

HYDRAULIC POLE PULLERS AND POLE BUTT PULLERS

DESCRIPTION AND OPERATION

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1. GENERAL

1.01 This section describes, in general, Hydraulic Pole Pullers and Hydraulic Pole Butt Pullers and covers procedures for their operation during pole removal operations.

1.02 This section is reissued to revise 4.04 and Fig. 7 to more clearly show the method of attaching the pulling chain when pulling poles.

1.03 The pole pullers and pole butt pullers, available commercially, are basically similar in design in that they consist of a hydraulic pulling cylinder, which is supported vertically on a base plate or frame, and a pulling chain that is attached to the cylinder and wrapped around the pole or pole butt. The descriptions given in this section apply to the units manufactured by the General Machine Products Company, the Holan Corporation, and the Pitman Manufacturing Company.

1.04 The units produced by these three manufacturers have pulling capacities that range from 38,000 to 42,000 pounds at 1500 pounds per square inch line pressure. The units have cylinder strokes of 16 to 18 inches.

1.05 When pole pullers or pole butt pullers are used, other equipment associated with pole erecting and removal is normally necessary for the complete work operation. Therefore, the applicable sections in the 621 Division of the Bell System Practices that pertain to pole removal shall

be supplementary to this section. Also, those sections which cover the operation of any special equipment, such as rotating derricks, shall be supplementary to this section.

2. DESCRIPTION

2.01 *The General Machine Products Company* pole butt puller (Fig. 1) consists of a hydraulic cylinder, two flexible hoses, a pulling chain, and a preassembled frame. The frame consists of two tubular steel legs equipped with ground pads, two aluminum straps which are hinged at a base plate, and sections of heavy duty chain that connect the base plate and legs to keep the legs from spreading.

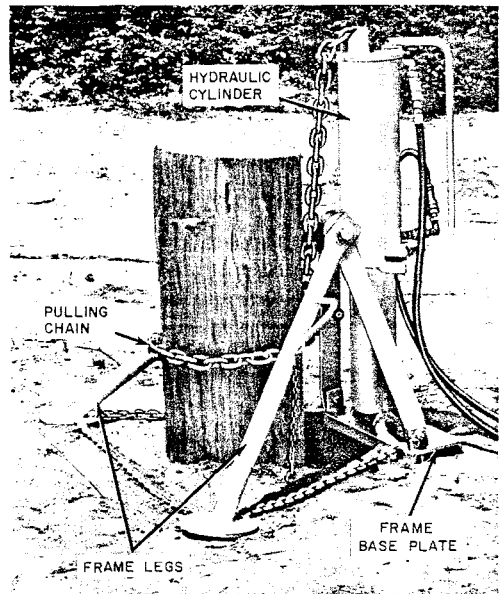


Fig. 1—General Machine Products Company Pole Butt Puller

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2.02 *The Holan Corporation* pole butt puller

(Fig. 2) consists of a hydraulic cylinder, two flexible hoses, a fabricated steel base, two curved steel pipe braces with cast foot plates, a pulling chain, and sections of heavy duty chain that connect the base and braces to keep the braces from spreading.

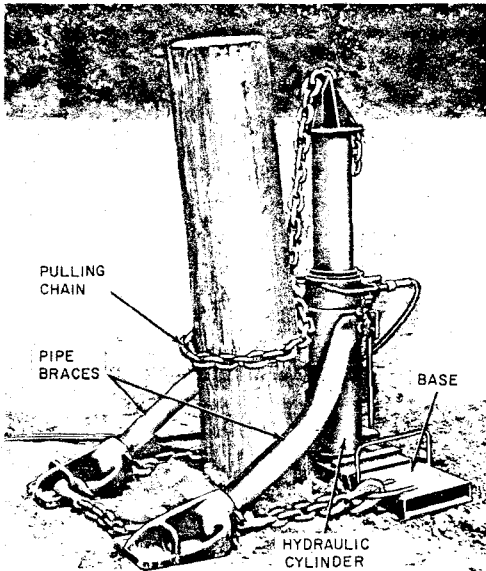


Fig. 2—Holan Corporation Pole Butt Puller

2.03 *The Pitman Manufacturing Company* pole butt puller

(Fig. 3) consists of a hydraulic cylinder, two flexible hoses, a pulling cable, a U-shaped base plate fitted with two hinged steel straps, two tubular diagonal braces, and a steel yoke fitted around the top of the hydraulic cylinder to which the steel straps and tubular braces attach.

