SERVICE MANUAL
AND
REPAIR PARTS
FOR
Size EH-2.5 Posidyne®
Electro/Hydraulic
CLUTCH/BRAKE DRIVES

WARNING - Read this manual before any installation, maintenance and operation.

MANUFACTURERS OF MECHANICAL AND ELECTRICAL POWER TRANSMISSION EQUIPMENT
Limited Warranty

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Section 1
DESCRIPTION and OPERATION

1-1 THE OIL SHEAR PRINCIPLE

Conventional clutches and brakes depend on the friction between solid surfaces operating in air to transmit torque. Friction does the job, but produces a great amount of heat and wear. The EH-2.5 Posidyne Clutch/Brake unit is an oil shear drive, with the friction surfaces operating in a bath of oil. The oil molecules tend to cling to each other, and to the friction surfaces. As moving and stationary elements are brought together, a thin but positive film of oil is maintained between them. The oil film is controlled by a clamping pressure and by carefully designed grooves in the elements. Torque is transmitted from one element to the other through the viscous shear of the oil film. So long as there is relative motion between the elements, they are protected by the oil, thus greatly reducing wear. The oil bath also effectively transmits heat away from the friction elements.

1-2 DESCRIPTION
(See Figure 1.1)

In the EH-2.5 Posidyne Clutch/Brake, the friction surfaces consist of alternate carbon steel plates and advanced friction material on steel discs. The oil control grooves are molded into the friction material disc surfaces. The discs have internal teeth which mate with a spline on the output shaft for both clutch and brake applications. The steel plates are keyed to the input shaft in the clutch and to the housing for the brake when used. The splined sections of the Posidyne output shaft contain centrifugal impellers to maintain a positive flow of oil between the discs and plates.

As noted in Section 2, Specifications, standard Posidyne units may be equipped with a clutch and a brake, or a clutch only. The Clutch is operated by hydraulic pressure. The Posidyne brake may be pressure operated, or it may be spring loaded to operate automatically when the clutch is released, or a combination of both springs and pressure.

1-3 OPERATION

The EH-2.5 Posidyne cross-section (Figure 1.1) shows the drive with the Brake engaged. A nominal braking force is
Provided by springs located in the Output Housing. Heavier springs are used to provide a greater braking force, when needed. Pressure Assist (as shown), controlled by external valves, also provides a greater braking force. The drive is normally in the Brake Position. The Drive Plates are keyed to the Output Housing and the Friction Discs are splined to the Output Shaft. The Output Shaft is not able to rotate in the Brake Position.

The Clutch is engaged when the hydraulic pressure is exhausted from the Brake Port and applied to the Clutch Port. The Piston moves to compress the Clutch Stack on the Input Shaft. The Drive Plates are keyed to the Input Shaft and the Friction Discs are splined to the Output Shaft. This allows both shafts to rotate at the same speed.

1-4 AVAILABLE MOUNTING CONFIGURATIONS

There are (3) basic mounting configurations for the EH-2.5 Posidyne Clutch/Brake Units.

A. Piggyback Mounting/Motor Driven Pump
(See Figures 1.2A and 10.6)
The Hydraulic Pump and Drive Motor is piggyback mounted above the Posidyne Unit for an efficient and compact design.

B. Piggyback Mounting/Belt Driven Pump
(See Figures 1.2B and 10.7)
(Non-Reversing Applications Only)
This Piggyback Mounted Unit uses a Timing Belt and Pulleys to drive the Hydraulic Pump, which is driven off the Input Shaft.

C. Side Mounting/Motor Driven Pump
(See Figures 1.2C and 10.8)
The Hydraulic Pump and Drive Motor is mounted on the side of the Posidyne Unit usually on a common base which is customer furnished unless otherwise specified.

1-5 OTHER AVAILABLE OPTIONS

1. Quill Input Shaft, C-Face Mounting. (Not available with Mounting Configuration B.)
   • 4-1/2" AK, 7/8" U
   • 8-1/2" AK, 1-1/8" U
   • 8-1/2" AK, 1-3/8" U

2. Output C-Face Mounting.
   • 4-1/2" AK, 7/8" U
   • 8-1/2" AK, 1-1/8" U
   • 8-1/2" AK, 1-3/8" U

3. Fan Cooling. (Not available with Quill Input Shaft or Mounting Configuration B)


5. Positioning Encoder Assembly. (Not available with C-Face Mounting on the Output Shaft.)

Contact Force Control Factory for further information on Available Options and Mounting Configurations.
Section 2
SPECIFICATIONS
(EH-2.5 Posidyne CLUTCH/BRAKE)

2-1 MODEL DESIGNATIONS

The model designations specifies the size (EH-2.5.) and internal logic type. The types are:

- **S** - Pressure set clutch, light spring set brake with pressure assist.
- **SA** - Pressure set clutch, medium spring set brake with pressure assist.
- **A** - Pressure set clutch, medium spring set brake (See NOTE following).
- **B** - Pressure set clutch, heavy spring set brake (See NOTE following).
- **C** - Pressure set clutch, no brake.
- **P** - Pressure set clutch and brake, No springs.

**NOTE:**

Type A and B units both have spring actuated brakes. The difference is that type B units have additional springs.

2-2 SPECIFICATIONS

Specifications for the EH-2.5 Posidyne Clutch/Brake Drives are listed in Table 2.1

**TORQUE RATINGS**

The torque ratings listed are based on maximum actuation pressure as specified in the Table 2.1.

### Table 2.1 SPECIFICATIONS

<table>
<thead>
<tr>
<th>Size</th>
<th>Logic</th>
<th>Clutch Torque (Lb. In.)</th>
<th>Brake Torque (Lb. In.)</th>
<th>Max. KE per Engmt. (Ft. Lbs.)</th>
<th>Average Thermal HP</th>
<th>Inertia of Cyclic Parts (Lb. Ft.²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>S</td>
<td>1116 @ 100 964 @ 100</td>
<td>122</td>
<td>1800</td>
<td>7500</td>
<td>.70</td>
</tr>
<tr>
<td></td>
<td>SA</td>
<td>1245 @ 150 1075 @ 150</td>
<td>424</td>
<td></td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>1237 @ 150 1068 @ 150</td>
<td>424</td>
<td></td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>794 @ 161  686 @ 161</td>
<td>860</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>1063 @ 119 918 @ 119</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>1160 @ 95  964 @ 95</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**

* Ratings based on 1800 RPM operating speed and 70° ambient temperature.
** Cooling water flow requirements in GPM equals .10 x calculated thermal horsepower.
Section 3
INSTALLATION

3-1 RECEIVING THE DRIVE
Check the drive for shortage or damage immediately after arrival. Prompt reporting to the carrier’s agent, with notations made on the freight bill, will expedite satisfactory adjustment by the carrier. When unloading or handling the drive, keep it upright. All Drives are filled with oil, ready to run, when shipped. However, before placing the unit in service or storage, check the oil level to make sure none has spilled out in transit. Add oil if necessary (refer to Section 4 - Lubrication). Remove the red plastic plug and install the Air Breather (#45). If the drive is not to be installed and operated soon after arrival, store it in a clean, dry place having slow, moderate change in ambient temperature.

3-2 MOUNTING THE DRIVE
Installation of the Drive should be made in much the same manner, and receive the same care for a precision gear reducer. Note the following precautions when mounting the drive:
1. The Drive should be mounted on a firm, level base or foundation, common with both the driving and driven components.
2. Use SAE Grade 5 Hex. Hd. Cap Screws to bolt the drive securely into place. Before tightening down the bolts, check alignment with both the driving and driven machinery, then recheck after tightening.
3. If the input or output shaft is to be directly coupled, use only a flexible coupling (with horsepower service factor 3 to 1) to take care of maximum torque requirements. Make sure that the shafts to be coupled are concentric within 0.005 in. TIR. Check for horizontal, vertical and angular misalignment. Use shims as necessary to correct.
   CAUTION: Do not drive couplings or bushings on shaft.
4. If the Drive is to be connected through a belt, chain or gear drive, locate as close as possible to the housing to minimize overhung loads. Make sure that the sheaves, sprockets or gears are in line and that the shafts are parallel.
5. After the machinery has been in operation for a few hours, make sure that all mounting bolts are tight and recheck the alignment of all components.
6. After machinery has been in operation for 40 hours check the mounting bolts and tighten if necessary.
Section 4  
LUBRICATION  

4-1 CHECKING THE OIL LEVEL  
When the drive is installed and weekly thereafter, or until experience dictates otherwise, check the oil level. Always check the oil level with the drive at room temperature and while it is not running. 
The drive has an oil sight gauge located at the output end of the drive. The oil level is to be at the center of the gauge. 

4-2 OIL CAPACITY  
The Oil Capacity for the EH-2.5 Posidyne is 3 quarts. 

4-3 CHANGING THE OIL  
IMPORTANT  
Open the disconnects to the drive motors before attempting to change the oil. 
After the first 30 days of operation completely drain the oil from the drive using the drain plugs provided. Remove and replace the cartridge oil filter with a new filter. If the oil sight glass is dirty it should be removed and cleaned. 
Reinstall the drain plugs and refill the drive to the center of the sight glass with fresh oil. 
After the first oil change check the oil level and color of the oil at least once per month. Maintain the oil level to the center of the sight glass by adding additional oil as needed. The oil and filter should be changed after every 12 months of operation there after. 

