



Price® Pump Co.

INSTALLATION, OPERATING AND MAINTENANCE MANUAL

AIR OPERATED
DIAPHRAGM PUMPS
MODEL: AOD .75-Y
ALL ELASTOMERS

PLEASE FILL IN DATA
FROM YOUR PUMP
NAMEPLATE

Pump Model _____

Spec. No. _____

Serial No. _____

Seal No. _____

RETAIN MANUAL
FOR REFERENCE

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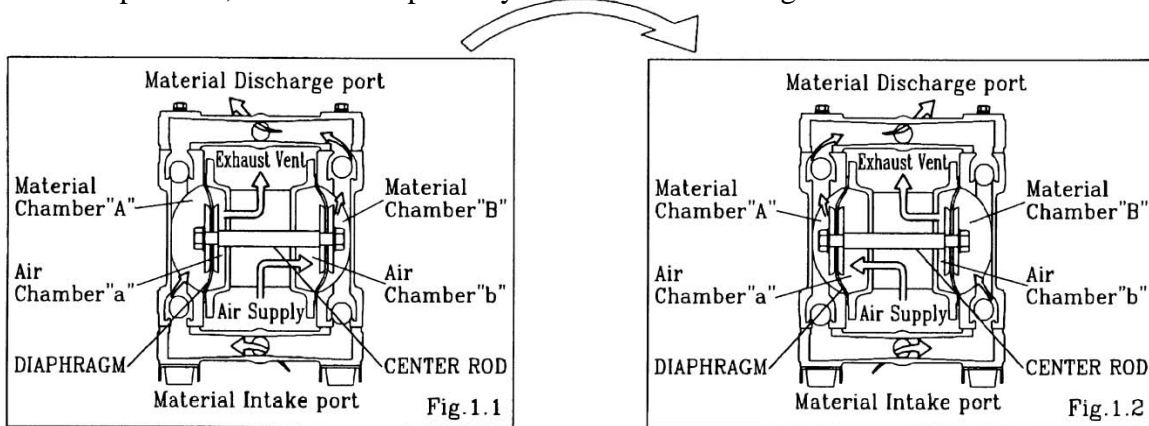
IN-AOD.75-Y REV-B

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1. Principles of operation

There are two diaphragms fixed to the center rod, one at each end. When compressed air is supplied to air chamber b (right side, see Fig. 1.1), the center rod moves to the right, the material in material chamber B is pushed out, and at the same time material is sucked into material chamber A. When the center rod is moved full-stroke to the right, the air switch valve is switched, compressed air is sent to air chamber a (left side, see Fig. 1.2), and the center rod moves to the left. The material in material chamber A is pushed out, and at the same time material is sucked into material chamber B. Through repetition of this operation, material is repeatedly taken in and discharged out.



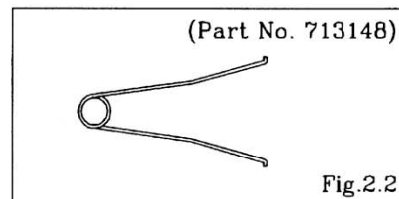
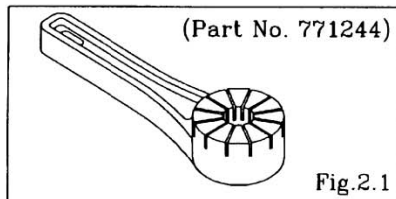
2. Tools, etc.

2.1 General tools

- Socket wrenches 10 mm, 12 mm, 13 mm, 17 mm, 22 mm
- Hexagonal box wrenches 5 mm
- Open-end wrenches 13 mm (BP_), 22 mm (BA_, BS_)

2.2 Special tools

- Accessory tool (Accessories) Sleeve Remover
Purpose: Removing the center disk of BP_ types.



2.3 Misc.

- Lubricating oil-Turbine oil none addition class 1 (equiv. ISO VG32 grade)
- Nuts M 14x1.5

3. Ordering Replacement parts

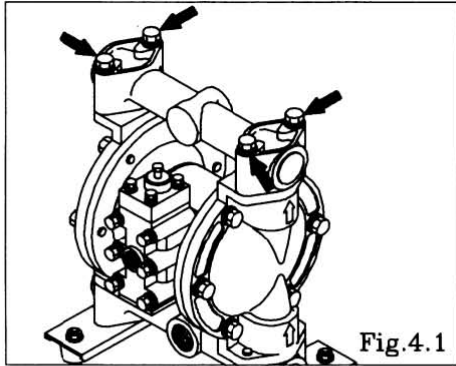
For accurate and speedy shipment of parts, be sure to order the right parts for your model to your distributor. Indicate the part numbers, descriptions and quantities.

4. Balls and Valve Seats

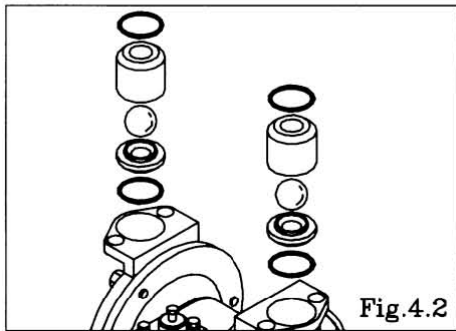
4.1 Removal

BA_, BS types

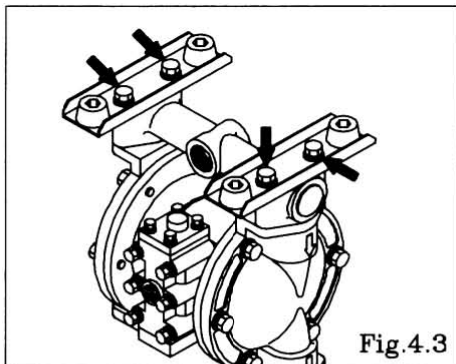
See [8. Exploded View] on after p.13 (Fig. 4.1, 4.2, 4.3 and 4.4 show the BS_).



