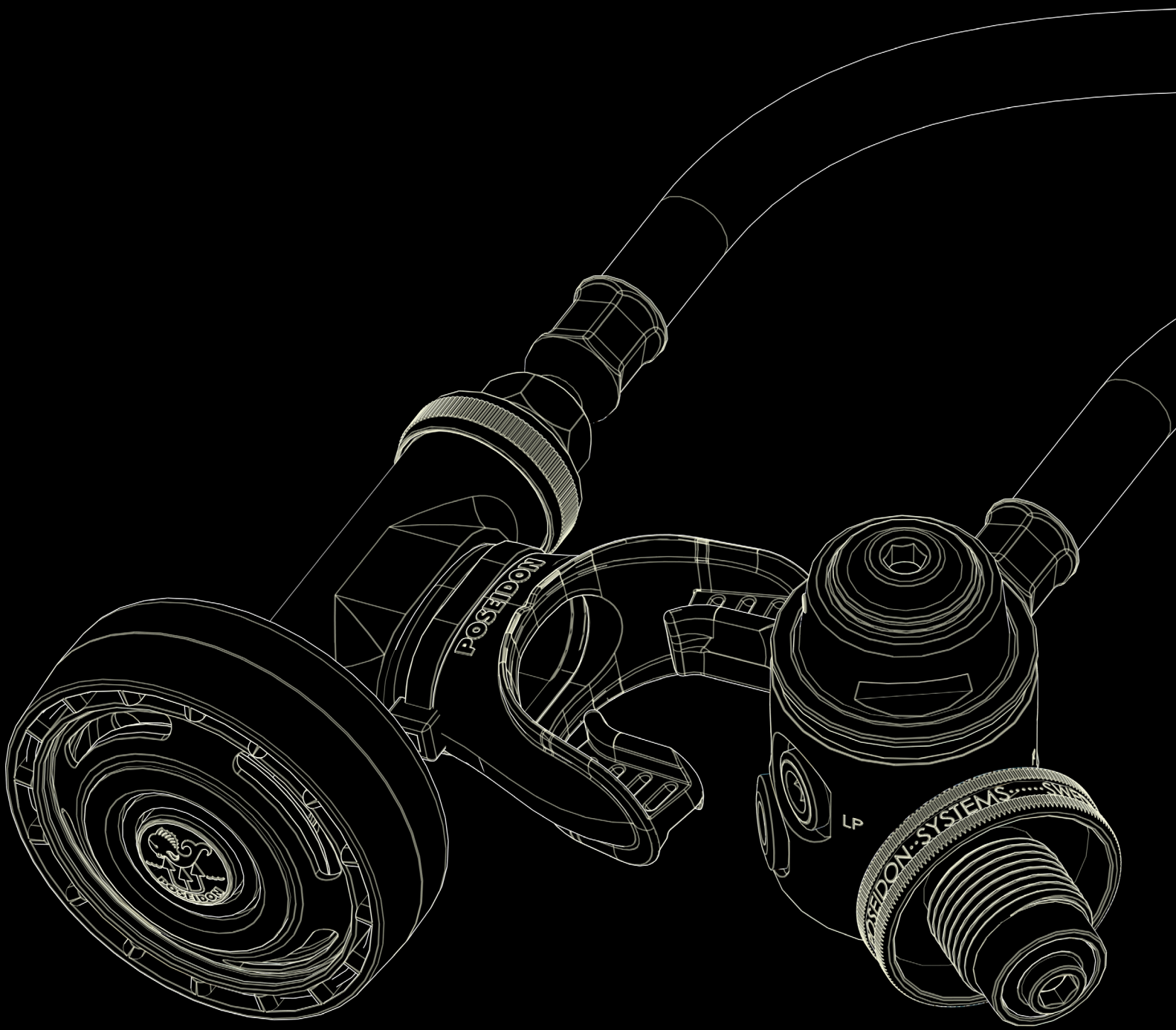
CYKLON 300 ART. NMBR 2980

SERVICE MANUAL V1.0



GÖTEBORG SWEDEN
POSEIDON

CYKLON 300 - Article number 2980

TABLE OF CONTENT

IMPORTANT

This manual contains preliminary servicing instructions for the Poseidon breathing regulators. It is intended to serve as a guide for repairs and servicing carried out by Poseidon Diving Systems. The instructions given in this manual are based on the assumption that special tools are used and are based on our experience.The work should be done in the same order as shown in these instructions.

TYPE DESIGNATIONS

In all correspondence concerning breathing regulators, indicate the type designation and serial number. All products in this servicemanual that requires a CE-approval are of course CE-approved. CE approval represents only a minimum level of product quality and manufacturing standards. At Poseidon we put each new addition through rigorious testing procedures our selves. This is the only proper method to ensure that your equipment will live up to our claims.

CLEANING

If corrosion or salt deposits occurs, place all metal parts in concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes. If available, all metal parts can be placed in an ultrasonic washer and cleaned in accordance with the instructions of the cleaning solution used.

Then, rince the parts thoroughly and blow dry with air. The synthetic parts in the second stage must not be treated with solvent. They shall be cleaned in freshwater only.

**Hempocid = Acid Liquid Detergent Containing phosphoric acid (5 - 10%) and bactericid for desinfectant cleaning.*

LUBRICANTS USED

The following lubricant/oil are used:

Regulator Lubricant: Art no 8516

Oil: Silicon oil Art no 3139

SERVICE KITS

The following service kits should be used:

Second stage No. 1133, 3224, 3354, 3354 M, 3536 : Service kit no. 3551

First stage No. 3070: Service kit no. 3886
First stage No. 2801, 2808: Service kit no. 3881

FUNCTION

POSEIDON breathing regulator is a two-stage regulator where the first stage is a diaphragm-actuated reducing valve, whith reduces the primary pressure (Cylinder pressure) to approx. 167 PSI/11,5 BAR. The reduced pressure (the secondar'y pressure) then goes via the regulator hose to the second stage where the air supply is automatically regulated to the convenience of the diver.

The first-stage always holds the adjusted pressure above the ambient pressure which is necessary to the function of the breathing regulator. This is brought about, the outer springloaded diaphragm being in contact with the ambient pressure. It automatically responds to this pressure acting it and thereby regulates all changes in pressure.

During diving in cold water, i.e, temperatures lower than +10°C (+50°Farenheit), the outer spring housing of the first stage may be provided with an anti-freeze cap in order to prevent direct contact with the water.This is necessary as the considerable cooling that takes place when the primary air expands in the secondary chamber can otherwise cause ice to form and thereby prevent the springs and diaphragm from functioning.

The second-stage functions in such a way that the underpressure created in the regulator housing during each inhalation influences a diaphragm actuated valve system, which will supply the necessary air as long as the inhalation phase lasts. The automatic pressure compensation takes place in the same way as in the first stage, the outer diaphragm surface being in direct contact with ambient pressure, and the pressure on the inside of the diaphragm must correspond to ambient pressure before the diaphragm can return to its position. The diaphragm retums to its rest position and shuts off the air flowing in as soon as the inhalation phase has been broken off and the air pressure in the regulator housing has become equal to ambient pressure.

The second stage fias been provided with an ejector system for the purpose of keeping inhalation effort to a minimum.

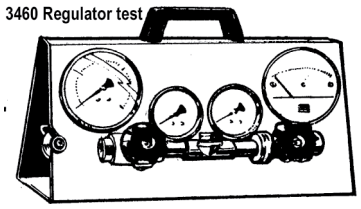
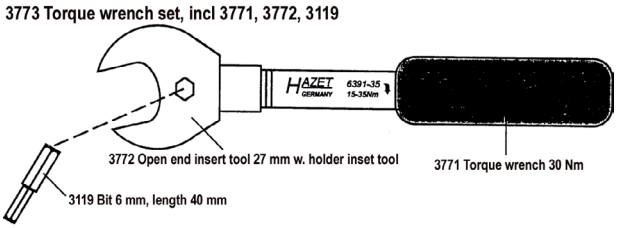
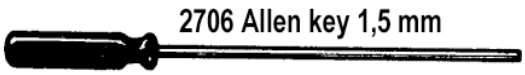
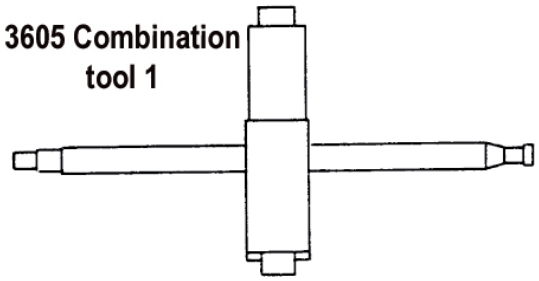
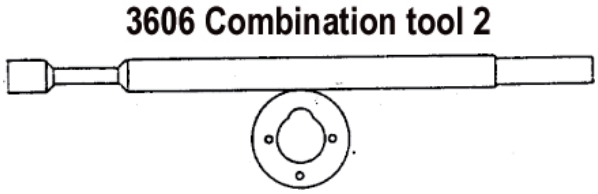
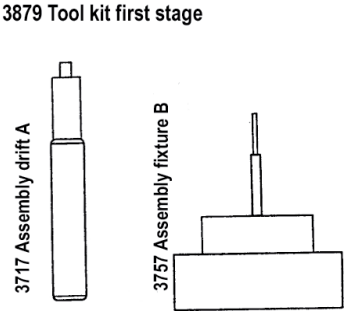
During the exhalation phase, the exhaled air goes out through the exhalation diaphragm on the opposite side of the inhalation diaphragm into the ambient medium. The exhalation diaphragm closes automatically when exhalation stops. Also, the exhalation diaphragm regulates the necessary pressure compensation by closing when the ambient pressure is equal.The special construction of the exhalation section of the regulator has been designed to obtain high capacity with low exhalation effort.

The second stage bas a built in purge button, for manual purging.

TOOLS

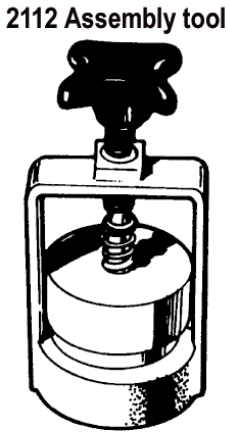
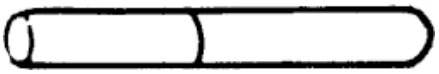
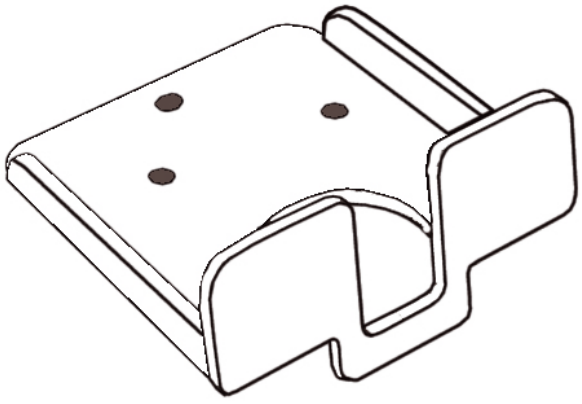
To service Poseidon Cyklon regulators, a mix of standard tools and specific Poseidon special tools are needed. The list below shows what specific Poseidon tools and what standard tools are needed.