2.04 The Hydraulic Pole Pullers of each of the manufacturers utilize the same hydraulic cylinder as used with the pole butt pullers. A bearing plate or base is used instead of a complete frame, to support the cylinder in an upright position. A heavy duty chain (one model uses two chains) is provided to hold the cylinder snug against the

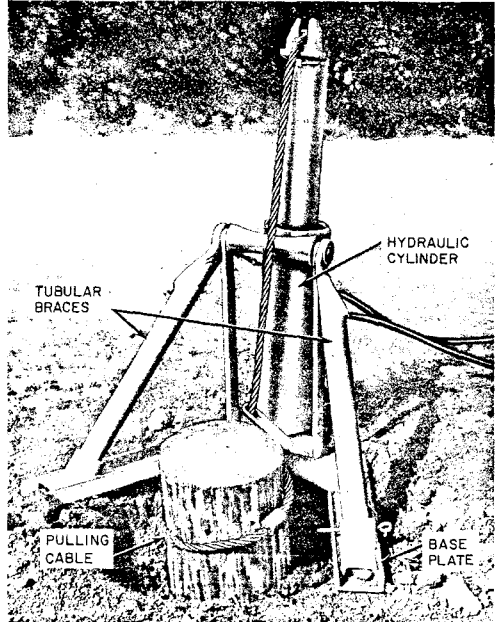


Fig. 3—Pitman Manufacturing Company Pole Butt Puller

pole. Two hoses are provided for connecting the hydraulic cylinder to the truck hydraulic system.

3. PRECAUTIONS

3.01 Before using a pole puller or pole butt puller, inspect the equipment to see that it has no visible damage and that it operates properly.

3.02 The hydraulic cylinder and frame are heavy. Depending on the make and model, the hydraulic cylinder may weigh from approximately 80 pounds to over 100 pounds, and the frame components may weigh from a few pounds to over 80 pounds. They should be picked up properly and handled with care to avoid injury to personnel.

3.03 When connecting the hydraulic hoses, be sure the fittings are clean. Use care when handling, using, and storing the hoses to prevent damage from kinking, crushing, or being cut by sharp tools or other objects.

3.04 Use care when operating the piston to avoid damage to the piston surface from contact with the pulling chain or the pole butt. Avoid getting dirt and grit on the piston surface.

3.05 Operate the hydraulic control handle slightly to begin piston movement and to place the chain under tension. Then the control handle may be fully operated. Do not continue to hold the control handle in the activated position after the piston has reached its limit of travel. Avoid sudden, jerking movements.

4. OPERATION

4.01 The methods used to set up the pole butt pullers are similar. Remove dirt, rocks, etc, as necessary to provide a relatively level footing for the puller frame. Place or assemble the frame

astride the pole butt. Position the hydraulic cylinder on the base or bearing plate, loop the pulling chain around the pole butt, pull the chain tight, and attach the free end to the hydraulic cylinder.

4.02 Connect the hydraulic hoses to the cylinder and to the truck hydraulic system. Apply power from the truck hydraulic system to extend the cylinder to the limit of its travel. At the end of the stroke, apply power to retract the cylinder. Reposition the chain on the butt and extend the cylinder a second time to complete another pulling stroke. Repeat the process until the pole butt is free of the hole.

4.03 The basic steps for setup of pole butt pullers that utilize a preassembled frame are illustrated in Fig. 4 and 5. The basic steps for setup of a pole butt puller that does not utilize a preassembled frame are shown in Fig. 6.