CAUTION  
Do not overfill the Drive Unit. Excess oil will cause the unit to overheat. 

4-4 TYPE OF OIL  
Use only Mobil AutomaticTransmission Fluid ATF-210 (type “F”) or Mobil Multi-Purpose AutomaticTransmission Fluid for most drives. Other fluids may be specified for special applications. Always use the type of fluid specified on the Name Plate.
Section 5
OPERATIONAL CHECKS

Make these Operational Checks with the driver shut down and locked out. Also remove the (2) Inspection Plugs from
the drive unit. Do not remove these inspection plugs while the drive unit is running.

If automatic controls are used, make provisions for manual operation. If the drive unit has been removed for repair,
make temporary, manually controlled hydraulic connections. (See Figure 5.1 for Hydraulic Schematic.)

The Manifold (#105), Control Valve (#387), Pressure Relief Valves (#388 and #400) and the Pressure Gauges
(#327 and #397) all have to be in place and attached to the unit. (See Figure 10.5)

5-1 CHECKING PISTON ACTUATION
(Motor Driven Hydraulic Pump Units Only)
1. With the hydraulic pump running, press and hold the
"Manual Override" button to apply pressure to the clutch
port. At the same time, observe the piston movement
to see if it actuates quickly and smoothly. If the piston
movement is irregular and has a tendency to stick or
bind, internal damage may be indicated. If the piston
moves slowly, the piston seals are probably leaking.
Release the "Manual Override: button and observe the
piston to see if it returns back to its original position
quickly and smoothly.

5-2 CHECKING CLUTCH/BRAKE ENGAGEMENT or
INPUT SHAFT Vs. OUTPUT SHAFT ROTATION
(With Male Input Shaft)
1. When applying pressure to the clutch port, simply rotate
the input shaft by hand and observe the rotation of the
output shaft.

When the pressure is not applied to the clutch or when
applied to the "Pressure Assist" brake port, the output
shaft should be locked and not able to rotate.

With SCP Logic, the output shaft is free to rotate when
pressure is not applied to the brake. Applying pressure
to the brake should lock the output shaft.

(With C-Face Mounted Drive Motor)
If the C-Face mounted drive motor is still attached, the
input shaft is not accessible to be manually rotated.

1. Temporarily hook-up drive motor and "Bump" it to check
the clutch or brake operating modes and output shaft
rotation.

CAUTION: Do not attempt to run the drive mo-
tor with the inspection plugs removed. They
must first be replaced.

5-3 DRIVE MOTORS
Check wiring connections against the wiring diagram on
the motor name plate. "Bump" the motor and check
direction of rotation. Check all connections for tightness.
## Section 6
### TROUBLESHOOTING

#### 6-1 TROUBLESHOOTING CHART

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>POSSIBLE CAUSE</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both clutch and brake fail to engage properly.</td>
<td>Electrical control circuit.</td>
<td>Check control circuit.</td>
</tr>
<tr>
<td></td>
<td>Low hyd. pressure.</td>
<td>Increase hyd. pressure.**</td>
</tr>
<tr>
<td></td>
<td>Hyd. pressure regulator or piping.</td>
<td>Check for improper operation or leaks.</td>
</tr>
<tr>
<td></td>
<td>Worn friction surfaces.</td>
<td>Check parts for wear and replace if necessary. (See Section 6-2)</td>
</tr>
<tr>
<td></td>
<td>Improper type of oil</td>
<td>Check name plate and change oil if necessary.</td>
</tr>
<tr>
<td>Clutch fails to engage properly.</td>
<td>Electrical control circuit.</td>
<td>Check control circuit.</td>
</tr>
<tr>
<td></td>
<td>Valve not functioning properly.</td>
<td>Check valve operation. Replace if necessary.</td>
</tr>
<tr>
<td></td>
<td>Internal hyd. leakage.</td>
<td>Check and replace O-Rings and Liners if necessary.</td>
</tr>
<tr>
<td></td>
<td>Low hyd. pressure</td>
<td>Increase hyd. pressure.**</td>
</tr>
<tr>
<td></td>
<td>Worn friction surfaces.</td>
<td>Check parts for wear and replace if necessary. (See Section 6-2)</td>
</tr>
<tr>
<td>Picks up load too quickly.</td>
<td>Hyd. pressure too high.</td>
<td>Reduce hyd. pressure.</td>
</tr>
<tr>
<td></td>
<td>Low oil level.</td>
<td>Check oil level and add if necessary.</td>
</tr>
<tr>
<td>Clutch fails to disengage properly.</td>
<td>Electrical control circuit.</td>
<td>Check control circuit.</td>
</tr>
<tr>
<td></td>
<td>Valve not functioning properly.</td>
<td>Check and replace valve if necessary.</td>
</tr>
<tr>
<td></td>
<td>Piston sticking-broken return springs.</td>
<td>Disassemble to extent necessary and inspect for damaged parts.</td>
</tr>
<tr>
<td>Noise and vibration</td>
<td>Mounted on poor foundation.</td>
<td>Improve installation. Tighten foot bolts.</td>
</tr>
<tr>
<td></td>
<td>Misaligned couplings.</td>
<td>Recheck alignment.</td>
</tr>
<tr>
<td></td>
<td>Damaged bearings.</td>
<td>Disassemble to extent necessary and inspect for damaged bearings.</td>
</tr>
<tr>
<td>Brake fails to engage properly.</td>
<td>Electrical control circuit.</td>
<td>Check control circuit.</td>
</tr>
<tr>
<td></td>
<td>Valve not functioning properly.</td>
<td>Check valve operation. Replace if necessary.</td>
</tr>
<tr>
<td></td>
<td>Internal pressure leakage.</td>
<td>Check and replace O-Rings and Liners if necessary.</td>
</tr>
<tr>
<td></td>
<td>Low hyd. pressure</td>
<td>Increase hyd. pressure.**</td>
</tr>
<tr>
<td>TROUBLE</td>
<td>POSSIBLE CAUSE</td>
<td>REMEDY</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>---------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Brake fails to engage properly.</td>
<td>Piston sticking.</td>
<td>Disassemble to extent necessary and check for damaged parts.</td>
</tr>
<tr>
<td>(Continued)</td>
<td>Weak or broken brake spring.</td>
<td>Replace spring.</td>
</tr>
<tr>
<td></td>
<td>Worn friction surfaces.</td>
<td>Check parts for wear and replace if necessary. (See Section 6-2)</td>
</tr>
<tr>
<td>Brake fails to disengage properly.</td>
<td>Electrical control circuit.</td>
<td>Check control circuit.</td>
</tr>
<tr>
<td></td>
<td>Valve not functioning properly.</td>
<td>Check and replace valve if necessary.</td>
</tr>
<tr>
<td></td>
<td>Piston sticking.</td>
<td>Disassemble to extent necessary and inspect for damaged parts.</td>
</tr>
<tr>
<td>Drive overheats. (Oil temp. above 225° F.)</td>
<td>Inertia or resistance changed.</td>
<td>Check with Force Control engineering.</td>
</tr>
<tr>
<td></td>
<td>Improper oil level.</td>
<td>Check oil level. Add or drain as needed.</td>
</tr>
<tr>
<td></td>
<td>Improper type of oil.</td>
<td>Check name plate and change oil if necessary.</td>
</tr>
<tr>
<td></td>
<td>Water turned off.</td>
<td>Check shut-off valve.</td>
</tr>
<tr>
<td></td>
<td>Fan blocked.</td>
<td>Clean shroud.</td>
</tr>
<tr>
<td>Oil leakage</td>
<td>Oil seal lips damaged.</td>
<td>Check to see if oil is leaking around shaft and replace if necessary.</td>
</tr>
<tr>
<td></td>
<td>Gaskets</td>
<td>Tighten all external bolts.</td>
</tr>
<tr>
<td></td>
<td>Poor ventilation.</td>
<td>Remove breather and clean.</td>
</tr>
<tr>
<td></td>
<td>Seal retainers loose.</td>
<td>Tighten retainer screws.</td>
</tr>
<tr>
<td>Oil leakage out breather.</td>
<td>Damaged seal around piston.</td>
<td>Disassemble and repair.</td>
</tr>
<tr>
<td></td>
<td>Oil level too high.</td>
<td>Drain excess oil.</td>
</tr>
<tr>
<td>Excessive shaft end play (.020&quot; Max.)</td>
<td>Bearings bad.</td>
<td>Disassemble and replace.</td>
</tr>
<tr>
<td>Clutch or Brake does not repeat</td>
<td>Hydraulic pressure changed.</td>
<td>Check hydraulic pressure and adjust.</td>
</tr>
<tr>
<td></td>
<td>Improper type of oil</td>
<td>Check name plate and change oil if necessary.</td>
</tr>
<tr>
<td></td>
<td>*Oil temperature changed.</td>
<td>Check temperature.</td>
</tr>
<tr>
<td></td>
<td>Resistance in machine changed.</td>
<td>Lubricate bearings.</td>
</tr>
</tbody>
</table>

* - For installations requiring precise starting and stopping, operating temperatures are important. Operating temperatures between 116°F and 165°F are recommended. If the oil is allowed to drop to ambient temperatures overnight, the clutch input shaft should be run approximately 1/2 hour before operating the machinery.