Poseidon specific tools

Article nmbr.	Description	Picture
2297	O-ring remover	
3460	Regulator test	
3773	Torque wrench set	
2706	Allen key 1,5 mm	
3605	Combination tool 1	
3606	Combination tool 2	
3879	Tool kit	

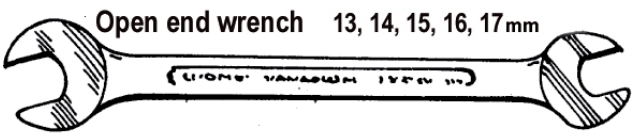
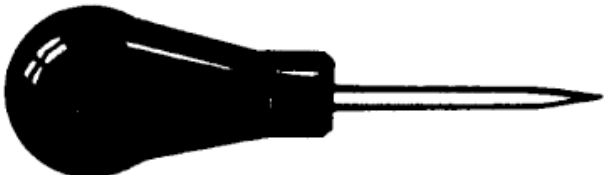
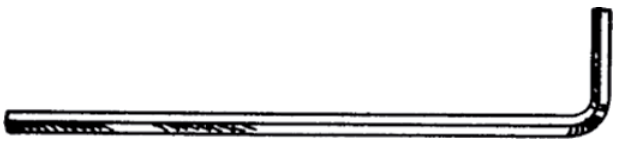
TOOLS

Poseidon specific tools continues.

Article nmbr.	Description	Picture
2112	Assembly tool	
2299	Drift	
3138	Holder for drift	
8516	Regulator lubricant	
3397 10	Fixture for first stages	

TOOLS

Standard tools

Article nmbr.	Description	Picture
	Open end wrenches	
	Screwdriver, flat	
	Awl	
	Allen keys, 4, 5, 6 mm	

CYKLON 300 Art No 2980

BREATHING REGULATOR

Primary pressure.....Max. 4350 PSI / 300 bar
Secondary pressure.....Max. 181 PSI / 12.5 bar
Air flow.....Approximately 800 l/min
Inhalation resistance at 115 l/min.....Max. 40 mm of water
Exhalation recistance.....Max. 20 mm of water
The above data apply when measuring at atmospheric pressure

FIRST STAGE VALVE Art No 2305, 3070

Description.....Diaphgram-operated,compensated.
Connection threads for primary pressure.....G 5/8" -max. 4350 PSI / 300 bar.
Outlet connections:
Three outlets marked LP for second stage,
drysuits, buoyancy compensators,
Octopus, etc .....UNF 3/8" -secondary pressure
One outlet marked HP.....UNF 7/16"-primary pressure
Four outlets marked HP/LP/R/U/I (2305).....G 1/8"

SECOND STAGE VALVE Art No 1133, 3536

Description.....Downstream type, diaphragm actuated.
Integral saftey valve opens at
approximatley 203 PSI / 14 bar.
Purge button for clearing.

REGULATOR HOSE Art No 2946

Length.....28 inch / 70 cm

TIGHTENING TORQUE

Primary DIN connection.....20-22 lbf.ft / 28-30 Nm
Valve cover.....20-22 lbf.ft / 28-30 Nm
Connections marked LP-HP.....6 lbf.ft / 8 Nm

ANTI-FREEZE PROTECTION Art No 1286

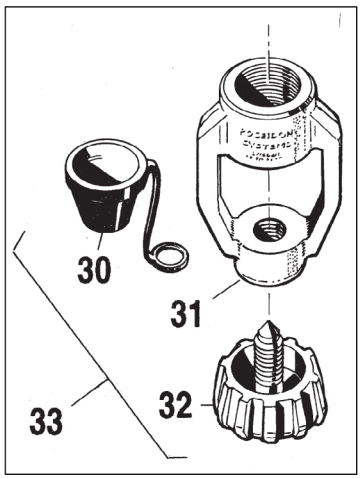
Type .....Rubber cap

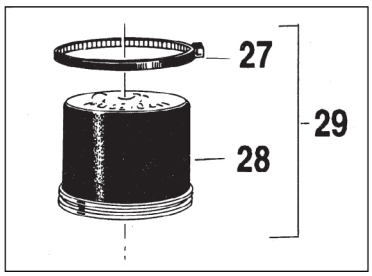
EXPLOADED VIEW - FIRST STAGE 3070

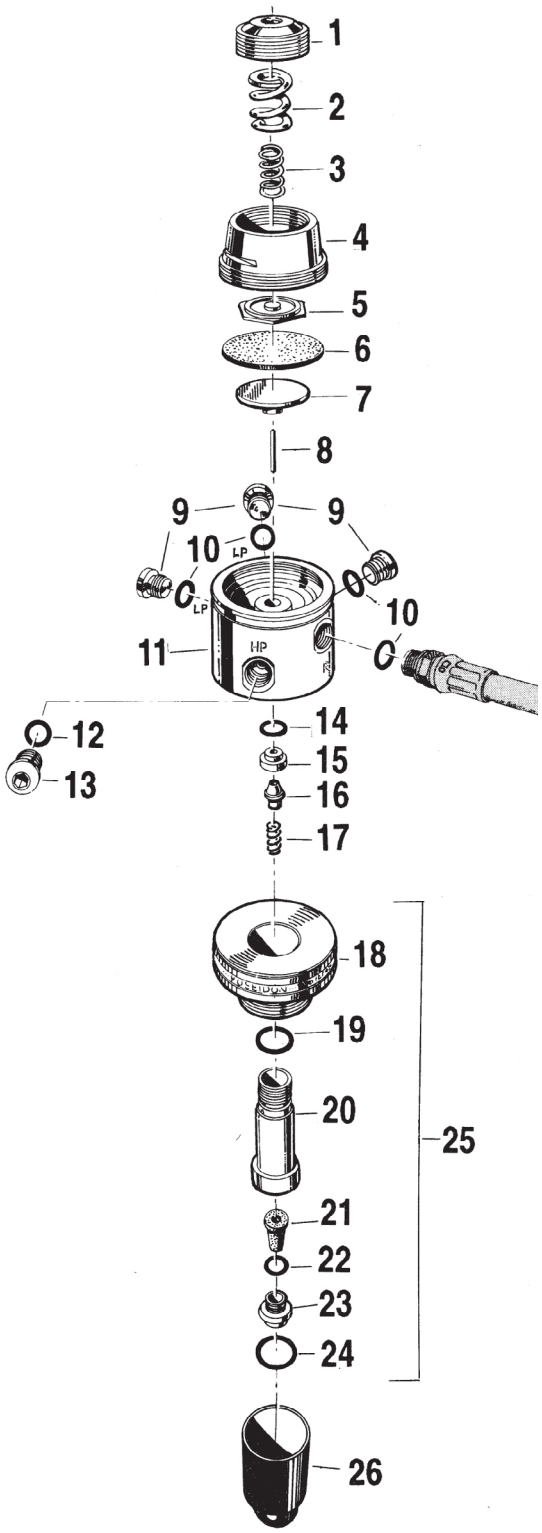
POS	Art. No	Description
1	3417	Pressure adjusting screw
2	2802**	Pressure spring, outer
3	3418**	Pressure spring, inner
4	2814	Cover for valve housing
5	2815	Diaphragm centre, upper
6	1189	Diaphragm
7	1176	Diaphragm centre, lower
8	2182	Valve needle
9	2679	Blind screw UNF 3/8" (3pcs)
10	0010-353	(2782) O-ring (4st)
11	3023	Valve housing
12	0010-354	(2918) O-ring
13	2680	Blind screw UNF 7/16
14	0010-009	(1156) O-ring
15	2302	Valve seat
16	1179	Valve piston
17	1180	Pressure spring
18	2424	Wheel G5/8"
19	0012-007	(1233) O-ring
20	2423	Connection
21	1377	Cup type filter
22	0010-006	(2656) O-ring
23	3096	Locking screw
24	0012-028	(1007) O-ring
25	2965	Connection incl. 18-24
26	2402	Protective cap
27*	2778	Locking strap
28*	1287	Anti-freeze cap
29*	1286	Anti-feeze cap with locking strap
30*	2277	Protective cap
31*	2921	Yoke
32*	2922	Knob
33*	2920	Yoke complete incl. 30-32

* Accessory

** Replaced with spring #2802 10



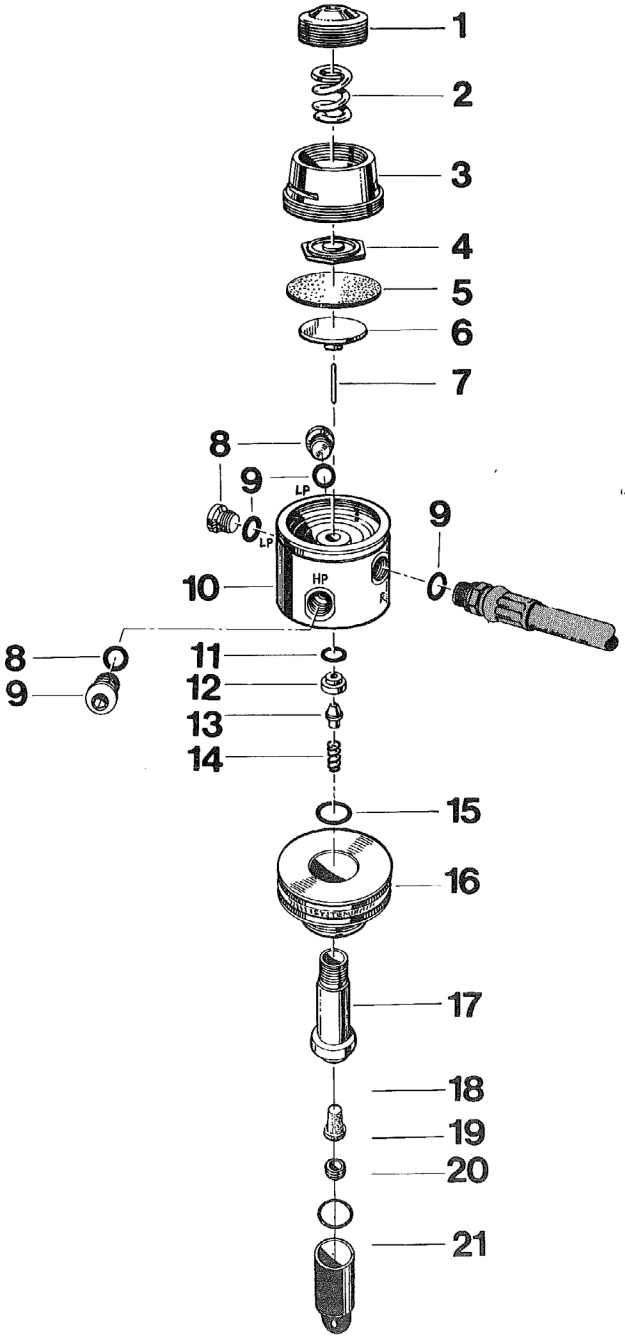


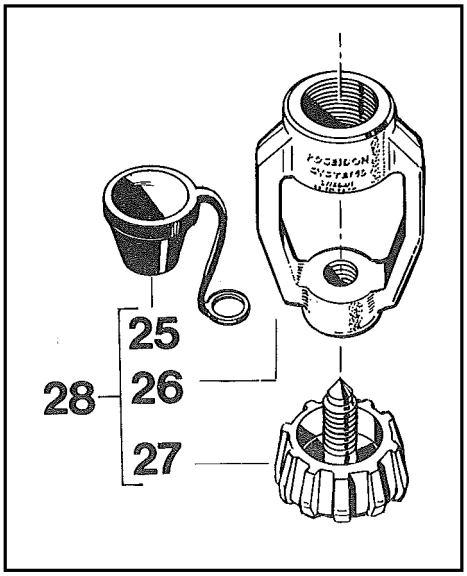


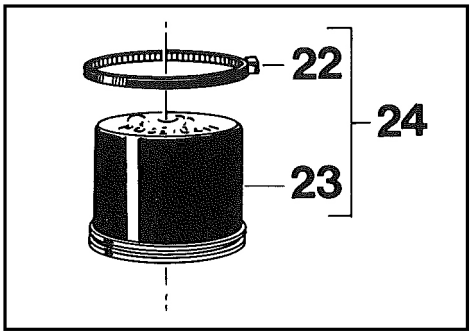
EXPLODED VIEW - FIRST STAGE 2305

POS	Art. No	Description
1	3417	Pressure spring screw
2	2802	Secondary spring
3	2814	Cover for valve housing
4	3419	Diaphragm centre, upper
5	1189	Diaphragm
6	1176	Diaphragm centre, lower
7	2182	Valve needel
8**	2807	Blinding screw G 1/8”
9	1013	Gasket
10**	2306	Valve housing
11	0010-009	(1156) O-ring
12	2302	Valve seat
13	1179	Valve piston
14	1180	Pressure spring
15	0012-007	(1233) O-ring
16**	2222	Wheel G5/8”
17**	2175	Connection
18	1377	Cup type filter
19**	1183	Locking screw
20	0012-028	(1007) O-ring
21	2402	Protective cap
22	2778	Locking strap
23*	1287	Anti-freeze cap
24*	1286	Anti-Freeze cap with locking strap
25*	2277	Protective cap
26*	2921	Yoke
27*	2922	Knob
28*	2920	Yoke, complete (incl. 26-28)

