CYKLON X / CYKLON X METAL

Art. Nmbr 0100-100/0100-101

SERVICE MANUAL V1.1

CYKLON X / Cyklon X Metal-
Article number 0100-100 / 0100-101

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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 8515

Oil: Silicon oil Art no 3139

FUNCTION

POSEIDON breathing regulator Cyklon X and Cyklon X Metal is a two-stage regulator combination where the first stage is an Xstream and the 2nd stage is a Cyklon 5000.

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.

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 has been provided with an ejector system for the purpose of keeping inhalation effort to a minimum.

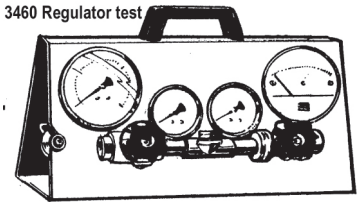
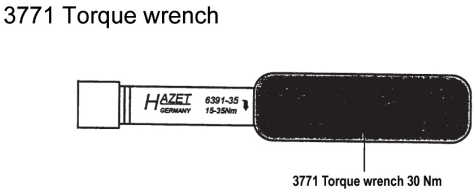
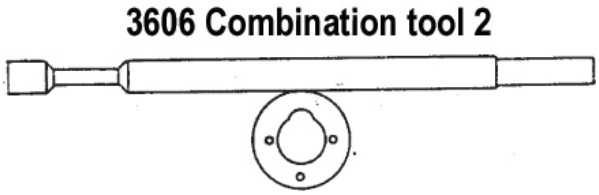
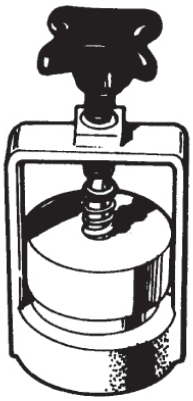
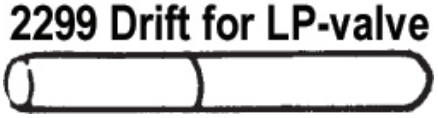
During the exhalation phase, the exhaled air goes out through the exhalation diaphragm on the opposite side of the inhalation diaphragm into the ambient medium. The exhalation diaphragm closes automatically when exhalation stops. Also, the exhalation diaphragm regulates the necessary pressure compensation 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 has a built in purge button, for manual purging.

TOOLS

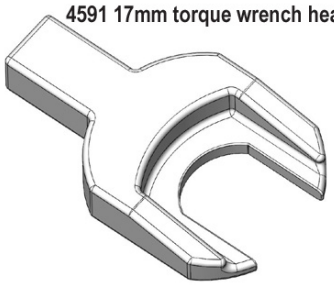
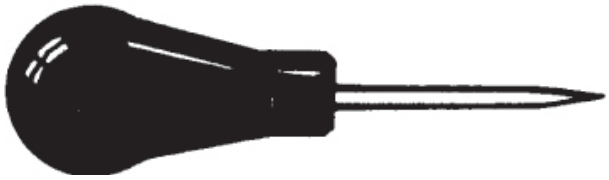
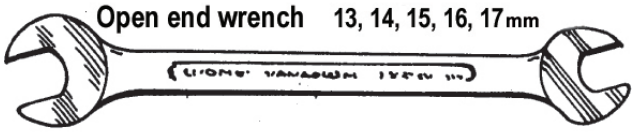
To service Poseidon Cyklon X regulators, a mix of standard tools and specific Poseidon special tools are needed. The list below shows what specific Poseidon tools and what standard tools are needed.

Poseidon specific tools

Article nmbr.	Description	Picture
2297	O-ring remover	
3460	Regulator test	
3771	Torque wrench	
3606	Combination tool 2	
2112	Assembly tool	
2299	Drift	

TOOLS

Poseidon specific tools continues.

Article nmbr.	Description	Picture
3138	Holder for drift	
8516	Regulator lubricant	
4591	Tool NV 17 Xstream	
1304	Awl	
	Allen key 2,5 mm, 5 mm	
	Open end wrenches	

CYKLON X / CYKLON X Metal Art No 0100-100 / 0100-101

BREATHING REGULATOR

Primary pressure.....Max 4351 PSI / 300 BAR
Secondary pressure.....Max 167 PSI/ 11,5 BAR
Airflow.....Approxemately 1050 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 0110-006

Description.....Xstream Cyklon
Connection threads for primary pressure.....G 5/8 -max 4350 PSI /300 bar accord. SS 2600/K and DIN 477/5 or yoke connection accord. SS 2603 and ANSI/CGA VI: 1987

Outlet connections:
Five outlets marked IP for second stage .....UNF 3/8'' - secondary pressure
For drysuits, buoyancy compensators, safety second stage etc.
Two outlet marked HP for pressure gauge.....UNF 7/16'' -primary pressure

