

**RICE HYDRO, INC.**  
**MANUFACTURER'S OPERATING INSTRUCTIONS**  
**DE & RP SERIES MODEL TEST PUMPS**

**FOR WARRANTY REGISTRATION CALL 800-245-4777.**

**CONNECTING THE PUMP:**

1. Check oil level in engine, use 10W30. Unleaded gasoline.
2. Check oil level in the gear reduction, use (90W). Oil should be level with side drain plug.
3. Connect pressurized water source to the inlet of the pump. *It is recommended that the unit be pressure fed.* For suction or gravity feed locate water within 8 feet, you may need to prime the pump.
4. Connect the supplied high-pressure outlet hose to the pump and your test environment.

**OPERATING THE PUMP:**

1. Turn the outlet ballvalve to the open position, and start the engine. The engine RPM is preset at the factory, **DO NOT ADJUST.**
2. The pressure regulator has been preset at the factory. ***To change this setting you must make this adjustment while the water is flowing freely, under no pressure.*** To adjust pressure, first loosen the locknut. Turn the T-handle clockwise to increase and counter-clockwise to decrease the pressure. Place a ballvalve or similar open and close valve at the end of the outlet hose, open and close ballvalve to check pressure setting and re-adjust as necessary. It is also recommended that you open and close the hosebib located under the gauge to bleed excess air from piping and ensure accurate pressure readings. Upon reaching desired pressure setting, tighten locknut.
3. With the ballvalve open begin building pressure in test environment. Bleeding air from hosebib under gauge at least once during this process. Once test pressure has been reached, **close ballvalve and shut off engine.**
4. Once the outlet ballvalve is closed and your test begins, you have now isolated the test pump from your test environment, any loss of pressure is due to leaks or trapped air in the line.

**REMEMBER THESE CAUTIONS:**

1. Check all fluid levels prior to operating pump.
2. Use a sound 3/4" or larger supply hose.
3. DO NOT run dry or pump chlorine through the unit.
4. Protect the pump from freezing, FLUSH with anti-freeze.

**RECOMMENDED PERIODIC MAINTENANCE PROCEDURE**

1. Change engine oil after the first 5 hours of operation thereafter every 80 hours of use or every season.
2. Change the gear oil after every 250 hours of use or every season.
3. **PISTON PUMPS ONLY** - Lubricate cam bearing with grease (wheel bearing grease) every 100 hours of operation or monthly. Use hand operated grease gun to prevent damage to the bearing seal. Grease fitting assembly is located behind the safety cover on the pump.