* Accessory
** Discontinued



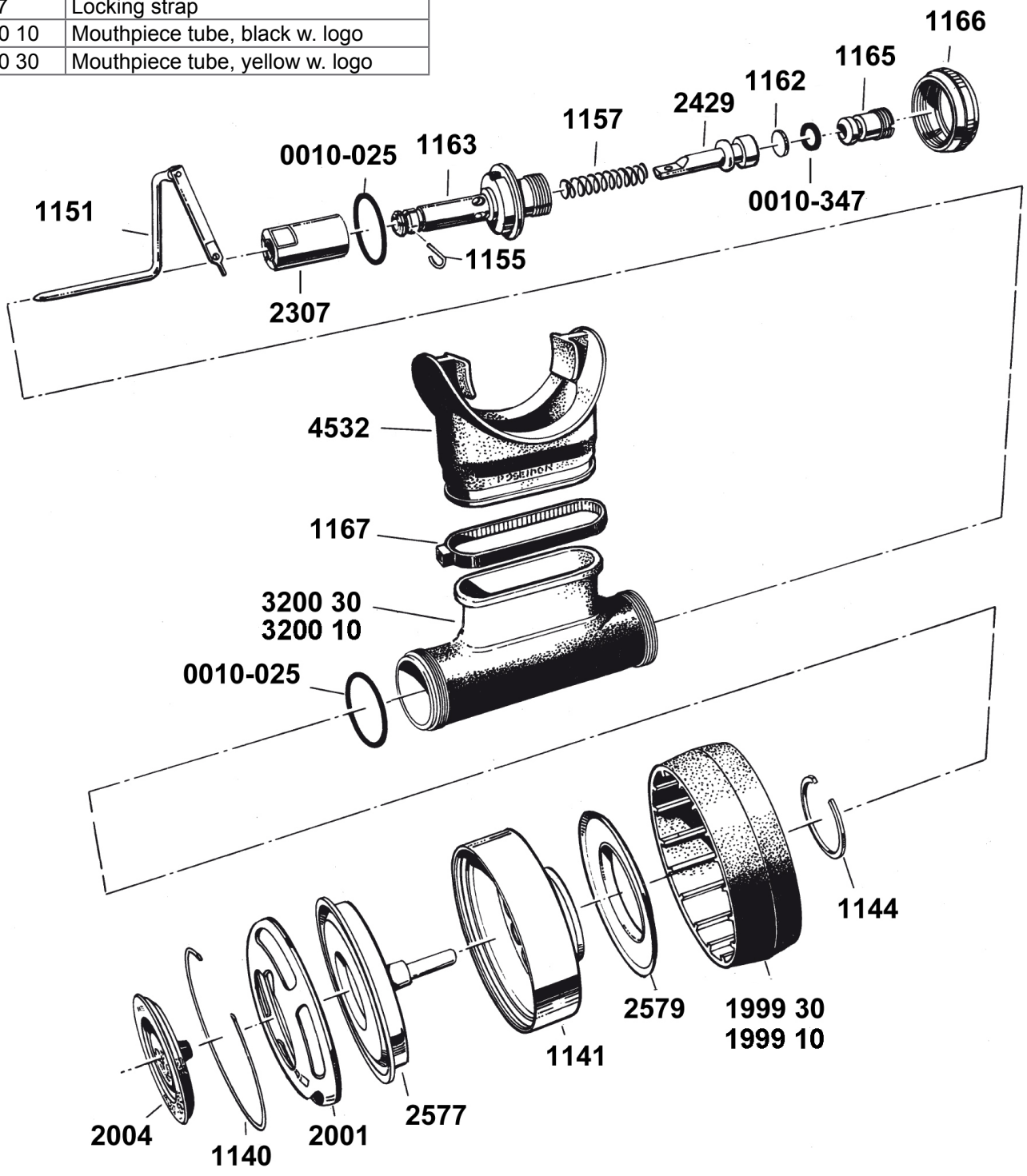




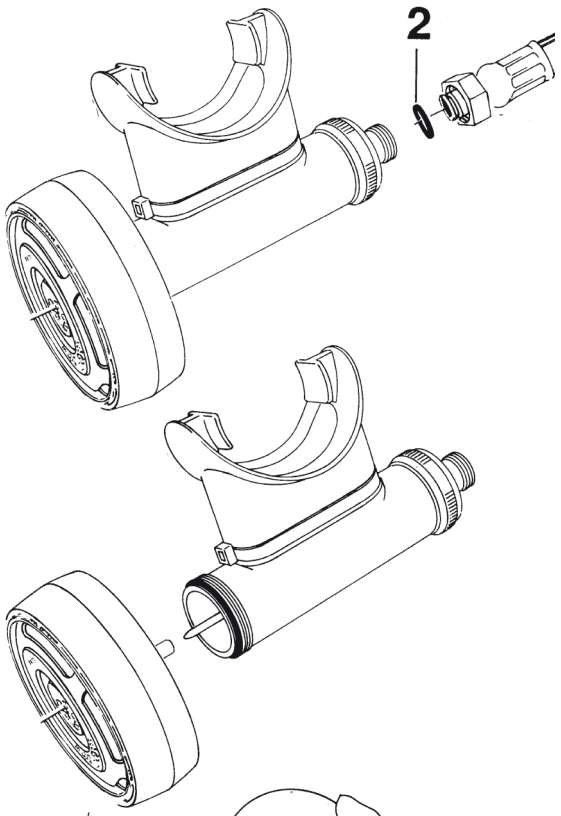
EXPLODED VIEW - SECOND STAGE 1133, 3224, 3354, 3354 M, 3536

Item #	Description
1166	Locking nut
1165	Valve seat
1162	Rubber plate
0010-347	O-ring
2429	Valve piston
1157	Pressure spring
1163	Valve house
1155	Lever pin
0010-025	O-ring
2307	Ejector sleeve
1151	Operating device
4532	Moutpiece - Silicone
1167	Locking strap
3200 10	Mouthpiece tube, black w. logo
3200 30	Mouthpiece tube, yellow w. logo

Item #	Description
1144	Locking ring
1999 10	Cover for exhale diaphragm, Black
1999 30	Cover for exhale diaphragm, Yellow
2579	Exhalation diaphragm
1141	membrane housing
2577	Inhalation diaphragm
2001	Inhalation cover
2004	Purge button

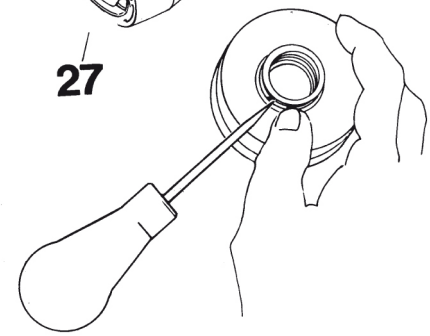


DISASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536

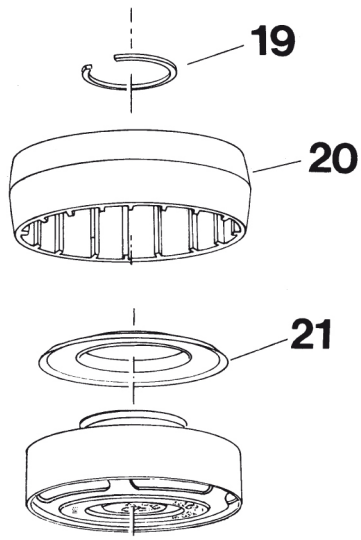


Disconnect the low pressure hose from the second stage with a 17 mm. open wrench. Remove the oring (2) with an o-rings remover.

Remove the diaphragm housing (27) from the mouth piece tube.

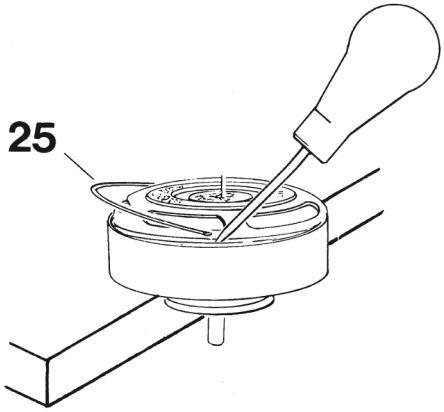


To release the exhalation cover, remove the locking ring with a small screwdriver.

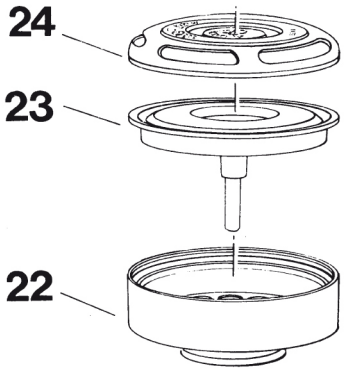


Remove the exhalation diaphragm (21).

DISASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536

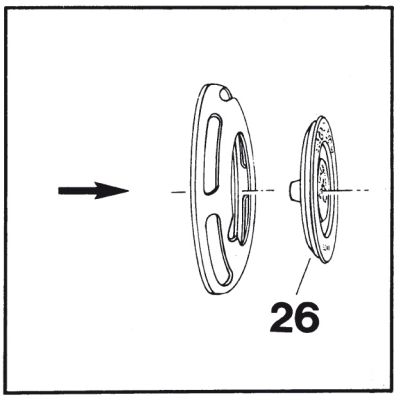


Remove the locking ring (25) with an awl. Support the diaphragm house, see diagram. Make sure that the sealing surface for the exhalation diaphragm is not damaged.

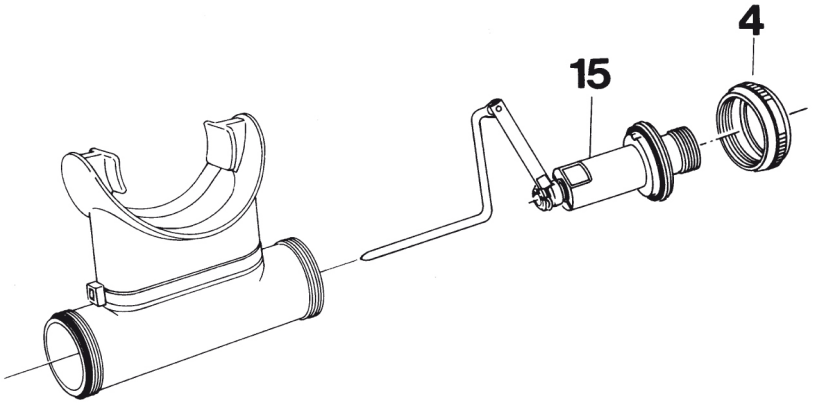


Remove the cover (24) and the inhalation diaphragm (23).

