oil valve. The oil valve supplies two kinds of flow for different demands. One with the constant flow is for steering use, and the other with a higher power is for engineering use. Refer to installation. You can choose the best suitable way. If your winch is installed as a simple working mode (standard supplied), NEVER POWER WINCH CABLE OUT WITH a HEAVY LOAD. This could cause severe and dangerous circumstances.

3.1 Trouble Shooting

SYMPTOM	POSSIBLE CAUSESUGGE	STED ACTION
Winch drum runs slowly or without	Hydraulic system failure. Hydraulic motor failure	Check if oil circuit error. Check system pressure.
Oil leakage	Winch overload.	Change hydraulic motor seals or change hydraulic motor. DO NOT overload during operation.
Winch stuck during Freespooling or hard to Freespool	Knob on the wire rope winch mounting bolts loose. Freespool knob rust.	Smooth wire rope. Tighten the mounting bolts. Disassemble Freespool knob in no load, lubricate it with lubrication oil.
Brake failure	Brake pad worn. Wrong wire rope winding direction.	Change brake assembly. See from motor side, counterclockwise winding should be cable in.



WARNING

Before installing, removing, inspecting, or performing any maintenance on the hoist, the main switch must be de-energized, locked out, and tagged out.
Do not use this equipment in hazardous locations.

3.2 Maintenance

Prowinch recommends using the equipment regularly (at least once a month). Power the cable out 15m, free spool 5m, and then power back in. Performing this will keep all components in good working condition, maintaining reliable equipment when needed. Contact your authorized outlet for technical assistance and repairs.

3.3 Lubrication

1. All moving parts within the winch having must be lubricated using #2 lithium grease at the factory. No internal lubrication is required.
2. Lubricate cable assembly periodically using light penetrating oil.

3.4 Cable Assembly Replacement

1. Turning the clutch to the “Clutch Out” position.
2. Extend the cable assembly to its entire length. Pay attention to how the existing cable is connected to the drum.
3. Remove the old cable assembly and attach a new one.
4. Retract cable assembly onto the drum, with the first five wraps being careful not to allow kinking. The winch cable must be wound onto the drum under a load of at least 10% rate line pull.
5. The roller fairlead is to be mounted to evenly guide the rope onto the drum.

SPECIFICATIONS

3. Unpacking

When unpacking, check to make sure all parts are included. Refer to Winch Assembly Drawing and Parts List (both with respective item numbers) at the end of this manual.

3.1. Installation

Mount the winch to the vehicle by using high strength cap screw. It should be aligned and secured to a solid part of the vehicle (front or rear) where you can evenly distribute the full rated load.

3.2 Mounting the directional solenoid valve assembly(Optional)

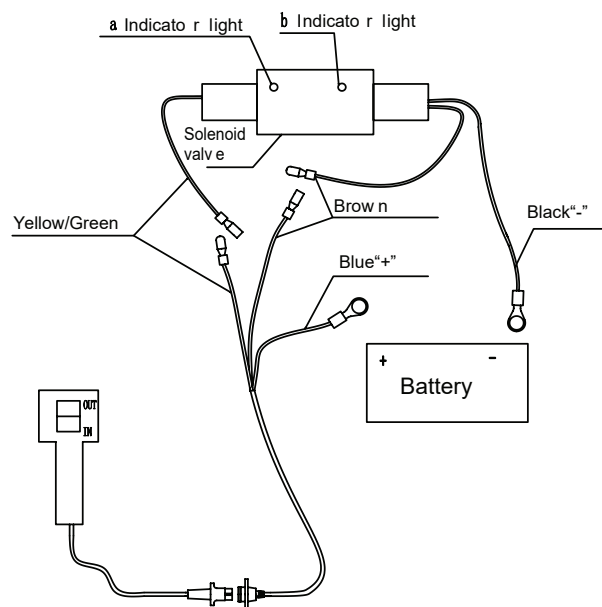
The valve should be mounted away from areas where heat may be too extreme. Such as an exhaust manifold or turbo. Be sure all plumbing and wiring reach the selected area without being stressed. It may be mounted by using the bracket and allen screws supplied. Using the bracket as a guide, mark where the mounting holes will be drilled, remove the plate, and drill four 1/4" holes. Mount valve assembly using nuts, and bolts.

Note: There is no need to mount a directional solenoid valve if there is already one manual directional valve on the vehicle.

3.3 Electrical connections(Optional)

If the winch's power supply is from the vehicle's existing power steering pump, the solenoid valve system is designed to default to the power steering box, so power steering is always available even when the winch is in use. The power source to the solenoid is not energized until the three-pole quick connector plug is plugged in. Each solenoid has two wires--either of which can be used as a ground or for electric power. The grounds are connected to each other at the factory. The other will connect to the blue and yellow wire in the harness (see illustration). Determine a location on the front grill to mount the female 3-pole plug connector. Drill a hole and mount the female 3-pole plug connector using nuts, bolts and washers supplied. Connect all wiring as shown in the illustration. Test hand control unit. Solenoids will make a slight "click" sound if connected properly.

Note: There is no need to do the wiring if there is already one manual directional valve on the vehicle.



3.4 Plumbing connections

Keep all hoses away from areas where heat is too extreme such as an exhaust manifold or turbo. Lines should not come in contact with abrasive or vibrating surfaces. In some applications, right-angle fittings on the directional and motor or balance valves are necessary to make hose mounting more flexible. After plumbing has been laid out on the vehicle, install o-ring fittings supplied to the valve. Torque tight. **DO NOT OVERTIGHTEN ANY FITTINGS.** Install o-ring fittings on the winch motor. Torque tight. Connect any hose port A on the motor or port C1 on the balance valve to port A on the directional valve, port B on the motor or port C2 on the balance valve to port B on the directional valve, port P on the directional valve to pump's high-pressure port, port T on the valve to the reservoir. Attach any o-ring or seal from the vehicle's original tube fitting to the tube fitting.

3.5 Cautions

Battery cables should not be drawn out. Leave slack for some cable movement. Please check and follow the steps if your application is supplied with an added cooler.

1. Check fluid level.
2. Replace lost fluid to system.(System will need to be purged).
3. Start engine. (Power winch cable in 5 feet).
4. Shut engine off.
5. Check fluid level. (Add fluid until full, start engine, power winch cable, Out 5 feet, Shut engine off and Check fluid level.) Add fluid until full if necessary.
6. Start engine. Power winch cable into desired position. Turn vehicle wheels from lock to lock position 5 times. This will aid in bleeding out any air that may have got into the system.



WARNING

Make sure the clutch is totally engaged before starting any winch operation.
Stay clear and away from raised loads.
Stay clear of cable while pulling do not try to guide cable.
A min. of wraps of cable around the drum.

Thank you for purchasing a Prowinch® winch. This manual describes the operation and maintenance of the winch. All information in this publication is based on the newest production information is available at print time.

1. SAFETY PRECAUTIONS

Prowinch's winches are designed to deliver a safe and trustworthy service if they are operated according to this manual. This manual contains essential information to help you properly install, operate and maintain your winch for maximum performance, economy, and safety. Please study its contents thoroughly before putting your winch into operation. You will experience long, dependable, and safe service by practicing correct operating procedures and following the recommended preventive maintenance suggestions. After thoroughly familiarizing yourself with the contents of this manual, we recommend that you carefully file it for future reference.

Applications for PWTR Prowinch® winches

Choose the Prowinch® winch that is right for you: PWTR series offers you, top-of-the-line models, from 9500 lbs up to 17000 lbs, featuring standard and optional accessories for recovery applications. We offer you lightweight, durable, and affordable winches. Specially designed for recovery applications, our winches are equipped with a durable wound motor for long life and extra pulling power, featuring a rugged 3-stage planetary gear box delivering power and reliability. The body and frame of your winch are corrosion-resistant stainless steel to provide a long life.

Mandatory use of:



Hard Hat



Safety Glasses



Safety Gloves



Safety Shoes

1.1. Safety Precautions



WARNING:

This symbol indicates unsafe practices or situations which may cause damage to the property and even injuries to the personnel.



DANGER:

This symbol indicates a potentially dangerous situation which if not avoided may cause severe injuries or death



DANGER

All operators and other users who are near the steel chain or its load must wear required safety equipment: gloves, safety helmet / hard hat, safety shoes and eye protection.



WARNING

Before installing, removing, inspecting, or performing any maintenance on the winche, the unit must be unplugged, locked out, and tagged out. Do not use this equipment in hazardous locations.

	<p>WARNING</p> <p>Moving parts can crush and cut.</p>
	<p>Disconnect power before opening.</p>

	<p>WARNING</p> <p>Underwind feed only</p>
	<p>Operating your winch in the overwound orientation could void any warranty and present a very dangerous situation.</p>

	<p>WARNING</p>
	<p>Verify torque of Screws periodically Tighten base screws To 120 lb Use always red Threadlocker</p>

Read and understand the contents of this User Manual thoroughly before handling the product. Practicing correct and safe operating procedures and carrying out the recommended preventative maintenance will ensure a long, reliable, and safe service.

