

Reparatur - Handbuch

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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 rigorous 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 – concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes. Then, rinse 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 disinfectant cleaning.*

FOLLOWING LUBRICATE IS USED:

Grease:

Gleitmo 594 Art no 8507

Siliconpasta Art no 2587

Oil:

Siliconoil Art no 3139

1. Einleitung

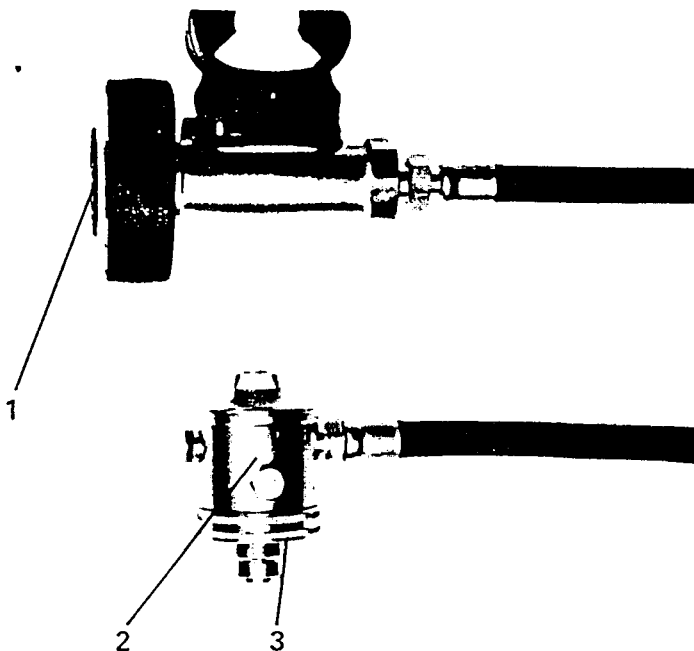
Dieses Handbuch beinhaltet im besonderen Serviceinstruktionen für Poseidon-Lungenautomaten und ist abgestimmt als ein Leitfaden für Reparatur und Service für die von Poseidon Industrie AB autorisierten Service-Stationen.

Die Anleitungen, die in diesem Buch aufgeführt sind, setzen die Anwendung von Spezialwerkzeugen voraus und basieren auf Erfahrungen. Gleiche Resultate kann man mit verschiedenen Arbeitsmethoden erreichen, aber wenn Sie den Anweisungen in diesem Handbuch folgen, erreichen Sie ein gutes Resultat in kürzester Zeit.

Typenbezeichnung

Bei allen Automaten sind die Typenbezeichnungen und eine laufende Nummer an den gezeigten Stellen angegeben:

1. Typenbezeichnung der 2.Stufe,
2. laufende Nummer des Automaten,
3. Typenbezeichnung des Reduzierventils (1.Stufe).





FUNCTION

POSEIDON breathing regulator is a two-stage regulator where the first stage is a diaphragm-actuated reducing valve, which reduces the primary pressure (Cylinder pressure) to approx. 145 PSI. The reduced pressure (the secondary 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 on it and thereby regulates all changes in pressure.

During diving in cold water, i.e., temperatures lower than +6°C (+43°Fahrenheit), 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 returns 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.

Funktionsprinzip

Der CSU 300 ist ein zweistufiger Lungenautomat. Die 1. Stufe ist ein membrangesteuertes Reduzierungsventil, das den Primärdruck (Flaschendruck) reduziert auf einen Druck von 10 -13 bar. Der reduzierte Druck (Sekundärdruck) geht dann durch den Mitteldruckschlauch auch zu der 2.Stufe (Dosierventil). Hier werden für den Bedarf und die Umgebung der Druck und der Luftbedarf automatisch geregelt. Das Reduzierventil behält immer den eingestellten Druck gegenüber der Umgebung, welches notwendig ist für die Funktion des Atemreglers. Dieses geschieht durch eine federbelastete Membranfläche, die in Verbindung mit dem umgebenden Druck steht. Die federbelastete Membranfläche fühlt automatisch die Druckänderungen und reguliert gemäß der Druckveränderung.

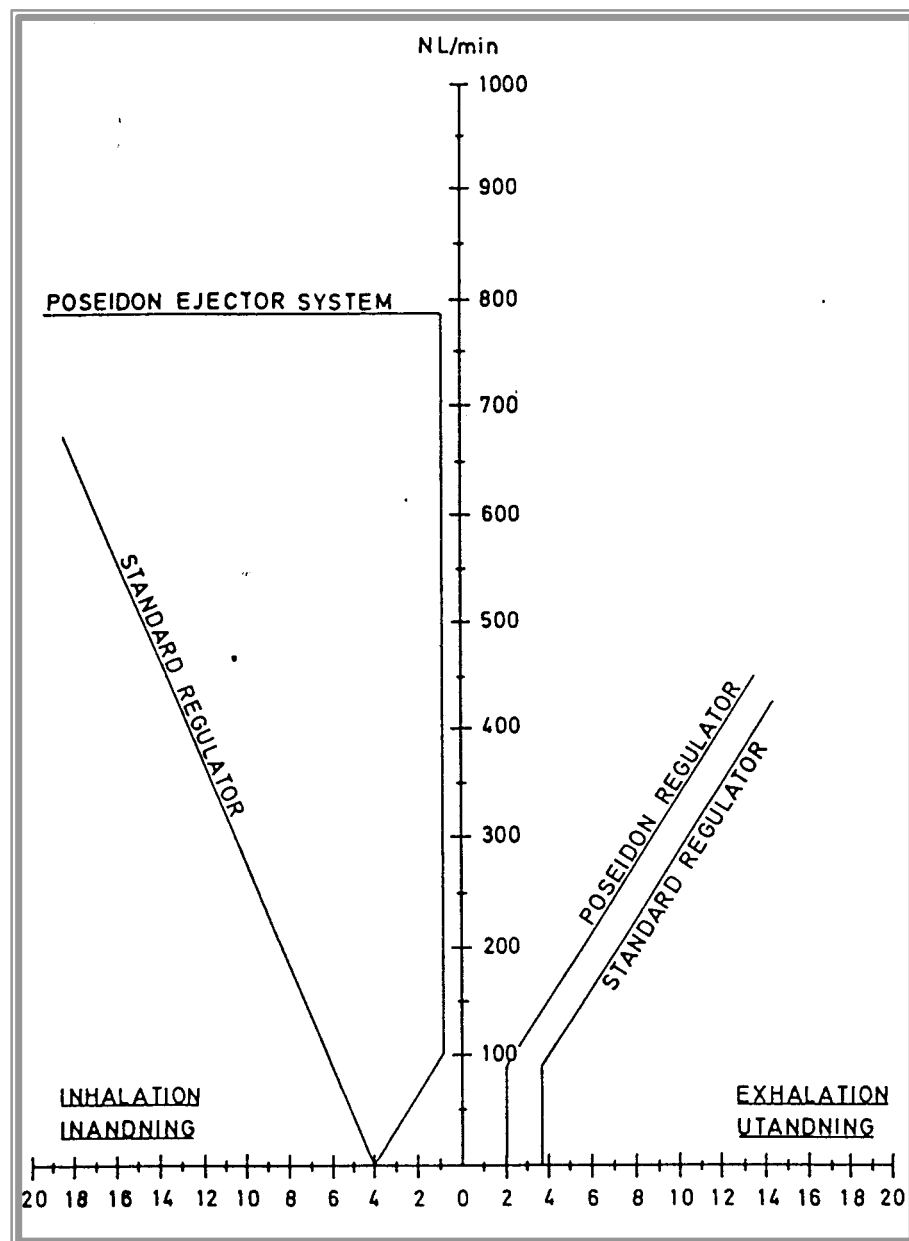
Während des Tauchens in kaltem Wasser, d.h. bei niedrigeren Temperaturen als +5°C, muß das äußere Federgehäuse des Reduzierventils mit einer Gummikappe (Frostschutzkappe) versehen werden, um einen direkten Kontakt mit dem Wasser zu vermeiden. Dieses ist notwendig, da ein kräftiges Abkühlen, welches durch die expandierende Primärluft entsteht, in der Sekundärkammer eine Vereisung hervorrufen kann. Dadurch wird die Funktion der Feder und der Membrane behindert. Die Frostschutzkappe wird dann mit Alkohol oder Glyzerin gefüllt.

Die 1. Stufe funktioniert so, daß der Unterdruck bei jeder Einatmung im Reglergehäuse ein membrangesteuertes Ventilsystem so lange betätigt und den notwendigen Luftbedarf durchläßt, wie die Einatemphase dauert. Die automatische Druckkompensation geschieht dadurch, daß die äußere Membrane in direkter Verbindung mit dem umgebenden Druck steht, womit der auf der Innenseite der Membrane ruhende Druck entsprechend des umgebenden Druckes ausgleicht (dem äußeren Druck entspricht), bevor die Membrane in ihre Ruhelage zurück geht. Die Membrane geht in ihre Ruhelage zurück und schließt die einströmende Luft ab, sowie die Einatemphase beendet ist und der Luftdruck im Regulatorgehäuse mit dem umgebenden Druck ausgeglichen ist.

Um einen so niedrigen Einatemwiderstand wie möglich zu erhalten, hat das Dosierventil ein Injektorsystem. Dieses System ist so ausgeführt, daß die einströmende Luft in der Einatemrichtungsrichtung gesteuert wird, im Gegensatz zu Lungenautomaten ohne solch ein System. Es vermeidet die sonst normalerweise vorkommende Luftturbulenz, die hinderlich wirkt und den Atemwiderstand proportional erhöht und nicht zuletzt den Luftbedarf vermehrt (siehe Diagramm).

Bei der Ausatemphase geht die ausgeatmete Luft durch die Ausatemmembrane direkt heraus in das umgebende Medium (Luft oder Wasser), und diese schließt automatisch, wenn die Ausatemphase abgeschlossen ist. Auch die Ausatemmembrane, die in direkter Verbindung mit dem äußeren umgebenden Druck steht, reguliert die notwendige Druckkompensation dadurch, daß die Membrane schließt, wenn ein Ausgleich zwischen dem umgebenden und dem in dem Regulatorgehäuse vorhandenen Druck erreicht ist. Die zur Ausatemmembrane gehörenden Teile sind speziell konstruiert, um eine hohe Kapazität und einen niedrigen Ausatemwiderstand zu erreichen.

Unten geht aus dem Diagramm hervor, welche vergleichbaren Werte zwischen CSU 300 und einem Lungenautomaten ohne Injektorsystem bestehen.



Einatemwiderstände in cm Wassersäule

Das obenstehende Diagramm gilt bei einem atmosphärischen Druck unter kontinuierlichem Fluß.



FAULT-TRACING SCHEME

This fault-tracing scheme is primarily intended to serve as a guide during servicing. It contains probable faults and remedies aimed at facilitating servicing work.

FAULT	PROBABLE REASONS	REMEDIES
First stage valve connection leaks	Connections not tightened	Tighten up
	O-rings or sealing surface defective	Replace o-rings. Replace defective parts
First stage secondary side leaks	The cover is not tightened	Tighten up
	Diaphragm defective	Replace diaphragm
Safety valve activates	O-ring defective or not lubricated	Replace o-ring and lubricate
	First stage leaks or is adjusted to high	Repair first stage Adjust secondary pressure
	Sealing surface defective	Replace low pressure valve housing or low pressure hose
Second stage valve takes in water	Diaphragm defective	Replace diaphragm
	Mouth-piece cracked	Replace mouth-piece
	O-ring not fitted or defective	Fit or replace o-ring
	Foreign object under exhalation diaphragm	Clean



FAULT

**PROBABLE
REASONS**

REMEDIES

(from the foregoing page)

**Second stage valve takes
in water**

The switch defective

Replace the switch

The o-ring under the
switch is defective

Replace the o-ring.

**Second stage valve leaks air
(regulator freeflows)**

Servo valve leaks

Replace servo valve

Sleeve in low pressure
valve defective

Replace valve insert

Filter in valve insert
is clogged

Replace valve insert

Valve tube incorrectly
adjusted

Adjust

Purge button deformed

Replace purge button

**Second stage valve
inhalation resistance too high**

Valve needle in servo valve
defective

Replace servo valve

Diaphragm defective

Replace diaphragm

Valve tube incorrectly
adjusted

Adjust



FAULT

**PROBABLE
REASONS**

REMEDIES

(from the foregoing page)

Second stage valve provides no air when purge button is activated

Valve tube incorrectly adjusted

Adjusted

Spring in purge button defective

Replace purge button

Exhalation resistance too high

Diaphragm. stuck

Clean or replace diaphragm

Air flow restricted

Filter in first stage valve clogged

Replace filter

Low pressure from first stage

Adjust pressure

Inhalation resistance is not altered when the switch is set at minus

Diaphragm cam is deformed or wrongly fitted

Fit a new switch

3. Fehlersuchtabellen

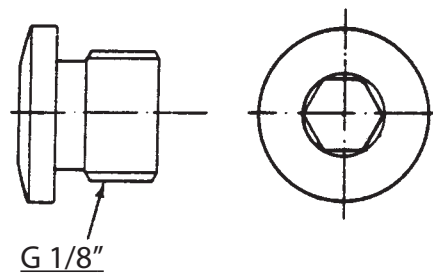
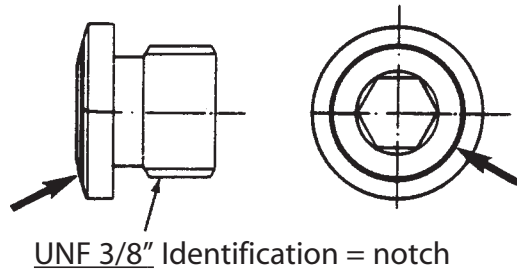
Die Fehlersuchtabellen sollen in erster Linie ein Leitfaden für den Service sein und beim Auffinden denkbarer Fehler helfen, um die Servicearbeiten zu erleichtern.

Fehler	denkbare Ursachen	Maßnahmen
Das Dosierventil (2. Stufe) läßt Luft ab.	Der Ventilkolben der Primärseite des Reduzierventils dichtet nicht.	Tausche folgende Teile aus 0-Ring Nr.1156, Ventilsitz Nr.2302 und den Ventilkolben Nr.1179
	Mitteldruck ist zu hoch.	1. Stufe ist falsch eingestellt, justiere den Mitteldruck.
	Der Ventilkolben der 2. Stufe sitzt in geöffneter Lage fest. Die Ventilplatte auf dem Ventilkolben der z. Stufe ist deformiert.	Salzablagerungen in der 2. Stufe beseitigen. Ventilplättchen Nr.1162 austauschen.
Die 2. Stufe läßt Wasser ein.	Der Ventilsitz in der z. Stufe ist deformiert. Der 0-Ring des Ventilsitzes ist deformiert. Ventilfeder der z. Stufe ist zu schwach (defekt). 2. Stufe fehlerhaft eingestellt. Einatemmembrane ist defekt.	Den Ventilsitz Nr.1165 austauschen. 0-Ring Nr. 1164 austauschen. Ventilfeder Nr. 1157 austauschen. Neu justieren. Einatemmembrane Nr.2086 (neue Nr.2577 aus Silcon) austauschen.
	Ausatmembrane ist defekt.	Ausatmembrane Nr.1982 (neue Nr.2579 aus Silicon) austauschen.
	Dichtungsfläche für Ausatemmembrane ist nicht sauber. 0-Ringe oder Dichtungsfläche am Mundstücksrohr sind defekt.	Dichtungsfläche reinigen. 0-Ringe Nr.1145 austauschen.
Anschluß am Reduzierventil (I.Stufe) ist undicht. 1. Stufe läßt Luft am Membrandeckel.	0-Ring oder die Dichtungsfläche des Hochdruckgehäuse ist defekt.	0-Ring Nr.lsp7 oder defektes Hochdruckgehäuse Nr.2175 austauschen.
	Membrane der 1. Stufe ist defekt oder der Deckel nicht richtig angezogen.	Tausche die Membrane Nr.1189 aus, oder ziehe den Membrandeckel auf 2.8 kp/m an.

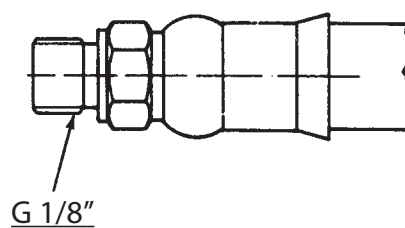
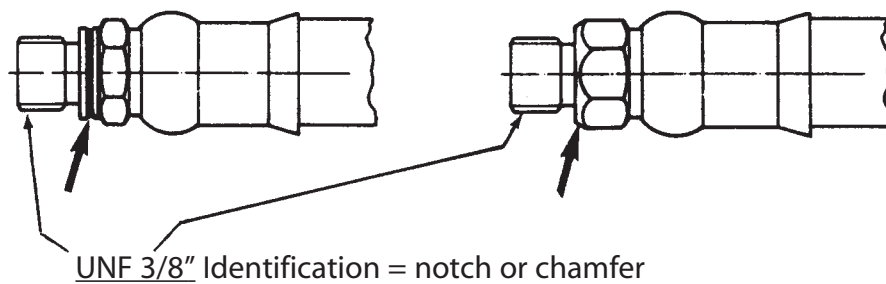
Fehler	denkbare Ursachen	Maßnahmen
Anschlüsse der 1. Stufe sind undicht.	Löse die Anschlüsse, Dichtungen fehlen oder sind defekt.	Tausche die Nylondichtungen, Nr.1013 oder die 0-Ringe bei den neuen Stufen aus.
Undichtigkeit zwischen dem Ventil- und Hochdruckgeh.	Der 0-Ring ist defekt.	Tausche den 0-Ring Nr.1233 aus.
Einatemwiderstand ist zu groß. (Zu kleiner Luftdurchfluß).	<p>-1. Stufe ist falsch eingestellt. (Mitteldruck)</p> <p>- Mitteldruckdifferenz ist zu groß, der Ventilsitz ist deformiert. - Die Injektorhülse ist falsch eingestellt. - Einatemmembrane ist defekt.</p> <p>- Salzablagerung in der 1. Stufe. - Drosselung aufgrund einer deformierten Dichtung im Regulatorauslaß "R" (nur bei alten Modellen möglich) - Hebelweg des Steuerhebels nicht voll ausgenutzt.</p>	<p>- Justiere den Mitteldruck.</p> <p>- Ventilsitz Nr.2302 austauschen. - Justiere die Einstellung der Injektorhülse Nr.2307 - Einatemmembrane Nr.2577 (alte Nr.2086) austauschen. - Reinigen - Dichtung Nr. 1013 austauschen (Neue Modelle haben 0-Ringe)</p> <p>- Justiere das Ventil der 2. Stufe einschließlich Spiel des Steuerhebels Nr.1151</p>
Ausatemwiderstand ist zu groß.	Ausatemmembrane klebt fest.	Reinigung des Sitzes und evtl. Austausch der Ausatemmembran Nr. 2579 (alte Nr. 1982)
Regulator (LA) bläst ab.	Wirkung des Injektors ist zu kräftig.	Verstellen und Justieren der Injektorhülse.



BLIND SCREWS WITH DIFFERENT THREADS



LOW PRESSURE HOSE WITH DIFFERENT THREADS





Poseidon Cyklon 300

BREATHING REGULATOR

Art. No 2980

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 resistance	Max. 20 mm of water

The above data apply when measuring at atmospheric pressure

FIRST STAGE VALVE

Art. No 3070

Description.....	Diaphragm-operated, compensated
Connection threads for primary pressure	G 5/8" -max. 4350 PSI / 300 bar
Outlet connections: Four outlets marked LP for second stage, drysuits, buoyancy compensators, hookah supply, safety second stage, etc	UNF 3/8" -secondary pressure
One outlet marked HP	UNF 7/16"-primary pressure

SECOND STAGE VALVE

Art. No 1133, 3536

Type designation	Downstream type, diaphragm actuated.
Description.....	Integral safety valve opens at approximately 203 PSI / 14 bar. Purge button for clearing.

REGULATOR HOSE

Art. No 2946

Length.....	28 inch / 70 cm
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TIGHTENING TORQUE

Primary 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 designation	Rubber cap
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2. Technische Daten CYKCLON 300

Typbezeichnung	CSU 300 - 1908
Primärdruck (Hochdruck)	max. 300 bar/4267.00 p.s.i.
Sekundärdruck (Mitteldruck)	max. 13 bar/184.90 p.s.i.
Luftleistung	min. 700 Nl/min.
Einatemwiderstand bei 700 Nl/min.	max. 40 mm/vp
Ausatemwiderstand bei 85 Nl/min.	max. 25 mm/vp

Die Daten basieren auf Messungen bei atmosphärischem Druck bei kontinuierlichem Durchfluß.

Reduzierventil (1.Stufe)

Anschlußgewinde Primärdruck	BSP R 5/8"
Adapter für spez. französ. Systeme	Bügel mit Bezeichnung "F"
Adapter für amerikan. Standard-Systeme	Bügel mit Bezeichnung "U"
Anschlußgewinde "R" für 2. Stufe	BSP R 1/8" (oder G 1/8")
Anschlußgewinde "LP" für Luftversorgung von oben usw. (alte Bezeichnung "H")	BSP R 1/8" max 13 bar/184.90 p.s.i.
Anschlußgewinde "U" für Unisuit	BSP R 1/8" max 13 bar/184.90 p.s.i.
Anschlußgewinde "HP" für UW-Manometer	BSP R 1/8" max 300 bar/4267 p.s.i.

Drehmomente

Hochdruckventilgehäuse	2.8kp/m oder 28 Nm
Ventilgehäusedeckel	2.8kp/m " 28 Nm
Anschlüsse bezeichnet mit R-LP-U-HP	1.3kp/m " 13 Nm

Dosierventil (2.Stufe)

Typ, Funktionsweise	mit dem Druck öffnend (downstream)
Arbeitsdruck	max. 13 bar/184.90 p.s.i.
Anschlußgewinde des MD-Schlauches	M14 x 1.25
Anschluß für Cressi-Vollgesichtsmaske mit Bißmundstück	Best.-Nr. 1146
Anschluß für Vollgesichtsmasken mit Gasanschl.	Best.-Nr. 2088, RD 40x1.7" DIN 3182

Mitteldruckschlauch

Schlauchlänge inkl. Anschlüssen	65 cm/25.59 Inch
Außendurchmesser	12.7 mm/0.500 Inch
Innendurchmesser	6.35 mm/0.250 Inch
Anschlußgewinde 1. Stufe	BSP R 1/8"
Anschlußgewinde 2. Stufe	M14 x 1.25
Arbeitsdruck	17.5 bar/248.90 p.s.i.

