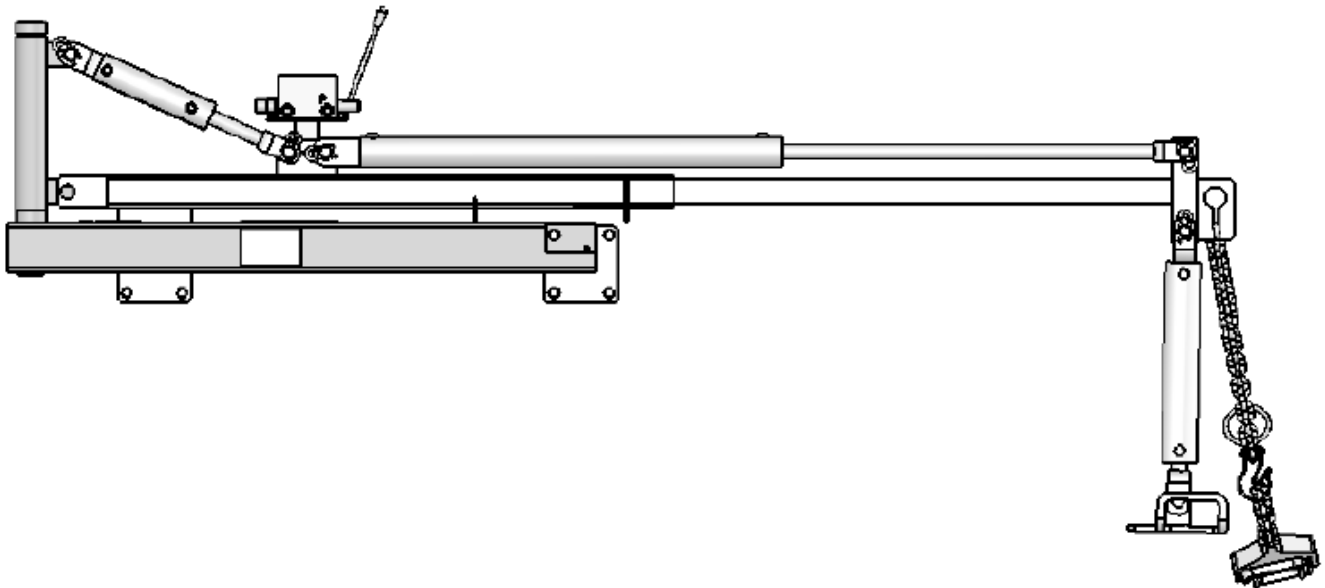


OPERATION, MAINTENANCE AND PARTS MANUAL

DIVERSIFIED

• P R O D U C T •

DEVELOPMENT



10,000 lb. REGULAR DUTY

PPF 203

POST PULLER



Read and understand all of the instructions and safety information in this manual before operating or servicing this piece of equipment.

Introduction

This manual has been compiled to assist you in properly operating and maintaining your Diversified Post Puller.

Before placing the post puller in service, all operators and persons working around the equipment must thoroughly read and understand the contents of the manual pertaining to **Safety, Operation and Maintenance**. Before moving the puller, information relating to transporting the puller must be read and observed.

The manual must be retained with the post puller for use by subsequent operating personnel.

Information in this manual does not replace federal, state or local regulations, safety codes or insurance requirements.

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Description

The Diversified Post Puller is a simple, compact and convenient way to remove and reuse most types of posts. The post puller is mounted to the front end of your truck (3/4 ton or larger) for a one man operation. It is to be used in accordance with the instructional and warning decals that are fixed to the puller and are published in this manual and in accordance with the other publications listed in this manual.

Safety

Safety is essential in the use and maintenance of this Diversified equipment. This manual and any markings on this piece of equipment provide information for avoiding hazards and unsafe practices related to the use of this equipment. Observe all of the safety information provided.