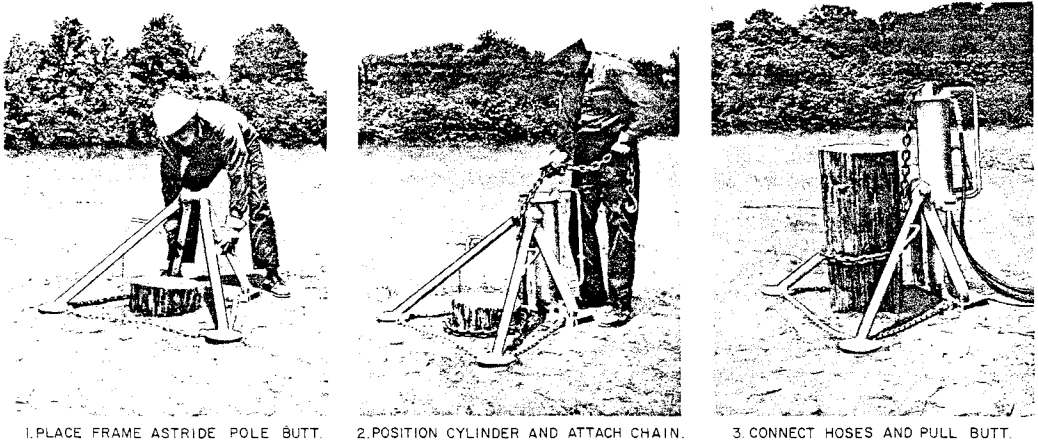
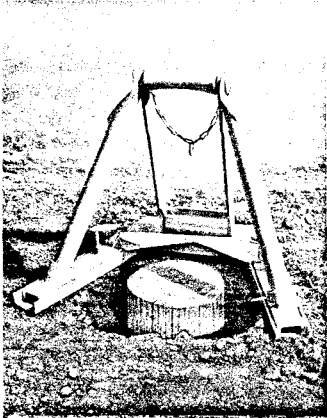
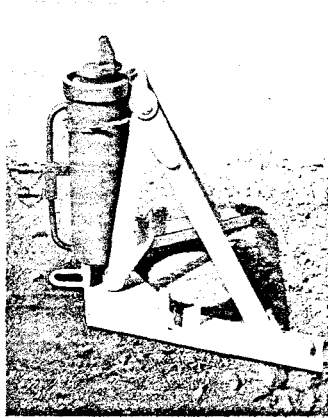


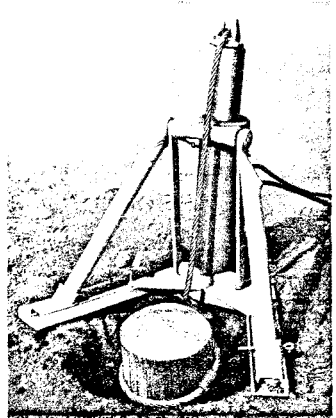
Fig. 4—Basic Steps for Setup of General Machine Products Company Pole Butt Puller



1-PLACE THE FRAME ASTRIDE THE POLE BUTT.



2- POSITION THE CYLINDER ON THE FRAME AND HOLD WITH CHAIN.

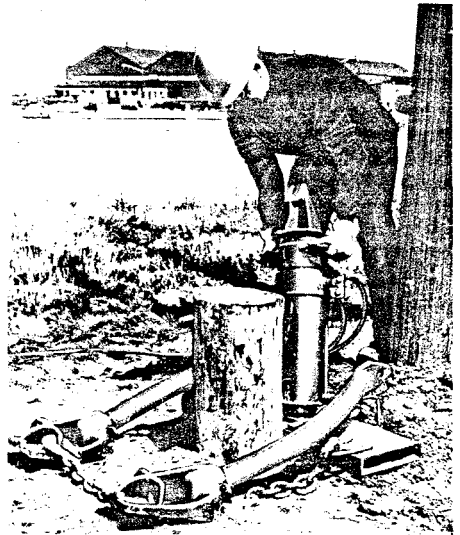


3-ATTACH PULLING CABLE, CONNECT HOSES, AND PULL THE BUTT.

