

# 液压绞车使用说明书

Hydraulic Winch Instructions

型号 model: YS 7.0



## 一、概述 Overview

YS 7.0 液压绞车广泛用于船舶, 钻机平台, 打桩机, 拖车, 吊机, 等设备。本产品可随主机长期工作在野外, 其特点为结构紧凑、体积小、重量轻、拉力大、安装简便、维护方便。

YS 7.0 hydraulic winch widely used in boat, drilling machine, pile engine, trailer, crane, etc. This winch can work outside for a long time. The advantage is compact structure, small size, light weight, large pull, easy installation, easy maintenance.

## 二、工作原理及组成 Working principle & composition

YS 7.0 系列液压绞车采用先进的行星少齿差传动, 承载能力远高于涡轮蜗杆副传动 50% 以上, 传动效率提高 50%, 传动平稳, 操作方便。它由行星减速器, 低速大扭矩液压马达、卷筒等部件组成。

YS 7.0 hydraulic winch adopt of advanced planetary gear differential transmission, bearing capacity is much higher than the turbine worm drive more than 50%, transmission efficiency increased by 50%, smooth transmission, easy to operate. It consists of planetary reducer, low-speed high-torque hydraulic motor, mechanical clutch, reel and other components.

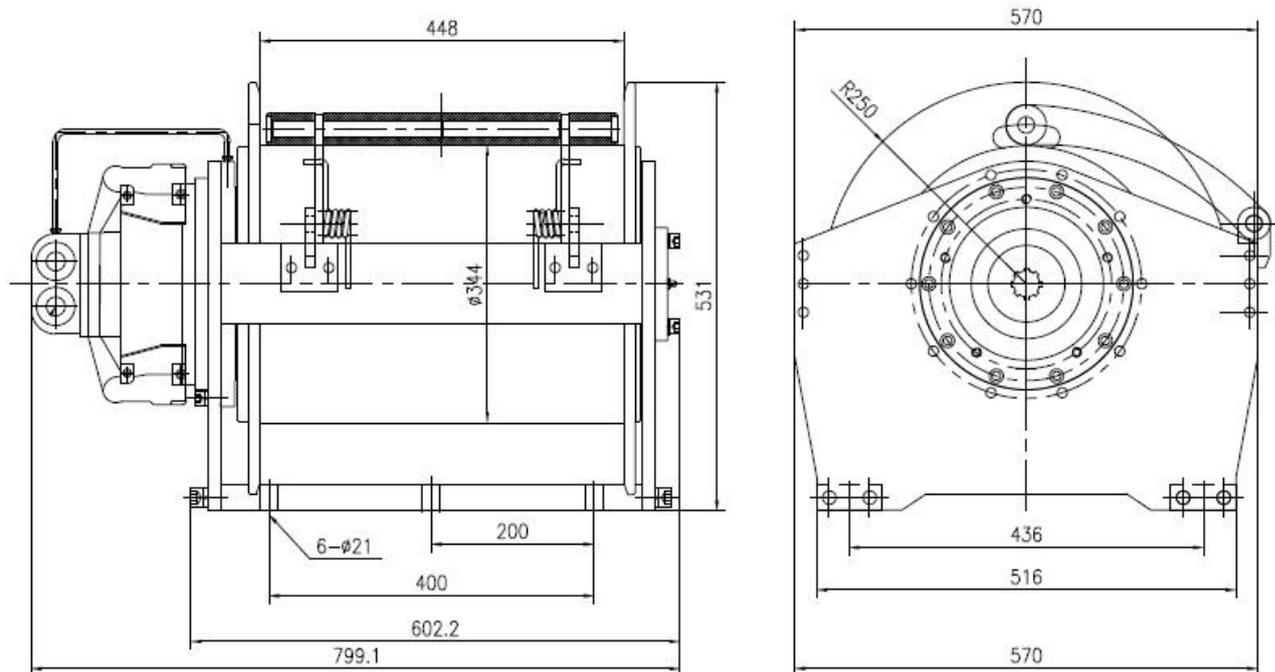
液压传动绞盘由液压马达通过液压系统获得的液压能转变成机械能, 通过行星减速器减速增扭, 在卷筒上产生很大扭矩, 通过缠绕卷筒上的钢丝绳达到拖曳重物之目的。

The hydraulic winch is converted into mechanical energy by the hydraulic motor through the hydraulic system. The motor can be decelerated by the planetary reducer, which produces a great torque on the reel. The purpose of towing the weight is achieved by winding the wire on the reel.