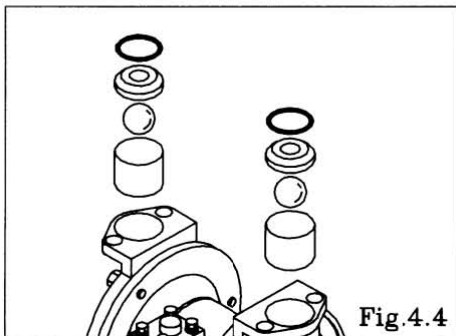
- Remove the 4 retainer bolts from the out manifold, and remove the out manifold. [Fig. 4.1]



- Remove the O ring, valve stopper, ball and valve seat. [Fig. 4.2]



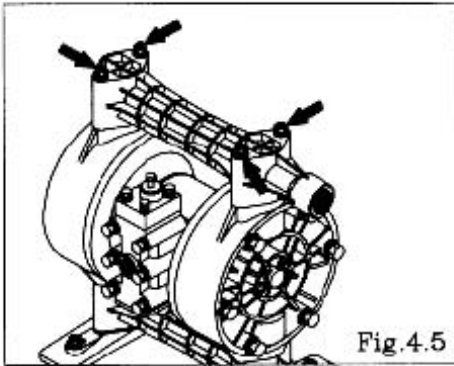
- Turn over the main body assembly. [Fig. 4.3]
- Remove the 4 retainer bolts from the in manifold, and remove the in manifold and pump bases. [Fig. 4.3]



- Remove the O ring, valve seat, ball and valve stopper. [Fig. 4.4]

BP_ types

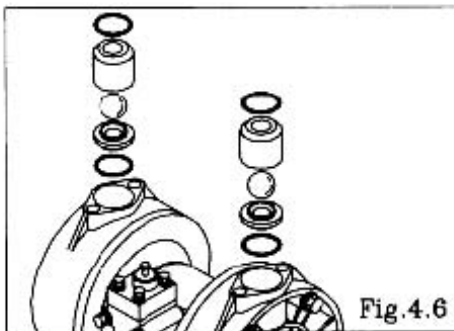
See [8. Exploded View] on after p.13 (Fig. 4.5, 4.6, 4.7 and 4.8 show the BP_).



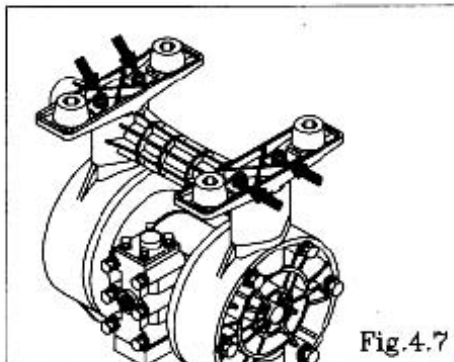
- Remove the 4 retainer nuts from the upper side of tie rods, and remove the out manifold. [Fig. 4.5]

<NOTE>

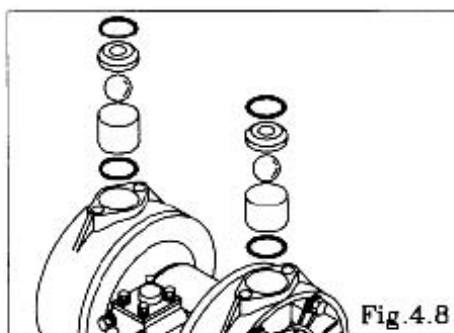
- When the retainer nuts are removed from the tie rods, the in manifold removes.



- Remove the O ring, valve seat, ball and valve stopper. [Fig. 4.8]

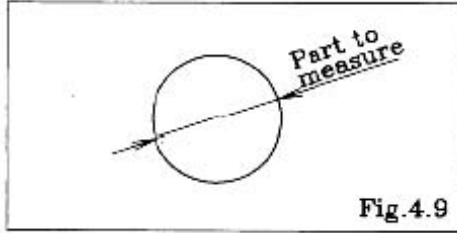


- Turn over the main body assembly. [Fig. 4.7]
- Pull out the tie rod, and remove the base and in manifold. [Fig. 4.7]



- Remove the O ring, valve stopper, ball and valve seat. [Fig. 4.6]

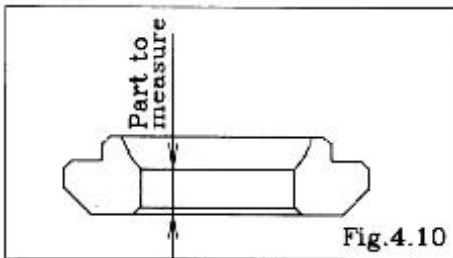
4.2 Inspection



- **Ball** [Fig. 4.9]
Measure the outside diameter, and if it is outside the usable range, replace the ball.

Usable range of ball

$S_{\phi}0.957 \sim S_{\phi}1.095$ in { $S_{\phi}24.3 \sim S_{\phi}27.8$ mm}



- **Valve seat** [Fig. 4.10]
Measure the dimension shown at left, and if it is outside the usable range, replace the valve seat.

Usable range of valve seat

BA_, BS_	BP_
0.134 ~ 0.335 in {3.4 ~ 8.5 mm}	0.130 ~ 0.319 in {3.3 ~ 8.1 mm}

- **O ring (other than PTFE)**
If O rings are worn out or cracked, replace them.

4.3 Installation

For installation, see [8. Exploded View] on after p.13, and install in the reverse order of disassembly.

Tightening torque for manifold retainer nuts

	C, N, E, V, S	T
BA_	8 lbf·ft {100 kgf·ft}	15 lbf·ft {200 kgf·cm}
BS_	8 lbf·ft {100 kgf·ft}	25 lbf·ft {350 kgf·cm}

Tightening torque for manifold retainer bolts

	C, N, E, V	S, T
BP_	8 lbf·ft {100 kgf·ft}	9 lbf·ft {120 kgf·cm}

<NOTE>

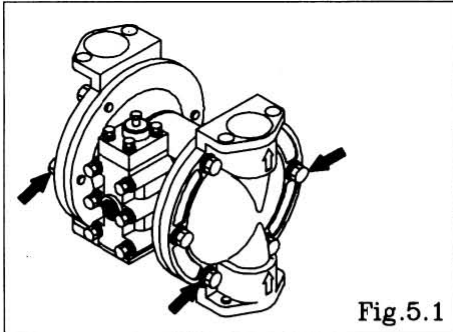
- Make sure there is no dust on the seal surface and the seal is not damaged.
- Replace the PTFE O ring regardless of its condition.

5. Diaphragm and Center rod

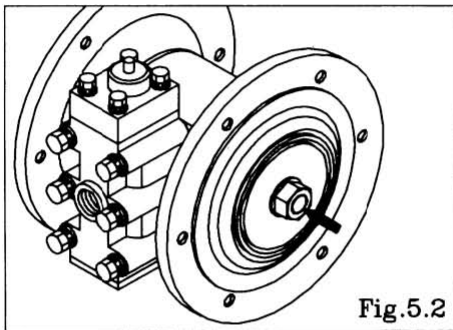
5.1 Removal

BA_, BS_, BF_ types

See [8. Exploded View] on after p.13 (Fig. 5.1 shows the BS_).

