

# Operation Instruction Hydraulic Herculean Puller



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# Operation Instruction

## Hydraulic Herculean Puller

This handbook is an integrating part of the machine, and must be carefully read in full, before accomplishing every operation. It must be kept in case of future references, until getting rid of the machine.

The handbook is addressed to professional users; it reflects the state of the technique at the moment of the commercialization of the machine, and cannot be considered inadequate just because on the ground of new experience it will be afterwards up-to-date.

WREN CO. declines every responsibilities due to the following situations;

- improper use of the machine or its use by not professional operators;
- wrong installation;
- wrong feeding;
- absences in maintenance;
- alterations or interventions not authorized by the manufacturer;
- employment of not original parts, or not suitable for the model.

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### IMPORTANT INSTRUCTIONS ON RECEIPT

Always inspect the packages and all the material received, this to verify possible damages happened during the transport; in this case make a complaint to the transport company.

### INFORMATION ABOUT THE RISKS RESULTING FROM THE OF THE PRODUCT



This is the symbol of danger. Every time you meet this symbol it means that damages more or less serious towards persons, animals and things are possible. The kind of danger and the precautions to adopt in order to contain the relative risks are every time quoted in the text following the symbol.



**DANGER:** EVERY TIME THIS WARNING IS IGNORED, IT EXISTS A MINOR RISK FOR PERSONS' AND ANIMALS' SECURITY AND/OR DAMAGES TO THINGS.



**WARNING:** EVERY TIME THIS WARNING IS IGNORED, IT EXISTS A MINOR RISK FOR PERSONS' AND ANIMALS' SECURITY AND/OR DAMAGES TO THINGS.

**The user is requested to follow always and carefully these precautions. The manufacturer declines every responsibilities and wounds resulting from an improper use of the product.**

### SAFETY ISSUES

Hydraulic Herculean Puller is a power tool. Operators must read and understand all safety precautions and operation instructions included with the puller, electric pump, and cylinder before using the puller.

#### SAFETY FIRST

▲ **WARNING:** To avoid personal injury and possible equipment damage,

- Be sure that every components of the hydraulic system are designed for a max. pressure of 700bar (10,000 psi)

- Never rely on this puller to support, carry, or transport the workpiece being pulled.
- The following procedures should only be performed by qualified, trained personnel who are familiar with this equipment.
- Safety glasses must be worn at all times by the puller operator and anyone within sight of the puller. Locate the puller in an isolated area or shield it to minimize danger to others.
- The owner of this tool must ensure that all safety-related decals are installed, maintained and replaced if they become hard to read.
- Do not exceed equipment ratings. Try to minimize the danger of overloading. Overloading causes equipment failure and possible personal injury.
- The pressure gauge is installed in the system to monitor operating pressure. It is your window to what happening in the system.
- Immediately replace worn or damaged parts by genuine WREN parts.
- Keep hydraulic equipment away from flames, heat, sharp edge, and chemical corrosion
- To avoid personal injury and possible equipment damage, NEVER get rid of the protective device installed on the puller. Do not dismount any components of the puller without WREN's permission. Do not readjust the safety valve of the cylinder.
- Never stand to each side of the puller in case of personal injury in system operation.

## HOSES

- should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the pump. Never grasp a leaking pressurized hose with your hands.
- Avoid damaging hydraulic hose. Avoid sharp bends and kinks when routing hydraulic hoses. Using a bent or kinked hose will cause severe backpressure. Sharp bends and kinks will internally damage the hose leading to premature hose failure.
- Do not drop heavy objects on hose. A sharp impact may cause internal damage to hose wire strands. Applying pressure to a damage hose may cause it to rupture.
- Do not subject the hose to potential hazard, such as fire, sharp surfaces, heavy impact, or extreme heat or cold. Do not allow the hose to kink, twist, curl, or bend so tightly that the oil flow within the hose is blocked or reduced. Periodically inspect the hose for wear, because any of these conditions can damage the hose and possibly result in personal injury.
- Do not use the hose to move attached equipment. Stress can damage the hose and possibly cause personal injury.
- Hose material and coupler seals must be compatible with the hydraulic fluid used. Hoses also must not come in contact with corrosive material such as creosote-impregnated objects and some paints. Consult the manufacturer before painting a hose. Never paint a coupler. Hose deterioration due to toxic materials can result in personal injury.