Purpose of this Manual

This manual is intended to familiarize all personnel with the safe operation and maintenance procedures for the following Diversified piece of equipment:

Regular Duty PPF 203 Post Puller

Keep this manual available.

Replacement manuals are available for download.

Other Publications

SAE Standard J1273 (Hose and Hose Assemblies)

All specifications are nominal and may change as design improvements occur. Diversified Product Development shall not be liable for damages resulting from misapplication or misuse of its products.

KEEP THIS MANUAL

IMPORTANT SAFETY INFORMATION

TO OPERATE POST PULLER


1. Push Lift Control Lever (Orange Lever) To Raise Boom From Cradle.
2. Manually Rotate Boom To Desired Position, Extending Boom As Required. Boom Is Extended By Pulling Out On Boom Extension Lever (Green) And Retracted By Pushing In On Same Lever.
3. Pull Back On Lift Control Lever (Orange) To Lower Pulling Cylinder Foot To Ground.
4. Connect Puller Jaws Around Post To Be Pulled, And Hook Chain Over Hook On End Of Boom.
5. Pull Orange Lift Control Lever Out Until It Locks In The Detent Position. This Will Float The Lift Cylinder To Enable A Post To Be Pulled Without Damage To The Unit.
6. Push "In" On Pull Control Lever (Black) To Pull Post.

TO PREPARE UNIT FOR TRAVELING

1. Disconnect Puller Jaws From Boom Hook.
2. Push Orange Lift Control Lever In To The Center Position.
3. Fully Retract Pull Cylinder By Pulling Back On Pull Control Lever (Black).
4. Fully Raise Boom By Pushing "In" On Lift Control Valve Lever (Orange).
5. Fully Retract Boom By Pushing "In" On Extension Valve Lever (Green).
6. Manually Swing Boom To A Position Over Cradle.
7. Pull Back On Lift Control Lever (Orange) To Lower Into Cradle.

CAUTION: This Unit Designed for 2500 lbs. per sq. in. max. pressure.

PPC100



DIVERSIFIED PRODUCT DEVELOPMENT
WACO, TX (254) 757-1177

BRAWNY POST PULLER
PPC 345 PATENT NO. 3,848,850

USE ONLY
AW 32 (10 WEIGHT)
HYDRAULIC OIL

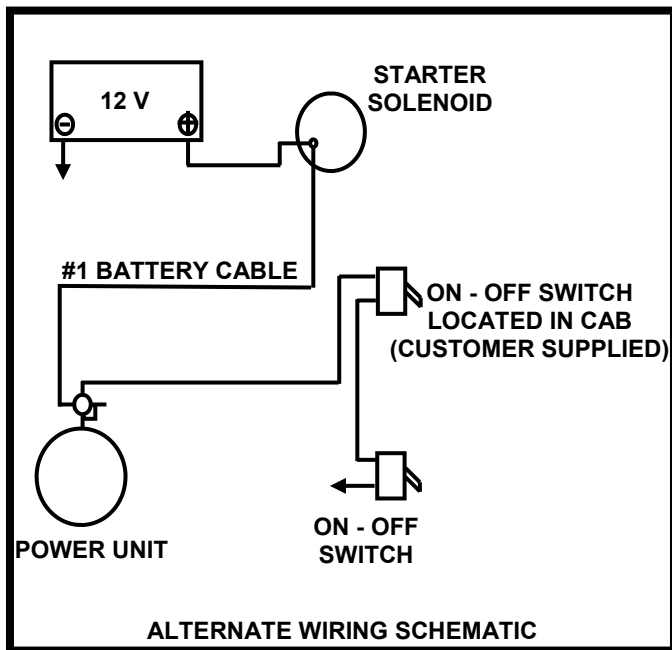
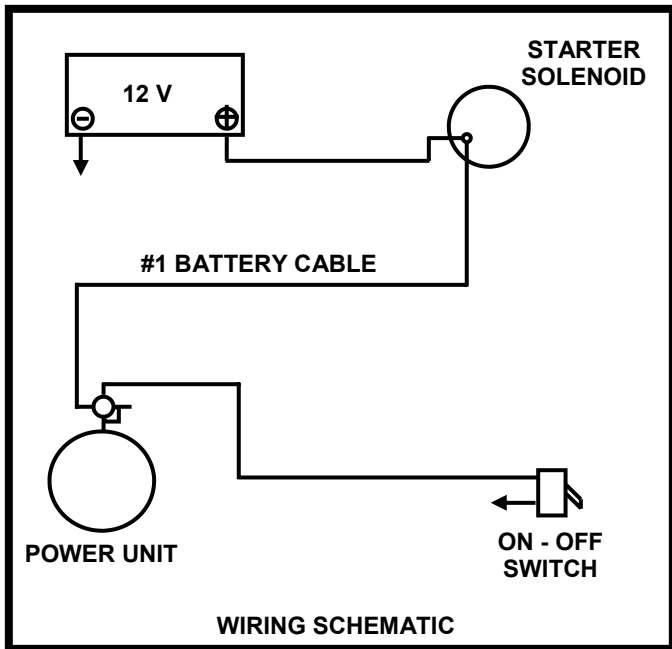
PPC105

