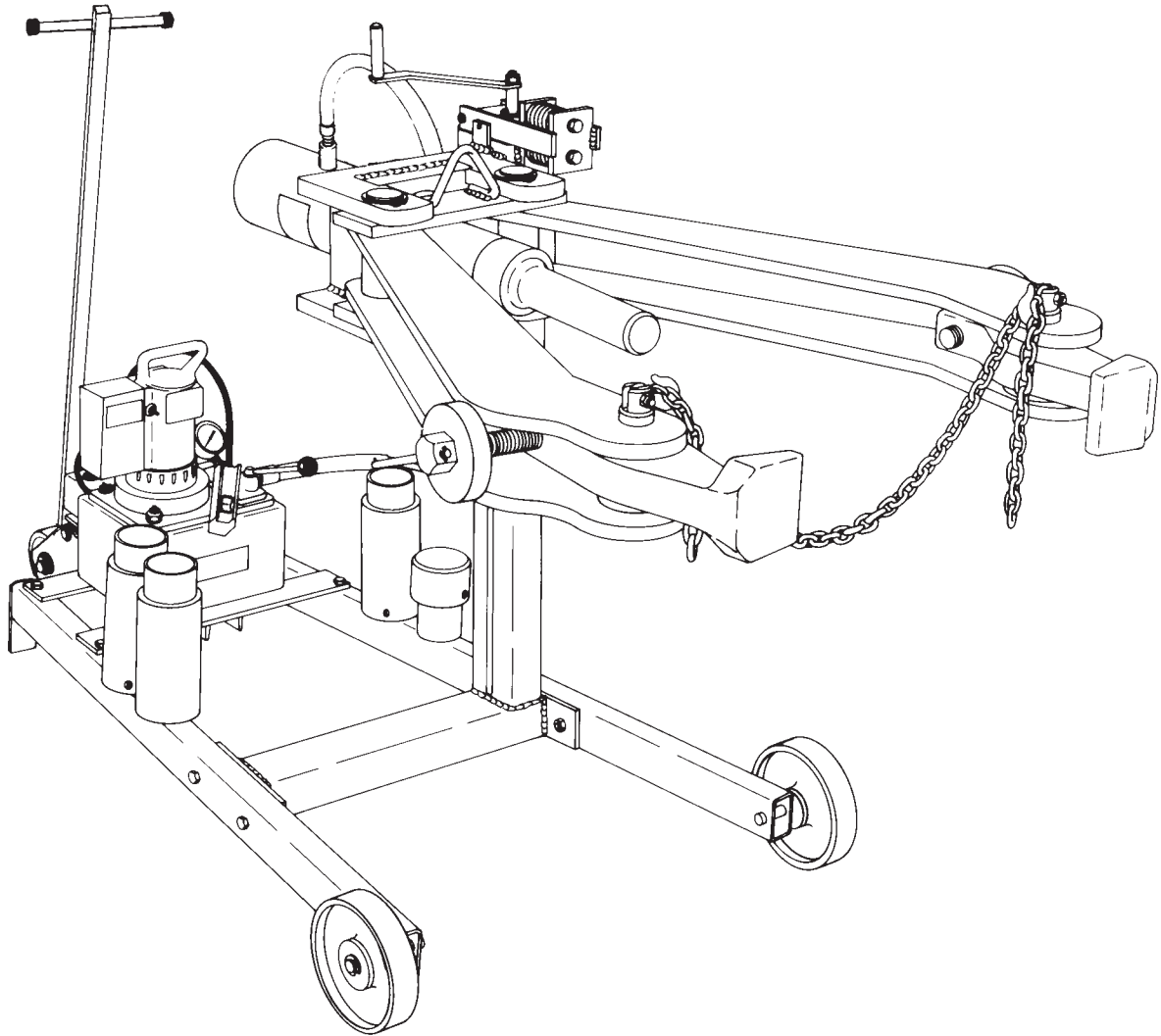


PORTABLE PULLER
100 Ton Capacity

These instructions must be read and carefully followed. Most problems with new equipment are caused by incorrect assembly, operation, or installation. Carefully inspect all parts upon arrival. The carrier, not the manufacturer, is responsible for any damage resulting from shipment.