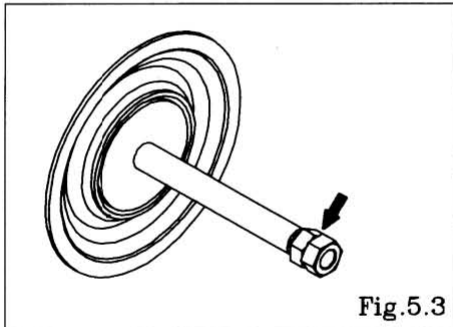


- Remove the ball and valve seat (see [4.1 removal BA_, BS_ types] on p.4).
-
- Remove the 12 retainer bolts from the out chamber, and remove the out chamber. [Fig. 5.1]



- Remove the nuts on both sides of the center rod. [Fig. 5.2]

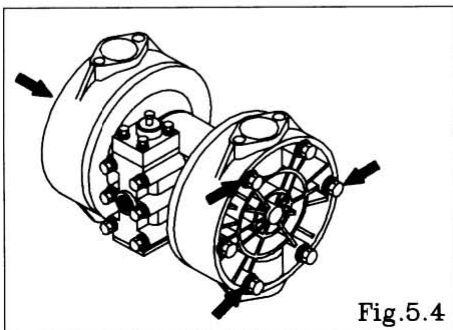
After the nuts on one side have been removed, remove center disk and diaphragm. Remove the diaphragm, center disk and center rod from the opposite side of the main body.



Remove the nuts on the opposite side using the double nuts. [Fig. 5.3]

- Remove the coned disk spring, center disk and diaphragm.

3 (Fig. 5.4 shows the BP_).



- Remove the ball and valve seat (see [4.1 removal BP_ types] on p.5).
- Remove the 12 retainer bolts from the out chamber, and remove the out chamber. [Fig. 5.4]

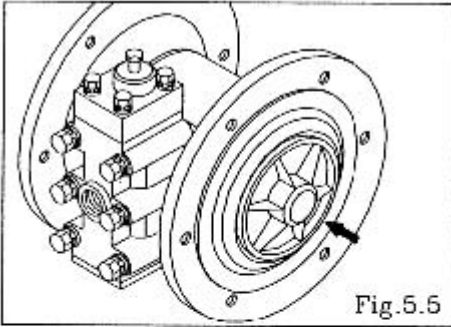


Fig.5.5

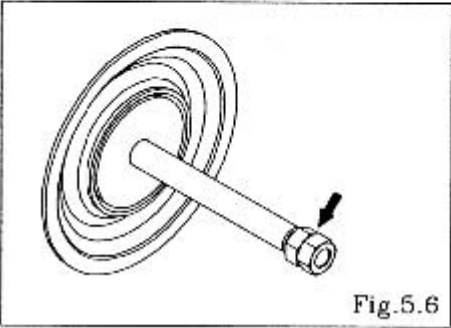


Fig.5.6

- Remove the center disk from one side using the accessory tool (special tool: part No. 771244). [Fig. 5.5]
- After the center disk (outside) has been removed, remove the diaphragm and the center disk (inside).
- Remove the center disk and center rod from the opposite side of the main body.
- Fix a double nut to one end of the center rod and take the diaphragm and center disk off the opposite end. [Fig. 5.6] Be careful not to scratch or score the center rod.

5.2 Inspection

- Diaphragm
If the diaphragm is worn out or damaged, replace it. New replace just one diaphragm.

Guideline of diaphragm (estimated) life

CR, NBR, EPDM	10,000,000 cycles
FPM	2,500,000 cycles
PTFE	3,000,000 cycles
TPEE, TPO	15,000,000 cycles

(When used with clean water at room temperature)

- Center rod [Fig. 5.7] Measure the diameter, and if it is outside the usable range, replace the rod.

Usable range of center rod

$\phi 0.704 \sim \phi 0.709$ in $\{\phi 17.9 \sim \phi 18.0 \text{ mm}\}$

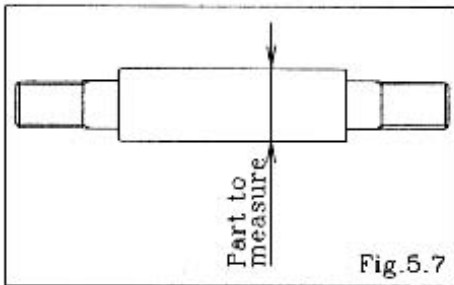
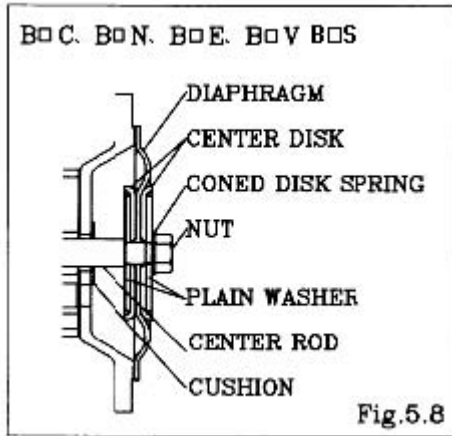


Fig.5.7

5.3. Installation

B_C, B_N, B_E, B_V, B_S types

For installation, see [8. Exploded view] on p.13, and install in the reverse order of disassembly.



- Apply assembly oil to the center rod, and insert it into the main body.
- Keep the marking “OUTSIDE” to liquid end for CR, NBR, EPDM, FPM Diaphragms.
- Keep the convex side to the outside for TPEE, TPO diaphragms.
- Tighten the center disk using the accessory tool (special tool: part No.771244) for the BP_ types. (no coned disk springs and nuts are needed.)

Tightening torque for center rod.

B_C, B_N, B_E, B_V	22 lbf·ft { 300 kgf·cm }
B_S	29 lbf·ft { 400 kgf·cm }

Draw the center disk to one side, (cf. Fig. 5.8) and install the out chamber. Tighten the bolts temporarily.

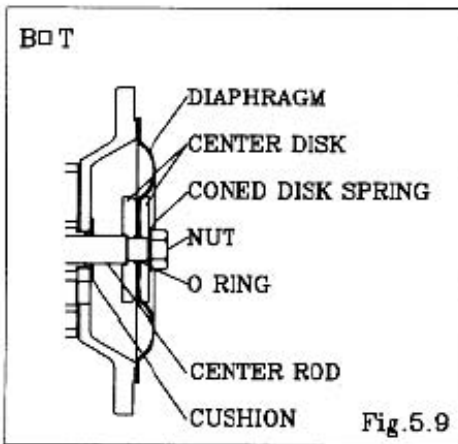
- Draw the center disk to the opposite side, then turn the diaphragm over (cf. Fig. 5.8) and install the out chamber. Tighten the bolts temporarily.
- After installation of the out chambers on both sides, place the pump on a flat surface and stand the pump upright for further assembly.