Removal: Push out the purge button

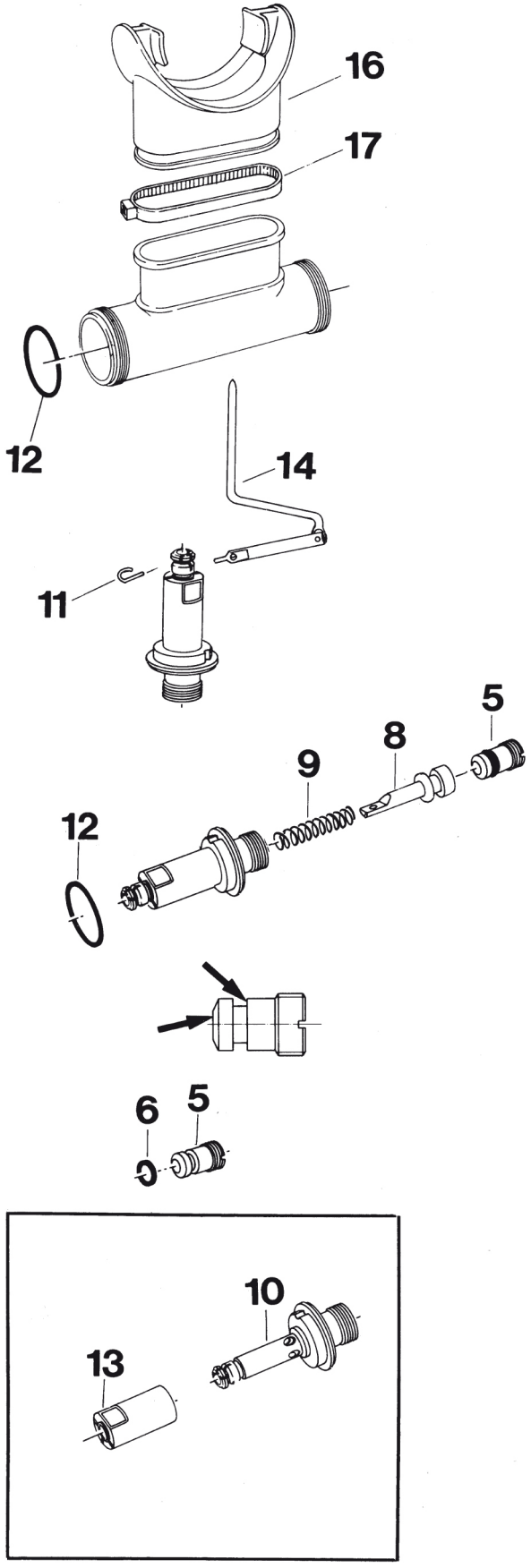


IMPORTANT! The purge button (26) should not be removed if it is undamaged



Remove the connecting ring (4) and the low pressure valve (15).

DISASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536



Cut off the locking strap (17) with cutting pliers.

Remove the mouth-piece (16) and the o-ring (12).

Remove the lever pin (11).

Remove the operating device (14).

Remove the o-ring (12).

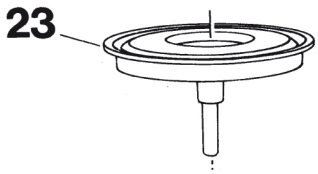
Unserew the valve seat (5) with an 8.5 mm screwdriver. **NOTE!**
the valve seat has a very fragile sealing edge; put the seat with the edge upwards.

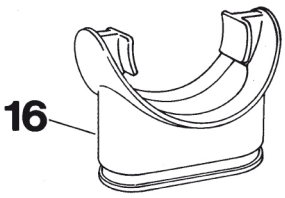
Remove the valve piston (8) and the spring (9). In order to protect the piston bond, the old rubber plate should be kept until the new shall be fixed.

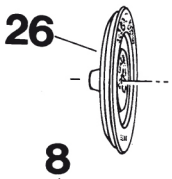
Remove the o-ring (6) with an oring remover. Make sure the sealing surfaces are not damaged.

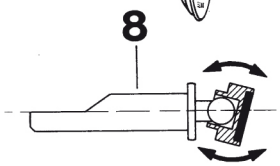
IMPORTANT! The ejector sleeve should not be removed if it is functional and undamaged. Check to see that the sleeve can be rotated to any position, but that it does not rotate freely.

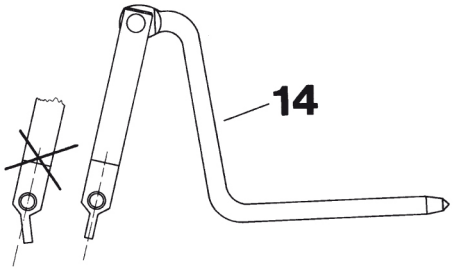
DISASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536

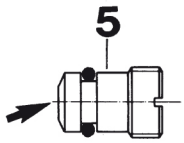


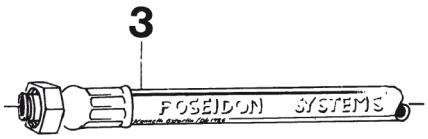


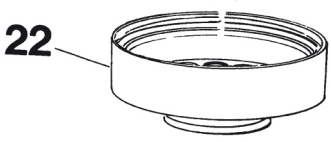












When servicing the regulator the following parts should be replaced:

- All o-rings, including the one in the low-pressure hose.
- Rubber plate.

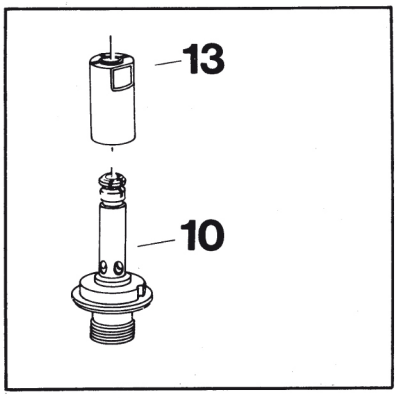
CLEANING:
If corrosion or salt deposits occurs, place all metal parts in an ultra-sonic washer or in 15% Hydrochloric acid solution for about 10 minutes.Then, rince the parts thoroughly and blow dry with air.The synthetic parts in the second stage must not be treated with solvent. They shall be cleaned in freshwater only.

**Hempocid = Acid Liquid Detergent Containing phosphoric acid (5 - 10%) and bactericid for desinfectant cleaning.*

BEFORE INSTALLING CHECK THE FOLLOWING:

- Diaphragms (21) (23). Check the sealing surface of the diaphragm to see if it is even and uncracked.
- The mouth-piece (16). Make sure that there are no cracks.
- The purge button (26). Make sure there are no cracks.
- Valve piston (8). Ensure that the ball joint is working correctly by manipulating and rotating the joint.
- Operating device (14).Make sure that the joint articulates smoothly. Important: The operating device must be replaced, if the lever tab is bent. The tab should not be straightened, as this would weaken it and make subsequent failure possible.
- Valve seat (5). Check to make sure the sealing surfaces are undamaged.
- Low pressure hose (3). Check to make sure that the sealing surface is undamaged, and that the rubber does not show any flaws.
- Diaphragm housing (22).Make sure that the sealing surfaces are free from defeas and that the track for the inhalation diaphragm is absolutely clean and free from lubricant.

ASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536



Assembly:

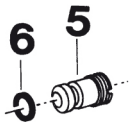
This step is only performed if the ejector sleeve has been removed.
Install the ejector sleeve (13) on the valve housing (10). Press the sleeve into the low pressure valve so the slits of the sleeve are exceedingly small.

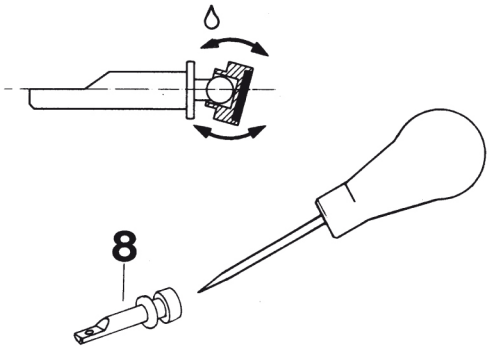
Lubricate:

Grease:

Oil:

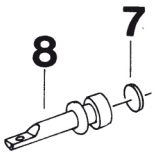
Install the o-ring (6) on the valve seat (5).Make sure that the sealing surface is not damaged.

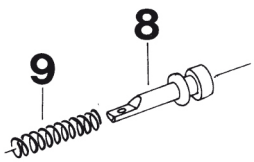




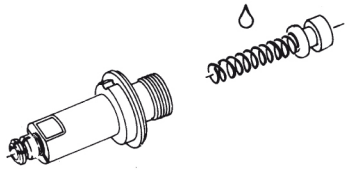
Lubricate the ball joint. Tilt the position head according to the figure to ensure that it rotates and articulates smoothly.

Remove the rubber plate (7) with an awl and make sure the sealings surface on the valve is clean. Install the new rubber plate.



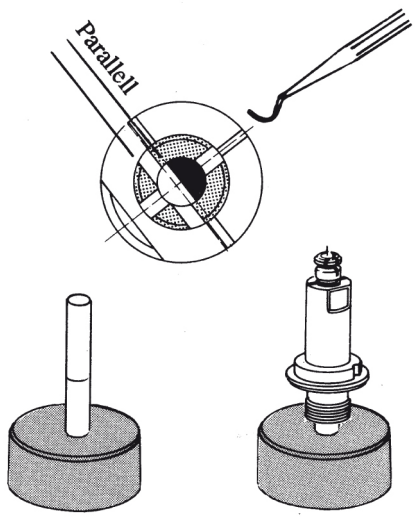


Put the spring (9) on the valve piston (8). Lubricate the spring

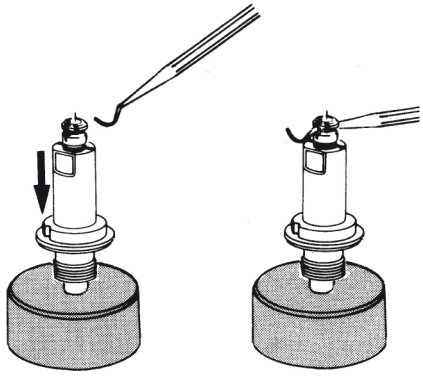


Install the valve piston/spring in the valve housing with the flat part of the valve piston upwards.

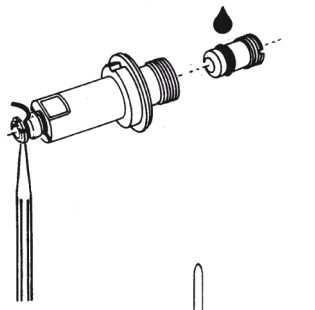
ASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536



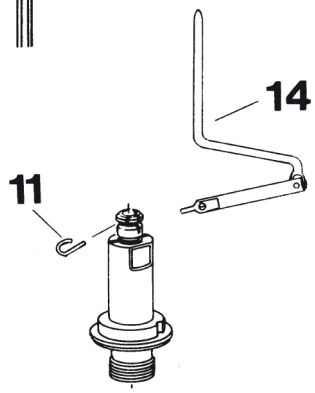
Place the valve housing on a drift seated on a block. Press the valve housing down, compressing the spring. Keep the flat part of the valve piston parallel with the horizontal slot in the end of the valve housing. Move the valve piston up and down a few times to check for freedom of movement.