NOTE:

- **Flame Out 220™ fire-resistant hydraulic fluid is compatible with all Power Team hydraulic equipment. This fluid, which is available through your local Power Team distributor, does not require changing the seals in any Power Team pump or ram.**

SAFETY PRECAUTIONS



WARNING: To help prevent personal injury,

- The following procedures should only be performed by qualified, trained personnel who are familiar with this equipment. Operators must read and understand all safety precautions and operating instructions included with the puller, pump, and ram before using the puller.
- The owner of the puller must see that it is installed and operated according to federal (OSHA), state, and local safety standards.
- 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.
- It is impossible for the manufacturer to provide practical “all-purpose” shielding, because this is a general purpose tool that can be used in many different applications. The owner of the press must fabricate shielding that is practical and necessary for a particular application. A certain degree of safety is provided by wrapping the work in a protective blanket (available from Power Team) before applying pressure.
- The owner of this tool must ensure that all safety-related decals are installed, maintained, and replaced if they become hard to read.

Hoses

- Before operating the pump, tighten all hose connections with the correct tools. Do not overtighten. Connections should only be secure and leak-free. Overtightening can cause premature thread failure or high pressure fittings to split at pressures lower than their rated capacities.
- Should a hydraulic hose ever rupture, burst, or need to be disconnected, immediately shut off the pump and shift the control valve twice to release all pressure. Never grasp a leaking pressurized hose with your hands.
- 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 materials such as creosote-impregnated objects and some paints. Consult the manufacturer before painting a hose. Never paint the couplers. Hose deterioration due to toxic materials can result in personal injury.

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 pressures used.
- Align puller jaw and pushing adapter set-ups 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 pressures used.
- Adjust the puller jaws equally to make flat and square contact with the part being pulled.
- The safety chain must be tightly attached to the jaw pin hooks before pressure is applied.
- 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”.

ASSEMBLY

See Figure 1:

1. Position the left leg (60925) and the right leg (60926) as shown. Set the pump mounting plate (60937) over the correct holes and **bolt loosely**.
2. Position the upright (60924) as shown and **bolt loosely**. Carefully measure from the end of each leg to the cross tube. Make any adjustment needed to equalize the measurements. Securely tighten the four bolts holding the upright. Securely tighten the four bolts holding the pump mounting plate to the legs.
3. Mount and fasten the 8" wheels onto the frame in the parts sequence shown.