SECOND STAGE VALVE Art No: 3536, 3354, 3354 M

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

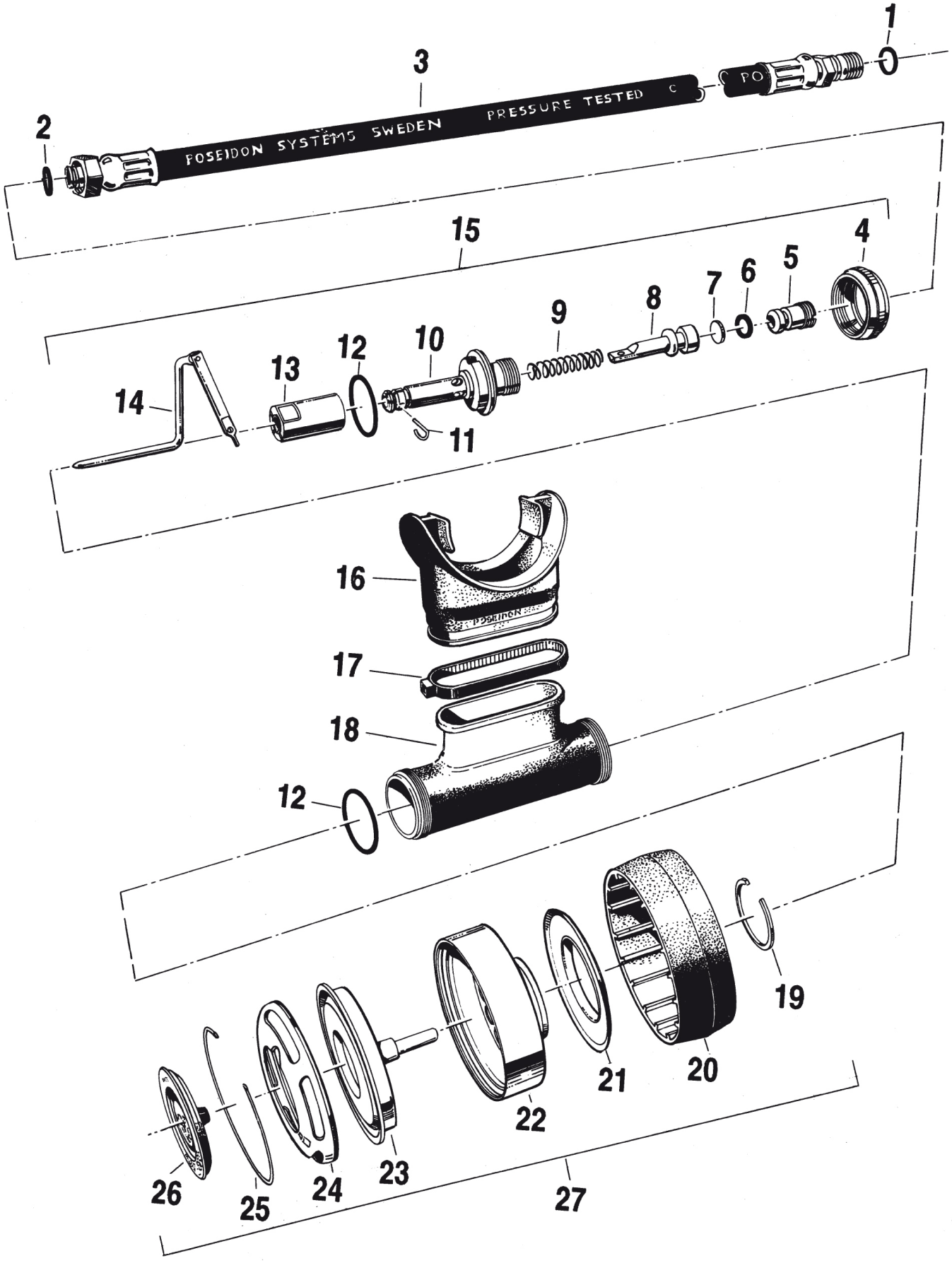
REGULATOR HOSE Art No 2946

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

Exploaded view: 2nd stage 3354, 3354 M, 3536 - Cyklon X / Cyklon X Metal



Parts list: 2nd stage 3354, 3354 M, 3536 - Cyklon X / Cyklon X Metal

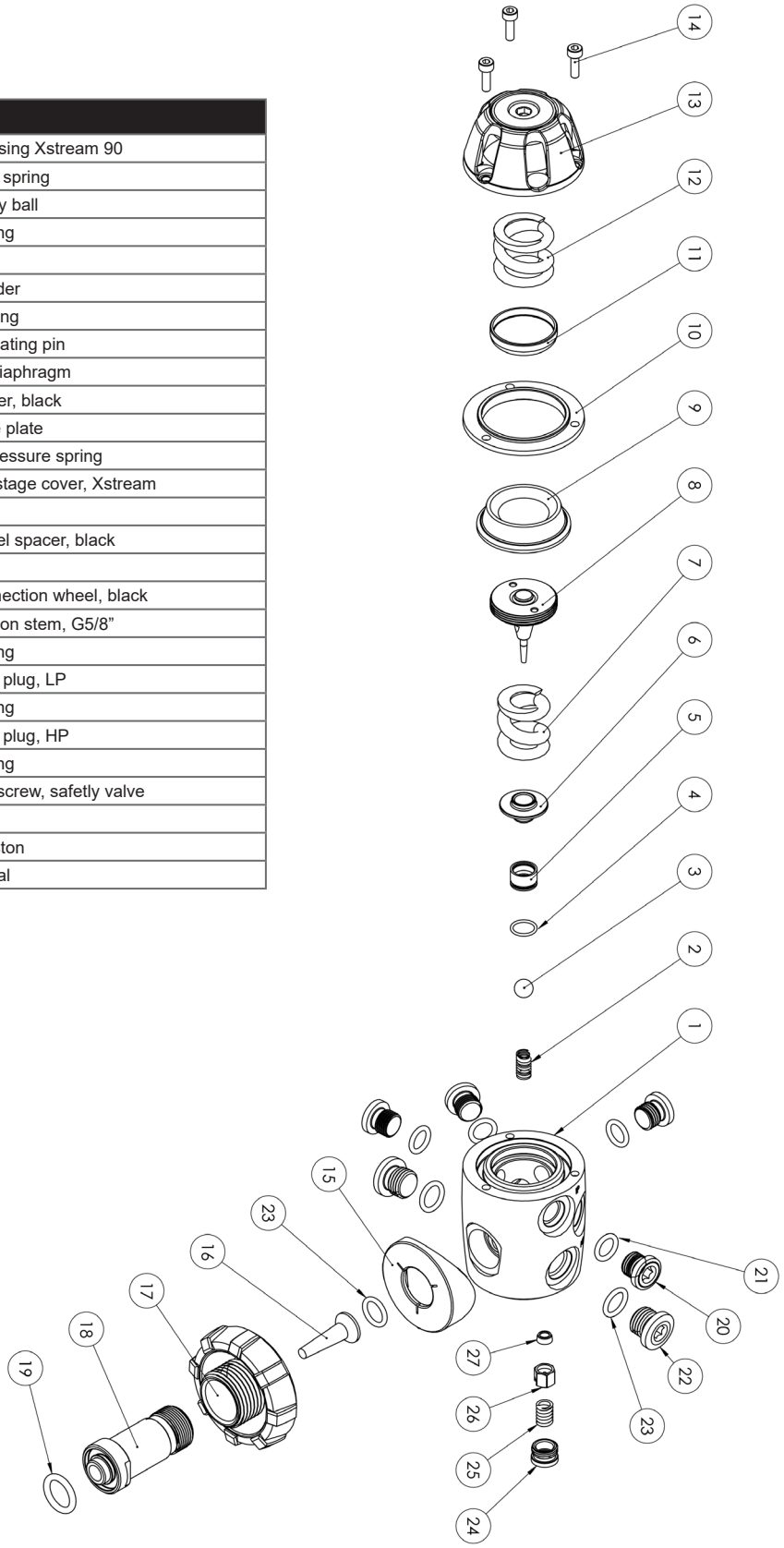
	Art. Nmbr.	Description
1	0010-353	(2782) O-ring
2	0010-009	(1156) O-ring
3	2946	LP hose 70 cm Cyklon UNF 3/8”
	2947	LP hose 90 cm Cyklon UNF 3/8”
4	1166	Locking nut
5	1165	Valve seat
6	0010-347	(1164) O-ring
7	1162	Rubber plate
8	2429	Valve piston
9	1157	Pressure spring
10	1163	Valve housing
11	1155	Lever pin
12	0010-025	(1145) O-ring
13	2307	Ejector sleeve
14	1151	Control lever
15	1150	LP valve, complete (5-14)
16	3202	Mouthpiece**
17	1167	Locking strap
18	3200 10	Mouthpiece tube, black w. logo
	3200 30	Mouthpiece tube, yellow w. logo
	1146	Mouthpiece tube, metal
19	1144	Locking ring
20	1999 10	Cover for exhale diaphragm, black
	1999 30	Cover for exhale diaphragm, Yellow
21	2579	Exhalation diaphragm, Silicone
22	1141	membrane housing
23	2577	Inhalation diaphragm
24	2001	Inhalation cover
	2001 77	Inhalation cover, Cyklon Metal**
25	1140	Locking ring
26	2004	Purge button
27	2000 10	Diaphragm housing compl. Black (19-26)
	2000 30	Diaphragm housing compl. Yellow (19-26)
	2000 77	Diaphragm housing compl. Metal (19-26)**

**No longer available as a spare part

First stage Xstream Cyklon G5/8”

0110-006 1st Stage Xstream Cyklon G5/8”

Item #	Description
1	0000-139 - Housing Xstream 90
2	4555 - Ball seat spring
3	0000-149 - Ruby ball
4	0013-349 - O-ring
5	4758 - Ball seat
6	4760 - Seat holder
7	4764 - Seat spring
8	0005-077 - Actuating pin
9	4564 - Rolling diaphragm
10	4570-BK - Barrier, black
11	4565 - Pressure plate
12	4763 - Upper pressure spring
13	0000-091 - 1st stage cover, Xstream
14	4568 - Screw
15	4579-BK - Wheel spacer, black
16	4552 - Filter
17	4576-BK - Connection wheel, black
18	4778 - Connection stem, G5/8”
19	0013-032 - O-ring
20	2679 - Blanking plug, LP
21	0013-164 - O-ring
22	2680 - Blanking plug, HP
23	0013-165 - O-ring
24	3727 - Locking screw, safetly valve
25	1180 - Spring
26	3725 - Valve piston
27	3726 - Valve seal



Servicekits

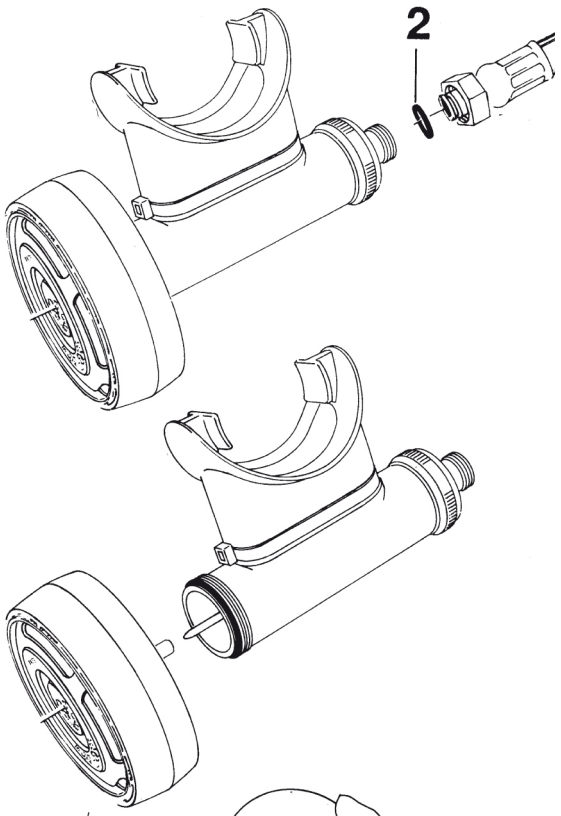
4822 Servicekit	Xstream Deep90, Dive90 1:st stage		
Included	4758	Zytel valve seat Xstream	1 pc
	4552	Cup type filter long Xstream 90	1 pc
	0011-037	O-ring	1 pcs
	0013-164	O-ring	5 pcs
	0013-165	O-ring	3 pc
	0013-392	O-ring	1 pc
	0013-394	O-ring	1 pc
	3726	Valve sealing	1 pc

3551 Servicekit	2nd stage Cyklon		
Included:	0010-025	O-ring	2 pc
	0010-009	O-ring	1 pcs
	0010-347	O-ring	1 pcs
	1162	Rubber plate	1 pc
	1167	Locking strap	1 pc