** - Max. Hyd. Pressure:
S Logic - 100 PSI ; SA and A Logics - 150 PSI ; B Logic - 161 PSI ; C Logic - 119 PSI ; P Logic - 95 PSI.

Zinc anode - On all water cooled drives, a brass plug containing a zinc anode is installed in the water line close to one of the water connection ports. **DO NOT REMOVE IT**. The zinc anode is installed to prevent electrolysis damage to the oil cooler. Water supply should enter the oil cooler at the port nearest the zinc anode. The zinc anode should be checked occasionally and replaced before it is completely eroded.
6-2 CHECKING THE BRAKE AND CLUTCH STACKS FOR WEAR
(S, SA, A, B and P Logics)

An easy procedure has been established to visually check the Brake and Clutch Stacks for Wear to determine whether or not they need to be replaced.

Four (4) “Stack Wear” Grooves have been machined in the Brake Pressure Plate (#97) Lugs to facilitate this visual check. Depending on which Logic applies to your unit, only (2) of them are used. (See Figure 6.1)

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6-3 MOTOR DRIVEN HYDRAULIC PUMP UNITS

**NOTE:** On Piggyback Mounted Units the Drive Motor (#222), Hydraulic Pump (#389) and Motor Mounting Plate (#153) will have to be removed to gain access to the Inspection Ports.

1. Remove the Inspection Plug (#14) from the top of the Output Housing.
2. With the Hydraulic Pump running and with a flashlight observe the position of Surface “A” of the last Drive Plate as shown in Figure 6.2.

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CAUTION

Disconnect and lock-out all Electrical Power to the Prime Mover. This step must be taken to avoid any possibility of personal injury or damage to the Drive Unit.

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A. BRAKE STACK WEAR (See Figure 6.2)

(A, B and SA Logics)

If Surface “A” of the last Drive Plate has moved up to or past the “Stack Wear” Groove (#3), the Brake Stack is worn and needs to be replaced.

(S and P Logics)

If Surface “A” of the last Drive Plate has moved up to or past the “Stack Wear” Groove (#4), the Brake Stack is worn and needs to be replaced.

B. CLUTCH STACK WEAR (See Figure 6.2)

1. Push and hold the “Manual Override” Button on the Control Valve Solenoid (#387).
2. Insert a screwdriver through the inspection port and slide the Brake Stack over to make contact with the piston surface.

(A, B and SA Logics)

If Surface “A” of the last Drive Plate has moved up to or past the “Stack Wear” Groove (#1), the Clutch Stack is worn and needs to be replaced.

(S and P Logics)

If Surface “A” of the last Drive Plate has moved up to or past the “Stack Wear” Groove (#2), the Clutch Stack is worn and needs to be replaced.
Section 7
DISASSEMBLY

7-1 GENERAL DISASSEMBLY PROCEDURE

The EH-2.5 Posidyne Clutch/Brake Unit is comprised of the Input Housing Sub-Assembly and the General Overall Assembly which includes the Clutch Stacks, Piston Retainer, Piston, Brake Stack, Output Housing and Output Shaft. The Repair Parts Lists and Exploded View Drawings shown in Section 10 are for all Standard and Optional Equipment. They are as follows:

1. EH-2.5 Posidyne Clutch/Brake Ass'y .......... (Fig. 10.1)
2. Output C-Face Adapter (8-1/2" AK) ............ (Fig. 10.2)
3. Input Housing Sub-Assembly .................. (Fig. 10.3)
4. Optional Fan Cooling and Water Cooling... (Fig. 10.4)
5. Optional Positioning Encoder Assembly .... (Fig. 10.5)
6. Hydraulic Control Valves ........................ (Fig. 10.5)
7. Piggyback Mounting/Motor Driven Pump .. (Fig. 10.6)
8. Piggyback Mounting/Pulley Driven Pump.. (Fig. 10.7)
9. Side Mounting/Motor Driven Pump............ (Fig. 10.8)

Please refer to these Parts Lists and Exploded View Drawings during the Disassembly Procedure for a visual reference and guide to all parts being disassembled.

NOTES:

1. On Belt Driven or Direct Coupled Units, remove all necessary safety guards, belts, sheaves and couplings.
2. For Water Cooled Units, disconnect water inlet and outlet piping. Drain water from the unit.
3. An overhead crane and a soft sling is also recommended, if necessary, to remove heavy castings and parts.

1. Disconnect the Drive and move it to a suitable work area.
2. Remove drain plugs at the bottom of the Drive Unit and drain out all of the oil into suitable container and either save for reuse or discard as conditions warrants.

(Piggyback Mounting /Motor Driven Pump and Side Mounting/Motor Driven Pump)
(See Figures 10.6 and 10.8)
3. Remove the hydraulic pump, drive motor and all mounting brackets. Also remove all hydraulic hoses and pipe fittings connected to the unit.

(Piggyback Mounting/ Pulley Driven Pump)
(See Figure 10.7)
3. Remove the Belt Guard (#124) by taking out the (4) Screws (#268) and (4) Lockwashers (#265) in the sides of the Belt Guard.

4. Take the Taper Bushing (#331) off the Posidyne Input Shaft. (See Figure 7.1 for procedure.) This will release the tension on the Timing Belt (#334). Take it off the Pulleys.

5. Disconnect the (2) Hydraulic Hoses from the unit and pump. Remove the attaching Screws (#150) from the Mounting Bracket (#148) and take the bracket and pump assembly off the unit.

6. Remove all other pipe fittings, brackets, filter, etc. that is attached to the Posidyne Unit.

7-2 REMOVING HYDRAULIC CONTROL VALVES
(See Figure 10.5)

1. If the Brad Harrison Cable (#902) is still attached to the Control Valve (#387), disconnect it at this time.
2. Remove the (4) Screws (#358) and (4) Lockwashers (#359) and take the Control Valve (#387) off the Manifold (#105).
3. Take the Manifold (#105) off the Posidyne Unit by removing the (4) Screws (#198) and (4) Lockwashers (#182).
4. Remove and check the (4) O-Rings (#104) and (1) O-Ring (#103). Replace if necessary.
5. Remove the Pressure Gauges (#327) and Pressure Regulators (#400) from the housing.

NOTE:
There is only (1) Pressure Gauge and (1) Pressure Regulator for Logics "A", "B" and "C".
7-3 REMOVING C-FACE MOUNTED DRIVE MOTOR and C-FACE FLANGES  
(With Quill Input Shaft Only)  
(See Figure 10.3)  
1. Attach an appropriate sling and hoist to the Input Drive Motor for support and removal.  
2. Remove (4) Hex Hd. Screws (#415) and (4) Lockwashers (#416) from the C-Face Adapter (#200).  
3. Slide the motor shaft out of the Quill Input Shaft (#2).  
4. Remove the (4) Soc. Hd. Screws (#201) and (4) Lockwashers (#202) from the C-Face Adapter (#200).  
5. Pull the C-Face Adapter (#200) off of the Input Housing.  

(With 8-1/2" AK Output C-Face Adapter)  
(See Figure 10.2)  
1. Remove the (4) Screws (#204) and the (4) Lockwashers (#205) from the C-Face Adapter (#203).  
2. Pull the C-Face Adapter (#203) off of the Output Housing.  

7-4 REMOVING FAN SHROUD and FAN  
(See Figure 10.4)  
1. Remove the (2) Screws (#66) from the rear of the Fan Shroud (#24) and remove the Fan Shroud from the Input Housing.  
2. Loosen the (2) Set Screws (#70) and pull the Fan (#25) off the Input Shaft (#2).  
3. Remove both Keys (#37) and (#180) from the Input Shaft.  

7-5 REMOVING POSITIONING ENCODER ASSEMBLY  
(See Figure 10.5)  
1. If the 5-Pin Brad Harrison Cable (#259) is still attached, disconnect it at this time.  
2. Take the Housing Cover (#253) off by removing (4) Screws (#268).  
3. Remove the (4) Screws (#76) and (4) Lockwashers (#257) from the Encoder Housing (#17) and pull the housing off the Output Housing.  
4. Loosen the Set Screw (#154) and pull the Pulse Gear (#186) off of the Output Shaft (#1).  
5. Remove both keys (#181) and (#234) from the Output Shaft.  

7-6 REMOVAL OF QUADRATURE SENSOR (#355) and MAGNETIC PICK-UP (#22)  
(See Figure 10.5)  

NOTE:  
The Positioning Encoder Assembly does not have to be removed from the Output Housing to replace the Sensors.  
1. Remove the (4) Screws (#225) and take the Top Cover (#372) off the Encoder Housing (#17).  
2. Disconnect the wires from the Brad Harrison Cable Connector (#368) to both Sensors.  
3. Loosen the Set Screw (#241) and pull the Magnetic Pick-Up (#22) out of the housing. (Do not remove this set screw.)  
4. Remove the (2) Screws (#226) and lift the Quadrature Sensor (#355) out of the housing.  
5. If any Shims (#214) are under this sensor, remove them and save them for Reassembly.  

7-7 ACCESS TO THE CLUTCH and BRAKE STACKS  
(See Figure 10.1)  
We recommend that you set the Drive Unit on the Output End with the Output Shaft in a vertical down position, for ease of disassembly. Supply suitable bracing and clamping to stabilize the Drive Unit for Disassembly.  

IMPORTANT NOTE:  
When removing the Clutch and Brake Stacks, always keep the Drive Plates and Friction Discs in the same order as they were removed.  