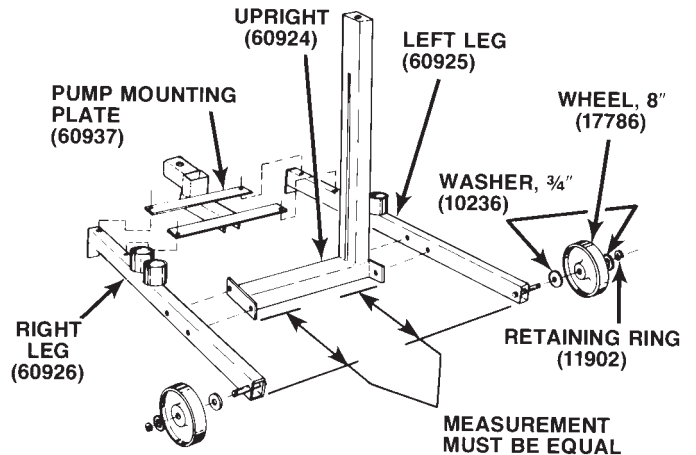


Figure 1

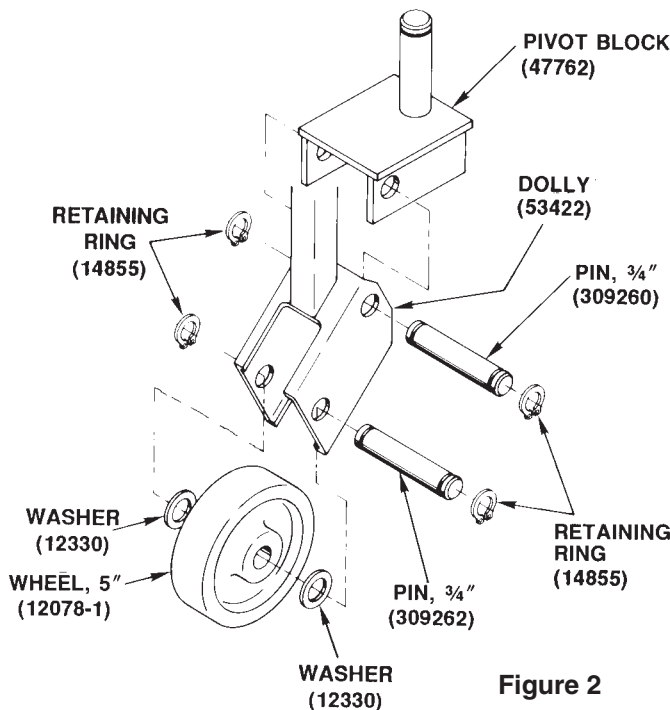


Figure 2

See Figure 2:

4. Assemble the wheel dolly as shown.

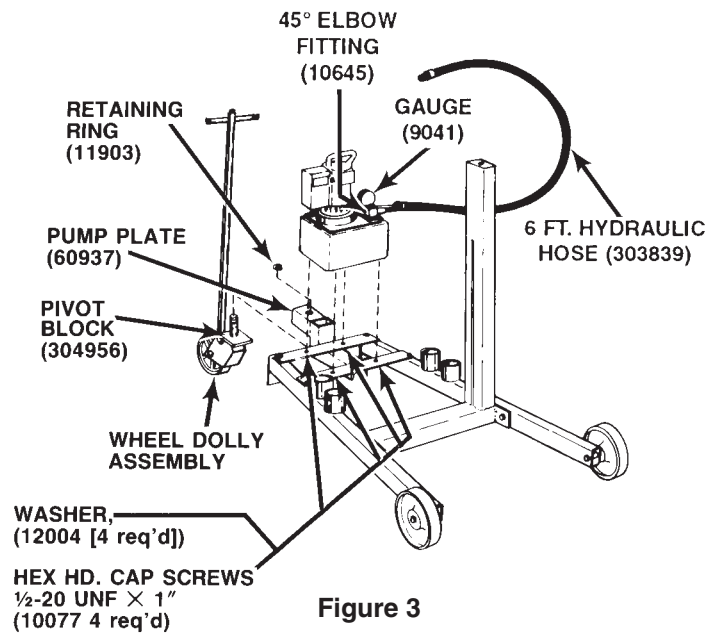


Figure 3

See Figure 3:

5. Fasten the wheel dolly to the leg assembly.
6. Using hex head cap screws and washers, attach the pump to the pump mounting plate as shown.
7. Remove the pipe plug from the pump gauge port. Thread the 45° elbow fitting into the gauge port, angled upward to make room for the gauge.

Note: Seal all hydraulic connections with Power Team HTS6 thread sealant. Teflon tape can be used if only one layer of tape is used. Apply carefully, two threads back, to prevent the tape from being pinched by the coupler and broken off inside the pipe end. Loose pieces of tape can travel through the system and obstruct the flow of oil or cause jamming of precision parts.

8. Install the pressure gauge on the 45° elbow fitting. Turn the face of the gauge so it can be read when standing to the right rear of the puller.
9. Assemble the hose half coupler on the hose. Thread the other end of the hose into the pump outlet pump.



See Figure 4:

- Clean and lubricate the threads on the ram body and head assembly. Thread the ram into the head assembly as shown.

WARNING: To help prevent personal injury, the ram must be fully threaded into the puller head until threads are visible on the opposite side of the puller head block.

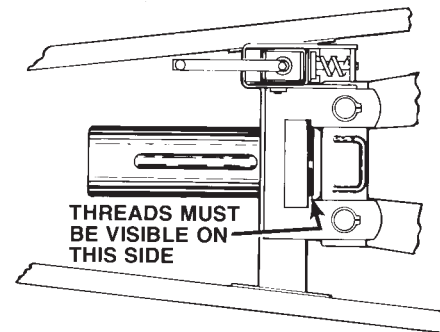


FIGURE 4

See Figure 5:

- Grease the threads on the acme threaded rod (303108). Grease both slotted sides on the inside of the upright tube.
- Thread the block (303030) about half-way down the threaded rod.
- Slip the block (303032) over the threaded rod from the end that has been designated as the handle assembly end. Position the blocks as shown. Lower this assembly into the rectangular tube.