Press the valve housing down and slide an o-ring remover through the hole in the valve piston.

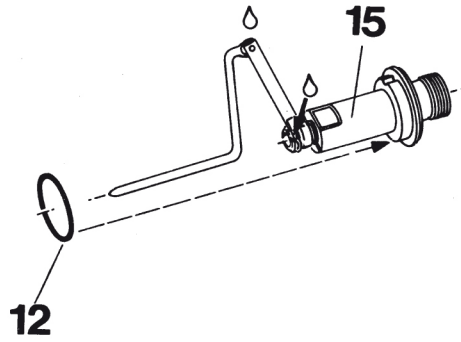


Lubricate the o-ring and the thread of the valve seat. Screw in the valve seat with an 8.5 mm screw driver until the o-ring remover comes loose.

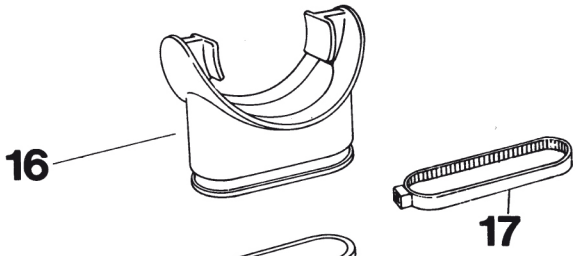


Install the operating device (14). Insert the lever pin (11) through the slot, engaging the hole in the operating device. Rotate the lever pin 90 degrees to lock it in place.

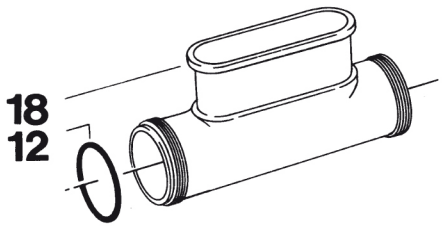
ASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536



Install the o-ring (12). Lubricate. See diagram.

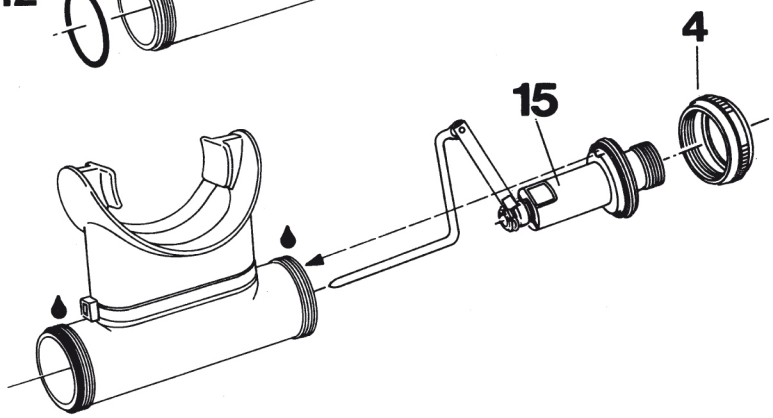


Install the mouth piece (16) and the plastic band (17). Tighten and cut off plasticband with a plier.

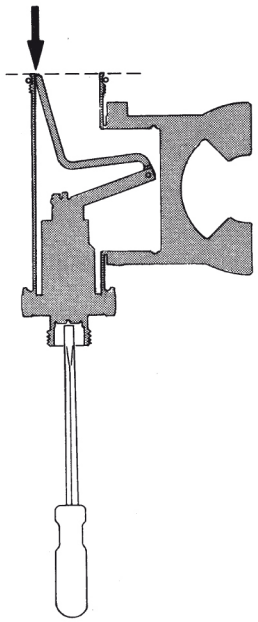


Install the o-ring .(12)

Lubricate the threads on the mouth piece

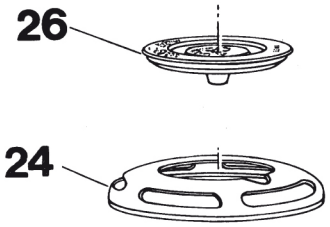


Install the low pressure valve (15) in the mouth piece tube. Set the indent notch at the top of the valve housing against the key at the top of the mouth piece tube. Screw on the connecting ring (4).

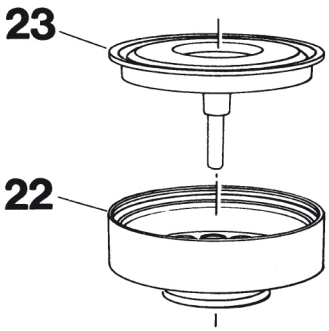


Screw the valve seat down until the highest part of the operating device is even with the level og the opening of the mouth piece tube. Hold the second stage valve vertically. See fig.

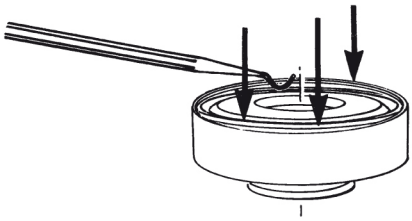
ASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536



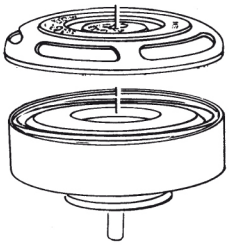
Install the purge button (26) in the cover (24).Screw the button in the cover-cavity



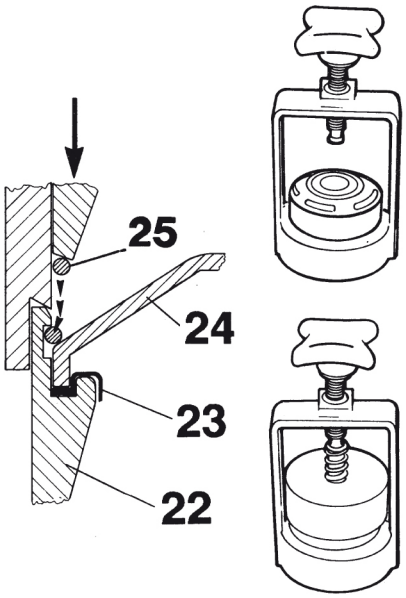
Install the inhalation diaphragm (23) on the diaphragm housing(22).



Seat the lip on the diaphragm into the recess on the inner rim of the diaphragm housing.Use an o-ring remover or other blunt pointed instrument.



Set the inhalation cover (24) on the diaphragm housing over the diaphragm.



Place the diaphragm housing complete with diaphragm and cover into the frame of the assembly tool.

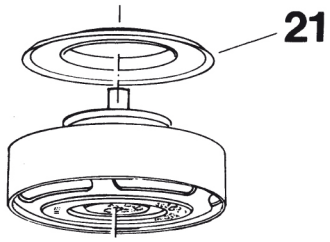
Insert the locking ring (25) into the upper groove of the press of the assembly tool. See diagram

Place the press on top on the diaphragm housing.

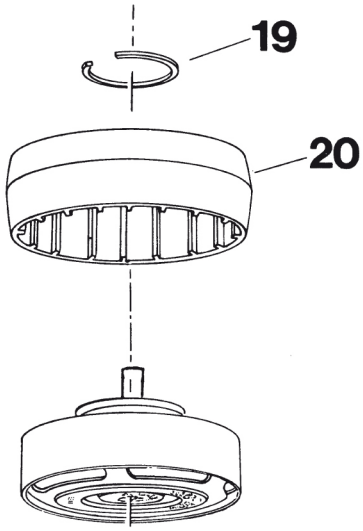
Tum the knob until you hear or feel a slight click. Continue turning until you encounter resistance, then back off the knob to release the housing.

Check the locking ring placement to make sure that it has completely entered the groove.

ASSEMBLY - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536



Install the exhalation diaphragm (21) on the diaphragm housing. Make sure that the diaphragm is laying flat on the diaphragm housing.

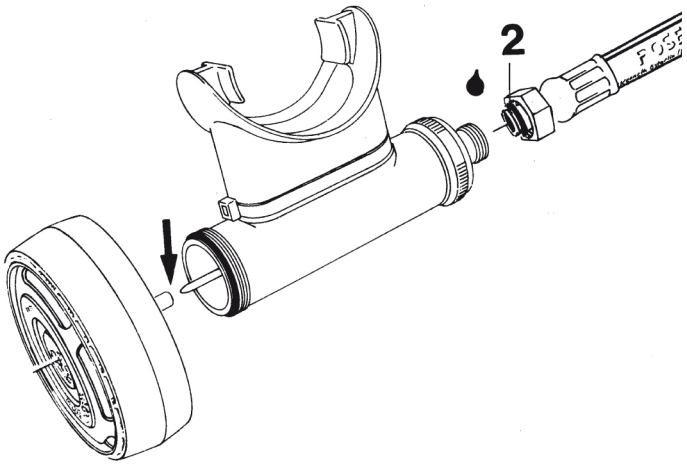


Install exhalation diaphragm cover (20) and locking ring (19).

Install the diaphragm housing on the mouthpiece tube. Be sure to slip the operating device into the diaphragm guide sleeve.

Checking the second stage for leaks: Place the mouth piece against your lips the low pressure hose correction with your thumb and inhale lightly. This will create a partial vacuum inside the second stage. If the pressure does not equalize in 5 seconds the second stage leaks.

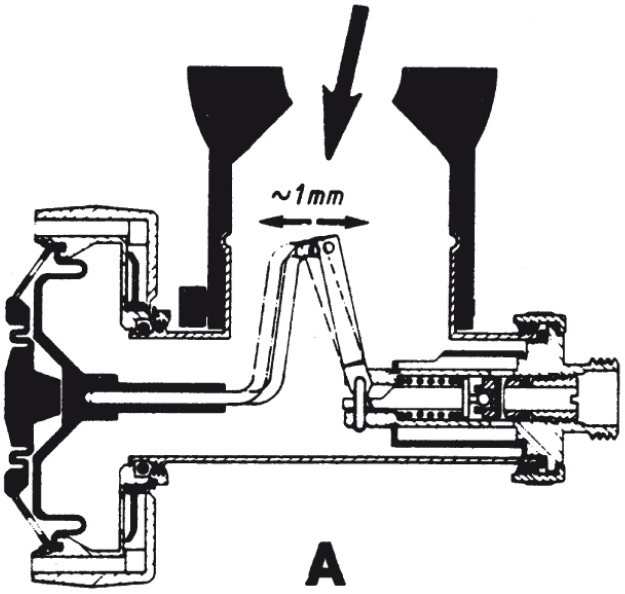
See chapter Fault-tracing scheme.

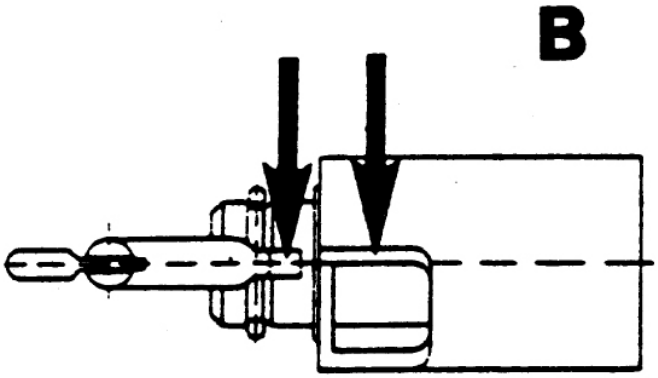


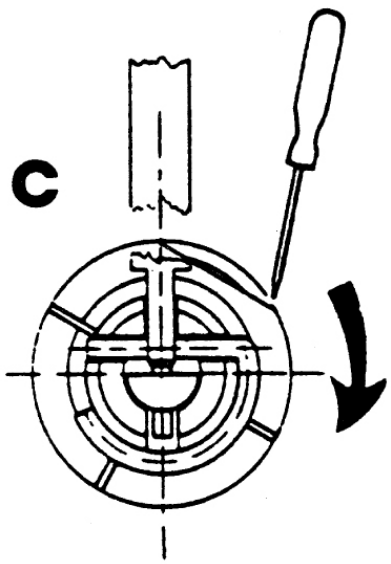
Install the o-ring (2) on the LP hose and lubricate

Screw on the LP-hose.Do not tighten the connecting ring until after the function test.