A. Clutch Stack  
1. Remove the (8) Screws (#69), (2) Screws (#76) and the (10) Lockwashers (#127) from the Output Housing (#9).  
2. Using the (2) jackscrew holes in the Input Housing (#8), separate the Input Housing from the Piston Retainer (#11).  

The Clutch Stack can now be removed from the Output Shaft Spline.  

B. Brake Stack  
(S, SA, A and B Logics)  
1. Remove the (4) Screws (#62) and (4) Lockwashers (#128) from the Piston Retainer (#11). Using the (2) jackscrew holes, separate the Piston Retainer (#11) from the Output Housing (#9). Be careful not to damage the Teflon Liner (#42) in the Piston Retainer.  
2. Remove and discard Gasket (#51).  
3. Remove the Key (#181) from the Output Shaft (#1).  
4. Set the Output Housing upright and remove the (6) Screws (#63) from the Bearing Retainer (#329) located on the output end. Pull the Bearing Retainer (#329) off.
the Output Shaft. Be careful not to damage the lip of the Oil Seal (#31).

5. Insert a 5/16” allen wrench into the (4) cavities and back-out the Screws (#151). Pull out the Screws (#151), Washers (#264), Springs (#31) and Sleeves (#30). (See Figure 7.2).

6. Pull the Piston Sub-Assembly off the Output Shaft Spline and out of the Output Housing. Be careful not to damage the Teflon Liner (#43) in the Piston.

The Brake Stack can now be removed from the Output Shaft Spline.

(P Logic - No Springs)

1. Remove the (4) Screws (#62) and (4) Lockwashers (#128) from the Piston Retainer (#11). Using the (2) jackscrew holes, separate the Piston Retainer (#11) from the Output Housing (#9). Be careful not to damage the Teflon Liner (#42) in the Piston Retainer.

2. Remove and discard Gasket (#51).

3. Pull the Piston Sub-Assembly off the Output Shaft Spline and out of the Output Housing. Be careful not to damage the Teflon Liner (#43) in the Piston.

The Brake Stack can now be removed from the Output Shaft Spline.

7-8 REMOVING PISTON HOUSING ASSEMBLY

(P Logic Only)

1. Remove the (4) Screws (#62) and (4) Lockwashers (#128) from the Piston Retainer (#11). Using the (2) jackscrew holes, separate the Piston Retainer (#11) from the Output Housing (#9). Be careful not to damage the Teflon Liner (#42) in the Piston Retainer.

2. Remove and discard Gasket (#51).

3. Remove the Key (#181) from the Output Shaft (#1).

4. Set the Output Housing upright and remove the (6) Screws (#63) from the Bearing Retainer (#329) located on the output end. Pull the Bearing Retainer (#329) off the Output Shaft. Be careful not to damage the lip of the Oil Seal (#31).

5. Insert a 5/16” allen wrench into the (4) cavities and back-out the Screws (#76). Pull out the Screws (#76), Washers (#264), Springs (#31) and Sleeves (#30). (See Figure 7.2).

6. Pull the Piston Sub-Assembly off the Output Shaft Spline and out of the Output Housing. Be careful not to damage the Teflon Liner (#43) in the Piston.

If replacement of the Clutch and Brake Stacks is the only repair to be done, then proceed to Section 8 CLEANING and INSPECTION.

7-9 REMOVING PISTON SEALS

(Teflon Liners and O-Rings) (See Figure 10.1)

It is recommended that all Liners and O-Rings that are removed at Disassembly should be replaced with new ones at Reassembly.

(S, SA, C and P Logics)

1. Remove the Teflon Liner (#42) and O-Ring (#39) from the Output Housing (#9) and discard, if necessary.

(A, B, S, SA and P Logics)

2. Remove the Teflon Liner (#42) and O-Ring (#39) from the Piston Retainer (#11) and discard, if necessary.

(All Logics)

3. Remove the Teflon Liner (#43) and (2) O-Rings (#40) from the Piston (#3) and discard, if necessary.

7-10 PISTON DISASSEMBLY

(See Figures 7.3 and 10.1)

IMPORTANT

Only disassemble this Piston if either the Thrust Plate (#5) or Bearing (#27) needs to be replaced.
1. Press the Thrust Plate (#5) and the Bearing (#27) out of the Piston (#3) with an arbor press as shown in Figure 7.3.

![Figure 7.3 - Piston Disassembly](image)

### 7-11 OUTPUT HOUSING DISASSEMBLY
(See Figure 10.1)

**P Logic Only**
1. If the Key (#181) is still in the Output Shaft, remove it at this time.

2. Remove the Bearing Retainer (#329) by taking out (6) Screws (#63). Pull the Bearing Retainer off and over the Output Shaft, being careful not to damage the lip of Oil Seal (#31).

**All Logics**
3. Check the Oil Seal (#31) and if it needs replaced, press it out of the Bearing Retainer (#329) with an arbor press.

4. Remove and discard Gasket (#54).

**All Logics but C Logic**
5. If necessary, remove the Brake Pressure Plate (#97) by taking out (4) screws (#64).

**C Logic Only**
5. Loosen the (3) Set Screws (#130) and take the Spacer (#129) off the Output Shaft Spline. If necessary, remove the (4) Screws (#305) and (4) Lockwashers (#265) and take the Retainer Plate (#302) out of the Output Housing

**All Logics**
6. With a mallet, tap the Output Shaft out of the Output Housing as shown in Figure 7.4.

![Figure 7.4 - Removing Output Shaft](image)

**IMPORTANT**
Do not attempt to remove the Output Shaft unless Bearings (#28) and (#35) are damaged and have to be replaced.

7. Heat up the Locknut (#34) and remove it from the Output Shaft. (Also clamp the Output Shaft in a vise to make the disassembly easier.

8. With a bearing splitter or puller, remove Bearings (#28) and (#35).

### 7-12 DISASSEMBLY OF INPUT HOUSING SUB-ASSEMBLY
(See Figure 10.3)

**A. Removing Water Cooled Heat Exchanger**
(See Figure 10.5)

**NOTES:**
1. Only remove the Heat Exchanger (#48) if replacement or repair is required.
2. It will be necessary to use a suitable punch to drive the tube ends out of the Input Housing. Care must be taken not to damage external machined surfaces.

1. Remove all external fittings from the Input Housing.
2. Remove (2) Screws (#56).
3. Tap out the tube ends, with a suitable punch, from the Housing (#8) and remove the Heat Exchanger (#48).

**B. Removing Male Input Shaft**

**IMPORTANT**
Do not attempt to remove the Input Shaft unless Bearings (#26) and (#38) are damaged and have to be replaced.
1. If the Key (#180) is still intact in the Input Shaft (#2), remove it at this time.

2. Remove (6) Screws (#63) and remove the Bearing Retainer (#7) taking care not to damage the lip of the Oil Seal (#31).

3. Check Oil Seal (#31) and replace if necessary. If replacement is necessary, use an arbor press to press it out of the Bearing Retainer (#7).

4. Remove and discard Gasket (#55).

5. Take the Locknut (#34) off the Input Shaft.

6. Place the Input Housing (#8) into an arbor press with the Input Shaft pointing up. Use appropriate spacers under the housing. Press the Input Shaft (#2) down and out of the housing.

7. Lift the Bearing (#26) out of the bearing bore.

8. Use a Bearing Splitter to remove Bearing (#38) from the Input Shaft. (See Figure 7.5)

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3. Check Oil Seal (#208) and replace if necessary. If replacement is necessary, use an arbor press to press it out of the Bearing Retainer (#207).

4. Remove and discard Gasket (#206).

5. Take the Locknut (#209) off the Input Shaft.

6. Place the Input Housing (#8) into an arbor press with the Input Shaft pointing up. Use appropriate spacers under the housing. Press the Input Shaft (#2) down and out of the housing.

7. Lift the Bearing (#26) out of the bearing bore.

8. Use a Bearing Splitter to remove Bearing (#38) from the Input Shaft. (See Figure 7.5)

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Disassembly is now complete for your EH-2.5 Posidyne Clutch/Brake Unit

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**C. Removing Quill Input Shaft**

**IMPORTANT**

Do not attempt to remove the Input Shaft unless Bearings (#26) and (#38) are damaged and have to be replaced.

1. If the Key (#180) is still intact in the Input Shaft (#2), remove it at this time.

2. Remove (6) Screws (#110) and remove the Bearing Retainer (#207) taking care not to damage the lip of the Oil Seal (#208).
Section 8
CLEANING and INSPECTION

8-1 CLEANING AND INSPECTION

Clean metal parts in a suitable solvent and dry in a stream of low pressure compressed air. The Clutch and Brake Drive Plates (#13) and (#269) can be cleaned in a solvent, but DO NOT clean the Clutch and Brake Friction Discs (#12) in solvent. Use only a clean, dry and lint-free rag to clean these Friction Discs. (Solvent will damage the resilient paper-based friction material used on the Friction Discs). Keep the Drive Plates and Friction Discs in the same order as they were removed. After cleaning, inspect parts for cracks, distortion, scoring, nicks, burrs or other damage which would affect serviceability. Pay particular attention to the following:

1. Check the disc wear surfaces for scoring, galling or evidence of uneven wear.
2. Check the clutch and brake plates for scoring or galling. Make sure they are flat. If a perceptible ridge is worn in any of the drive plates, replace all of the drive plates and friction discs as a complete set.
3. Carefully check the piston and bore surfaces for nicks, scratches, scoring or other damage which would affect operation or cause leakage.
4. Pay particular attention to shafts in the area of rotary seals. Check for nicks, scratches which would cause leakage. Replace any damaged parts.
5. It is not necessary to remove the ball bearings to check their operation. Slowly rotate the free race of each bearing by hand checking to see if it turns freely without rough or flat spots.