Poseidon Cyklon 5000

BREATHING REGULATOR

Art. No 2950

Primary pressureMax. 4350 PSI / 300 bar

Secondary pressureMax. 174 PSI / 12 bar

Air flowApprox. 1050 l/min

Inhalation resistance at 115 l/min.....Max. 40 mm of water

Exhalation resistanceMax. 20 mm of water

The above data apply when measuring at atmospheric pressure

FIRST STAGE VALVE

Art. No 3257, 3585

Description.....Diaphragm-actuated, balanced.

Connecting threads for primary pressureG 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:

One outlet marked R for second stage (max airflow)UNF 3/8" - secondary pressure

Three outlets marked LP for drysuits, buoyancy
compensators, hookah supply, safety second stage etc.....UNF 3/8" -secondary pressure

One outlet marked S has restricted airflow
and therefore is intended only for dry-suit or stabjacket ..Intended for first stage No. 3585
UNF 3/8" -secondary pressure

One outlet marked HP for pressure gauge.....UNF 7/16" -primary pressure

SECOND STAGE VALVE

Art. No 1133

Description.....Downstream-type, diaphragm actuated.
Integral safety opens with approximately
203 PSI/14 bar. Purge button for clearing.

REGULATOR HOSE

Length.....28 inch / 70 cm

TIGHTENING TORQUE

Primary connection20 - 22 lbf.ft / 28-30 Nm

Valve cover20 - 22 lbf.ft / 28-30 Nm

Connections marked R-LP-HP.....6 lbf.ft / 10 Nm

ANTI-FREEZE PROTECTION

Type designationArt. No 1286

TypeRubber cap

Poseidon Cyklon 5000

BREATHING REGULATOR

Art. No 3950

Primary pressureMax. 4350 PSI / 300 bar

Secondary pressureMax. 174 PSI / 12 bar

Air flowApprox. 1050 l/min

Inhalation resistance at 115 l/min.....Max. 40 mm of water

Exhalation resistanceMax. 20 mm of water

The above data apply when measuring at atmospheric pressure

FIRST STAGE VALVE

Art. No 3720, 3720 10

Description.....Diaphragm-actuated balanced with shear venturi boost. Release pressure approx. 217-247 PSI / 1,5-1,7 MPa / 15-17 bar

Connecting threads for primary pressureG 5/8"-max 4350 PSI / 30 MPa / 300 bar accord. SS 2600/K and DIN 477/5 or yoke connection accord. SS 2603 and ANSI/CGA V1: 1987

Outlet connections:

One outlet marked R for second stage (max. airflow) UNF 3/8"-secondary pressure

Three outlets marked LP for Cyklon octopus, drysuits, stadjacket.....UNF 3/8"-secondary pressure

Two outlet marked HP for pressure gauge.....UNF 7/16"-primary pressure

SECOND STAGE VALVE

Art. No 1133, 3536

Description.....Downstream-type, diaphragm actuated. Integral safety opens with approximately 203 PSI/14 bar. Purge button for clearing.

REGULATOR HOSE

Art. No 2946

Length.....28 inch / 70 cm

TIGHTENING TORQUE

Primary connection, valve cover22 lbf. ft / 30 Nm / 3,0 kpm

Connections marked R-LP-HP6 lbf.ft / 8 Nm, / 0,8 kpm

ANTI-FREEZE PROTECTION

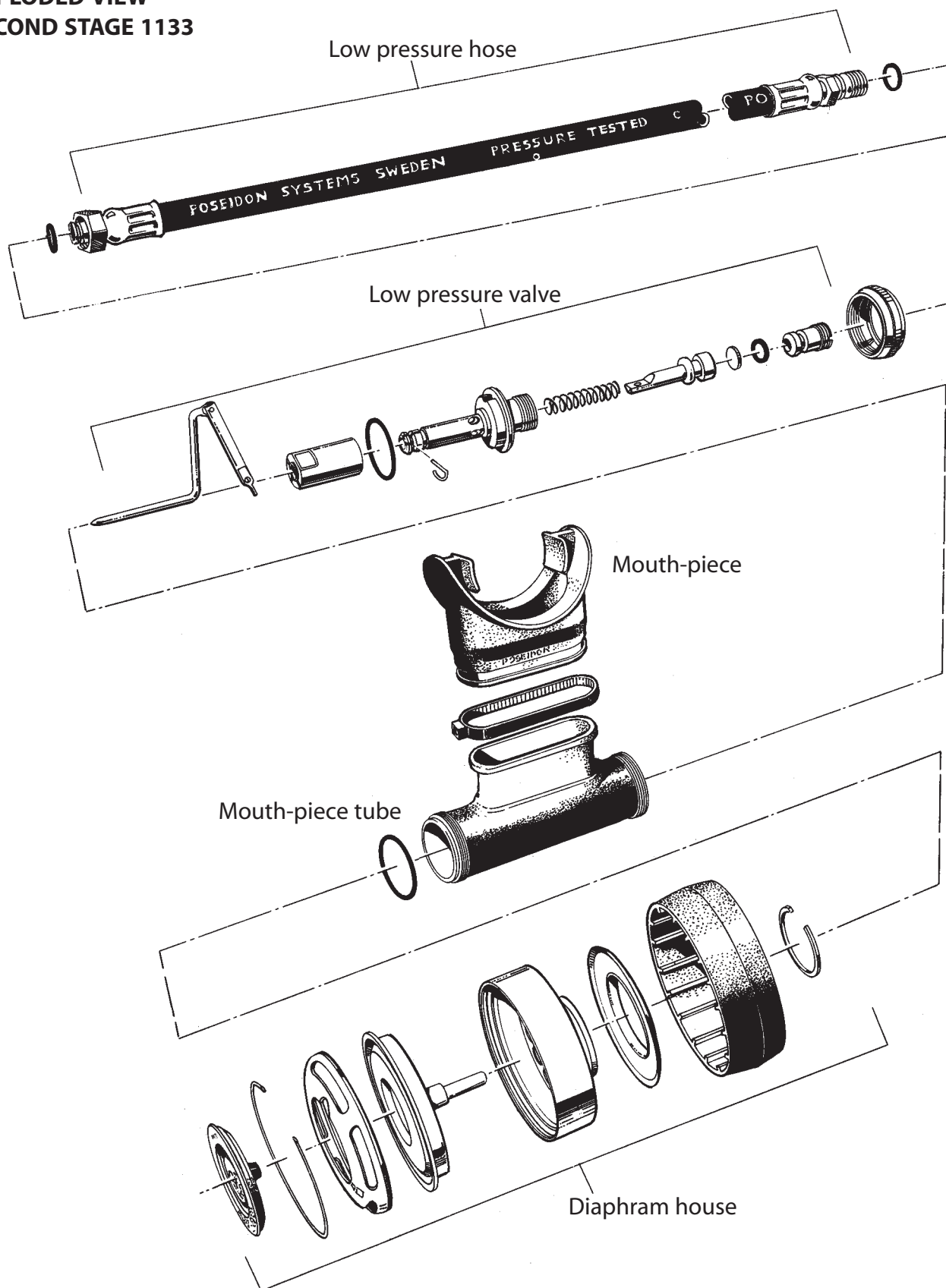
Type designationArt. No 1286

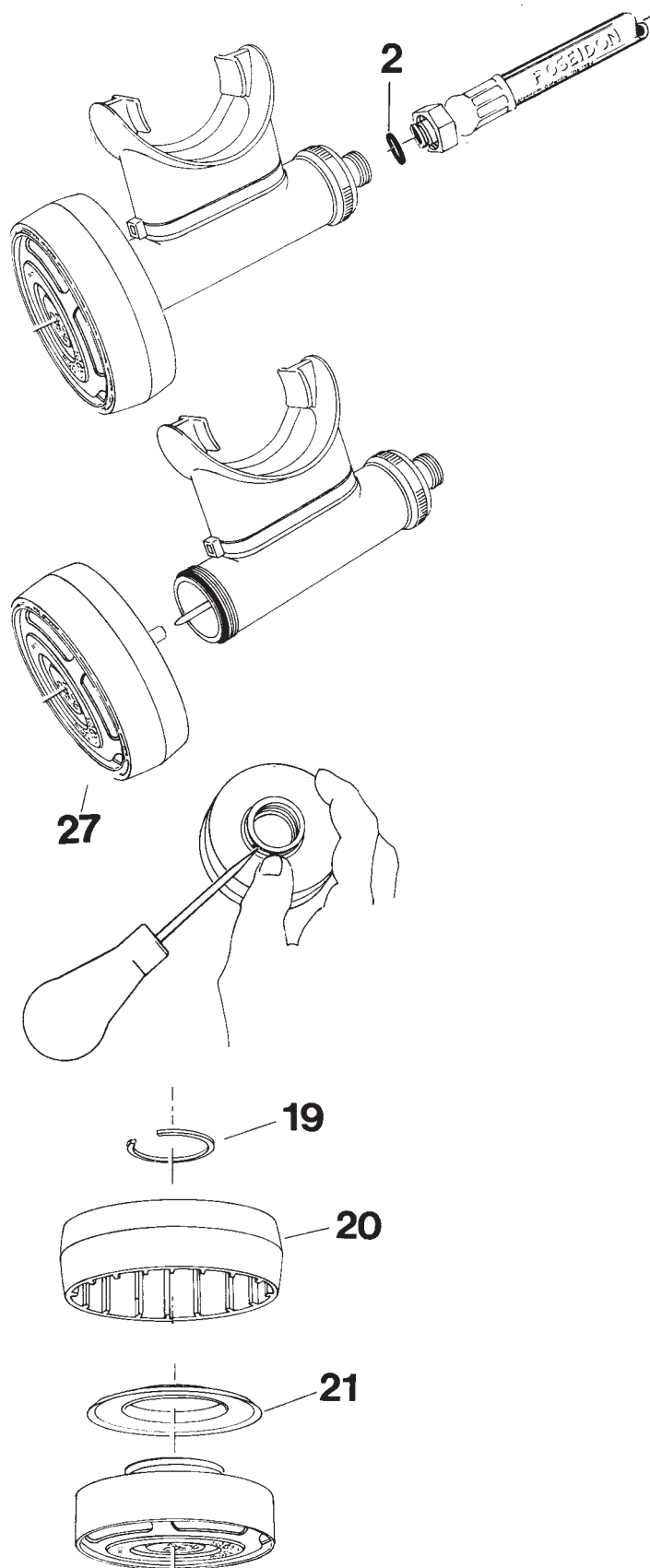
TypeRubber cap



REPAIR INSTRUCTIONS SECOND STAGE DEMAND VALVE

EXPLODED VIEW SECOND STAGE 1133

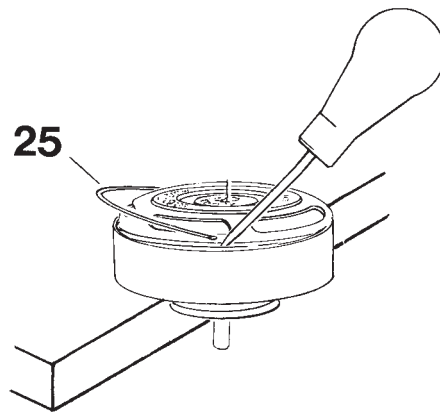




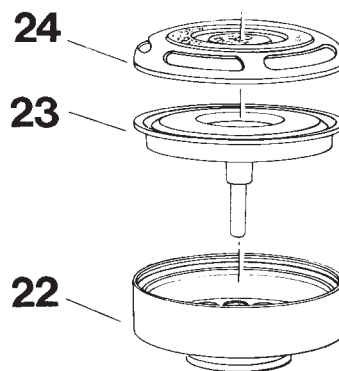
SECOND STAGE 1133, 3224, 3354, 3536

Removal:

1. Disconnect the low pressure hose from the second stage with a 17 mm. open wrench. Remove the oring (2) with an o-rings remover.
2. Remove the diaphragm housing (27) from the mouth piece tube.
3. To release the exhalation cover, remove the locking ring with a small screwdriver.
4. Remove the exhalation diaphragm (21).

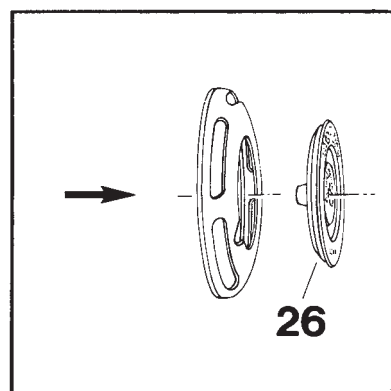


1. Remove the locking ring (25) with an awl. Support the diaphragm house, see diagram. Make sure that the sealing surface for the exhalation diaphragm is not damaged.

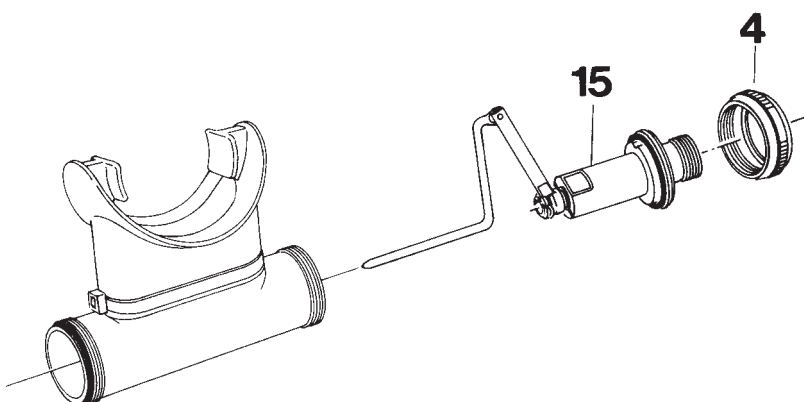


2. Remove the cover (24) and the inhalation diaphragm (23).

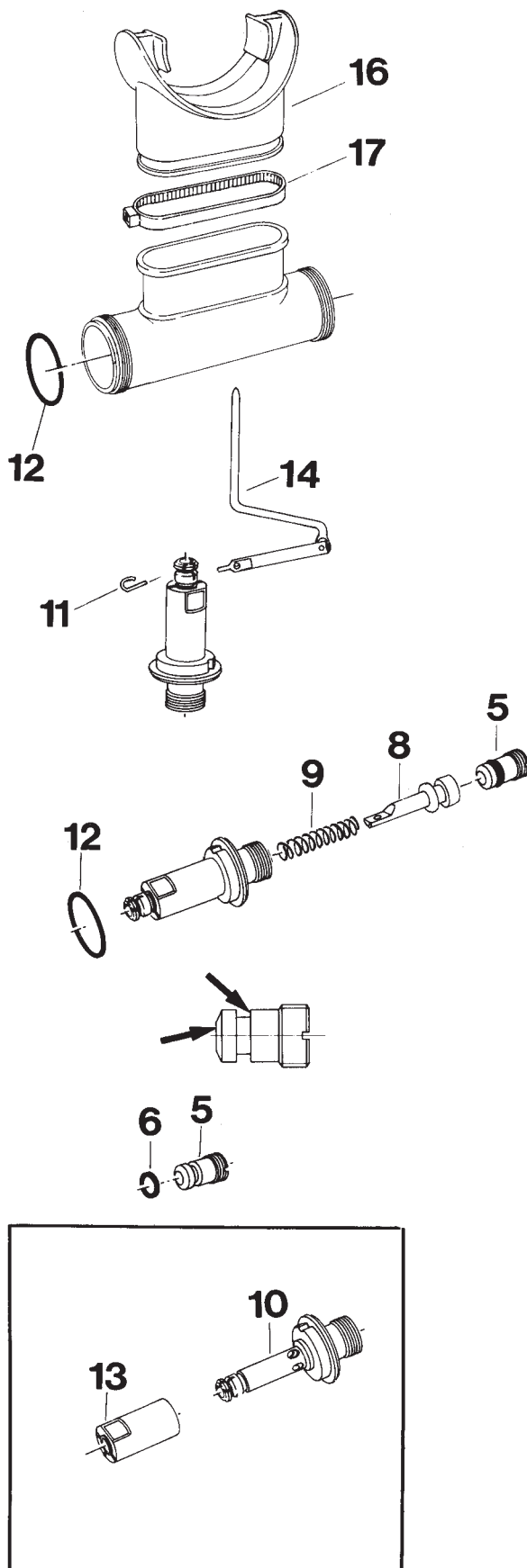
Removal: Push out the purge button



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



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



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

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

1. Remove the lever pin (11).

2. Remove the operating device (14).

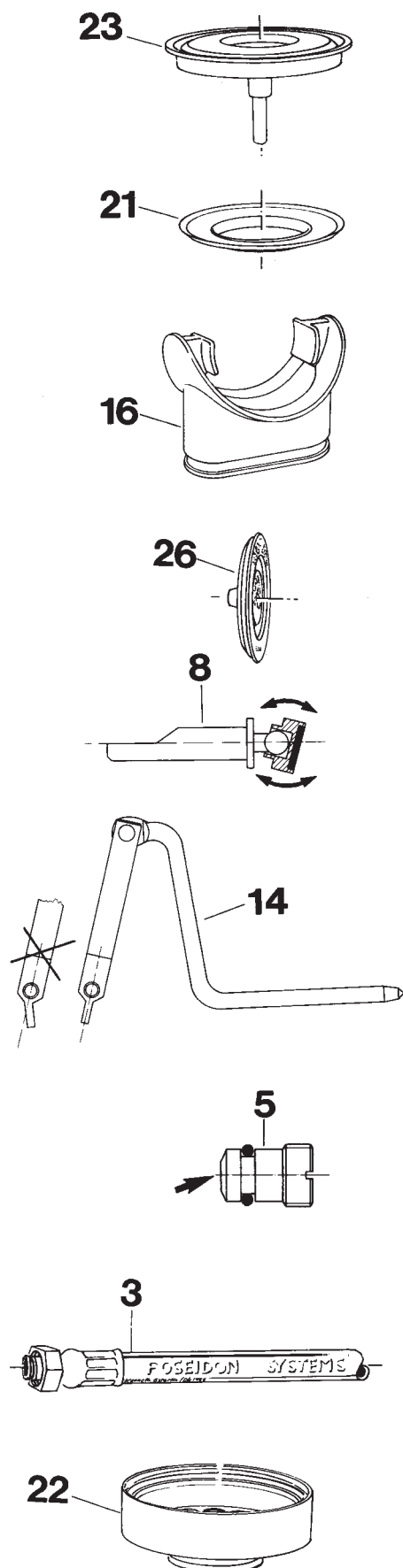
3. Remove the o-ring (12).

4. Unscrew the valve seat (5) with an 8.5 mm screwdriver. NOTE! the valve seat has a very fragile tightening edge; put the seat with the edge upwards.

5. 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.

6. 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.



When servicing the regulator the following parts should be replaced:
See chapter Servicekit.

1. All o-rings, including the one in the low-pressure hose.
2. Rubber plate (7).

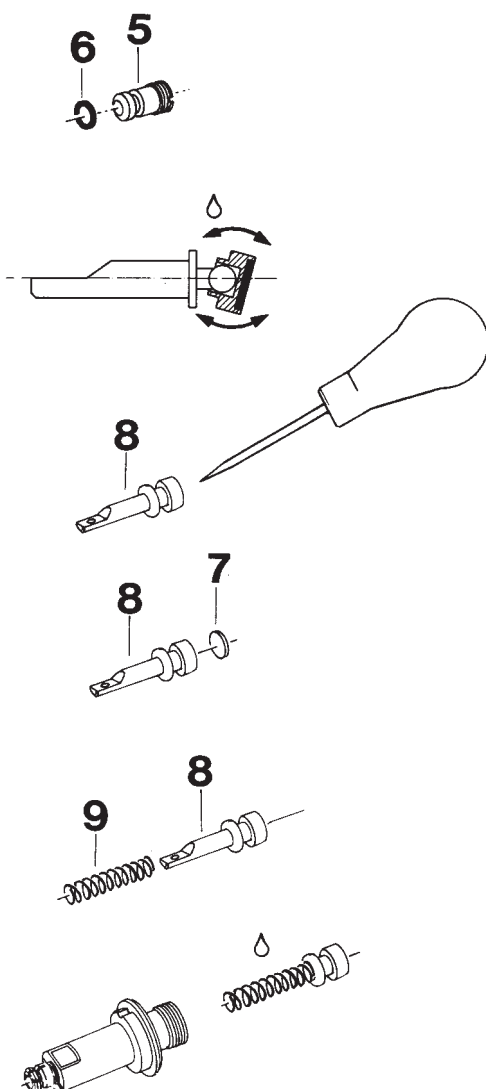
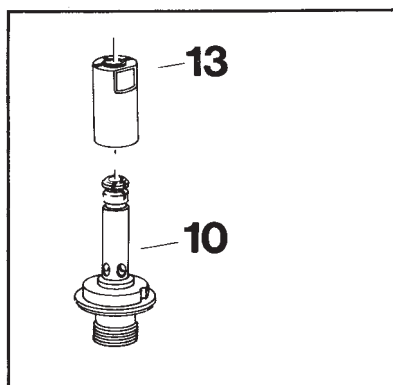
CLEANING:

If corrosion or salt deposits occurs, place all metal parts – concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes. Then, rinse 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 disinfectant cleaning.*

BEFORE INSTALLING CHECK THE FOLLOWING:

1. Diaphragms (21) (23). Check the sealing surface of the diaphragm to see if it is even and uncracked.
2. The mouth-piece (16).
Make sure that there are no cracks.
3. The purge button (26).
Make sure there are no cracks.
4. Valve piston (8). Ensure that the ball joint is working correctly by manipulating and rotating the joint.
5. 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.
6. Valve seat (5). Check to make sure the sealing surfaces are undamaged.
7. Low pressure hose (3). Check to make sure that the sealing surface is undamaged, and that the rubber does not show any flaws.
8. Diaphragm housing (22). Make sure that the sealing surfaces are free from defects and that the track for the inhalation diaphragm is absolutely clean and free from lubricant.