ADJUSTMENT - 2nd STAGE 1133, 3224, 3354, 3354 M, 3536







Open the LP valve. Check the secondary pressure. It should be between 12 and 12.5 bar (174 - 181 psi). Max tankl pressure should be used.

Check to make sure that the clearance between the control unit and the low pressure valve is approximately lmm. See ill. A. If the clearance is too small, do not seal the second stage valve. If the clearance is too large, reduce the flow of air and the inhalation resistance will increase.

Adjustment of the clearance:
Close the LP valve, and empty the regulator completely by means of the purge button.

Unscrew and remove the low pressure hose from the second stage valve.

If the clearance is too small, screw the valve seat inwards (clockwise) using an 8.5 mm screwdriver. If the clearance is too large, screw the valve seat outwards (counterclockwise).NOTE that the adjustment torque is very sensitive, so you should screw carefully.The clearance can be checked only when the secondary pressure is between 10 and 12.5 bar. (145 - 181 psi)

Fit the hose and open the LP valve. Check the clearance once again.

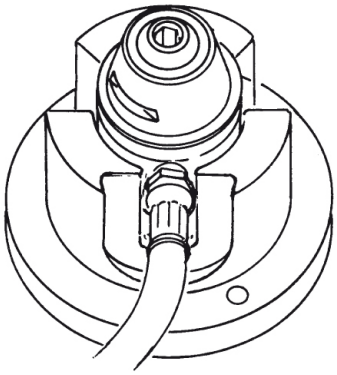
Close the LP valve.

Adjustment of ejector sleeve:
Open the HP valve.

Turn the ejector sleeve using a 3.5 mm screwdriver as shown in ill. B so that the edge of the hole is opposite the slit in the low pressure valve. See ill. C. Hold the second stage valve upright, press the button so that the valve will give a maximum flow of air, and then release the button. If the valve continues to blow itself, stop the air flow using your hand.Turn the ejector sleeve in the direction of the arrow, see ill. B, and make a new test using the button.The opening of the hole should be turned to face upwards as much as possible, that is, close to the limit where the valve blows itself.The regulator will then give a maximum flow of airand the inhalation resistance is minimal.

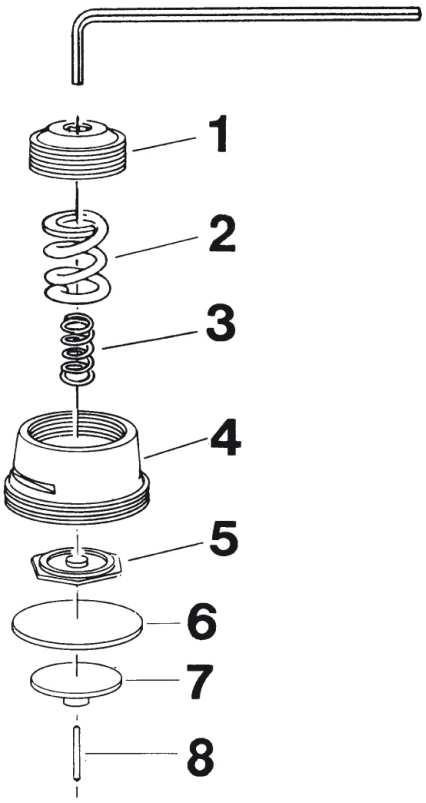
Close the HP valve and purge fully with the purge button. Tighten the nut moderately.

DISASSEMBLY - 1st STAGE 3070



Disassembly

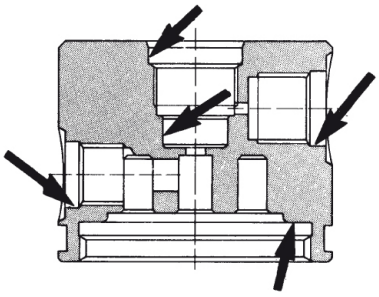
Place the first-stage valve in a fixture with the secondary side facing upwards.



Remove the pressure adjusting screw (1) with a 6 mm hexagon spanner, and remove the spring (2) and (3).

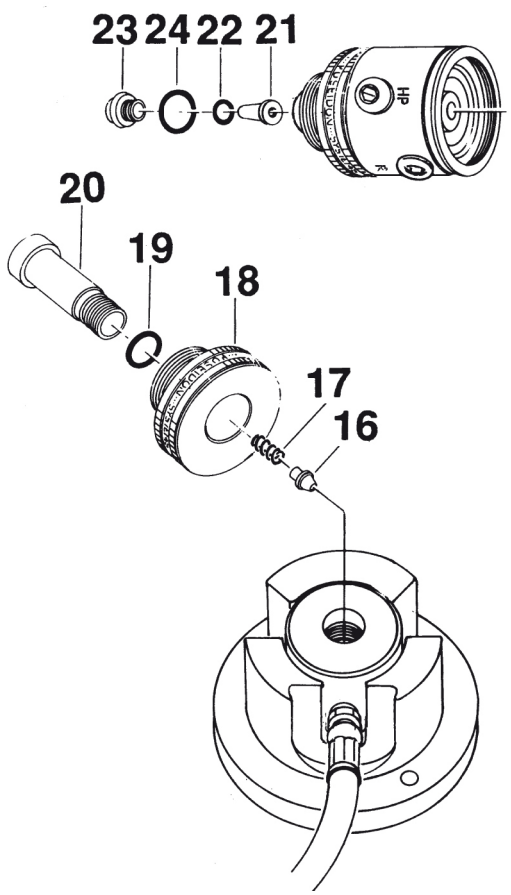
Remove the cover (4) using a 27 mm crowsfoot wrench. Remove the upper diaphragm center (5).

Remove the diaphragm (6) with an o-ring remover.



Make sure the sealing surface is not damaged. Remove the lower diaphragm center (7) and the valve needle (8).

DISASSEMBLY - 1st STAGE 3070



Remove the locking screw (23) with a 6 mm Allen wrench. 20 Remove the oring (24), cup filter (21) and o-ring (22).

Place the first stage in the fixture. Remove the connection (20) with 6 mm Allen wrench.

Remove the wheel (18) and the o-ring (19) with an o-ring remover.Make sure the sealing surfaces are not damaged.

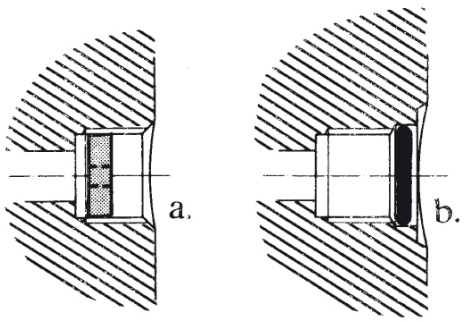
Remove the spring (17) and the valve piston (16).

Disconnect the low pressure hose from the first-stage valve with a 13 mm open-end wrench.

Remove the o-ring from the low pressure hose. Make sure the sealing surfaces are not damaged.

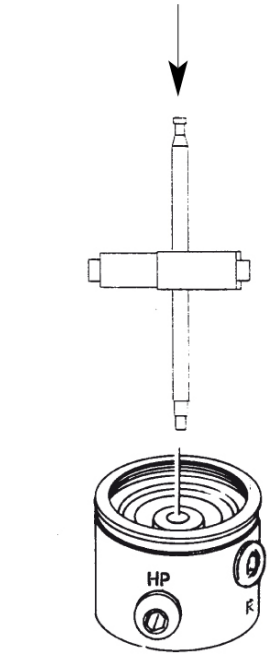
Old-type fist stage valve housings with (G 1/8”) threads are equipped with nylon gaskets seats. It is not normally necessary to change these seats during service.
However, if the seats are subjected to a great deal of over-tightening, the interior orfices can be reduced in diameter, significantly reducing flow and performance.

Compare installed gasket orifices with a new gasket, and replace as necessary.
Gaskets must also be replaced after a long time acid-bath.



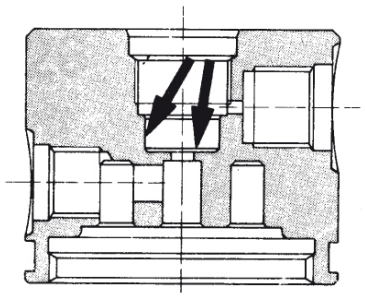
a. G1/8″-port with gasket.
b. UNF 3/8″-port with o-ring

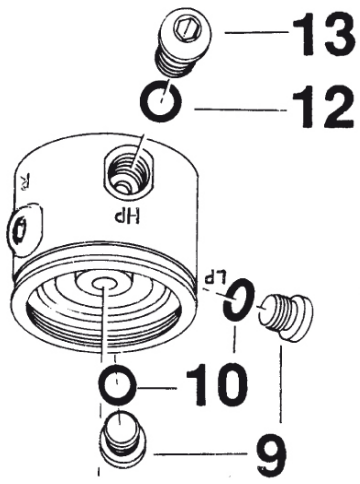
DISASSEMBLY - 1st STAGE 3070



Remove the valve seat (15) with the valve seat remover.

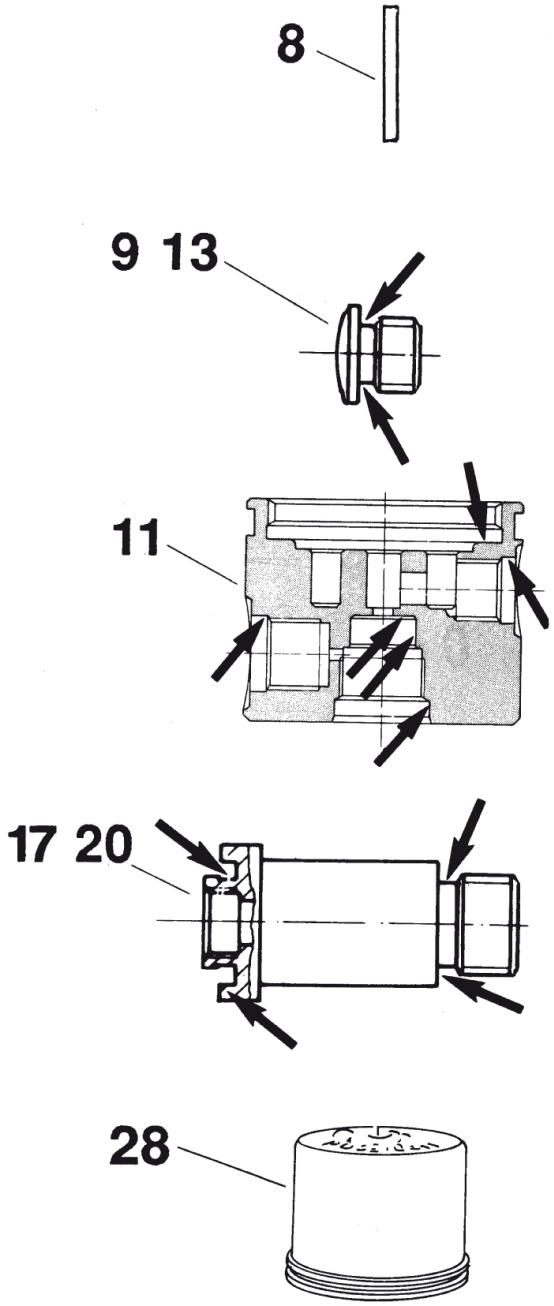
Remove the o-ring (14) with an o-ring remover. Make sure that the sealing surfaces are not damaged.





