



# 13.5JP Hydraulic Winch Instruction Manual



Assembly & Operating instructions

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# Introduction

JP Hydraulic Winches are our company's newly developed products with a pulling force from 10ton to 40ton.

They are structured by hydraulic motors, normally-closed hydraulic multi-plate brakes, planetary gear reducer mechanisms, reel, and a framework. The hydraulic motors we chose exhibit high mechanical efficiency. With the characteristics of starting torque and low speed, they are able to meet the requirements of converters with different flow rates according to different situations.

Also, valves sets, such as a balancing valve, overload valve, high pressure shuttle valve, speed control valve or other valves, can be directly installed on the oil distributor of the motor according to users' needs.

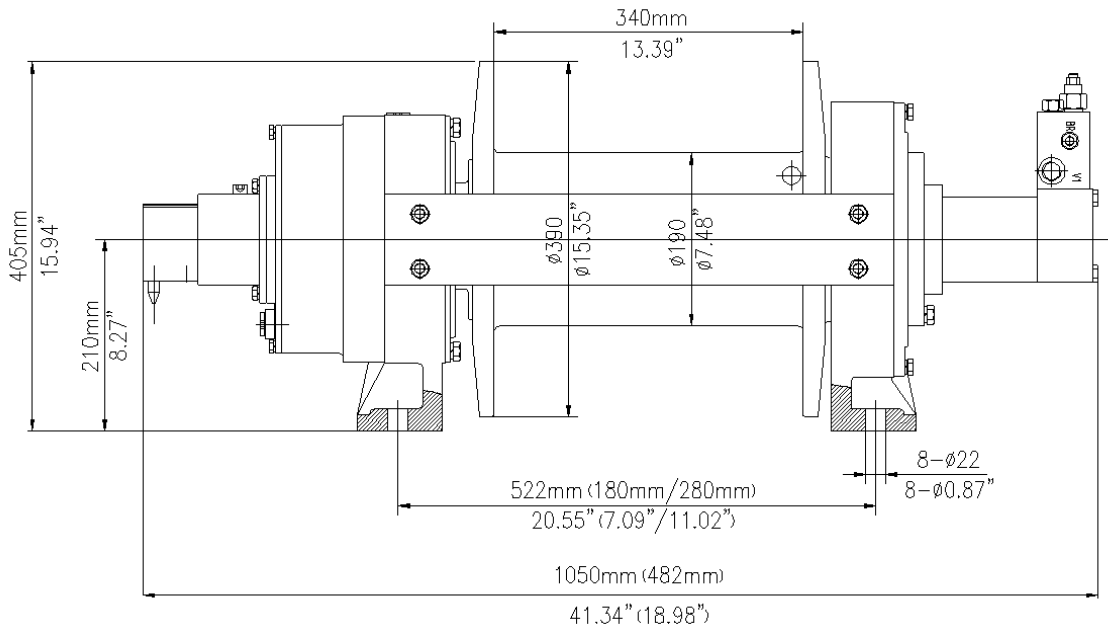
Brake and planetary gear reducer is directly installed on the reel. The reel, carrying shaft, and the rack are designed according to the mechanical requirements, making the overall construction compact but with enough intensity and rigidity.

With its compact structure, small size, low weight, beautiful appearance, and with high security, high efficiency, large starting torque, stability of low speed, low noise, and reliable operation, the JP series of winches has solved the problems of second gliding and chattering of the empty hook found in ordinary winches, providing a stable process of hoisting, descending, and braking.

The integrated valve set installed in the valve plate effectively simplifies the user's hydraulic system.

Due to the above advantages, the JP series of winches are widely used in industries such as shipping, railway, construction machinery, petroleum, geological exploration, and metallurgy etc.