Assembly:

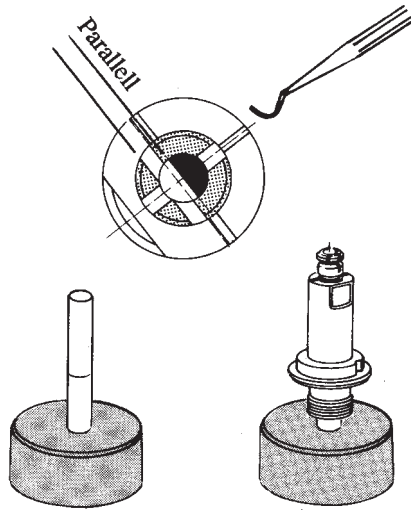
Install the ejector sleeve (13) on the valve housing (10). Press the sleeve into the low pressure valve so the slits of the sleeve are exceedingly small.

Lubricate:

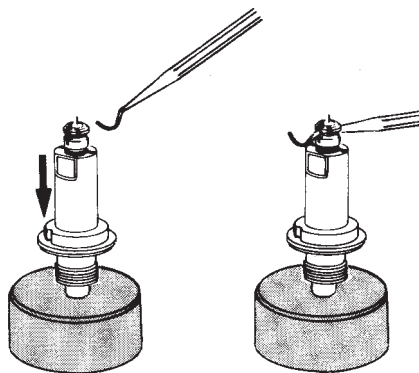
Grease: 

Oil: 

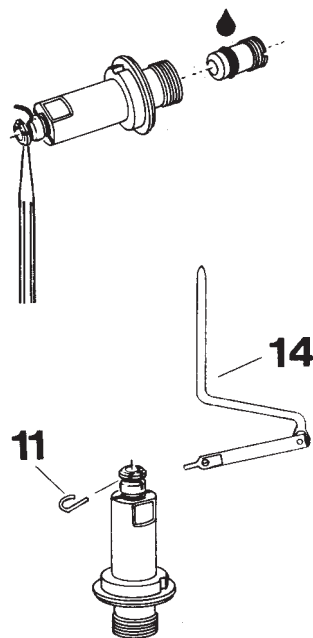
1. Install the o-ring (6) on the valve seat (5). Make sure that the sealing surface is not damaged.
2. Lubricate the ball joint. Tilt the position head according to the figure to ensure that it rotates and articulates smoothly.
3. Remove the rubber plate (7) with an awl and make sure the sealings surface on the valve is clean. Install the new rubber plate.
4. Put the spring (9) on the valve piston (8). Lubricate the spring
5. Install the valve piston/spring in the valve housing with the flat part of the valve piston upwards.



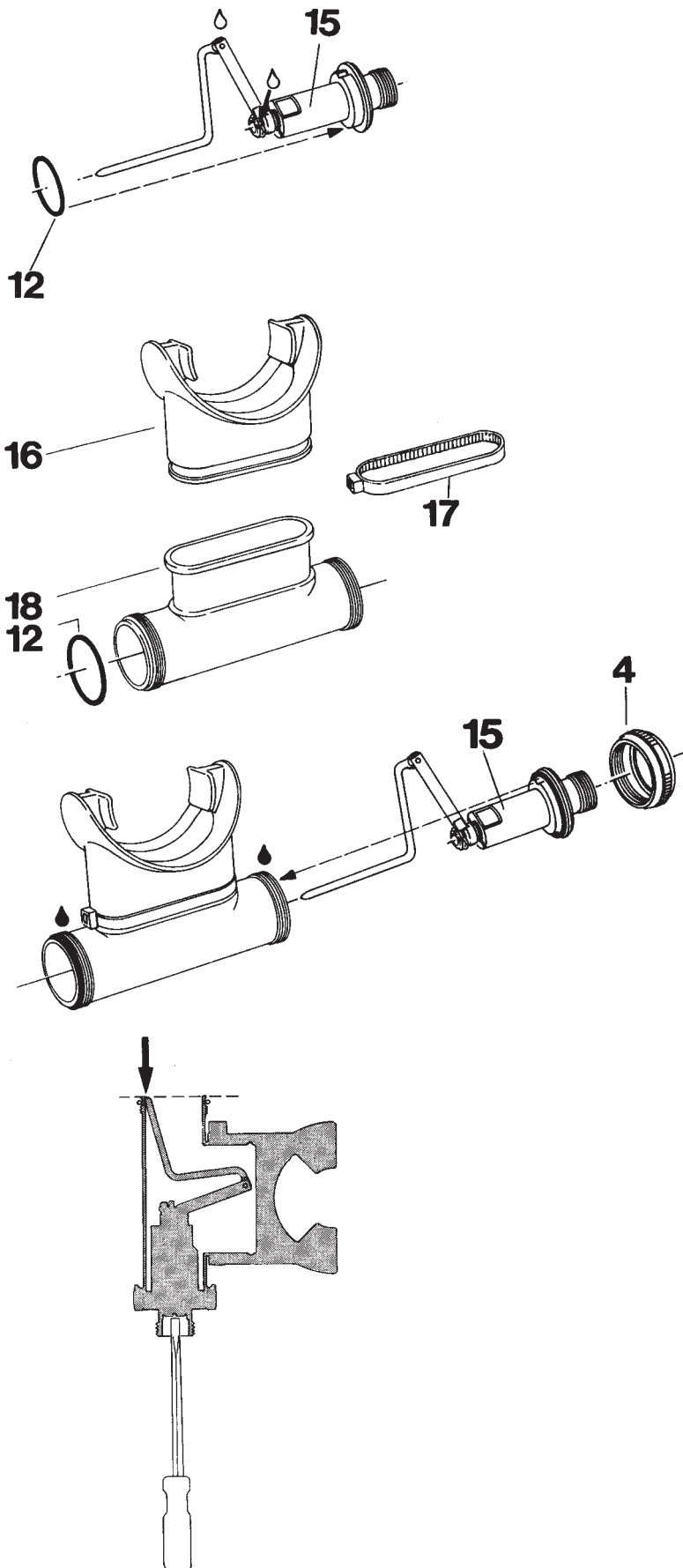
1. Place the valve housing on a drift seated on a block. Press the valve housing down, compressing the spring. Keep the flat part of the valve piston parallel with the horizontal slot in the end of the valve housing. Move the valve piston up and down a few times to check for freedom of movement.



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



3. 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.
4. 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.



1. Install the o-ring (12).

Lubricate. See diagram.

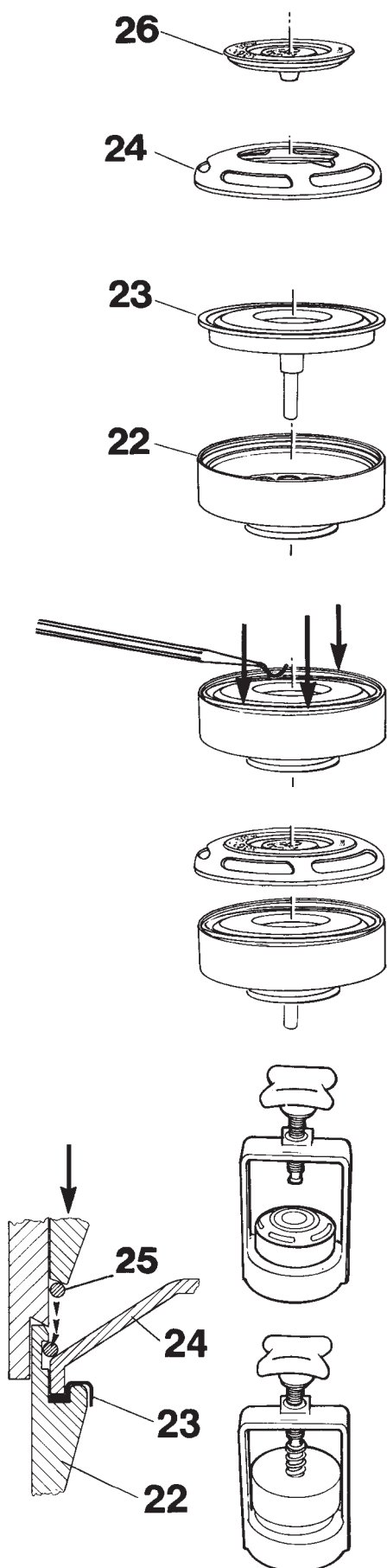
2. Install the mouth piece (16) and the plastic band (17). Tighten and cut off plasticband with plastic band pliers.

3. Install the o-ring .(12)

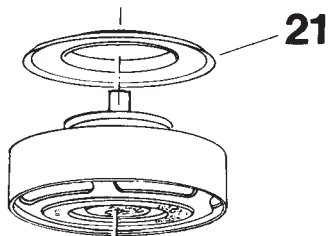
4. Lubricate the threads on the mouth piece

5. 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).

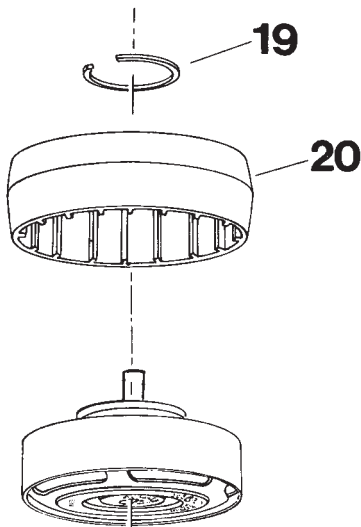
6. Screw the valve seat down until the highest part of the operating device is even with the level og the opening of the mouth piece tube. Hold the second stage valve vertically. See fig.



1. Install the purge button (26) in the cover (24).Screw the button in the cover-cavity
2. Install the inhalation diaphragm (23) on the diaphragm housing (22).
3. 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.
4. Set the inhalation cover (24) on the diaphragm housing over the diaphragm.
5. Place the diaphragm housing complete with diaphragm and cover into the frame of the assembly tool.
6. Insert the locking ring (25) into the upper groove of the press of the assembly tool. See diagram
7. Place the press on top on the diaphragm housing.
8. Turn 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.
9. Check the locking ring placement to make sure that it has completely entered the groove.

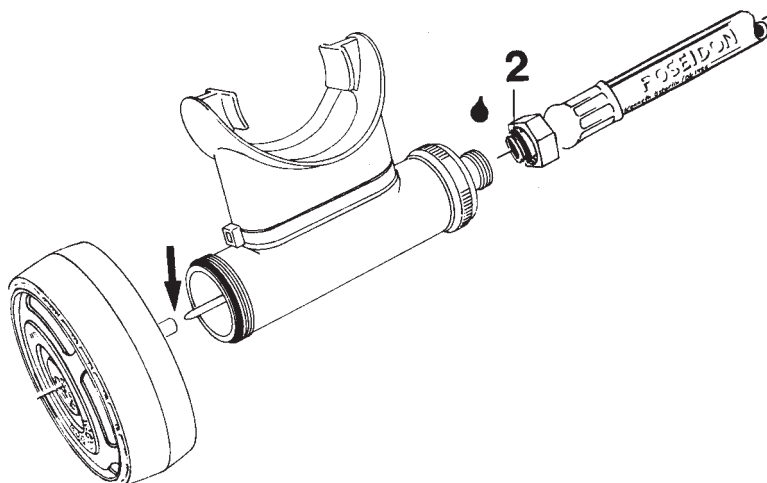


1. Install the exhalation diaphragm (21) on the diaphragm housing. Control that the diaphragm is packing on the diaphragm housing.



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

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



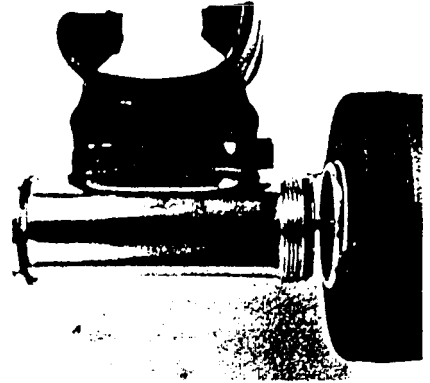
4. Checking the second stage for leaks: Place the mouth piece against your lips the low pressure hose correction with your thumb and inhale lightly. This will create a partial vacuum inside the second stage. If the pressure does not equalize in 5 seconds the second stage leaks. See chapter Fault-tracing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

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

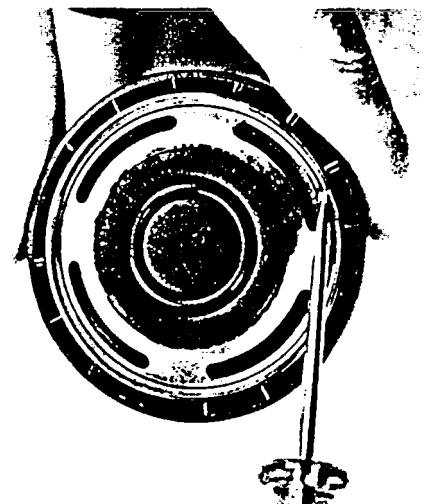
6. Screw on the LP-hose. Do not tighten the connecting ring until after the function test.

Demontage Membrangehäuse

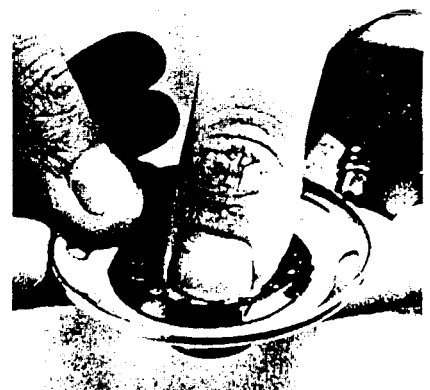
1. Schraube das Membrangehäuse (22) von dem Mundstücksrohr (23) ab (s. Abb.).



2. Löse den Membrandeckel durch die Demontage des Spengringes (25) mit Hilfe des Dornes (s. Abb.).

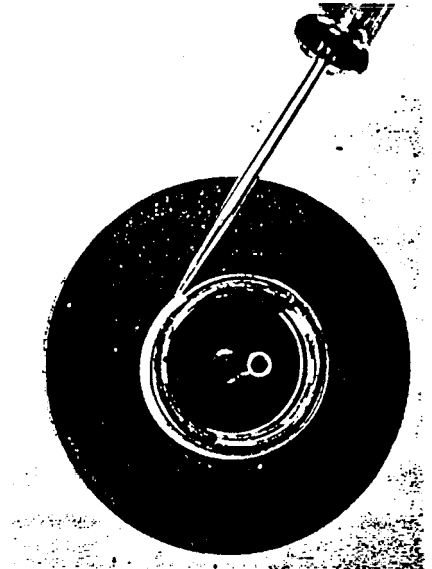


3. Demontiere die Einatemmembrane (26) einschließlich Steuerteil.



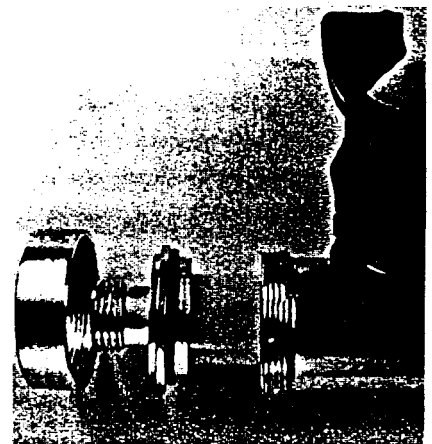
4. Demontiere den Luftduschenknopf (27) vom Membrandeckel (24) dadurch, daß der Luftduschenknopf von der Innenseite aus dem Membrandeckel herausgedrückt wird.

5. Demontiere den Ausatemdeckel (28) durch Lösen des Sprengringes (29) mit Hilfe des Dornes.



Demontage Niederdruckventil

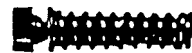
1. Löse das Niederdruckventil (30) vom Mundstückrohr (23) durch das Abschrauben der Überwurfmutter (31) (s. Abb.).
Abschrauben des Mitteldruckschlauches von der 2. Stufe durch Lösen der Überwurfmutter SW 17



2. Demontiere den Steuerhebel (32) vom Niederdruckventil (30) durch Lösen der Hebelarmachse (33) (s. Abb.).
Erst nach vorn drücken und dann die Achse seitlich herausziehen.



3. Der Ventilsitz (34) wird aus dem Niederdruckventil (30) herausgeschraubt, wonach das Ventilgestänge (35) und Druckfeder(36) frei werden, so daß man sie aus dem Ventilgehäuse (41) herausnehmen kann (s.Abb.). Die Injektorhülse (48) verbleibt auf dem Ventilgehäuse (41).

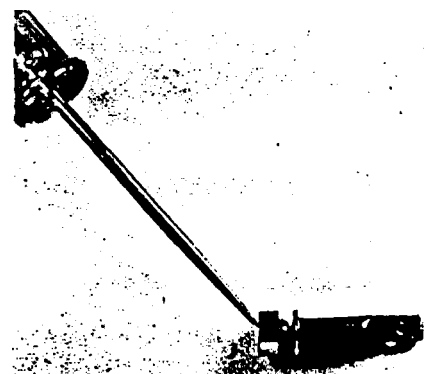


Kontrolle:

1. Kontrolliere, daß die Ein- und Ausatemmembran (26+37) nicht beschädigt sind.
2. Kontrolliere, daß der Ventilsitz (34) nicht deformiert ist (Dichtungskanten).
3. Tausche die O-Ringe (38+42) aus und die Ventilplatte (39).
4. Kontrolliere die übrigen Teile und tausche eventuell defekte aus.

Montage Niederdruckventil

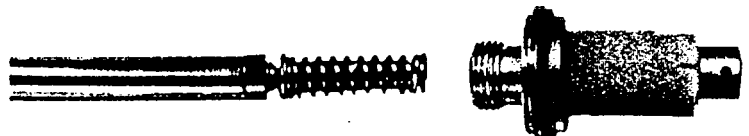
1. Vor Montage der Ventilplatte (39) achte darauf, daß die Sitzfläche für die Ventilplatte des Ventilkolbens (40) gut gesäubert ist (s. Abb.) Montiere danach die selbsthaftende Ventilplatte (39).



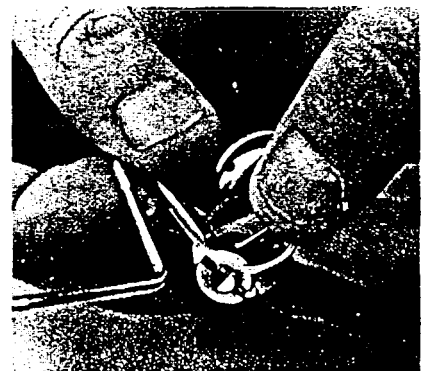
2. Schiebe die Ventilfeeder (36) auf die Ventilstange (35) (s.Abb.)



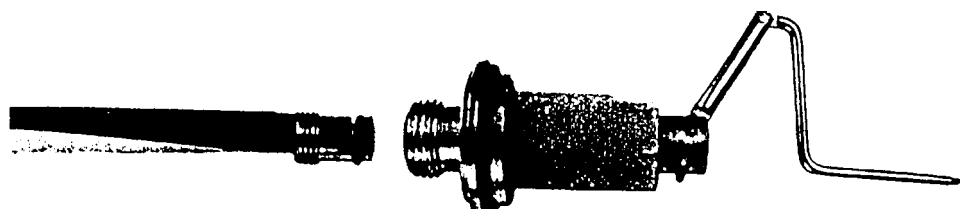
3. Führe die Ventilstange (35) mit der Feder (36) in das Ventilgehäuse (41) mit Hilfe von Spezialwerkzeug ein (s.Abb.).



4. Kontrolliere, ob die Ventilstange (35) die richtige Lage zu der gefrästen Nut des Ventilgehäuses (41) hat, bevor der Steuerhebel (32) montiert wird (s. Abb.).

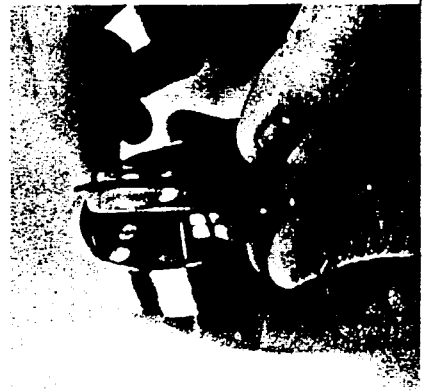
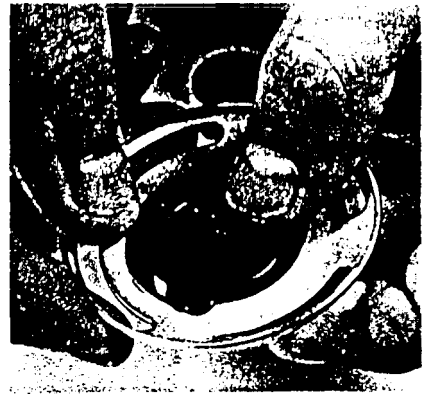


5. Montiere den Ventilsitz (34) mit dem aufgesetzten O-Ring (38) im Ventilgehäuse (41) und schraube den Ventilsitz (34) ein, bis ein Spiel zwischen dem Ventilgestänge (35) und dem Steuerhebel (32) entsteht (s. Abb.).

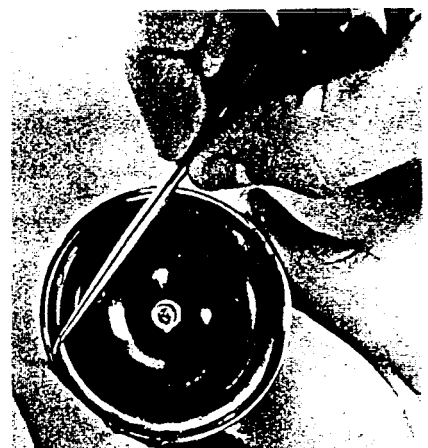


Membrangehäuse

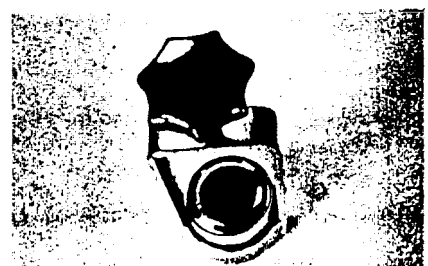
1. Montiere den Luftduschenknopf in den Membrandeckel (24) dadurch, daß der Luftduschenknopf in die halbmondförmige Aussparung hineingedrückt wird und durch drehen in seine richtige Position gebracht wird.
2. Montiere die Einatemmembrane (26) in das Membrangehäuse (46). Kontrolliere sorgfältig, daß die äußere Kante der Membran in die dafür vorgesehene Nut des Membrangehäuses paßt (s.Abb.).