Tightening torque for out chamber.

8lbf·ft { 100kgf·cm }

<NOTE>

- Make sure there is no dust on the seal surface in order to prevent seal damaged.
- Tighten the bolts that balance should be equal from both sides on diagonal line with even torque.



B_T types

For installation, see [8. Exploded view] on after p.13, and install in the reverse order of disassembly.

- Apply lubricating oil to the center rod, and insert it into the main body.
- Keep the convex side to the outside (cf. Fig. 5.9).
- Put the O rings to both sides of the Diaphragm (cf. Fig. 5.9).
- Tighten the center disk using the accessory tool (special tool: part No. 771244) for the BPT types (no coned disk springs and nuts are needed).
- After installation of the out chambers on both sides, place the pump on a flat surface and stand the pump upright for further assembly.

Tightening torque for out chamber.

29 lbf·in {400 kgf·cm}

- Tighten the out chamber temporarily at first.
- After installation of the out chambers on both sides, place the pump on a flat surface and stand the pump upright for further assembly.
29 lbf·ft {400 kgf·cm}

Tightening torque for center rod.

10 lbf·in {130 kgf·cm}

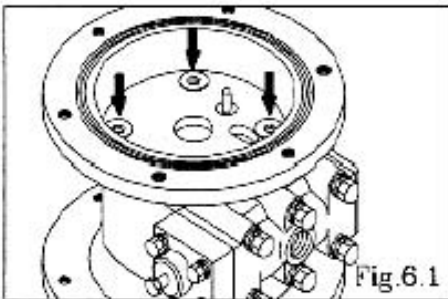
<NOTE>

- Make sure there is no dust on the seal surface in order to prevent seal damaged.
- Replace the PTFE O ring with new.
- Tighten the bolts that balance should be equal from both sides on diagonal line with even torque.

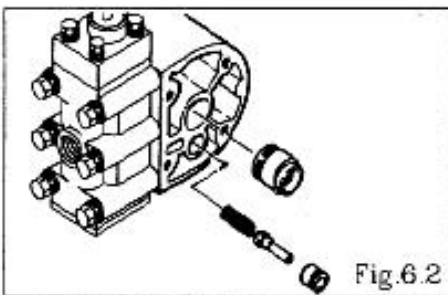
6. Throat bearing and pilot valve assembly

6.1 Removal

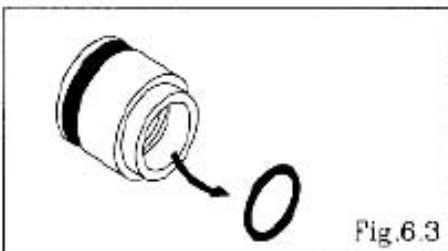
See [8. Exploded View] on after p.13.



- Remove the diaphragm and center rod etc (see [5.1 removal] on p.7).
- Remove the 8 retainer bolt from the air chamber, and remove the air chamber and gasket. [Fig. 6.1]

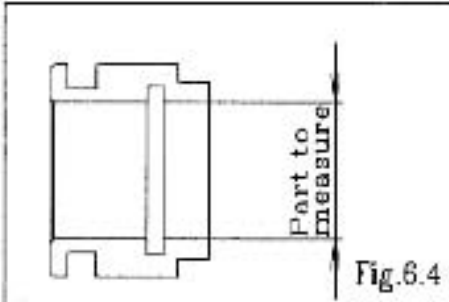


- Draw out the pilot valve assembly. [Fig. 6.2]
- Draw out the throat bearing. [Fig. 6.2]



- Remove the O ring from the throat bearing. [Fig. 6.3]

6.2 Inspection



- Throat bearing [Fig. 6.4] Measure the inside diameter, and if it is outside the usable range, replace the throat bearing.

Usable range of bushing

$\phi 0.711 \sim \phi 0.713$ in $\{\phi 18.06 \sim \phi 18.10\text{mm}\}$

- O rings
- If O rings are worn out or cracked, replace them.
- Pilot valve assembly
If the pilot valve is worn or cracked, replace it.

6.3 Installation

For installation, see [8. Exploded View] on after p. 12, and install in the reverse order of disassembly.

Tightening torque for air chamber retainer bolts

$13\text{lb}\cdot\text{ft}$ $\{180\text{kg}\cdot\text{cm}\}$

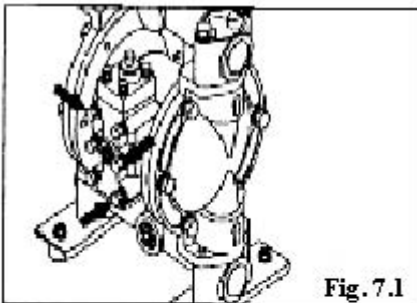
<NOTE>

- Make sure there is no dust on the seal surface and it is not damaged.

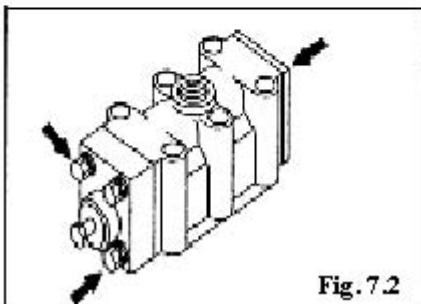
7. C spool assembly and sleeve assembly

7.1 Removal

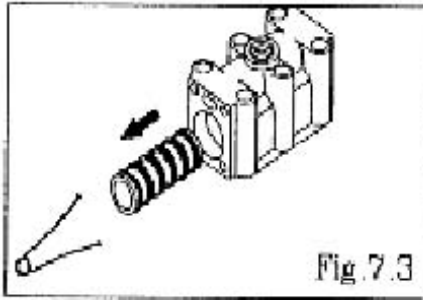
See [8. Exploded View] on after p.13.



- Remove the 6 retainer bolts from the valve body, and remove the valve body. [Fig. 7.1]

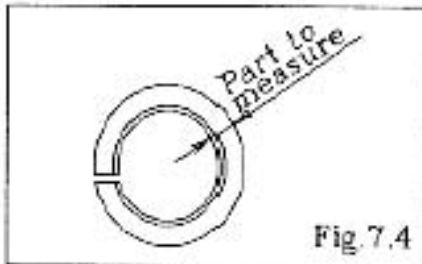


- Remove the 8 cap A and cap B retainer bolts, and remove cap A, cap B, packing, plain washer, cushion and gasket. [Fig. 7.2]
- Draw out the C spool valve assembly, and remove the seal ring from the C spool valve assembly.