O-ring conversion table

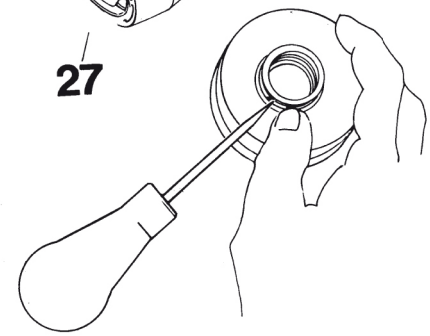
Old article number	New article number	Note
1007	0012-028	
1007 59	0011-037	
1145	0010-025	
1145 55	0013-018	
1156	0010-009	
1156 59	0011-006	
1164	0010-347	
1233	0012-007	
1233 55	0013-009	
1365	0010-177	
1368	0012-126	
1368 59	0011-270	
1561	0010-352	
1561 59	0011-275	
1562	0010-010	
1562 59	0011-007	
1651	0010-186	
1839	0010-013	
1839 59	0011-009	
1850	0010-343	
1851	0010-018	
1860	0010-112	
1860 59	0011-084	
1861	0015-627	
1861 59	0016-382	
1896	0010-002	
1896 55	0013-001	
2620	0010-122	
2640	0016-019	
2656	0010-006	
2656 59	0011-003	
2782	0010-353	
2782 55	0013-164	
2782 59	0011-276	
2809	0010-015	
2809 59	0011-011	
2856	0010-355	
2856 55	0013-166	
2856 59	0011-278	
2876	0015-019	
2876 55	0013-351	
2877	0015-104	
2918	0012-132	
2918 55	0013-165	
2918 59	0011-277	
3178	0010-054	
3396	0010-011	
3413	0010-358	
3458	0012-009	
3611	0015-157	
3728	0010-028	
3728 59	0011-023	
3734	0010-361	
3779	0015-004	
3779 59	0016-004	
2839	0013-159	
3831	0013-030	
4421 59	0016-085	
4423	0015-012	
4423 55	0013-392	
4423 59	0016-010	
4557	0015-059	
4557 59	0016-036	
4959-0-NR-7	0015-243	

DISASSEMBLY - 2nd STAGE 3354, 3354 M, 3536

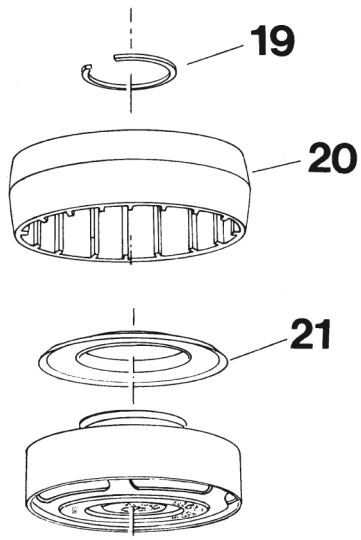


Disconnect the low pressure hose from the second stage with a 17 mm. open wrench. Remove the oring (2) with an o-rings remover.

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

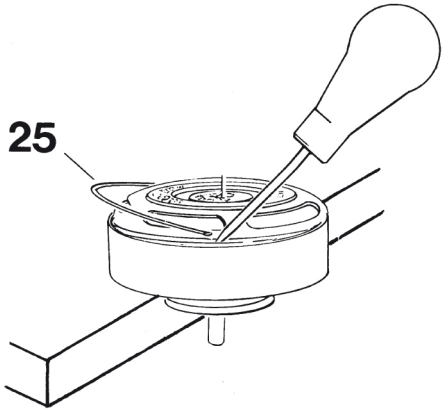


To release the exhalation cover, remove the locking ring with a small screwdriver.

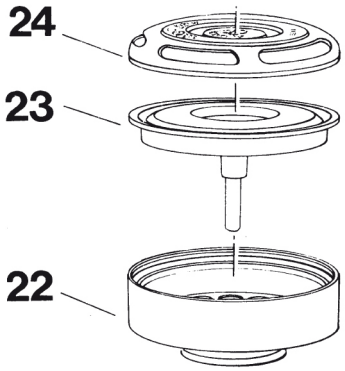


Remove the exhalation diaphragm (21).

DISASSEMBLY - 2nd STAGE 3354, 3354 M, 3536

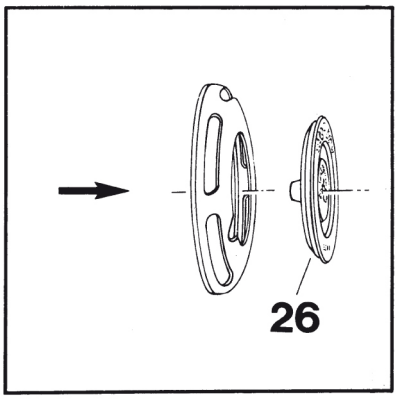


Remove the locking ring (25) with an awl. Support the diaphragm house, see diagram. Make sure that the sealing surface for the exhalation diaphragm is not damaged.

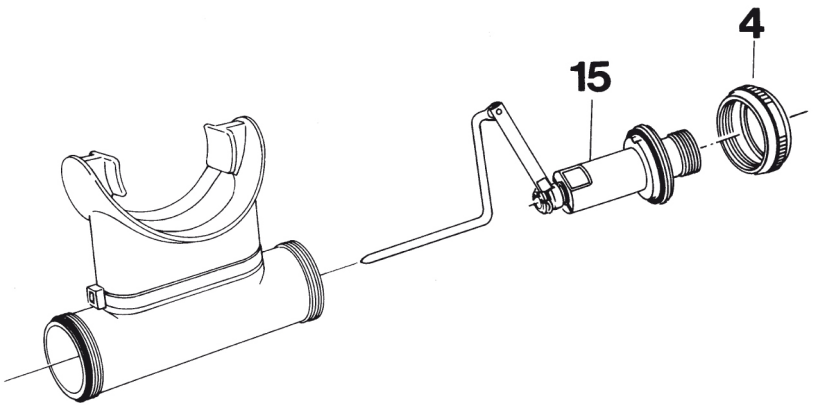


Remove the cover (24) and the inhalation diaphragm (23).

Removal: Push out the purge button

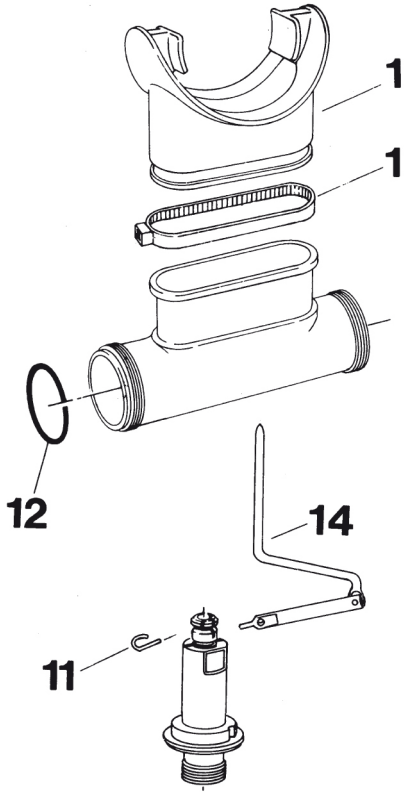


IMPORTANT! The purge button (26) should not be removed if it is undamaged



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

DISASSEMBLY - 2nd STAGE 3354, 3354 M, 3536

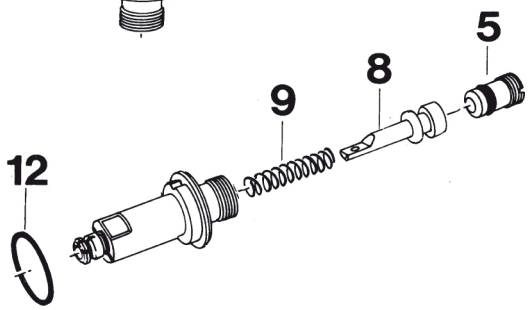


Cut off the locking strap (17) with cutting pliers.

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

Remove the lever pin (11).

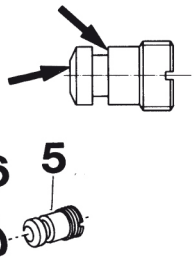
Remove the operating device (14).



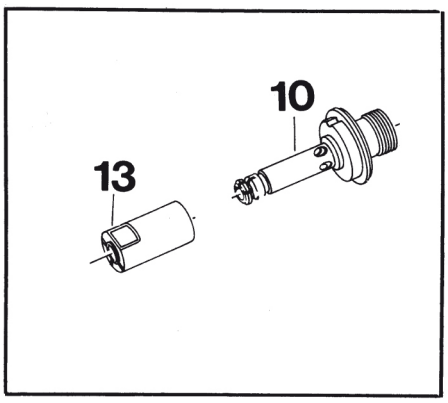
Remove the o-ring (12).

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.

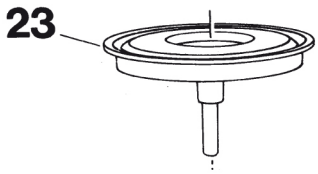


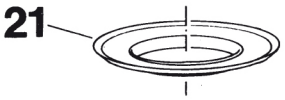
Remove the o-ring (6) with an oring remover. Make sure the sealing surfaces are not damaged.