Product Development LLC

Specifications

Model Number PPF 203
 Puller Assembly Weight..... 235.97 lbs (107.03 kg)
 Stowed
 Length..... 69.81" (177.32 cm)
 Height..... 24.06" (61.11 cm)
 Extended
 Length..... 99.81" (253.52 cm)
 Height..... 40.08" (101.80 cm)

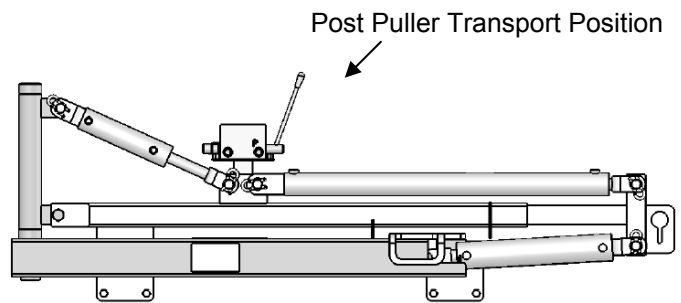
Hydraulic Schematic



Transport

To Prepare Unit for Travel:

1. Disconnect puller jaws from boom hook.
2. Push boom lift control lever (orange) to center position.
3. Fully retract post pull cylinder by pulling out on post pull control lever (black).
4. Fully raise boom by pushing "in" on boom lift control lever (orange).
5. Fully retract boom by pushing "in" on boom extension control lever (green).
6. Manually swing boom to a position over cradle.
7. Pull out on boom lift control lever (orange) to lower boom into cradle.



Installation

General Information

Your BRAVNY POST PULLER comes partially assembled and is ready for your installation, hydraulic assembly connection, electrical assembly connection and operational testing. Each of these steps is described in enough detail to enable a qualified mechanic and welder to install the unit. Before beginning however, they should thoroughly familiarize themselves with the unit and follow all the instructions. However, each installation is unique and an amount of ingenuity on your part may be required. We have supplied installation instructions to fit most normal applications, but due to various optional equipment and modifications found on vehicles, we cannot guarantee the installation instructions will fit your vehicle without modification. If you have difficulty, we will assist you with any installation information we may have available.

BATTERY REQUIREMENT:

Vehicle must be equipped with a battery rated at 85 AMP/hr or better.

PUMP SIZE:

This unit comes supplied with a pump rated at 1.18 GPM @ 2,000 PSI. Do not replace with a larger pump (customer supplied on PPF 103x).

