



20JP Hydraulic Winch Instruction Manual



Assembly & Operating instructions

CONTENTS

| | |
|-------------------------------|---|
| Introduction | 3 |
| Technical Parameters | 4 |
| Appearance | 4 |
| Pull & Speed | 4 |
| Characteristic | 5 |
| Maintenance Precautions | 5 |
| Overhaul..... | 6 |
| Lifting and Storage | 7 |
| Lifting | 7 |
| Storage | 7 |
| Packing list..... | 7 |
| Explosive View..... | 8 |

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.

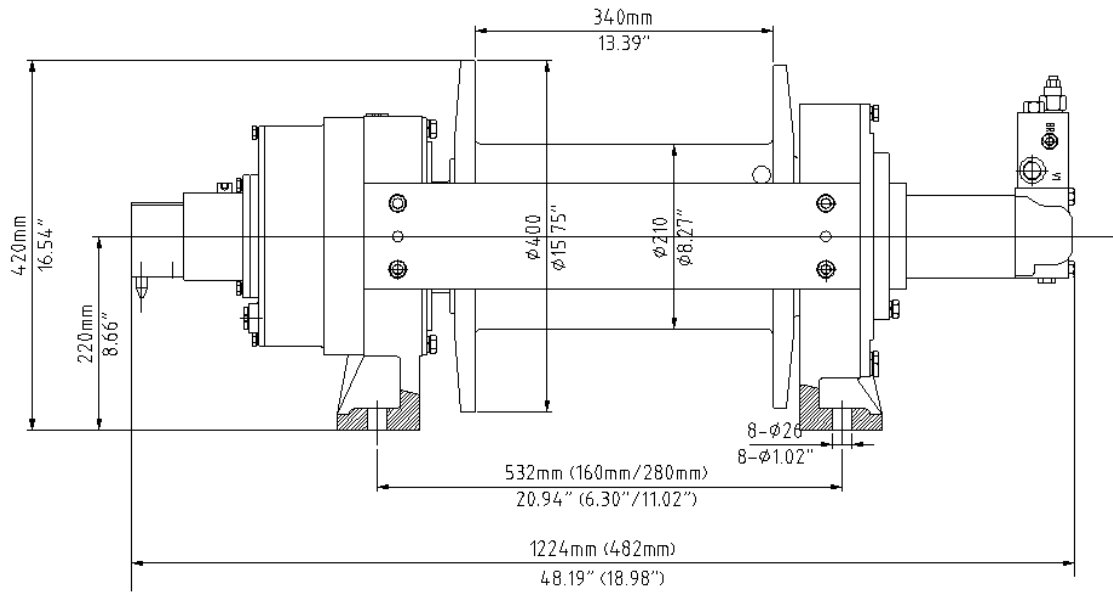
Brake and planetary gear reducer is directly installed on the reel. The reel, carrying shaft, and the rack are designed according to the mechanical requirements, making the overall construction compact but with enough intensity and rigidity.

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) | Ø1.02 "×160 FT(Ø26mm×50m) | |
| Drum size (Dia.× L) | Ø8.27 "×13.39 " (Ø210mm×340 mm) | |
| Mounting bolt pattern | 20.94"×6.30/11.02" | 8- Ø1.02 " |
| | 532mm ×160/280mm | 8- Ø26 |
| Overall dimensions (L×W×H) | 48.19"×25.20"×16.54 " | |
| | 1224mm ×640mm ×420mm | |

Pull & Speed

| Layer of Cable | 1 | 2 | 3 | 4 | 5 |
|------------------------------|------------------------|--------------------------|---------------------------|----------------------------|----------------------------|
| Rated Line Pull Per Layer | 44000 LBS [196 KN] | 36000 LBS [160 KN] | 31000 LBS [138 KN] | 27000 LBS [120 KN] | 24000 LBS [107 KN] |
| Maximum Line Speed Per Layer | 23 FPM [7.01 m/min] | 27.4 FPM [8.35 m/min] | 31.78 FPM [9.69 m/min] | 36.17 FPM [11.02 m/min] | 40.57 FPM [12.37 m/min] |

