

Verderair VA50 - HP single acting (SA) Air Operated Diaphragm pump

Addendum to manuals 819.4273

Always check and follow the Warnings, Safety -, Installation-, Assembly- and Disassembly Instructions of manuals 819.4273.

Configuration Number Matrix

Check the identification plate (ID) for the 17 digit Configuration Number of your pump. Use the following matrix to define the components of your pump.

Sample configuration number : VA50AA AL GE GE TB HP

VA50	A	A	AL	GE	GE	TB	HP
Pump model	Fluid section	Air Section	Seats	Balls	Diaphragms	Connections	High Pressure (SA) version

Note : Not all combinations are available, please check with your local supplier

Pump model	Fluid Section Material		Air Section Material		Check valve seats		Check Valve Balls	
	VA50	A	Aluminium	A	Aluminium	BN	Buna-N	GE
	S	Stainless Steel	S	Stainless Steel	GE	Geolast	AC	Acetal
					SP	Santoprene	HS	Hardened steel
					SS	Stainless Steel	SP	Santoprene
					HY	Hytrell	HY	Hytrell
							TF	PTFE
							BN	Buna-N

Diaphragms		Connections		Options	
GE	Geolast	TB	Threaded BSP	HP	SA High pressure
HY	Hytrel	TN	Threaded NPT		
SP	Santoprene				
TF *	2 piece PTFE				
BN	Buna-N				
TO	overmold PTFE				

* : for pumps with TF liquid diaphragm, a Santoprene booster diaphragm will be used.

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Disassembly of VA50-HP

1. Follow the Pressure Relief Procedure on page 11 of manual 819.4273. Disconnect all the hoses.
2. Remove the pump from its mounting.
3. Using a 10 mm socket wrench, remove the four bolts (106) holding the outlet manifold (103) to the fluid covers (101); See fig 10 manual 819.4273
4. Remove the seat (201), the closing disc), balls (301) and o-rings (202) from the manifold

NOTE : some models are not using o-ring (202) on the seat, there will be always an o-ring (202) on the closing disc.

5. Turn the pump over and remove the inlet manifold (102). Remove the seat (201), the closing disc), balls (301) and o-rings (202) from the manifold
6. Remove the o-rings (13, not use on some models, of seats), the seat (11), the closing disc and the ball (12).

Reassembly of VA50-HP

1. Clean all parts and inspect for wear or damage. Replace parts as needed.
2. Reassemble in the reverse order, following the notes in fig 4 . Put the inlet manifold first.

Be sure :

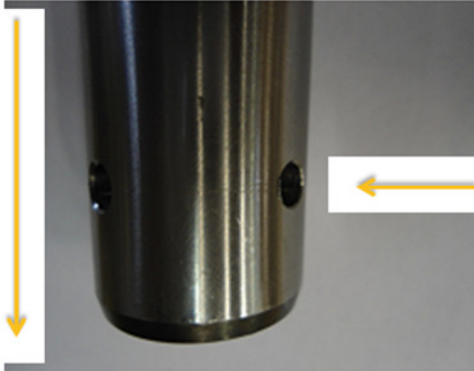
- The ball checks and manifolds are exactly assembled as shown. The arrow (A) on the fluid covers (101) must point toward the outlet manifold (103).
- **The ball valves needs to be placed on the liquid side of the pump (with the non-drilled shaft bolt (107B)), the closing discs needs to be placed at the booster side of the pump (with the drilled shaft bolt (107A)) !**

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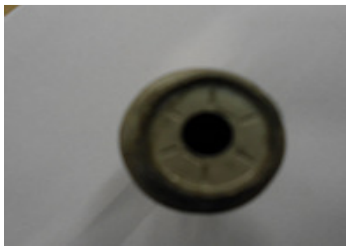
Reassembly of Standard Diaphragms

2 piece PTFE diaphragm

1. Clean all parts and inspect for wear or damage. Replace parts as needed
2. Clamp the shaft flats in a vise with the side drilling downwards



3. Install o-ring (108) on the shaft bolt (107A) (= drilled bolt !)

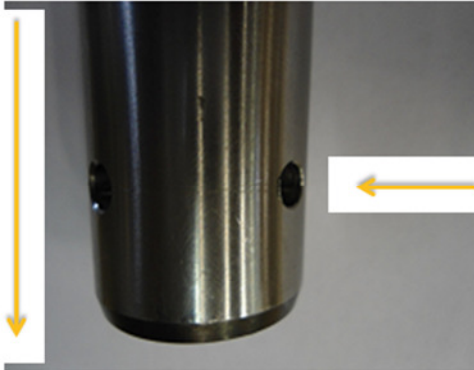


4. Assemble the fluid side plate (105), the Santoprene booster diaphragm (403), the air side diaphragm plate (104) on the bolt as shown on page 20 of manual 819.4273.
5. Apply medium strength (blue) loctite or equivalent to the bolt (107A) threads. Assemble into the shaft. Torque the bolt to 27-34 Nm at 100 rpm maximum.
6. Grease the shaft u-cups (10) and the length of the diaphragm shaft (24). Slide the shaft into the housing.
7. Repeat steps 3 and 4 for the liquid diaphragm assembly. Use the PTFE diaphragm (403) and the back-up diaphragm (401) as shown on page 20 of manual 819.4273, using the non-drilled shaft bolt (107B)
8. Apply medium strength (blue) Loctite or equivalent to the bolt (107B) threads. Screw the bolt into the shaft hand-tight.
9. Clamp the torqued bolt (107A) in a vise.
10. Torque the other shaft bolt (107B) to 27-34 Nm at 100 rpm maximum.
11. Reattach a fluid cover (101) on the side of the PTFE (liquid diaphragm) Arrow (A) must point toward the air valve. See torque instructions page 29 of manual 819.4273.
12. Follow directions under Attach Second Fluid cover.
13. Reassemble the ball check valves, closing discs and manifolds as explained in page 12 (+ addendum)

