

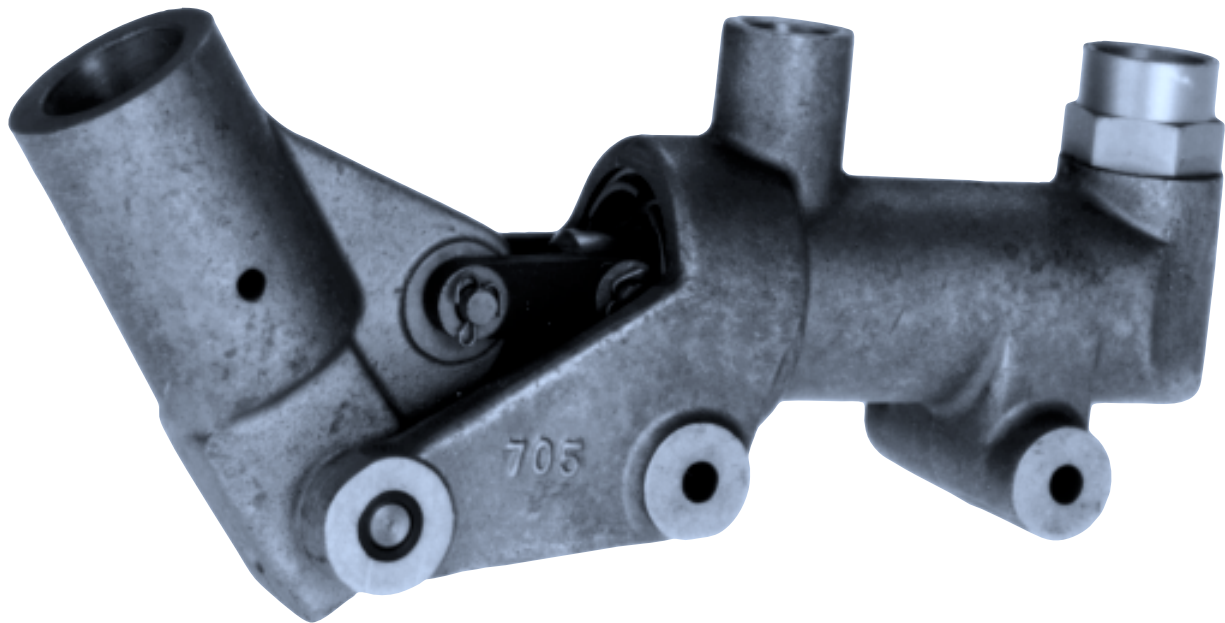


Bulletin HY14-3000-M1/US
Installation and Service Guide

Republic Hand Pumps

Series 914, 915 and 916

Effective: March 1, 2002



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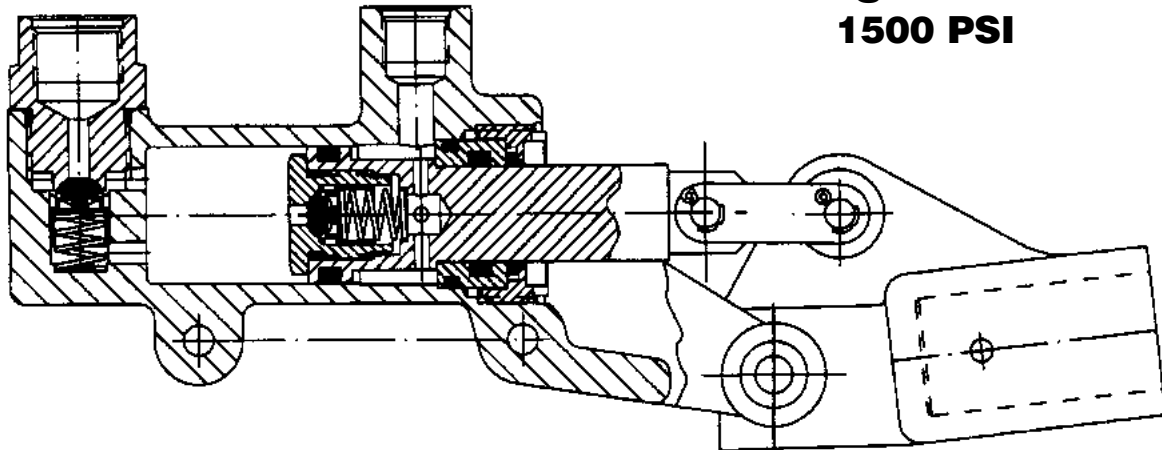
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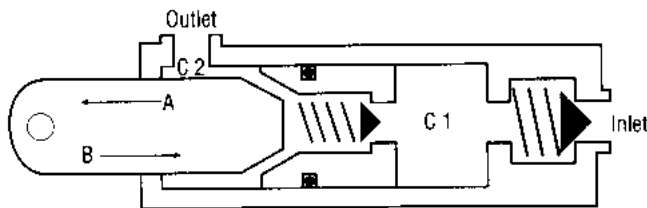
Catalog Series 914 1500 PSI