FITTINGS:

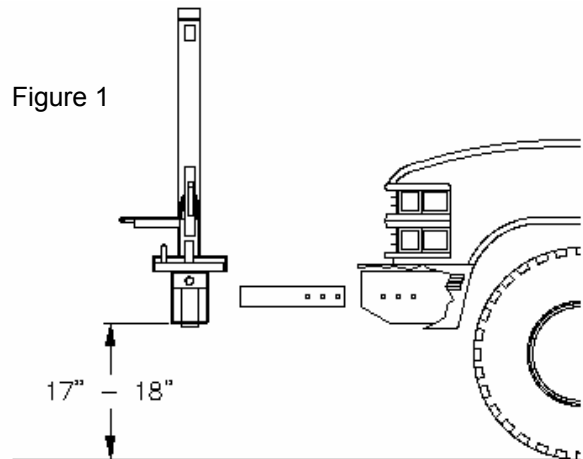
Quick disconnects or any other type fittings that may restrict oil flow are not recommended. Restrictions in the hydraulic system may limit available power and create excessive heat which could damage the system.

TRUCK WEIGHT:

This unit is designed for installation on a heavy duty 3/4 ton (8,000 GVW) truck or larger. The post puller will add 350 to 400 lbs to the front of the truck. Therefore, the front suspension must be heavy enough to handle this extra weight.

MOUNTING HEIGHT:

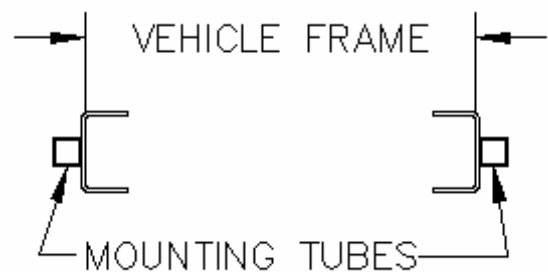
The bottom of the main body tube must be 17 to 18 inches from the ground when the truck is parked in a level area. See Figure 1.



Vehicle Mounting Instructions

1. Park the truck on a level surface.
2. It may be required to remove the vehicle's front bumper and bumper mounting brackets for some installations.
3. Clamp the mounting tubes (customer supplied 1/4" x 2 1/2" x 2 1/2" steel tubes minimum) on the truck frame as illustrated in Figure 2.

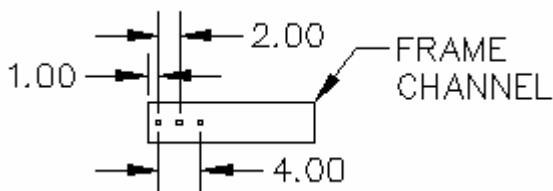
Figure 2



Vehicle Mounting Instructions (cont'd)

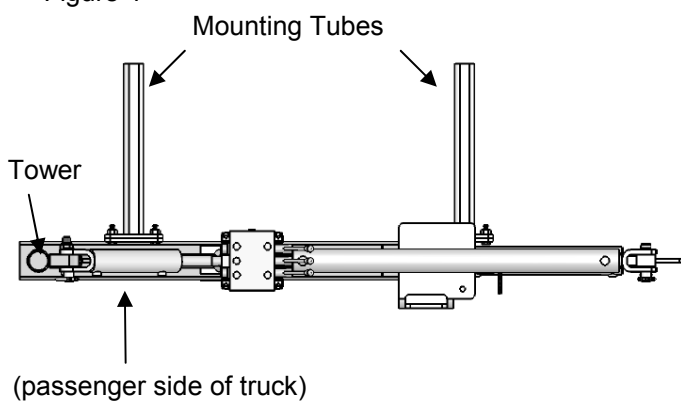
4. Align the mounting tubes so that:
 - A. The front surfaces are parallel.
 - B. They are vertically centered on the frame channels.
 - C. The front surfaces are far enough beyond the front of the truck so the post puller will clear the truck and the bumper.
 - D. The front surfaces are perpendicular to the ground.
5. Drill three holes per mount tube to accommodate 1/2" bolts. The bolts should be at least grade five. NOTE: It is easier to use a smaller drill bit first then graduate to a 1/2" bit. See Figure 3.