- Remove the sleeve using the sleeve remover (special tool: part No. 713148). [Fig. 7.3]
- Sleeve remover (sold separately)
Purpose: For removing sleeves.

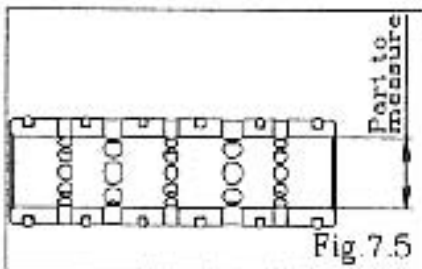
7.2 Inspection



- C spool valve Assembly
 - Seal Ring [Fig.7.4]
Measure the inside thick diameter, and if it is outside the usable range, replace the C spool assembly.
If the seal ring is worn out or cracked, replace.

Usable range of seal ring

$0.1161 \sim 0.1181$ in { $2.95 \sim 3.00$ mm}



- Sleeve Assembly [Fig. 7.5]
Measure the inside diameter, and if it is outside the usable range, replace the sleeve assembly.

Usable range of Sleeve

$0.726 \sim 0.7341$ in { $\phi 18.45 \sim \phi 18.65$ mm}

- O-rings
If the O ring is worn out or cracked, replace it.

<NOTE>

- C spool valve Assembly and Sleeve Assembly must be replaced complete set. Unable to replace individual component.

7.3 Installation

For installation, see [8. Exploded View] on after p.13, and install in the reverse order of disassembly.

Tightening torque for installation cap A, cap B

4.5 lbf·ft { 60 kgf·cm}

Tightening torque for valve body installation bolts

5.5 lbf·ft { 75 kgf·cm}

<NOTE>

- Make sure there is no dust on the seal surface and it is not damaged.
- Install the sleeve at the center of the valve body. At this point, apply lubricating oil around the sleeve and O ring.

8.1 Parts List BA_, BS_

NO.	20BA_	20BS_	DESCRIPTION	QTY	NOTE
1	TAB. 1	TAB. 1	O'RING	4	Link
2	711700	711701	VALVE STOPPER	4	
3	TAB. 4	TAB. 4	BALL	4	Link
4	590086	590086	VALVE SEAT	4	
5	TAB. 5	TAB. 5	O'RING	2	Link
6	TAB. 7	TAB. 7	DIAPHRAGM	2	Link
7	709153	709153	CENTER DISK	4	
7T	709456	709456	CENTER DISK	2	
8	709152	709152	PLAIN WASHER	4	EXCLUDED B_T
9	711686	711693	OUT CHAMBER	2	
10	682263	682263	NUT	2	
11	682730	682730	CONED DISK SPRING	2	
13	682264	682727	BOLT BOLT	8 8	M8x1.25x60 M10x1.5x72
14	682724	682722	BOLT BOLT	12 12	M8x1.25x30 M10x1.5x35
15	802435	802435	BODY ASS'Y	1	Link
16	709163	709163	CENTER ROD	1	
17	790911	790911	NAME PLATE	1	
18	771054	771054	CUSHION	2	
19	831280	831270	MANIFOLD ASS'Y	2	
20	802362	802362	VALVE BODY ASS'Y	1	Link
21	682265	682265	BOLT	6	M8x1.25x75
24	771056	771056	GASKET	1	
25	682515	682515	SILENCER	1	3/4"
26	611148	611148	BOLT	4	M8x1.25x22
27	682276	682276	NUT WITH FLANGE	4	M8x1.25
28	709157	709157	PUMP BASE	2	
29	770551	770551	CUSHION	4	
30T	709314	709326	CENTER DISK	2	
31T	643013	643013	O'RING	4	P-14

<NOTE>

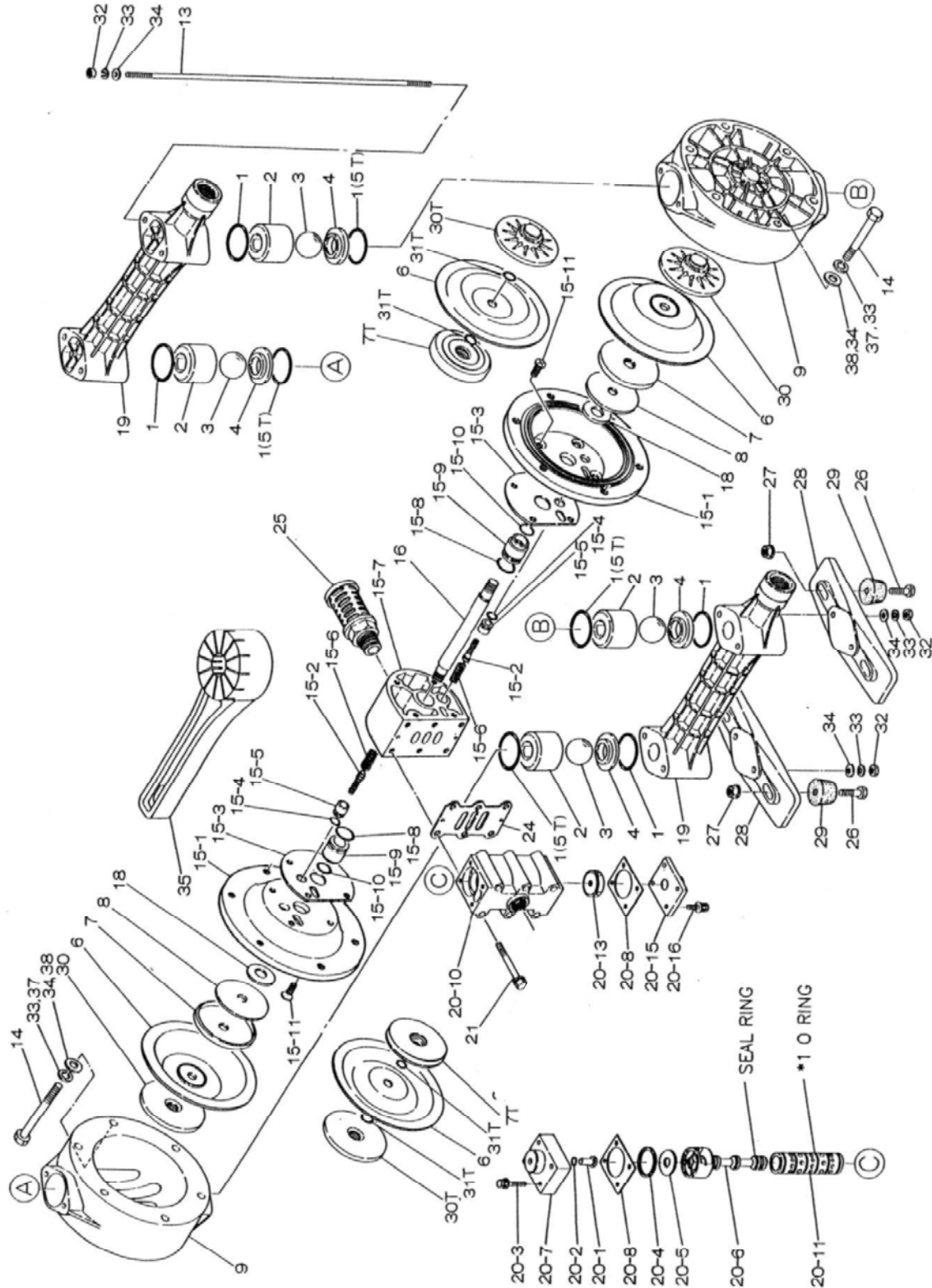
1. T: BAT/BST
2. Tab. 1 ~ Tab. 5: see [8.3 parts list * Common parts] on p. 16.
3. NO. 17 (NAME PLATE) IS NOT INDICATED IN EXPLODED VIEW