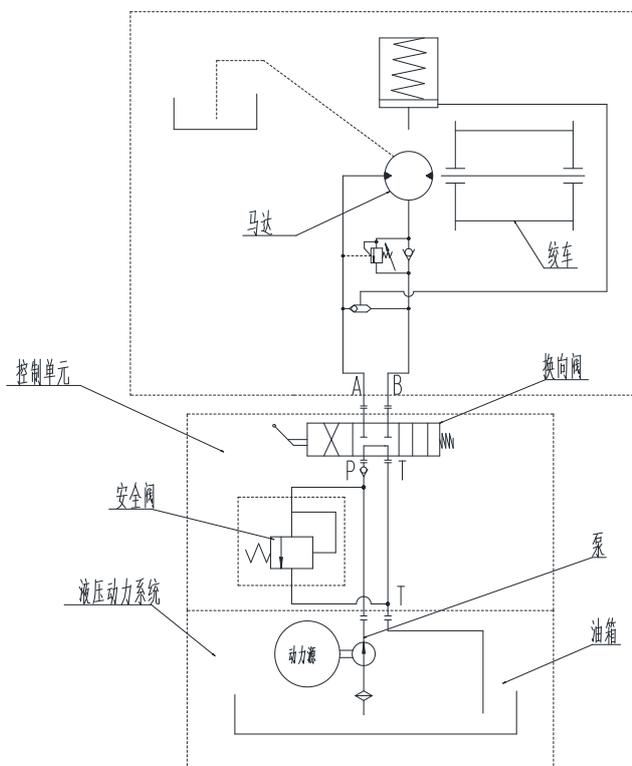
## 三、主要技术参数 The main technical parameters

标定力 (标定) Calibration force (calibration)		KN	70(7t)			
额定载荷 Rated load	钢丝绳层数 wire rope layers		1	2	3	4
	载荷 Load	KN	70(7t)	61(6.1t)	56(5.6t)	52(5.2t)
标定工作速度 Calibration working speed		m/min	4.2 m/min			
液压系统工作压力 Hydraulic system working pressure		Mpa	16			
液压系统工作流量 Hydraulic system working flow		L/min	36			
速比 Speed ratio		i	22.8			
容绳量 Rope capacity		m	80			
钢丝绳缠绕层数 wire rope layers		层 layer	4			
钢丝绳直径 Wire rope diameter		mm	Φ22			
净量 Weight (about)		kg	370			

#### 四、安装尺寸 Installation dimensions



#### 五、液压原理 Hydraulic working principle



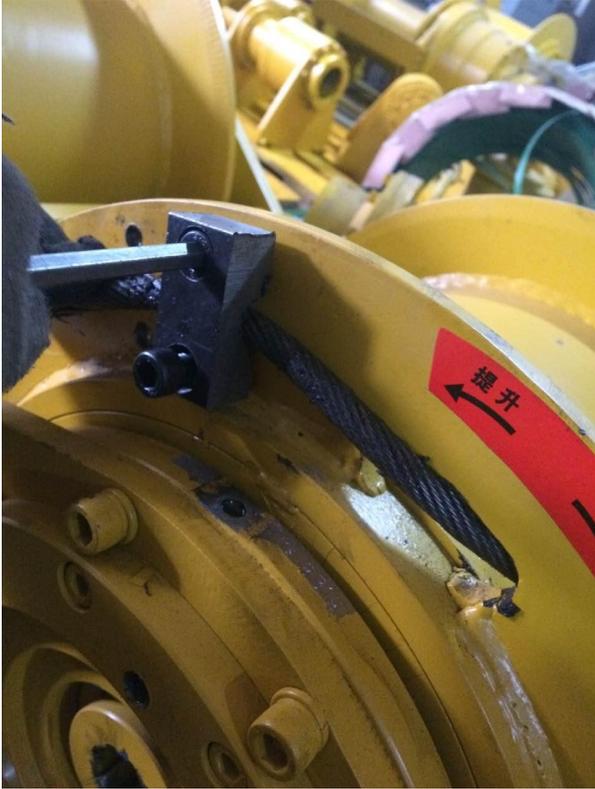
## 六、安装和使用注意事项 Installation & use precautions

1. 安装绞车于主机上，需用机械性能为 10.9 级（GB5782-86）以上强度螺栓固定或者直接焊接。

When installing the winch, the bolt should meet the 10.9 grade (GB5782-86), Or directly welding on boat/machine

2. 缠绕钢丝绳时，将绳头装入绞车卷筒绳孔内，然后拧紧螺钉，并处于收绳工况，人工缠绕 4~5 圈后，加载 5~10kN 力把钢丝绳缠紧。

How to wrap the rope on the drum? Put the rope end into the rope hole on the drum and tighten the screw. (see the picture below) After 4 to 5 turns of manual winding, load 5 to 10 kN to tighten the wire rope.