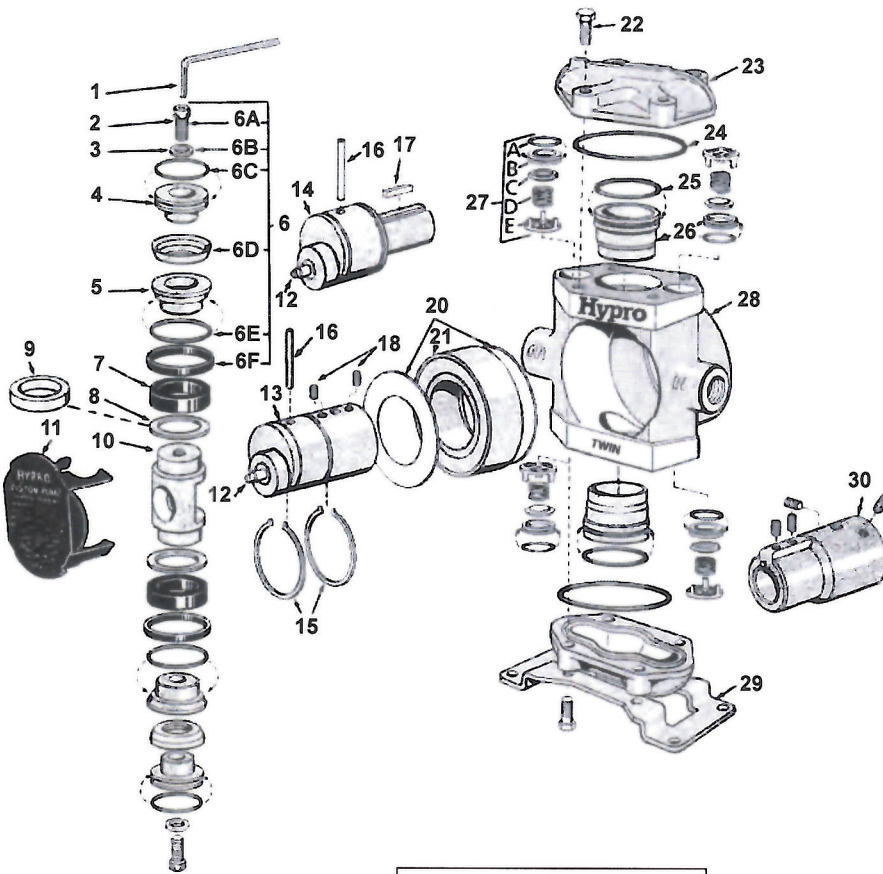
PARTS BREAKDOWN FOR MODEL DE(H)-3C & DEH-10/450  
RICE HYDRO INC.

| REF# | PART NUMBER..     | DESCRIPTION..                | QTY<br>REQ'D |
|------|-------------------|------------------------------|--------------|
| 2    | HYPRO-2220-0013   | PISTON CAP SCREW             | 2            |
| 3    | HYPRO-2270-0012   | WASHER                       | 2            |
| 4    | HYPRO-1830-0039   | PISTON CUP SPREADER          | 2            |
| 5    | HYPRO-1410-0054   | CUP BACKING PLATE            | 2            |
| 7    | HYPRO-1440-0005   | PISTON GUIDE                 | 2            |
| 8    | HYPRO-1410-0018   | SUPPORT RING FOR 5210 ONLY   | 2            |
| 9    | HYPRO-1410-0020   | SUPPORT RING FOR 5206 ONLY   | 2            |
| 10   | HYPRO-0503-5200   | CONNECTING ROD               | 1            |
| 11   | HYPRO-0602-5200   | SAFETY COVER                 | 1            |
| 12   | HYPRO-2405-0006A  | GREASE FITTING ASSEMBLY      | 1            |
| 14   | HYPRO-5003-5206   | CRANKSHAFT SUB-ASSEMBLY      | 1            |
| 14   | HYPRO-5001-5206   | CRANKSHAFT COMPLETE ASSEMBLY | 1            |
| 15   | HYPRO-1810-0001   | RETAINER RING                | 2            |
| 16   | HYPRO-1600-0013   | CRANKPIN RETAINER            | 1            |
| 17   | HYPRO-1610-0005   | KEY FOR SOLID SHAFT          | 1            |
| 20   | HYPRO-1410-0006   | SLINGER RING                 | 2            |
| 21   | HYPRO-2005-0006   | MAIN BEARING                 | 1            |
| 22   | HYPRO-2210-0062   | CYLINDER HEAD BOLT           | 8            |
| 23   | HYPRO-0203-5200CB | CYLINDER HEAD                | 2            |
| 24   | HYPRO-1720-0028   | O-RING FOR CYLINDER HEAD     | 2            |
| 25   | HYPRO-1720-0019   | O-RING FOR CYLINDER SLEEVE   | 2            |
| 26   | HYPRO-3550-0007   | CYLINDER SLEEVE              | 2            |
| 27   | HYPRO-3400-0038   | VALVE ASSEMBLY               | 4            |
| 28   | HYPRO-0100-5200C  | PUMP BODY 5200 SERIES        | 1            |
| 29   | HYPRO-1510-0024   | PUMP BASE                    | 1            |