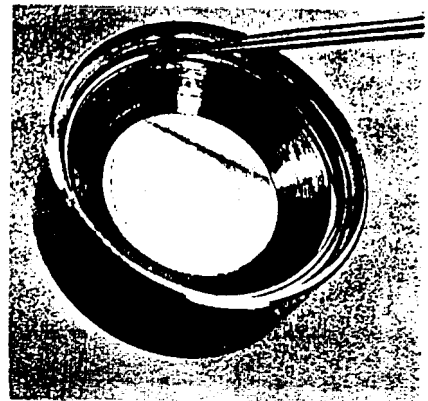
3. Montiere Membrandeckel (24) mit dem montierten Luftduschenknopf (27) in das Membrangehäuse (46) mit dem dafür vorgesehenen Spezialwerkzeug.



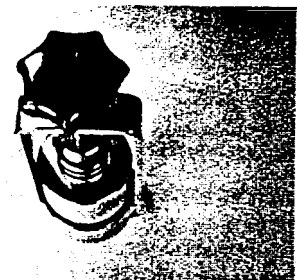
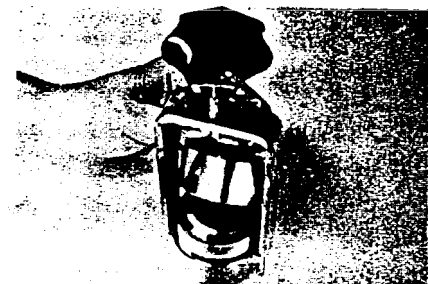
- 3a) Lege das Membrangehäuse mit dem Membrandeckel in das Spezialwerkzeug gemäß Abbildung.



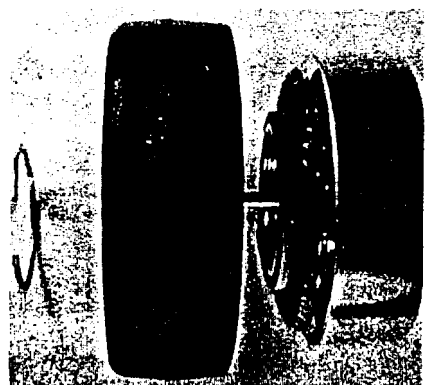
3b. Spanne den Sprengring (25) in den Drucknut des Spezialwerkzeuges gemäß Abbildung.



3c. Nimm die Druckkappe mit dem Sprengring so in den Bügel, daß die äußere Steuerhülse der Druckkappe das Membrangehäuse fixiert.
Presse daraufhin den Sprengring in seine Sitzrinne, bis ein klickendes Geräusch zu hören ist (s.Abb.).

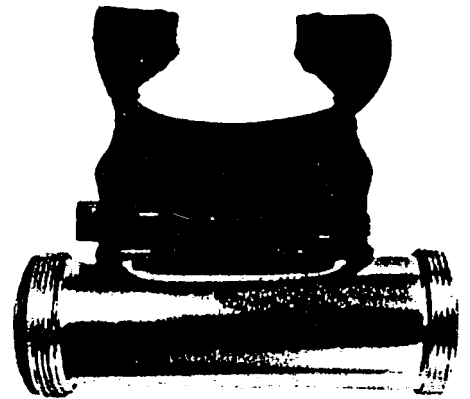


4. Montiere Ausatemmembran (37), Ausatemmschlauch (28) und Sprengring (29) gemäß Abbildung.



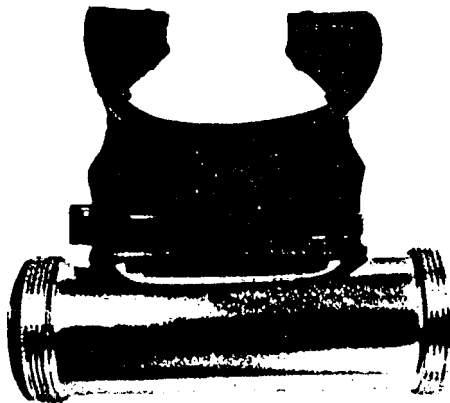
Mundstücksrohr

1. Montiere Bißmundstück (43) auf das Mundstücksrohr (23) und ziehe dieses mit einem Panduitband (Kabelbinder) (44) fest. Der Schließer des Panduitbandes soll auf derselben Seite sein wie die O-Ringsnut gemäß Abbildung.

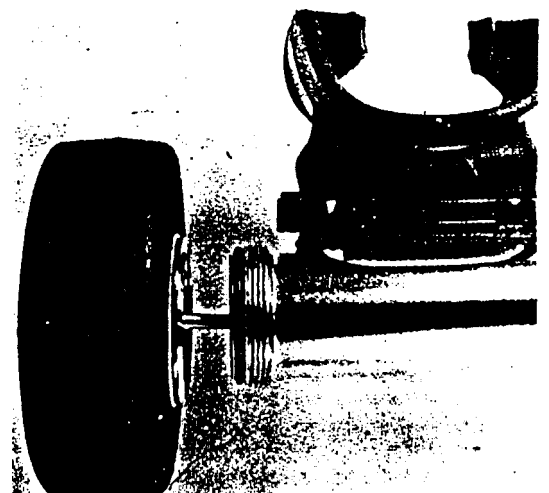


Dosierungsventil (2. Stufe)

Montiere das Niederdruckventil mit dem Mundstücksrohr (23) so, daß die kleine Aussparung in die Nase des Mundstücksrohres paßt gemäß Abbildung.



Montiere das komplette Membrangehäuse mit dem Mundstücksrohr (23) und achte darauf, daß der Steuerhebel (32) in die Steuerhülse (47) des Einatemmembrangehäuses hineinkommt.

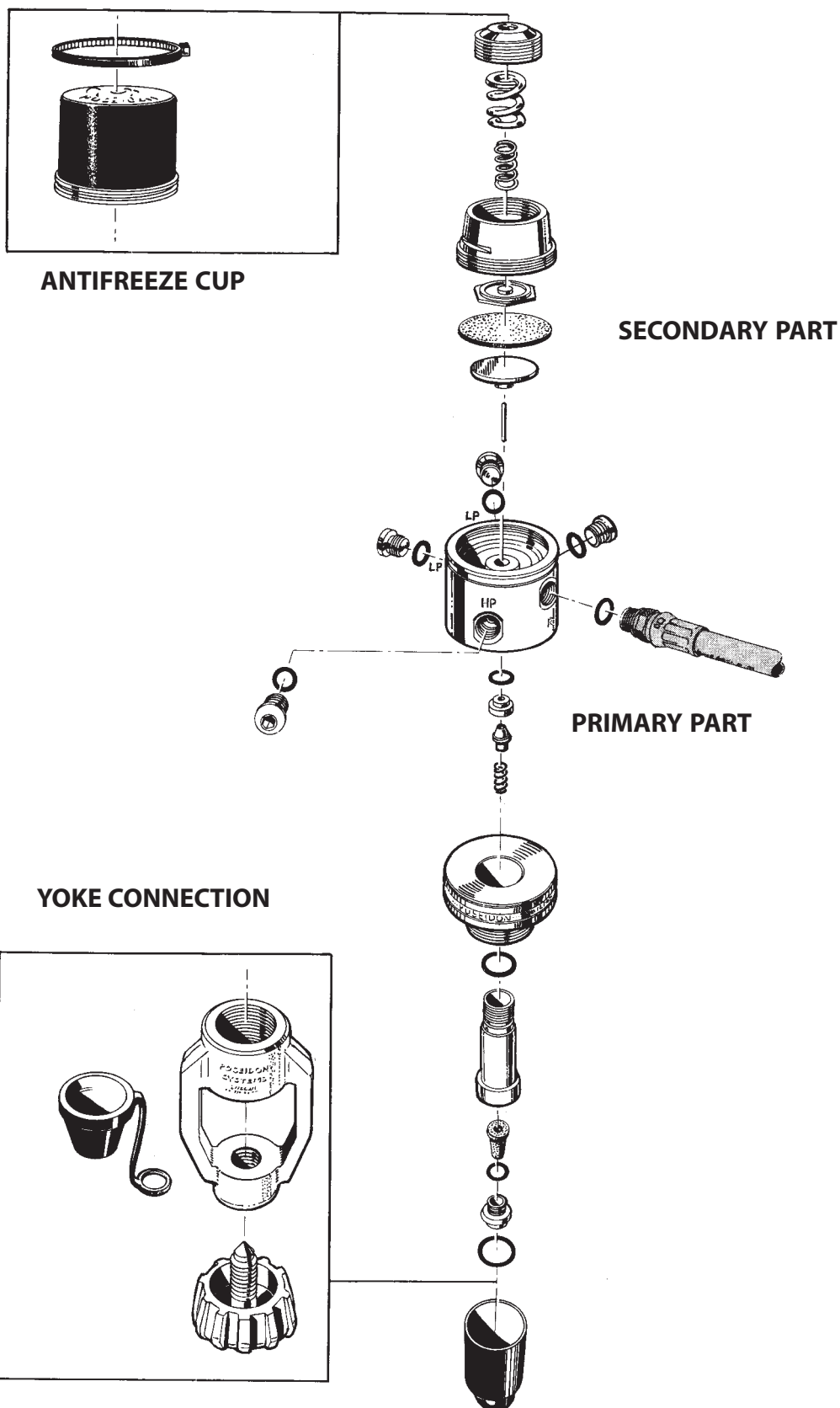




REPAIR INSTRUCTIONS FIRST STAGE REDUCING VALVE

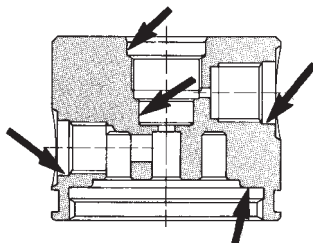
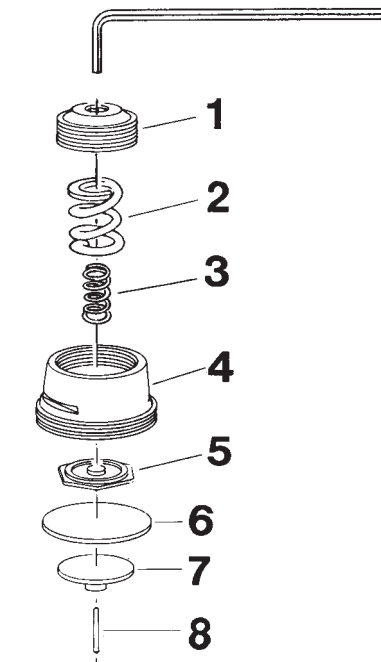
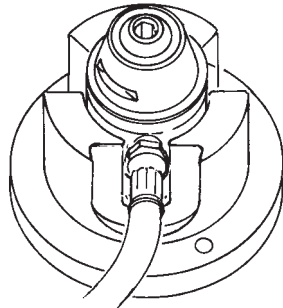
EXPLODED VIEW

Art. No. 2305, 2422, 3070





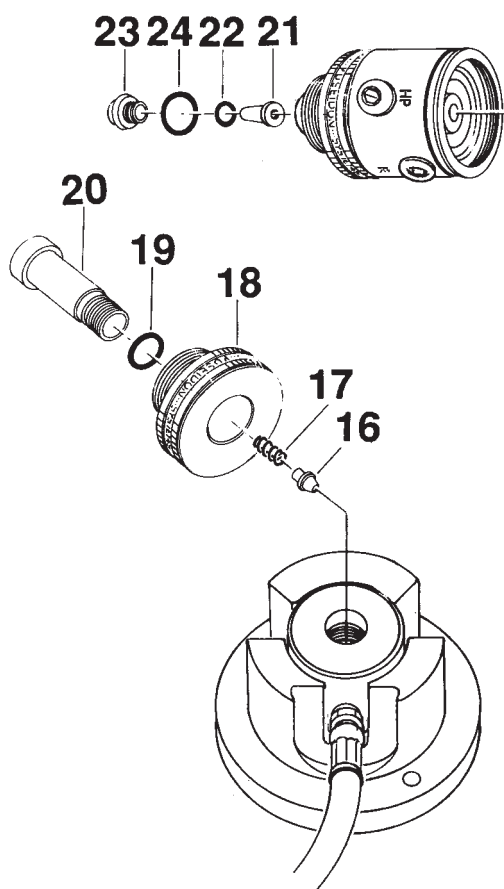
FIRST STAGE VALVE 2305, 2422, 3070



Secondary side: Removal:

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

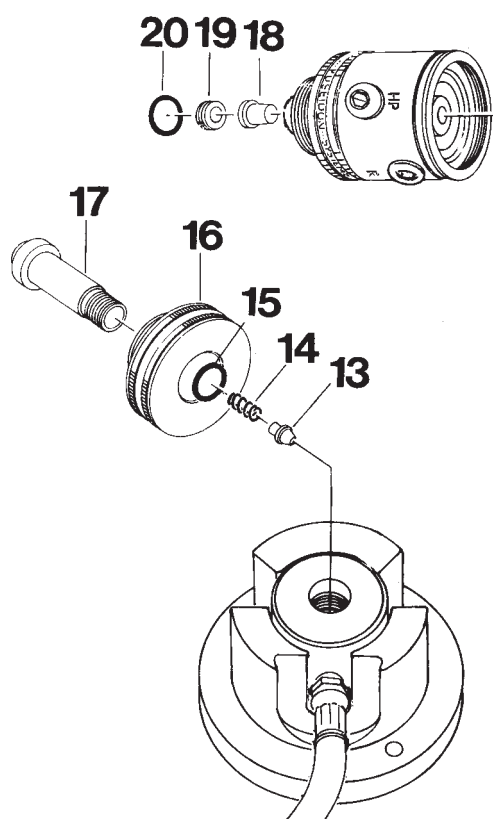
1. Remove the pressure adjusting screw (1) with a 6 mm hexagon spanner, and remove the spring (2) and (3).
2. Remove the cover (4) using a 27 mm crowsfoot wrench. Remove the upper diaphragm center (5).
3. Remove the diaphragm (6) with an o-ring remover. Make sure the sealing surface is not damaged. Remove the lower diaphragm center (7) and the valve needle (8).



FIRST STAGE

3070 (2422)

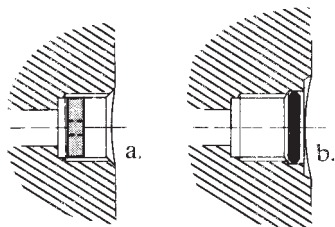
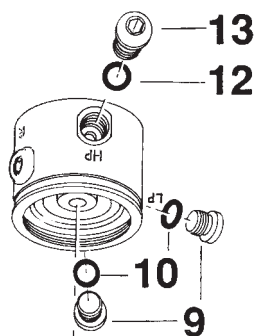
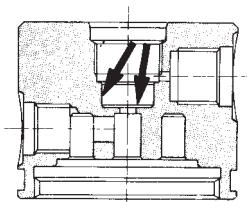
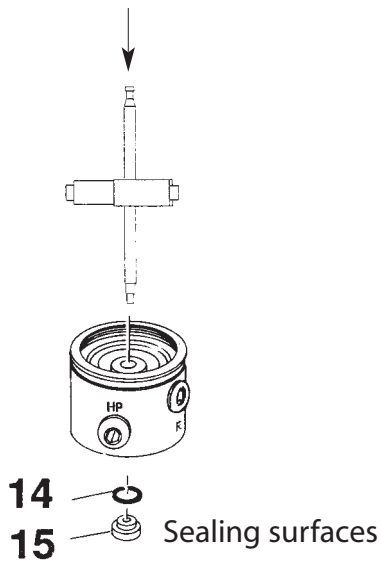
1. Remove the locking screw (23) with a 6 mm Allen wrench. 20 Remove the o-ring (24), cup filter (21) and o-ring (22).
2. Place the first stage in the fixture. Remove the connection (20) with 6 mm Allen wrench.
3. Remove the wheel (18) and the o-ring (19) with an o-ring remover. Make sure the sealing surfaces are not damaged.
4. Remove the spring (17) and the valve piston (16).
5. Disconnect the low pressure hose from the first-stage valve with a 13 mm open-end wrench.
6. Remove the o-ring from the low pressure hose. Make sure the sealing surfaces are not damaged.



FIRST STAGE

2305

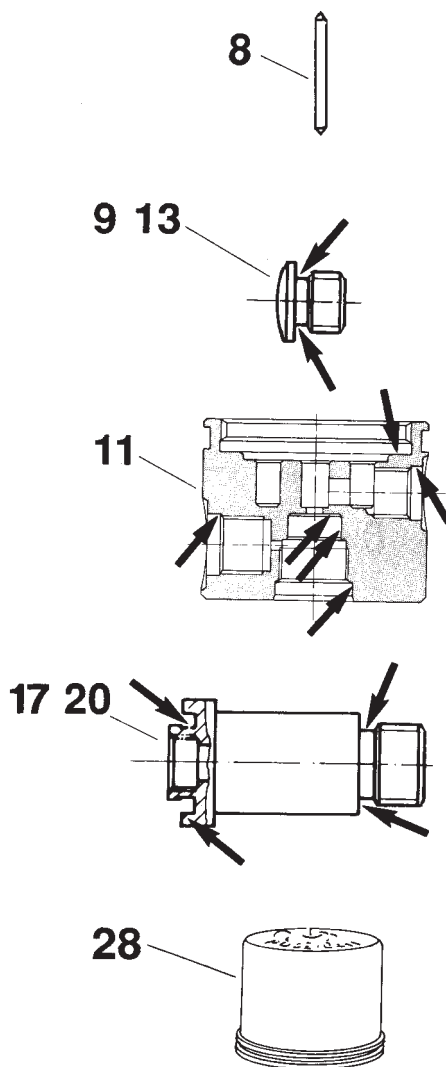
1. Remove the o-ring (20) with an o-ring remover. Make sure the sealing surfaces are not damaged.
2. Remove the locking screw (19) with a 8.5 mm screwdriver. Remove the cup type filter (18).
3. Place the first stage housing in the fixture. Remove the connection (17) using a 6 mm Allen wrench.
4. Remove the o-ring (15) with an o-ring remover. Make sure the sealing surfaces are not damaged.
5. Remove the wheel (16).
6. Remove the spring (14) and the valve piston (13).
7. Disconnect the low pressure hose from the first stage valve with a 13 mm openend wrench.
8. Remove the o-ring from the low pressure hose. Make sure the sealing surfaces are not damaged.



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

1. Remove the valve seat (15) with the valve seat remover.
2. Remove the o-ring (14) with an o-ring remover. Make sure that the sealing surfaces are not damaged.
3. 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.

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 orifices 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.



When servicing the regulator following parts should be replaced:

See chapter Servicekit.

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. They should be left in the acid for about 10-15 minutes. Then, rinse the parts thoroughly and blow dry with air.

SERVICE INSTRUCTIONS

Checking:

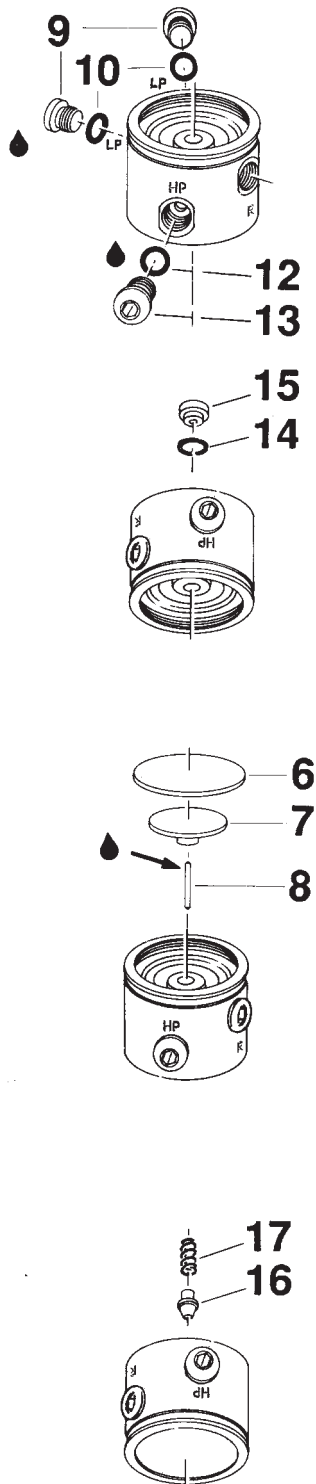
Check the following parts very carefully. Replace even if only slightly damaged.

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

Lubricant:

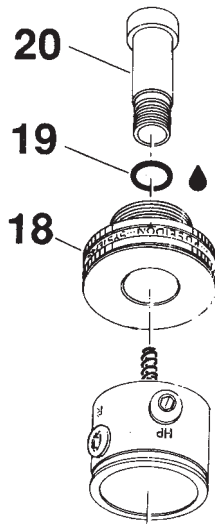
Grease: 

1. 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.
2. Screw in the blind screws in the LP-HP outlets. Use a 5 mm Allen wrench and tighten hard.
3. Install the o-ring (14) on the valve seat (15) and then install the valve seat with a seat drift.
4. 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).
5. Install needle (8) and center (7) in the valve housing.
6. Press the diaphragm (6) into the groove of the valve housing. Use a blunt-pointed instrument to set it firmly in place.

NOTE:

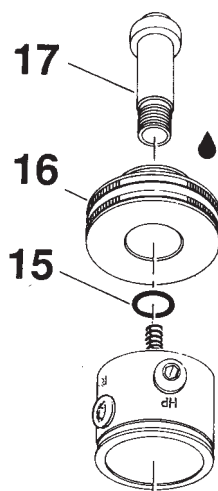
The diaphragm (6) must be replaced on every removal.

7. Reverse the valve housing.
8. Install the valve piston (16) on the valve needle.
9. Install the spring (17) on the valve piston.