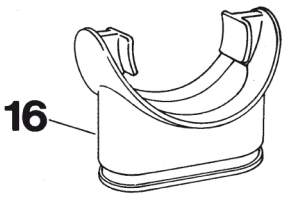


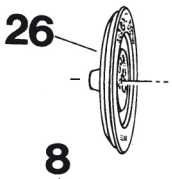
IMPORTANT! The ejector sleeve should not be removed if it is functional and undamaged. Check to see that the sleeve can be rotated to any position, but that it does not rotate freely.

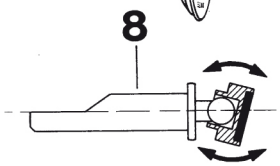
DISASSEMBLY - 2nd STAGE 3354, 3354 M, 3536

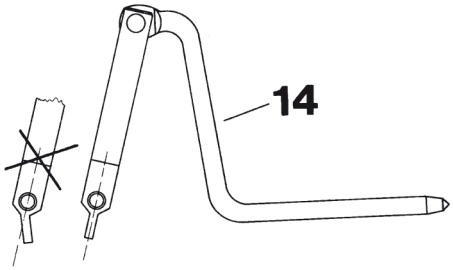


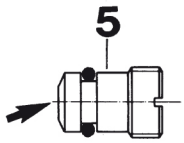


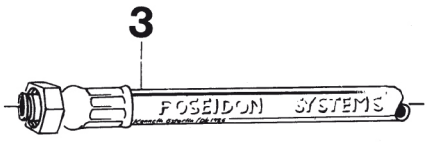


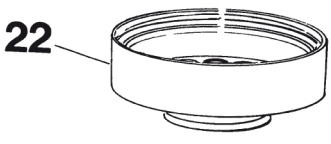












When servicing the regulator the following parts should be replaced:

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

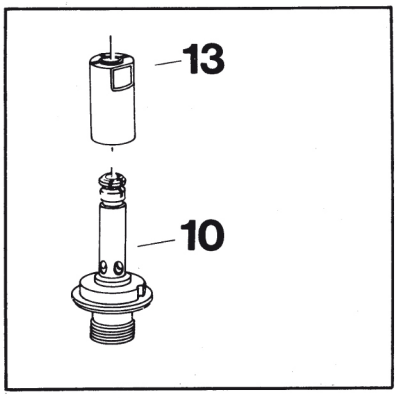
CLEANING:
If corrosion or salt deposits occurs, place all metal parts in an ultra-sonic washer or in 15% Hydrochloric acid solution for about 10 minutes.Then, rince the parts thoroughly and blow dry with air.The synthetic parts in the second stage must not be treated with solvent. They shall be cleaned 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 3354, 3354 M, 3536



Assembly:

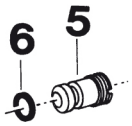
This step is only performed if the ejector sleeve has been removed.
Install the ejector sleeve (13) on the valve housing (10). Press the sleeve into the low pressure valve so the slits of the sleeve are exceedingly small.

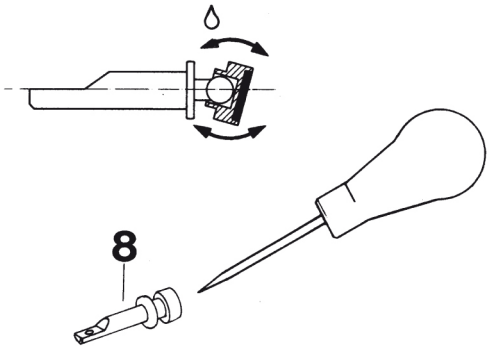
Lubricate:

Grease:

Oil:

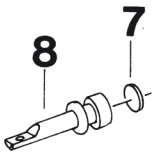
Install the o-ring (6) on the valve seat (5).Make sure that the sealing surface is not damaged.

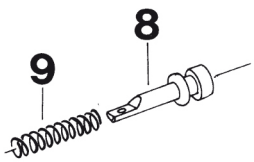




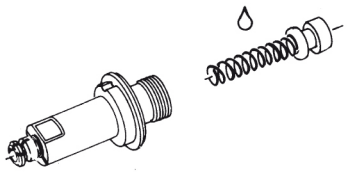
Lubricate the ball joint. Tilt the position head according to the figure to ensure that it rotates and articulates smoothly.

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



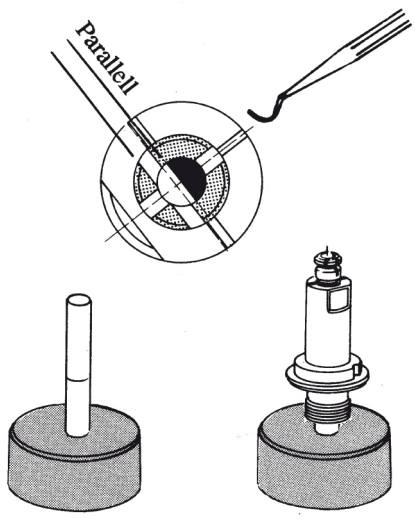


Put the spring (9) on the valve piston (8). Lubricate the spring

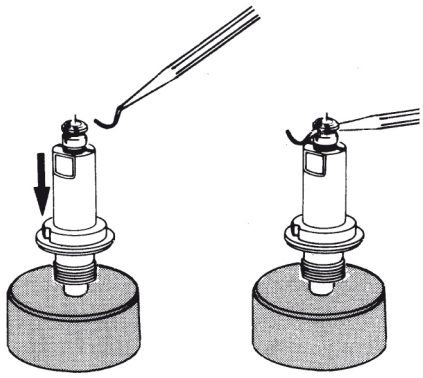


Install the valve piston/spring in the valve housing with the flat part of the valve piston upwards.

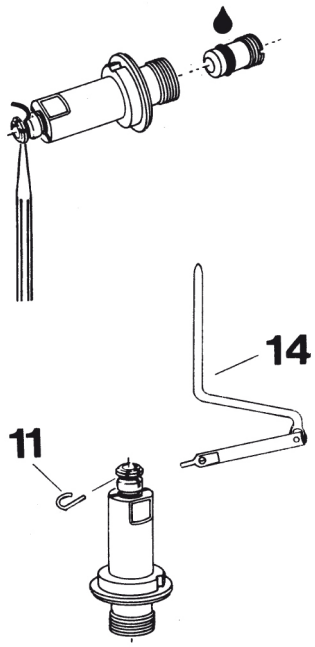
ASSEMBLY - 2nd STAGE 3354, 3354 M, 3536



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.



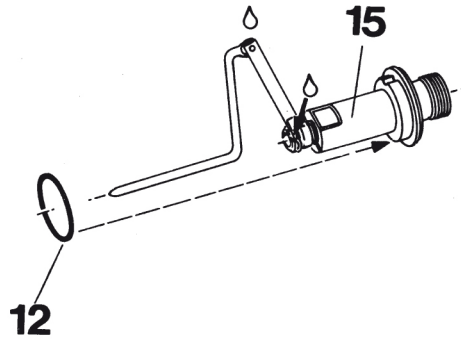
Press the valve housing down and slide an o-ring remover through the hole in the valve piston.



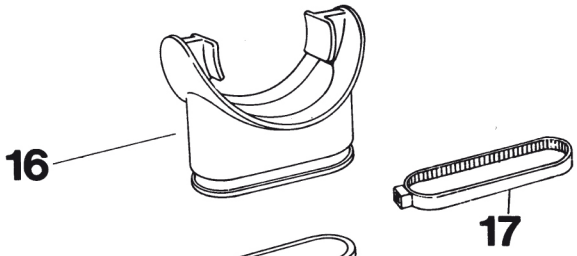
Lubricate the o-ring and the thread of the valve seat. Screw in the valve seat with an 8.5 mm screw driver until the o-ring remover comes loose.

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.

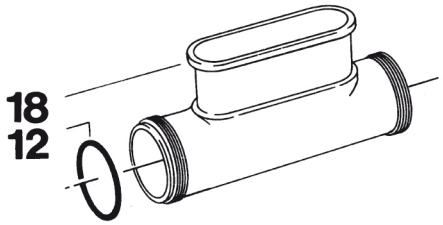
ASSEMBLY - 2nd STAGE 3354, 3354 M, 3536



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

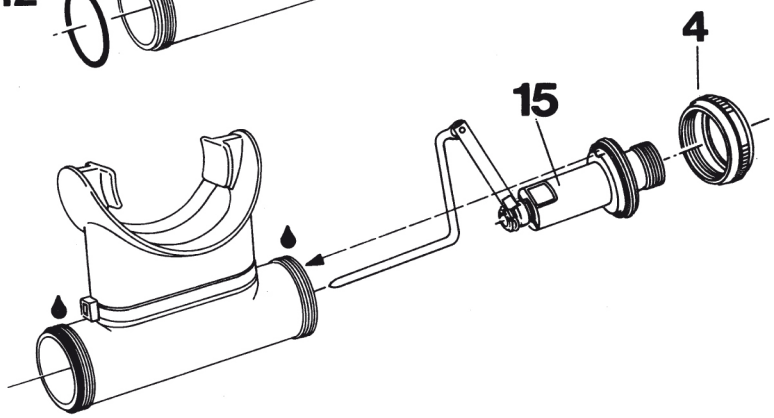


Install the mouth piece (16) and the plastic band (17). Tighten and cut off plasticband with a plier.