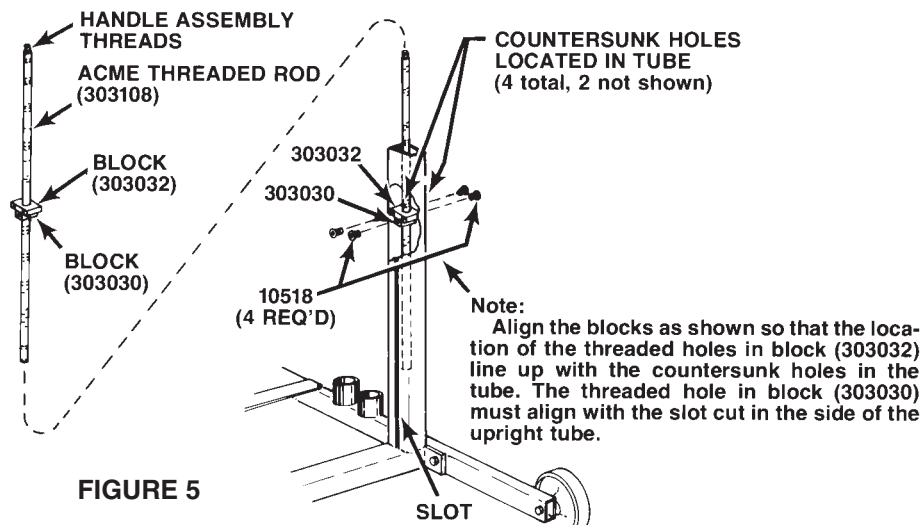


FIGURE 5

See Figure 6:

- Align the countersunk holes in the tube with the threaded holes in the block (303032). Thread four 3/8-16 x 1" lg. screws (10518) into the block finger-tight.
- Look down from the top of the tube. Tighten each screw as needed until the block is centered with each side parallel to its corresponding side of the tube. The block should be centered to about 1/16" tolerance.
- Lower the rod until the threaded holes in the lower block (303030) are aligned with the slot in the tube. Thread the hex socket head shoulder screws (207459) into each side of the block and tighten to 30 ft. lbs.

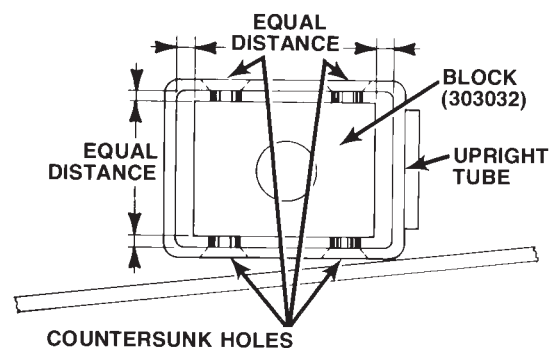


FIGURE 6

See Figure 7:

- Position the threaded rod as shown. Place the 12" spring (207521), the spring cap (303033), the thrust bearing (12702), and washer (12330) over the threaded rod.
- Insert the 1/4" roll pin (10982) into the drilled hole in the threaded rod. Center the roll pin until about 3/8" of the roll pin is extended on each side of the rod.
- Place the entire spring and rod assembly into the tube.

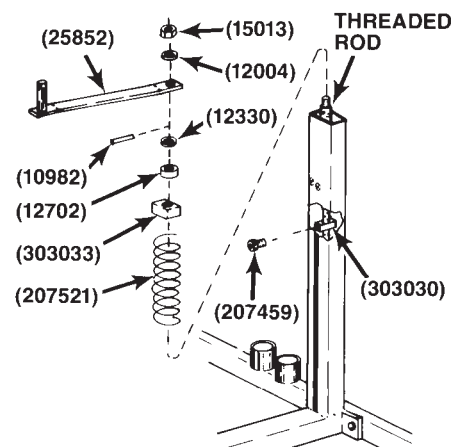
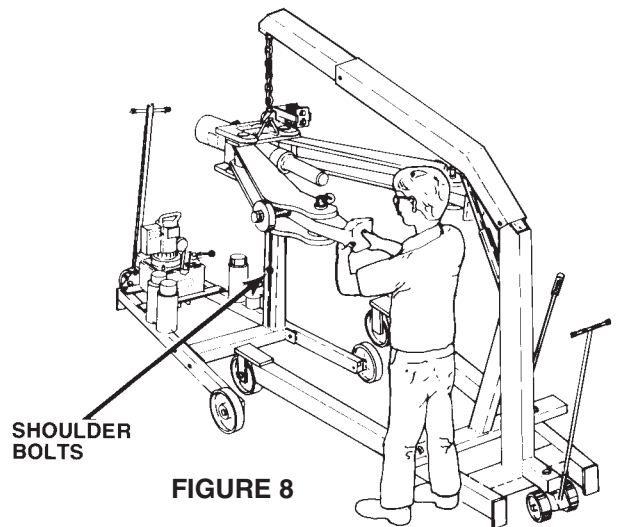