Characteristic

| | | | |
|----------------------|-------------------------|------------------------------|------------------------|
| Rated Torque | 16500 LBF-FT [22371 Nm] | Wire Rope Capacity | 160 FT [50 m] |
| Wire Rope | Ø26 mm, Optional Item | Design Standard | ISO 4301 & SAE J706 |
| Hydraulic Motor | Sauer Danfoss OMT 310 | 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×M24, Class 10.9 | Gross Weight | 815 LBS [370 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 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 there are 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 the malfunction is confirmed, the user can check and repair. Under conditions that the user is not able to do it, then do not dismantle or 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 seal parts from damaging. Repair the damaged parts. Replace those that can't be repaired. Before assembly all parts must be cleaned, and if necessary, coated the parts with lithium grease.

Lifting and Storage

Lifting

When lifting, put the wire rope with sufficient hardness around the proper position of the reel of the hydraulic winch, and pay attention to fixation and reliability.

Storage

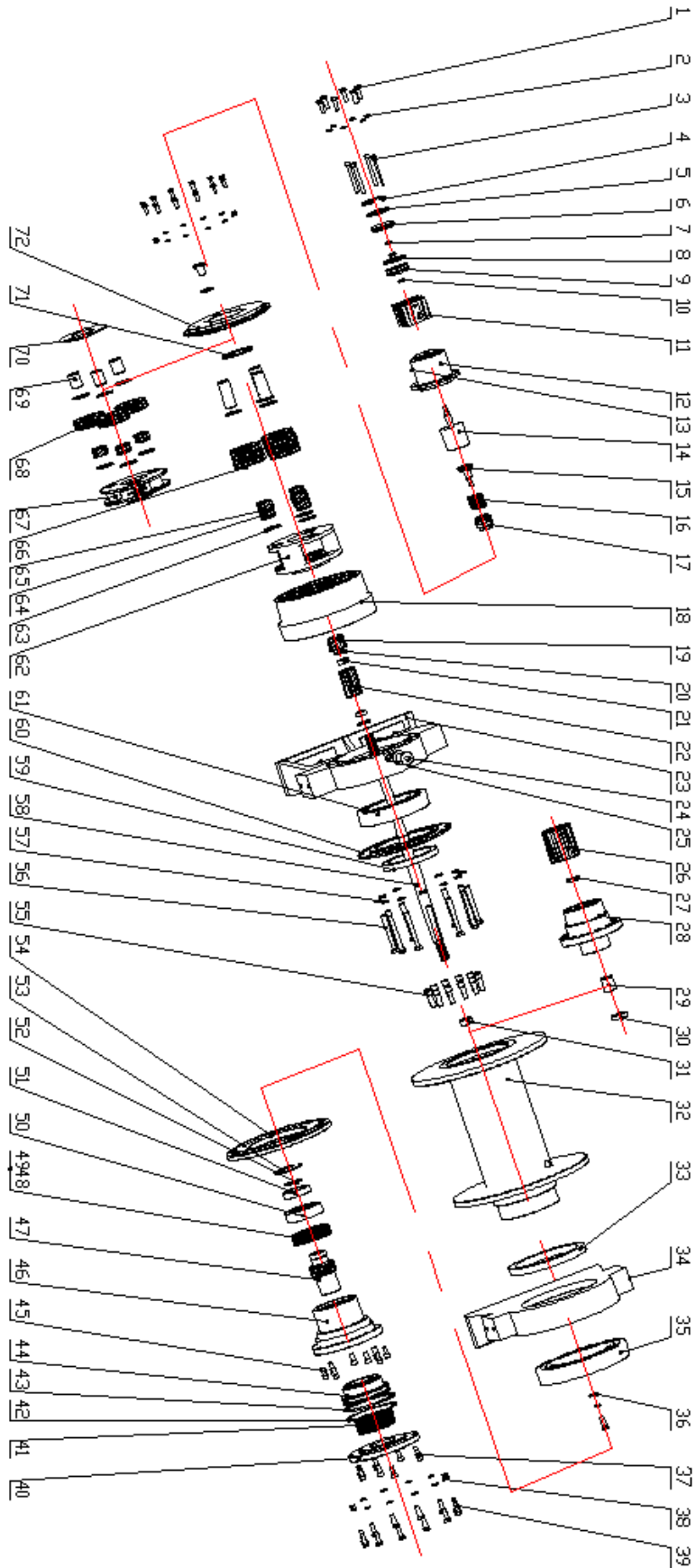
(1) The Hydraulic winch should be stored in the warehouse where the air is dry and no corrosive gas. Do not put it under high temperature or at a -20 °C environment for long-term storage, in case the aging of sealing parts is accelerated.