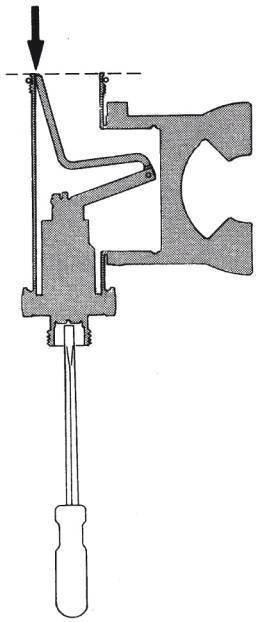


Install the o-ring .(12)

Lubricate the threads on the mouth piece

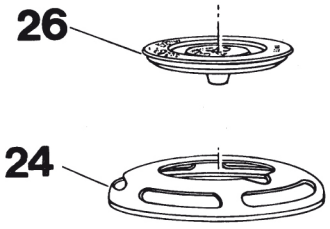


Install the low pressure valve (15) in the mouth piece tube. Set the indent notch at the top of the valve housing against the key at the top of the mouth piece tube. Screw on the connecting ring (4).

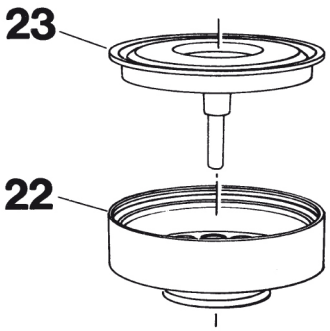


Screw the valve seat down until the highest part of the operating device is even with the level og the opening of the mouth piece tube. Hold the second stage valve vertically. See fig.

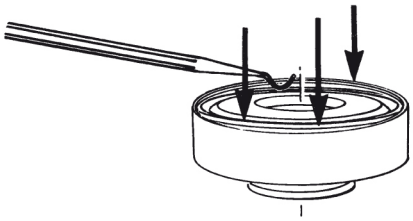
ASSEMBLY - 2nd STAGE 3354, 3354 M, 3536



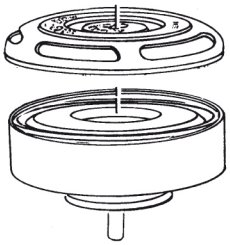
Install the purge button (26) in the cover (24).Screw the button in the cover-cavity



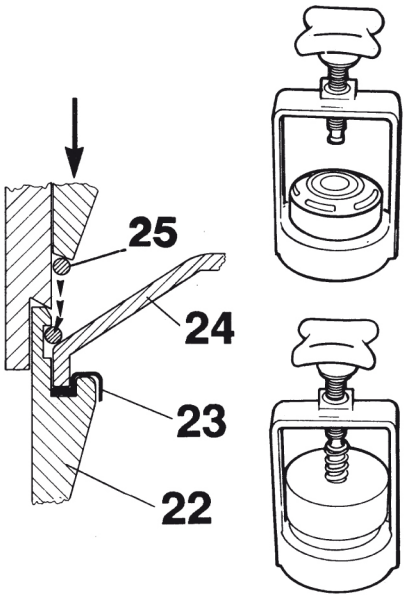
Install the inhalation diaphragm (23) on the diaphragm housing(22).



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.

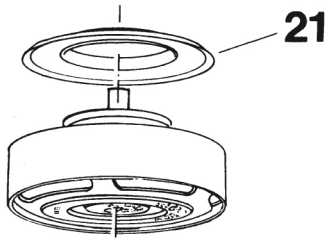
Insert the locking ring (25) into the upper groove of the press of the assembly tool. See diagram

Place the press on top on the diaphragm housing.

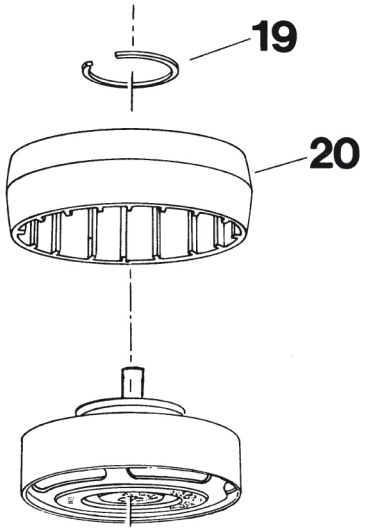
Tum the knob until you hear or feel a slight click. Continue turning until you encounter resistance, then back off the knob to release the housing.

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

ASSEMBLY - 2nd STAGE 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.

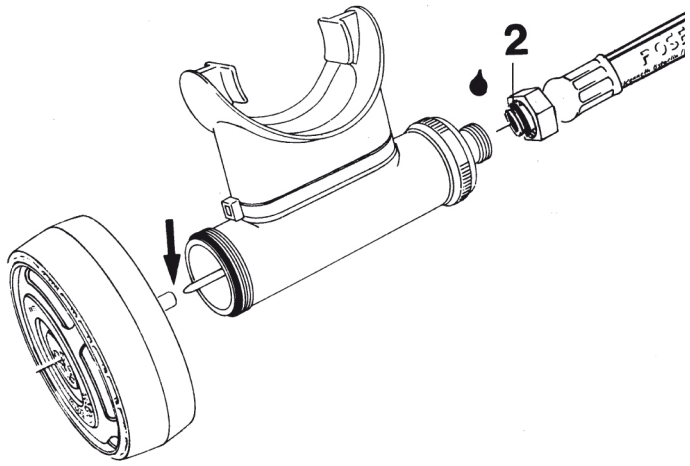


Install exhalation diaphragm cover (20) and locking ring (19).

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.

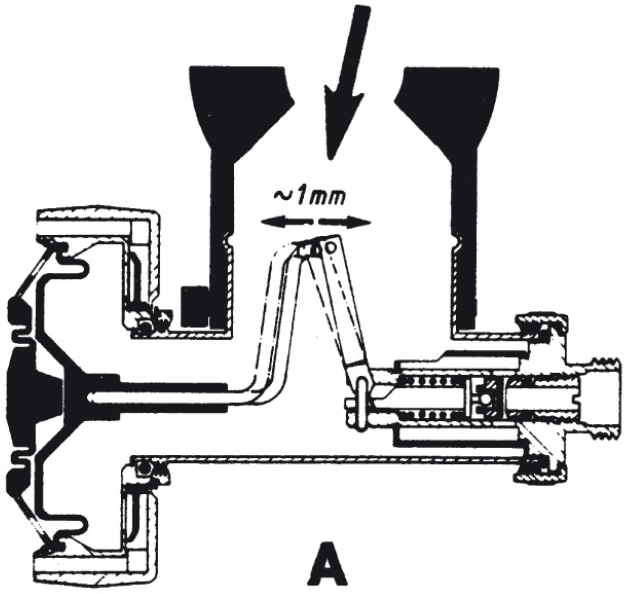
See chapter Fault-tracing scheme.



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 3354, 3354 M, 3536



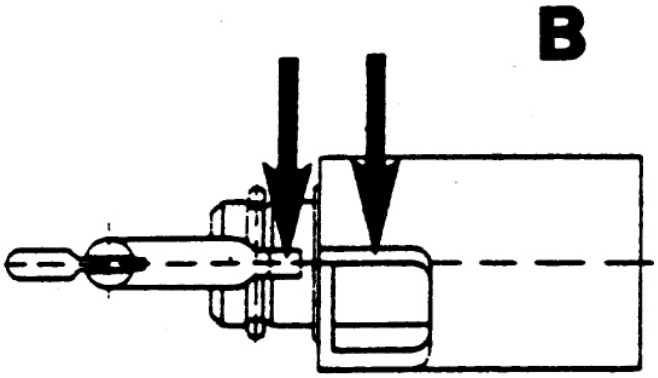
Open the LP valve. Check the secondary pressure. It should be around 11.5 bar (166 psi). Max tank pressure should be used.

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.

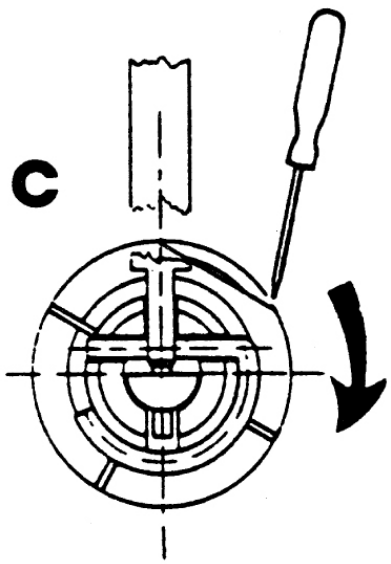
If the clearance is too small, screw the valve seat inwards (clockwise) using an 8.5 mm screwdriver. If the clearance is too large, screw the valve seat outwards (counterclockwise).NOTE that the adjustment torque is very sensitive, so you should screw carefully.The clearance can be checked only when the secondary pressure is around 11.5 bar. (166 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.