Figure 3



6. Measure the distance between the mounting tubes, remove them from the frame, and center them on the plates which are bolted to the plates on the post puller body. (See Figure 4). NOTE: The tower goes on the passenger side of the truck.

Figure 4



7. Weld the mounting tubes to the post puller. Be certain that the tubes Figure 2 remain parallel and the proper distance apart.

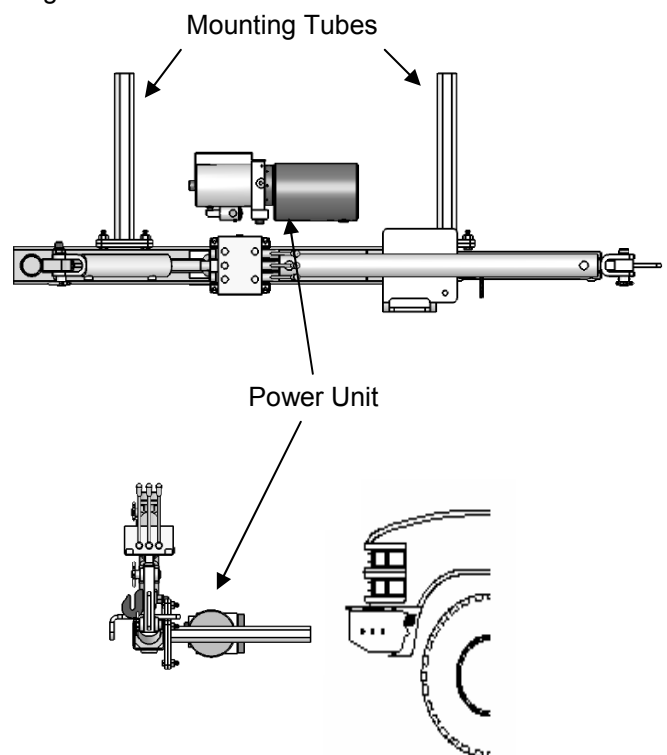
8. Place the bumper mounting brackets and bumper back on the vehicle. Some modifications to the bumper may be required.
9. Now with the post puller mounting bars welded to the post puller, carefully insert the mounting bars through the holes in front of the bumper and bolt the post puller to the frame.

Power Unit Mounting Instructions

(Electric Motor Pump and Reservoir Unit Assembly)

The power unit may be mounted on the firewall or fenderwell, if room permits, in a horizontal position with the reservoir filler cap up. Another alternative to mounting the pump power unit is suggested in Figure 5. Suitable mounts or brackets may have to be fabricated. Mount the power unit as close to the engine starter solenoid as possible so that the power lead (cable) may be kept short.

Figure 5



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Hydraulic Connection

1. Apply a good grade of thread sealing compound to the pipe threads on the 3/8" male pipe x 9/16" male JIC 90-degree adapter and install in the pressure port of the pump.
2. Apply a good grade of thread sealing compound to the pipe threads on the 1/4" Male pipe x 9/16" Male JIC 90-degree adapter and install in reservoir standpipe fitting.
3. Connect 3/8" ID hose from the pump pressure port to the valve inlet port.
4. Connect 3/8" ID hose from the valve outlet port to the valve inlet port.
5. Fill the reservoir with AW 32 (10 weight) hydraulic oil only.
3. Pull out on the green valve handle to extend the boom. This also may take several seconds due to air in the system. Extend and retract the boom several times until it operates smoothly. Smooth operation indicates that all air is out of the cylinder.
4. Pull out boom lift control lever (orange) to lower pulling cylinder foot to ground.
5. Connect puller jaws around post, to be pulled with "T" side up, and hook chain over hook on any one of the three hooks on the hook plate.
6. Pull out on boom lift control lever (orange) until it locks in the detent position. This will float the boom lift cylinder to enable a post to be pulled without damage to the unit. Bent components, due to misuse or overloading, will not be covered by warranty.