After carefully reading and understanding the User Manual, store it for future reference.

2. GENERAL SAFETY PRECAUTIONS

1. Take time to fully read the instructions from this User's Manual, in order to understand your winch and its operations.
2. Do not exceed winch or winch wire rope rated capacity. Double line using a snatch block to reduce winch load.
3. Do not use winch or winch wire rope for towing. Shockloads can damage, overload and break wire rope.
4. Do not use a winch to secure a load.
5. Do not operate this winch when under the influence of drugs, alcohol or medication.
6. Always wear heavy leather gloves when handling winch wire rope.
7. Always remove jewelry and wear eye protection.
8. Always be aware of possible hot surfaces at winch motor, drum or wire rope during or after winch use.
9. Inspect equipment regularly, replace damaged or worn parts, and keep appropriate records of maintenance.
10. Use only PROWINCH®'s recommended parts for replacement. Any modifications or repairs without the approval from PROWINCH® will void warranty.

2.1. SAFETY INSTALLATION

1. Choose a mounting location that is sufficiently strong to withstand the maximum pulling capacity of your winch.
2. Use class 8.8 metric (grade 5) or better hardware.
3. Do not weld mounting bolts.
4. Use factory approved mounting hardware, components, and accessories.
5. Do not use bolts that are too long.
6. required bolt length to ensure proper thread engagement.
7. Complete the winch installation and hook attachment before installing the wiring.
8. Always keep hands clear of winch wire rope, hook loop, hook and fairlead opening during installation, operation, and when spooling in or out.
9. Always position fairlead with warning readily visible on top.
10. Prestretch wire rope and respool under load before use. Tightly wound wire rope reduces chances of binding, which can damage the wire rope.
11. Insulate and protect all exposed wiring and electrical terminals.
12. Do not route electrical cables across sharp edges, near parts that get hot and/or through or near moving parts.
13. Always place the supplied terminal boots on wires and terminals as directed by the installation instructions.
14. Do not lean over battery while making connections.
15. Do not route electrical cables over battery terminals.
16. Do not short battery terminals with metal objects.
17. Battery Recommendations A fully charged conventional automotive battery with a minimum rating of 650 cold cranking amps is recommended to obtain peak performance from your winch. Make sure all electrical connections are clean and tight.
18. Consult this User's Manual for proper wiring details.



DANGER:

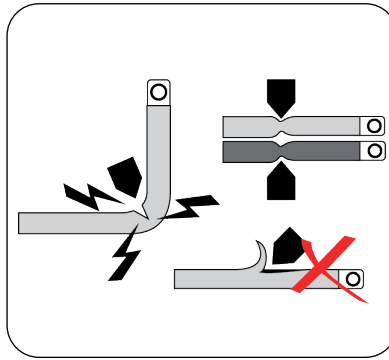
Failure to observe these instructions could lead to serious injury or death.

2.2. SAFETY OPERATION

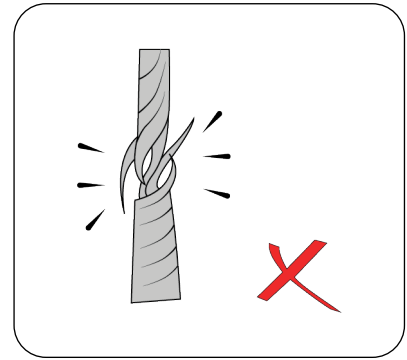
- 1.** Inspect winch wire rope, hook, and slings before operating winch. Frayed, kinked or damaged winch wire rope must be replaced immediately. Damaged components must be replaced before operation. Protect parts from damage.
- 2.** Remove any element or obstacle that may interfere with safe operation of the winch.
- 3.** Always be certain the anchor you select will withstand the load and the strap will not slip.
- 4.** Always use supplied hook strap whenever spooling winch wire rope in or out, during installation and during operation.
- 5.** Always require operators and bystanders to be aware of vehicle and or load.
- 6.** Be aware of stability of vehicle and load during winching, keep others away. Alert all bystanders of an unstable condition.
- 7.** Always unspool as much winch wire rope as possible when rigging. Double line or pick distant anchor point.
- 8.** Take time to use appropriate rigging techniques for a winch pull.
- 9.** Do not touch winch wire rope or hook while someone else is at the control switch or during winching operation.
- 10.** Do not engage or disengage clutch if winch is underload, winch wire rope is in tension or drum is moving.
- 11.** Do not touch winch wire rope or hook while under tension or under load.
- 12.** Stand clear of winch wire rope and load and keep other away while winching.
- 13.** Do not use vehicle to pull load on winch wire rope. Combined load or shock load can damage, overload and break wire rope.
- 14.** Do not wrap winch wire rope back onto itself. Use a choker chain or tree trunk protector on the anchor.
- 15.** Do not operate winch with less than 5 wraps of winch wire rope or 10 wraps of synthetic rope around the drum. Wire rope could come loose from the drum, as the wire rope attachment to the drum is not designed to hold a load.
- 16.** Do not use winch as a hoist or to suspend a load.
- 17.** Always be certain anchor will withstand load, use appropriate rigging and take time to rig correctly.
- 18.** Do not use winch to lift or move persons.
- 19.** Do not use excessive effort to freespool winch wire rope.
- 20.** Always use proper lifting technique or get lifting assistance while handling and installing.
- 21.** Always wind the winch wire rope on bottom (mountside) of drum.
- 22.** Do not wind wire rope over top of drum. Always spool the winch wire rope onto the drum in the direction in this manual.
- 23.** Do not leave remote control where it can be activated during free spooling, rigging, or when the winch is not being used.
- 24.** Do not leave the winch remote control plugged in when installing, freespooling, rigging, servicing or when the winch is not being used.
- 25.** Do not operate any equipment on which the safety placards or decals are missing or illegible.
- 26.** Report any malfunction or irregular operation of the equipment.
- 27.** Do not operate an equipment that has been modified without previous PROWINCH® approval.
- 28.** Winch damper helps to prevent wire rope recoil in the event of a wire rope failure. Do not approach or move the damper once tension is applied. Do not allow it to get pulled into the fairlead.



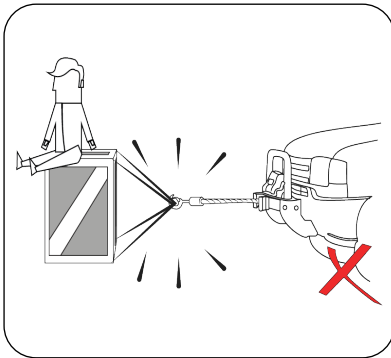
1. Do not exceed winch or winch rope rated capacity.



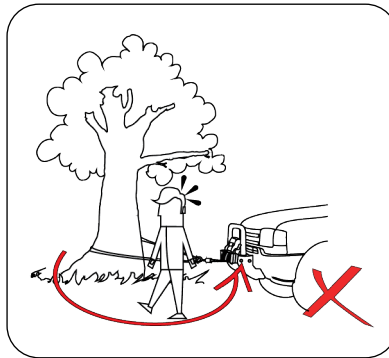
2. Do not route electrical cables across sharp edges, near parts that get hot and/ or through or near moving parts.



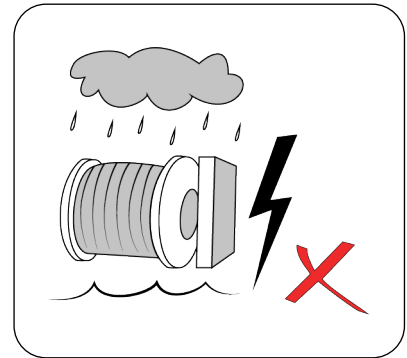
3. Always inspect winch rope, hook, and slings before operating winch. Frayed, kinked or damaged winch rope must be replaced immediately.



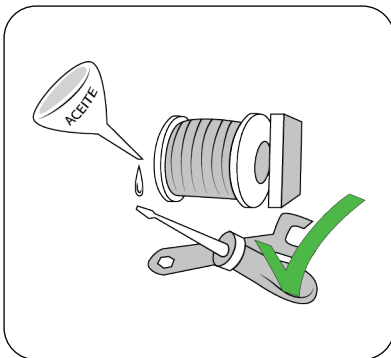
4. Do not use the equipment to lift or move people.



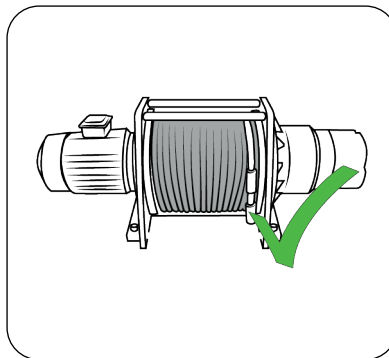
5. During winching operation always be aware of stability of vehicle and load during winching, keep others away. Alert all bystanders of an unstable condition.