Remove the blind screws (9) and (13) with a 5 mm Allen wrench. Remove the o-rings with an o-ring remover. Make sure that the sealing surfaces are not damaged.

DISASSEMBLY - 1st STAGE 3070



When servicing the regulator following parts should be replaced:

1. All o-rings
2. Diaphragm
3. Cup filter
4.Valve seat

Cleaning:
If corrosion or salt deposits are in evidence, place all metal parts in 15 percent hydro-chloric acid or in an ultrasonic washer. They should be left in the acid/ washer for about 10-15 minutes. Then, rinse the parts thoroughly and blow dry with air.

SERVICE INSTRUCTIONS

Checking:

Check the following parts very carefully. Replace even if only slightly damaged.

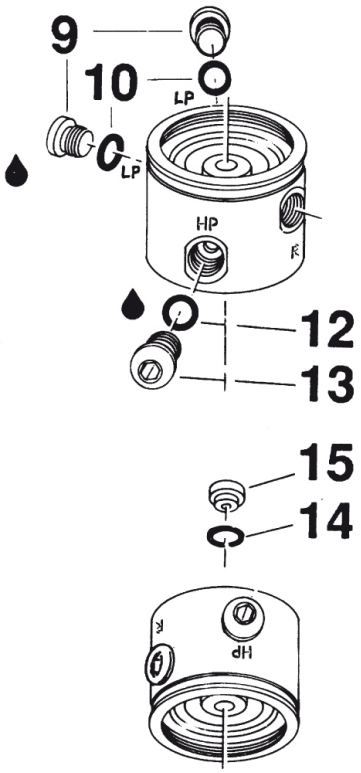
Valve needle (8). Check to make sure that the needle is straight.

The blind screws (9) and (13), check to make sure the sealing surfaces are undamaged. Also check that the threads are not damaged.

The valve housing (11), check to make sure the threads and also the sealing surfaces for the o-rings are undamaged.

The connections (17) or (20), check to make sure the sealing surfaces for the o-rings are undamaged.

ASSEMBLY - 1st STAGE 3070



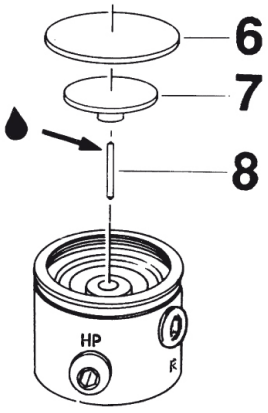
Lubricant:

Grease:

Install the o-ring (10) on the blind screws (9), low pressure supply and the o-ring (12) on the blind screw (13), high pressure supply. Lubricate the blind screws and the o-rings.

Screw in the blind screws in the LP-HP outlets. Use a 5 mm Allen wrench an tighten hard.

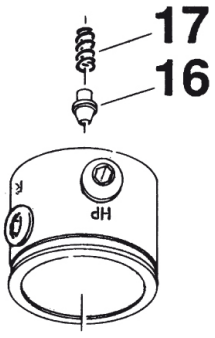
Install the o-ring (14) on the valve seat (15) and then install the valve seat with a seat drift.



Lubricate the point of the valve needle (8) and install it in the lower diaphragm center (7). (The grease will help retain the needle on the lower diaphragm center during the assembly process).

Install needle (8) and center (7) in the valve housing.

Press the diaphragm (6) into the groove of the valve housing.Use a blunt-pointed instrument to set it firmly in place.



NOTE:

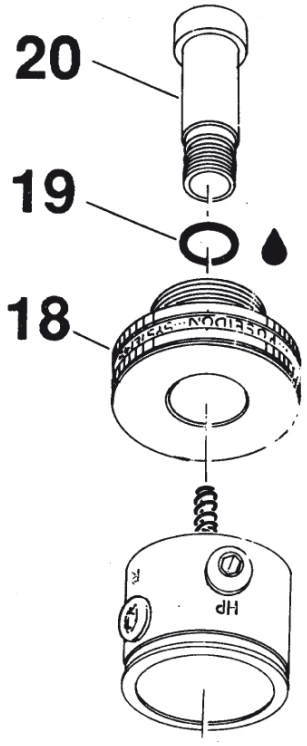
The diaphragm (6) must be replaced on every removal.

Reverse the valve housing.

Install the valve piston (16) on the valve needle.

Install the spring (17) on the valve piston.

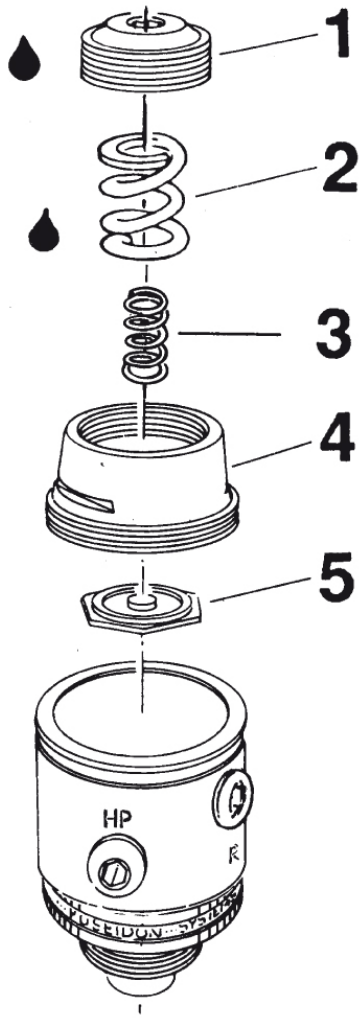
ASSEMBLY - 1st STAGE 3070



Install the o-ring (19) on the connection housing (20). Lubricate the o-ring and the thread

Install the wheel (18) on the connection (20).

Screw the wheel connection assembly into the valve housing assembly with a 6 mm Allen wrench. Reverse the valve housing. Check the movement of the valve piston by pressing hard on the diaphragm.The movement should be about 1.5 mm (1/16”).



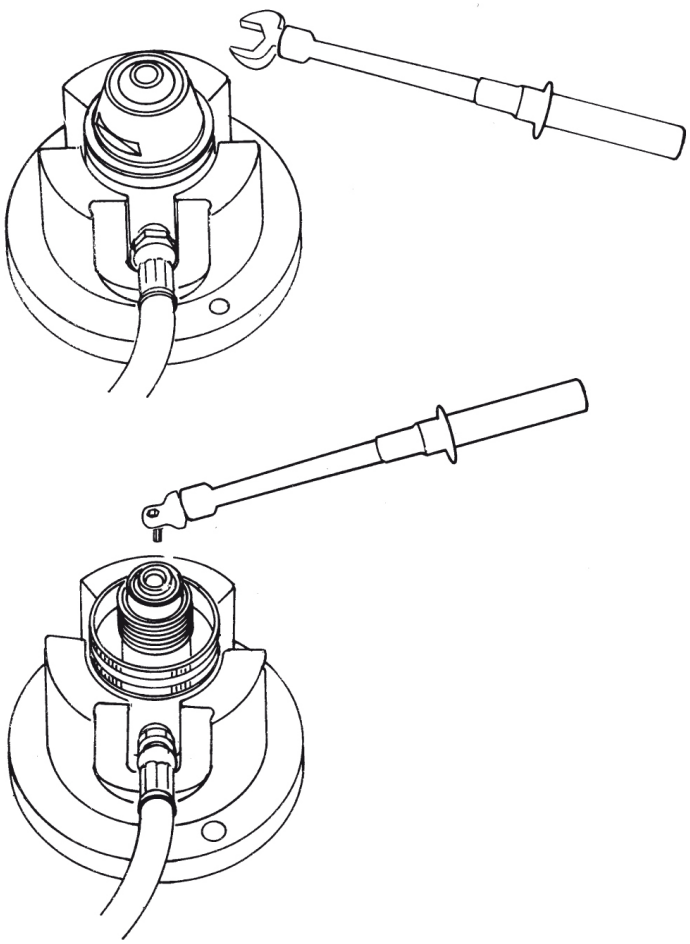
Place the upper diaphragm center (5) on the diaphragm in the valve housing.

Screw the cover (4) into the valve housing.

Lubricate both ends of the spring (2) and (3). Lubricate the threads on the pressure adjusting screw(1).

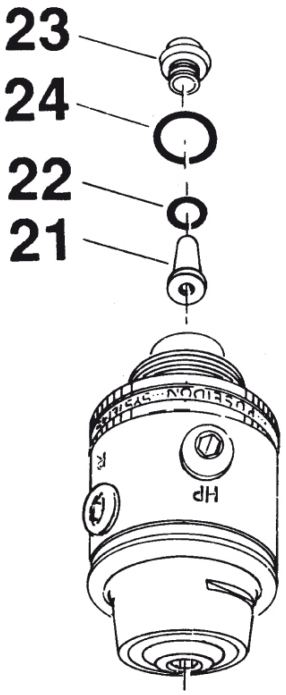
Tighten the pressure adjusting screw about 5 turns with a 6 mm Allen wrench.

ASSEMBLY - 1st STAGE 3070



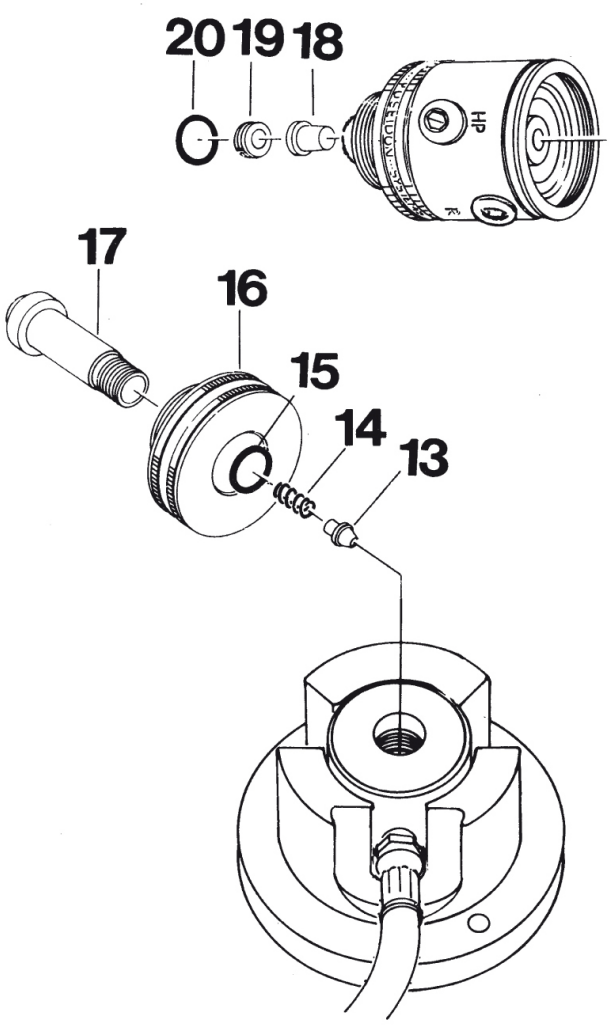
Place the stage assembly in the fixture. Tighten the valve housing cover with a 27 mm crowsfoot and the connection with a 6 mm Allen wrench. use a torque wrench to achieve 28-30 Nrn (20-22 lbf.ft) of torsion.