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|     |                      |  |
|-----|----------------------|--|
| NA  | BRIGG-126352-0049-E2 | 5.5 HP 206 CC ENGINE W/GR                        |
| NA  | HONDA-GX160UT2-HX2   | 5.5 HP 163 CC ENGINE W/GR                        |
| NA  | BALLVALVE-3/4        | 3/4" FXF 1/4 TURN BALLVALVE                      |
| NA  | GAUGE-600            | 0-600 PSI LIQUID FILLED 2&1/2"                   |
| NA  | GAUGE-SNUBBER-1/4    | VIBRATION SNUBBER                                |
| NA  | HOSE-3/4X8-RH        | HIGH PRESSURE OUTLET ASSEMBLY                    |
| NA  | FITTING-3/4-MPIPE    | HOSE, MALE PIPE RIGID END                        |
| NA  | FITTING-3/4-MPX      | HOSE, MALE PIPE SWIVEL END                       |
| NA  | HOSE-3/4-1250KFT     | CUSTOMER TO SPECIFY LENGTH                       |
| NA  | CENTERDISK-5206      | URETHANE SPIDER 5206                             |
| NA  | CENTERDISK-5210      | HYTREL SPIDER 5210                               |
| NA  | COUPLING-LVJ-3/4     | 3/4" COUPLING (ENGINE SIDE)                      |
| NA  | COUPLING-LVJ-ENG-1"  | 1" COUPLING (PUMP SIDE)                          |
| NA  | LINESTRAINER-3/4     | COMPLETE LINESTRAINER ASSEMBLY                   |
| NA  | HYPRO-5206C-FL       | TWIN PISTON 6 GPM 450 PSI                        |
| NA  | HYPRO-5210C-FL       | TWIN PISTON 10 GPM 450 PSI                       |
| NA  | SPRAY-6815-700-3/4   | 70-700 PSI T-HANDLE REGULATOR                    |
| NA  | SWIVEL-3/4           | 3/4" FEMALE INLET HOSE SWIVEL                    |
| NA  | HOSEWASHER-3/4       | 3/4" HOSEWASHER                                  |
| NA  | COUPLERBODY-3/4      | FEMALE CONNECT TO OUTLET HOSE                    |
| NA  | COUPLERPLUG-3/4      | MALE PUMP OUTLET PIPING                          |
| KIT | HYPRO-3430-0037      | PISTON STACK PARTS KIT -<br>LEATHER CUPS REF. #6 |
| KIT | HYPRO-3430-0039      | PISTON STACK PARTS KIT -<br>FABRIC CUPS REF. #6  |
| KIT | PULSE-HOSE-KIT       | PULSATION DAMPENER HOSE                          |
| KIT | SPRAY-AB6815-700     | REGULATOR REPAIR KIT                             |

\*\*PRICES SUBJECT TO CHANGE WITHOUT NOTICE\*\*



**NOTE:** When ordering parts, give quantity, part number, description, and complete model number. Reference numbers are used **ONLY** to identify parts in the drawing and are **NOT** to be used as order numbers.

### Piston Stack Parts Kits

#### Leather Cup Kit No. 3430-0037 (STD)

Consists of two each of the following parts: No. 2220-0013 Piston Cap Screw (Ref. 6A), No. 2270-0012 Washer (Ref. 6B), No. 1720-0030 O-Ring (Ref. 6C), No. 2150-0001 Leather Cup (Ref. 6D), No. 1720-0065 O-Ring (Ref. 6E) and No. 1440-0012 Seal Ring (Ref. 6F).

#### Fabric Cup Kit No. 3430-0039

Same as Leather Cup Kit except with two No. 2150-0012 Fabric Cups.

#### Rubber Cup Kit No. 3430-0189

Same as Leather Cup Kit except with two No. 2150-0042 Rubber Cups.

