DEWEZE

200 Series

FLATBED

Manual

NOTICE

Do not install or operate this machine until you have read and understood this manual.

Thank you for purchasing the DewEze Flatbed. We are confident that it will perform satisfactorily, and will be glad to assist you any way we can if you encounter any problems during installation or use of our equipment.

This manual, along with the installation instructions included with the Hydraulic System, includes instructions for installing on most vehicles. Due to the vehicle manufacturer's many different engine and frame configurations, you may find that our instructions do not clearly address your particular installation. You may also run into problems when installing on a truck that has some "add-on" features, such as add-on air conditioners, as our system is designed to fit the specific engine as delivered from the factory, with factory accessories. If you experience difficulty during installation or use of our equipment, please contact us at the address or phone listed below and we will be glad to assist you.

Harper Industries, Inc.
151 East Hwy 160
Harper, KS 67058

Phone (620) 896-7381
(800) 835-1042
Fax (620) 896-7129

Table of Contents

To insure efficient and prompt service, please furnish the model and serial numbers in all correspondence or contacts.

Purchase Date_____
Dealer_____
Flatbed Model_____ Serial_____
Hydraulic Kit Model_____

Safety Precautions

General

1. Never stand under the hugger arms when operating the bale pickup unit, even when the arms are empty. Personal injury may result.

2. Make sure all safety pins are in place and flatbed mounting bolts are secure at the truck frame.

3. Make sure hinges, joints, and sliding parts are well greased, especially during the off season to prevent rusting and binding.

4. Check with your truck dealer for any load limits, additional suspension or tire requirements. The flatbed's lifting capability may exceed the truck's load capacity in a few instances.

Live Hydraulic System

1. Never activate the electric clutch except when truck engine is at idle. Switching the clutch on at road speeds can seriously damage your hydraulic system.

2. Do not operate hydraulic system with hood open.

Installation

Flatbed Preparation

Note: For easier preparation, place flatbed on sturdy stands. This will allow you to install the filter assembly and tool boxes before placing the flatbed on the truck

1. Drill 2 1/2” holes in side of bed as needed for fuel filler necks for your truck. Location for center of hole is 2” from top of bed, 33” from front of bed for front tanks, and 31” from rear of bed for rear tanks.

2. Insert fuel filler neck into hole from inside of bed and weld into place with spout angled down.

3. To install optional the tool box, hold tool box into place, flush with front and side of flatbed. Weld tool box to flatbed frame and support bracket as indicated in Figure 1. **Note:** Do not weld tool box skirt on at this time.

4. Install valves under bed. If possible, mount valves on same side of truck that the hydraulic pump will be mounted on.
    a. If no tool box is installed, weld valve bracket onto underside of flatbed per Figure 1.
    b. If tool box is installed, weld valve bracket onto the side of the tool Box per Figure 1.

5. Install oil filter bracket into the reservoir outlet that is on opposite side from the valves. (See Figure 9, page 7)
    a. Use the 1 1/4” X 3/4” bushing (1) and 3/4” nipple (2) between reservoir and filter head.
    b. Use two 90 degree street ells (5) on inlet side of filter head, as shown.
    c. Bushing (6) will be 3/4” X 3/8” for 7 gallon system, 3/4" X 1/2” for 12 or 17 gallon system.
6. Place flatbed on truck frame and install according to the following instructions:

(continued)

Flatbed Installation

Ford (except 1 ton cab and chassis) and Dodge (Page 5, figure 3 & 4)

1. Butt the 1” thick lug at rear of flatbed to the end of the truck frame using three 1/2" X 1 1/2” bolts and wiz flange nuts (see figure 3). This should locate the headache rack no more than 2 inches from the truck cab. If the distance exceeds 2” the frame will need to be cut off accordingly

2. Align the bed so that it is the same distance between cab and the bed on BOTH sides of the truck. Also level the bed so that it is level BOTH front and back AND side to side.

3. When mounting stand-off brackets (37) use any existing holes in the truck frame if possible. If not drill 1/2" holes at the proper locations.

4. Install stand-off brackets (37, 38) onto the OUTSIDE of the truck frame and on the OUSIDE of the bed frame (see figure 2, page 3), using 1/2" X 1 1/2” bolts (43) and 1/2" X 2 1/2" bolts (44), and wiz flange nuts.

5. Place spacers (39) on INSIDE of the channel when bolting the stand-off brackets to the bed frame.

Chevrolet Old Style Chassis
Ford 1 Ton Cab-and-Chassis

1. Bolt stand-off brackets (37) to rear of the flatbed frame using three 1/2” X 1 1/2" bolts and wiz flange bolts.

2. Locate the flatbed on the truck frame so that the bottom bolt (29) through the 1” thick lug and the stand-off bracket rests on the frame of the truck while the lug is flush with the end of each frame rail. This should locate the front of the bed about 2 inches from the cab of the truck.

3. Align and bed so that it is the same distance between the cab and the bed BOTH sides of the truck. Also level the bed so that it is level BOTH front and back AND side to side.

4. Mount stand-off brackets (37, 38) onto the OUTSIDE of the truck frame and on the INSIDE of the bed frame (see figure 3, page 3)

5. Place spacers (39) on INSIDE of the channel when bolting the stand-off brackets to the bed frame.

Chevrolet New Style Chassis

1. Center the 3” X 4” steel tube (42) on the bed brackets of the truck frame. Locate and drill mounting holes in tube. Mount tube with 1/2” x 1 1/2” bolts provided (see figure 2).

2. Butt the 1” thick lug at rear of flatbed to the end of the truck frame (see figure 1). This should locate the headache rack no more than 2 inches from the truck cab. If the distance exceeds 2” the frame will need to be cut off accordingly.

3. With flatbed in place, adjust the distance between flatbed and cab. Center flatbed, side to side on truck frame, both front and rear. Weld the flatbed to the 3” X 4” tube (42) where the flatbed frame (hydraulic reservoir) meets the 3” X 4” tube.

4. Locate and drill holes for stand-off brackets above axle and at rear of frame. Install 1/2" X 2 1/2" bolts and wiz flange nuts through bracket and truck frame.

5. Place spacers (40) between bed frame and stand-off bracket and install with 1/2" X 2 1/2" bolts and wiz flange bolts (see figure 3).