Features

- Lightweight, double-acting pump delivering 1.25 to 1.50 cubic inch per cycle (2 strokes) up to 1500 PSI.
- Integral resilient seated valves prevent back flow during operation.

Principle of Operation



Piston Stroke — Direction A

Chamber C1 draws in fluid through INLET while chamber C2 discharges fluid through OUTLET.

Piston Stroke — Direction B

Volume in chamber C1 is transferred to chamber C2. Since chamber C2 holds half the volume of chamber C1, half of the fluid in chamber C2 is discharged through the OUTLET port.

General Installation Information

Republic Hand Pumps are double-acting, positive-displacement type. This service literature covers operation and maintenance instructions for Series 914, 915, AN6201-1 and AN6248-3.

Pump part numbers 3-1158-18 (AN6201-1) and 10-1382-1 (AN6248-3) meet military specification MIL-P-5515, and are designed for use with hydraulic oil MIL-H-5606. Series 914, 915 and 916 Pumps are standard for use with hydraulic oil MIL-H-5606, but the o-rings and seals on special order may be specified for use with fuels, and a side variety of chemicals and liquids.

The hand pump is completely assembled and ready for installation. Upon receiving, visually inspect for possible shipping damage. Do not remove the port connectors until the pump is to be installed.

CAUTION: during installation do not permit any foreign matter to enter the parts.

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Specifications

Service Applications: Hydraulic oil.

Pressure Range:

Working: 0 to 1,500 PSI
(1500 PSI based on 60 lb. handle force at 22-1/2 in.)

Proof: 2,250 PSI
Burst: 3,750 PSI

Temperature Range: -65° to 250° F.

Sizes: IST 8 (inlet); IST 6 (outlet)

Type Ports:

IST Internal Straight Threads, AND 10050.

Mounting: Holes (2) through, .257 in. dia.

Materials:

Body: Aluminum alloy.
Piston: Steel.
Poppets: Stainless steel type 303.
Springs: Stainless steel AMS5688.
Molded Seals: Synthetic rubber.
Back-up Rings: PTFE.
Scraper: Brass.
O-Rings: Synthetic rubber.

Type: Double-acting.

Displacement:

1.25/1.5 cu. in. per cycle (2 strokes).

Operating arc: 60° maximum.

Handle:

Not furnished. Available on special order.

Weight: 2.25 lbs.