8-2 REPAIR AND REPLACEMENT

A fine stone or crocus cloth may be used to remove minor surface defects from parts so long as the operating or sealing action of the part is not affected. The use of coarser abrasives or other machining methods should not be attempted. Otherwise, damaged parts should be replaced.

Replacement is recommended also for the following, as applicable:

1. Replace all O-Rings, Liners, Gaskets and Oil Seals removed during the course of disassembly.
2. Replace Clutch or Brake Discs and Drive Plates in complete sets only.

Section 9
REASSEMBLY

9-1 GENERAL REASSEMBLY INSTRUCTIONS

1. Lubricate O-Rings and the lips of all the Oil Seals with the same oil as used in the Drive Unit immediately before Reassembly and Installation of any mating parts.
2. O-Ring Liners (#43) will be easier to install if heated in a oven to 250° F. maximum.

   The installation of press fitted parts can be eased by heating the outside parts in a oven. Heat Bearings to 250° F. maximum. Always wear suitable gloves when handling heated parts.
3. Apply Gasket Sealant (Permatex #30), or equivalent, to all flat gaskets except where otherwise noted.
4. Use Cap Screw Adhesive (Loctite #271), or equivalent, on all Cap Screws and Locknuts. Use sparingly and clean off any excess with (Loctite (#755) Adhesive Cleaner.
5. Unless otherwise specified, torque all bolts to SAE Grade 5 specifications.

Basic the Reassembly is just a reverse order of the Disassembly Procedure described in Section 7.

9-2 REASSEMBLY OF INPUT HOUSING SUB-ASSEMBLY

(See Figure 10.3)

A. Installing Male Input Shaft

1. Press Bearing (#38) onto the Input Shaft (#2) with an arbor press.
2. Insert the Input Shaft (#2) with the Bearing (#38) on it into the rear of the Input Housing (#8) until the Bearing (#38) seats in the bearing bore.
3. Set the Input Housing into an arbor press as shown in Figure 9.1. Place the Bearing (#26) onto the Input Shaft with the bearing loading slots up. With an appropriate sized tube, as shown, press on the inner race of the bearing until it bottoms out. (Do not press on the bearing cage of the outer race.)
5. Apply a thin coat of Sealant (Permatex #30) to the oil seal bore in the Bearing Retainer (#7) or (#16) and press the Oil Seal (#31) into the bore.

6. Place the Gasket (#55) onto the Bearing Retainer (#7), aligning the screw holes up. (Do not use any gasket sealant on this gasket.)

7. Place masking tape over the keyway and slide the Bearing Retainer (#7) or (#16) with the Gasket (#55) over the shaft, being careful not to damage the lip of the Oil Seal (#31). Attach with (6) Screws (#63). Torque to 9 Ft. Lbs.

8. Replace Key (#180) back into the Input Shaft.

B. Installing Quill Input Shaft

1. Press Bearing (#38) onto the Input Shaft (#2) with an arbor press.

2. Insert the Input Shaft (#2) with the Bearing (#38) on it into the rear of the Input Housing (#8) until the Bearing (#38) seats in the bearing bore.

3. Set the Input Housing into an arbor press as shown in Figure 9.2. Place the Bearing (#26) onto the Input Shaft with the bearing loading slots up. With an appropriate sized tube, as shown, press on the inner race of the bearing until it bottoms out. (Do not press on the bearing cage of the outer race.)


5. Apply a thin coat of Sealant (Permatex #30) to the oil seal bore in the Bearing Retainer (#207) and press the Oil Seal (#208) into the bore.

6. Place the Gasket (#206) on to the Bearing Retainer (#207), aligning the screw holes up. (Do not use any gasket sealant on this gasket.)

7. Slide the Bearing Retainer (#207) with the Gasket (#206) over the shaft, being careful not to damage the lip of the Oil Seal (#208). Attach with (6) Screws (#210). Torque to 14 Ft. Lbs.

8. Replace Key (#180) back into the Input Shaft.

9-3 INSTALLING WATER COOLED HEAT EXCHANGER
(See Figures 9.3 and 10.4)

1. Guide the Heat Exchanger (#48) into the Input Housing, making sure that the tube ends project out the (2) holes in the rear face of the Housing. Attach with (2) Screws (#56).

2. Mark the tubing approximately 1/16” beyond the face of the housing. (See Figure 9.3.)

3. Remove the Heat Exchanger from the Housing and cut off the tubes on the 1/16” marks. NOTE: The ends of the tubes must be free of all burrs before reassembly.

4. Reinstall the Heat Exchanger back into the Housing. Apply Loctite #271 to the tubing O.D. Then place the (2) Compression Fittings with Ferrules (#71) on the tubing. (See Figure 9.3.)

   IMPORTANT
   When tightening Fittings (#71), do not overtighten and then back off. This will cause the compression seal to leak.

5. Install all external pipe fittings shown on Figure 10.5.
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9-4 OUTPUT HOUSING INSTALLATION
(See Figure 10.1)

1. Install both Bearings (#28) and (#35) onto the Output Shaft (#1) with an arbor press.

2. Next install the Locknut (#34) onto the Output Shaft. Use (Loctite #271) on the threads. Wipe off any excess.

3. Insert the Output Shaft with the (2) Bearings on it into the Output Housing (#9) until Bearing (#35) seats into the bearing bore. (See Figure 9.4)

4. Press the Oil Seal (#31) into the Bearing Retainer (#329). Install the Gasket (#54) and Bearing Retainer (#329) on to the Output Housing (#9). Do not use any Gasket Sealant on this gasket. Also be careful not to damage the lip of Oil Seal (#31) on the output shaft keyway.

(All Logics but P Logic)

4. Temporarily attach the Bearing Retainer (#329) to the Output Housing (#9) with (2) Screws (#63). Do not tighten these screws at this time.

Then set the Output Housing in a vertical position with the output shaft down.

(All Logics except C Logic)

5. Attach the Brake Pressure Plate (#97) to the inside of the Output Housing with (4) Screws (#64). Torque to 14 Ft. Lbs.

6. Install the Brake Stack onto the Output Shaft Spline (#1) and Brake Pressure Plate (#97). Start with a Drive Plate (#269) then a Friction Disc (#12), ending with a Drive Plate (#269).

Align the notches in the Drive Plate (#269) with the lugs on the Brake Pressure Plate (#97) and the internal teeth in the Friction Discs (#12) with the splined teeth on the Output Shaft (#1).

(C Logic Only)

5. Slide the Spacer, Spider (#129) on to the spline of the Output Shaft (#1). Position the end of the Spacer (#129) .50" from the face of the Output Housing. Tighten (3) Set Screws (#130). (See Figure 9.5)

6. Attach the Retainer Plate (#302) to the inside of the Output Housing with (2) Screws (#305) and (2) Lockwashers (#265) in the (2) bottom holes.

Place the Splash Guard (#196) on the Retainer Plate (#302) and attach with the other (2) Screws (#305) and (2) Lockwashers (#265). Torque all (4) Screws to 14 Ft. Lbs.
9-5 REASSEMBLY OF PISTON SUB-ASSEMBLY
(See Figure 10.1)

1. Apply Sealant (Loctite #620) to the I.D. of Bearing (#27) and press it onto the Thrust Plate(#5). Make sure that the Bearing is firmly seated on the Thrust Plate shoulder.

2. Apply Sealant (Loctite #620) to the O.D. of Bearing (#27). Press the Bearing and Thrust Plate into the Piston (#3). Again, make sure the bearing is firmly seated in the Piston.

3. Lubricate the (2) O-Rings (#40) and install them on the Piston (#3).

4. Heat the Teflon Liner (#43) to 200° F. max. and install it on the Piston (#3). Also lubricate this Liner before installing it.

CAUTION
Use suitable work gloves when handling heated parts.

9-6 INSTALLING PISTON SUB-ASSEMBLY and SPRINGS
(See Figures 9.6, 9.7 and 10.1)

1. Lubricate the O-Ring (#39) and the Teflon Liner (#42) and install them into the Output Housing (#9).

2. Set the unit upright and take the Bearing Retainer (#329) back off the Output Housing.

3. For ease of installation, attach (2) Screws (#151) and (2) Sleeves (#30) to the Piston (#3). Only hand tighten these screws. Do not install the Springs (#36) or the Washers (#264).

4. Insert the Piston Sub-Ass’y. down over the Output Shaft Spline and into the Output Housing. Align the (2) Screws (#151) and (2) Sleeves (#30) with the holes in the Drive Plates (#269). Be careful not to damage the installed Liners (#42) and (#43). (See Figure 9.6)

5. Remove the (2) Screws (#151) previously installed in the Piston for alignment. Reinstall the proper amount of Sleeves (#30), Springs (#36), Washers (#264) and Screws (#151). (See Figure 9.7 for placement and quantities needed for the different logics.)
(P Logic Only)
2. Insert the Piston Sub-Ass’y. down over the Output Shaft Spline and into the Output Housing. Align the (2) Pins (#218) with the slots in the Brake Pressure Plate (#97). Be careful not to damage the installed Liners (#42) and (#43).