FIGURE 7



See Figure 8:

20. Place the puller cart in position to fit the puller jaw head assembly onto the spring-loaded tube upright. Attach a crane to the lifting hook located near the head of the puller jaw head assembly. Lift the entire assembly over the tube upright.
21. Grease the rollers on the puller jaw and head assembly. Grease the slotted sides of the upright tube. Lower and slide the entire head assembly down until it rests evenly on the shoulder bolts. **IMPORTANT: The spring cap (303033) must slide into the tube upright evenly as pressure from the weight of the puller head assembly pushes the spring (207521) down over the threaded rod (303108). See Figure 9.**
22. Refer to Figure 7 again. Assemble the handle (25852), washer (10204), and nut (15013) onto the end of the threaded rod as shown.



See Figure 10:

23. Install the ram adapter (303040) on the end of the ram using two 3/8-16 UNC x 2-1/2" socket head screws (10435). Tighten securely.

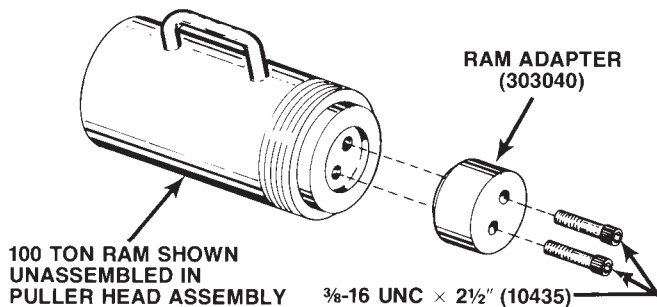


FIGURE 10

IMPORTANT: Spring cap (303033) must slide into tube upright evenly as pressure from weight of puller head compresses spring over threaded rod assembly.

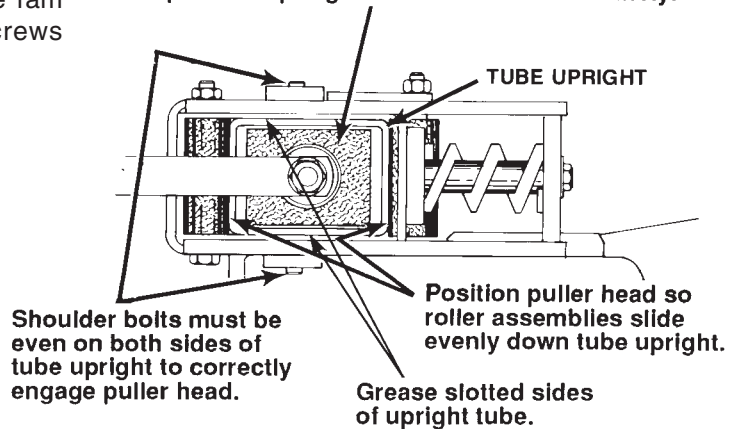


FIGURE 9

OPERATING INSTRUCTIONS

VERTICAL SET-UP: See Figure 11

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 1. 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.