### Crankshaft Assemblies

#### Sub-Assemblies

Include Grease Fitting (Ref. 12), Crankshaft with cam bearing (Ref. 13 or 14) and Crankpin Retainer (Ref. 16).

#### Complete Assemblies

Include Sub-Assembly components plus Retaining Rings (Ref. 15), slinger rings (Ref. 20) and Bearing (Ref. 21).

| Complete Sub-Assembly PART NO.                | Pump Assembly PART NO. | Model Number |
|---|------------------------|--------------|
| <b>with 1-3/8" Hollow PTO Shaft (Ref. 13)</b> |                        |              |
| 5503-5206                                     | 5501-5206              | 5206C-H      |
| 5503-5210                                     | 5501-5210              | 5210C-H      |
| <b>with 1" Solid Shaft (Ref. 14)</b>          |                        |              |
| 5003-5206                                     | 5001-5206              | 5206C        |
| 5003-5210                                     | 5001-5210              | 5210C        |

| Ref. No. | Qty. Req'd. | Part No.    | Description  |
|----------|-------------|-------------|--|
| 1        | 1           | 3020-0008   | Allen Wrench (Optional)                                |
| 2        | 2           | 2220-0013   | Piston Cap Screw                                       |
| 3        | 2           | 2270-0012   | Washer   |
| 4        | 2           | 1830-0039   | Piston Cup Spreader                                    |
| 5        | 2           | 1410-0054   | Cup Backing Plate                                      |
| 6        | 1           | 3430-0037   | Piston Stack Parts Kit with Leather Cups (Standard)    |
| 6        | 1           | 3430-0039   | Piston Stack Parts Kit with Fabric Cups (Model 5200-F) |
| 6        | 1           | 3430-0189   | Piston Stack Parts Kit with Buna-N Cups (Model 5200-R) |
| 7        | 2           | 1440-0005   | Piston Guide   |
| 8        | 2           | 1410-0018   | Support Ring For 5210 Models Only                      |
| 9        | 2           | 1410-0020   | Support Ring For 5206 Models Only                      |
| 10       | 1           | 0503-5200   | Connecting Rod   |
| 11       | 1           | 0602-5200   | Safety Cover   |
| 12       | 1           | 2405-0006   | Grease Fitting Assembly                                |
| 13       | 1           | See Listing | Crankshaft (Hollow Shaft Models)                       |
| 14       | 1           | See Listing | Crankshaft (Solid Shaft Models)                        |
| 15       | 2           | 1810-0001   | Retainer Ring  |
| 16       | 1           | 1600-0013   | Crankpin Retainer                                      |

| Ref. No. | Qty. Req'd. | Part No.    | Description   |
|----------|-------------|-------------|---|
| 17       | 1           | 1610-0005   | Key (Solid Shaft Models)  |
| 18       | 2           | 2230-0003   | Set Screw   |
| 20       | 2           | 1410-0006   | Slinger Ring  |
| 21       | 1           | 2005-0006   | Main Bearing  |
| 22       | 8           | 2210-0062   | Cylinder Head Bolt  |
| 23       | 2           | 0203-5200CB | Cylinder Head   |
| 24       | 2           | 1720-0028   | O-Ring – for cylinder head  |
| 25       | 2           | 1720-0019   | O-Ring – for cylinder sleeve  |
| 26       | 2           | 3550-0007   | Cylinder Sleeve   |
| 27       | 4           | 3400-0038   | Valve Assembly—Consists of: O-ring (Ref. A), Valve Seat (Ref. B), Valve Poppet (Ref. C), Valve Spring (Ref. D) and Valve Spring Retainer (Ref. E) |
| 28       | 1           | 0100-5200C  | Body  |
| 29       | 1           | 1510-0024   | Base  |
| 30       | 1           | 1320-0081   | Adapter-Adapts 1" solid shaft to 1- 3/8" 6-spline PTO hollow shaft (Includes set screws.)   |