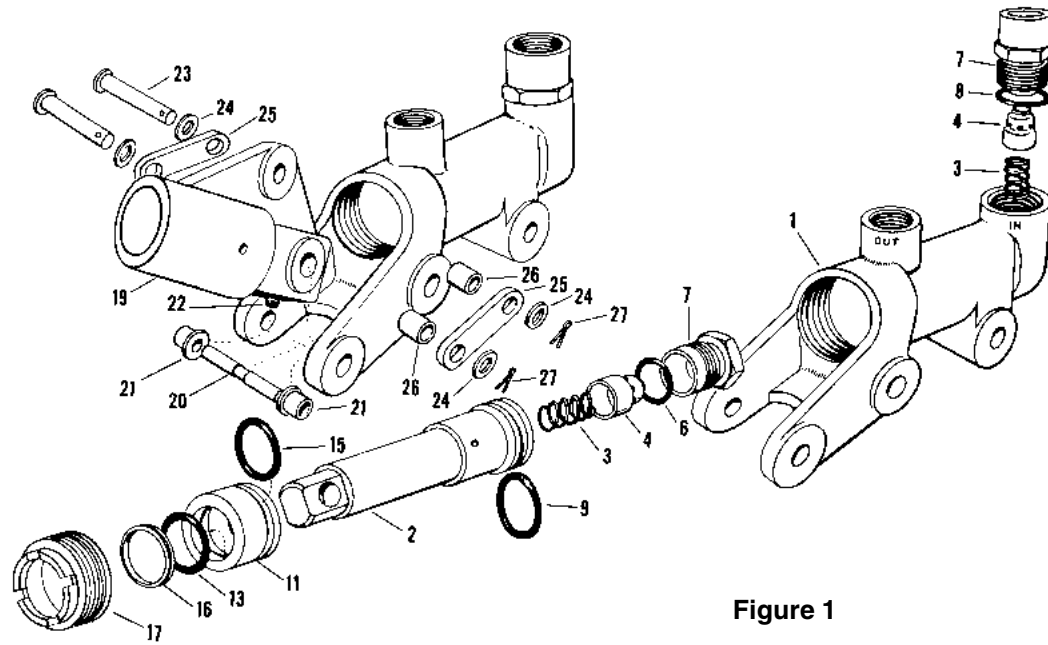


Figure 1

Repair Kit (2-866-3-27)

Table 1

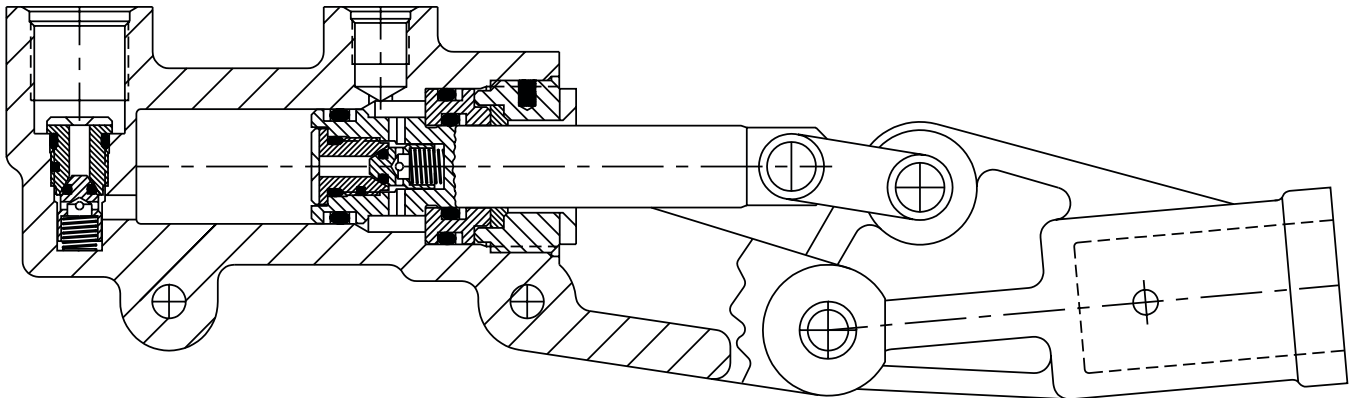
Item	Description	Part No.	Quantity
3	Spring	2-2755-2	2
4	Poppet Assembly	1-375-1-27	2
6	Piston Cap O-ring	2016V304-75	1
8	Inlet Cap O-ring	3910V304-75	1
9	Piston O-ring	2212V304-75	1
13	Inner Spacer O-ring	2211V304-75	1
15	Outer Spacer O-ring	2121N304-75	1

Parts Breakdown

914-8D27 or 3-1158-18 (AN6201-1)

Item	Description	Part No.	Quantity
1	Body	3-1158-5	1
2	Piston	3-1158-6	1
3	Spring	2-2755-2	2
4	Poppet Sub-Assembly	1-375-1-27	2
5	Cap, Inlet	3-1158-7	1
6	O-ring	2016N304-75	1
7	Cap, Piston	3-1158-10-1	1
8	O-ring	3910N304-75	1
9	O-ring	2212N304-75	1
11	Spacer	3-1158-8	1
13	O-ring	2211N304-75	1
15	O-ring	2121N304-75	1
16	Scraper	MS28776M2-6	1
17	Screw	3-1158-11	1
19	Pivot Arm	3-1958-15	1
20	Pin	3-1158-12	1
21	Bushing	3-1158-13	2
22	Set Screw	MS18063-14	1
23	Pin Flat Head	MS20392-3C33	2
24	Washer	AN960-416	4
25	Link	3-1158-14	2
26	Bushing	3-1158-15	2
27	Cotter Pin	MS24665-151	2