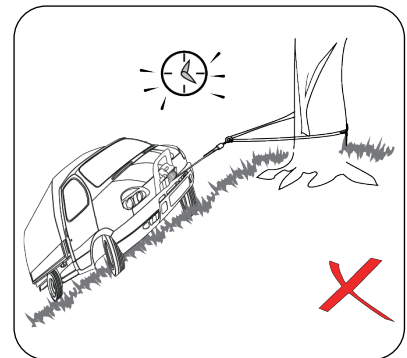
6. Do not submerge winch in water. Always store the remote control in a protected, clean, dry area.



7. Perform preventive checks as part of a regular maintenance schedule to keep your winch operating properly.



8. Always verify installation before operating.



9. Do not leave loads unattended, wire rope could come loose from the drum, as the wire rope attachment to the drum is not designed to hold a load.

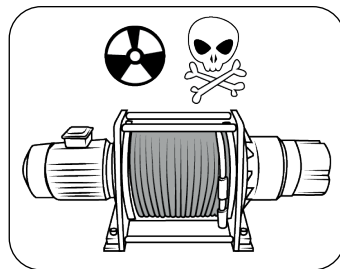
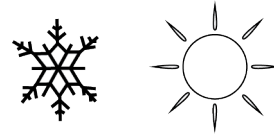
2.3. GENERAL ENVIRONMENTAL PRECAUTIONS



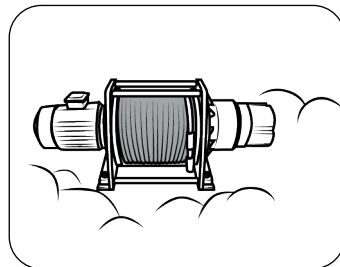
DANGER:

The following environmental conditions can cause malfunction of the winch.

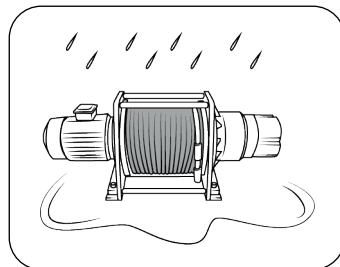
The following environmental conditions may cause malfunctions in the equipment. When operated outdoors, winch should be sheltered from extreme weather conditions: below 14 F or above 104° C



If used near chemicals, corrosive gas or explosives may cause an explosion. Exposure to salt or acids may cause malfunctioning.



Exposure to sand may cause malfunctioning.



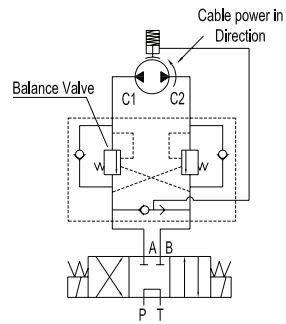
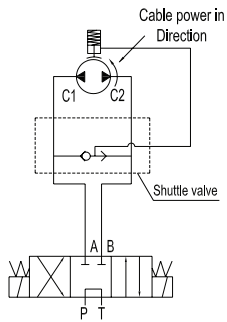
Avoid exposure to rain or extreme humidity. It may cause rusting of the equipment.

WARNINGS

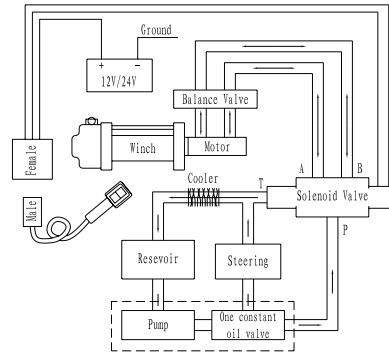
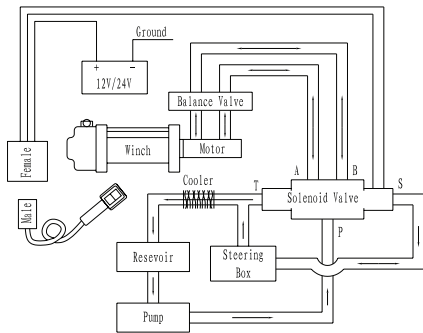


PWYH11000

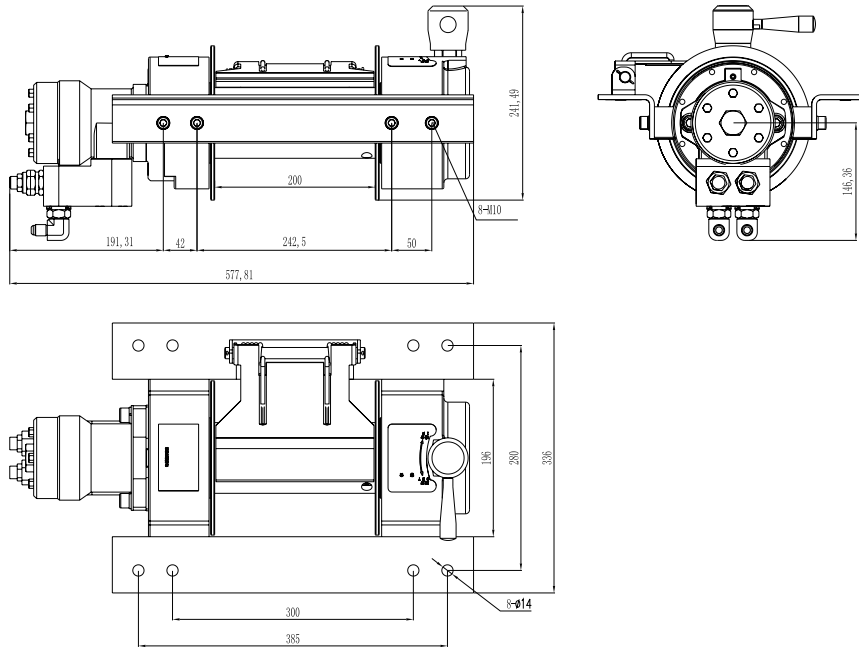
Working hydraulic principle chart



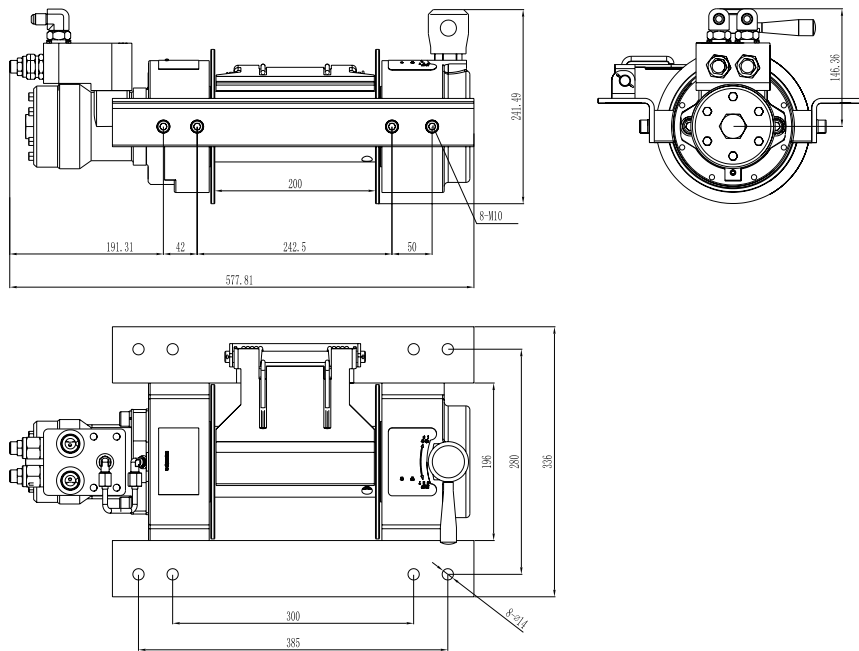
Installation illustration (Complete working mode)