9-7 INSTALLING PISTON RETAINER
(See Figure 10.1)
1. For ease of further installation, set the unit back to a vertical position with the output shaft in the down position.
2. Lubricate the O-Ring (#39) and the Teflon Liner (#42). Install them into the Piston Retainer (#11). NOTE: This O-Ring and Liner is not used for C Logic.
3. Place the Gasket (#51) onto the Output Housing (#9), using the Dowel Pin (#68) to assure proper alignment. Use Gasket Sealant (Permatex #30). Wipe off any excess.
4. Push the Piston Retainer (#11) down and over the Piston (#3) and onto the Output Housing. Be careful not to damage the Teflon Liner (#42) (if used) in the Piston Retainer.
5. Attach with (4) Screws (#62) and (4) Lockwashers (#128).

IMPORTANT
Compress these (4) Screws in an even manner to compress the Springs (#36) correctly. Torque to 14 Ft. Lbs.

9-8 INSTALLING CLUTCH STACK
(See Figure 10.1)
1. Install the Clutch Stack onto the Output shaft spline, starting with a Friction Disc (#12), then a Drive Plate (#13) ending with a Drive Plate (#13). There are (4) Friction Discs and (4) Drive Plates.
   Align the notches in the Drive Plates with each other and align the internal teeth in the Friction Discs with the spline in the Output Shaft.

9-9 INSTALLING INPUT HOUSING SUB-ASSEMBLY
(See Figure 10.1)
1. Place the Gasket (#53) on the Piston Retainer (#11), using the (2) Pins (#68) for alignment. Use (Permatex #30) Gasket Sealant. Wipe off any excess.
2. Lower the Input Housing Sub-Assembly down onto the Piston Retainer, aligning the lugs on the Input Shaft (#2) with the notches in the Drive Plates (#13). Press the Input Housing down until the (2) Dowel Pins (#68) engage the Input Housing. Make sure that Gasket (#53) stays in position.

CAUTION
Do not force the Input Shaft Lugs into the Clutch Stack. This could damage the Drive Plates. Lower the Input Housing slowly and, if necessary, manually adjust the Drive Plates.

3. With the (8) Screws (#69), (2) Screws (#76) and (10) Lockwashers (#127) bolt the Housing together. Use (Loctite #271) Thread-Locker on the threads. Torque to 14 Ft. Lbs.
4. If your Drive Unit has a Male Input Shaft, but does not have Fan Cooling, install Key (#180) into the Input Shaft (#2).

9-10 INSTALLING HYDRAULIC CONTROL VALVE
(See Figure 10.5)
1. Install the Pressure Regulators (#400) into the top of the output housing. NOTE: There are (2) Valves for S, SA and P Logics and only (1) valve for A, B and C Logics. The Brake Port is plugged with O-Ring (#228) and Plug (#409).
2. Lubricate and install the (4) O-Rings (#104) and (1) O-Ring (#103) into the Manifold (#105).
3. Mount the Manifold (#105) on to the side of the output housing with (4) Screws and (4) Lockwashers (#182).
4. Install the Relief Valve (#388) into the top of the Manifold (#105).
5. Attach the Control Valve (#901) to the Manifold with (4) Screws (#198) and (4) Lockwashers (#182).
6. Replace any pipe plugs in the manifold that were removed at disassembly.

Before proceeding any further an Operational Check of the Piston Movement should be made. Apply 60 to 80 PSI as indicated in Section 5 - Operational Checks. Observe the piston movement through the inspection ports.

9-11 INSTALLING POSITIONING ENCODER ASSEMBLY
(See Figure 10.5)
1. Replace Key (#234) into the Posidyne output shaft if it was removed.
2. Slide the Pulse Gear (#186) onto the output shaft and tighten Screw (#154).
3. Slide the Housing (#17) over the Pulse Gear (#186) and attach it to the Posidyne Output Housing with (2) Screws (#76) and (2) Washers (#257).

Jump ahead to Section 9-12 and install the Quadrature Encoder (#355) and the Magnetic Pick-Up (#22).
4. Attach the Top Cover (#372) with (4) Screws (#225) and the Front Cover (#253) with (4) Screws (#268).

9-12 INSTALLING QUADRATURE ENCODER (#355) AND MAGNETIC PICK-UP (#22)
(See Figure 10.5)

Before installing the Quadrature Encoder and Magnetic Pick-Up a special .015" Shim must be made to set the Gap between them and the Pulse Gear. (See Figure 9.8)

Figure 9.8 - Sensor Gap Shim

A. QUADRATURE ENCODER (See Figure 9.9)

1. Looking through the hole where the Encoder is to be placed, check to see that the Pulse Gear (#186) is in position so the teeth will be aligned with the Encoder.

2. Position the Encoder so the (2) mounting holes are lined up with the holes in the housing. Insert the Sensor into the slot and attach with (2) Screws (#226).

NOTES:
1. The holes are offset to one side so the Encoder can only be installed one way.
2. Do not install any Shims (#214) at this time. The Gap must be checked first.
3. Check the Gap between the Pulse Gear and the Encoder with the Special .015" Shim that you made. If necessary, remove the Encoder and place Shims (#214) under the Encoder. (Usually .015" is sufficient.) Re-attach the Encoder and re-check the Gap. (See Figure 9.9)
4. Connect the sensor wires to the Brad Harrison Connector.

B. MAGNETIC PICK-UP SENSOR (See Figure 9.9)

1. Visually check through the hole to see if the single tooth in the Pulse Gear (#186) is aligned with the Sensor and that the teeth for the Quadrature Encoder will not be visible to the Magnetic Pick-Up Sensor.

The Magnetic Pick-Up Sensor has a Scribed Line down one side of it. To facilitate installation, highlight this Scribed Line with a felt tip pen.

2. Insert the Magnetic Pick-Up Sensor (#22) into the hole with the Scribed Line in position as shown in Figure 9.9, View A-A.

3. Insert the special .015" Shim in between the Pulse Gear and the Sensor. Tighten the Set Screw (#241).

4. Connect the sensor wires to the Brad Harrison Connector.

Figure 9.9 - Position Sensors Installation
9-13 INSTALLING FAN AND FAN SHROUD  
(See Figure 10.4)
1. Install Key (#37) into the Input Shaft.
2. Place Fan (#25) on the Input Shaft and tighten the (2) Set Screws (#70).
3. Place the Fan Shroud (#24) into position and attach with (2) Screws (#66).
4. Install Key (#180) into the Input Shaft.

9-14 ATTACHING C-FACE ADAPTERS  
A. Output C-Face Adapter  
(See Figure 10.2)
1. Attach the C-Face Adapter (#203) with (8) Screws (#204) and (8) Lockwashers (#205). Torque to 25 Ft. Lbs.

B. Input C-Face Adapters  
(With Quill Input Shaft Only)  
(See Figure 10.3)
1. Attach C-Face Adapter (#200) with (6) Screws (#201) and (6) Lockwashers (#202). Torque to 25 Ft. Lbs.

9-15 FINAL REASSEMBLY  
(See Figure 10.6)
(Piggyback Mounting/Motor Driven Pump)
1. Re-attach Mounting Brackets, Hydraulic Pump, Drive Motor Assembly.
2. Re-connect the Hydraulic Filter and all Hydraulic Fittings, Hoses and Pipe Plugs removed for Inspection or Disassembly.

(Piggyback Mounting/Pulley Driven Pump)
1. Re-attach the Pump Mounting Bracket (#148) and the Hydraulic Pump (#389).

2. Place the Pulley (#332) with the Taper Bushing (#330) on the pump shaft. Place the Pulley (#333) with the Taper Bushing (#331) on the Posidyne input shaft. Do not tighten them at this time.
3. Install the Timing Belt (#334) on the pulleys.
4. Now tighten both Taper Bushings as shown in Figure 9.11.
5. Replace the Belt Guard (#124).
6. Re-connect the Hydraulic Filter and all Hydraulic Fittings, Hoses and Pipe Plugs removed for Inspection or Disassembly.

(Side Mounting/ Motor Driven Pump)
1. Re-mount the Hydraulic Pump and Drive Motor if it was removed.
2. Re-connect the Hydraulic Filter and all Hydraulic Fittings, Hoses and Pipe Plugs removed for Inspection or Disassembly.

(All Units)
1. Fill the Drive Unit with Mobil Automatic Transmission Fluid type ATF-210 type “F” or Mobil Multi-purpose Automatic Transmission Fluid, as indicated in Section 4 LUBRICATION.  
   IMPORTANT: 
   Other fluids may be specified for special drives. First Check the Name Tag.
2. Replace all external motor drive parts, safety guards, sheaves, pulleys, belts and couplings on belt drive units.

REASSEMBLY IS NOW COMPLETE AND THE DRIVE UNIT IS READY FOR SERVICE.
Section 10
ILLUSTRATED PARTS LIST

10-1 GENERAL INFORMATION
This section illustrates, lists and describes all available repair parts for the Force Control EH-2.5 Posidyne Clutch/Brake Drives. Parts are identified on the exploded views with Part Reference Numbers. These Numbers correspond to the Part Reference Number given in the Parts List. The Part Name and Quantity Used is also given in the Parts List. This Part Reference Number, Part Name and Quantity should be used when ordering parts.