Electrical Connection

1. Disconnect the battery cables from the battery before attempting electrical installation.
2. Refer to wiring schematic on page 4. Connect a #1 copper stranded Automotive Battery Cable between the empty 5/16" threaded post on the pump solenoid and post on the engine starter solenoid containing the cable from the positive (+) post of the battery.
3. Cut the wire from the switch on the post puller to required length and crimp on the #10 round terminal end. Attach to the #10 threaded post on the pump solenoid.
4. Confirm that the post puller pump switch is in the off position then reconnect the battery cables to the bottom.
7. Extend and retract the post-pulling cylinder (black lever) several times until it operates smoothly. NOTE: Check the oil level in the reservoir after each step 2-4 and add oil if necessary. If oil level becomes too low, the pump will induce air into the system and steps 2-4 must be repeated.
8. Install a 3,000-PSI pressure gauge between the directional control valve inlet port and the hose connected to it. Follow the operating instructions as if you were going to pull posts but do not hook up to the post. Fully extend the post-pulling cylinder by pulling out on BLACK lever. Hold the lever out while making the pressure test. The gauge should read between 2200 to 2500 psi. Adjust the pressure relief valve on the control valve inlet section as required. Remove the pressure gauge and connect the pressure hose back to the valve. Your unit is now ready for normal operation.

To prevent unauthorized actuation of the electric pump, refer to hydraulic schematic on page 4 for alternate method of wiring.

Operation

1. Switch pump switch located at hydraulic control valve ON. Have switch on only while using hydraulic functions.
2. Push in on the boom lift control lever (orange) and hold until the boom lifts to its highest position. This may take several seconds due to air in the system. Use caution as the boom may suddenly jump up because of the air in the system. Note: The flow control valve between the control valve and the boom lift cylinder has been adjusted for use in ambient temperatures of 50°F. Adjustment of this valve may be necessary to obtain proper downward movement of the boom. Only a qualified mechanic should make this adjustment.

CAUTION: Do not exceed the flow rate of 3 GPM or the pressure rating of 2500 PSI in the system.

During all operation and testing, the vehicle engine must be running at a fast idle and the battery charged to peak condition.

Operation (cont'd)

Special Hints:

IMPORTANT: PLEASE READ THE FOLLOWING BEFORE ATTEMPTING TO PULL POSTS WITH YOUR NEW DIVERSIFIED POST PULLER.

- Your Diversified Post Puller is capable of producing up to 6.13 tons of force. This force, when properly used, can save time and money. Misuse results in costly damage and injury. USE WITH CAUTION.
- Use only AW 32 (10 weight) hydraulic oil.... Use of any other kind of oil or fluid may cause the unit to fail and VOID the warranty.
- Fill the oil reservoir 1/2" from the top with all cylinders in the RETRACTED or COLLAPSED position.
- Hoses should not be allowed to rest on the exhaust manifold or firewall. If a hose rests against these, the pulsation or vibration will transmit a distinct noise into the passenger area.
- Clean and flush the oil reservoir at least once a year.
- Pull posts only with the pulling cylinder next to the post and in a vertical position. Pulling posts from a side angle will cause irreparable damage to the post puller and void the warranty.

November 15, 2007

SERVICE BULLETIN:

Installation of any of our Post Puller products on the new 2008 Ford trucks may obscure the headlights because of the new design of the truck.

Therefore, the installation of additional headlights may be required. Please take that issue into consideration when quoting these products.

Troubleshooting

To properly troubleshoot the unit, a 3000 PSI pressure gauge along with a few fittings and hand tools are required.

