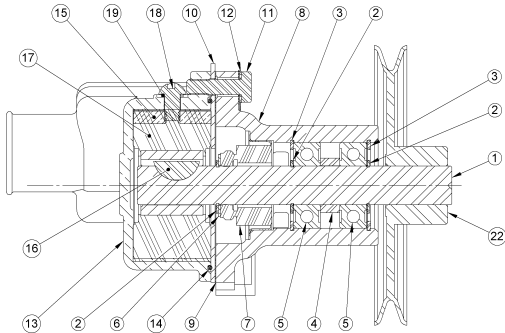
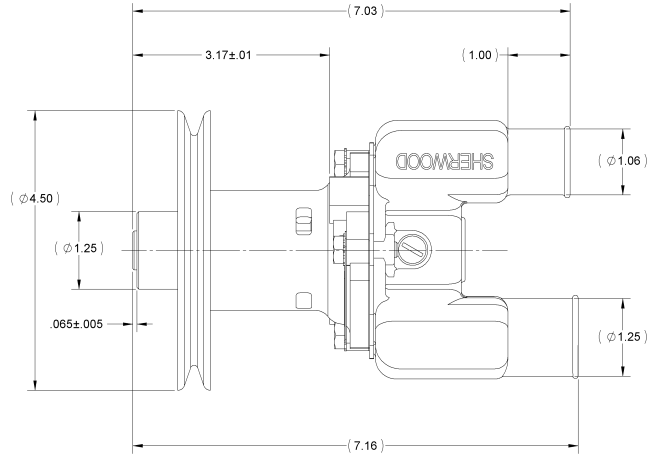


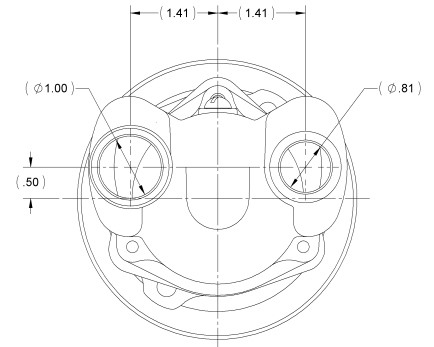
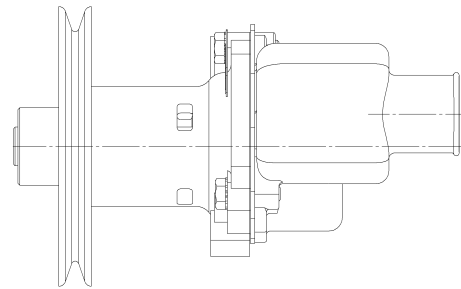
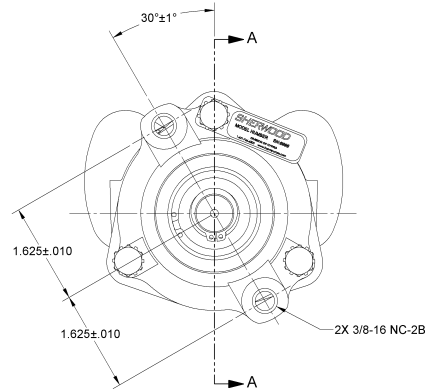
| ITEM NO. | PART NUMBER | DESCRIPTION            | QTY. |
|----------|-------------|------------------------|------|
| 1        | 13383       | SHAFT                  | 1    |
| 2        | 04258       | EXT. RETAINING RING    | 3    |
| 3        | 04259       | INT. RETAINING RING    | 2    |
| 4        | 05133       | SPACER                 | 1    |
| 5        | 12211       | BALL BEARING           | 2    |
| 6        | 04264       | FLAT WASHER            | 1    |
| 7        | 12314       | TYPE 6A SEAL/SEAT ASSY | 1    |
| 8        | 21759       | BODY - MACHINED        | 1    |
| 9        | 12855       | GASKET                 | 1    |
| 10       | 12856       | WEAR PLATE             | 1    |
| 11       | 12857       | 1/4-20 HHCS            | 3    |
| 12       | 21757       | LOCKWASHER EXT TOOTH   | 3    |
| 13       | 21151       | HOUSING                | 1    |
| 14       | 12231       | O-RING                 | 1    |
| 15       | 15883       | CAM                    | 1    |
| 16       | 04432       | WOODRUFF KEY           | 1    |
| 17       | 09959       | RUBBER IMPELLER        | 1    |
| 18       | 19995       | SCREW 1/4-20 ROUND HD  | 1    |
| 19       | 19996       | CAM WASHER             | 1    |
| 20       | 13285       | TAG                    | 1    |
| 21       | 23083       | LABEL                  | 1    |
| 22       | 21175       | PULLEY                 | 1    |