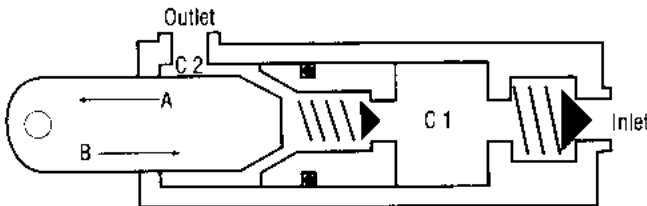
Catalog Series 915, 916 3000 PSI



Features

- Lightweight, double-acting pump delivering .7 cubic inch minimum per cycle (2 strokes).
- Integral resilient seated valves prevent back flow during operation.

Principle of Operation



Piston Stroke — Direction A

Chamber C1 draws in fluid through INLET while chamber C2 discharges fluid through OUTLET.

Piston Stroke — Direction B

Volume in chamber C1 is transferred to chamber C2. Since chamber C2 holds half the volume of chamber C1, half of the fluid in chamber C2 is discharged through the OUTLET port.

General Installation Information

Republic Hand Pumps are double-acting, positive-displacement type. This service literature covers operation and maintenance instructions for Series 914, 915, AN6201-1 and AN6248-3.

Pump part numbers 3-1158-18 (AN6201-1) and 10-1382-1 (AN6248-3) meet military specification MIL-P-5515, and are designed for use with hydraulic oil MIL-H-5606. Series 914, 915 and 916 Pumps are standard for use with hydraulic oil MIL-H-5606, but the o-rings and seals on special order may be specified for use with fuels, and a side variety of chemicals and liquids.

The hand pump is completely assembled and ready for installation. Upon receiving, visually inspect for possible shipping damage. Do not remove the port connectors until the pump is to be installed.

CAUTION: during installation do not permit any foreign matter to enter the parts.

3000-M1.p65, dd

Specifications

Service Applications: Hydraulic oil.

Pressure Range:

Working: 0 to 3,000 PSI
 (3,000 PSI based on 60 lbs. handle force at 22-1/2 in.)

Proof: 4,500 PSI

Burst: 7,500 PSI

Temperature Range: -65° to 250° F.

Sizes: IST 8 (inlet); IST 4 (outlet)

Type Ports: IST Internal Straight Threads.
 915-8D27 (AND 10050), 916-8D27 (MS33649).

Mounting: Holes (2) through, .257 in. dia.

Materials:

Body: Aluminum alloy.
Piston Rod: Stainless steel type 420.
Poppets: Stainless steel type 303.
Springs: Stainless steel type 18-8.
Molded Seals: Synthetic rubber.
Back-up Rings: PTFE..
Scraper: Brass.
O-Rings: Synthetic rubber.

Type: Double-acting.

Displacement:

.7 cu. in. minimum per cycle (2 strokes).

Operating arc: 60°.

Handle: Not furnished.

Weight: 2.13 lbs.