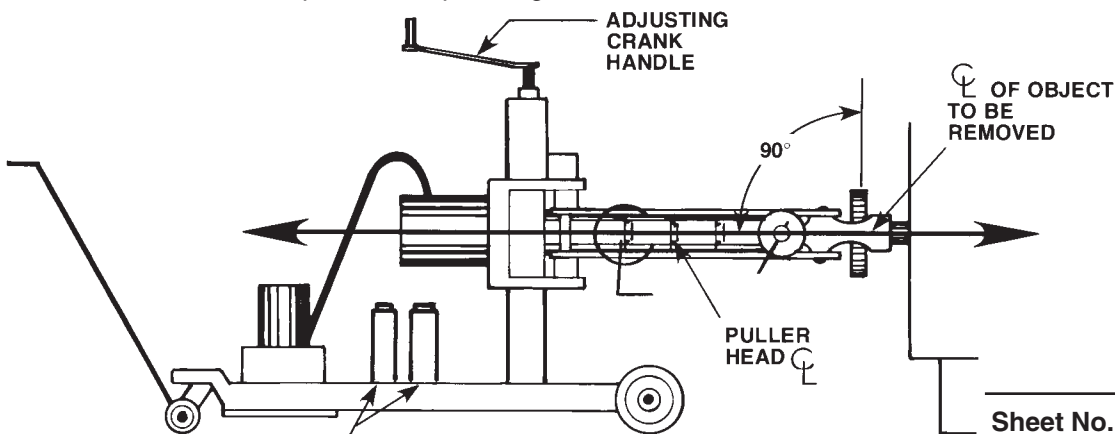


FIGURE 11



ADAPTERS TO BE STORED AS SHOWN WHEN NOT IN USE

VERTICAL SETTING

HORIZONTAL SET-UP: See Figure 12

1. Adjust the horizontal by positioning the puller cart as shown in Figure 12. The centerline of the object being removed must be at a 90° angle to the flat surface of the jaws and on the same centerline as the puller cart and the puller head.

JAW and ARM ADJUSTMENT: See Figure 12 Inset

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

1. Move the puller arms inward to a minimum width of 15” or outward to a maximum width of 48”. In all adjustments with the arms, maintain equal angles between the arms as shown in the Figure 12 inset. **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 jaws must also be aligned to establish maximum jaw contact that is as parallel as possible whenever the setting of the arms is changed.