NOTES:

1. APPLY BEAD OF PERMATEX AROUND THREADED HOLE IN CAM PRIOR TO ASSEMBLY, (ITEM 15).
2. USE WATER ONLY WHEN INSTALLING SEAL/SEAT ASSY, (ITEM 7).
3. USE COOLANT TO AID IN INSTALLATION OF RUBBER IMPELLER, (ITEM 17).
4. TORQUE 1/4-20 HHCS TO 5 - 8 FT/LBS, (ITEM 11).
5. PRESSURE TEST PUMP TO 20 - 30 PSI.
6. PRINT ON LABEL, (ITEM 21).  
G9903  
DATE CODE



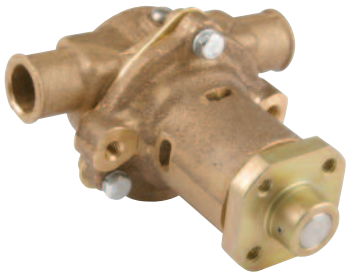
SECTION A-A



|  |     |                                    |      |                   |                                  |
|--|-----|------------------------------------|------|-------------------|----------------------------------|
| <b>SHERWOOD</b>  |     |                                    |      | REPLACES PART NO. | REV                              |
| <small>A Div. of Hypro Corporation A PENTAR COMPANY</small>                |     |                                    |      | DWG BY: EW        | DATE: 5/31/1994                  |
| <small>375 Fifth Avenue NW, New Brighton, MN 55112, (651) 766-6300</small> |     |                                    |      | CHECKED BY: TLG   | DATE: 5/31/1994                  |
| <small>DRAWING BASED ON ASME Y14.5M-1994 DO NOT SCALE PRINT</small>        |     |                                    |      | APPROVED BY:      | DATE:                            |
| C 482P   |     | REMOVED 12264/844 AX11, REBRANN    | REB  | 11/20/2001        | SCALE: SHEET NUMBER              |
| S 490F   |     | CHANGE BEARING TO 12211, WAS 23448 | RE   | 6/26/2002         | 1.1 1 OF 1                       |
| A E191F  |     | UPDATE BOM                         | DV   | 8/8/2002          | PART DESCRIPTION                 |
| REV.   | ECN | REVISION DESCRIPTION               | CHKD | DATE              | PART NUMBER                      |
|  |     |                                    |      |                   | <b>RUBBER IMPELLER PUMP ASSY</b> |
|  |     |                                    |      |                   | <b>G9903</b>                     |
|  |     |                                    |      |                   | <b>C</b>                         |