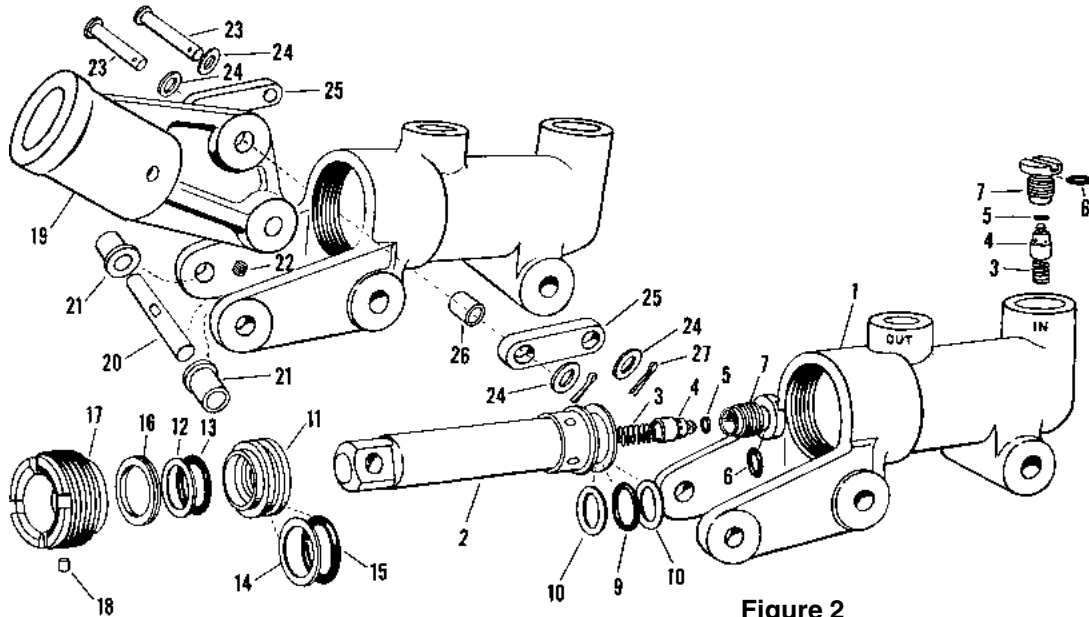


Figure 2

Repair Kit (11-2266-4-27)

Table 2

Item	Description	Part No.	Quantity
3	Spring	11-661-1	2
5	Poppet O-ring	2006N304-75	2
6	Valve Seat O-ring	2011N304-75	2
9	Piston Head O-ring	2115N304-75	1
10	Piston Head Back-Up O-ring	107X115	2
12	Piston Rod Back-Up O-ring	107X114	1
13	Piston Rod O-ring	2114N304-75	1
14	Housing Back-Up Ring	107X120	1
15	Housing O-ring	2120N304-75	1

Parts Breakdown
Series 915

Item	Description	Part No.	Quantity
1	Body	8-1761-2	1
2	Piston	8-1761-6	1
3	Spring	11-661-1	2
4	Poppet	3-2860-17-1	2
5	O-ring	2006N304-75	2
6	O-ring	2011N304-75	2
7	Seat	6-1583-2	2
9	O-ring	2115N304-75	1
10	Back-Up Ring	107X115	2
11	Seal Housing	8-1761-4	1
12	Back-Up Ring	107X114	1
13	O-ring	2114N304-75	1
14	Back-Up Ring	107X120	1
15	O-ring	2120N304-75	1
16	Scraper	MS28776M2-3	1
17	Seal Retainer	8-1761-3	1
18	Nylon Insert	8-1761-5	1
19	Pivot Arm	8-1761-9	1
20	Pin	9-2763-1	1
21	Bushing	3-1158-13	2
22	Set Screw	MS18063-14	1
23	Pin Flat Head	MS20392-3C33	2
24	Washer	AN960-416L	4
25	Link	8-1761-8	2
26	Bushing	8-1761-11	1
27	Cotter Pin	MS24665-151	2

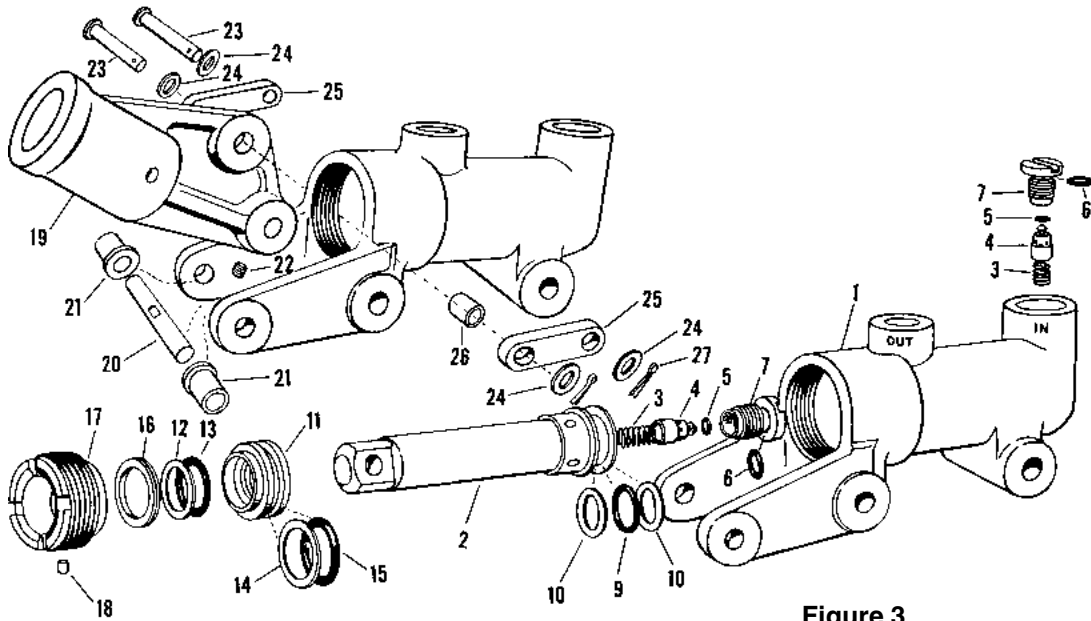


Figure 3

Repair Kit (11-2266-4-27)