1st Stage service

The parts that needs to be replaced during a service are described in the Spare parts & Servicekits section of this handbook. Make sure that you have servicekits for the corresponding model and that you have all special tools required available. The tools required are described in the Tools section of this hand book.

For instructions on how to service the regulator follow the instruction below until you reach the ”GO TO FINAL INSPECTION” text at the end of the instruction. The instructions in this handbook must be followed in detail step by step. Negligence can cause serious injury or even death.

A service includes the following 5 steps:

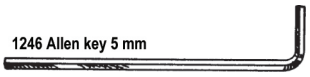
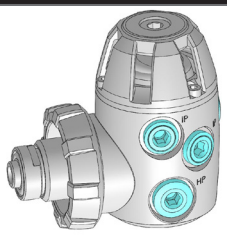
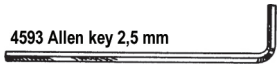
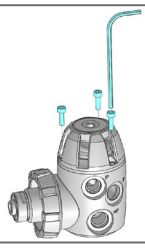
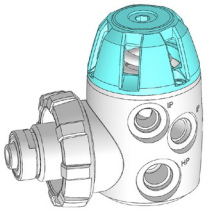
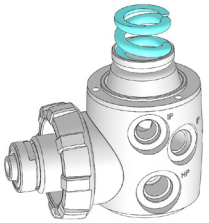
1. Complete disassembly of the first stage.
2. Inspection of disassembled parts.
3. Cleaning prior to assembly.
4. Assembly.
5. Final inspection and adjustment.

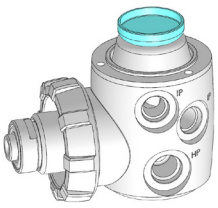
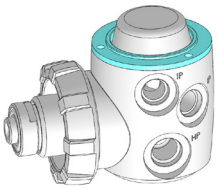
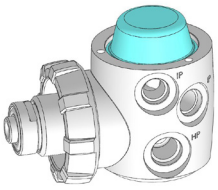
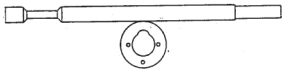
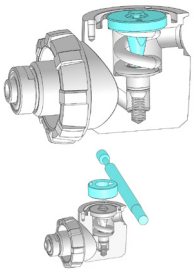
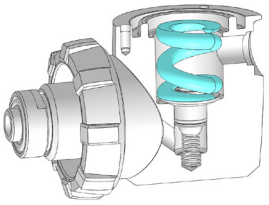
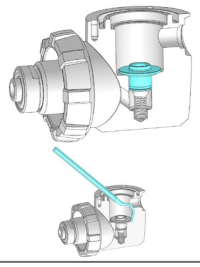
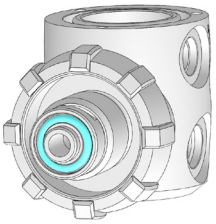
Disassembly

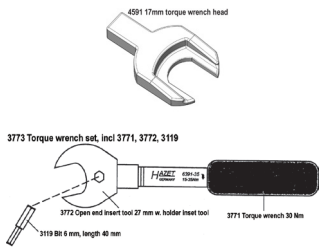
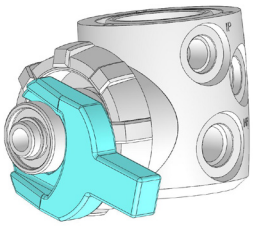
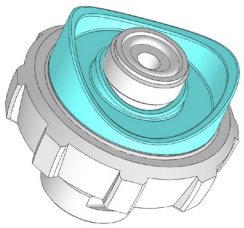
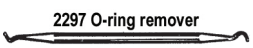
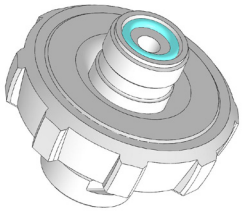
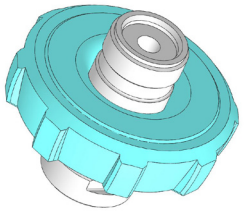
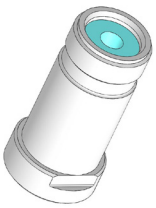
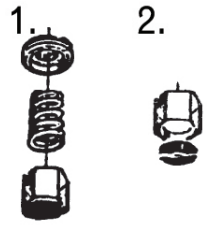
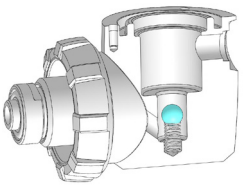
Do not disassemble the regulator in the clean room environment. All parts shall be taken to the clean room environment after inspection and after the pre-cleaning process if such is needed. Otherwise you risk to contaminate the clean room environment. New parts should be stored in it’s original packing until it is time for assembly.

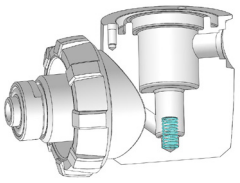
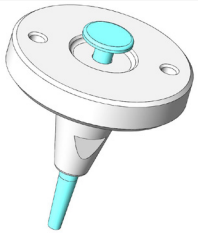
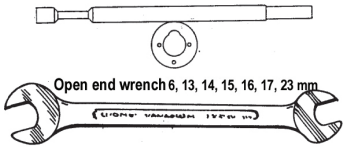
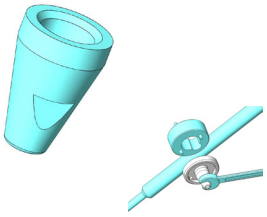
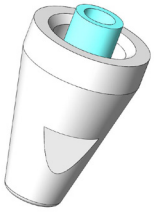
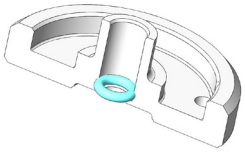
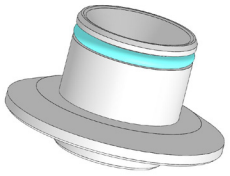
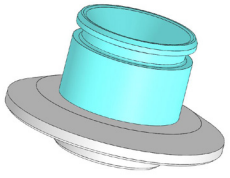
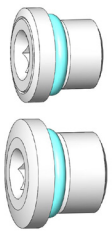
To remove o-rings, ONLY use o-ring remover tool 2297. Make sure not to damage o-ring and sealing surfaces!!

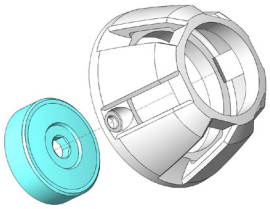
Xstream first stage

Step	Parts	Tools/Instructions	Replace	Picture
1	2680 Blindscrew UNF 7/16” 1 or 2 pcs 2679 Blindscrew UNF 3/8” 2, 3 or 5 pcs			
2	4568 Screw M3x10 Xstream 3 pcs			
3	0000-140 Cover Xstream first stage chrome 0000-141 Adjustment screw chromed			
4	4763 Press. spring 1.stage Xstream			

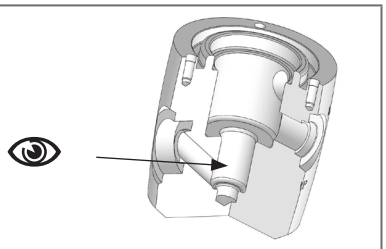
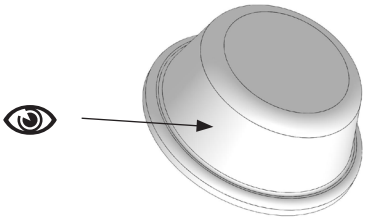
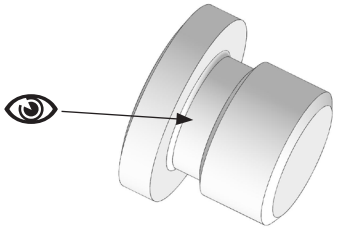
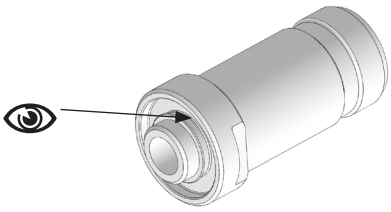
Step	Parts	Tools/Instructions	Replace	Picture
5	4565 Pressure plate 1.stage Xstream			
6	4570-BK Barrier 1.stage Xstream black			
7	4564 Roll. diaphragm 1.stage Xstream	Only use fingers. Tools may puncture the diaphragm		
8	Pin guide assembly	3606 Combination tool 2 		
9	4764 Valve seat spring Xstream			
10a	4760 Valve seat holder Xstream 4758 Zytel valve seat Xstream	2297 O-ring remover 		
10b	4760 Valve seat holder Xstream 4758 Zytel valve seat Xstream	If stuck, pressurized air through the connection stem will make the seat and seat holder come lose.		
16	0011-037 O-ring (Deep90 EAN40)	2297 O-ring remover 		