10-2 DRIVE MOTORS
The motors used with these Drive Units are standard and may be repaired or replaced by any qualified motor rebuild facility or supplier.

10-3 FACTORY REBUILD SERVICE
Reconditioning service is offered by Force Control Industries at the factory. Before returning a unit for this service, however, be sure to first contact the Force Control Industries Service Sales Department for authorization and shipping instructions. Force Control Industries cannot be responsible for units returned to the factory without prior notice and authorization.

Care must be given to the packing of return drives. Always protect mounting feet by attaching to a skid. Shipment-damaged drives always delay repairs. It is usually impossible to recover damage costs from the carrier. When possible describe the problem experienced on your shipping papers.

10-4 ORDERING REPLACEMENT PARTS
When ordering replacement parts, please specify all of the following information:
1. Drive Model Number (on the nameplate)
2. Drive Serial Number (on the nameplate)
3. Part Reference Number (from the parts list or exploded view drawing.)
4. Part Name (from the parts list)
5. Quantity (from the parts list)
6. Complete Shipping Information
Failure to include information for items 1 thru 6 will only delay your parts order. Unless another method is specified for item 6, parts less than 150 pounds will be shipped United Parcel Service, parts over 150 pounds will be shipped Motor Freight. Air freight and other transportation services are available but only if specified on your order.

10-5 NAME PLATE AND MODEL NUMBERS
The Name Plate shown is located on the Housing.

Return to:
Force Control Industries, Inc.
3660 Dixie Highway
Fairfield, Ohio 45014
Telephone: 513-868-0900
Fax No.: 513-868-2105
### Repair Parts List - *(Figure 10.1)*

**EH-2.5 Posidyne CLUTCH/Brake Assembly**

<table>
<thead>
<tr>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
<th>PART NAME</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Output Shaft</td>
<td>1</td>
<td>*54</td>
<td>Gasket, Bearing Retainer</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>1</td>
<td>62</td>
<td>Soc. Hdl Cap Screw</td>
</tr>
<tr>
<td>5</td>
<td>Thrust Plate</td>
<td>1</td>
<td>63</td>
<td>Soc. Hdl Cap Screw</td>
</tr>
<tr>
<td>9</td>
<td>Output Housing</td>
<td>1</td>
<td>64</td>
<td>Soc. Hdl Cap Screw (Not used on C logic)</td>
</tr>
<tr>
<td>11</td>
<td>Piston Retainer</td>
<td>1</td>
<td>68</td>
<td>Dowel Pin</td>
</tr>
<tr>
<td>*12</td>
<td>Friction Disc</td>
<td></td>
<td>*59</td>
<td>Soc. Hdl Cap Screw</td>
</tr>
<tr>
<td>A,B,S,SA and P Logics</td>
<td>8</td>
<td>72</td>
<td>Pipe Plug</td>
<td>1</td>
</tr>
<tr>
<td>C Logic</td>
<td></td>
<td>4</td>
<td>73</td>
<td>Pipe Plug</td>
</tr>
<tr>
<td>*13</td>
<td>Drive Plate</td>
<td>4</td>
<td>76</td>
<td>Soc. Hdl Cap Screw</td>
</tr>
<tr>
<td>14</td>
<td>Inspection Plug</td>
<td>1</td>
<td>90</td>
<td>Reducer Bushing</td>
</tr>
<tr>
<td>*27</td>
<td>Bearing, Piston</td>
<td>1</td>
<td>97</td>
<td>Brake Pr. Plate (Not used on C logic)</td>
</tr>
<tr>
<td>*28</td>
<td>Bearing, Pilot</td>
<td>1</td>
<td>116</td>
<td>Filler Drive Plate (Not on C logic)</td>
</tr>
<tr>
<td>30</td>
<td>Sleeve (Not used on P logic)</td>
<td>122</td>
<td>Lockwasher</td>
<td>10</td>
</tr>
<tr>
<td>S Logic</td>
<td></td>
<td>6</td>
<td>127</td>
<td>Lockwasher</td>
</tr>
<tr>
<td>SA, A and B</td>
<td>8</td>
<td>128</td>
<td>Lockwasher</td>
<td>4</td>
</tr>
<tr>
<td>C Logic</td>
<td></td>
<td>4</td>
<td>129</td>
<td>Spacer, Spider (C Logic Only)</td>
</tr>
<tr>
<td>*31</td>
<td>Oil Seal</td>
<td>1</td>
<td>130</td>
<td>Set Screw (C Logic Only)</td>
</tr>
<tr>
<td>*34</td>
<td>Locknut</td>
<td>1</td>
<td>136</td>
<td>Pipe Plug</td>
</tr>
<tr>
<td>*35</td>
<td>Bearing, Output Shaft</td>
<td>1</td>
<td>151</td>
<td>Soc. Hdl Cap Screw (Not used on P logic)</td>
</tr>
<tr>
<td>*36</td>
<td>Spring (Not used on P logic)</td>
<td></td>
<td></td>
<td>S Logic</td>
</tr>
<tr>
<td>S Logic</td>
<td></td>
<td>6</td>
<td></td>
<td>SA, A and B</td>
</tr>
<tr>
<td>SA, A and B</td>
<td>8</td>
<td></td>
<td></td>
<td>C Logic</td>
</tr>
<tr>
<td>C Logic</td>
<td></td>
<td>4</td>
<td>181</td>
<td>Key</td>
</tr>
<tr>
<td>*39</td>
<td>O-Ring</td>
<td>1</td>
<td>196</td>
<td>Splash Guard (C Logic Only)</td>
</tr>
<tr>
<td>A,B and C Logics</td>
<td>1</td>
<td>218</td>
<td>Pin (P Logic Only)</td>
<td>1</td>
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<tr>
<td>S, SA and P Logics</td>
<td>2</td>
<td>264</td>
<td>Flat Washer (Not used on P logic)</td>
<td>6</td>
</tr>
<tr>
<td>*40</td>
<td>O-Ring</td>
<td>2</td>
<td></td>
<td>S Logic</td>
</tr>
<tr>
<td>A,B and C Logics</td>
<td>1</td>
<td></td>
<td>SA, A and B</td>
<td>4</td>
</tr>
<tr>
<td>S, SA and P Logics</td>
<td>2</td>
<td></td>
<td></td>
<td>C Logic</td>
</tr>
<tr>
<td>*43</td>
<td>Teflon Liner, I. D. Sealing</td>
<td>1</td>
<td>*269</td>
<td>Drive Plate (Not used on C Logic)</td>
</tr>
<tr>
<td>*45</td>
<td>Breather</td>
<td>1</td>
<td>302</td>
<td>Retainer Plate (C Logic Only)</td>
</tr>
<tr>
<td>*46</td>
<td>Sight Gauge</td>
<td>1</td>
<td>305</td>
<td>Cap Screw (C Logic Only)</td>
</tr>
<tr>
<td>*51</td>
<td>Gasket, Output Housing</td>
<td>1</td>
<td>329</td>
<td>Bearing Retainer</td>
</tr>
<tr>
<td>*53</td>
<td>Gasket, Input Housing</td>
<td>1</td>
<td>380</td>
<td>Filler Drive Plate</td>
</tr>
</tbody>
</table>

* - Indicates parts in Overhaul Kit.
AR - As Required
EH-2.5 Posidyne CLUTCH/BRAKE ASSEMBLY

Figure 10.1 - EH-2.5 Posidyne Clutch/Brake Assembly
Repair Parts List - *(Figure 10.2) & (Figure 10.3)*

**OUTPUT C-FACE ADAPTER**

**INPUT HOUSING SUB-ASSEMBLY**

<table>
<thead>
<tr>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
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<tbody>
<tr>
<td>2</td>
<td>Input Shaft ........................................</td>
<td>1</td>
<td>200</td>
<td>C-Face Flange, Input ................................</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Bearing Retainer (With Motor Driven Pump)</td>
<td></td>
<td>201</td>
<td>Soc. Hd. Cap Screw ..................................</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>Input Housing ........................................</td>
<td>1</td>
<td>202</td>
<td>Lockwasher ...........................................</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>Pipe Plug ............................................</td>
<td>1</td>
<td>203</td>
<td>C-Face Flange, Output ................................</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Bearing Retainer (With Pulley Driven Pump)</td>
<td>1</td>
<td>204</td>
<td>Soc. Hd. Cap Screw ..................................</td>
<td>8</td>
</tr>
<tr>
<td>*26</td>
<td>Bearing ................................................</td>
<td>1</td>
<td>205</td>
<td>Lockwasher ...........................................</td>
<td>8</td>
</tr>
<tr>
<td>*31</td>
<td>Oil Seal ...............................................</td>
<td>1</td>
<td>*206</td>
<td>Gasket ................................................</td>
<td>1</td>
</tr>
<tr>
<td>*34</td>
<td>Locknut ................................................</td>
<td>1</td>
<td>207</td>
<td>Bearing Retainer .....................................</td>
<td>1</td>
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<tr>
<td>*38</td>
<td>Bearing ................................................</td>
<td>1</td>
<td>*208</td>
<td>Oil Seal ...............................................</td>
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</tr>
<tr>
<td>*55</td>
<td>Gasket ................................................</td>
<td>1</td>
<td>*209</td>
<td>Locknut ...............................................</td>
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</tr>
<tr>
<td>99</td>
<td>Freeze Plug ..........................................</td>
<td>1</td>
<td>415</td>
<td>Hex. Hd. Cap Screw ...................................</td>
<td>4</td>
</tr>
<tr>
<td>104</td>
<td>O-Ring ................................................</td>
<td>1</td>
<td>416</td>
<td>Lockwasher ...........................................</td>
<td>4</td>
</tr>
<tr>
<td>180</td>
<td>Key .....................................................</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Indicates parts in Overhaul Kit.