Table 3

Item	Description	Part No.	Quantity
3	Spring	11-661-1	2
5	Poppet O-ring	2006N304-75	2
6	Valve Seat O-ring	2011N304-75	2
9	Piston Head O-ring	2115N304-75	1
10	Piston Head Back-Up O-ring	107X115	2
12	Piston Rod Back-Up O-ring	107X114	1
13	Piston Rod O-ring	2114N304-75	1
14	Housing Back-Up Ring	107X120	1
15	Housing O-ring	2120N304-75	1

Parts Breakdown

Series 916-8D27 or 10-1382 (AN6248-3)

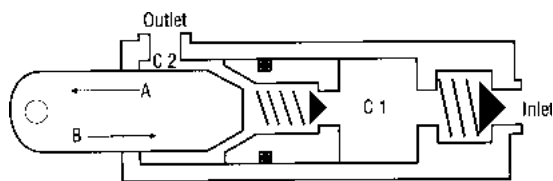
Item	Description	Part No.	Quantity
1	Body	10-1382-2	1
2	Piston	8-1761-6	1
3	Spring	11-661-1	2
4	Poppet	3-2860-17-1	2
5	O-ring	2006N304-75	2
6	O-ring	2011N304-75	2
7	Seat	6-1583-2	2
9	O-ring	2115N304-75	1
10	Back-Up Ring	107X115	2
11	Seal Housing	8-1761-4	1
12	Back-Up Ring	107X114	1
13	O-ring	2114N304-75	1
14	Back-Up Ring	107X120	1
15	O-ring	2120N304-75	1
16	Scraper	MS28776M2-3	1
17	Seal Retainer	8-1761-3	1
18	Nylon Insert	8-1761-5	1
19	Pivot Arm	8-1761-9	1
20	Pin	9-2763-1	1
21	Bushing	3-1158-13	2
22	Set Screw	MS18063-14	1
23	Pin Flat Head	MS20392-3C33	2
24	Washer	AN960-416L	4
25	Link	8-1761-8	2
26	Bushing	8-1761-11	1
27	Cotter Pin	MS24665-151	2

Operation

Liquid is forced through the pump by moving the handle between the two extreme positions.

When the pump handle is moved from the vertical to the horizontal position, as in piston stroke A (see schematic Fig. 3) chamber C1 draws fluid in through inlet or suction port check valve, while chamber C2 discharges fluid through outlet or discharge port. When the handle is returned to vertical position, as in piston stroke B, the volume of fluid in chamber C1 is transferred to chamber C2 through the piston check valve. Since chamber C2 holds half the volume of chamber C1, half the fluid in chamber C2 is discharged through the outlet port, and the other half is held for use in the following stroke A.

Principle of Operation



Maintenance

External leakage around the piston (2), (Figures 1, 2 and 3), may often be stopped by further tightening of the gland (17).

If excessive force is required to actuate the pump, check the system pressure.

Should it become necessary to service the pump, it can be completely disassembled and reassembled in the field.

Failure to build up pressure is probably caused by defective piston seals, or an inoperative check valve. Handle creep indicates leakage past the check valve. Most leakage is due to defective or incorrectly installed O-ring packings. Often foreign matter in the pump causes unsatisfactory service, which can be corrected by cleaning.

There is available a Field Repair Kit of replacement parts (Tables 1, 2 and 3) which contains all the O-rings, back-up rings, springs, etc., necessary for complete overhaul of the standard pumps (for use with hydraulic oil MIL-H-5606). Figures 1, 2 and 3.

Disassembly

All work should be done in as clean an area as is available. Figures 1, 2 and 3 show the order of disassembly.

Remove handle. Place pump in a vise, bearing on the body at the ends of the mounting bosses.

To remove inlet valve, with a wrench (Fig. 1), or a wide

screwdriver (Fig. 2 and 3), unscrew valve seat (7) from inlet port. Poppet (4) and spring (3) may then be removed.