## 4. PUMP

- Do not exceed the PSI hydraulic pressure rating noted on the pump nameplate or tamper with the internal high pressure relief valve. Creating pressure beyond rated capacities can result in personal injury.
- Retract the system before adding oil to prevent overfilling the pump reservoir. An overfill can cause personal injury due to excess reservoir pressure created when cylinders are retracted.

## PULLER

- align the puller on the same centerline as the part being removed.  
Failure to align parts correctly can result in a dangerous operating situation because of the high hydraulic pressure used.

- Adjust the puller jaws equally to make flat and square contact with the part being removed.
- The safety chain must be tightly attached to the jaw pin hooks before pressure is applied.

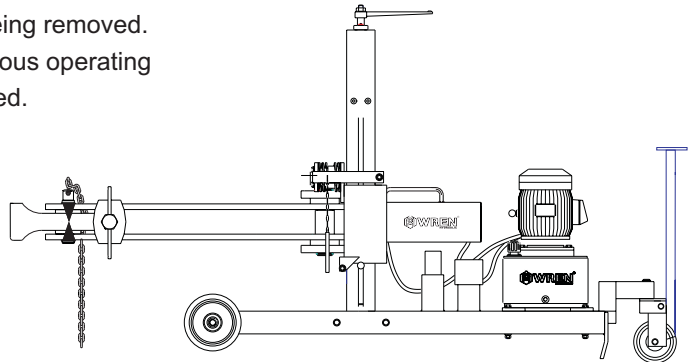


FIGURE 1

- Stand behind and to one side of the puller when applying pressure.
- Do not try to pull components that are thicker than 12 or require the jaw to be opened to more than 48° or less than 15°.

## Description of LA25100 (LA2560) Hydraulic Herculean Puller

WREN's LA25100 Hydraulic Herculean Puller is made from High Strength Alloy Steel. Two acting hydraulic design controlled by remote hand switch. This puller is used for dismounting bearings, couplings, spindle sleeves and other large sized parts.

Cart's swivel casters give ease of mobility.

Caution: Do not do any alteration on design, configuration and application of the tool without authorization.

## OPERATION

VERTICAL SET-UP : See Figure 2

The head and pulling jaw assembly on this puller is designed to compensate for some degree of error in a job set-up. The puller head is spring-loaded, permitting 7° flexibility in upward movement and 3° flexibility in downward movement. Note: Because of this feature, the head and puller jaw assembly may rest at a slight upward angle.

1. Adjust vertical set-up by using the crank handle shown in Figure 2. the centerline of the object being pulled must be on the same centerline as the puller head. Note: Because of spring loading, you may have to turn the crank handle several times before the head starts moving.

2. Align the puller horizontally and vertically as close as possible to the same centerline as the object to be pulled. The head cannot compensate for poor alignment.