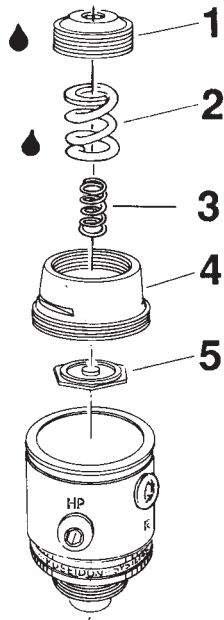
FIRST STAGE 3070, 2422

1. Install the o-ring (19) on the connection housing (20). Lubricate the o-ring and the thread
2. Install the wheel (18) on the connection (20).
3. 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").

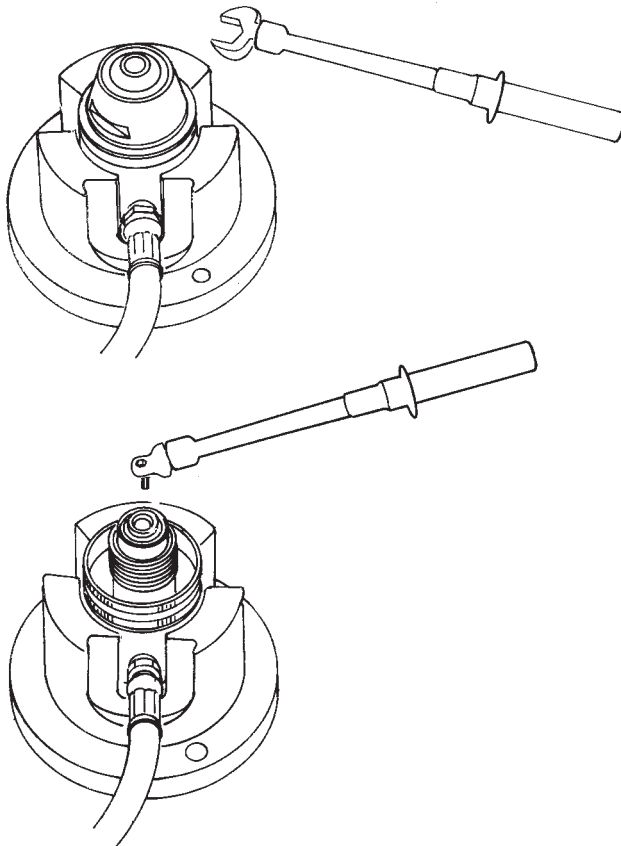


FIRST STAGE 2305

1. Install the wheel (16) on the connection (17). Install the o-ring (15) on the connection (17). Lubricate the o-ring and the thread
2. 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").

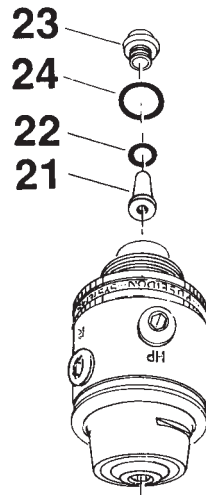


1. Place the upper diaphragm center (5) on the diaphragm in the valve housing.
2. Screw the cover (4) into the valve housing.
3. Lubricate both ends of the spring (2) and (3). Lubricate the threads on the pressure adjusting screw(1).
4. Tighten the pressure adjusting screw about 5 turns with a 6 mm Allen wrench.



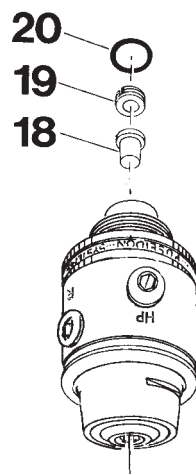
Place the stage assembly in the fixture. Tighten the valve housing cover with a 27 mm crowsfoot and the connection with a 6 mm Allen wrench. use a torque wrench to achieve 28-30 Nrn (20-22 lbf.ft) of torsion.

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



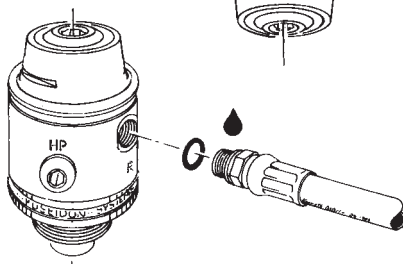
FIRST STAGE 3070, 2422

1. 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.



FIRST STAGE 2305

1. Install the cup filter (18) and the locking screw (19) with a 8.5 mm screwdriver. Install the o-ring (20).
2. 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.

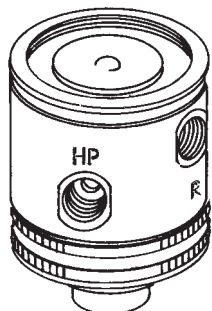


INSTALLMENT OF ANTIFREEZE CAP

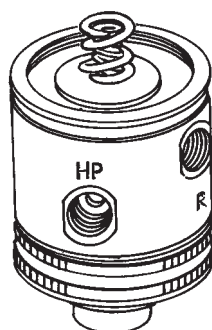
1. Check valve cover for correct tightness - 28-30 Nm.(20-22 lbf.ft)
2. Blow the inside of the valve cover clean and dry.
3. Then fill the valve cover and the rubber with pure spirit (alcohol, vodka) or water/glycol mixture. 3/4 fill.
4. Install the anti-freeze cap and fasten it with the locking band.

OLD TYPE

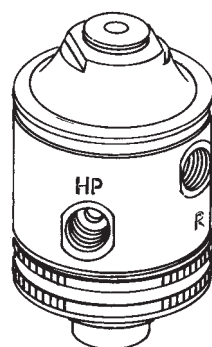
For assembly of old-type spring housing, please note the following:



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

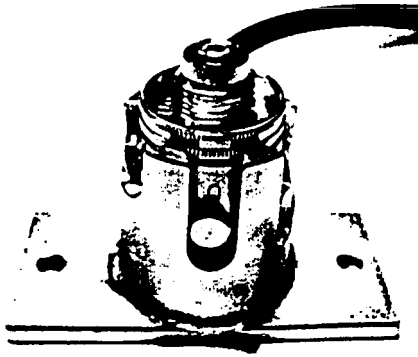


2. The inner and outer secondary springs shall be set in the middle.



3. Screw carefully on the cover with assembly screw.

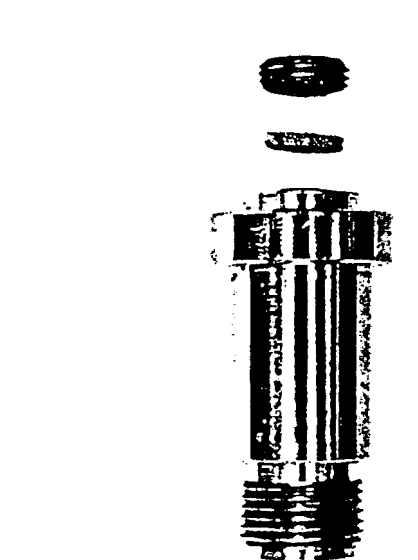
4. Tighten the valve housing cover with a special tool No. 2318. Use a torque wrench to achieve 28 Nm (20 lbf.ft).



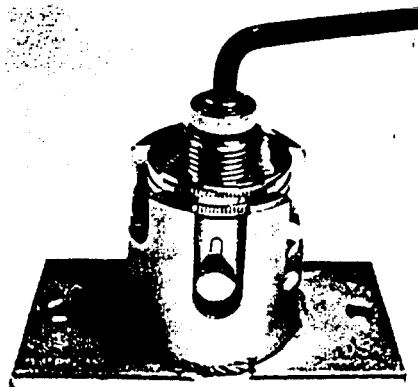
Hochdruckseite

Demontage:

Setze die 1.Stufe mit der Einstellschraube nach unten in den Sockel (s. Abb.)
Neue Best.-Nr. PK0592



1. Demontiere die Verschlußschraube (1) mit Hilfe eines Schraubendrehers und entferne den Bronzefilter (s.Abb. 2)

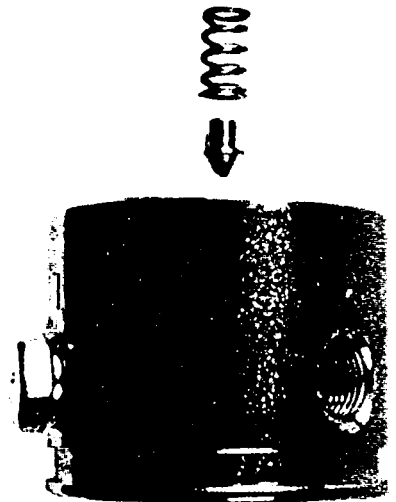


2. Demontiere das Hochdruckgehäuse (3) mit Hilfe eines Imbuschlüssels (6 mm) (s.Abb.)

3. Demontiere den O-Ring (4+5),
Handrad (6) und
Hochdruckgehäuse (3) (s. Abb.)



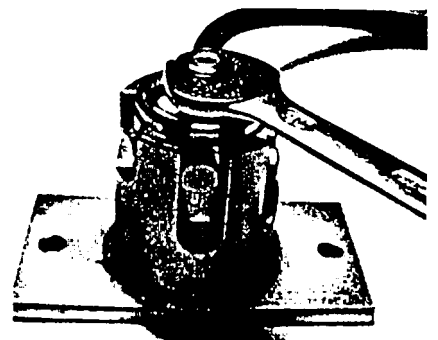
4. Demontiere Feder (7) und
Ventilkolben (8) (s. Abb.)



Mitteldruckseite

Demontage

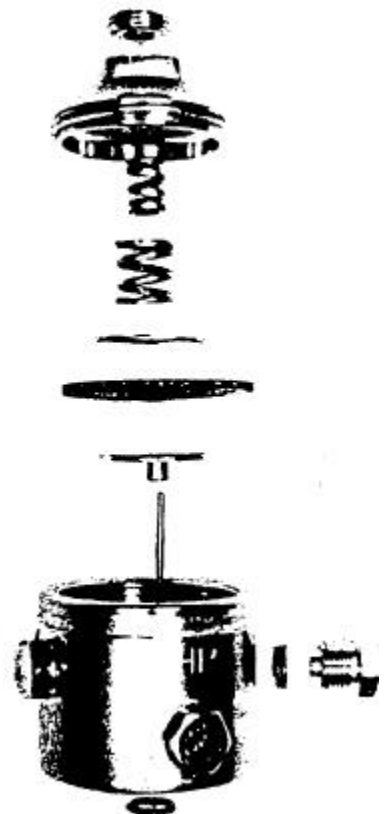
Setze das Reduzierventil mit der
Sekundärseite nach oben in den
Haltesockel (s. Abb.)



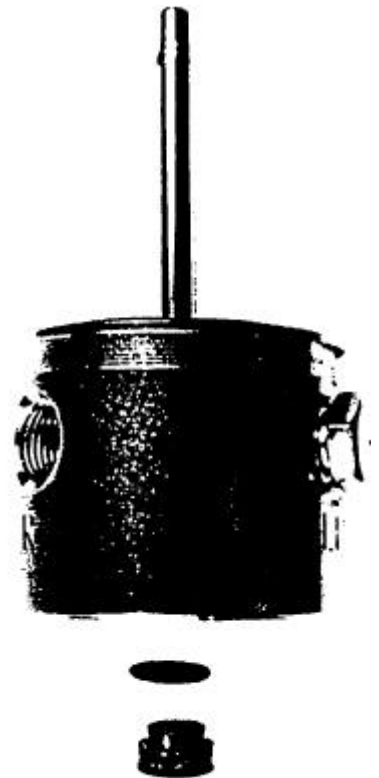
1. Demontiere Ventildeckel (9) (s. Abb.)
SW 16



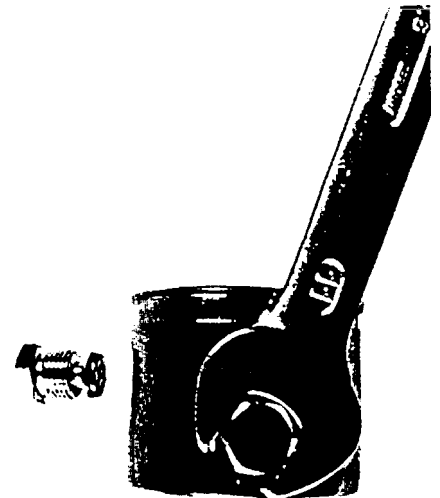
2. Demontiere Stellschraube (21),
Mitteldruckfedern (10-11), oberes
Membranzentrum (12), Membrane
(13), unteres Membranzentrum (14)
und Ventilnadel (15) (s.Abb.)



3. Demontiere den Ventilsitz (16) und den O-Ring (17).
Herauspressen geschieht mit Hilfe eines Spezialdornes
(s. Abb.)
Best.-Nr. PK0532 NEU
(2 Werkzeuge, Edelstahl mit je 4 Funktionen)



4. Demontiere die Verschlusskappe (18)
SW 11 und die Dichtung (19) (s. Abb.)



Reinigung und Kontrolle

Durchsicht und Reinigung, ob Korrosion oder Salzablagerungen existieren. Diese werden nur noch mit einer Tinktur in Ultraschallgeräten gereinigt.

Kontrolle

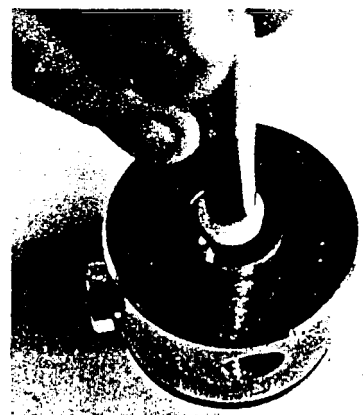
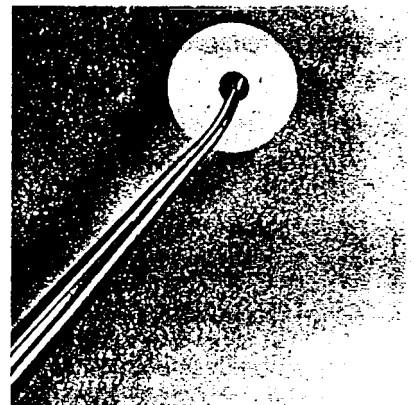
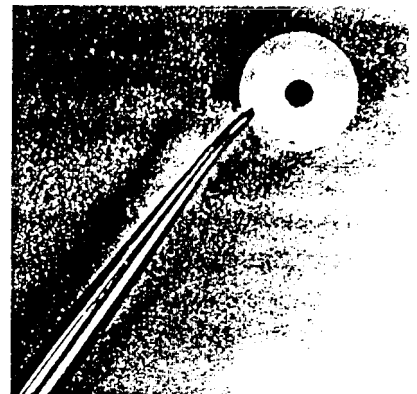
1. Kontrolliere, daß die Dichtungsfläche des Ventilsitzes nicht beschädigt ist. Schaden kann vorkommen gemäß Abb. 1 beim O-Ring-Sitz und gemäß Abb. 2 beim Sitz der Dichtungskanten für den Ventilkolben (s. Abb.).

2. Kontrolliere, ob die Dichtungsfläche des Ventilkolbens nicht beschädigt ist (8). Einen beschädigten Ventilkolben tausche aus (s. Abb.)

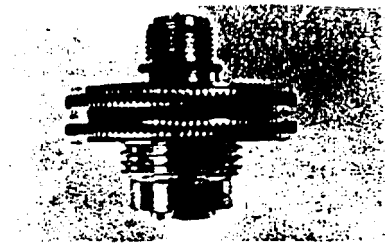
3. Tausche aus O-Ringe (4, 5 + 17), Dichtung (19) und Reduzierungsmembran (13) einschl. Bronzefilter (2). Kontrolliere übrige Einzelteile und tausche eventuell defekte Teile aus.

Montage-Hochdruckseite

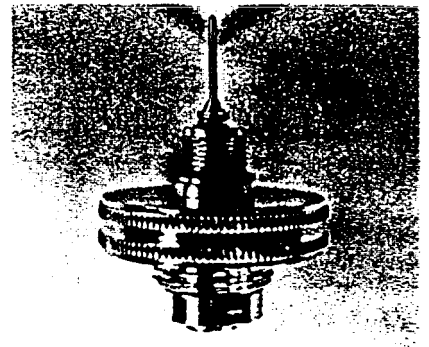
1. Montiere die Dichtung (19) und Verschlußschraube (18) SW 11
2. Montiere den Ventilsitz (16) und O-Ring (17) mit Hilfe des Spezialwerkzeuges.



3. Montage des Hochdruckgehäuse (3)
Handrad (6) und 0-Ringe (4+5)
(s.Abb.)



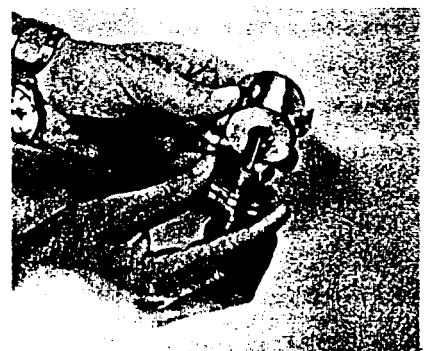
4. Setze die Druckfeder (7), Ventilkolben (8)
und Ventalnadel (15) in die
Federführung des Hochdruckgehäuses.



5. Vor der Montage des Hochdruckgehäu-
ses (3) darauf achten, daß der 0-Ring
(5) mit Siliconspray eingesprüht
worden ist (s. Abb.)



6. Montiere Hochdruckgehäuse (3) zu-
sammen mit Ventilgehäuse (20)
gemäß Abbildung.



Darauf achten, daß der Ventilsitz bei der
Montage nicht durch die Ventalnadel oder den
Ventilkolben beschädigt wird.

7. Schraube das Hochdruckgehäuse mit seinen Teilen mit der Hand an, bis es eine Berührung hat zwischen Ventilkolben (8) und Ventilsitz (16), und zwar so, daß die Druckfeder (7) belastet ist.

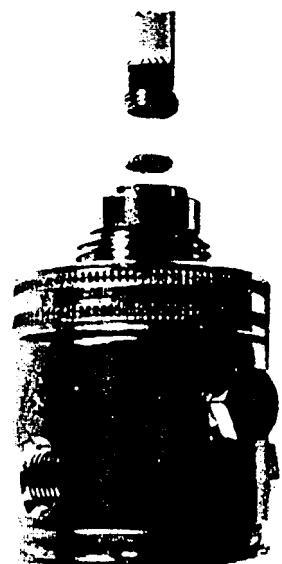
Während des Einschraubens des Hochdruckgehäuses (3) kontrolliere während der ganzen Zeit, daß die Ventalnadel (15) und der Ventilkolben (8) so zentriert ist, daß die Dichtungskante des Ventilsitzes vom Ventilkolben nicht beschädigt wird. (s. Abb.) Auch darauf achten, daß der O-ring (5) in seinen Sitz am Gehäuse eingepaßt ist.



8. Setze das Ventilgehäuse (20) in den Haltsockel und ziehe das Hochdruckgehäuse mit einem Drehmomentschlüssel mit einem Moment von 2,8 kp/m an (s. Abb.).



9. Montiere Bronze- oder Sinterfilter (2), mit der feinkörnigen Seite zur Verschlussschraube (1) (s. Abb.)

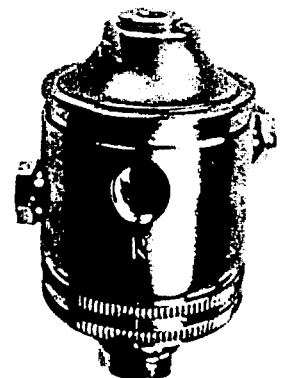
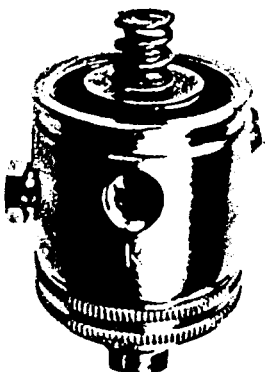
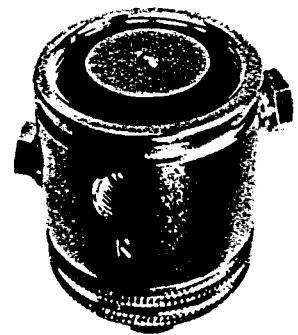
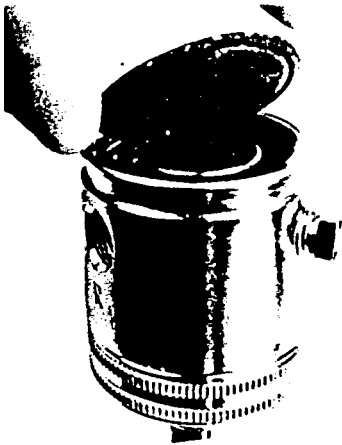


Montage Niederdruckseite

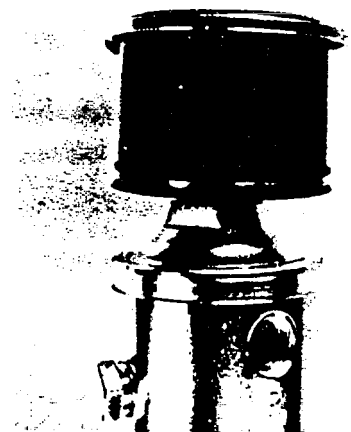
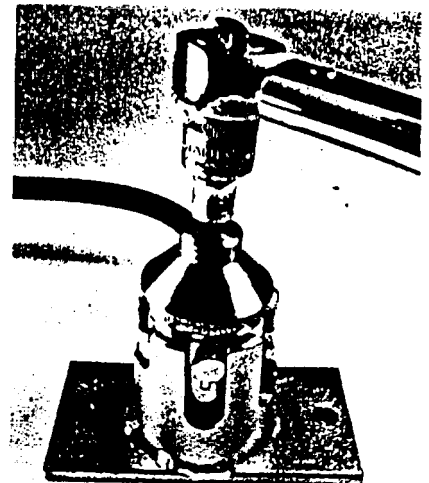
1. Kontrolliere, daß die Ventilhadel (15) im Zentrum fixiert ist.

Montiere danach das untere Membranzentrum (14). Dadurch, daß man das untere Membranzentrum mit der Hand herunterdrückt (nur zentrisch drücken, nicht verkanten), kann man erkennen, ob die Hochdruckfeder (7) arbeitet.