6. Finish installing and tightening all bolts.

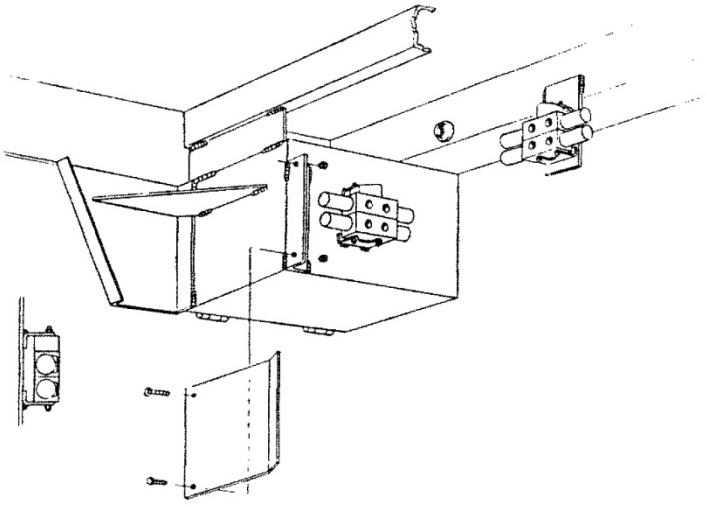


Fig. 1

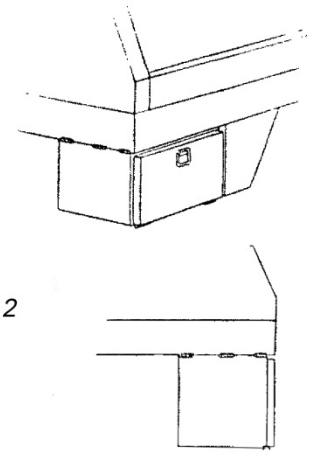


Fig. 2

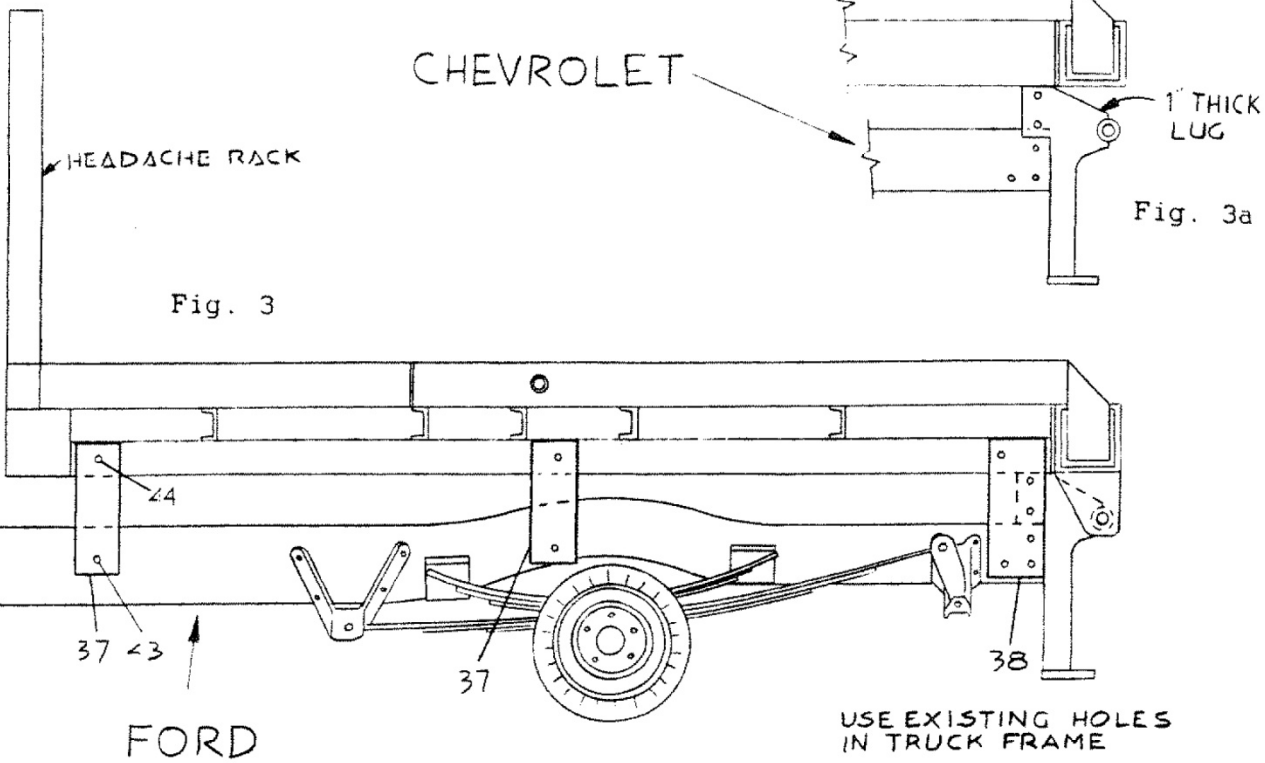


Fig. 3a

Fig. 3

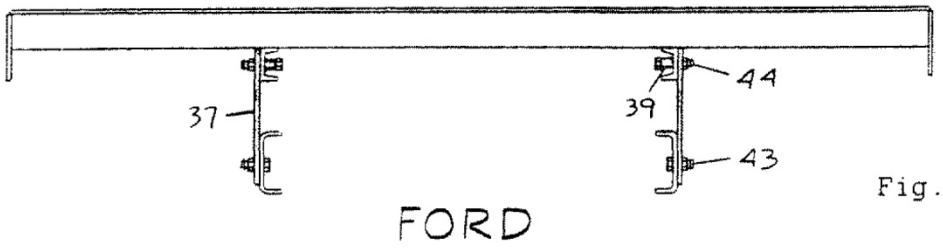


Fig. 4

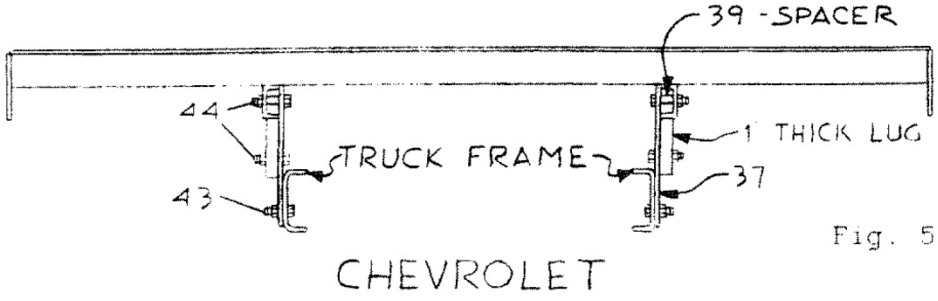


Fig. 5

CHEVROLET NEW
STYLE CHASSIS

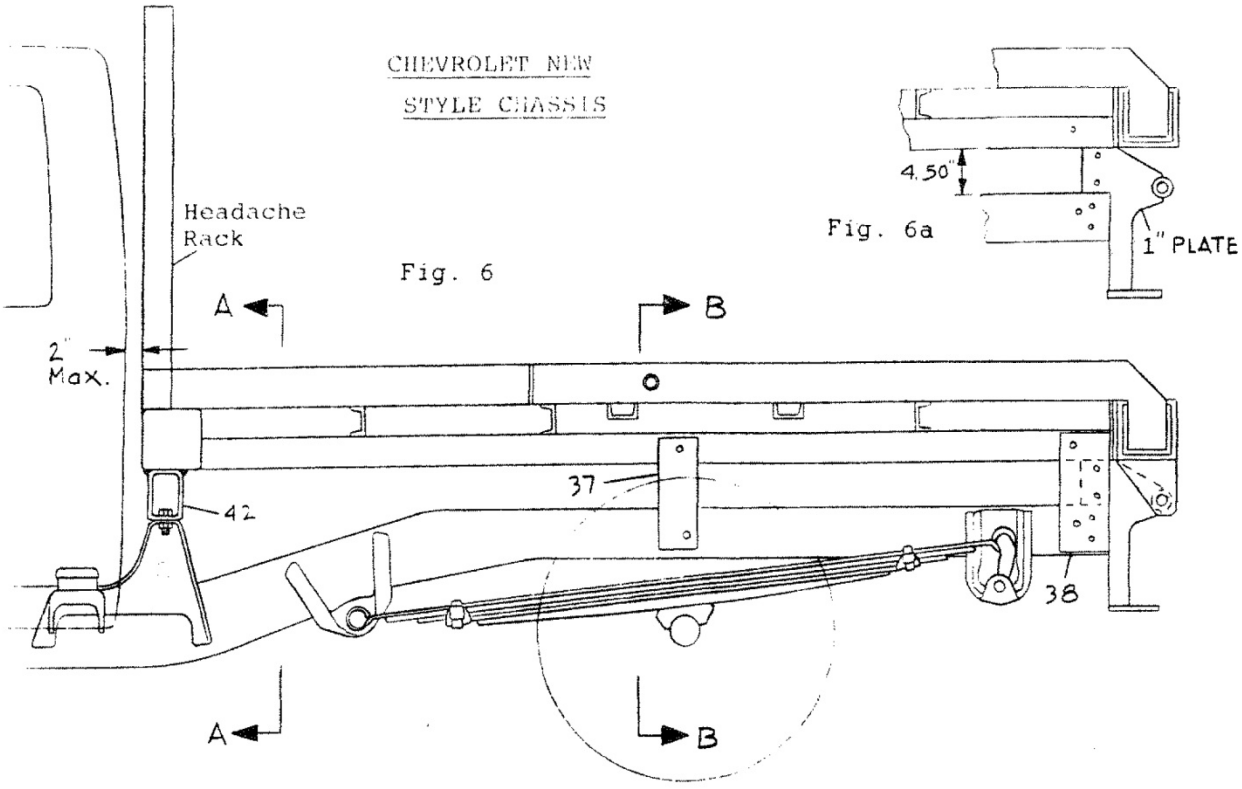
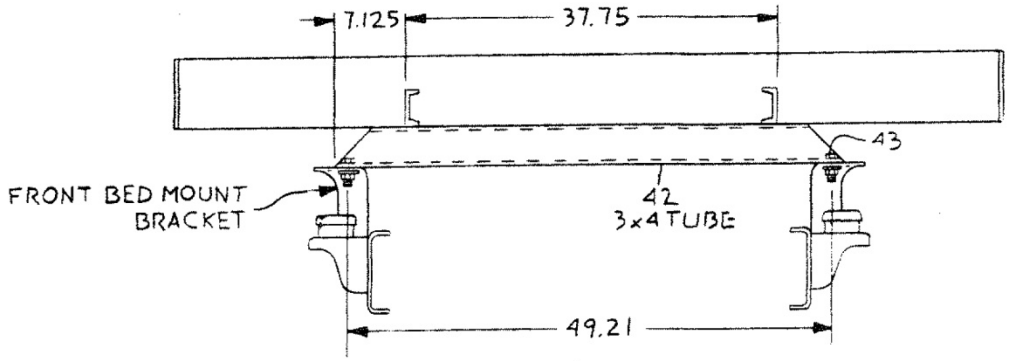