(2) If the Hydraulic winch is in a 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 | IYJ150.4-2 | Screw | 1 | |
| 14 | IYJ150.4-1 | Fork | 1 | |
| 15 | IYJ100.1-5 | Spring seat | 1 | |
| 16 | IYJ100.1-4 | Spring | 1 | |
| 17 | IYJ200.4-3 | linker | 1 | |
| 18 | IYJ200-2 | Gear ring | 1 | |
| 19 | IYJ200-14 | First stage sun gear | 1 | |
| 20 | IYJ200-12 | Cover | 2 | |
| 21 | IYJ200.1-8 | Cover | 2 | |
| 22 | IYJ200.1-7 | Second stage sun gear | 1 | |
| 23 | IYJ200-10 | The left bearing | 1 | |
| 24 | JB1001-77 | Ventilate plug screw | 2 | |
| 25 | JB982-77 | Gasket 20 | 2 | |
| 26 | IYJ200-11 | Driver axle | 1 | |
| 27 | IYJ150-12 | Gasket | 1 | |
| 28 | IYJ150-11 | The middle axle | 1 | |
| 29 | IYJ200-7 | Gasket | 1 | |
| 30 | GB3452.1-85 | Oil seal 32x52x8 | 1 | |
| 31 | IYJ200-12 | Gasket | 1 | |
| 32 | IYJ200-4 | Drum | 1 | |
| 33 | GB9877.1-86 | Oil seal 200*230*15 | 1 | |
| 34 | IYJ200-5 | The right bearing | 1 | |
| 35 | GB276-89 | Bring 61938 | 1 | |
| 36 | IYJ150-7 | Gasket | 1 | |
| 37 | GB70-85 | Screw M10*20 | 8 | |
| 38 | GB93-87 | Gasket 10 | 13 | |
| 39 | GB5783-86 | Bolt M10*30 | 13 | |
| 40 | IYJ200.3-4 | 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 | IYJ200.3-2 | Brake cage | 1 | |
| 47 | IYJ200.3-3 | Splined hub | 1 | |
| 48 | HS70K-11 | Inner friction disc | 6 | |
| 49 | HS70K-10A | outside friction disc | 7 | |
| 50 | IYJ200.3-5 | 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 | IYJ200.3-1 | Cover | 1 | |
| 55 | GB70-85 | Screw M12*45 | 20 | |
| 56 | GB5782-86 | Bolt M12*100 | 12 | |
| 57 | GB93-87 | Gasket 12 | 12 | |
| 58 | IYJ200-6 | Driver axle | 1 | |
| 59 | GB9877.1-86 | Oil seal 130*160*12 | 1 | |
| 60 | IYJ200-3 | Driver axle | 1 | |
| 61 | GB288-87 | Bring 3053124 | 1 | |
| 62 | IYJ200.1-2 | Second stage planet carrier | 1 | |
| 63 | IYJ200.1-4 | First stage planet gasket | 12 | |
| 64 | GB309-84 | Roller 5*21.8 | 252 | |
| 65 | IYJ200-9 | Gasket | 3 | |
| 66 | IYJ200.2-3 | Second stage planet gear | 3 | |
| 67 | IYJ200.1-6 | First stage planet carrier | 1 | |
| 68 | IYJ200.1-3 | First stage planet gear | 3 | |
| 69 | IYJ200.1-2 | First stage planet axle | 3 | |
| 70 | IYJ200.1-1 | Gasket | 1 | |
| 71 | IYJ200-13 | Gasket | 1 | |
| 72 | IYJ200-1 | Cover | 1 | |