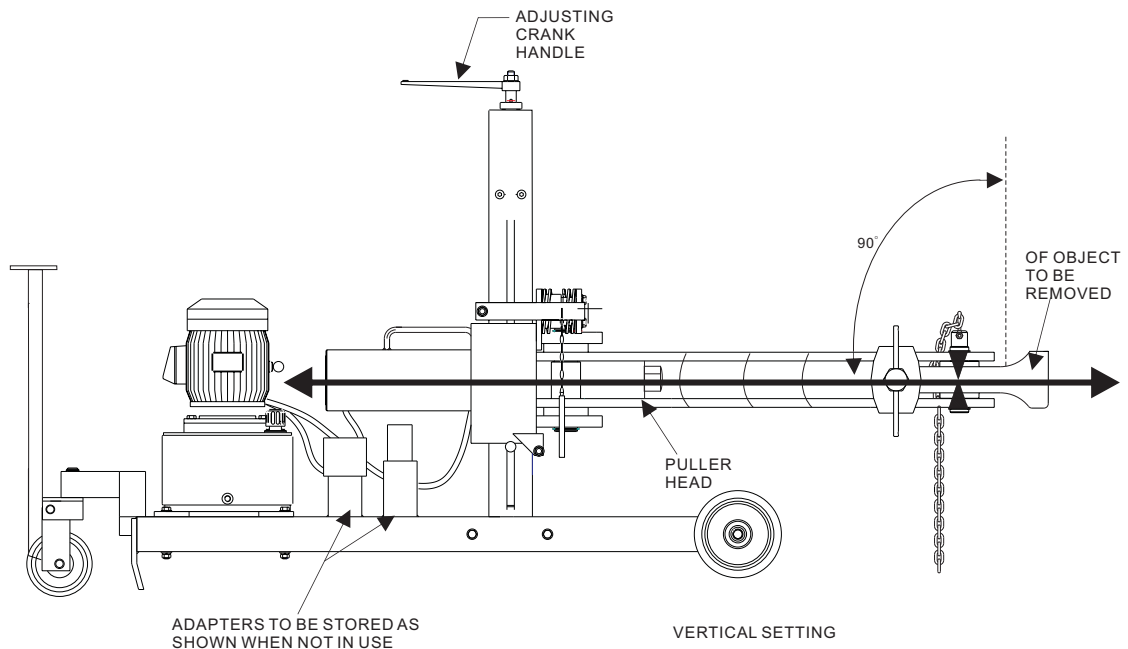


FIGURE 2

## HORIZONTAL SET-UP: See Figure 3

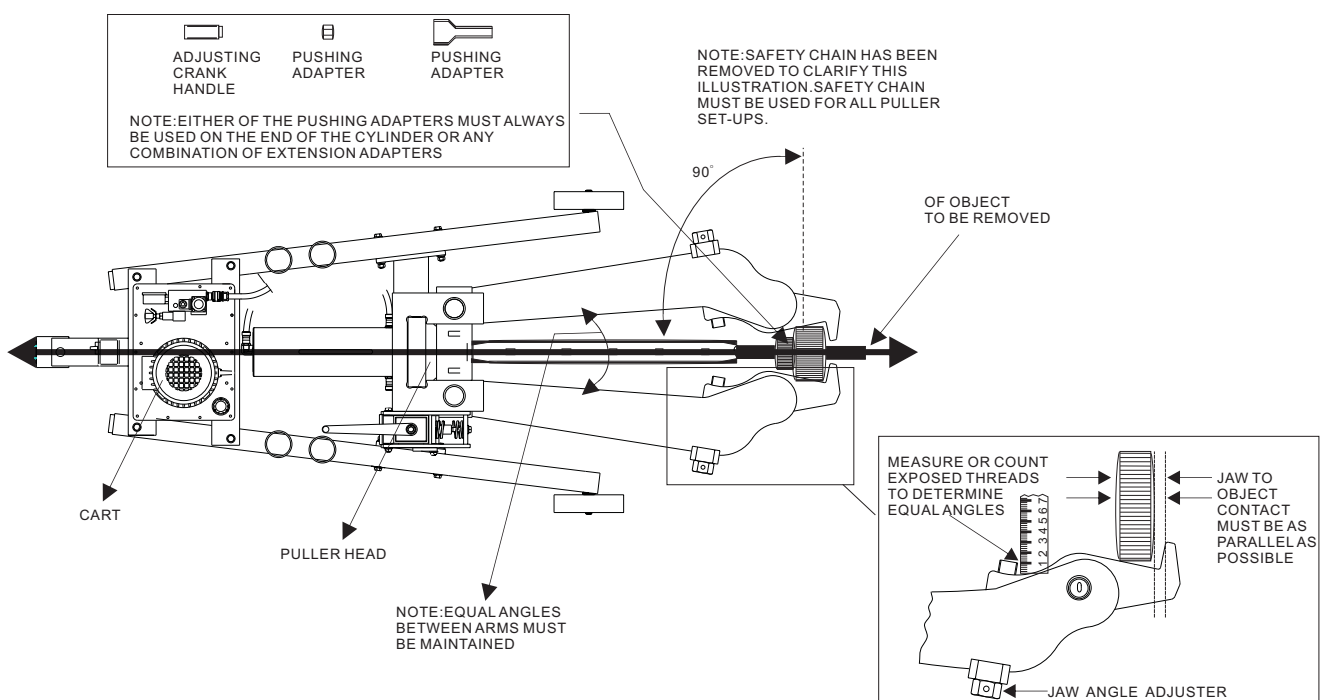
1. Adjust the horizontal by positioning the puller cart as shown in Figure 3. The centerline of the object being removed must be at a  $90^\circ$  angle to the flat surface of the jaw and on the same centerline as the puller cart and the puller head.