Fig. 6

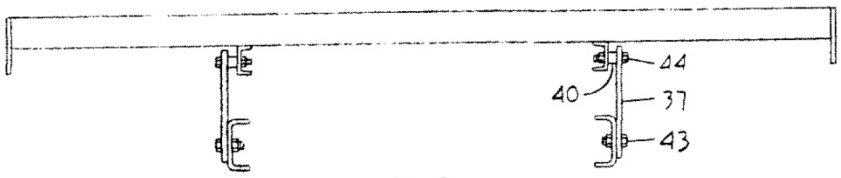
Fig. 6a

Fig. 7



A-A

Fig. 8



B-B

Electrical Installation

1. Drill 5/8” hole through the back of cab, behind the seat, approximately 3” above floor-board and 12” from corner of cab.

2. Feed the control cable through the hole far enough so that the ends will reach the valves. Remove bolt that holds truck seat to the floor. Place cable clamp around cable and on the bolt. Replace bolt into floor board and tighten.

3. Loosen the floor carpet trim along bottom of door way. Place the black and red wires under the trim and tighten trim back into place.

4. Locate a clear area of fire wall close to steering column. Drill 3/16” hole though fire wall. Feed wire through hole and connect to wire on clutch.

5. Locate a post in the fuse terminal that turns on and off with the ignition switch. Fasten one end of the in-line fuse holder to this post, the other end to the red wire from the control cable.

6. Push the four wire ends onto the posts of the valve solenoids, matching the colors as shown on page 9, figure 11.

Final Installation

1. Put approximately 8 gallon of hydraulic oil into the flatbed reservoir.

2. Start engine and run both cylinders in and out or up and down twice to fill system with oil. Make sure the tow hoses coming through the flatbed frame to the squeeze arms do not kink or stretch during operation. Check for hydraulic leaks.

3. Fill oil reservoir to full mark on dipstick. Reservoir holds approximately 10 gallon of oil.

4. Connect a hydraulic test gauge to the quick couplers in hoses going to squeeze cylinder. Check hydraulic system for pressure; should be 2300- 2500 psi.

5. If valves are installed on tool box, fasten valve protector shield to tool box. (see figure 1, page 4)

6. If valves are installed on frame, then weld protector shield to frame, behind valves, to protect valves.

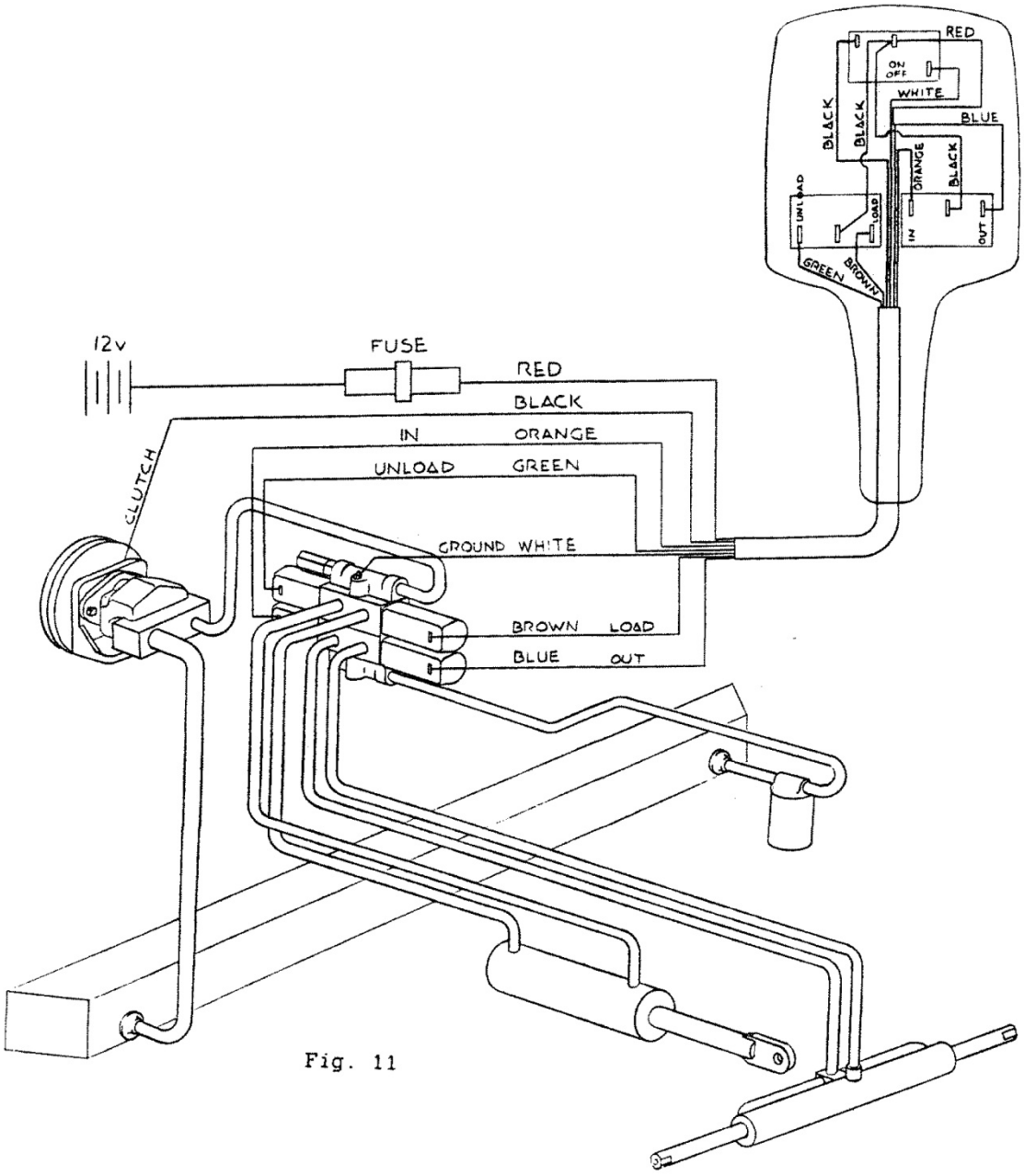


Fig. 11

Hydraulic and Electrical Schematic

Install electric wiring and hydraulic hoses per this schematic for proper operation of switches.

CAUTION

Before any engine work is begun, be sure engine is OFF and cannot be started.

Hydraulic Kit Installation Instructions

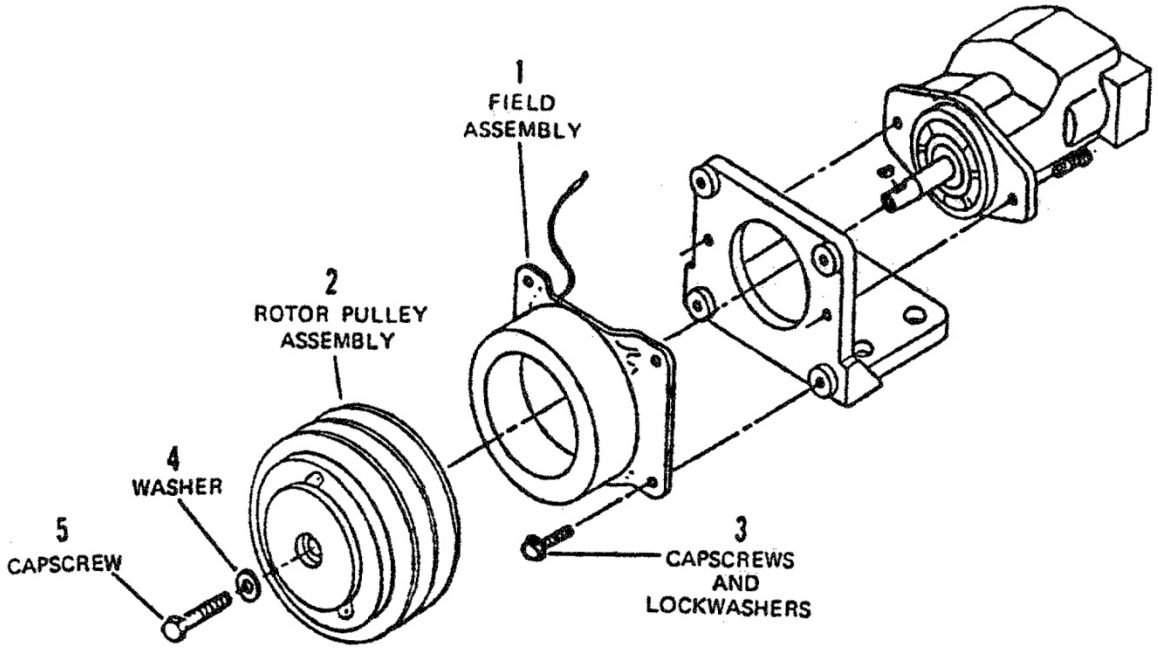
Note: The following instructions are general instructions applying to all Clutch Pump Kits. For specific instructions that apply to a specific engine, see instructions supplied with your Clutch Pump Kit.