PWYH11000 With Balance Valve Downwards



PWYH11000 With Balance Valve Upwards



PWYH11000 With Balance Valve Winch Performance Specification

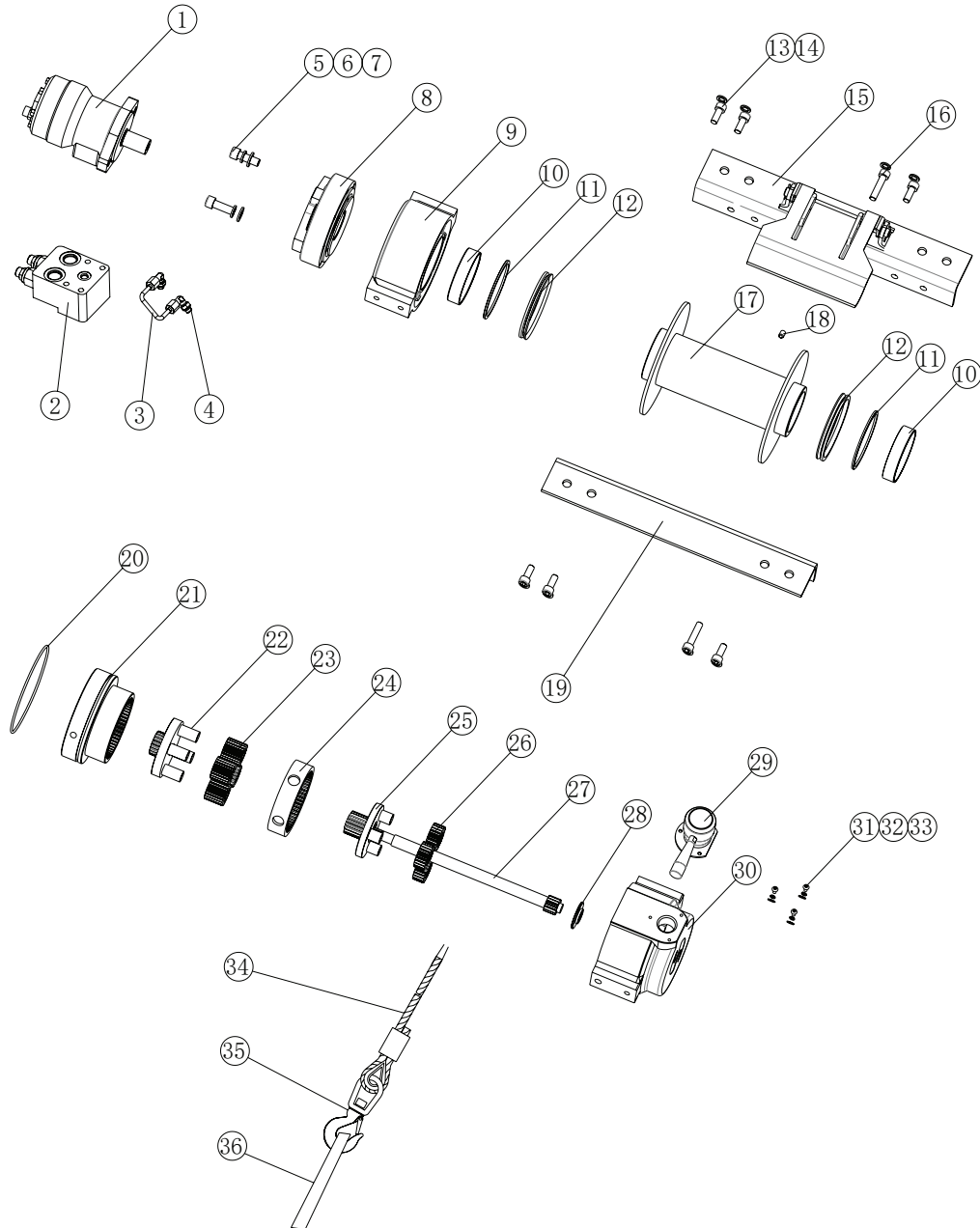
PWYH11000	
Rated line pull	11000 lbs single line
Motor displacement	80 ml/rev
Max. flow	30-60 l/min
Max pressure	14Mpa
Gear Train	2 stage planetary gear
Gear Ratio	23:1
Clutch	Cam Clutch
Braking Action	Automatic Hydraulic Brake
Fairlead	4-way roller fairlead (Optional)
Wire rope	15/32: x 82'
Drum Size	3.46" x 7.56"
Dimensions	22.75" x 13.23" x 11.5"
Bolt pattern	11.81" x 11.02"
Net Weight	128lbs

11000lb winch line pull and pressure difference	
Single line pull	Pressure difference
0/0	2
2750/1248	5
5500/2495	7
8250/3742	10
11000/4990	13

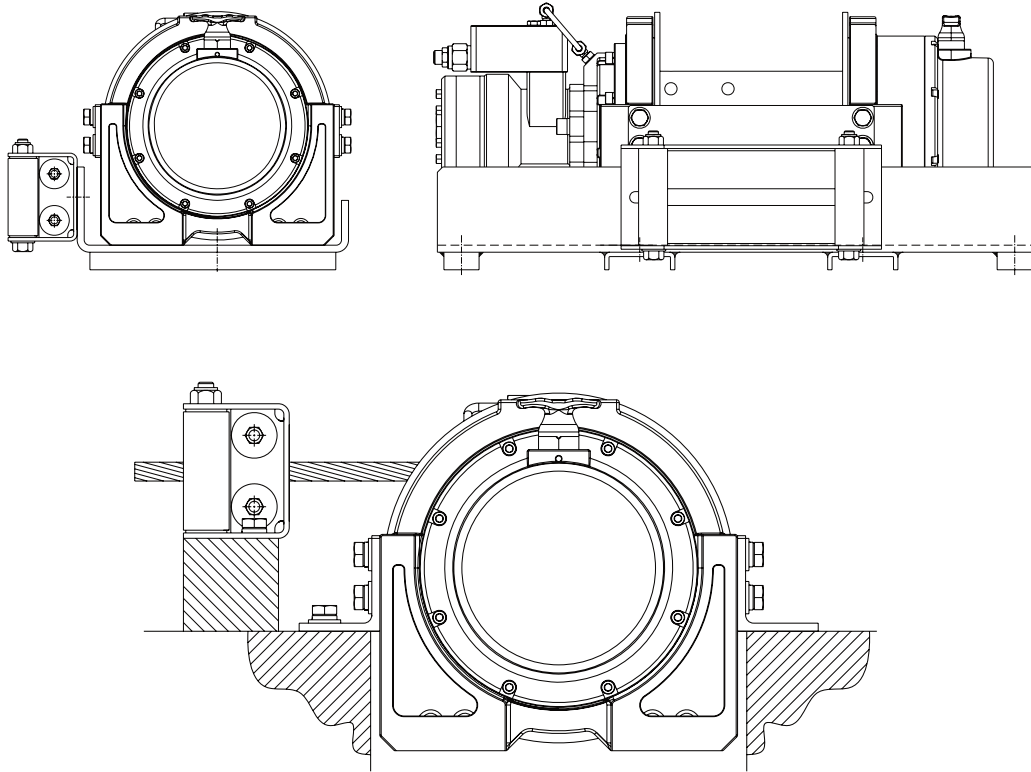
11000lb winch line pull and pressure difference		11000lb Winch Line pull and cable capacity			
Single line pull	Pressure difference	Layer	Rated line pull	Line Speed	Cable Capacity
0/0	2	1	11000	9	17.06
2750/1248	5	2	8250	11.2	37.07
5500/2495	7	3	5500	13	59.71
8250/3742	10	4	2750	15	82

No.	Part Name	Qty.
1	Hydraulic motor	1
2	Valve block	2
3	Brake u-shape oil pipe	2
4	Flaring type adjustable right-angle connector	2
5	Spring washer 12	1
6	Hexagon socket cap screw M12×35	2
7	Flat washer 12	2
8	Brake assembly	2
9	Motor support	1
10	Drum shaft sleeve	1
11	Drum retaining ring	1
12	A shape seal ring	1
13	Hexagon socket cap screw M10×25	6
14	Spring washer 10	8
15	Wire rope tensioner assembly	1
16	Hexagon socket cap screw M10×45	2
17	Drum	1
18	Hexagonal socket screw M8×12	1
19	Right angle iron	1
20	O-ring	1
21	Output ring gear assembly	4
22	2rd stage planetary gear carrier assembly	1
23	2rd stage planetary gear	1
24	1st stage ring gear	3
25	1st stage planetary gear carrier assembly	1
26	1st stage planetary gear	1
27	Sun gear axle	1
28	Gearbox nylon retaining ring	1
29	Freespool knob assembly	3
30	Gearbox housing	1
31	Allen at round head screw M5×12	1
32	Flat washer 5	1
33	Spring washer 5	3
34	Wire rope assembly 12	3
35	Rotatable 3/8" hook	1
36	Hand saver	1

PWYH11000 With Balance Valve Winch Assembly Drawing



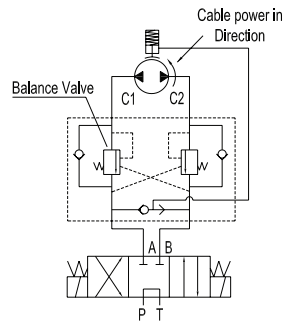
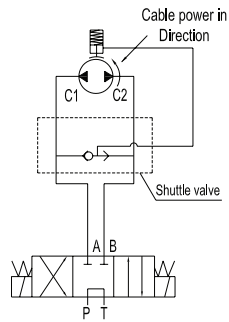
MOUNTING



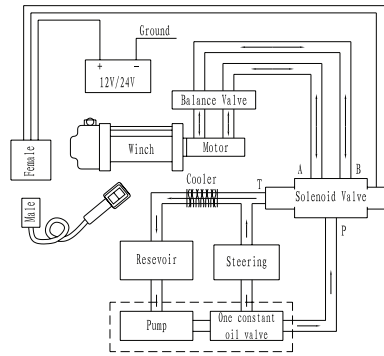
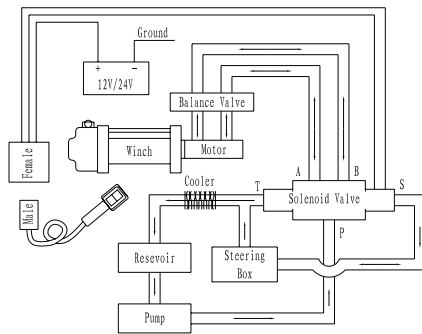
These diagrams show the mounting dimensions for the 8000 - 18000LB. The side and feet mounting hole positions allow the winch to be interchangeable with the most popular 8000 - 18000LB units. The diagram below shows the 8000-18000LB mounted on a flatbed mounting kit with roller fairlead. If you do not use a mounting plate, the surface must be flat within 0.5mm and sufficiently stable to prevent flexing. A minimum of 6.0mm thick steel plate should be used. The thicker the plate, the better the alignment between motor mounting, drum, and gearbox housing. The winch must be mounted securely so the motor mounting, drum, and gearbox housing are accurately aligned. Be sure the winch will not move under load; otherwise, you may cause misalignment in the winch, causing the drum to bind up.