Gleichzeitig versichert man sich, ob sämtliche Teile in die richtige Position gekommen sind. Montiere danach die Membran (13), das obere Membranzentrum (12), die Mitteldruckfedern (10+11) und Ventildeckel (9) mit der vorher montierten Stellschraube (21). Sieh genau, ob die Membrane (13) richtig in ihren Sitz kommt, einschließlich des oberen Membranzentrums (12). Ebenso sollen die Mitteldruckfedern (10+11) exakt in das Zentrum der Membrane kommen (siehe folgende Bilderserie).

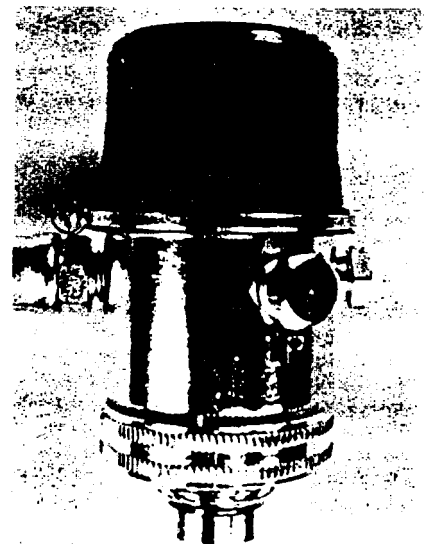


2. Ziehe den Ventildeckel (9) mit einem Drehmomentschlüssel mit einem Moment von 2,8kp/m an (s. Abb.).
Spez. Kappe SW16 mit 6-mm-Imbus
(NEUES Werkzeug Best-Nr. PK0599
Doppelwerkzeug für Membrandeckel aller 1. Stufen
von Poseidon-Schweden).
3. Zutreffende Einstellung des Reduzierventils siehe unter der Rubrik
" Zusammenbau und Einstellung des
Lungenautomaten ".



Montage-Frostschutzkappe

Die Frostschutzkappe wird über dem Federgehäuse des Reduzierventils montiert gemäß Abbildung.
Beachte, daß die Schraube des Spannrings richtig über den Schlauchanschluß kommt.
(NEU nur noch mit Kabelbinder montieren).





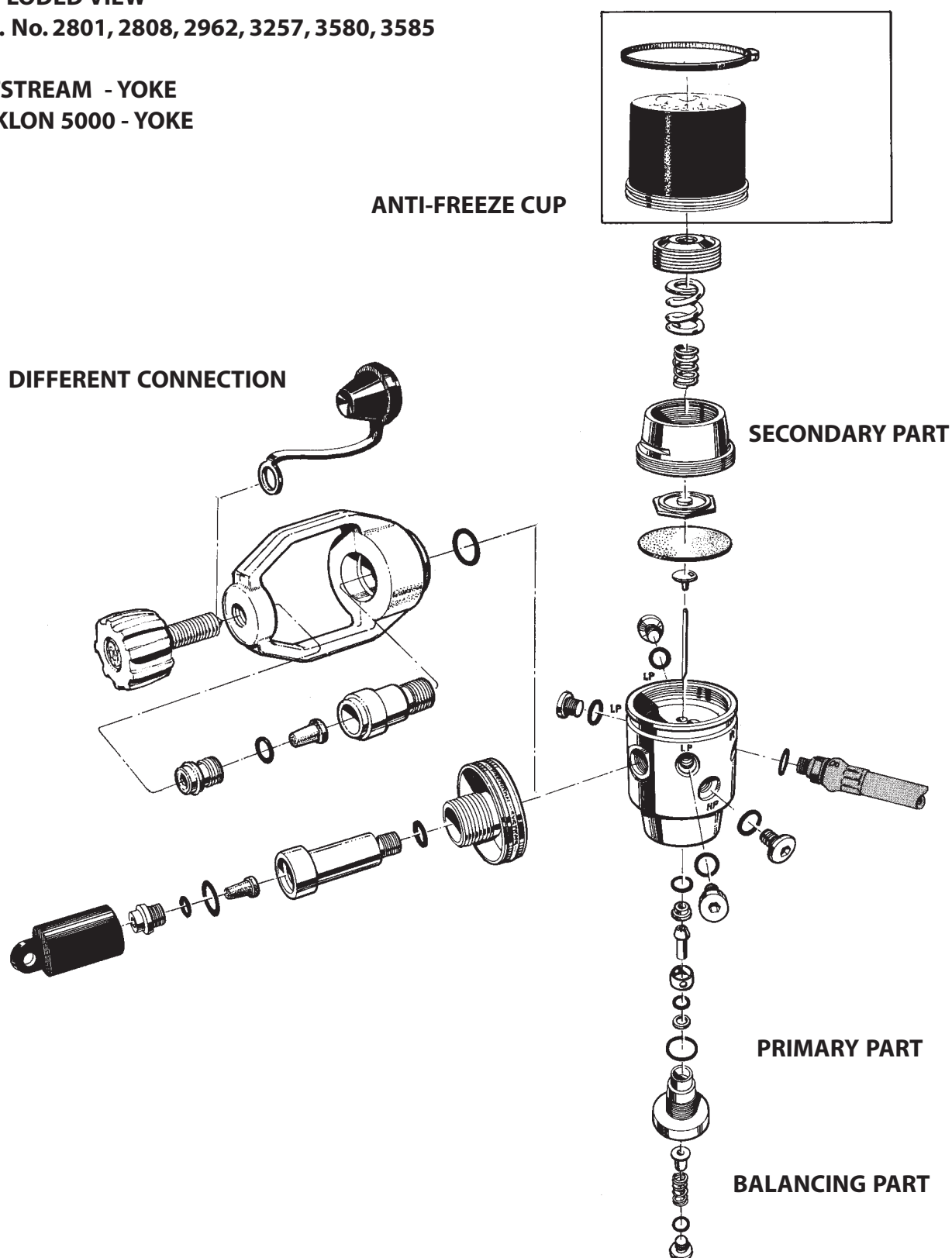
REPAIR INSTRUCTIONS FIRST STAGE REDUCING VALVE

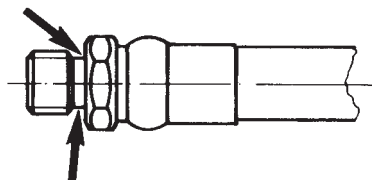
EXPLODED VIEW

Art. No. 2801, 2808, 2962, 3257, 3580, 3585

JETSTREAM - YOKE

CYKLON 5000 - YOKE

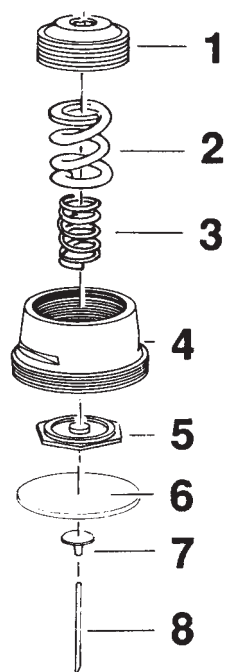
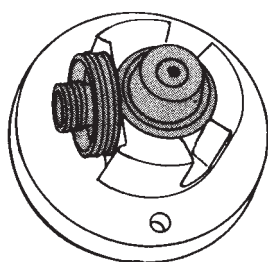




FIRST STAGE VALVE 2801, 2808, 2962, 3257, 3580, 3585

Secondary side:

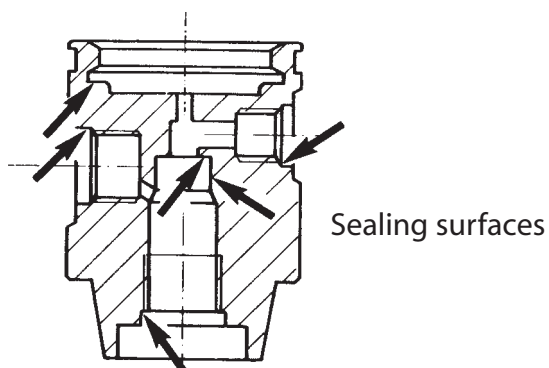
1. Disconnect the low pressure hose from the first stage valve using a 13 mm open end wrench.
2. Remove the o-ring from the low pressure hose. Make sure the sealing surfaces are not damaged.

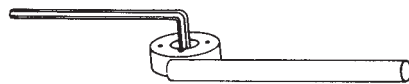


Removal:

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

1. Remove the pressure adjusting screw (1) with a 6 mm Allen wrench and remove the spring (2) and (3).
2. Remove the cover (4) using a 27 mm crowsfoot and the upper diaphragm centre (5).
3. Remove the diaphragm (6). Make sure the sealing surface is not damaged. Remove the lower diaphragm centre (7) and the valve needle (8).

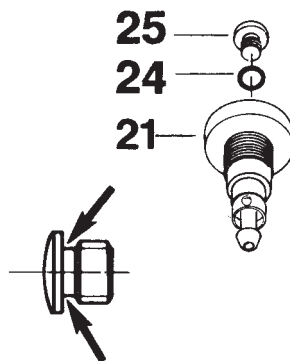




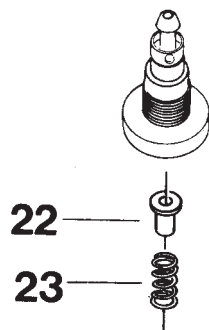
BALANCE HOUSING

Removal:

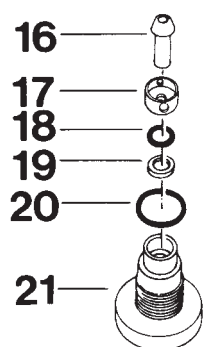
Place the first-stage valve with the balanced housing facing upwards.



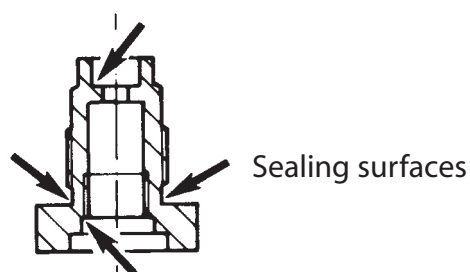
1. Steady the balance housing with a special wrench. Then remove the blind screw (25) with a 5 mm Allen wrench. Remove the o-ring (24) with an o-ring remover. Remove the balance housing (21) with the special wrench.

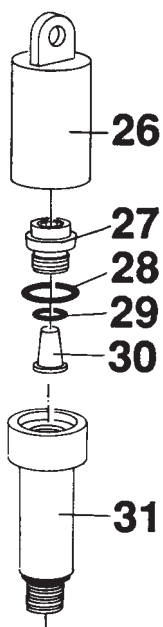


2. Remove the spring (23) and the spring guidance (22).



3. Remove the valve piston (16) and the spacing sleeve (17). Remove the o-ring (18) with an o-ring remover. Remove the washer (19) and the o-ring (20). Use an o-ring remover for this also. Make sure the sealing surfaces are not damaged.

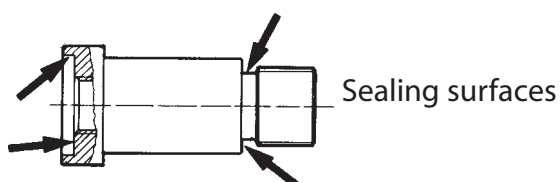
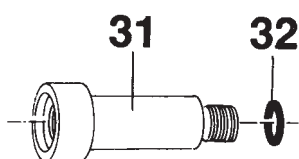
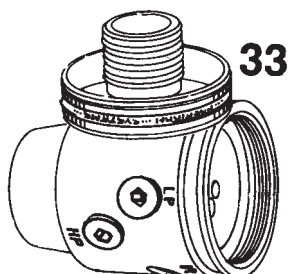


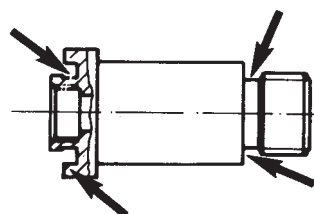
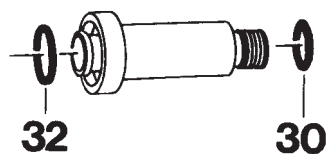
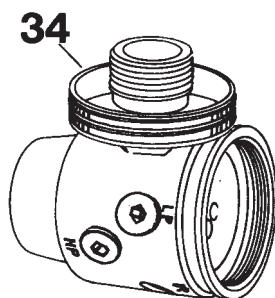
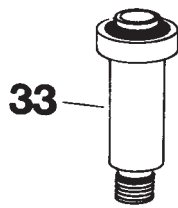
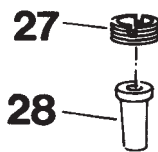
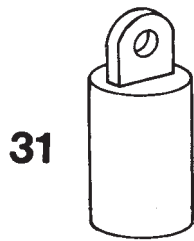


FIRST STAGE 2962, 3257, 3580, 3585

Removal:

1. Remove the protective cap (26).
2. Remove the locking screw (27) with a 6 mm Allen wrench. Remove the o-ring (28) and the cupfilter (30).
3. Place the first stage in the fixture. Remove the connecting (31) with a 6 mm Allen wrench.
4. Remove the wheel (33) and the oring (32) with an o-ring remover. Make sure the sealing surfaces are not damaged.



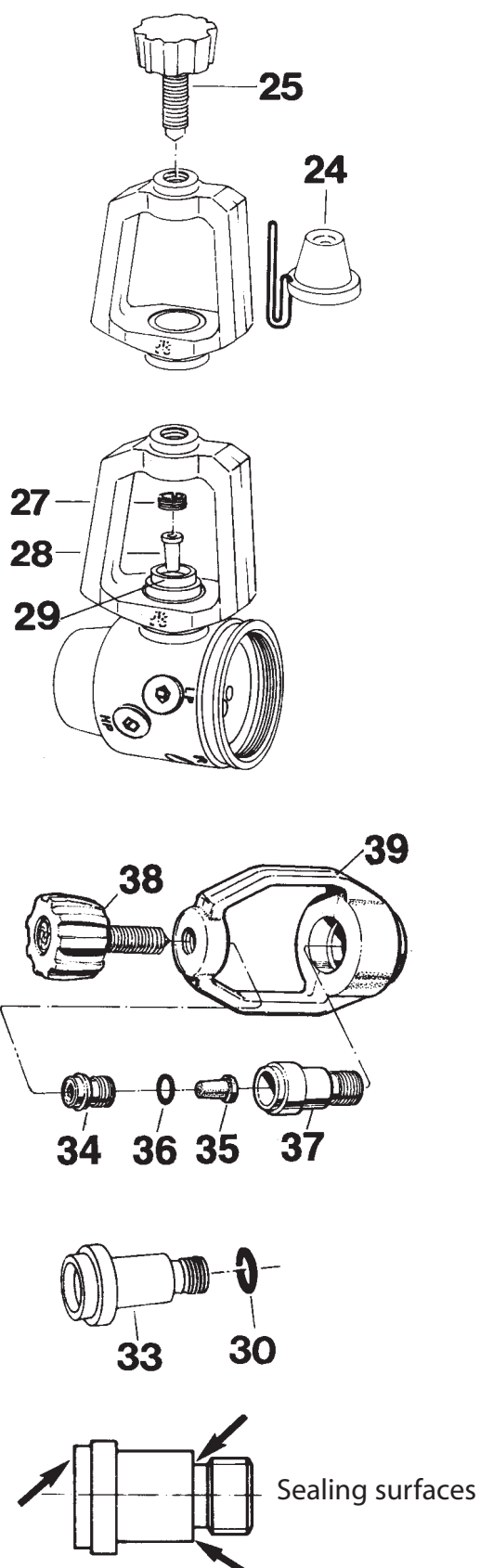


Sealing surfaces

FIRST STAGE 2801

Removal:

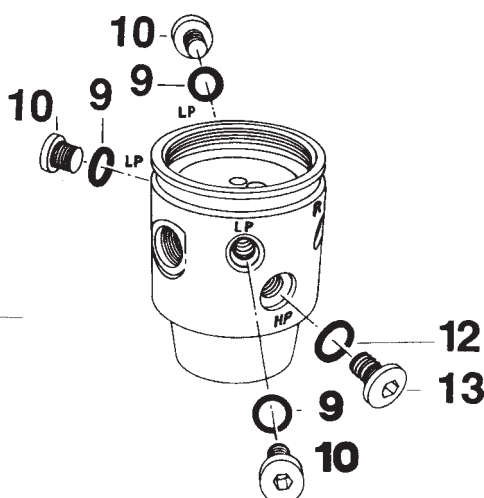
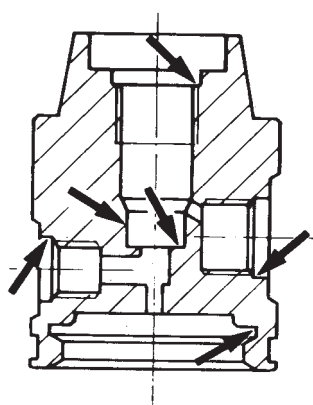
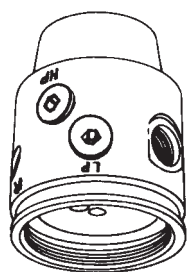
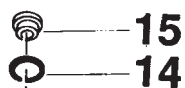
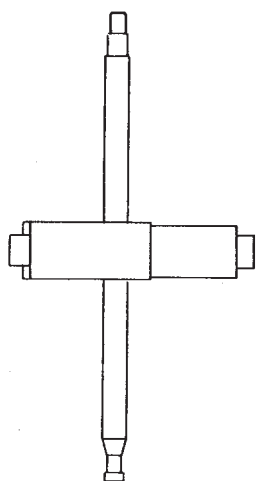
1. Remove the protective cap (31).
2. Remove the locking screw (27) with an 8.5 mm screwdriver. Remove the cup filter (28).
3. Place the first stage in the fixture. Remove the high pressure valve housing (33) with a 6 mm Allen wrench.
4. Remove the wheel (34).
5. Remove the o-rings (30,32) with an o-ring remover. Make sure the sealing surfaces are not damaged.



FIRST STAGE 2801, 3257 10, 3585 10

Removal:

1. Remove the protective cap (24).
Unscrew the knob (25).
2. Remove the locking screw (27)
with an 8.5 mm screwdriver.
Remove the cup filter (28).
3. Remove the connection (29)
with a 6 mm Allen wrench.
4. New model, remove the locking
screw (34) with an 6 mm Allen
wrench. Remove the cup filter
(35) and the o-ring (36). Remove
the connection (37) with an 6
mm Allen wrench.
5. Remove the o-ring (30) with an
o-ring remover. Make sure the
sealing surface is not damaged.



FIRST STAGE

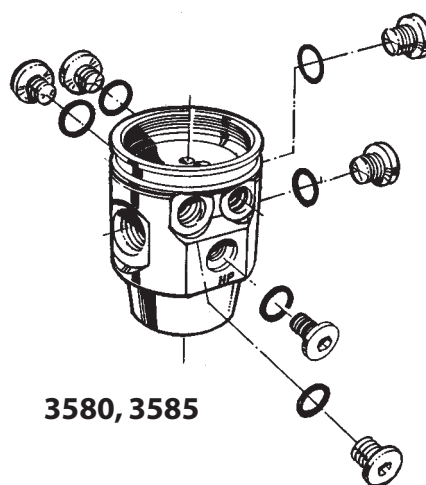
**2801, 2808, 2962, 3257,
3580, 3585**

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

7. Remove the o-ring (14) with an oring remover. Make sure the sealing surface is not damaged.

8. Remove the valve housing from the fixture.

9. Remove the blind screw (10 and 13) with a 5 mm and 3 mm Allen wrench. Remove the o-rings (9 and 12) with an o-ring remover. Make sure the sealing surfaces are not damaged.



When servicing the regulator the following parts should be replaced:
See chapter Service-kit.

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

CLEANING:

If corrosion or salt deposits occurs, place all metal parts – concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes. Then, rinse 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.

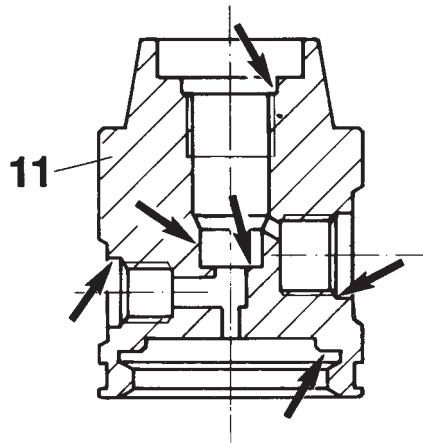
**Hempocid = Acid Liquid Detergent
Containing phosphoric acid (5 - 10%)
and bactericid for disinfectant cleaning.*

Checking:

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

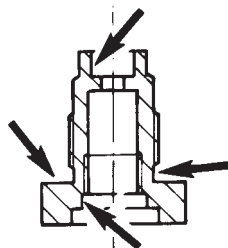
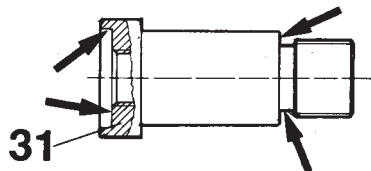
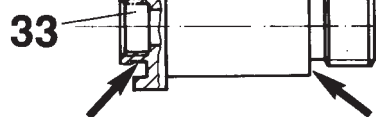
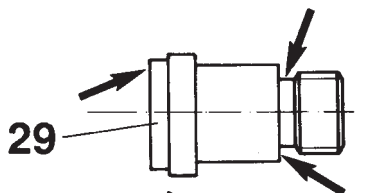
1. Valve needle (8). Check to make sure that the needle is straight.
2. The blind screws (10 and 13). Check to make sure the sealing surfaces are undamaged. Also check that the threads are not damaged.





3. The valve housing (11).

Check to make sure the threads and also the sealing surfaces for the o-rings are undamaged.

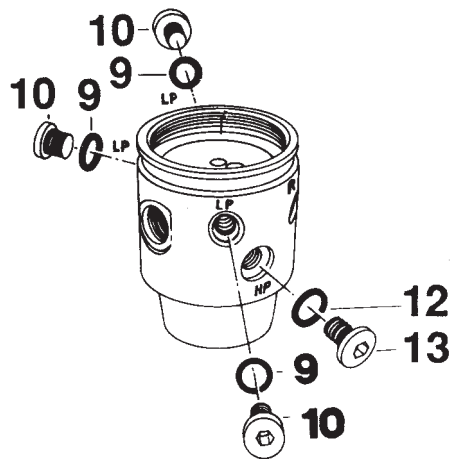


4. The connections (29,31 or 33).

Check to make sure the sealing surfaces for the o-rings are undamaged.