8.2 Exploded View BP_

- Air Kit

- Liquid Kit

✓ -Inspect/Replace as necessary (#2, #3, #15T, #25, #30, #16, #15-9,)



8.2 Parts List BP_

NO.	20BP_	DESCRIPTION	QTY	NOTE
1	Tab. 2	O'RING	-	
2	771216	VALVE STOPPER	4	
3	Tab. 4	BALL	4	
4	780137	VALVE SEAT	4	
5	N/A	O'RING	4	
6	Tab. 7	DIAPHRAGM	2	
7	709153	CENTER DISK	2	
7T	709456	CENTER DISK	2	
8	709152	PLAIN WASHER	2	EXCLUDED B_T
9	780134	OUT CHAMBER	2	
13	710122	TIE ROD	4	
14	621163	BOLT	12	M8x1.25x80
		BOLT	12	M10x1.5x90
15	802808	BODY ASSEMBLY	1	
16	710252	CENTER ROD	1	
17	790911	NAME PLATE	1	
18	771054	CUSHION	2	
19	780010	MANIFOLD	2	
20	802809	VALVE BODY ASS'Y	1	
21	682265	BOLT	6	M8x1.25x75
24	771056	GASKET	1	
25	682515	SILENCER	1	3/4"
26	611151	BOLT	4	M8x1.25x30
		BOLT	4	M8x1.25x35
27	682276	NUT WITH FLANGE	4	M8x1.25
28	771219	PUMP BASE	2	
29	770551	CUSHION	4	
30	780123	CENTER DISK	2	
30T	780124	CENTER DISK	2	
31T	643013	O'RING	4	P-14
32	683635	NUT	8	M8x1.25
33	681300	SPRING LOCK WASHER	20	M8
		SPRING LOCK WASHER	8	M8
34	631329	PLAIN WASHER	20	M8
		PLAIN WASHER	8	M8
35	771244	ACCESSORY TOOL	2	
37		SPRING LOCK WASHER	12	M10
38		PLAIN WASHER	12	M10

<NOTE>

1. T: BPT/BVT
2. Tab. 1 ~ Tab. 5: see [8.3 parts list *Common parts] on p. 16.
3. NO. 17 (NAME PLATE) IS NOT INDICATED IN EXPLODED VIEW

8.3 Parts List BA_, BS_

TAB. 1 O RING

TYPE	BA/BS_	MATERIAL
	P-36	
B_C	640036	NBR
B_N	640036	NBR
B_E	684118	EPDM
B_V	642036	FPM
B_T	643036	PTFE
B_S	684118	EPDM

TAB. 2 O RING

TYPE	BA/BS_	MATERIAL
	P-36	
BPC	640033	NBR
BPN	640033	NBR
BPE	684116	EPDM
BPV	642033	FPM
BPT	643033	PTFE
BPS	684116	EPDM

TAB. 4 BALLS

TYPE	BA/BS_	BP_	MATERIAL
B_C	770705	770705	CR
B_N	770720	770720	NBR
B_E	770723	770723	EPDM
B_V	770726	770726	FPM
B_T	770736	770736	PTFE
B_S	770723	770723	EPDM

TAB. 5 O RING (G-35: EXCLUDED B_T)

TYPE	BA/BS_	MATERIAL
B_C	640132	NBR
B_N	640132	NBR
B_E	684117	EPDM
B_V	642132	FPM
B_T	771131	PTFE
B_S	684117	EPDM

TAB. 7 DIAPHRAGM

TYPE	BA/BS_	BP_	MATERIAL
B_C	771254	771254	CR
B_N	771255	771255	NBR
B_E	771256	771256	EPDM
B_V	771257	771257	FPM
B_T	771083	771083	PTFE
B_S	771973	771973	EPDM

8.4 Parts List BODY ASSEMBLY

802435 BODY ASSEMBLY				[BA_, BS]_
NO.	PART NO.	DESCRIPTION	QTY	NOTE
15-1	710275	AIR CHAMBER	2	
15-2	802360	*PILOT VALVE ASSEMBLY	2	
15-3	771057	*GASKET	2	
15-4	640009	*O'RING	2	P-11 NBR
15-5	709158	*VALVE SEAT	2	
15-6	708666	*SPRING	2	
15-7	709812	BODY	1	
15-8	640020	*O'RING	2	P-22A NBR
15-9	709160	THROAT BEARING	2	
15-10	640016	*O'RING	2	P-18 NBR
15-11	682486	FLAT HEAD BOLT	8	M8x1.25x20

802808 BODY ASSEMBLY				[BP_]_
NO.	PART NO.	DESCRIPTION	QTY	NOTE
15-1	710275	AIR CHAMBER	2	
15-2	802360	*PILOT VALVE ASSEMBLY	2	
15-3	771057	*GASKET	2	
15-4	640009	*O'RING	2	P-11 NBR
15-5	709158	*VALVE SEAT	2	
15-6	708666	SPRING	2	
15-7	711503	BODY	1	
15-8	640020	*O'RING	2	P-22A NBR
15-9	709160	THROAT BEARING	2	
15-10	640016	*O'RING	2	P-18 NBR
15-11	682486	FLAT HEAD BOLT	8	M8x1.25x20