# Technical Parameters



## Appearance

Cable (Dia.× L)	Ø0.71 "×160 FT(Ø18mm×50m)	
Drum size (Dia.× L)	Ø7.48 "×13.39 " (Ø190mm×340 mm)	
Mounting bolt pattern	20.55"×7.09/11.02" 522mm ×180/280mm	8- Ø0.87 " 8- Ø22
Overall dimensions (L×W×H)	41.34"×25.20 "×15.94 " 1050mm ×640mm ×405mm	

## Pull & Speed

Layer of Cable	1	2	3	4	5
Rated Line Pull Per Layer	29700 LBS [135 KN]	25700 LBS [117 KN]	22700 LBS [103 KN]	20500 LBS [93 KN]	18500 LBS [84 KN]
Maximum Line Speed Per Layer	17 FPM [5.17 m/min]	19.36 FPM [5.9 m/min]	22.05 FPM [6.72 m/min]	24.61 FPM [7.50 m/min]	27.17 FPM [8.28 m/min]

## Characteristic

Rated Torque	12500 LBF-FT [17000 Nm]	Wire Rope Capacity	160 FT [50 m]
Wire Rope	Ø18 mm, Optional Item	Design Standard	ISO 4301 & SAE J706
Hydraulic Motor	Sauer Danfoss OMS 200	Hydraulic Operating Pressure	2465 PSI [17 MPa]
Free Spooling Clutch	Pneumatic	Pneumatic Clutch Pressure	0.4 ~ 0.8 MPa
Air Rope Tensioner	Standard Item	Rope Roller Fairlead	Optional Item
Oil	Industrial Gear Oil 220	Oil Capacity	0.2 Gallon [0.8 Liter]
Mounting Bolts	8×M20, Class 10.9	Gross Weight	597 LBS [271 kg]

## Maintenance Precautions

1. Correct and rational use of the hydraulic winch is closely related to the safety of operations, and can effectively increase the life of the hydraulic winch.
2. Spring washers must be added with mounting screws. Mounting screws and wire rope must be inspected for fastening reliability and tightness.
3. Adjust the reversal valve to put the reel in a suitable position and put the wire rope into the hole on the edge of the reel. Then press down the edge of the wire rope with the steel plate and screws, and tighten screws. Start the winch, pull the wire rope back, and making it neat and orderly. At least three circles of wire rope must be maintained on the reel while working, otherwise, the end of rope might come out, causing accident.
4. Pay attention that the wire rope is in order on the reel. The disorder of the wire rope must be avoided.
5. During normal working, the pulling force must be less than the rated one. The overloading capacity, that is, the maximum pulling force of IYJ series winch, which is around 1.25 times of its rated number, is not exceeded, otherwise, the users will be responsible for the damages and accidents.
6. The opening pressure of the balancing valve must be 0.1-0.4Mpa higher than the brake, or the winch will shake when putting it down. Our company has tested hoisting and adjusted balancing

valves for each and every winch before it leaves the factory. Therefore, there is no need for users to adjust it more. But if there are special cases where the users need to adjust it, the users can turn the adjusting screw outward, thus making the opening pressure higher. Turn it the opposite way and it will be reduced.

7. If there is an abnormal pressure increase in the system, the users must stop the machine immediately to check it. Check if the leakage of the oil in the hydraulic motor is normal. Usually, when hydraulic motor works under the load, the leaked oil from the pipe must not surpass 1m/m. Plenty of leakage demonstrates a damaged hydraulic motor, which must be repaired or replaced. Or, if the hydraulic motor is in good condition, check other parts inside the reel.

8. Check the operation of the hydraulic winch and its systems regularly during the work. In case of abnormal temperature rise, leakage, abnormal noise and vibration or pressure fluctuation, the user should stop the machine immediately to check the causes, and overhaul it.

9. Pay attention to the tank's oil and its level. If there is much foam, the users should stop immediately to check whether air leaks from the oil inlet of the hydraulic system or the return oil port below the water, and whether hydraulic oil is emulsified by the entrance of the water.

10. Check quality indicators of hydraulic oil regularly. New oil must be changed if the indicators exceed the rated ones. Do not allow different types of hydraulic to mix otherwise the performance of the hydraulic winch will be affected. Oil replacement cycle varies depending on operating conditions, and the user must monitor this during operation.

11. Put 90 # gear oil into the winch speed reducer before using it, and replace the oil after 100 accumulated working hours. First remove the screw plugs on the reel, then slowly roll the reel to make reel block hole aim at the block hole on the planetary gear reducer. Carefully take the plug out with an Allen Key. Drain all the used oil and add the new oil. Tighten each and every plug.