The tie bars supplied with the winch must remain attached when the winch is foot mounted. Angle mounting is possible and recommended for maximum flexibility in mounting. These mounts allow the winch to be low-mounted.

PWYH18000



PWYH11000 With Balance Valve Upwards



PWYH18000 Winch Performance Specification

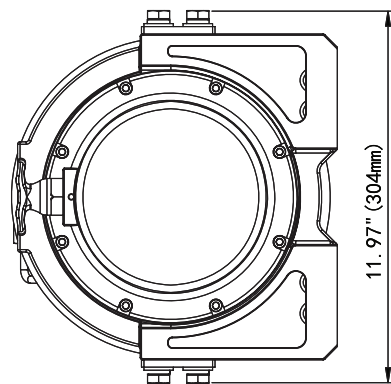
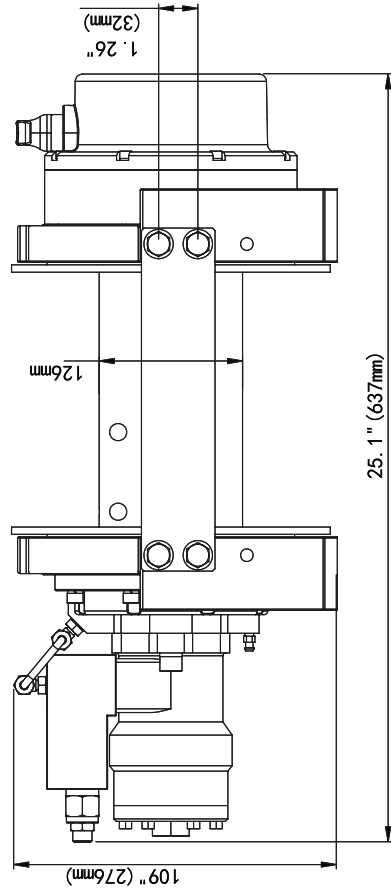
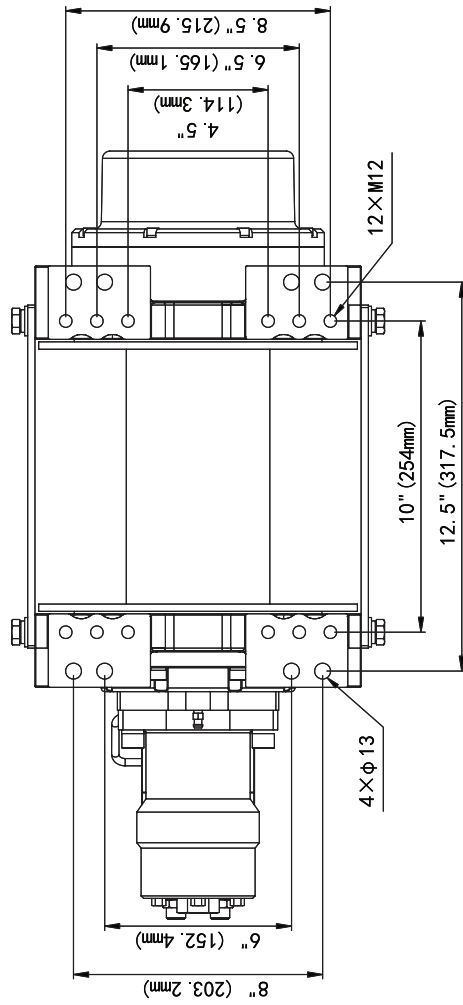
PWYH18000	
Rated line pull	18000 lbs single line
Motor displacement	200 ml/rev
Max. flow	75 l/min
Max pressure	17.5Mpa
Gear Train	2 stage planetary gear
Gear Ratio	17.3:1
Clutch	Cam Clutch
Braking Action	Automatic Hydraulic Brake
Fairlead	4-way roller fairlead (Optional)
Wire rope	35/64: x 98.4'
Drum Size	5" x 8.2"
Dimensions	25.1" x 12" x 10.87"
Bolt pattern	10" x 4.5"
Net Weight	167.4lbs

18000lb winch line pull and pressure difference	
Single line pull	Pressure difference
0/0	8
8000/3632	9
12000/5448	11
15000/6810	14
18000/8172	17

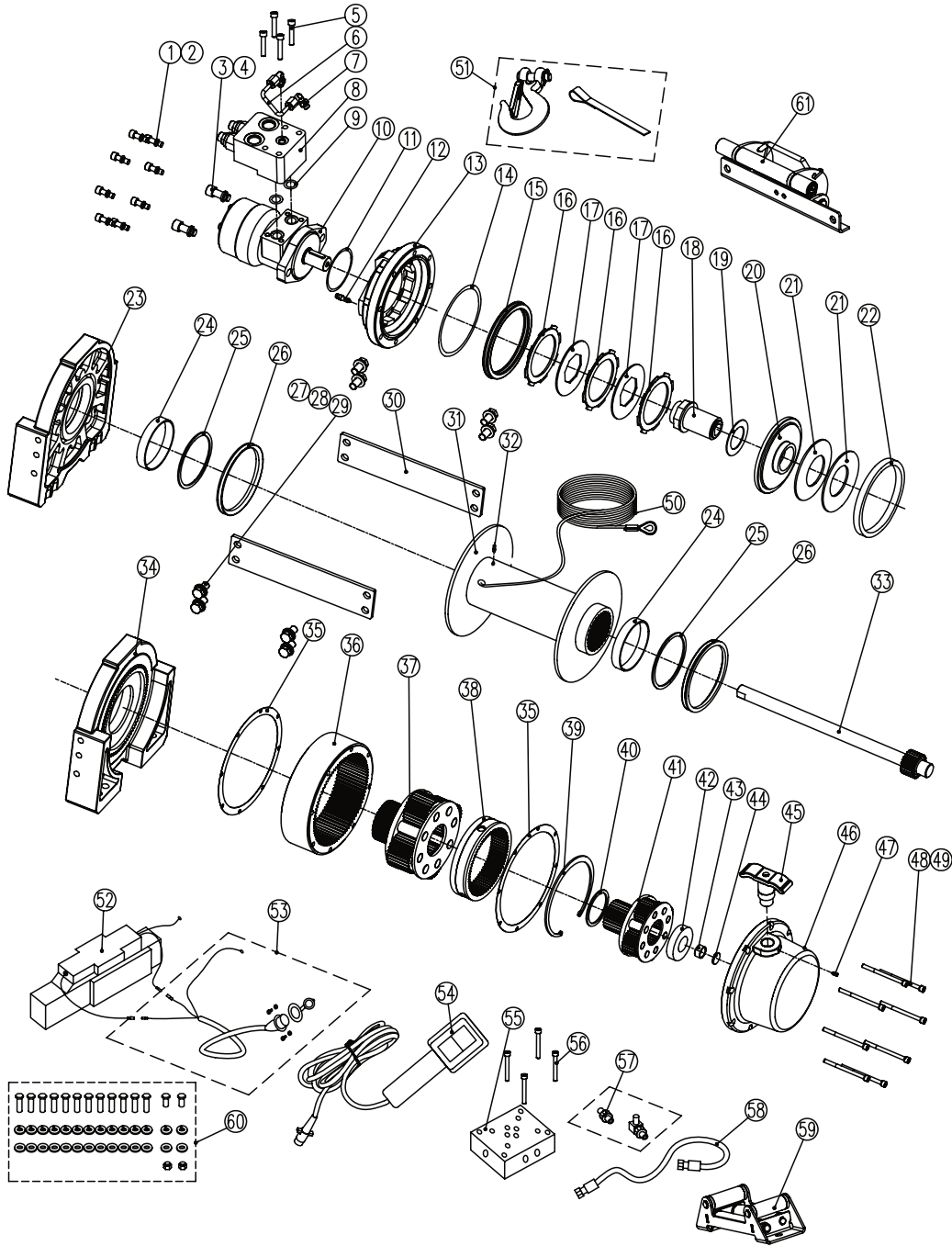
18000lb Winch Line pull and cable capacity			
Layer	Rated line pull	Line Speed	Cable Capacity
1	18000	23	21
2	15000	27	45
3	12875	32	71
4	11250	36	98