*Air Kit Contents

8.5 Parts List BODY ASSEMBLY

802362 VALVE BODY ASSEMBLY				[BA_, BS_, BF_, BA_] .
NO.	PART NO.	DESCRIPTION	QTY	NOTE
20-1	709161	RESET BUTTON	1	
20-2	640005	O'RING	1	P-8 NBR
20-3	682704	BOLT	4	M6x1x32
20-4	771241	PACKING	1	
20-5	710270	PLAIN WASHER	1	
20-6	802400	C SPOOL VALVE ASSEMBLY	1	
20-7	710221	CAP	1	
20-8	771240	GASKET	2	
20-10	711639	VALVE BODY	1	
20-11	803931	SLEEVE ASSEMBLY	1	*1(771080)
20-13	771914	CUSHION	1	
20-15	709305	CAP	1	
20-16	682262	BOLT	4	M6x1x16

802809 VALVE BODY ASSEMBLY				[BP_, BV_] .
NO.	PART NO.	DESCRIPTION	QTY	NOTE
20-1	709161	RESET BUTTON	1	
20-2	640005	O'RING	1	P-8 NBR
20-3	682704	BOLT	4	M6x1x32
20-4	771241	PACKING	1	
20-5	710270	PLAIN WASHER	1	
20-6	802400	C SPOOL VALVE ASSEMBLY	1	
20-7	711219	CAP	1	
20-8	771240	GASKET	2	
20-10	711640	VALVE BODY	1	
20-11	803931	SLEEVE ASSEMBLY	1	*1(771080)
20-13	771914	CUSHION	1	
20-15	711212	CAP	1	
20-16	682262	BOLT	4	M6x1x16

<NOTE>*1: PART NUMBER MENTIONED ON O'RING FOR SLEEVE ASSEMBLY ONLY.

8.6 Parts List SUCTION PIPE SET

804000 SUCTION PIPE SET				
NO.	PART NO.	DESCRIPTION	QTY	NOTE
40-1	709406	SUCTION PIPE	1	R1"xL927
40-2	803667	BUNG ADAPTER ASSEMBLY	1	



GENERAL TERMS OF SALE FOR PRODUCTS

GENERAL

A. Seller's price is based on these sales terms and conditions. The agreement and inclusion of other or amended terms in this contract will result in a change (including increase) in Seller's price (as may be contained in any price books or quotations) to reflect such other or amended terms. This contract shall represent the final, complete and exclusive statement of the agreement between the parties and may not be modified, supplemented, explained or waived by parole evidence, any Terms and Conditions contained in Buyer's purchase order or request for quotation, any course of dealings between the parties, Seller's performance or delivery, or in any other way. The Terms and Conditions of this contract may only be modified or waived in a written document signed by an Officer of Seller. These terms are intended to cover all activity of Seller and Buyer hereunder, including sales and use of products, parts and work and all related matters (references to products include parts and references to work include construction, installation and start-up). Any reference by Seller to Buyer's specifications and similar requirements are only to describe the products and work covered hereby and no warranties or other terms therein shall have any force of effect. Any information provided by Seller including, but not limited to, suggestions as to specific equipment does not imply any guarantee of specific suitability and/or material compatibility in a particular application, since many factors outside the control of Seller may affect the suitability of products in a particular application. Catalogs, circulars, similar pamphlets and information contained on websites of the Seller are issued for general information purposes only and shall not be deemed to modify the provisions hereof.

B. The agreement formed hereby and the language herein shall be construed and enforced under the Uniform Commercial Code as in effect in the State of California on the date hereof.

2. TAXES

Any sales, use or other similar type taxes imposed on this sale or on this transaction and/or any import or export duties or fees as may be assessed or imposed on or as a result of deliveries under this transaction are not included in the price. Such taxes shall be billed separately to the Buyer. Seller will accept a valid exemption certificate from the Buyer if applicable; however, if an exemption certificate previously accepted is not recognized by the governmental taxing authority involved and the Seller is required to pay the tax covered by such exemption certificate. Buyer agrees to promptly reimburse Seller for the taxes paid.

3. PERFORMANCE, INSPECTION AND ACCEPTANCE

A. Unless Seller specifically assumes installation, construction or start-up responsibility, all products shall be finally inspected and accepted within thirty (30) days after arrival at point of delivery. Where seller has responsibility for installation, construction or start-up all work shall be finally inspected and accepted within thirty (30) days after completion of the applicable work by Seller. All claims whatsoever by Buyer, (including claims for shortages) except only those provided for under the WARRANTY AND LIMITATION OF LIABILITY and PATENTS Clauses, hereof, must be asserted in writing by Buyer within said thirty (30) day period or they are waived. If this contract involves partial performance, all such claims must be asserted within said thirty- (30) day period for each partial performance. There shall be no revocation of acceptance. Rejection may be only for defects substantially impairing the value of products or work and Buyer's remedy for lesser defects shall be those provided for under the WARRANTY AND LIMITATION OF LIABILITY Clause.

B. Seller shall not be responsible for non-performance or for delays in performance occasioned by any causes beyond Seller's reasonable control, including, by way of example and not limitation, to labor difficulties, delays of vendors or carriers, fires, governmental actions, or shortages of material, components, labor, or manufacturing facilities. Any delays so occasioned shall affect a corresponding extension of Seller's performance dates, which are, in any event, understood to be approximate. IN NO EVENT SHALL BUYER BE ENTITLED TO INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LATE PERFORMANCE OR FOR A FAILURE TO PERFORM. Seller reserves the right to make partial shipments and to ship products, parts or work which may be completed prior to the scheduled performance date.

C. In the event that Seller has agreed to mount motors, turbines, gears, or other products which are not manufactured by Seller and which are not an integral part of Seller's manufactured product, and a delay in the delivery of such products to Seller occurs that will cause a delay in Seller's performance date, Seller reserves the right to ship its product upon completion of manufacture and to refund an equitable portion of the amount originally included in the purchase price for mounting without incurring liability for non-performance.

D. Seller reserves to itself the right to change its specifications, drawings and standards if such changes will not impair the performance of its products, and parts, and further those products, and parts, will meet any of Buyer's specifications and other specific product requirements which are a part of this agreement. Seller is a global supplier of products and utilizes parts and products obtained worldwide, and Seller's products supplied under this contract shall be subject to Seller's sole determination as to all manufacturing, sourcing, assembly and supply unless otherwise specifically agreed in writing.

E. The manufacture and inspection of products and parts shall be to Seller's Engineering and Quality Assurance standards, plus such other inspections or tests of documentation as are specifically agreed to by Seller. Requirements for any additional inspection, tests, documentation, or Buyer witness of manufacture, test, and/or inspection shall be subject to additional charges.

4. TITLE AND RISK OF LOSS

Title and risk of loss shall pass to buyer upon delivery of products at the designated "Ex Works" as defined by Incoterms, unless other wise agreed by the parties.