## G Series Technical Guide – 9959 Impeller

### Identification



**G30-2 & G30-2B**



**G21**



**G9901 & G9903\***



**K75 & K75B**



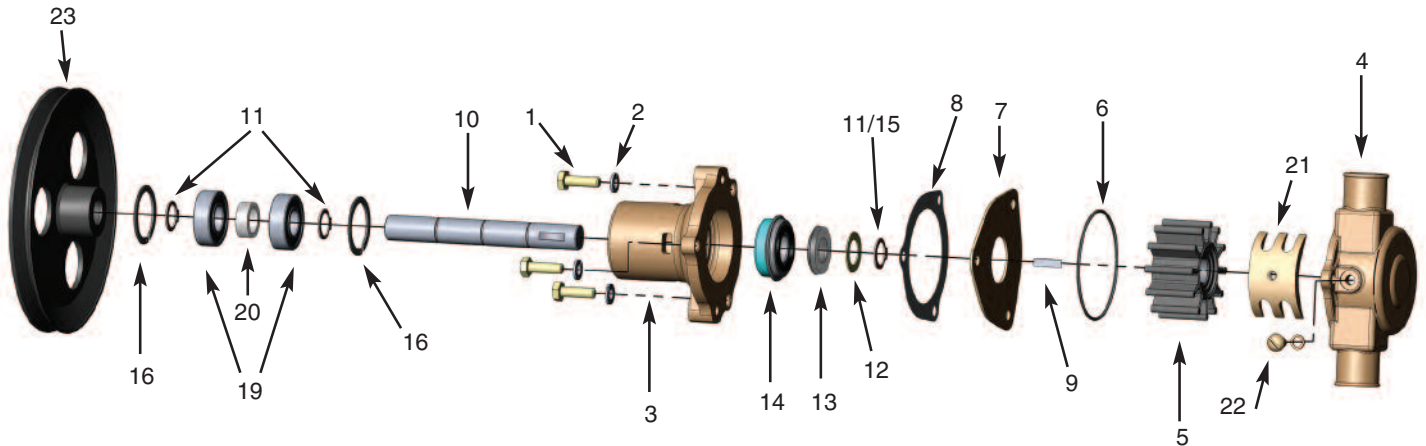
**J70**



**G15**

\*(G9901 - 6 1/2" pulley; G9903 - 4" pulley)

# Assembly / Disassembly Instructions



The following assembly/disassembly procedures apply to all G Series pumps. Deviations from pump to pump are primarily a result of different methods of drive and mounting.

## Disassembly:

- A. Remove the screws (1) and lockwashers (2) that hold the body (3) and housing (4) together.
- B. The housing assembly including the impeller (5) can be removed from the body assembly, along with the o-ring (6), spacer plate (7) and gasket (8).
- C. Remove the woodruff key (9) from the shaft (10). If the shaft is to be used again, and if it is put in a vise, always use lead over the jaws of the vise so that the shaft is not damaged.
- D. Remove the retaining ring (11 or 15) from the shaft (impeller end). The shoulder washer (12) and seat assembly (13) can now be removed.
- E. From the drive end of the pump (pulley end, hub end, shaft end), remove retaining ring, remove pin (17), remove woodruff key (18) and loosen setscrew if used. NOTE: If the pulley (23) or hub (24) is pressed on the shaft, it will be necessary to locate a support directly between the pump body and pulley or hub as close to the shaft as possible. Press the shaft out of the pulley or hub. Make sure the body is free and not supported.
- F. Remove the large internal retaining ring (16) from the body at the end of the bearing.
- G. Support the body, and press the shaft, bearings (19), spacer (20) and retaining rings (11) out through the bearing or pulley end of the body.
- H. The seal assembly (14) is pressed into the body. It can be removed by pushing a tool through the bearing end and up against the metal or back side of the seal. NOTE: On some pumps there is a spacer located between the pulley (hub) and bearing on the shaft. On other pumps, the bearings are positioned on the shaft with a retaining ring on each end. Support the bearings on the inner race, and push the shaft out of the bearings.

## Assembly:

- A. When assembling the cam (21), put Permatex #1 on the backside of the cam and the screw (22) that retains the cam. Wipe off any Permatex that gets into the impeller cavity.
- B. Assemble a retaining ring (11) on the shaft into the second groove from the impeller end. Push the ball bearing (19) over the shaft (10). Press on the inner race of the bearing. Push the bearing up against the retaining ring. Assemble a spacer and then the second ball bearing. Assemble the second retaining ring over the shaft and up against the ball bearing, if required.
- C. There is a large internal retaining ring (16) located in the body that provides a shoulder for the bearings (approximately 1.38" from the bearing end of the body). If it has been removed, it must be inserted at this time.
- D. Press the mechanical seal (14) into the body from the impeller end. Make sure that seal is pressed in square. A tool should be used to assure proper assembly.
- E. Push the bearing and shaft assembly into the body using care not to cock the bearing. A tool is recommended that will give you uniform pressure on the bearing outer race. Lock the bearing in place with the large internal retaining ring.
- F. Assemble the seat assembly (13), shoulder washer (12) and retaining ring (11 or 15) over the shaft from the impeller end. Locate the white ceramic surface against the seal – Do not damage (scratch) the white ceramic surface of the seat, or the seal and seat assembly might leak. Lubricate the rubber part of the seat and use a tool for ease of assembly.
- G. While supporting the shaft, press the pulley (23) or hub (24) onto the shaft. Secure pulley/hub with pin (17) or key (18) and retaining ring or setscrew as needed.
- H. Press the woodruff key (9) into the shaft. Make sure the stainless steel key is used at this location.
- I. Assemble the impeller (5) into the housing (4).