Fig. 5—Basic Steps for Setup of Pitman Manufacturing Company Pole Butt Puller



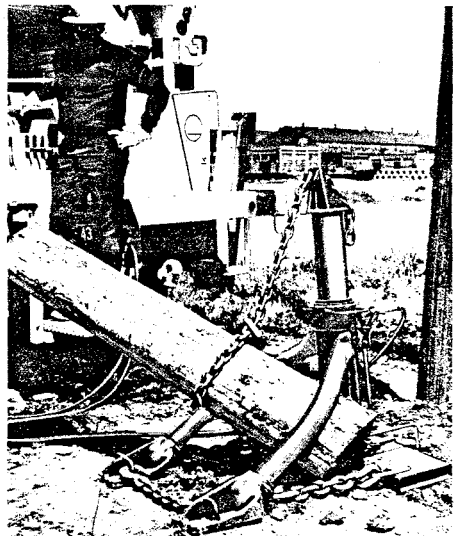
1. PLACE FRAME ASTRIDE POLE BUTT.



2. POSITION CYLINDER ON BEARING PLATE.



3. ATTACH BRACES TO CYLINDER AND PULLING CHAIN TO BUTT.



4. CONNECT HOSES AND PULL BUTT.

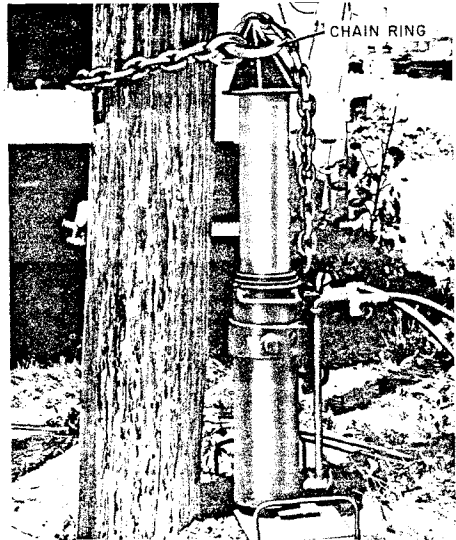
Fig. 6—Basic Steps for Setup of Holan Corporation Pole Butt Puller

4.04 When pulling poles with the pole puller, the top of the pole should be supported with the winch line and derrick. Attach the winch line above the balance of the pole. To set up for pulling, place the cylinder on the base or bearing plate, which is positioned at the base of the pole. To attach the pulling chain, place the chain ring over the chain attachment on the top of the puller, pass the chain around the pole, remove the slack, and engage the chain in the slot in the attachment. Typical set-ups using two available types of cylinders are illustrated in Fig. 7. The basic difference between the two types is that when pulling the pole, the piston moves up on one type, but the cylinder moves up on the other.

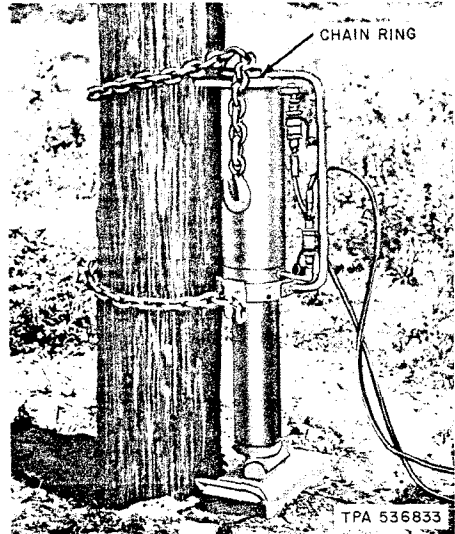
5. MAINTENANCE

5.01 Each time the equipment is used, inspect the hoses, fittings, and cylinder for signs of oil leakage or damage. Leakage of a few drops of oil through the cylinder packing does not normally indicate trouble.

5.02 The frame components, chains, and the hydraulic cylinder should be cleaned at regular intervals. Worn or damaged parts should be repaired or replaced. After cleaning, wipe all parts with an oily rag.



HOLAN CORP POLE PULLER
(PITMAN CO. POLE PULLER IS SIMILAR)



GENERAL MACHINE CO. POLE PULLER

Fig. 7—Pole Pullers Extended During Pulling Operation