12. Regularly check the oil filter, which should be cleaned and replaced regularly.

13. Standing under the winch hook is strictly prohibited.

## Overhaul

When the hydraulic winch does not work or where the malfunction is identified and confirmed, the user can check and repair. Under conditions that the user is not able to identify the problem then do not dismantle or attempt repair. Contact our company or ask another professional repair department to overhaul. Be careful when dismantling the machine, do not make scratches or dents on precision parts, especially to prevent the surface of moving and sealed parts from damaging. Repair the damaged parts. Replace those that can't be repaired. Before assembly all parts must be cleaned, and if necessary, coat the parts with lithium grease.

# Lifting and Storage

## Lifting

When lifting, put the wire rope with sufficient tension around the proper position of the reel of the hydraulic winch, and pay attention to how secure and reliable it is fixed.

## Storage

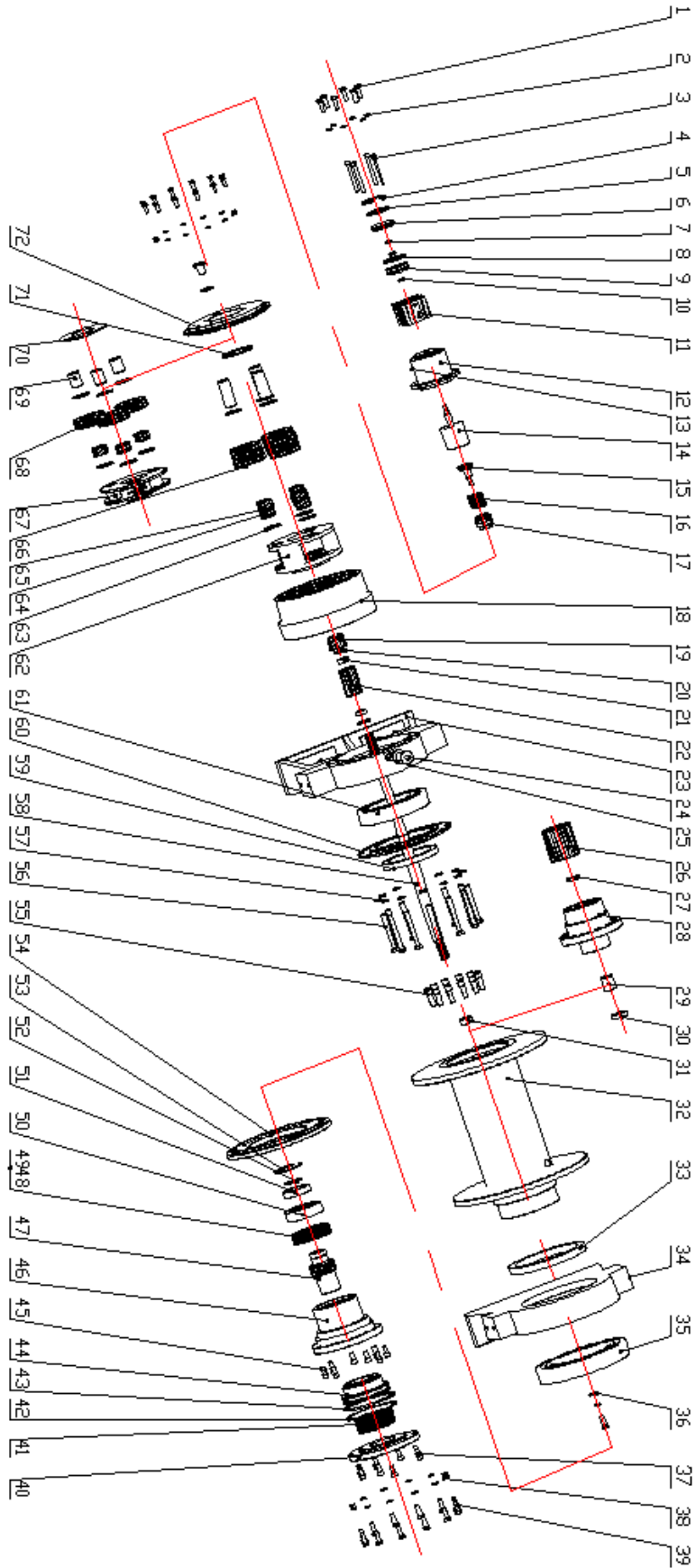
(1) The Hydraulic winch should be stored in the warehouse where the air is dry and with no corrosive gas. Do not put it under high temperature or at a -20 °C environment for long-term storage, in case the aging of sealing parts is accelerated.