# Assembly / Disassembly Instructions (continued)

- J. Assemble the gasket (8) and spacer plate (7) on the body (3), and line up the screw holes. Replace the lockwashers (2) and tighten the screws (1).
- K. Make sure the o-ring (6) is properly located in the groove in the housing. A small dab of grease will help hold it in position until the housing to body screws are tightened.

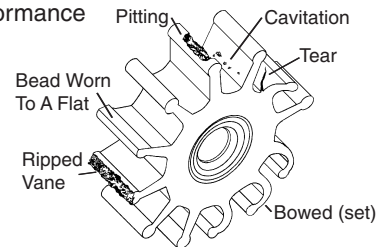
| Sherwood #          |                      | G15         | G21   | G30-2B      | G30-2       | G9901     | G9903     | J70        | K75B  |       |
|---------------------|----------------------|-------------|-------|-------------|-------------|-----------|-----------|------------|-------|-------|
| Engine Manufacturer |                      | Chris Craft |       | Chris Craft | Chris Craft | Volvo/OMC | Volvo/OMC | Commander  |       |       |
| Engine Model        |                      | 350         |       | 350         | 350         | 6&8 Cyl   | 4 Cyl     | 302&351    |       |       |
| ITEM                | QTY                  |             |       | 16.80-18346 | 16.80-18346 | 3852398   | 3855079   | CM1-10-610 |       |       |
| 1                   | Screw                | 3           | 12857 | 12857       | 12857       | 12857     | 12857     | 12857      | 12857 |       |
| 2                   | Lockwasher           | 3           | 12710 | 12710       | 12710       | 12710     | 12710     | 12710      | 12710 |       |
| 3                   | Body                 | 1           | 12324 | 12328       | 19784       | 12328     | 21153     | 21759      | 12328 | 19948 |
| 4                   | Housing              | 1           | 12303 | 12303       | 12303       | 12303     | 21151     | 21151      | 12303 | 13793 |
| 5                   | Impeller             | 1           | 9959  | 9959        | 9959        | 9959      | 9959      | 9959       | 9959  | 9959  |
| 6                   | O-ring               | 1           | 12231 | 12231       | 12231       | 12231     | 12231     | 12231      | 12231 | 12231 |
| 7                   | End Plate            | 1           | 12856 | 12856       | 12856       | 12856     | 12856     | 12856      | 12856 | 12856 |
| 8                   | Gasket               | 1           | 12855 | 12855       | 12855       | 12855     | 12855     | 12855      | 12855 | 12855 |
| 9                   | Key                  | 1           | 4432  | 4432        | 4432        | 4432      | 4432      | 4432       | 4432  | 4432  |
| 10                  | Shaft                | 1           | 12233 | 13363       | 12612       | 12612     | 13363     | 13363      | 13274 | 13363 |
| 11                  | Retaining Ring (Ext) | 2/3         | 4258  | 4258        | 4258        | 4258      | 4258      | 4258       | 4258  | 4258  |
| 12                  | Washer               | 1           | 4264  | 4264        | 4264        | 4264      | 4264      | 4264       | 4264  | 4264  |
| 15                  | Retaining Ring (Ext) | 1           | 12305 |             |             |           |           |            |       |       |
| 16                  | Retaining Ring (Int) | 2           | 4259  | 4259        | 4259        | 4259      | 4259      | 4259       | 4259  | 4259  |
| 17                  | Pin                  | 1           |       |             | 12791       | 12791     |           |            |       |       |
| 18                  | Key                  | 1           | 12622 |             |             |           |           |            | 12622 |       |
| 19                  | Ball Bearing         | 2           | 23448 | 23448       | 23448       | 23448     | 23448     | 23448      | 23448 | 23448 |
| 20                  | Spacer               | 1           | 5133  | 5133        | 5133        | 5133      | 5133      | 5133       | 5133  | 5133  |
| 21                  | Cam                  | 1           | 15883 | 15883       | 15883       | 15883     | 15883     | 15883      | 15883 | 15883 |
| 22                  | Cam Screw            | 1           | 10515 | 10515       | 10515       | 10515     | 10515     | 10515      | 10515 | 10515 |
| 23                  | Drive Pulley or Gear | 1           | 12323 | 19729       |             |           | 21154     | 21175      | 13429 |       |
| 24                  | Hub                  | 1           |       |             | 12615       | 12615     |           |            |       | 13795 |
| 13/14               | Water Seal/Seat Assy | 1           | 12859 | 12859       | 12859       | 12859     | 12859     | 12859      | 12859 | 12859 |
|                     | Minor Repair Kit     |             | 23979 | 23979       | 23979       | 23979     | 23979     | 23979      | 23979 | 23979 |
|                     | Major Repair Kit     |             | 12665 | 12665       | 12665       | 12665     | 12665     | 12665      | 12665 | 12665 |