17	4778 Conn. stem 1.stage 90 Xstream			
18	4576-BK Line protector Xstream, black			
19	0013-165 O-ring (Deep90 EAN40)			
20	4576-BK Wheel G5/8” Xstream, black			
21	4552 Cup type filter long Xstream 90			
	Over pressure valve (only 1st stages with a built in OP valve) 3726 Valve sealing 3725 Valve piston 1180 Pressure spring 3727 Locking screw	1. Remove the locking screw with a 4mm Allen wrench. Remove the pressure spring and the valve piston. 2. Remove the valve sealing from the valve piston with an o-ring remover.		
22	0000-149 Ruby ball, Xstream			

23	4555 Spring for ball Xstream			
24	4559 Actuating pin, Xstream			
25	4777 Lower pin guide Xstream	3606 Combination tool 2  Open end wrench 6, 13, 14, 15, 16, 17, 23 mm 6 mm		
26	4563 Pin bushing 1.stage Xstream Do not pull out nor replace the Pin bushing while servicing Dive or Deep models. This should only be done while servicing Deco, Oxygen and Duration models.	Screw in M3 screw 4568 in the pin bushing and pull out.		
27	0013-392 O-ring (EAN40)	2297 O-ring remover		
28	0013-394 O-ring (Deep90 EAN 40)	2297 O-ring remover		
29	4758 Zytel valve seat Xstream			
30	<u>On blindscrew UNF 3/8”</u> 0013-164 O-ring Deep 90 EAN40 <u>On blindscrew UNF 7/16”</u> 0013-165 O-ring Deep90 EAN40	2297 O-ring remover		

31	0000-141 Adjusting screw Chrome			

Inspections

1	0000-139 Housing 1:st Stage Xstream, Chrome	1. Check sealing surfaces	
3	4564 Roll.diaphragm 1.stage Xstream	1. Check for wear and tear	
4	2680 Blindscrew UNF7/16 2679 Blindscrew UNF3/8,	1. Check O-ring sealing surfaces	
5	4778 Conn. stem 1.stage 90 Xstream	1. Check O-ring sealing surfaces	

Cleaning

Xstream Cyklon Cleaning

⚠ Make absolutely sure Hydrochloric acid is NOT poured into the ultra-sonic cleaner. It would then destroy the ultra-sonic cleaner and the parts attempted to be cleaned.

If corrosion or salt deposits occurs on metallic parts, immerse part in concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes or clean them using an ultra sonic cleaner. Then rinse them thoroughly in fresh water and blow them dry with air. The synthetic parts must not be treated with solvents and must only be cleaned with fresh water.

*Hempocid=Acid Liquid detergent containing phosphoric acid (5-10%) and bactericide for disinfectant cleaning

Xstream Cyklon

When cleaned rinse parts thoroughly in fresh water and blow them dry with air.

⚠ The safety of your customer and yourself depends on you carefully and strictly following these instructions. Negligence in any step can cause serious injury or even death.

⚠ Keep hands and tools clean and free from grease, except for what is required and stated in this manual.

Preparations and Pre-cleaning

1. These preparations and the pre-cleaning shall NOT be conducted in a clean room, since it may then contaminate the clean room.
2. If any part is visibly contaminated, it shall be pre-cleaned.
3. Only undertake the pre-cleaning if you are sure you can move on to the cleaning stage immediately after. If the parts dry between the two stages of operation, undesirable deposits can be left on part surfaces.
4. Use IPA and a toothbrush to agitate away all visible contaminants. Rinse part(s) in municipal running water until all visible soil, particulate and cleaning agent is removed. When using IPA make sure you have sufficient ventilation. Please refer to the safety instructions of the IPA.
5. Use air of any quality to blow dry.

THE PROCESS BELOW SHOULD BE PERFORMED OUTSIDE A CLEANROOM AREA

Cleaning

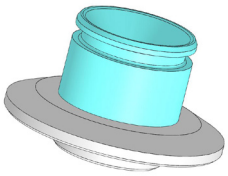
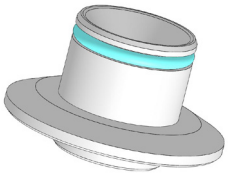
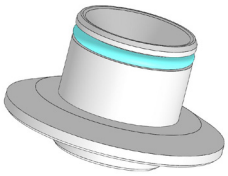
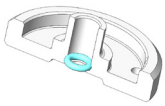
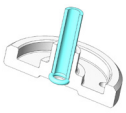
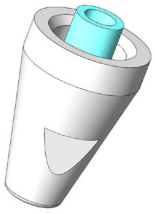
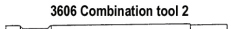
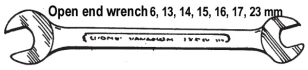
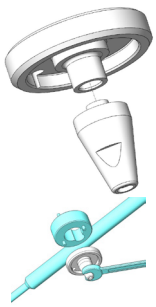
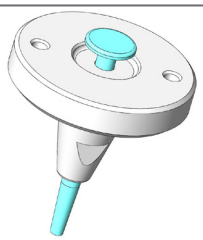
1. Wash your hands before this cleaning process.
2. Always ensure the UltraSonic cleaner is absolutely clean inside
3. Fill the UlraSonic cleaner with ultra-sonic cleaning liquid and water in the ratio 1:5.
4. Let the UltraSonic cleaner reach its working temperature 60-70°C .
5. Place all parts in the basket. The parts shall be placed so that no air is trapped inside. Turn the part a few times under the solution until no bubbles are coming from it. Ultra Sonic cleaning agitates away contaminants, why it is important to finally place the part so that contaminants can drop out freely, i.e. open holes pointing down. Ensure parts are not contacting each other, since that may reduce the cleaning effectiveness.
6. Immerse and ultra sonic clean the parts for 20-25 minutes
7. Bring all parts needed to assemble the complete regulator to the clean room. Keep the bagged 2nd stage parts and the service kit parts in their bags until immediately before assembly.

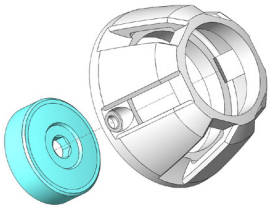
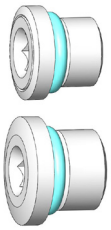
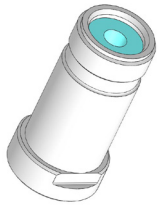
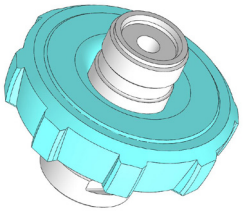
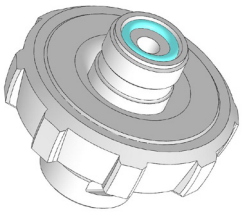
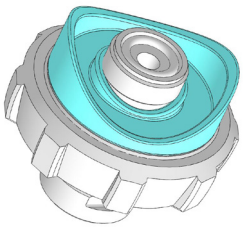
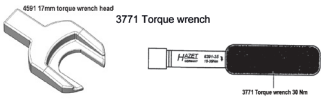
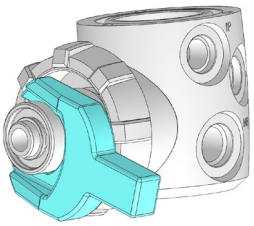
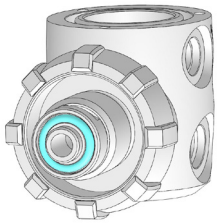
Assembly

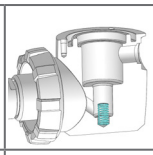
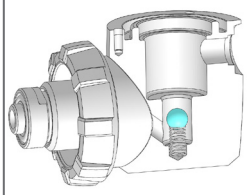
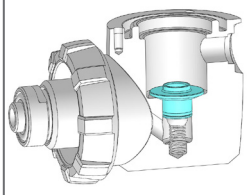
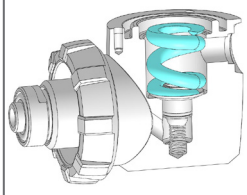
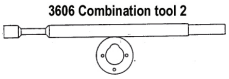
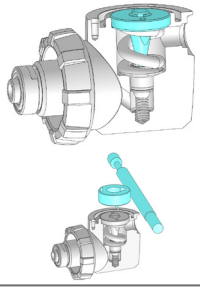
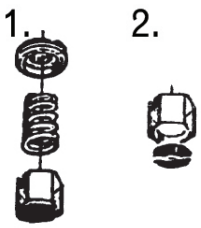
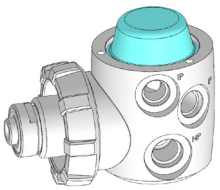
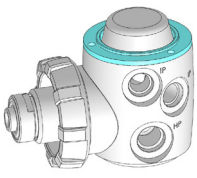
⚠ Lubricants shall be used sparingly. Excessive quantities of lubricant can trap particulate and other contaminants developing apotential fire hazard.