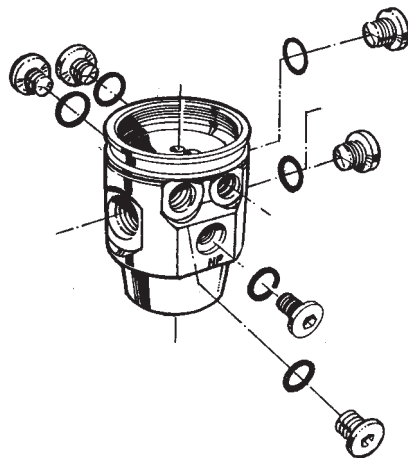
5. Balanced housing (21).

Check to make sure the threads and also the sealing surfaces for the o-rings are undamaged.

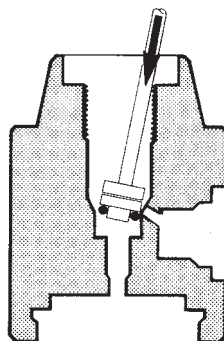


Assembly

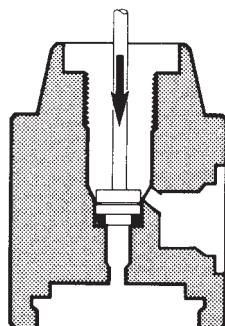
1. Install the o-rings (9) and (12) on the blind screws (10) and (13). Lubricate through the outlets.

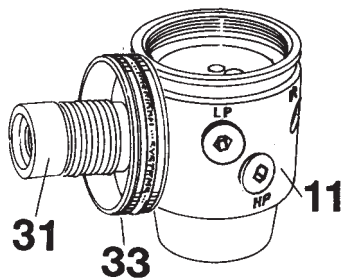
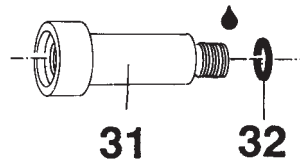


2. Screw in the blind screws in the LP- HP outlets. Use a 5 mm Allen wrench and tighten up by hand.



3. Install the o-ring (14) on the valve seat (15) and the install the valve seat with a seat drift. Press the drift diagonally as shown in the diagram and the "rock" it to the vertical while pressing down. The seat and o-ring should pop into place. This procedure avoids damage to the oring from the high pressure supply outlet.

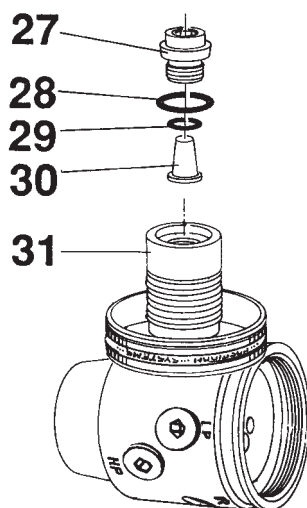




FIRST STAGE 2962, 3257, 3580, 3585

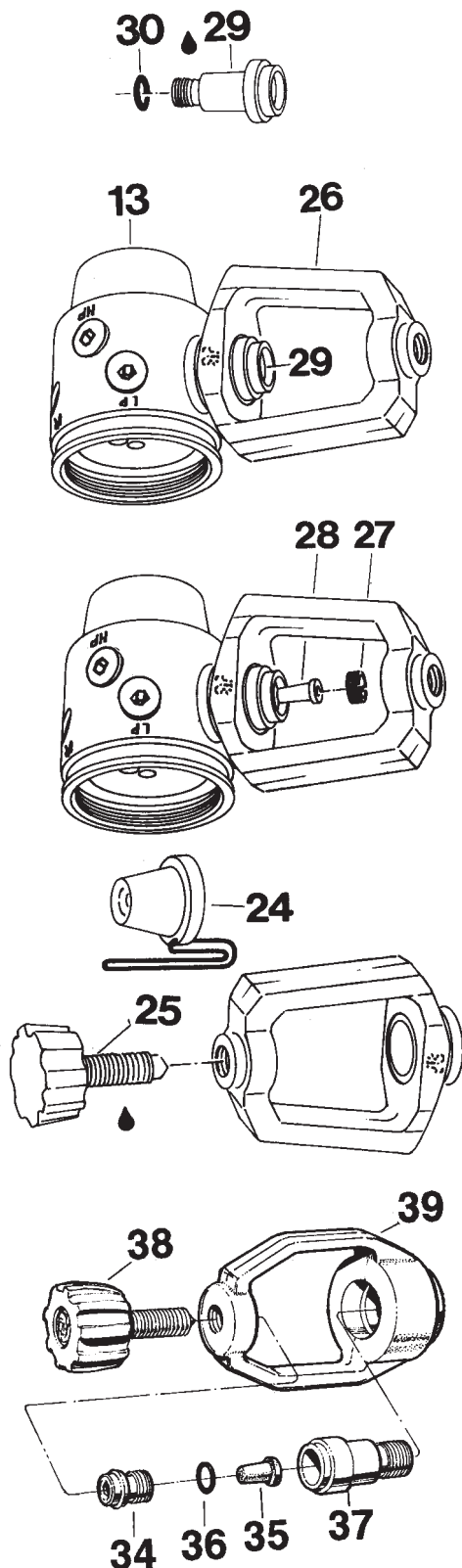
Assembly:

1. Install the o-ring (3 1) on the connection (30). Lubricate the o-ring and the thread.
2. Install the wheel (33) on the connection.
3. Screw the wheel connection assembly into, the valve housing assembly with a 6 mm Allen wrench.



Place the valve housing (11) in a fixture. Tighten with a torque wrench to 28 - 30 Nm (20-22 lbf. ft.).

IMPORTANT! Use bits No 3119 (L = 40 mm). Put o-ring (29) on the cup type filter (30). Install these and o-ring (28) and the locking screw (27) in connection (31). Tighten with a Allen wrench 6 mm.

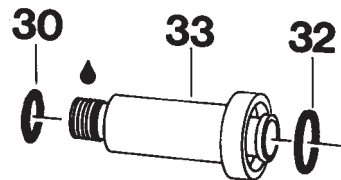


FIRST STAGE

2801, 3257 10, 3585 10

Assembly:

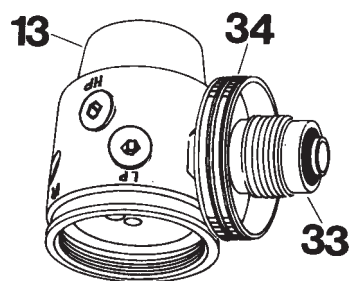
1. Install the o-ring (30) on the connection (29). Lubricate the thread and the o-ring.
2. Place the connection (29) in the Yoke (26) and screw the connection into the valve housing (13) using a 6 mm Allen wrench. Place the valve housing in a fixture. Tighten with a torque wrench to 28 - 30 Nm.(20-22 lbf.ft). Use bits nr 2883 (length 30 mm)
3. Install the cup filter (28). Screw in the locking screw (27) with a 8.5 mm screw driver. Install the protective cap (24).Grease the thread and screw in the knob.
4. New model. Place the connection (37) in the Yoke (39) and screw the connection into the valve housing, using a 6 mm Allen wrench. Place the valve housing in a fixture. Tighten with a torque wrench to 28 - 30 Nm (20 - 22 lbf.ft). Use bits nr 3119 (length 40 mm)
5. Install the o-ring(36) on the cup type filter(35). Place the filter in the connection(37).
6. Install the protective cap, grease the thread and screw in the knob.



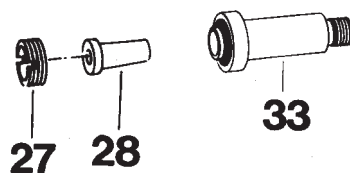
FIRST STAGE 2808

Assembly:

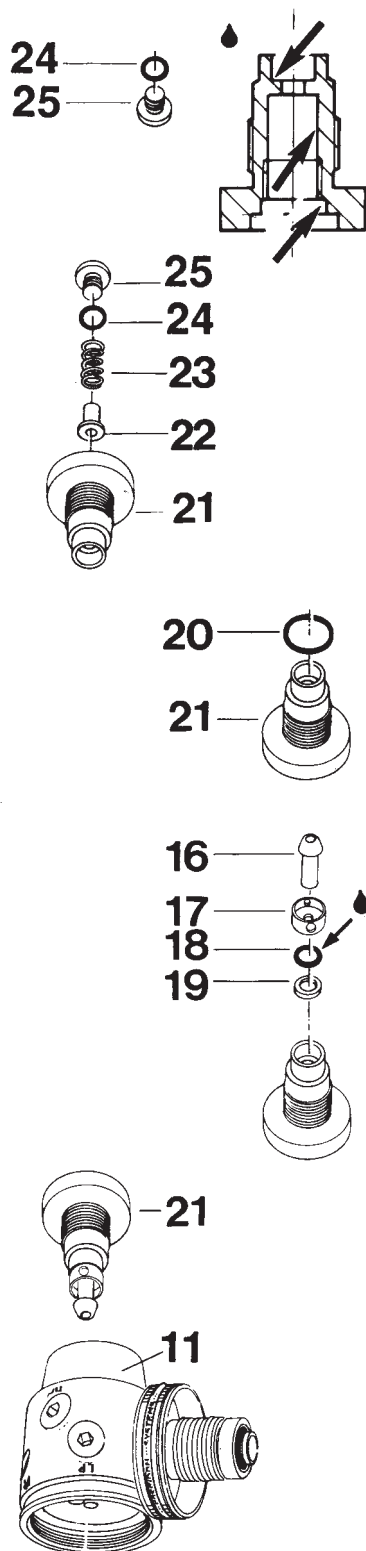
1. Install the o-rings (30,32) on the connection (33). Grease the o-ring (30) and thread.



2. Fit the connection (33) to the wheel (34) and screw it into the valve housing (13) with a 6 mm Allen wrench. Place the valve housing in torque wrench to 28 - 30 Nm.(20-22 lbf.ft).



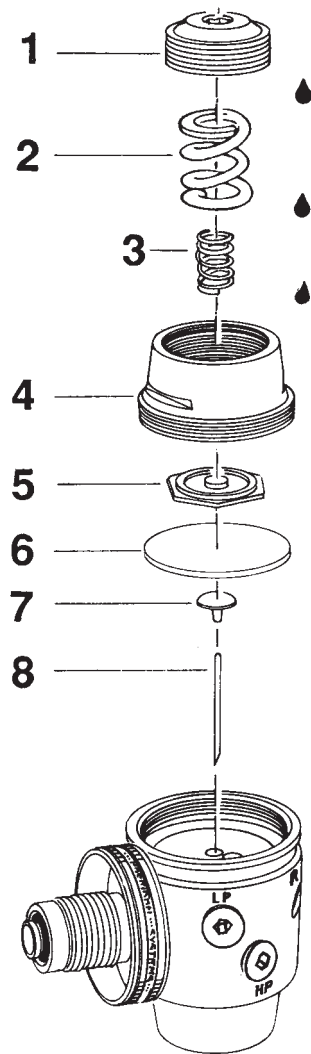
3. Install the cup filter (28) screw in the locking screw (27) with an 8.5 mm screwdriver.



FIRST STAGE

BALANCED HOUSING

1. Install the o-ring (24) on the blind screw G 1/8" (25).
2. Grease the inside of balanced housing (21).
3. Install the spring guide (22) and the spring (23). Serew in the blind screw (11) with a 5 mm Allen wrench. The blind screw should be tightened while the balanced housing is held in the valve housing.
4. Install the o-ring (20) at the balanced housing .
5. Install the washer (19)and the oring (18). Grease the inside of oring and the washer. Install the spacing sleeve (17) and the valve piston (16).
6. Install the balanced housing (21) in the valve housing (11) and tighten the blind screw with a Allen wrench to 10Nm/7 lbf.ft.



7. Turn the valve housing with the secondary side upwards.

8. Install the valve needle (10). At previous models the needle was beveled in one edge. The bevel should in these cases be pointed downwards.

9. Install the lower diaphragm centre (7) and the diaphragm (6), which must be pushed into the groove in the valve housing. Check to make sure that this is correctly installed by pressing it downwards. It should move approximately 2 mm (1/16").

10. Install the upper diaphragm centre (5).

11. Install the cover (4) and tighten with a torque wrench to 28 - 30 Nm. (20-22 lbf.ft).

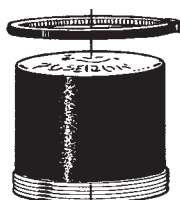
12. Install the spring (2) and (3), lubricate both ends of the spring and the thread on pressure adjusting screw, and tighten 5 turns with a 6 mm Allen wrench.



REPAIR INSTRUCTIONS FIRST STAGE REDUCING VALVE

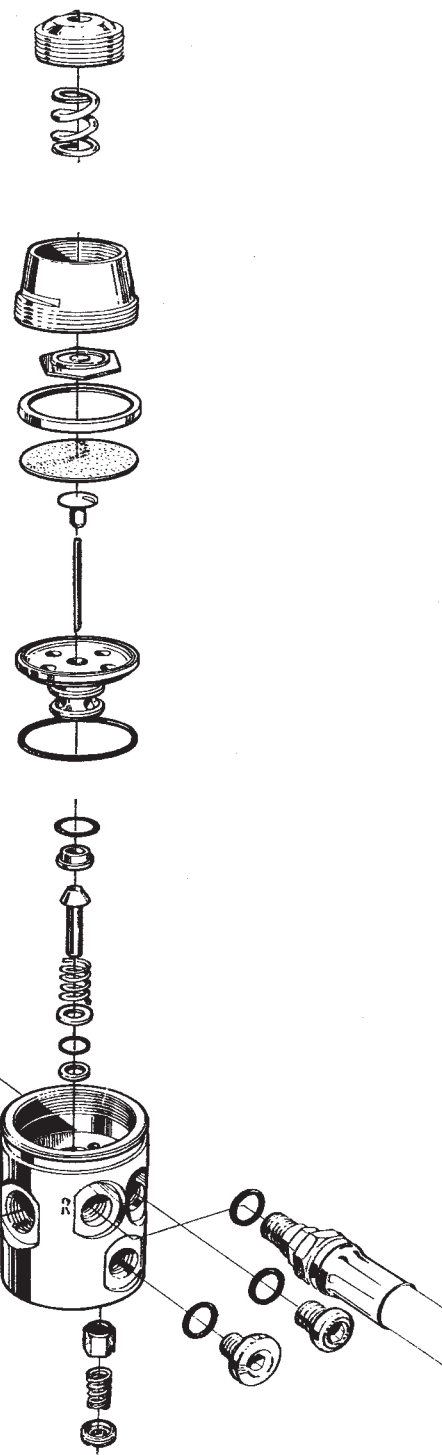
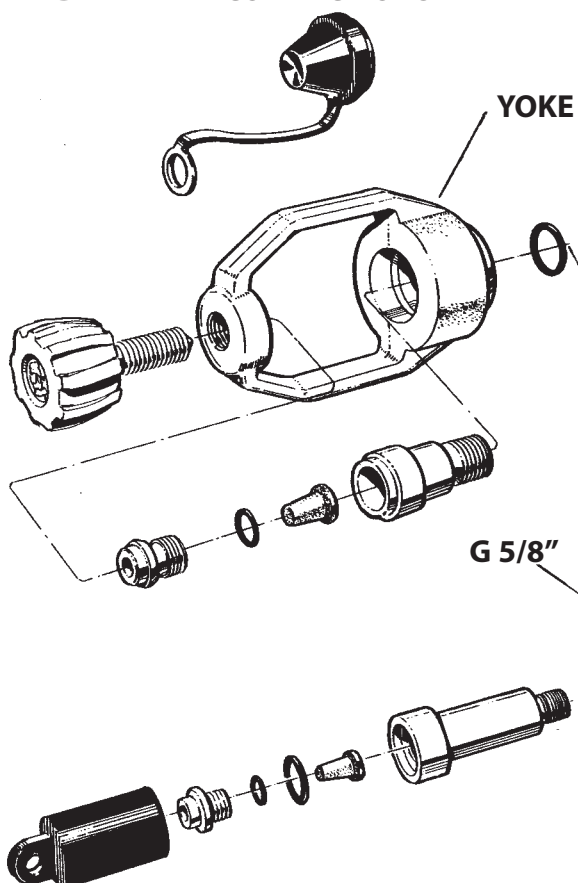
3720

3720 10

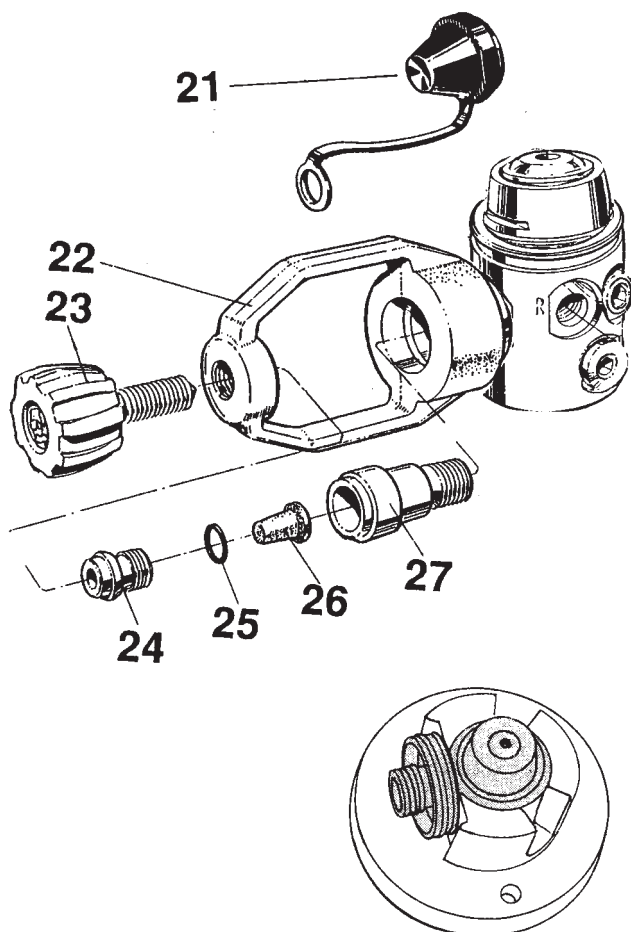
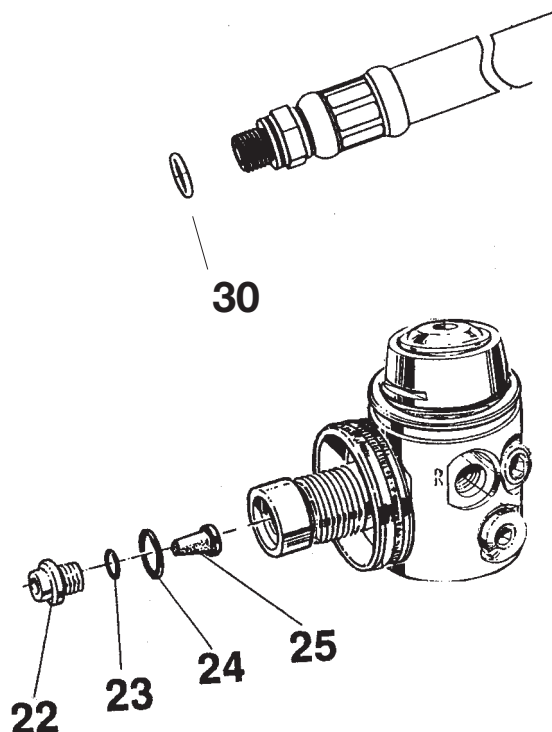


ANTI-FREEZE CAP

DIFFERENT CONNECTIONS



SAFETY VALVE



FIRST STAGE VALVE 3720

Secondary side:

1. Disconnect the low pressure hose from the first stage valve using a 13 mm box spanner.
2. Remove the o-ring (30) from the low pressure hose with the o-ring remover.

First stage valve with G 5/8":

3. Remove the locking screw (22) with a 6 mm Allen wrench. Remove the o-ring (24) and the cup-filter (25) with o-ring (23).

First stage valve with Yoke:

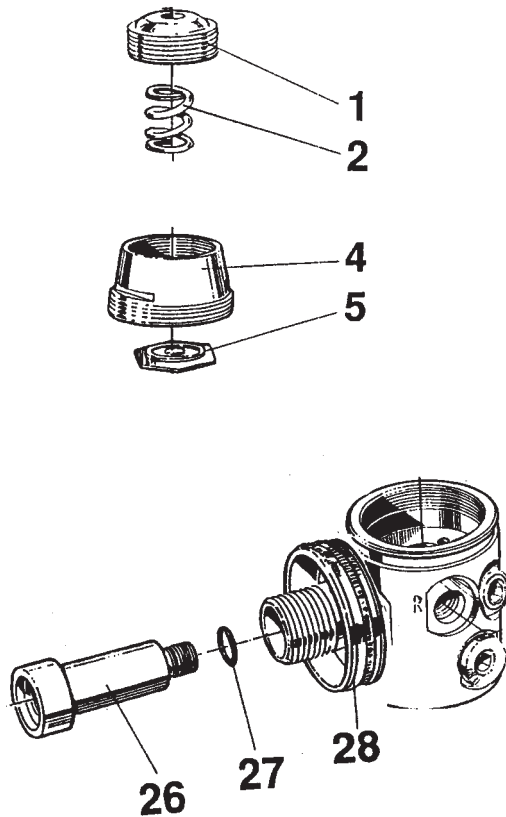
3. Remove the knob (23) and the protective cap (21). Remove the locking screw (24) with a 6 mm Allen wrench. Remove the cup filter (26) and the o-ring (25).
4. Place the first stage valve with the secondary side facing upwards in the fixture.



FIRST STAGE VALVE 3720

Removal:

1. Remove the pressure adjusting screw (1) with a 6 mm Allen wrench and remove the spring (2 and 3).
2. Remove the cover (4) using a 27 mm crowsfoot and the upper diaphragm center (5).