1. Loosen all bolts on fan shroud and fan
2. Remove fan shroud and fan at the same time.
3. Loosen all bracket bolts to relieve tension on all V-belts.
4. Loosen and remove bolt of the engine crankshaft pulley. Match these bolts with bolts supplied in kit to assure thread match. Save these bolts.
5. Clean crankshaft pulley mating surfaces; make sure no burrs or dirt remains.
6. Bolt on DewEze aluminum pulley using the bolts supplied, in the original bolt holes.

   Note: Tighten all bracket bolts according to OEM instructions.
7. Install DewEze bracket in location as indicated on the specific instructions for your engine. Tighten bolts only hand tight at this time.
8. Install provided fan extension by replacing original stud bolts with bolts provided and secure extension temporarily with 2 flat washers and nuts.
9. Tighten everything including all original belts, air conditioner, power steering pump, smog pump(s), etc., per OEM specifications.
10. Mount pump and clutch assembly with supplied belts and tighten bolts hand tight.
11. Use a sturdy straight edge to align clutch pulley with newly installed crankshaft pulley.

    Note: Failure to properly align pulleys could result in severe damage to Fan, Radiator, Water Pump, and other surrounding components.
12. Tighten pump mounting bolts securely.
13. Install and align supplied idler pulley (if applicable) using spacers provided so pulley is centered on the backside of the belts. Tighten snugly.

Standard V-Belt Clutch Installation Instructions



STEP 1

Position the field assembly (1) against the foot mount bosses, aligning the field mounting holes with the bolt holes in the bosses. Insert four capscrews and lockwashers (3) furnished with the clutch into the bolt holes of the bracket. Tighten the capscrews to a wrench torque of 7-10 ft.-lbs. (85-120 inch-lbs.) Use caution not to strip the threads in the bracket body.

STEP 2

The pump shaft must be clean and free from burrs. Check the woodruff key for proper position and seating.

STEP 3

Slide the rotor assembly (2) on to the tapered shaft (aligning the keyway with the woodruff key in the shaft). Secure the rotor pulley assembly with the washer (4) and self-locking capscrew (5) provided with the clutch. Tighten the self-locking capscrew to a wrench torque of 15 - 20 ft.-lbs. (180 - 240 inch-lbs.).

STEP 4

Rotate the pulley assembly manually to assure that there is no interference between the field and rotor. If any interference occurs, a rubbing noise can be heard as the pulley rotates. In case of rubbing or other mechanical interference disassemble the clutch and repeat the installation of the field assembly.

STEP 5

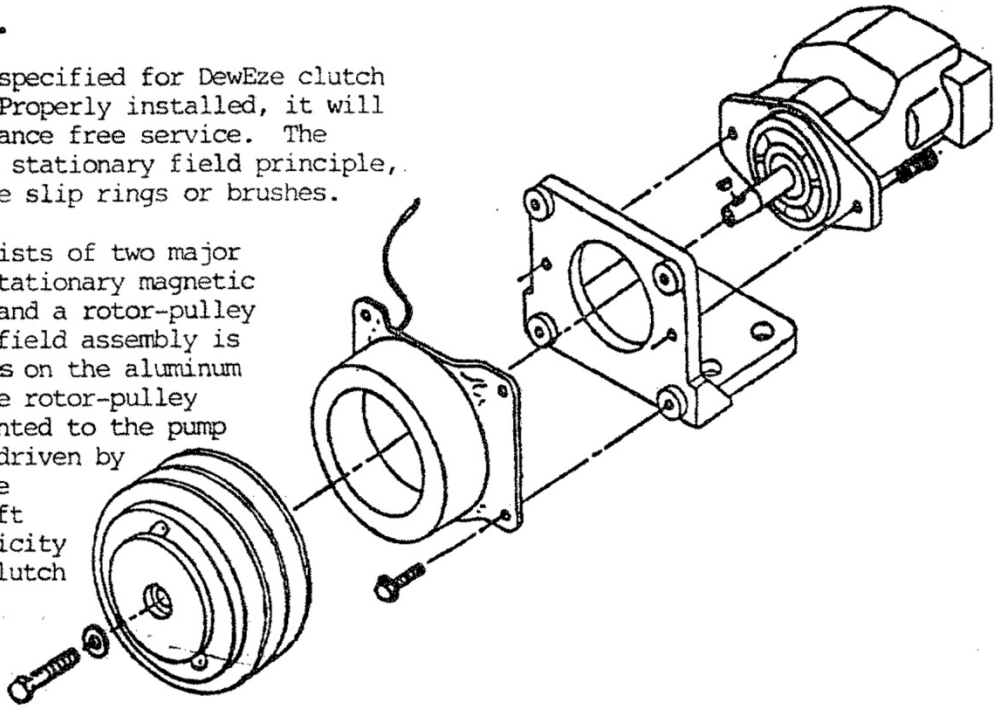
To disassemble the rotor-pulley assembly from the pump, remove the self-locking capscrew and washer and insert a 5/8-11 UNC-2B capscrew in the threaded portion of the hub. The pressure exerted by the capscrew on the end of the pump shaft will force off the rotor pulley assembly without damage to the clutch or pump. DO NOT USE a wheel puller on the outer diameter of the pulley, as this can result in damage to the clutch bearing.

Warranty voided if clutch is removed from shaft without using a 5/8-11 UNC bolt in the hub.

Heavy Duty V-Belt Clutch Installation Instructions

GENERAL

This clutch is specified for DewEze clutch pump systems. Properly installed, it will provide maintenance free service. The clutch, using a stationary field principle, does not require slip rings or brushes.



The clutch consists of two major components, a stationary magnetic field assembly and a rotor-pulley assembly. The field assembly is mounted on bosses on the aluminum foot mount. The rotor-pulley assembly is mounted to the pump crankshaft and driven by V-belts from the engine crankshaft pulley. Electricity energizes the clutch field to couple the clutch magnetically, thus driving the pump. De-energization of the field releases the clutch and uncouples the pump.

WIRING

The coil in the field assembly has a single leadwire (hot) and is grounded to the field shell. It will only be necessary to connect this leadwire into the electrical system. (See electrical switch installation instructions) Figure 2 is an example of a typical system.