5. EROSION AND CORROSION

It is specifically understood that products and parts sold hereunder are not warranted for operation with erosive or corrosive fluids or for operation with any fluid or under any operating condition in variance with the specifications of this contract. No product or part shall be deemed to be defective by reason of failure to resist erosive or corrosive action of any fluid and Buyer shall have no claim whatsoever against Seller therefore. No product shall be deemed defective by reason of any effect on Seller's products of the action or results (such as vibration) of any goods or system (such as piping) not supplied by Seller.

6. BUYER'S RESPONSIBILITY

The design specifications of the equipment require the operation of the equipment within certain parameters and may call for the use of speed controls, safety devices, set points or other control devices to insure that the operation remains within design parameters. Buyer agrees and understands that the equipment must be operated and maintained within design specifications and operated within the specifications of the contract, irrespective of whether controls or devices are otherwise required.

7. WARRANTY AND LIMITATION OF LIABILITY

A. Seller warrants only that its product and parts, when shipped, will be free from defects in materials and workmanship. All claims for defective products or parts under this warranty must be made in writing immediately upon discovery and, in any event, within two (2) years of shipment by seller and all claims for defective work must be made in writing immediately upon discovery. Defective items must be held for Seller's inspection and returned to the sellers' point of original shipment upon request.

ANY UNAUTHORIZED DISSASSEMBLY, ALTERATION OF OR TAMPERING WITH ANY PRODUCT OR COMPONENT MAY "VOID" THE WARRANTY, IN THAT SUCH ACTION WILL RESULT IN SELLER BEING RELEASED AND RELIEVED FROM ITS OBLIGATIONS UNDER THIS WARRANTY AND FOR ANY FURTHER COSTS OR ACTIONS UNDER CLAUSE 7.C, FOLLOWING, AND THE BUYER ASSUMING SOLE RESPONSIBILITY FOR THE COSTS AND RESULTS OF SUCH ACTION. THE FOREGOING IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES WHATSOEVER, EXPRESS, IMPLIED AND STATUTORY, INCLUDING WITHOUT LIMITATION, THE IMPLIED, WARRANTIES OF MERCHANTABILITY AND FITNESS.

B. ANY PRODUCT (S) SOLD HEREUNDER WHICH ARE NOT MANUFACTURED BY SELLER ARE NOT WARRANTED BY SELLER and shall be covered only by the express warranty, if any, of the manufacturer thereof. With respect to products and parts not manufactured by Seller, Seller's only obligation shall be to assign to Buyer, to the extent possible, whatever warranty Seller obtains from the manufacturer.

C. Upon Buyer's submission of a claim as provided above and its substantiation, Seller shall at its option either (i) repair or replace its product, part or work at the original place of shipment, or (ii) refund an equitable portion of the purchase price.

D. THE FOREGOING IS SELLER'S ONLY OBLIGATION AND BUYER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY AND, EXCEPT FOR THE REMEDIES PERMITTED UNDER THE PERFORMANCE, INSPECTION AND ACCEPTANCE AND THE PATENTS CLAUSES HEREOF, THE FOREGOING IS BUYER EXCLUSIVE REMEDY AGAINST SELLER FOR ALL CLAIMS ARISING HEREUNDER OR RELATING HERETO WHETHER SUCH CLAIMS ARE BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE OR STRICT LIABILITY), INDEMNITY OR OTHER THEORIES. BUYER'S FAILURE TO SUBMIT A CLAIM AS PROVIDED ABOVE SHALL SPECIFICALLY WAIVE ALL CLAIMS FOR DAMAGES OR OTHER RELIEF, INCLUDING BUT NOT LIMITED TO CLAIMS BASED ON LATENT DEFECTS. IN NO EVENT SHALL BUYER BE ENTITLED TO INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, NOR FOR DAMAGES FOR LOSS OF USE, LOST PROFITS OR REVENUE, INTEREST, LOST GOODWILL, WORK OR PRODUCTION STOPPAGE, IMPAIRMENT OF OTHER GOODS, INCREASED EXPENSES OF OPERATION, OR THE COST OF PURCHASING REPLACEMENT POWER OR OTHER SERVICES BECAUSE OF SERVICE INTERRUPTIONS. FURTHERMORE, IN NO EVENT SHALL SELLER'S TOTAL LIABILITY FOR DAMAGES OF BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS OR PARTS MANUFACTURED BY SELLER AND UPON WHICH SUCH LIABILITY IS BASED. ANY ACTION ARISING HEREUNDER RELATED HERETO, WHETHER BASED ON BREACH OF CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHER THEORIES, MUST BE COMMENCED WITHIN ONE (1) YEAR AFTER THE CAUSE OF ACTION ACCRUES OR IT SHALL BE BARRED.

8. PURCHASER'S REPRESENTATIONS & WARRANTIES

Purchaser represents and warrants that the products(s) covered by this contract shall not be used in or in connection with a nuclear facility or application. The parties agree that this representation and warranty is material and is being relied on by seller. This provision may be modified in a separate writing signed by an officer of Price Pump Co.

9. PATENTS

Seller agrees to assume the defense of any suit for infringement of any patents brought against Buyer to the extent of such suit charges infringement of an apparatus or product claim by Seller's product in and of itself, provided (i) said product is built entirely to Seller's design, (ii) Buyer notifies Seller in writing of the filing of such suit within ten (10) days after the service of process thereof, and (iii) Seller is given complete control of the defense of such suit, including the right to defend, settle and make changes in the product for the purpose of avoiding infringement of any process or method claims. Provided however, Seller will not defend any suit for infringement of a claimed patent where such alleged infringement is the result of following specific instruction furnished by Seller.

10. EXTENT OF SUPPLY

Only products as listed in Seller's proposal are included in this agreement. It must not be assumed that Seller has included anything beyond same.

11. MANUFACTURING SOURCES

To maintain delivery schedules, Seller reserves the right to have all or any part of the Buyer's order manufactured at any of Sellers', sellers' licensees or sub contractors' plants, globally.

12. TERMS OF PAYMENT

Net 30 days from date of invoice.

13. ARBITRATION

In the event a dispute arises between the parties relating to or arising out of this agreement, the parties agree to attempt to have their senior management amicably settle the matter. In the event that the matter cannot be settled, the parties shall submit all disputes relating to this Agreement (whether contract, tort, products liability or otherwise) to binding Arbitration before a panel of arbitrators under the Commercial Dispute Resolution Procedures of the American Arbitration Association. Each party shall appoint an arbitrator and the third shall be selected in accordance with the rules of the American Arbitration Association. Judgment upon the award may be entered in any court having jurisdiction. The parties shall cooperate in providing reasonable disclosure of relevant documents. Each party shall bear its own expenses, and the costs and fees of the arbitration shall be borne as allocated by the Arbitrator.