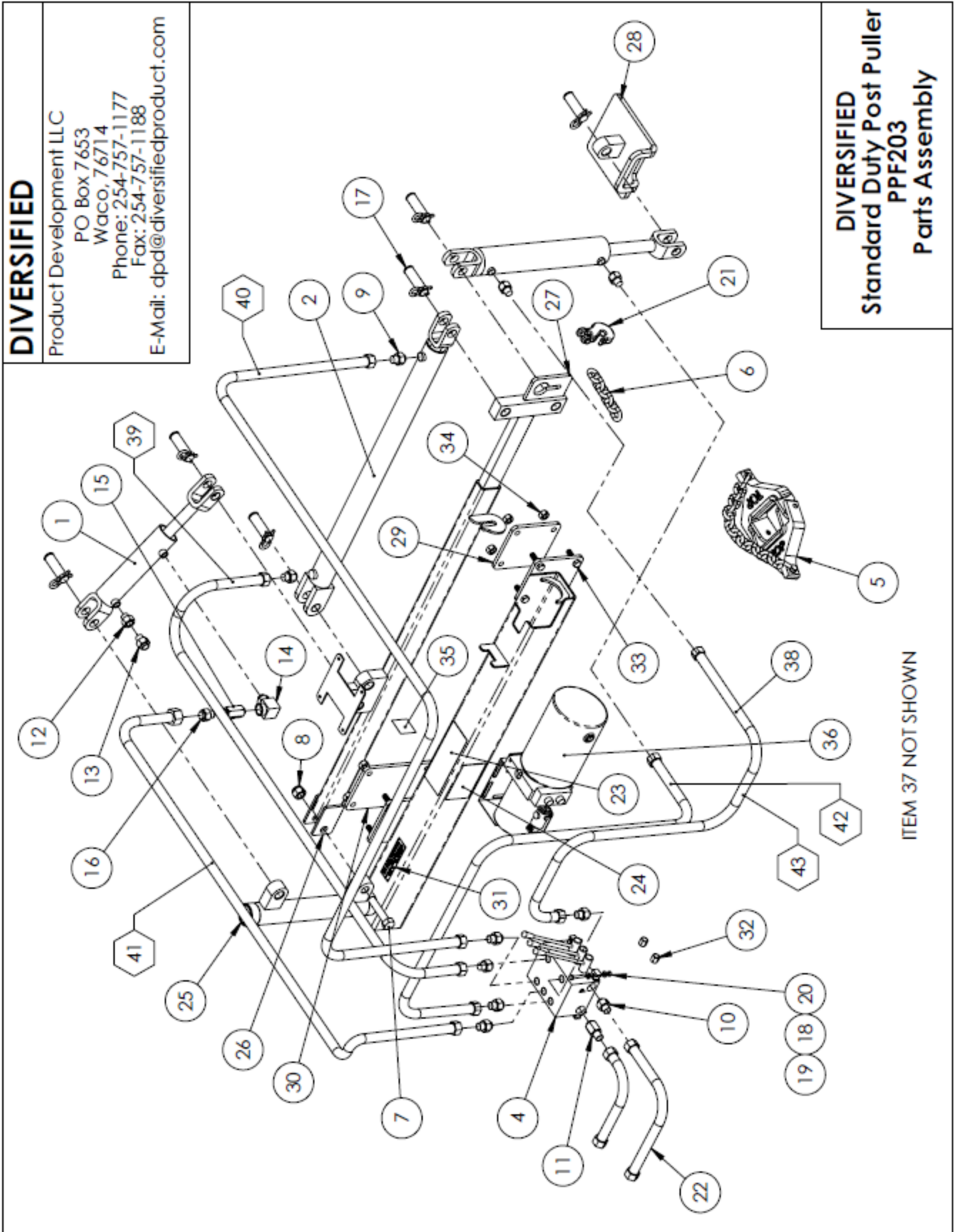
1. If the unit will not function at all or has lost its power, check the following.
 - a. Check oil level in tank. Fill the oil reservoir 1/2" from the top with the cylinders in the DOWN or COLLAPSED position. Use only AW 32 (10 weight) hydraulic oil....Use of any other kind of oil or fluid may cause the unit to fail and VOID the warranty.
 - b. Check pump pressure (must be 2200 to 2500 PSI) measured at the directional control valve with the post pulling cylinder fully extended and the lever (black) held in the "IN" position.
2. Electric pump doesn't run.
 - a. Check all battery and cable connections. Connections must be clean and tight.
 - b. Check pump mount. Pump must be securely fastened to a clean, paint free surface to insure a good ground connection.
 - c. Check wires from pump motor solenoid to switch and switch to ground for continuity.
 - d. Check vehicle battery condition.
3. If any section of the unit will not operate properly, check the following:
 - a. Check for mechanical damage.
 - b. Check oil level in tank.
 - c. Check hoses leading to the affected area.
 - d. Check pressure at cylinder port (must be 2200 to 2500 PSI) with cylinder fully extended and valve handle held in the extended position.