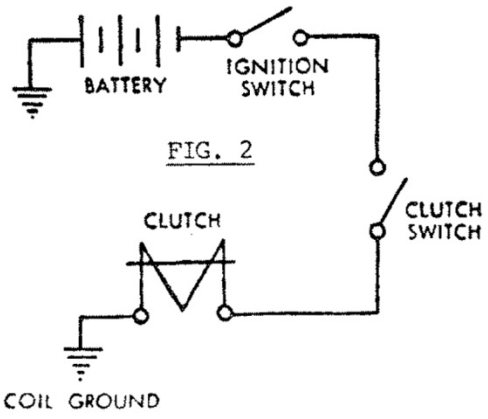


FIG. 2

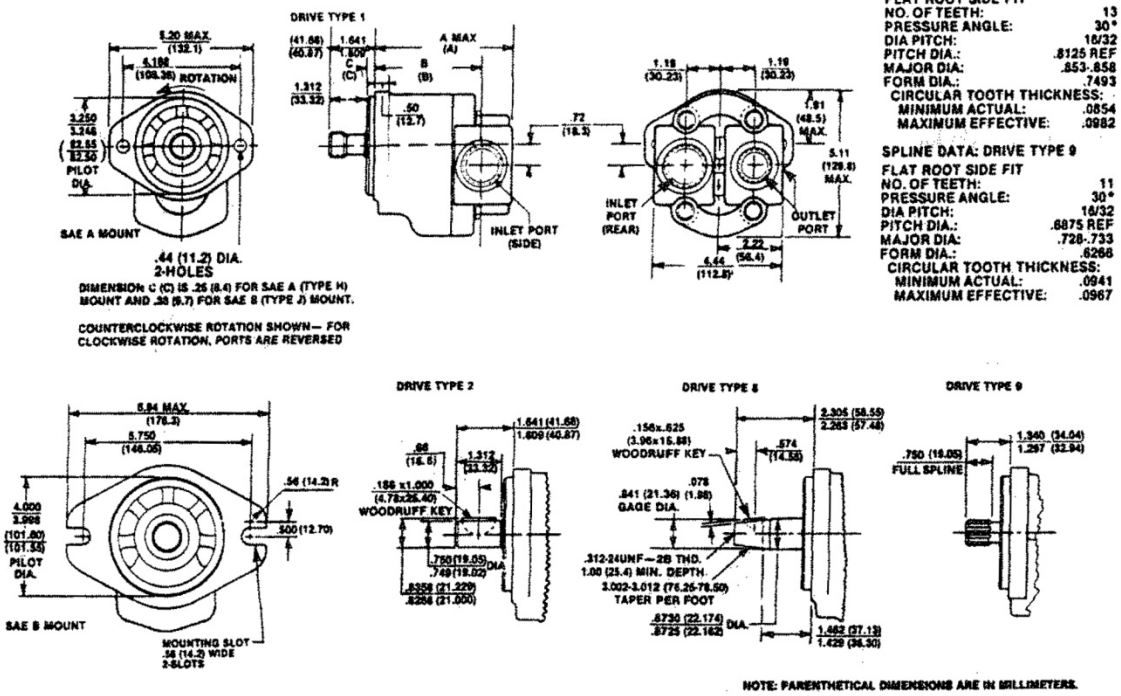
SERVICE

This pump clutch automatically compensates for wear requring no adjustment throughout the life of the clutch. NO NOT lubricate the unit. If the clutch should fail to operate, check the electrical circuit to be sure that the proper voltage is being supplied to the clutch. DO NOT attempt to make any mechanical adjustments on the clutch.

HYDRAULIC GEAR PUMP—Series S20S

4.5 to 10.0 GPM—SAE / NFPA Volumetric Rating

INSTALLATION DRAWINGS



NOTE: PARENTHETICAL DIMENSIONS ARE IN MILLIMETERS.

SPECIFICATION DATA

MODEL	DISPLACEMENT CU.IN./REV.	SAE/NFPA VOLUMETRIC RATING @1000 RPM & 100 PSI GPM	PRESSURE RATING PSI UP TO	A	(A)	B	(B)	INLET PORT	OUTLET PORT
S20S-7	.85	3.7	3000	4.42	(117.4)	3.35	(90.2)	1.312-12UN	1.062-12UN
S20S-12	1.45	6.3	3000	4.94	(125.5)	3.85	(97.8)	1.312-12UN	1.062-12UN
S20S-17	2.02	8.7	2500	5.38	(136.7)	4.29	(109.0)	1.625-12UN	1.312-12UN

*Note—S20S-17 with keyed shaft is rated up to 2500 PSI.

ORDERING FORMULA

PUMP MODEL NO.

S20S-15 AH2-1-R

- **SERIES NUMBER**
- **CAPACITY** IN GPM @ 2000 RPM & 100 PSI
- **PORT LOCATION**
  - A—PORTS IN SIDE
  - D—PORTS IN REAR
- **MOUNTING PAD**
  - H—SAE A—2-BOLT
  - J—SAE B—2-BOLT
- **SHAFT END**
  - 1—SPLINE—13-TOOTH
  - 2—KEYED
  - 8—TAPERED WITH KEY
  - 9—SPLINE—11-TOOTH
- **DESIGN NO.**
- **ROTATION**
  - R—RIGHT HAND (CLOCKWISE)
  - L—LEFT HAND (COUNTERCLOCKWISE)

REXROTH
WORLDWIDE HYDRAULICS

Operating Instructions

Starting

Turn pump ON with engine idling. (Red light will indicate pump is on)

IMPORTANT: In cold weather, allow engine to idle for 5 or 10 minutes with pump on before operating the arms. This allows the oil to warm up and flow more freely. Failure to do so may cause hydraulic pump failure.

Loading

Back the truck against the bale with the arms wide apart and tilted slightly upward. Close the arms firmly against the bale. Lift the bale onto the truck. Release the bale and repeat the operation for the second bale except do not release the bale after it is onto the truck. Instead, keep the bale in the arms while hauling and it will be ready for unloading at your destination.

Unloading

Do the reverse of the loading operation.

NOTE: Sometimes it may be necessary to operate with spinners to grip the front bale for unloading.

Unrolling

With the arms laying on the bed, place the optional risers in the “eye” of the arms, and the spinners in the “eye” of the risers. Position the arms over the bale so the spinner is at the center of the bale. Close the arms and pick up the bale. To unroll, lower the bale onto the ground and drive. Gradually lower the arms as the bale unrolls.

NOTE: Without the risers, the spinners will not lower close enough to the ground to completely unroll the bale.

Storing the Arms

Close the arms partially and lay on the flatbed. Open arms until they are flush with the side of the bed. They now serve as sides for the flatbed.

Turn Clutch Pump Kit Off

Turn off the clutch pump kit when not using the hydraulic system. **Operating the truck at road speeds, or above 2,000 rpm, with pump engaged, may cause hydraulic pump failure.**

Maintenance

1. Oil reservoir must be kept full at all times. Maintain the oil between the “F” and “L” on the dipstick.

2. In cold weather, engage clutch and let the hydraulic system circulate until system sounds normal.

3. Change oil filter (10 micron) after first forty hours of use and then every 250 hours thereafter.

4. Keep belt tension tight. Loose belts may cause premature wear of belts and pulleys.

5. Watch hydraulic system for signs of leakage. Loss of hydraulic fluid may cause serious damage to major hydraulic components.

6. When quick-couplers leak, the O-ring may need to be replaced.

7. Examine the oil. If milky in appearance it is probably saturated with air or water and should be replaced with fresh oil.

8. Unusual sounds in the hydraulic pump or anywhere in the system should be investigated by a fluid power mechanic.

9. High heat, 190 degrees or greater, can be damaging to the hydraulic system and should not be tolerated. Feel various parts of the system to make sure there are no “hot spots” which may indicate a problem is developing.

10. Clutch should be disengaged when hydraulic system is not in use.

11. Make sure quick-disconnect couplers are clean, properly connected and mated, so that oil flows freely from hydraulic power source to implement.

12. For easy hook up in the couplers, shut clutch switch “off” and activate control valve switches with the ignition “on” This will release the pressure in the lines on the truck.

13. When quick couplers are not in use, cover with dust caps.

14. Engine should not exceed 2,000 rpm with clutch engaged and pump operating.

15. CAUTION: Do not operate hydraulic system with hood open.

Trouble – Solutions Guide

Problem Area	Symptoms	Possible Solutions
Hydraulic Pump	No Oil Flow	1. CHECK OIL LEVEL IN RESERVOIR – If oil level is low. Check for leaks in system. 2. CHECK BLET TENSION – Tighten if needed. Replace belt if necessary. 3. CHECK FOR SHEARED KEY ON PUMP SHAFT – Replace key. 4. CLUTCH NOT FUNCTIONING – See guide for clutch problems. 5. INTERNAL PUMP DAMAGE – Have pump repaired or replaced. 6. CHECK PRESSURE LINE AT PUMP TO SEE IF OIL IS MOVING.
	NO Oil Pressure (Assuming some oil flow)	1. VALVE NOT FUNCTIONING – Check for disconnected wires at solenoid. 2. CHECK FOR POSSIBLE LEAKS IN SYSTEM – Repair leaks or blown hoses. 3. CHECK FOR MALFUNCTIONING SWITCH – Replace broken switches. 4. PRESSURE RELIEF SPRING BROKEN ALLOWING OIL TO BY-PASS SYSTEM – Replace spring. 5. PRESSURE SEAL ON PUMP IS BROKEN OR WORN – Replace pressure seal. 6. BELTS OR CLUTCH ARE SLIPPING – Tighten belts. 7. PRESSURE RELIEF MAY BE SET TOO LOW **CAUTION:** PRESSURE ECEEDING 2,600 PSI CAN DAMAGE THE PUMP.