## JAW and ARM ADJUSTMENT: See Figure 3 Insert

**WARNING:** To help prevent personal injury, do NOT apply hydraulic pressure to the object being pulled until the angles of the jaw are set equally.

1. Move the puller arms inward to a minimum width of  $15^\circ$  or outward to a maximum width of  $48^\circ$ . In all adjustments with the arms, maintain equal angles between the arms as shown in the Figure 3 insert. Note: If the jaw contact area is flat and even on the object being pulled, an equal amount of threads visible on each screw shaft would indicate an equal angle between both arms.

2. The puller jaw must also be aligned to establish maximum jaw contact that is as parallel as possible whenever the setting of the arms is changed.



## EXTENSION ADAPTERS: See Figure 4

Extension adapters serve as spacers between the cylinder and the shaft of the object to be pulled.

Note: Use a pushing adapter on the end of the cylinder or on the end of any combination of extension adapters. When using extension adapters, there may be sagging away from the centerline as adapters are fitting together.

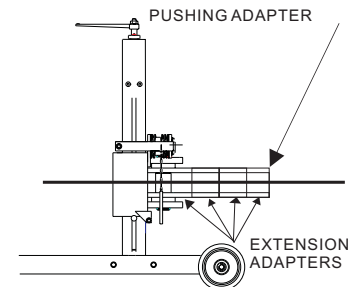


FIGURE 4

To correct the alignment, use the following procedure:

1. Before applying hydraulic pressure to an object, lift the pushing adapter to position it on the common centerline of the object being pulled and the puller head.
2. Lightly apply hydraulic pressure to hold the pushing adapter in position. Check the alignment. All adapters must be in a straight line at 90° angle to the object being pulled.
3. When not in use, store extension adapters on the puller cart as shown in Figure 1

## SAFETY CHAIN: See Figure 5

1. Use the safety chain at all times with this puller. The puller arms must be hooked and checked before hydraulic pressure is applied to the object being pulled.

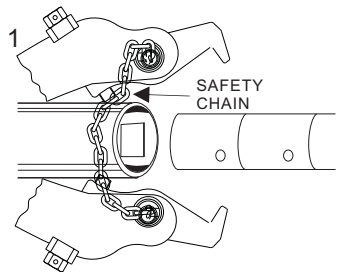


FIGURE 5

## LIFTING INSTRUCTIONS: See Figure 6

**▲WARNING:** To help prevent personal injury, the following steps must be performed if it is necessary to lift the entire 100 ton puller assembly. The cotterless hitch pin prevents the entire puller head and jaws assembly from coming off the tube upright.

1. Lower the puller head and jaw assembly until it is resting on the base.
2. Insert the cotterless hitch pin into the hole located on the tube upright above the lowered head and jaw assembly.
3. Hook the crane to the lifting hook located near the head of the puller jaw assembly.

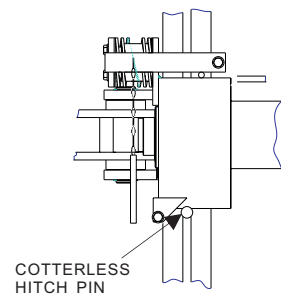


FIGURE 6

## GENERAL MAINTENANCE

1. Regularly grease the acme screw, wheel zerks, all pivoting pins and the side of the upright tube.
2. Regularly check the jaw pins for signs of excessive wear.
3. Regularly check the tightness of all nuts and bolts.



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