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Replacement Parts

43	PPA300-5	HOSE ASSEMBLY	1
42	PPA300-4	HOSE ASSEMBLY	1
41	PPA300-3	HOSE ASSEMBLY	1
40	PPA300-2	HOSE ASSEMBLY	1
39	PPA300-1	HOSE ASSEMBLY	1
38	PPA300	HOSE KIT, REGULAR DUTY POST PULLER	1
37	PPK470	KIT, ELECTRIC PUMP INST.	1
36	PPC460	PUMP, HYDRAULIC	1
35	PPC103	DECAL, OIL	1
34	-	NUT, LOCK, 1/2-13 UNC	8
33	-	HHCS, 1/2-13 UNC X 1-3/4 LG	8
32	PPC500	CAP	2
31	PPC178	ID PLATE	1
30	PPD008	PLATE, MOUNT	1
29	PPD062	PLATE, MOUNT, SHORT	1
28	PPD033	WELDMENT, POST PULLER FOOT	1
27	PPA133	BOOM EXTENSION	1
26	PPD067	BOOM	1
25	PPD051	BODY, TOWER ASSEMBLY	1
24	PPC345	DECAL, LOGO	1
23	PPC100	DECAL, OPENING INSTRUCTIONS	1
22	PPA336	HOSE ASSEMBLY	2
21	PPC173	CLEVIS GRAB HOOK, REGULAR DUTY	1
20		NUT, HEX, 1/4-20 UNC	4
19	-	HHCS 1/4-20 UNC X 1.5 L	4
18	-	1/4" FLAT WASHER	8
17	PPC270	PIN AND KEEPER	6
16	PPC305	ADAPTER, MP04-MJ04	1
15	PPC300	FLOW CONTROL, ADJUSTABLE	1
14	PPC295	ADAPTER, MO06-FP04-90	1
13	PPC290	MP04 BREATHER BLUG	1
12	PPC285	ADAPTER, MO06-FP04	1
11	PPC475	ADAPTER, MO06-MJ06 L	1
10	PPC280	ADAPTER, MO06-MJ06	1
9	PPC601	STRAIGHT THREAD ELBOW 4-6 C50X	9
8		NUT, NYLOC, 3/4-10UNC	1
7	-	HHCS 3/4-10 UNC X 1.5 LG	1
6	PPA153	CHAIN, PULLING, REGULAR DUTY	1
5	PPJ205	JAW SET	1
4	PPD068	VALVE, CONTROL - V040	1
3	PPC155	HYDRAULIC CYLINDER, 2 1/2" X 12"	1
2	PPA160	HYDRAULIC CYLINDER, 2" X 30"	1
1	PPC150	HYDRAULIC CYLINDER, 2" X 6"	1
ITEM NO.	PART NUMBER	DESCRIPTION	-/QTY.

Replacement Parts



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DEVELOPMENT

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