**OUTPUT C-FACE ADAPTER (8-1/2" Dia. AK)**

*TORQUE TO 25 Ft. Lbs.*

Figure 10.2 - Output C-Face Adapter (8-1/2" AK)
INPUT HOUSING SUB-ASSEMBLY
(With Male Input Shaft for Coupling or Belt Drive)

7 (With Motor Driven Pump)
16 (With Pulley Driven Pump)

* TORQUE SCREW (#63) to 9 Ft. Lbs.

(With Quill Input Shaft for C-Face Mounting)

8-1/2" AK Dia.

* TORQUE SPECIFICATIONS:
* SCREW (#201) - 25 Ft. Lbs.
* SCREW (#210) - 14 Ft. Lbs.
* SCREW (#415) - 25 Ft. Lbs.

Figure 10.3 - Input Housing Sub-Assembly

FORCE CONTROL INDUSTRIES, INC.
### Repair Parts List - *(Figure 10.4)*

**FAN COOLING and WATER COOLING OPTIONS**

<table>
<thead>
<tr>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
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</thead>
<tbody>
<tr>
<td>24</td>
<td>Fan Shroud</td>
<td>1</td>
<td>176</td>
<td>Zinc Anode</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>Fan</td>
<td>1</td>
<td>177</td>
<td>Pipe Coupling</td>
<td>1</td>
</tr>
<tr>
<td>48</td>
<td>Heat Exchanger</td>
<td>1</td>
<td>178</td>
<td>Pipe Nipple</td>
<td>1</td>
</tr>
<tr>
<td>56</td>
<td>Soc. Hd. Cap Screw</td>
<td>2</td>
<td>180</td>
<td>Key</td>
<td>1</td>
</tr>
<tr>
<td>66</td>
<td>Soc. Hd. Cap Screw</td>
<td>2</td>
<td>185</td>
<td>Access Cover</td>
<td>2</td>
</tr>
<tr>
<td>70</td>
<td>Set Screw</td>
<td>2</td>
<td>237</td>
<td>Anti-Rotational Tag</td>
<td>2</td>
</tr>
<tr>
<td>71</td>
<td>Compression Fitting</td>
<td>2</td>
<td>242</td>
<td>Pipe Tee</td>
<td>1</td>
</tr>
<tr>
<td>152</td>
<td>But. Hd. Cap Screw</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 10.4 - Fan Cooling and Water Cooling Options
<table>
<thead>
<tr>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>Positioning Encoder Housing</td>
<td>1</td>
<td>241</td>
<td>Set Screw</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Magnetic Pickup</td>
<td>1</td>
<td>253</td>
<td>Housing Cover</td>
<td>1</td>
</tr>
<tr>
<td>76</td>
<td>Soc. Hd. Cap Screw</td>
<td>4</td>
<td>257</td>
<td>Lockwasher</td>
<td>4</td>
</tr>
<tr>
<td>*103</td>
<td>O-Ring</td>
<td>1</td>
<td>259</td>
<td>Cable, 5-Pin Straight</td>
<td>1</td>
</tr>
<tr>
<td>*104</td>
<td>O-Ring</td>
<td>4</td>
<td>268</td>
<td>But. Hd. Cap Screw</td>
<td>4</td>
</tr>
<tr>
<td>105</td>
<td>Manifold</td>
<td>1</td>
<td>327</td>
<td>Pressure Gauge</td>
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<tr>
<td>131</td>
<td>Pipe Plug</td>
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<td>A, B and C Logics</td>
<td>1</td>
<td></td>
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<tr>
<td>137</td>
<td>Pipe Plug</td>
<td>1</td>
<td>S, SA and P Logics</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A, B and C Logics</td>
<td>2</td>
<td>355</td>
<td>Quadrature Pickup</td>
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</tr>
<tr>
<td></td>
<td>S, SA and P Logics</td>
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<td>358</td>
<td>Soc. Hd. Cap Screw</td>
<td>4</td>
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<tr>
<td>138</td>
<td>Pipe Nipple, 1/4&quot;</td>
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<td>359</td>
<td>Lockwasher</td>
<td>4</td>
</tr>
<tr>
<td>139</td>
<td>Pipe Tee, 1/4&quot;</td>
<td>1</td>
<td>368</td>
<td>Receptacle, 5-Pin</td>
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<tr>
<td>140</td>
<td>Reducer Bushing, 1/4&quot; x 1/8&quot;</td>
<td>1</td>
<td>372</td>
<td>Top Cover</td>
<td>1</td>
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<tr>
<td>154</td>
<td>Set Screw</td>
<td>1</td>
<td>387</td>
<td>Control Valve</td>
<td>1</td>
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<tr>
<td>177</td>
<td>Street Elbow</td>
<td>1</td>
<td>388</td>
<td>Relief Valve</td>
<td>1</td>
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<td>182</td>
<td>Lockwasher</td>
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<td>397</td>
<td>Pressure Gauge</td>
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<td>186</td>
<td>Pulse Gear</td>
<td>1</td>
<td>400</td>
<td>Pressure Regulator</td>
<td></td>
</tr>
<tr>
<td>198</td>
<td>Soc. Hd. Cap Screw</td>
<td>4</td>
<td>A, B and C Logics</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>*214</td>
<td>Shim AR</td>
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<td>S, SA and P Logics</td>
<td>2</td>
<td></td>
</tr>
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<td>225</td>
<td>But. Hd. Cap Screw</td>
<td>4</td>
<td>409</td>
<td>Plug (A, B and C Logics)</td>
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<tr>
<td>226</td>
<td>Rd. Hd. Cap Screw</td>
<td>2</td>
<td>901</td>
<td>Cable Fitting, 3-Pin</td>
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<tr>
<td>*228</td>
<td>O-Ring (A, B and C Logics)</td>
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<td>902</td>
<td>Cable, 3-Pin Straight</td>
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<td>234</td>
<td>Key</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* - Indicates parts in Overhaul Kit AR-As Required
Figure 10.5 - Positioning Encoder Assembly; Hydraulic Control Valves
### Repair Parts List (Figure 10.6)

**PIGGYBACK MOUNTING/MOTOR DRIVEN PUMP**

<table>
<thead>
<tr>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
<th>REF. No.</th>
<th>PART NAME</th>
<th>QTY.</th>
</tr>
</thead>
<tbody>
<tr>
<td>76</td>
<td>Soc. Hd. Cap Screw</td>
<td>4</td>
<td>254</td>
<td>Stud</td>
<td>4</td>
</tr>
<tr>
<td>126</td>
<td>Pipe Nipple</td>
<td>1</td>
<td>255</td>
<td>Flat Hd. Cap Screw</td>
<td>4</td>
</tr>
<tr>
<td>142</td>
<td>90° Street Elbow</td>
<td>1</td>
<td>257</td>
<td>Lockwasher</td>
<td>8</td>
</tr>
<tr>
<td>147</td>
<td>Bracket, Motor Mounting, Input</td>
<td>1</td>
<td>262</td>
<td>Hex. Hd. Cap Screw</td>
<td>4</td>
</tr>
<tr>
<td>148</td>
<td>Bracket, Pump Mounting</td>
<td>1</td>
<td>264</td>
<td>Flat Washer</td>
<td>AR</td>
</tr>
<tr>
<td>149</td>
<td>Bracket, Motor Mounting, Output</td>
<td>1</td>
<td>305</td>
<td>Hex. Hd. Cap Screw</td>
<td>4</td>
</tr>
<tr>
<td>152</td>
<td>Hex Nut</td>
<td>8</td>
<td>357</td>
<td>Hex. Hd. Cap Screw</td>
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AR- As Required
Figure 10.6 - Piggyback Mounting/ Motor Driven Pump
## Repair Parts List - *(Figure 10.7)*
### PIGGYBACK MOUNTING/PULLEY DRIVEN PUMP

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AR-As Required
Figure 10.7 - Piggyback Mounting/Pulley Driven Pump
### Repair Parts List - *(Figure 10.8)*

**SIDE MOUNTING/MOTOR DRIVEN PUMP**

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SIDE MOUNTING/MOTOR DRIVEN PUMP

MOUNTING BASE AND MOUNTING HARDWARE IS CUSTOMER FURNISHED UNLESS OTHERWISE SPECIFIED.

CONTROL VALVE AND RELIEF VALVE SUB-ASSEMBLY

EH-2.5 Posidyne CLUTCH/BRAKE

Figure 10.8 - Side Mounting/Motor Driven Pump
## Manual Revision & Printing History
**EH-2.5 Posidyne Clutch/Brake Drives**

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<th>REVISION NUMBER</th>
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<td>T. Stoner</td>
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- Flexibility
- Efficiency
- Endurance
- Performance
and
- Dependability.

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Fax: (513)868-2105

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Web: www.forcecontrol.com