Although the internal parts in each pump are identical, it is desirable that they be retained as parts of the same valve assembly. Therefore, if poppets are not to be renewed, identify poppets (4), seats (7) and O-rings, so they will be reassembled into the same valve bore from which they were removed.

To remove outlet valve, disconnect handle pivot (19) by releasing links (25) at the flat end of piston (2). Remove cotter pin (27), releasing washers (24) and spacer (26).

With a spanner wrench, unscrew the piston gland (17) and pull out the piston assembly. Remove scraper ring (16), O-rings, etc. Place piston (2) in a vise, gripped on the flats. With a wide screwdriver, unscrew valve seat (7) from valve in end of piston. Remove poppet (4) and spring (3). Remove O-rings and back-up rings.

Wash all parts in an approved oil base cleaning solvent (Fed. Spec. P-S-661). Dry with a clean, lint-free cloth or use compressed air, if available.

Warning

Use solvent in a well-ventilated area.

Avoid prolonged inhalation of fumes.

Keep away from open flames.

Check all parts for cracks, breaks and other obvious signs of damage and excessive wear. Springs must have no visible distortion when rolled on a surface plate. Examine all O-rings for cuts, tears, cracks and swelling. Imperfect rings should be replaced. To clean clogged passages, use a hardwood rod. Do not use metal.

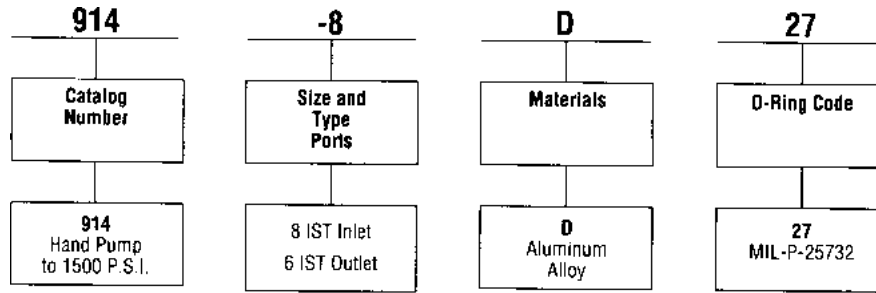
After cleaning, if reassembly is not immediate, put a light film of preservative oil (Spec MIL-H-6083) on parts, and place in a dust-free container until ready for inspection and reassembly.

Reassembly

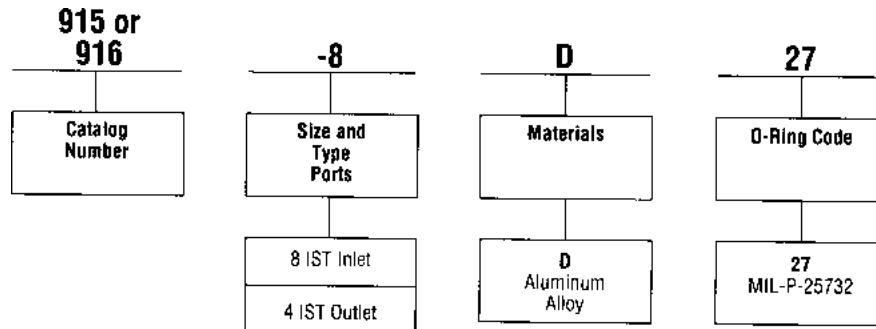
It is wise to replace springs, O-rings and back-up rings at each overhaul, and Republic has kits of Recommended Replacement Parts available for this purpose. (Tables 1, 2 and 3).

Use extreme care during reassembly to prevent dirt particles from entering the pump that would score internal metal parts or sealing surfaces. Coat all rubber parts with a suitable lubricant before assembly. Handle O-rings with care, especially when passing them over threads or sharp edges. Twisting, small cuts or nicks may result in leakage after installation. Make sure O-rings and back-up rings are installed in the proper relationship to each other, and to pressure direction. Apply one or two drops of light oil to the three handle pivot pins (20, 23) as required.

Series 914



Series 915 and Series 916



Order P/N 3-1158-18, which meets AN6201-1.

Order P/N 10-1382-1, which meets AN6248-3.

Offer of Sale

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2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. **THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.**

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6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter,

discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are manufactured using such property, Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights. If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

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9/91-P



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Bulletin HY14-3000-M1/US,
1M, 3/02, PHD