IMPORTANT NOTE: Use the right bits: To all first stages with wheel connection, bits No. 3119 (length 40 mm) should be used.



Install the o-ring (22) on the cup type 21), then install the locking screw and o-ring (23). Tighten with a 6 mm Allen wrench.

DISASSEMBLY - OLD 1st STAGE 2305



Remove the o-ring (20) with an o-ring remover. Make sure the sealing surfaces are not damaged.

Remove the locking screw (19) with a 8.5 mm screwdriver. Remove the cup type filter (18).

Place the first stage housing in the fixture. Remove the connection (17) using a 6 mm Allen wrench.

Remove the o-ring (15) with an oremover. Make sure the sealing surfaces are not damaged.

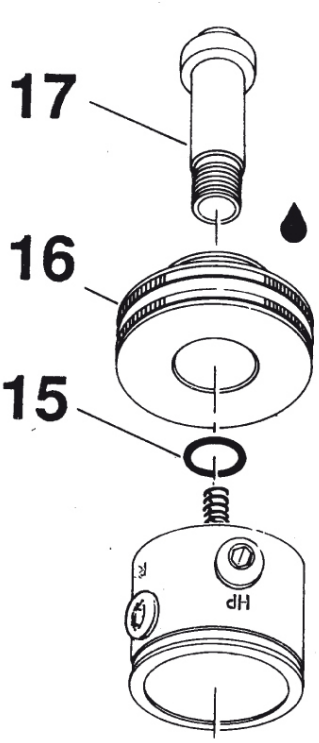
Remove the wheel (16).

Remove the spring (14) and the valve piston (13).

Disconnect the low pressure hose from the first stage valve with a 13 mm openend wrench.

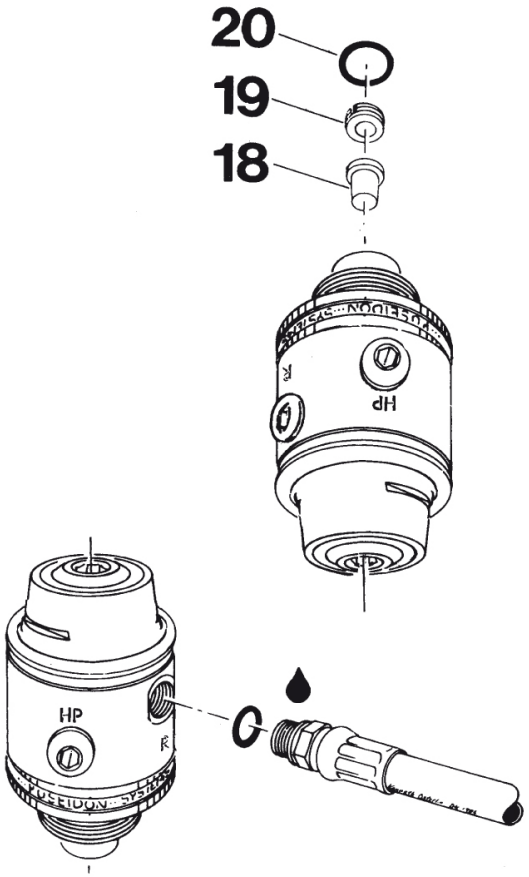
Remove the o-ring from the low pressure hose. Make sure the sealing surfaces are not damaged.

ASSEMBLY - OLD 1st STAGE 2305



Install the wheel (16) on the connection (17). Install the o-ring (15) on the connection (17). Lubricate the o-ring and the thread

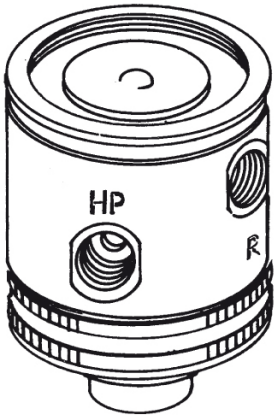
Screw the wheel connection assembly into the valve housing assembly with a 6 mm Allen wrench. Reverse the valve housing. Check the movement of the valve piston by pressing hard on the diaphragm.The movement should be about 1.5 mm (1/16”).



Install the cup filter (18) and the locking screw (19) with a 8.5 mm screwdriver. Install the o-ring (20).

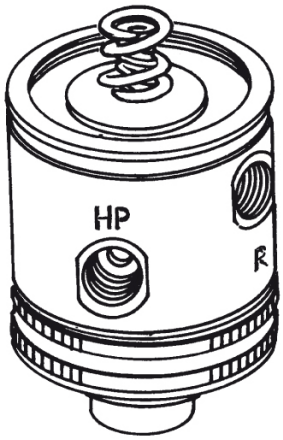
Install the o-ring (9) on the LP hose. Lubricate the o-ring and the thread.Tighten the hose nipple with a 13 mm openend wrench.

ASSEMBLY - OLD TYPE 1st STAGES

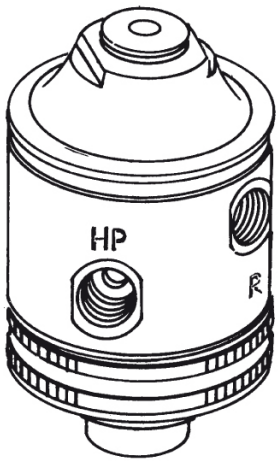


For assembly of old-type spring housing, please note the following:

The upper diaphragm centre must be centered in the mid part.



The inner and outer secondary springs shall be set in the middle.



Screw carefully on the cover with assembly screw.

Tighten the valve housing cover with a special tool No. 2318.Use a torque wrench to achieve 28 Nm (20 lbf.ft).

ADJUSTMENTS AND SETTINGS - 1st STAGE 3070 and 2305

Preparing the first stage for adjustment
Before tarting the process of setting the intermediate pressure of the first stage, it's recommended that you do the following steps.

- Un-screw the adjustment screw to the point where there is no tension on the adjustment spring.
- Connect the first stage to a regulator test box.
- Open the left hand side valve (Low Pressure) on the regulator test box and check for leaks. The intermediate pressure gauge should show 0 bar/psi intermediate pressure.
- If no leaks are found, open the right hand side vale (high pressure) and check the intermediate pressure gauge. It should still show 0 bar/psi intermediate pressure.
- Allow the first stage to sit, under high pressure, for one minute.
- Then start turning the adjustment screw, so that there is an intermediate pressure shown on the intermediate pressure gauge.
- Turn off both valves on the regulator test box.
- Depressurize the regulator.

You are now ready for the next step: Setting the intermediate pressure.

Setting the intermediate pressure
Connect the regulator to the test equipment.

Connect the regulator test low pressure gauge hose to one of the low pressure outlets.

Open the LP valve (=20 bar).

Set the secondary pressure at 11.5 bar, an intermittently purge the second stage by means of the purge button.NOTE that the second stage valve must be fully tight during this test.When the pressure gauge needle stops at the preset pressure, a maximum rise in pressure of 1 bar is allowed before the needle finally stops. Adjust the pressure to a maximum of 12 bar (the maximum pressure) taking into account any rise in pressure. If the needle continiues to move to a higher pressure reading there is a fault in the seal between the valve seat an piston, or the O-ring.

Close the LP valve, and open the HP valve (=200/300 bar - 2900/4350 psi). Purge intermittently with the purge button and check the intermediate pressure. It must not drop below 8 bar.

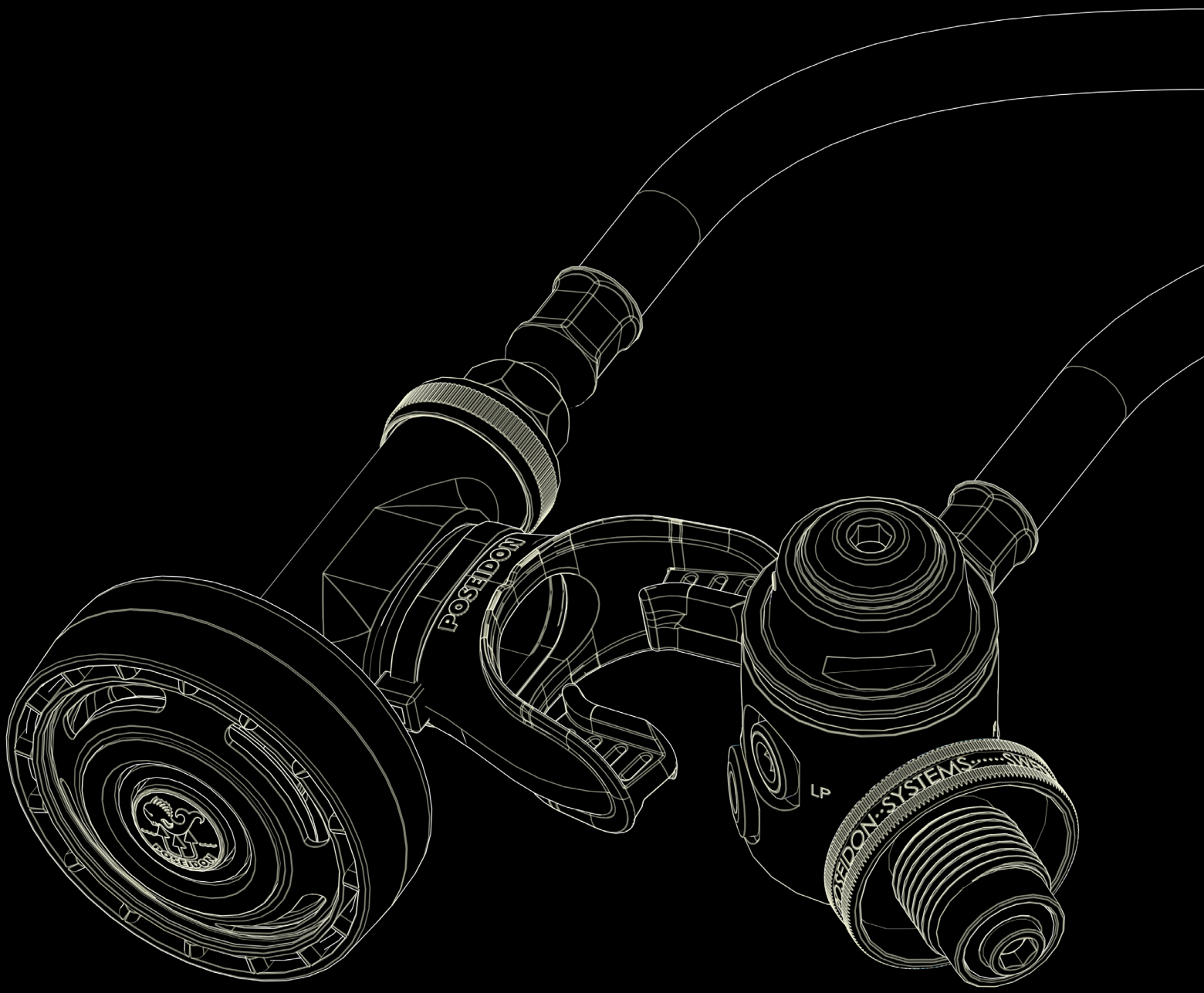
Close the HP valve and purge it fully.

The 1st stage intermediate pressure has now been set.

Intermediate pressure quick reference table.

	TANK PRESSURE		
1st stage model	**20 bar**	**M.T.P***	**Notes**
2305	12 bar / 174 psi	min. 8 bar / 116 psi	Un-balanced 1st stage
3070	12 bar / 174 psi	min. 8 bar / 116 psi	Un-balanced 1st stage

* Max Tank Pressure = Full tank



Issue 1.0

Service manual Cyklon 300 Art. Nmbr. 2980.