No.	Part Name	Qty.
1	Hexagon socket screw	8
2	Hexagon socket screw	8
3	Hexagon socket screw M12X35	2
4	Spring washer 12	2
5	Hexagon socket screw	4
6	U Tube	1
7	Adaptor	2
8	Block Load Control	1
9	O-ring $\Phi 17 \times \Phi 2.65$	2
10	M7 bleed nipple	1
11	Motor mounting plate	1
12	O-ring $\Phi 155 \times \Phi 3.1$	1
13	U-seal	1
14	Stationary disc	3
15	Rotating disc	2
16	Rotor	1
17	Thrust washer	1
18	Pressure plate	1
19	Disc spring	2
20	Supporting Ring	1
21	Motor Frame	1
22	Gasket	2
23	Nylon Washer	2
24	Seal Ring	2
25	Screw M12 x 25	8
26	Spring washer 12	8
27	Plain washer 12	8
28	Tie Bar	2
29	Drum	1
30	Hexagon socket set screws with fat point, M8X8	1
31	1 st stage gear shaft	1
32	Gearbox housing	1
33	Seal	2
34	2nd Stage Gear Ring	1
35	2nd Planetary Gear Assembly	1
36	st Stage Gear Ring	1

No.	Part Name	Qty.
39	Retaining ring for bore,145	1
40	Nylon thrust washer I	1
41	1st planetary gear assembly	1
42	Nylon thrust washer II	1
43	Slide bearing	1
44	Thrust washer	1
45	Clutch assembly	1
46	Gear box frame	1
47	Hexagon socket set screws with fat point, M4X8	1
48	Hexagon socket screw	8
49	Spring washer 6	8
50	Cable	1
51	Hook Assembly and Hand Saver	1
52	Electromagnetic directional valve	1
53	Connector	1
54	Switch	1
55	Valve plate(with block up, seal assemble)	1
56	Hexagon socket screw	4
57	fttings	1ST
58	Plumbing fxtures (1mlong)	4
59	Fairlead	1
60	Fastener	1ST
61	Wire rope tensioner	1



PWYH18000 Winch Assembly Drawing



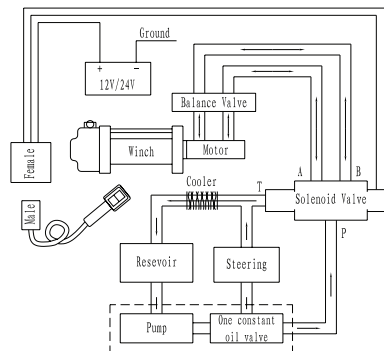
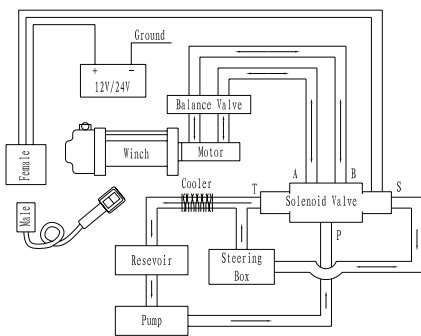
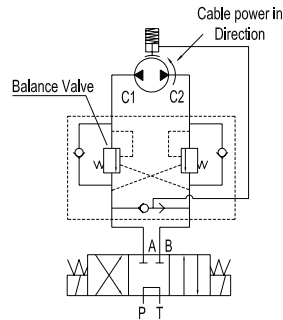
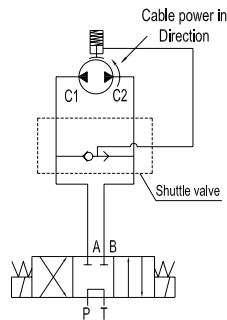
PWYH25000

Working hydraulic principle chart

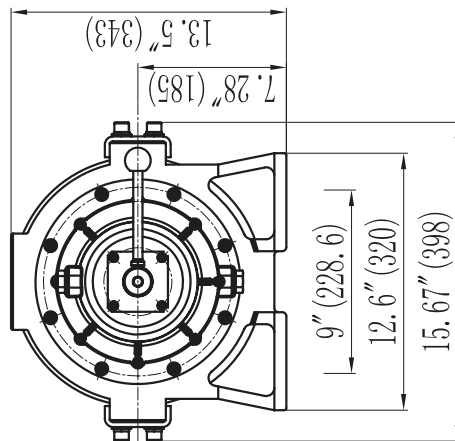
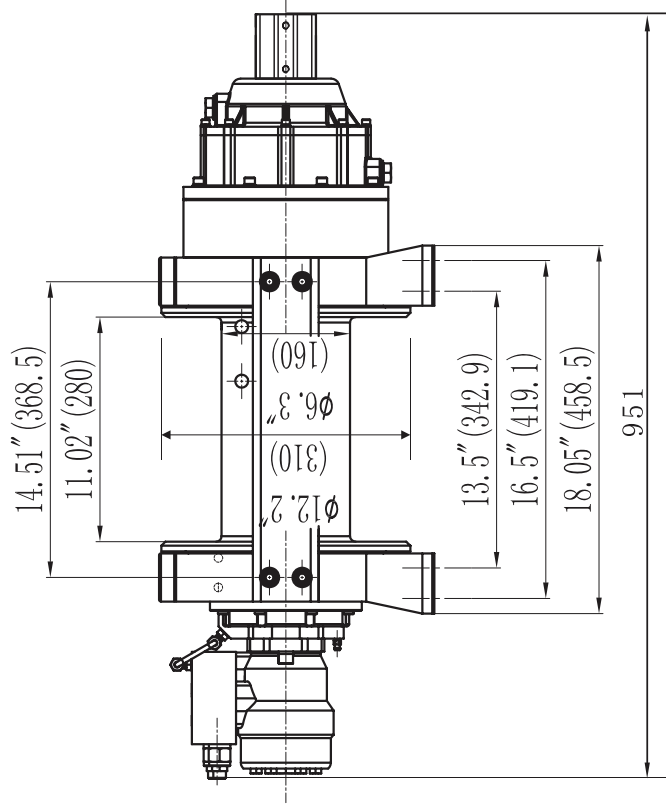
PWYH25000

SYSTEM REQUIREMENTS:
 2000 PSI RELIEF VALVE SETTING
 15 G.P.M. FLOW RATE *
 10 MICRON NORMAL FILTRATION

*Caution: Do not exceed G.P.M. 15 If exceeded, motor and winch may be damaged.



PWYH25000



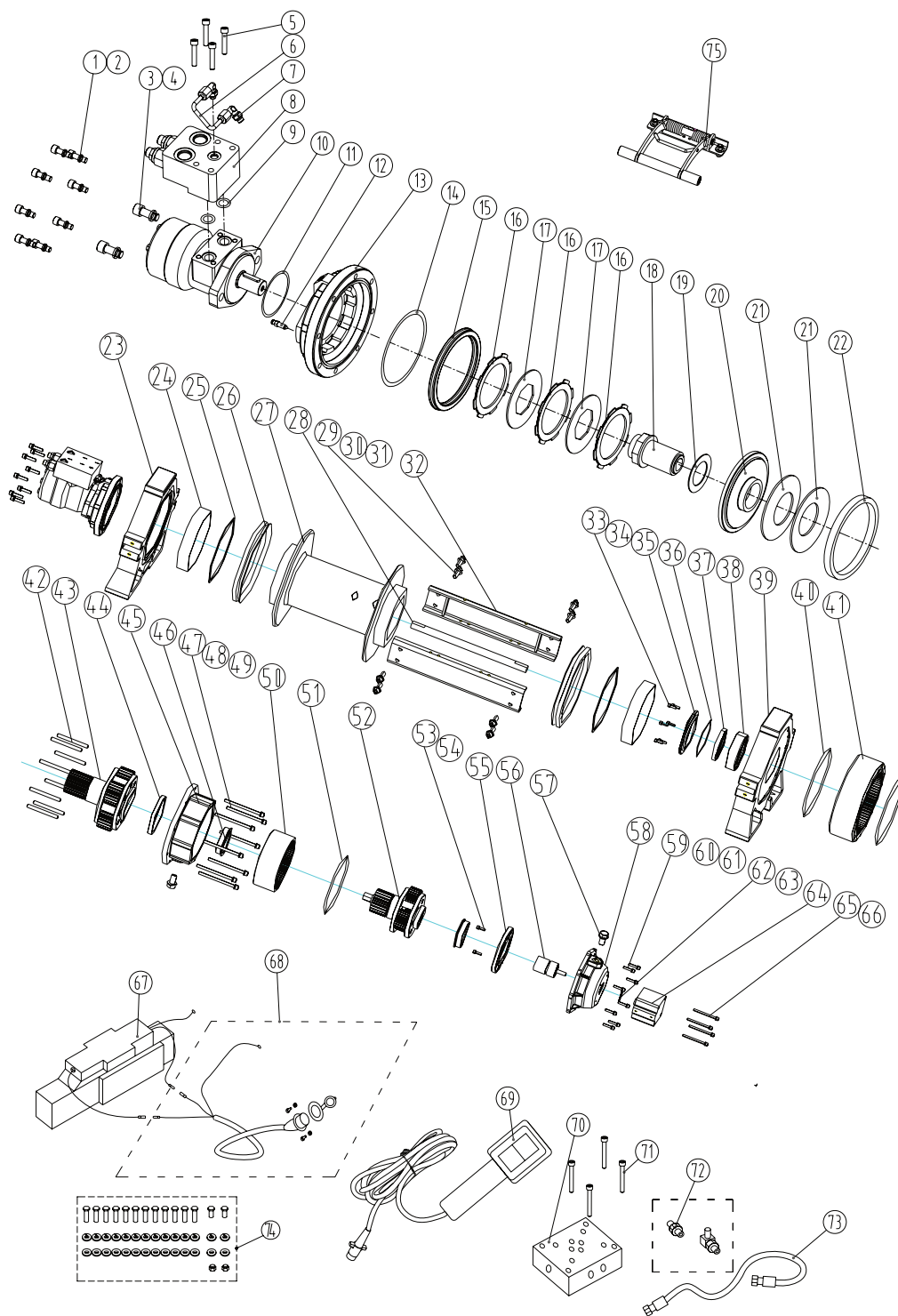
PWYH11000 With Balance Valve Winch Performance Specification