3. 使用时，液压系统的压力，流量应满足主要技术参数中的要求。

The hydraulic system pressure and flow should meet the winch requirements .

4. 液压系统的滤油器过滤精度不低于 25um，以保证系统的清洁度。

Hydraulic system filter should not less than 25um to ensure the cleanliness of the system.

5. 本液压绞盘不为载人提升而设计。

The hydraulic winch is not designed for lifting person.

6. 禁止使用不安全钢丝绳，钢丝绳报废应参考 GB5972-86。

Prohibit use unsafe wire rope, wire rope should be used to refer to GB5972-86

7. 使用时，钢丝绳应有 3-4 圈缠绕在卷筒上，不能全部释放。

For safety reasons, keep the drum at least 3 to 4 turns of wire rope.

## 七、维护保养 Maintenance

1. 每三个月或 300 次工作循环应加注减速箱的锂基油脂，保证活塞良好润滑。

Each 3 months or 300 times the working cycle should be filled with the gear box of lithium-based grease to ensure good lubrication of the piston.

2. 检查绞车各部位有否漏油现象，若有漏油及时拧紧螺塞及更换密封件。

Check the winch all the part, and if the winch have oil spill ,tighten the plug or renew the oil seal.

3. 绞车安装螺栓不应松动，经常检查并给予拧紧。

Winch mounting bolts should not be loosened, often checked and tighten.

## 八、常见故障与排除 Common faults & exclusions

故障表现 Fault performance	原因分析 Cause Analysis	解决方案 Solution
<p>液压马达不转 The hydraulic motor does not turn</p>	<p>—— 液压系统压力不足 Hydraulic system pressure is insufficient</p> <p>—— 液压油路安装有误 Hydraulic circuit installation is wrong</p> <p>—— 没有油进入马达 No oil into the motor</p>	<p>—— 检查安全阀调节压力 Check the safety valve to adjust the pressure</p> <p>—— 根据液压原理图检修 According to hydraulic principle to overhaul</p> <p>—— 检查方向控制阀 Check the direction control valve</p>
<p>绞车转动缓慢、爬行或震动 The winch rotary slowly, crawling or shaking</p>	<p>—— 系统压力不足 System pressure is insufficient</p> <p>—— 系统流量小, 马达供油不足 System flow is small, the motor is insufficient</p>	<p>—— 更换动力源或液压泵 Replace the power source or hydraulic pump</p> <p>—— 检查油箱油量, 及时补充液压油 Check the fuel tank, timely replenishment of hydraulic oil</p>
<p>绞车制动失效 Winch brake failure</p>	<p>—— 制动装置摩擦片磨损故障 Brake device friction plate wear failure</p> <p>—— 制动器液压腔内有异物 have dirty things in the hydraulic brake</p>	<p>—— 更换摩擦片 Replace the friction plate</p> <p>—— 清理制动装置 Clean the brake</p>
<p>马达转动正常但绞车不转、绞车转动困难并产生很大异响 The motor turns normal but the winch does not turn, or the winch turns hard and produces a loud noise</p>	<p>—— 系统压力小制动器开启不完全 System pressure small brake is not fully open</p> <p>—— 制动装置漏油 The brake is oily</p> <p>—— 离合器没有闭合 The clutch is not closed</p>	<p>—— 增加系统压力 Increase system pressure</p> <p>—— 更换制动器密封件 Replace the brake seal</p> <p>—— 闭合离合装置 Closed clutch device</p>
<p>空负荷运转正常带负荷后速度变慢或停车 The empty load is running normally with the load slowing down or stopping</p>	<p>—— 管路泄漏 Pipeline leaks</p> <p>—— 马达内泄 The motor is vented</p> <p>—— 安全阀调节压力过低 Safety valve adjustment pressure is too low</p>	<p>—— 检修管路 Overhaul piping</p> <p>—— 更换马达 Replace the motor</p> <p>—— 调高安全阀压力 Increase the safety valve pressure</p>
<p>绞车运转时马达摆动或绞车侧板摆动 When the winch is running, the motor shakes or winch side plate shakes</p>	<p>—— 行星减速机构故障 Planetary gear reducer failure</p> <p>—— 连轴套与马达输出轴联接故障 The connection between the sleeve and the motor output shaft is faulty</p>	<p>—— 清理检修 Clean up maintenance</p> <p>—— 检修 Overhaul</p>