(2) If the Hydraulic winch is in long-term storage, the user should drain all the oil from it, and fill the machine fully with Turbine Oil with a low acid value.

## Packing list

- 1.IYJ Hydraulic Winch
- 2.IYJ series Hydraulic Winches Manual
- 3.Manufacturer Certificate
- 4.Test Records of Product (users for special product requirements)

# Explosive View





NO.	Code.	Name.	Count	Remark
1	GB5783-86	Bolt M8*20	6	
2	GB93-87	Gasket 8	6	
3	GB70.1-2000	Screw M12*55	4	
4	GB893.1-86	check ring 65	1	
5	GB3452.1-2005	O-ring 58*2.65	2	
6	IYJ100.1-1	Cylinder cover	1	
7	GB/T6172.1-2000	Nut M10	2	
8	GB3452.1-2005	O-ring 58*2.65	2	
9	IYJ100.1-2	Bib	1	
10	GB3452.1-2005	O-ring 58*2.65	1	
11	IYJ100.1-9B	Cylinder liner	1	
12	IYJ100.1-8	Air vat	1	
13	IYJ100A.4-2	Screw	1	
14	IYJ100A.4-1	Fork	1	
15	IYJ100.1-5	Spring seat	1	
16	IYJ100.1-4	Spring	1	
17	IYJ100A.4-3	linker	1	
18	IYJ100A-2	Gear ring	1	
19	IYJ100A-14	First stage sun gear	1	
20	IYJ100A-12	Cover	2	
21	IYJ100A.1-8	Cover	2	
22	IYJ100A.1-7	Second stage sun gear	1	
23	IYJ100A-10	The left bearing	1	
24	JB1001-77	Ventilate plug screw	2	
25	JB982-77	Gasket 20	2	
26	IYJ100A-11	Driver axle	1	
27	IYJ100A-12	Gasket	1	
28	IYJ100A-11	The middle axle	1	
29	IYJ100A-7	Gasket	1	
30	GB3452.1-85	Oil seal 32x52x8	1	
31	IYJ100A-12	Gasket	1	
32	IYJ100A-4	Drum	1	
33	GB9877.1-86	Oil seal 200*230*15	1	
34	IYJ100A-5	The right bearing	1	
35	GB276-89	Bring 61938	1	
36	IYJ100A-7	Gasket	1	
37	GB70-85	Screw M10*20	8	
38	GB93-87	Gasket 10	13	
39	GB5783-86	Bolt M10*30	13	
40	IYJ100A.3-4	Motor seat	1	
41	Z30A-16	Spring	16	

42	GB3452.1-86	check ring A124*136*2	1	
43	GB3452.1-86	O-ring 120*7	1	
44	IHK3B21E.1-2	Bib	1	
45	GB70-85	Screw M10*30	12	
46	IYJ100A.3-2	Brake cage	1	
47	IYJ100A.3-3	Splined hub	1	
48	HS70K-11	Inner friction disc	6	
49	HS70K-10A	outside friction disc	7	
50	IYJ100A.3-5	Bring seat	1	
51	GB276-89	Bring 61916	1	
52	GB893.1-86	check ring 75	1	
53	JB/ZQ4341-1997	check ring 102*4	1	
54	IYJ100A.3-1	Cover	1	
55	GB70-85	Screw M12*45	20	
56	GB5782-86	Bolt M12*100	12	
57	GB93-87	Gasket 12	12	
58	IYJ100A-6	Driver axle	1	
59	GB9877.1-86	Oil seal 130*160*12	1	
60	IYJ100A-3	Driver axle	1	
61	GB288-87	Bring 3053124	1	
62	IYJ100A.1-2	Second stage planet carrier	1	
63	IYJ100A.1-4	First stage planet gasket	12	
64	GB309-84	Roller 5*21.8	252	
65	IYJ100A-9	Gasket	3	
66	IYJ100A.2-3	Second stage planet gear	3	
67	IYJ100A.1-6	First stage planet carrier	1	
68	IYJ100A.1-3	First stage planet gear	3	
69	IYJ100A.1-2	First stage planet axle	3	
70	IYJ100A.1-1	Gasket	1	
71	IYJ100A-13	Gasket	1	
72	IYJ100A-1	Cover	1	