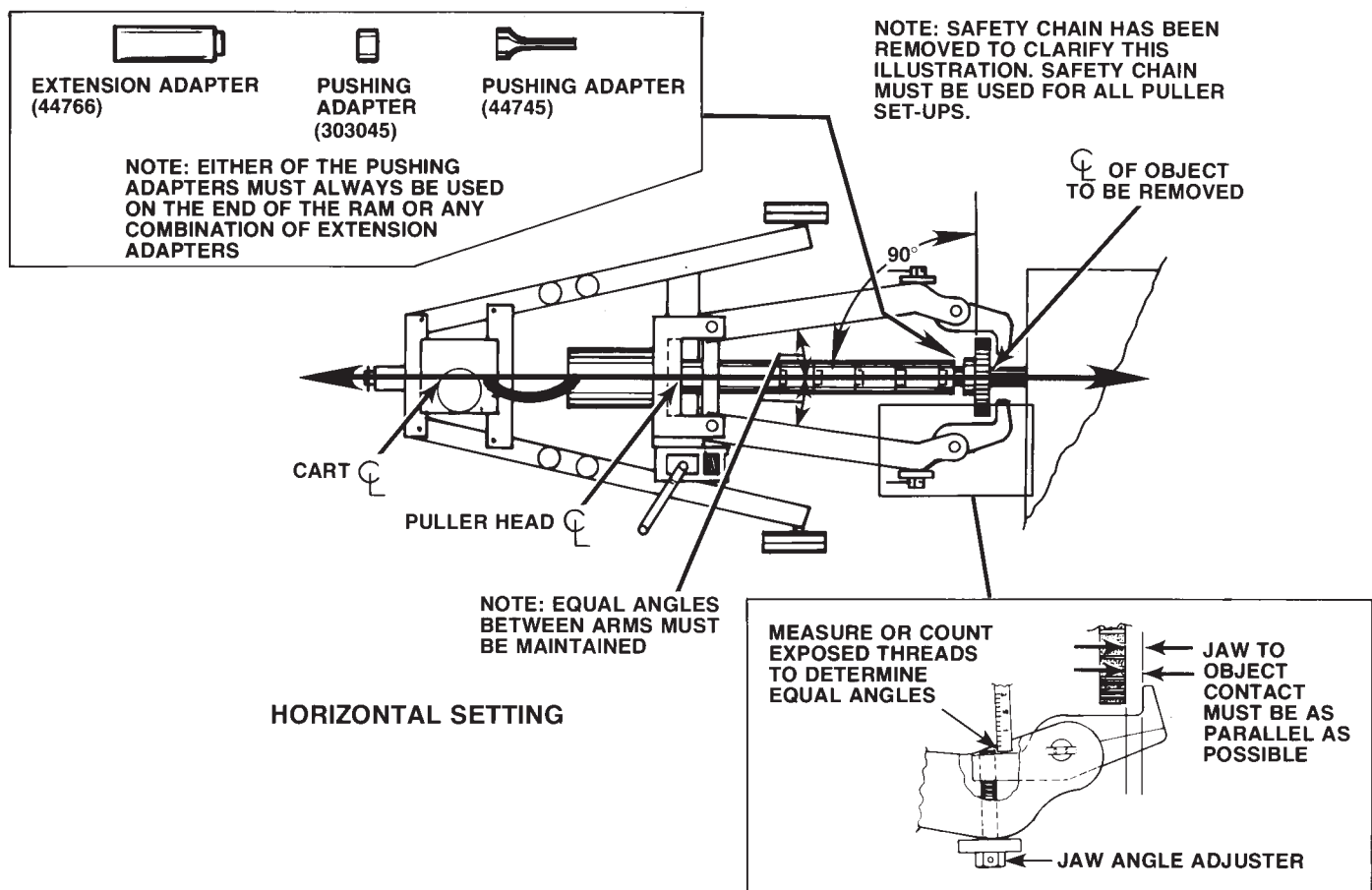


FIGURE 12



EXTENSION ADAPTERS: See Figure 13

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

Note: Use a pushing adapter (#303045 or #44745) on the end of the ram 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 fitted together.

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 and at a 90° angle to the object being pulled.
3. When not in use, store extension adapters on the puller cart as shown in Figure 11.

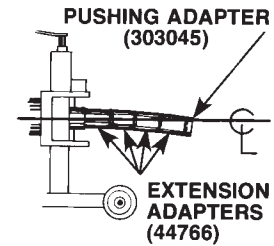


FIGURE 13

SAFETY CHAIN: See Figure 14

1. Use the safety chain (#207516) at all times with this puller. The puller arms must be hooked and checked before hydraulic pressure is applied to the object being pulled.

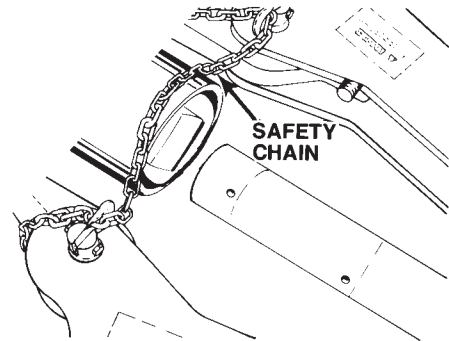


FIGURE 14

LIFTING INSTRUCTIONS: See Figure 15

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 (#17395) 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.

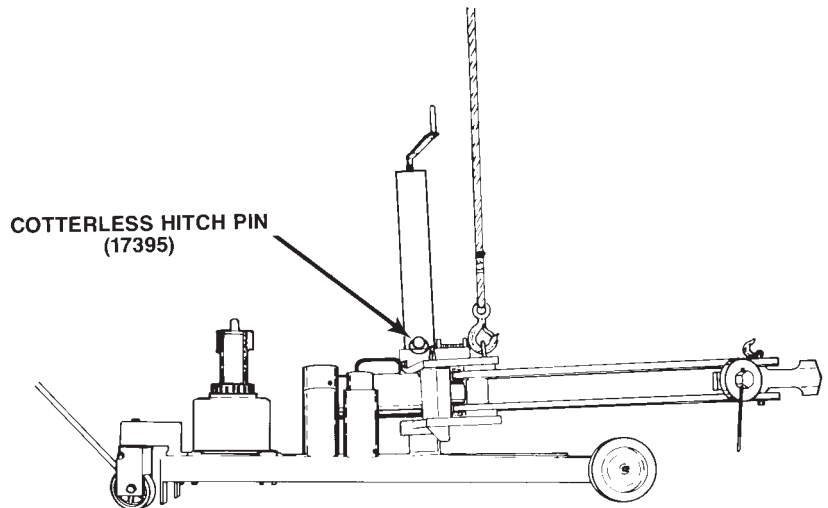


FIGURE 15

GENERAL MAINTENANCE

1. Regularly grease the acme screw, wheel zerks, all pivoting pins and the sides 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.
4. Look for any obvious signs of damage.