PWYH25000	
Rated line pull	25000 lbs single line
Motor displacement	315ml/rev
Max. flow	75 l/min
Max pressure	16 Mpa
Gear Train	2 stage planetary gear
Gear Ratio	20:1
Clutch	Cam Clutch
Braking Action	Automatic Hydraulic Brake
Fairlead	4-way roller fairlead (Optional)
Wire rope	35/64" x 223'
Drum Size	6.3" x 12.2"
Dimensions	37.1" x 15.67" x 13.5"
Bolt pattern	13.5" x 9"
Net Weight	370lbs

25000lb Winch Line pull and cable capacity			
Layer	Rated line pull	Line Speed	Cable Capacity
1	25000	18	30.8
2	21153	21.3	67.2
3	18333	24.6	109.2
4	16174	27.8	157

25000lb winch line pull and pressure difference	
Single line pull	Pressure difference
0/0	3.5
9341/4237	7
12884/5844	9
17531/7952	12
21856/9914	14.5
25000/11340	17.5

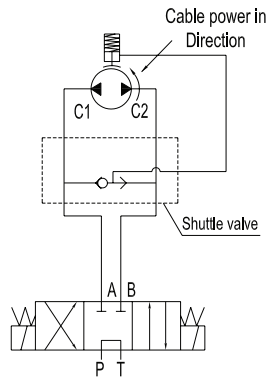
No.	Part Name	Qty.
1	Hydraulic motor	1
2	Valve block	2
3	Brake u-shape oil pipe	2
4	Flaring type adjustable right-angle connector	2
5	Spring washer 12	1
6	Hexagon socket cap screw M12×35	2
7	Flat washer 12	2
8	Brake assembly	2
9	Motor support	1
10	Drum shaft sleeve	1
11	Drum retaining ring	1
12	A shape seal ring	1
13	Hexagon socket cap screw M10×25	6
14	Spring washer 10	8
15	Wire rope tensioner assembly	1
16	Hexagon socket cap screw M10×45	2
17	Drum	1
18	Hexagonal socket screw M8×12	1
19	Right angle iron	1
20	O-ring	1
21	Output ring gear assembly	4
22	2rd stage planetary gear carrier assembly	1
23	2rd stage planetary gear	1
24	1st stage ring gear	3
25	1st stage planetary gear carrier assembly	1
26	1st stage planetary gear	1
27	Sun gear axle	1
28	Gearbox nylon retaining ring	1
29	Freespool knob assembly	3
30	Gearbox housing	1
31	Allen at round head screw M5×12	1
32	Flat washer 5	1
33	Spring washer 5	3
34	Wire rope assembly 12	3
35	Rotatable 3/8" hook	1
36	Hand saver	1



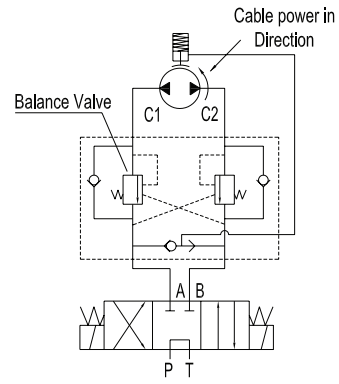
PWYH45000

Working hydraulic principle chart

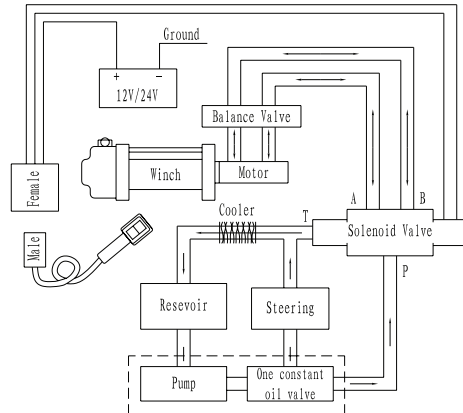
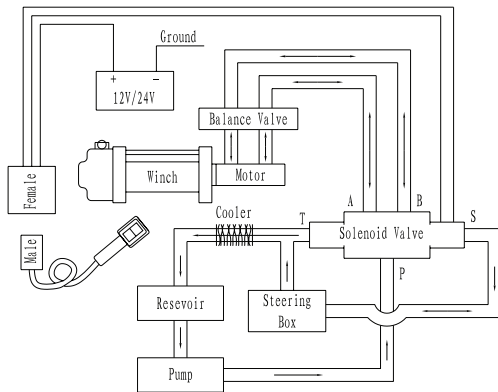
WITHOUT LOAD CONTROL

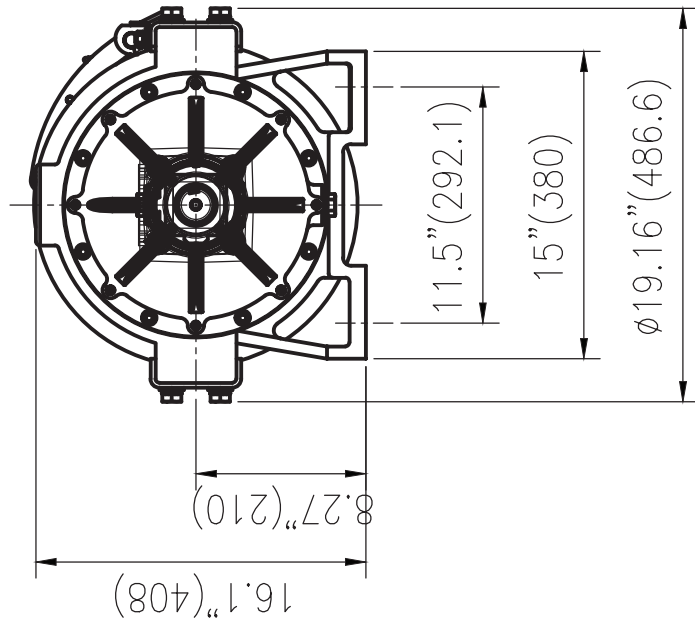
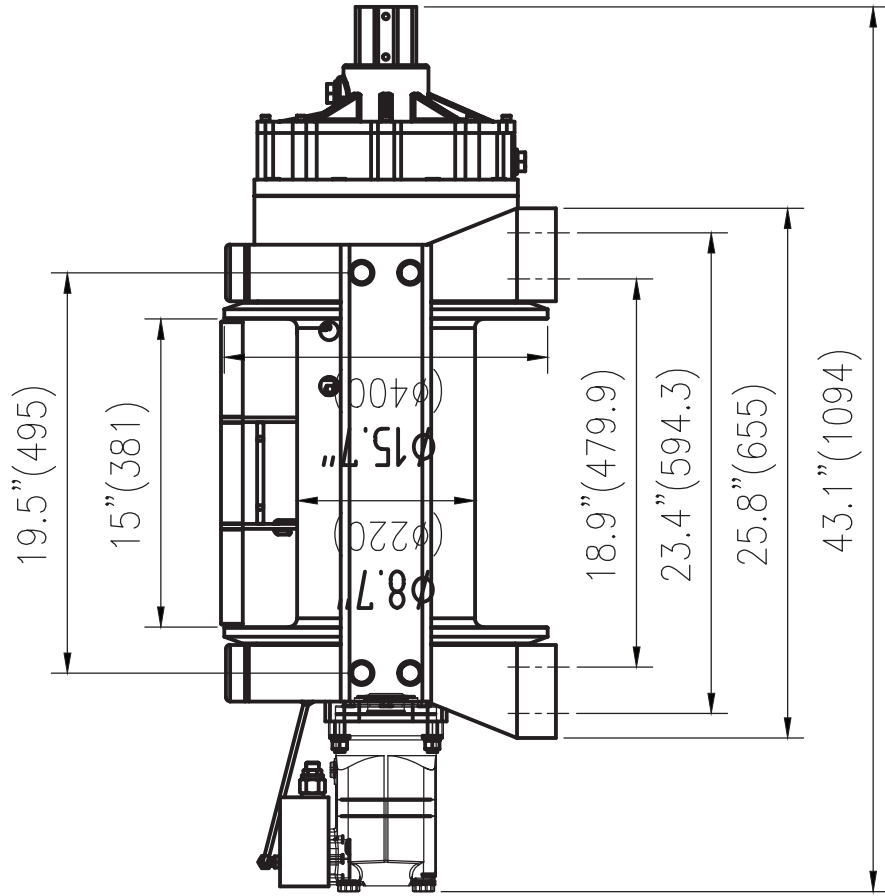