Assuming coil and electrical systems seem to be functioning, use a screwdriver and push in on the button at the end of the tube assembly. (**NOTE**: The solenoids rest on this tube.) This will usually operate the valve. **CAUTION**: Make sure no one is on or around moving parts of the equipment that is hooked to the hydraulic system.

If spool is jammed, do not force the spool as this may cause a scar on the spool or valve body. Disassemble valve, clean, and reassemble. If spool is still tight, use a very fine emery cloth to smooth burrs or rough edges on spool. **NOTE**: The relief valve is preset from factory. Warranty is void if valve pressure is increased beyond factory setting.

Trouble – Solutions Guide

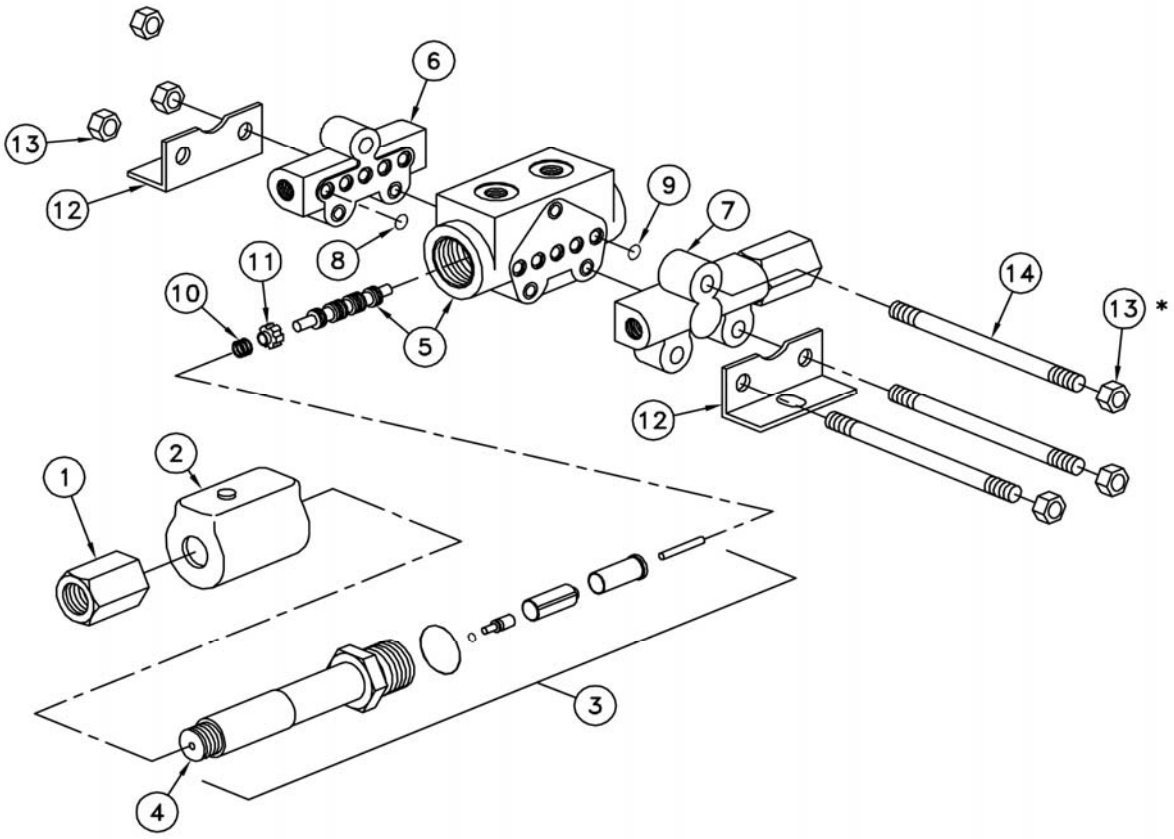
Problem Area	Symptoms	Possible Solutions
Clutch	Does Not Engage	1. CHECK FOR BLOWN FUSE – Replace fuse. **CAUTION**: Fuse should not exceed 30 amps. 2. CHECK WIRE TO CLUTCH – Insure there are no breaks or shorts in wire and that it is plugged into clutch lead. 3. CHECK FOR BAD SWITCH IN SYSTEM – Replace Switch 4. CHECK FOR BLOWN MAGNETIC COIL – Use jumper from positive battery terminal to coil lead to check coil. – Replace coil if necessary
Belt(s)	Jumping off Pulleys	1. BELT(S) TOO LOOSE – Tighten belts 2. CECK FOR EXCESSIVE BELT WEAR – Replace worn belt(s) 3. CHECK FOR LOOSE PUMP BRACKET – Tighten loose bolts – Replace broken bolts 4. CHECK ALIGNMENT OF CLUTCH AND CRANKSHAFT PULLEYS – Realign pulleys 5. CHECK CRANKSHAFT PULLEY FOR LOOSE OR BROKEN BOLTS – Replace broken bolts – Tighten loose bolts 6. CHECK ALIGNMENT OF IDLER PULLEY (IF APPLICABLE) AND THE CONDITION OF IDLER PULLEY BEARINGS – Realign idler pulley – Replace broken or worn bearings

FOR ADDITIONAL TROUBLE SHOOTING INFORMATION AND HELP CONTACT

Harper Industries, Inc.
151 East Hwy 160
Harper, KS 67058

Phone (620) 896-7381
(800) 835-1042
Fax (620) 896-7129

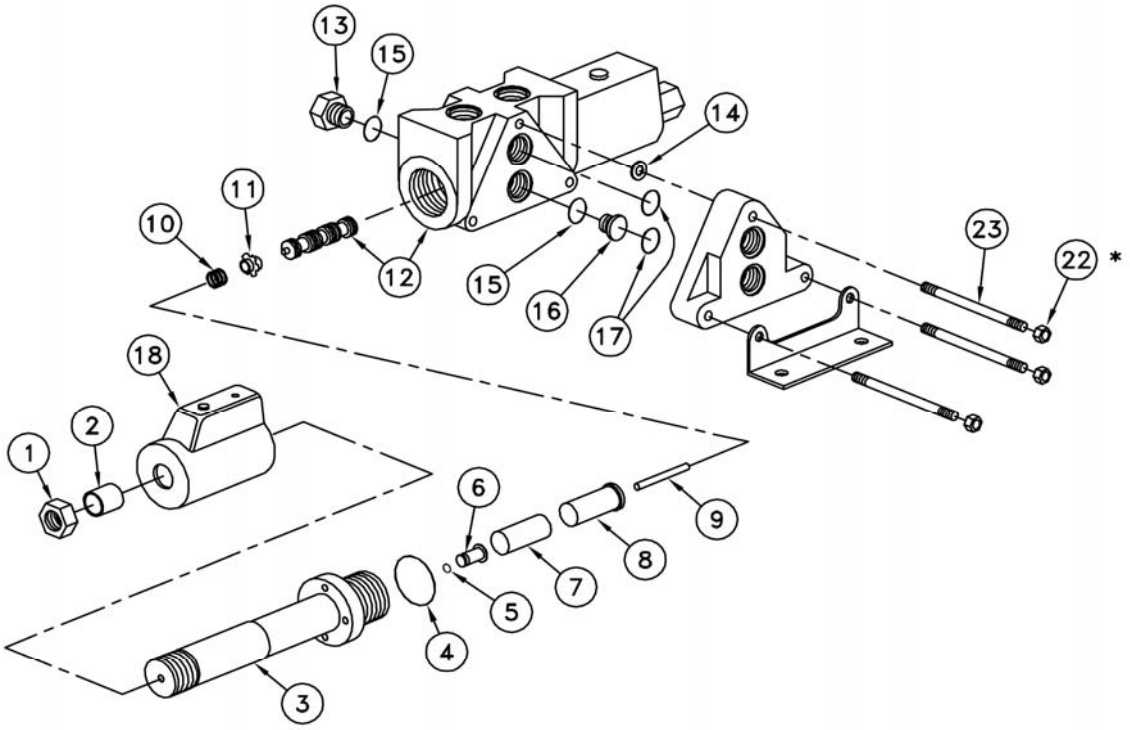
VALVE ASSEMBLY\FPS SMALL



ITEM	PART NO.	DESCRIPTION
1	720005	Nut
2	720004	Solenoid coil
3	720003	Tube sub–assembly
4	720017	Tube
5	720002	Body and spool
6	720008	Outlet
7	720006	Inlet
8	720019	O–ring/outlet
9	720018	O–ring/inlet
10	720023	Spring
11	720024	Spring retainer
12	720022	Mounting bracket
13*	510208	5/16–18 Nut
14	220048	Tie rod/1 bank
	220332	Tie rod/2 bank
	720128	Tie rod/3 bank