## Inspection

***The #1 reason for premature engine wear is overheating. To maintain engine performance, insist upon genuine Sherwood impellers and service kits.***

**Recommended inspection to be performed at any service interval:**

- Impeller . . . . . Inspect for cracks or tears. Also, inspect for excessive abrasion of vane ends. Replace annually, or if any of the conditions exist, as in the picture below.\*
- Wear Plate . . . . . Inspect for wear, flatness, and pin for fatigue. Replace at minor and major pump rebuild or if wear is evident to maintain pump flow and suction performance
- Cam . . . . . Replace at major pump rebuild or if pitting/wear is evident.
- Cover . . . . . Replace at major pump rebuild or if wear exists to maintain pump flow and suction performance.
- Mechanical Seal . . . . . Replace at minor and major pump rebuild or if leaking.
- Lip Seal . . . . . Replace at minor and major pump rebuild or if leaking.
- Shaft . . . . . Inspect for wear in area of lip seal and rubber impeller. Grooving of lip seal area or heavy fretting of the impeller end shaft will require shaft replacement.
- Bearing . . . . . Inspect for loss of grease, corrosion or rough rotation. Replace at major pump rebuild or if in doubt.



\* See maintenance schedule on back page

# Preventative Maintenance

| Maintenance Schedule | Pleasure Boating<br>(Low Hours) |   | Commercial/Fishing Use<br>(High Hours) |   |
|----------------------|---------------------------------|---|--|---|
|                      | Light Duty                      | Severe Duty<br>(High RPM, Silt or Sand) | Heavy Duty                             | Severe Duty<br>(High RPM, Silt or Sand) |
| Impeller Kit         | Every year                      | 6 months                                | 6 months                               | 3 months                                |
| Minor Kit            | 2 years                         | Every year                              | Every year                             | 6 months                                |
| Major Kit            | 4 years                         | 2 years                                 | 2 years                                | Every year                              |

|        | Impeller Kit<br>09959K                               | Minor Kit<br>23979   | Major Kit<br>12665  |
|--------|--|--|---|
|        | 1-09959 Impeller<br>1-12231 O-Ring<br>1-12855 Gasket | 1-09959 Impeller<br>1-12231 O-Ring<br>1-12855 Gasket<br>1-12859 Seal<br>1-04258 Snap Ring<br>1-04432 Key<br>1-04264 Washer<br>2-04259 Snap Rings | 1-09959 Impeller<br>1-12231 O-Ring<br>1-12855 Gasket<br>1-12859 Seal<br>3-04258 Snap Ring<br>1-04432 Key<br>1-04264 Washer<br>2-04259 Snap Rings<br>2-23448 Bearings<br>1-12856 End Plate<br>1-15883 Cam<br>1-10515 Cam Screw |
| G15    | X  | X  | X   |
| G21    | X  | X  | X   |
| G30-2B | X  | X  | X   |
| G30-2  | X  | X  | X   |
| G9901  | X  | X  | X   |
| G9903  | X  | X  | X   |
| G55-2  | X  | X  | X   |
| J70    | X  | X  | X   |
| K75B   | X  | X  | X   |



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