WITH LOAD CONTROL

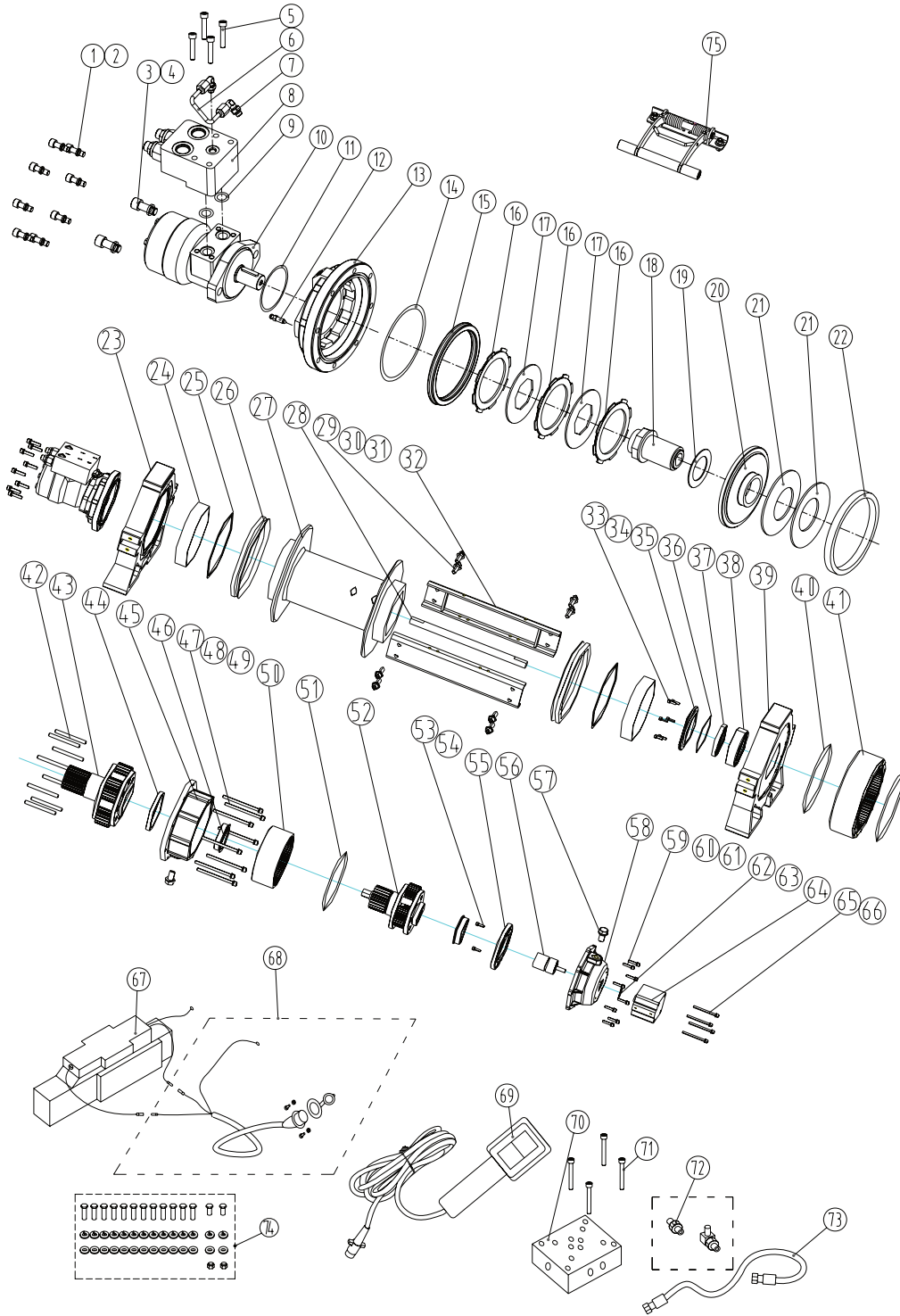


TYPICAL LAYOUT





PWYH45000 Winch Assembly Drawing



PWYH11000 Winch Performance Specification

PWYH45000	
Rated line pull	45000 lbs single line
Motor displacement	500ml/rev
Max. flow	75 l/min
Max pressure	14 Mpa
Gear Train	2 stage planetary gear
Gear Ratio	30.39:1
Clutch	Cam Clutch
Braking Action	Automatic Hydraulic Brake
Fairlead	4-way roller fairlead (Optional)
Wire rope	4/5" x 213'
Drum Size	8.66" x 15"
Dimensions	46.94" x 19.16" x 15.75"
Bolt pattern	18.9" x 11.5"
Net Weight	660lbs

45000lb winch line pull and pressure difference	
Single line pull	Pressure difference
0/0	3
18046/8185	8
30603/13881	10
40000/18144	12
45000/20412	14

45000lb Winch Line pull and cable capacity			
Layer	Rated line pull	Line Speed	Cable Capacity
1	45000	12.4	46.9
2	38571	14.4	101.7
3	33750	16.4	164.3
4	30000	18.7	213

No.	Part Name	Qty.
1	Hexagon socket screw	8
2	Spring washer 8	8
3	Hexagon socket screw M12X35	2
4	Spring washer 12	2
5	Hexagon socket screw	4
6	Utube	1
7	Adaptor	2
8	Block load control	1
9	O-ring $\Phi 17 \times \Phi 2.65$	2
10	Hydraulic motor	1
11	O-ring $\Phi 82 \times \Phi 2.65$	2
12	M7 bleed nipple	1
13	Motor mounting plate	1
14	O-ring $\Phi 155 \times \Phi 3.1$	1
15	U-seal	1
16	Stationary disc	3
17	Rotating disc	2
18	Rotor	1
19	Thrust washer	1
20	Pressure plate	1
21	Disc spring	2
22	Supporting ring	1
23	Hydraulic motor support	1
24	Drum Slide bearing	2
25	V-seal VA-300-N60	2
26	Nylon washer	2
27	Drum assembly	1
28	Hexagon socket set screw with flat point, M8x20	3
29	Hexagon socket cap screws M12x30	8
30	Sring washer $\phi 12$	8
31	Flat washer $\phi 12$	8
32	Drive shaft II	1
33	Tie bar	2
34	Hexagon socket cap screws M8x25	8
35	Sring washer $\phi 8$	8
36	Seals cover plate	1

No.	Part Name	Qty.
37	O-ring $\phi 155 \times \phi 2.55$	1
38	Lip seal B71	1
39	Double row cylindrical roller bearing NN 3019	1
40	Gearbox support	1
41	O-ring $\phi 272 \times \phi 5.3$	2
42	2nd stage ring gear	1
43	Cylindrical pin $\phi 12 \times 90$	8
44	2nd planetary gear assembly	1
45	2nd stage slide bearing	1
46	1st gear box housing	1
47	Cooper gasket 16	2
48	Hexagon headed bolt M16 \times 1.5 \times 20	2
49	1st Slide bearing	2
50	Hexagon socket cap screws M8 \times 100	8
51	Spring washer $\phi 8$	8
52	Flat washer $\phi 8$	8
53	O-ring $\phi 265 \times \phi 2.65$	1
54	1st stage ring gear	1
55	Drive Shaft I	1
56	1st planetary gear assembly	1
57	1st sun wheel assembly	1
58	Back cover	1
59	Hexagon socket cap screw M6 \times 35	8
60	Spring washer $\phi 6$	8
61	Flat washer $\phi 6$	8
62	O-ring $\phi 30 \times \phi 2.65$	1
63	Cylinder $\phi 63 \times 40$	1
64	Hexagon socket cap screws M6 \times 75	4
65	Spring washer 6	4
66	Electromagnetic directional valve	1
67	Connector	1
68	Switch	1
69	Valve plate(with block up, seal assemble)	1
70	Hexagon socket screw	4
71	Fittings	1ST
72	Plumbing fixtures (1mlong)	4
73	Fastener	1ST
74	Wire rope tensioner	1

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