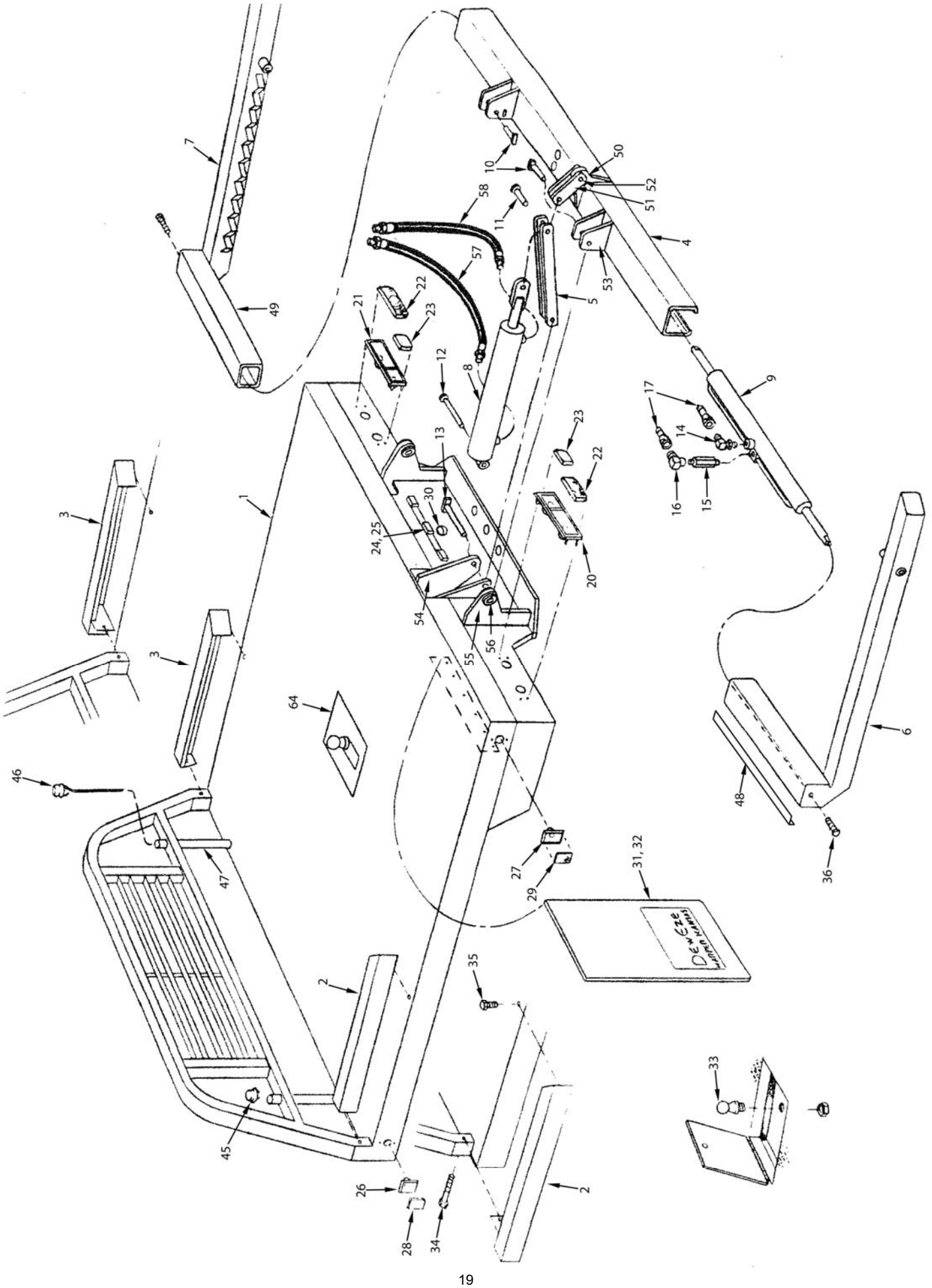
* TORQUE TO 115 in–lb

VALVE ASSEMBLY\FPS LARGE



ITEM	PART NO.	DESCRIPTION
1	720044	Nut
2	720045	Sleeve
3	720046	Tube Sub-assembly
4	720047	O-ring
5	720048	O-ring
6	720050	Button
7	720051	Plunger
8	720052	Plug
9	720053	Pin
10	720054	Spring
11	720055	Retainer/spring
12	720056	Spool & body (matched set)
13	720057	Plug
14	720058	Mylar shim
15	720059	O-ring
16	720060	Series plug
17	720061	O-ring
18	720062	Solenoid coil
19	220047	Relief valve
20	220043	Valve assembly/1-bank
21	220044	Valve assembly/2 bank w/relief
22*	510208	5/16-18 Nut
23	220332	Tie rod/1 bank
	720128	Tie rod/2 bank
	220051	Tie rod/3 bank

* TORQUE TO 115 in-lb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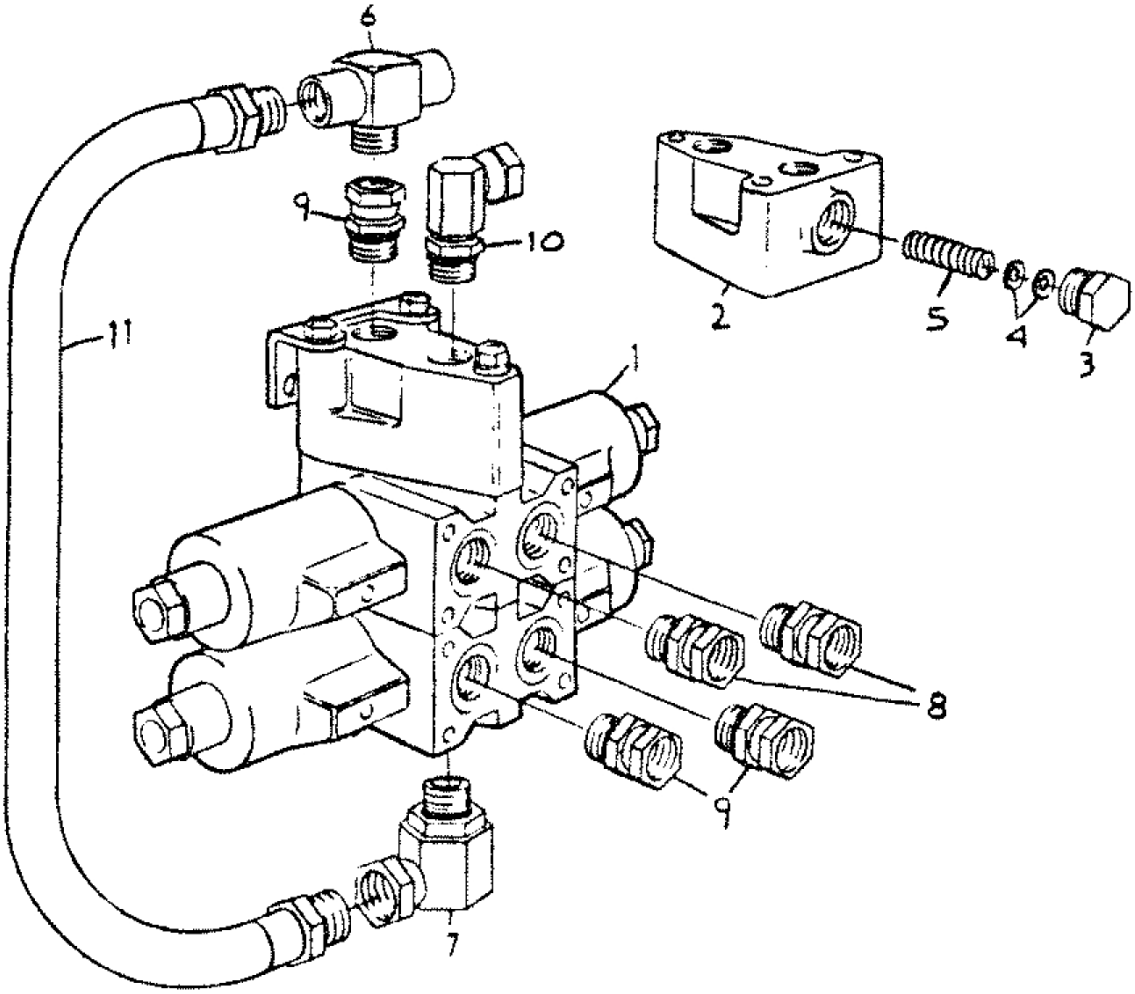
Flatbed Parts List