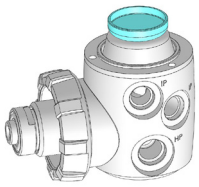
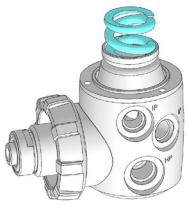
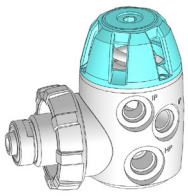
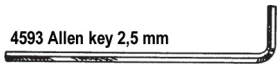
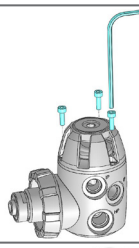
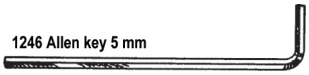
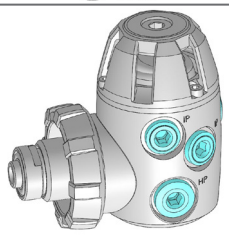
⚠ Parts marked with the ( ) symbol are parts that must be replaced at every service. New parts should be stored in it's original packing until it is time for assembly.

Xstream first stage

Step	Parts	Tools/Instructions	Replace	Picture
1	4758 Zytel valve seat Xstream		↻	
2a	0013-394 O-ring		↻	
2b	0013-394 O-ring		↻	
3	0013-392 O-ring	Use bushing 4563 to install o-ring		 
4	4763 Pin bushing 1.stage Xstream	Make sure fully to the bottom		
5	4777 Lower pin guide Xstream	  3 +/- 1 Nm Refer to section 9 for other units.		
6	4759 Actuating pin, Xstream	Lubricate pin at top section only. Leaving lower end dry. Wipe off excessive grease under the hat.		

7	0000-141 Adjusting screw			
8	<u>On blindscrew UNF 3/8”</u> 0013-164 O-ring, 5 pcs <u>On blindscrew UNF 7/16”</u> 0013-165 O-ring, 2 pcs		( )	
9	4552 Cup type filter long Xstream 90		( )	
10	4576-BK Wheel G5/8” Xstream, black			
11	0013-165 O-ring (Deep90 EAN40)		( )	
12	4576-BK Line protector Xstream, black			
13	4771 Conn. stem 1.stage 90 Xstream	 Ensure line protector is correctly positioned, with one slot facing to the bottom of the housing Torque setting 30 Nm Refer to section 9 for other units.		
14	0011-037 O-ring		( )	

15	4555 Spring for ball Xstream	⚠ Wider end facing upwards, towards the ball.		
16	0000-149 Ruby Ball Xstream Dia 7mm			
17	4760 Valve seat holder Xstream 4758 Zytel valve seat Xstream			
18	4761 Valve seat spring Xstream			
19	Pin guide assembly	8515 Oxygen grease 1  3606 Combination tool 2  1 +/- 0,2 Nm Refer to section 9 for other units.		
20	<u>Over pressure valve assembly</u> 3726 Valve sealing 3725 Valve piston 1180 Pressure spring 3727 Locking screw	1. Attach the new valve sealing to the valve piston and place the valve piston in the OP valve hole with the seal towards the housing. 2. Place the pressure spring in the valve piston and tighten the locking screw with a 4 mm Allen key.		
21	4564 Roll. diaphragm 1.stage Xstream			
22	4570-BK Barrier 1.stage Xstream black	⚠ You should see the marking "This side up" on the barrier.		

23	4565 Pressure plate 1.stage Xstream			
24	4766 Adj. spring 1.stage Xstream			
25	0000-140 Cover Xstream first stage, chrome 0000-141 Adjustment screw			
26	4568 Screw cover M3x10 Xstream 3 pcs	8516 Regulator grease  4593 Allen key 2,5 mm  1 - 2,5 Nm Refer to section 9 for other units.		
27	2680 Blindscrew UNF 7/16” 1 or 2 pcs 2679 Blindscrew UNF 3/8” 2, 3 or 5 pcs	1246 Allen key 5 mm 		

Parts marked with the ( ) symbol are parts that must be replace at every service. New parts should be stored in it’s original packing until it is time for assembly.

Setting Intermediate pressure

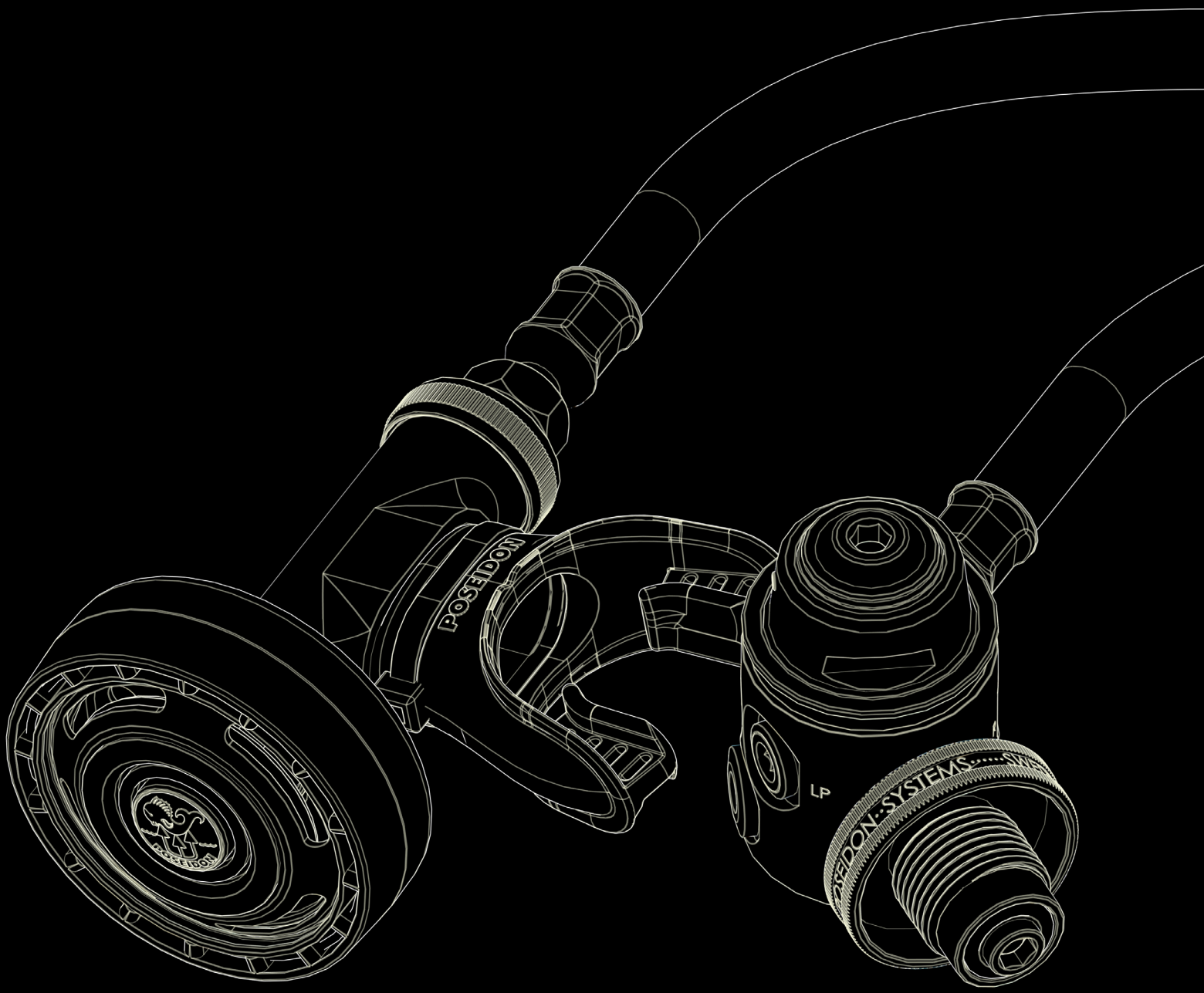
Property 1st stage	Setting SI units	Setting common units	Setting US units
P1 = Cylinder pressure	Full cylinder pressure	Full cylinder pressure	Full cylinder pressure
P3 = Empty cylinder	2 MPa	20 bar	290 psi
IP@P3	1150 kPa	11,5 bar	167 psi
IP@P1.	+150kPa / - 150 kPa (adjustable)	+1,5bar/ -1,5bar	+21.7psi/ -21,7psi

FIRST STAGE ADJUSTMENT METHOD:

1) Open cylinder valve at empty cylinder pressure (20 Bar / 290 psi)
2) Check IP
3) Adjust IP to 11,5 Bar / 167 psi
4) Purge
5) Check IP.
6) If holding at 11,5 Bar / 167 psi open valve at Full Cylinder Pressure (min 180 bar / 2900 psi)
7) Check IP. Should stay within ± 1,5 Bar / 21,7 Psi
8) Close valve
8) Purge

10. Updates

Version	Date	Updated by	Comments
1.0	2020-01-31	Poseidon	First issue
1.1	2024-10-02	Poseidon	Correction of article numbers and lubricant



Issue 1.1

Service manual Cyklon X / Cyklon X Metal Art. Nmbr. 0100-100/0100-101.