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All other standard Diaphragms

1. Clean all parts and inspect for wear or damage. Replace parts as needed
2. Clamp the shaft flats in a vise with the side drilling downwards



3. Install o-ring (108) on the shaft bolt (107A) (= drilled bolt !)

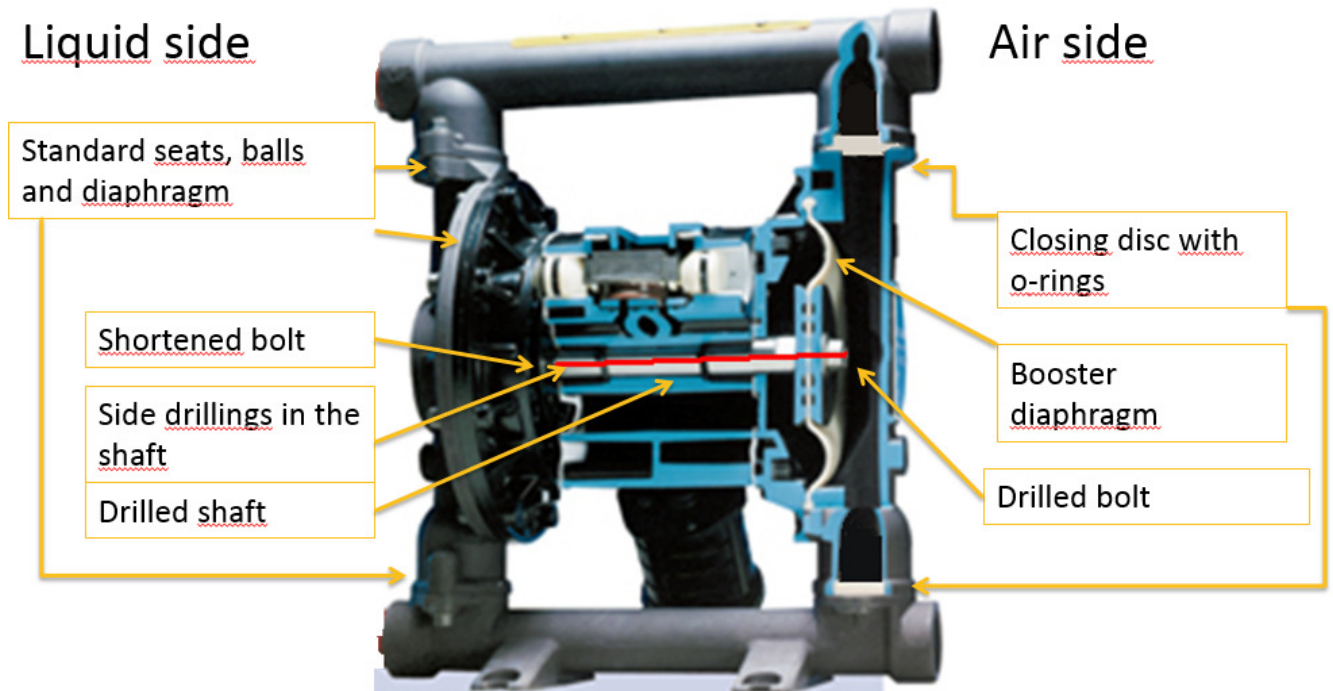


4. Assemble the fluid side plate (105), the diaphragm (403), the air side diaphragm plate (104) on the bolt as shown on page 20 of manual 819.4273.
5. Apply medium strength (blue) loctite or equivalent to the bolt (107A) threads. Assemble into the shaft. Torque the bolt to 27-34 Nm at 100 rpm maximum.
6. Grease the shaft u-cups (10) and the length of the diaphragm shaft (24). Slide the shaft into the housing.
7. Repeat steps 3 and for 4 for the liquid diaphragm assembly. Use diaphragm (403) as shown un page 20 of manual 819.4273, using the non-drilled shaft bolt (107B)
8. Apply medium strenght (blue) Loctite or equivalent to the bolt (107B) threads. Screw the bolt into the shaft hand-tight.
9. Clamp the torqued bolt (107A) in a vise.
10. Torque the other shaft bolt (107B) to 27-34 Nm at 100 rpm maximum.
11. Reattach a fluid cover (101) on the side of the PTFE (liquid diaphragm) Arrow (A) must point toward the air valve. See torque instructions page 29 of manual 819.4273.
12. Follow directions under Attach Second Fluid cover.
13. Reassemble the ball check valves, closing discs and manifolds as explained in page 12 (+ addendum)

Positioning of specific parts in VA50 -HP

Liquid side

Air side



Specific parts for VA50 HP :

107A : 829.4312A Drilled bolt

107B : 829.4312B shortened bolt

24 : 829.4296 drilled shaft

Closing disc : 829.4315 (2 needed in pump)