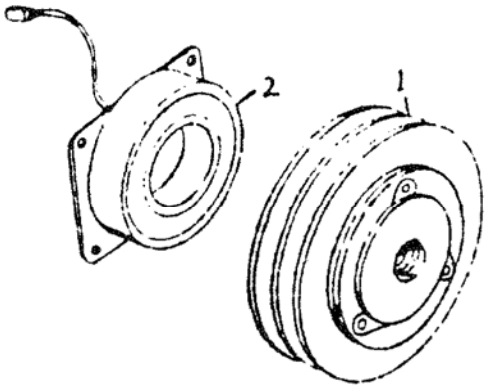
1.	210009	280 Bed, Recessed Ball
	210010	278 Bed, Recessed Ball
	210011	275 Bed, Recessed Ball
	210166	280 Bed, Flipover Ball
	210167	278 Bed, Flipover Ball
	210168	275 Bed, Flipover Ball
2.	210470	Side, Left – 287 Bed
	210286	Side, Left – 285 Bed
	210013	Side, Left – 280 Bed
	210015	Side, Left – 278 Bed
	210121	Side, Left – 275 Bed
3.	210471	Side, Right – 287 Bed
	210287	Side, Right – 285 Bed
	210014	Side, Right – 280 Bed
	210016	Side, Right – 278 Bed
	210122	Side, Right – 275 Bed
4.	210017	Cross Arm Tube – 280, 278 Bed
	210018	Cross Arm Tube – 275 Bed
5.	210993	Idler Arm Kit
6.	210019	Hugger Arm, Left
7.	210020	Hugger Arm, Right
8.	220006	Lift Cylinder
	220060	Lift Cylinder Seal Kit
9.	220002	Squeeze Cylinder
	220056	Squeeze Cylinder Seal Kit
10.	210107	Pin, Cross Arm
11.	210110	Pin, Lift Cylinder Rod End
12.	210112	Pin, Lift Cylinder Base End
13.	210124	Pin, Idler Arm
14.	220005	90 Degree Adjustment Ell
15.	220003	Connector
16.	220004	90 Degree Ell
17.	420005	Pioneer Coupler, Male
18.	220007	Hose, 7.5’ – 280 Bed
	220008	Hose, 9.0’ – 280 Bed
19.	220009	Hose, 6.5’ – 275, 278 Bed
	220010	Hose, 8.0’ – 275, 278 Bed
20.	230001	Tail Light Left
21.	230002	Tail Light Right
22.	230003	Lens, Tail and Stop
23.	230004	Lens, Back-Up
24.	230005	Rear Id Light
25.	230006	Lend, Rear Id Light
26.	230007	Side Marker Light, Amber
27.	230008	Side Marker Light, Red
28.	230009	Lens, Amber
29.	230010	Lens, Red
30.	230011	License Light
31.	210174	Mud Flap, Wide
32.	210178	Mud Flap, Narrow
33.	210090	Hitch Ball
34.	210129	3/8” X 4” NC Bolt
35.	510063	3/8” X 1” NC Bolt
36.	210128	5/8” X 1 1/2" NF Bolt
37.	210126	Stand-Off Bracket
38.	210127	Rear Stand-Off Bracket
39.	210179	Spacer, 1 1/4" (6)
40.	210180	Spacer, 7/8” (2)
42.	210182	3” X 4” Tube
43.	510218	1/2" X 1 1/2" NC Bolt (10)
44.	410273	1/2" X 2 1/2" NC Bolt (10)
45.	210165	Filler Cap
46.	210176	Filler Cap Threaded w/ Dipstick
	220383	Filler Cap Not Threaded w/ Dipstick
	220382	Filler Cap Not Threaded w/oDipstick
47.	210059	Filler Tube, Threaded
	220385	Filler Tube, Machined
48.	210717	Spacer, Slide Tube
49.	210084	Shield, Squeeze Cylinder
50.	210071	Horse Head
51.	210105	Push Arm
52.	210106	Pin, Push Arm
53.	210072	Hinge
54.	210045	Idler Arm Pivot
55.	210047	Hinge Mount
56.	210063	Bushing
57.	200064	Diesel Fuel Vent O-Ring
58.	210049	Left Rear Skirt
59.	210050	Right Rear Skirt
60.	210276	Valve Shield
61.	210277	Valve Shield Bracket
62.	110420	Bolt, 3/8 – 16 X 1 Gr 5
63.	110826	Nut, 3/8 -16 Gr 5
64.	210086	Ball, Flip-Over Assembly
65.	200052	Decal Kit w/o Stripe
66.	200053	Decal Kit w/ Stripe
67.	210063	Bushing Lift Cyl. Base End in Bed
68.	210825	Bushing Lift Cyl. Base End

Large Valves & Fittings

(for 12 & 17 GPM Systems)

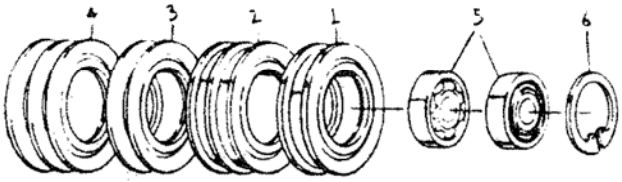


1.	**220044**	**Valve Assembly**
2.	**220047**	**Relief Valve Assembly**
3.	**220081**	**Cap**
4.	**220082**	**Shim**
5.	**220083**	**Spring**
6.	**120198**	**1/2" Tee**
7.	**120190**	**1/2" X 1/2" 90 Degree Swivel**
8.	**120301**	**3/8" X 1/2" Straight Swivel**
9.	**120191**	**1/2" X 1/2" Straight Swivel**
10.	**120302**	**1/2" X 3/4" 90 Degree Swivel**
11.	**720080**	**Return Hose**



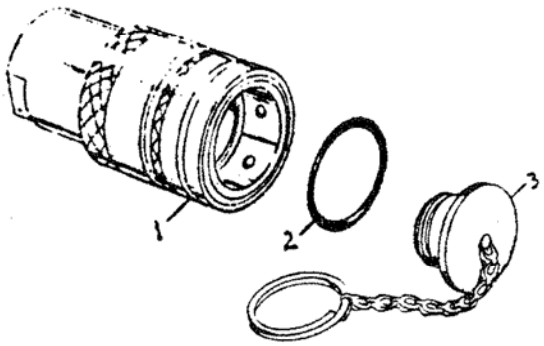
CLUTCH

1.	740037	Clutch, standard
	740038	Clutch, Heavy Duty
2.	730001	Coil, standard
	730002	Coil, Heavy Duty



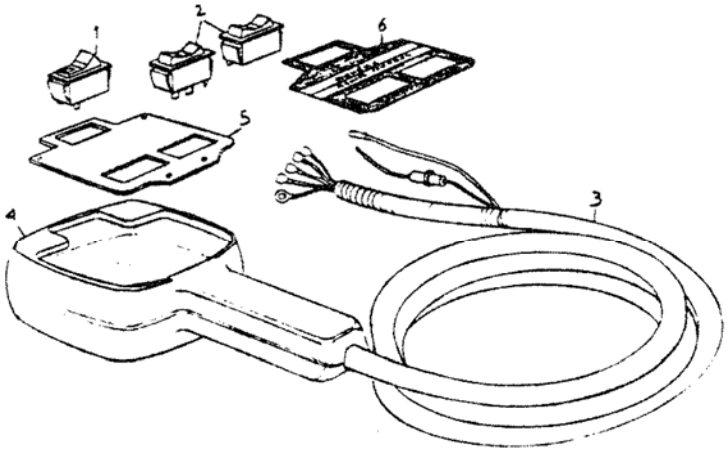
IDLER PULLEY

1.	740039	Single pulley, flat
	740040	Double pulley, flat
	740041	Single pulley, V-groove
	740042	Double pulley, V-groove
2.	740068	Bearing
3.	740069	Snap ring



QUICK COUPLER

1.	220084	Quick coupler
2.	420050	O-ring
3.	420051	Dust cap



CONTROL CABLE

1.	130001	Switch, with light
2.	130002	Switch
3.	230013	Wiring Harness
4.	150008	Housing
5.	150002	Plate
6.	150004	Decal