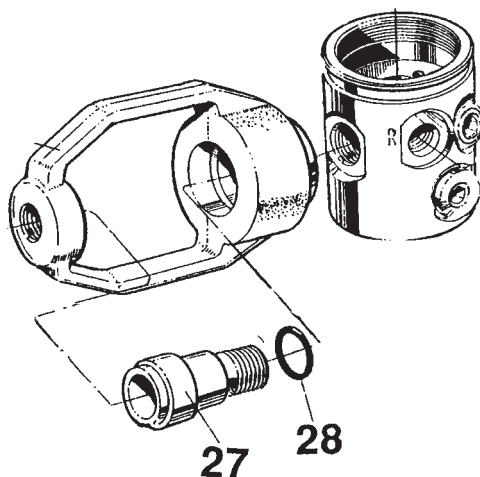


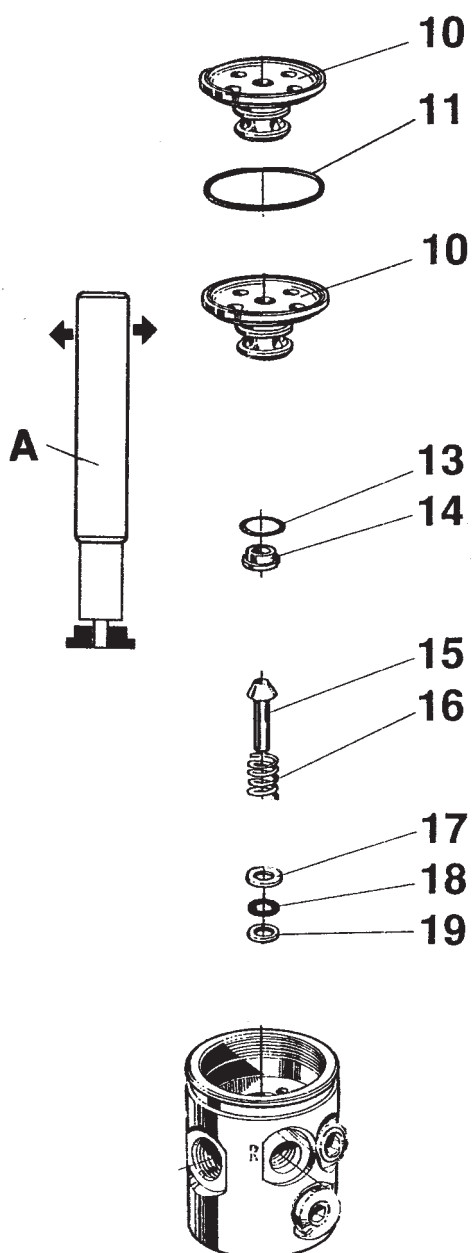
First stage valve with G 5/8":

3. Remove the connection (26) and the wheel (28) with a 6 mm Allen wrench.
4. Remove the o-ring (27) with an o-ring remover. Make sure the sealing surfaces are not damaged.

First stage valve with Yoke:

3. Remove the connection (27) and the yoke (22) with a 6 mm Allen wrench.
4. Remove the o-ring (28) with an o-ring remover. Make sure the sealing surfaces are not damaged.

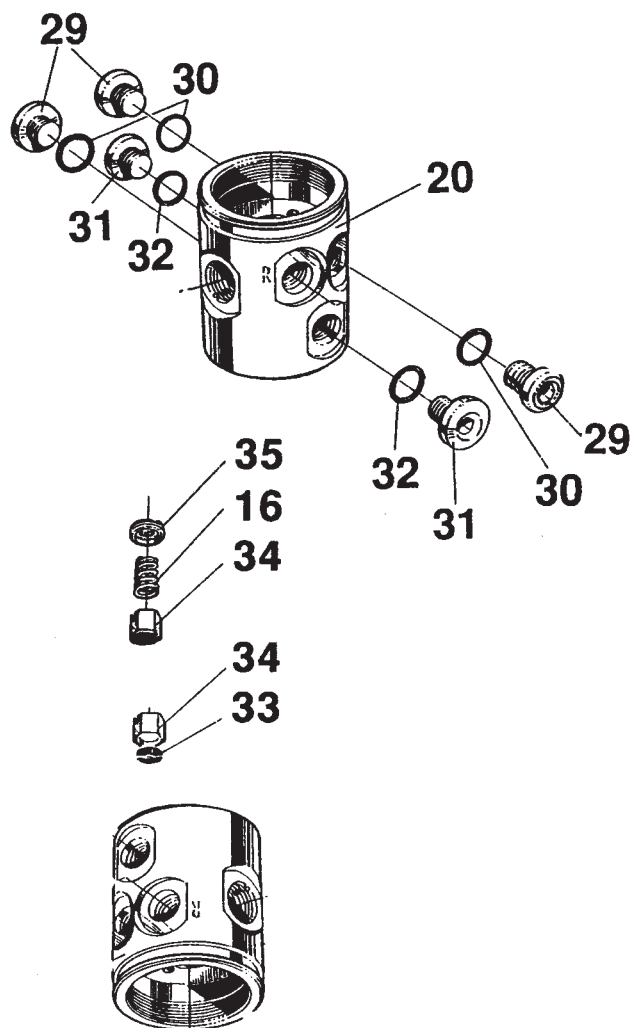




FIRST STAGE VALVE 3720

Removal:

1. Remove the valve centre, upper (6) and the diaphragm (7).
2. Remove the diaphragm centre, lower (8) and the valve needle (9).
3. Remove the valve centre, lower (10) and the o-ring (11) with an o-ring remover. Make sure the sealing surfaces are not damaged.
4. Remove the valve seat (14) and the o-ring (13) with the assembly drift A.
5. Remove the valve piston (15) and the pressure spring (16).
6. Remove the washer, steel (17), the o-ring (18) and the washer, teflon (19) with an o-ring remover. Make sure the surfaces, are not damaged.



FIRST STAGE VALVE 3720

Removal:

1. Remove the blind screw (29 and 31) with a 5 mm Allen wrench. Remove the o-rings (30 and 32) with an o-ring remover. Make sure the sealing surfaces are not damaged.
2. Remove the locking screw (35) with a 4mm Allen wrench. Remove the pressure spring (16) and the valve piston (34).
3. Remove the valve sealing (33) from the valve piston (34) with an o-ring remover.

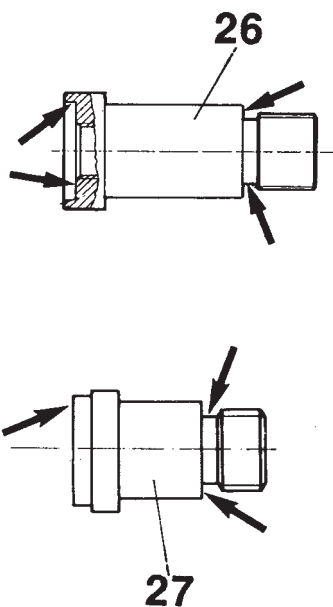
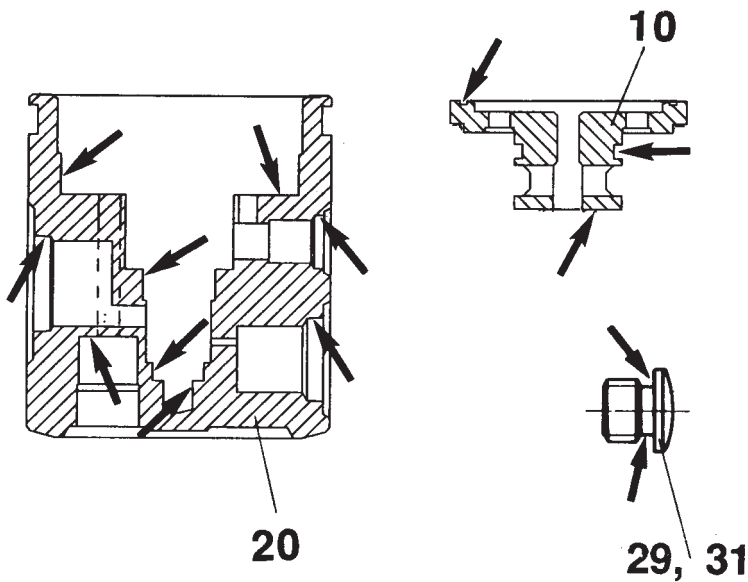
Cleaning:

If corrosion or salt deposits occurs, place all metal parts in concentrated Hempocid* or 15% Hydrochloric acid for about 10 minutes. Then rinse them 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 disinfectant cleaning.

FIRST STAGE VALVE, 3720

**When servicing the regulator
the following parts should be
replaced:**
(see chapter Servicekit)

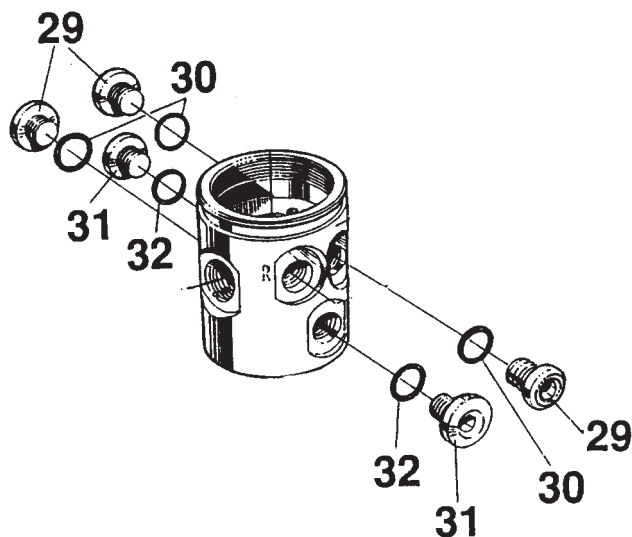
1. All o-rings
2. Diaphragm
3. Cup filter
4. Valve seat
5. Washer
6. Valve sealing



Checking:

Check the following parts to make
sure the sealing surfaces are
undamaged. Also check that the
threads are not damaged.

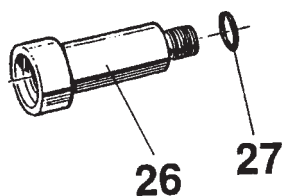
1. The blind screws (29 and 31)
2. The valve housing (20)
3. Valve centre (10)
4. The connections (26 or 27)



FIRST STAGE VALVE 3720

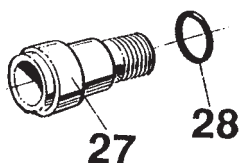
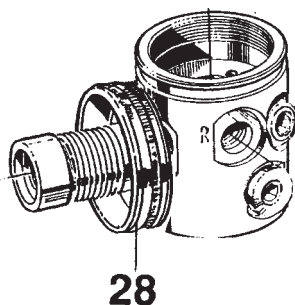
Assembly:

1. Install the o-rings(30 and 32) on the blind screws (29 and 31). Lubricate the outlets.
2. Screw the blind screws in the LP-HP outlets. Use a 5 mm Allen wrench and tighten up by hand.



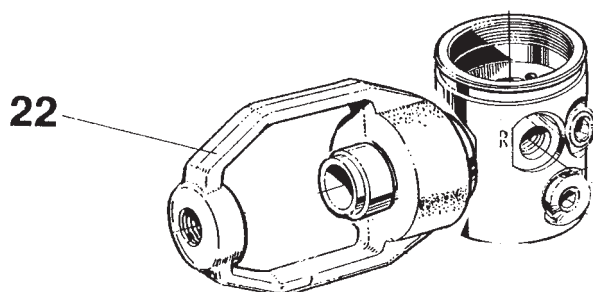
First stage valve with G 5/8":

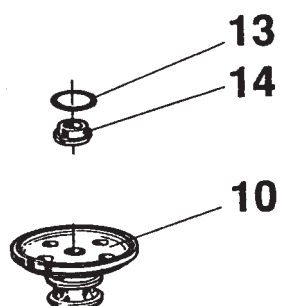
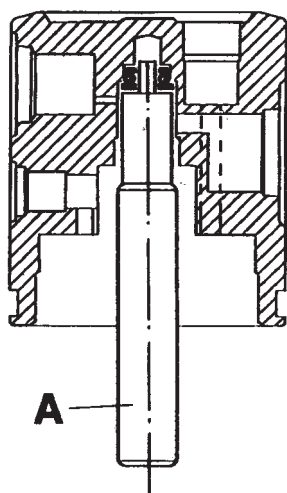
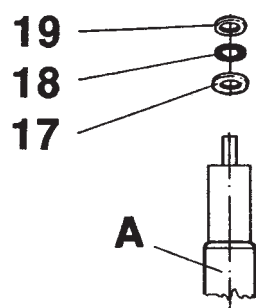
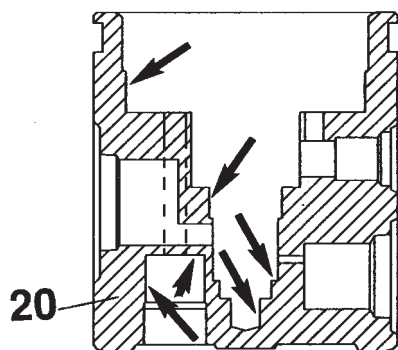
1. Install the o-ring (27) on the connection (26). Lubricate the o-ring and the thread.
2. Install the wheel (28) on the connection.
3. Screw the wheel connection assembly into the valve housing assembly with a 6 mm Allen wrench.



First stage valve with Yoke:

1. Install the o-ring (28) on the connection (27). Lubricate the o-ring and the thread.
2. Install the yoke (22) on the connection.
3. Screw the wheel connection assembly into the valve housing assembly with a 6 mm Allen wrench.





FIRST STAGE VALVE 3720

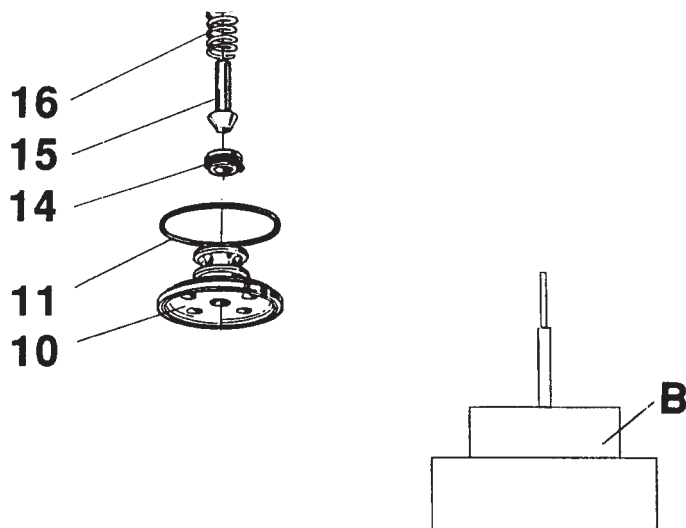
Assembly:

1. Lubricate the valve housing (20).

2. Place on the assembly drift A:
-washer, steel (17)
-O-ring (18)
-washer, teflon (19)

3. Install the valve housing.
Lubricate the washers
and the o-ring.

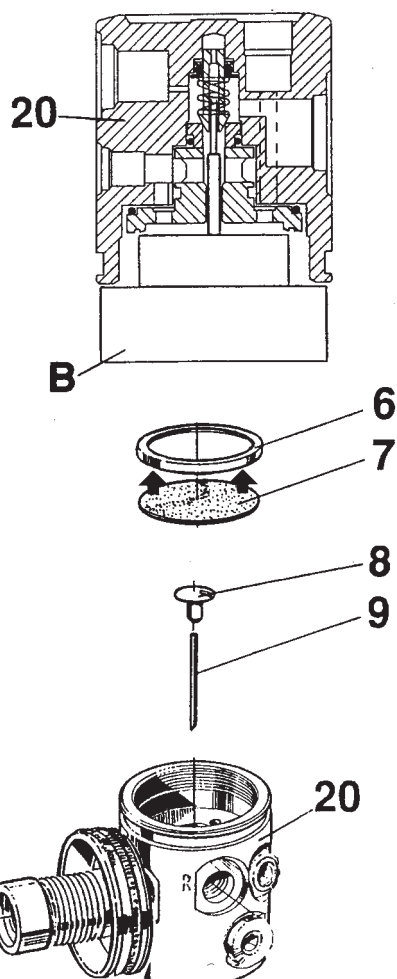
4. Install the o-ring (13) on the
valve seat (14).



FIRST STAGE VALVE 3720

Assembly:

1. Place on the assembly fixture B:
 - valve centre, lower (10)
 - o-ring (11), lubricate
 - valve seat (14) with o-ring downwards
 - valve piston (15), lubricate, and pressure spring (16) on valve piston.



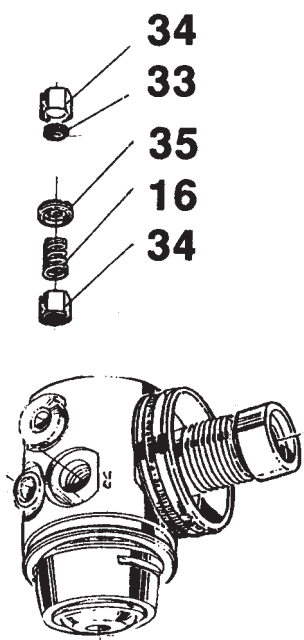
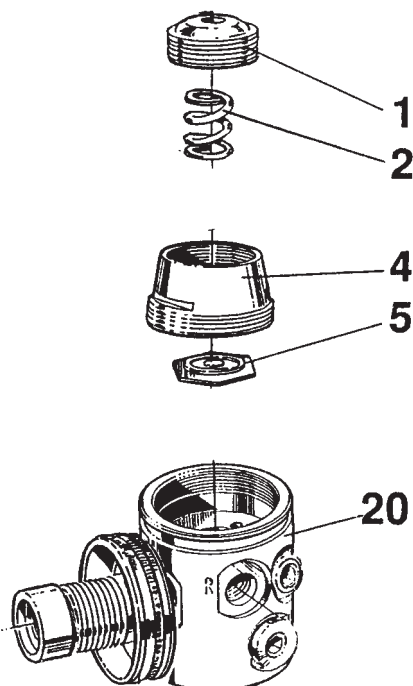
2. Install the valve housing (20).
3. Turn the valve housing (20) with the secondary side upwards.
4. Install the valve needle (9).
5. Install the lower diaphragm centre (8).
6. Install the diaphragm (7) in the valve centre, upper, convex part up (6). Install the valve housing (20).

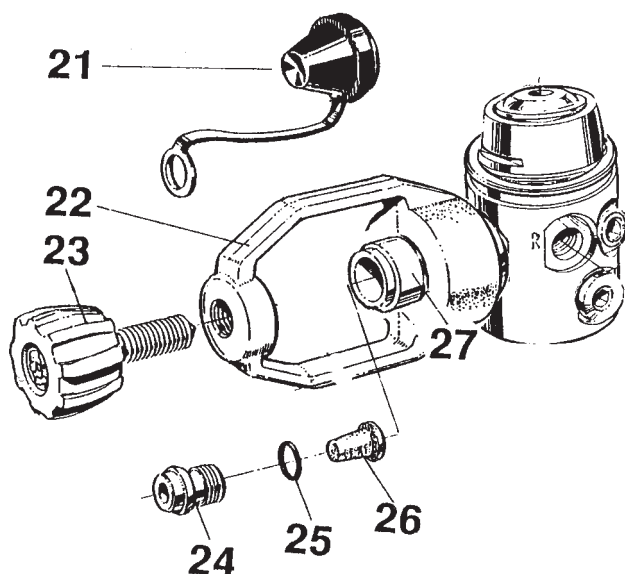
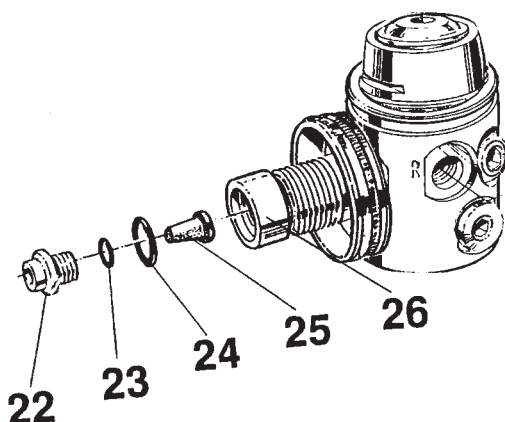
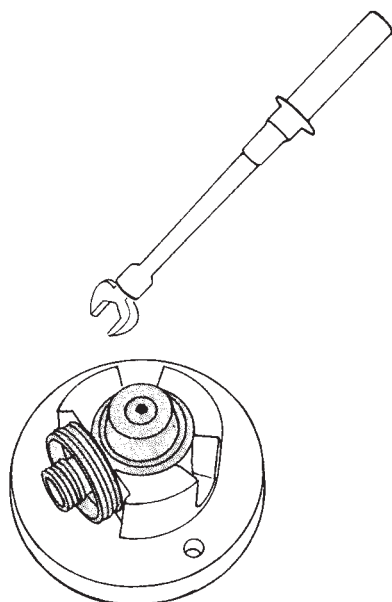


FIRST STAGE VALVE 3720

Assembly:

1. Install the diaphragm centre, upper (5) in the valve housing (20).
2. Grease the thread on the cover (4) and tighten up by hand.
3. Check to make sure that the parts are correctly installed by pressing at the valve centre. It should move approximately 2 mm (1/16").
4. Lubricate both ends of the spring (2 and 3) and install. Lubricate the thread on pressure adjusting screw (1), and tighten 7 turns with a 6 mm Allen wrench.
5. Install the valve sealing (33) on the valve piston (34).
6. Install the valve piston (34) and the pressure spring (16). Install the locking screw (35) with a 4 mm Allen wrench. Tighten up by hand.





FIRST STAGE VALVE 3720

Assembly:

1. Place the valve housing (20) in a fixture.
2. Tighten the cover for valve housing with a torque wrench (30 Nm) and an open ended insert tool 27 mm.
3. Tighten the connection with a torque wrench (30 Nm) and holder insert tool/ bits.
IMPORTANT! Use bits nr 3119 (L = 40 mm).

First stage valve with G5/8":

4. Put o-ring (23) on the cup type filter (25). Install them and the o-ring (24) and the locking screw (22) in the connection (26). Tighten with a Allen wrench 6 mm.

First stage valve with Yoke:

4. Put o-ring (25) on the cup type filter (26). Install them and the locking screw (24) in the connection (27). Tighten with a Wrench 6 mm. Put the protective cap (21) on the knob (23). Lubricate and screw in the knob.
5. Install o-ring (30) on the low pressure hose. Lubricate the o-ring and the thread. Tighten the hose with a 13 mm open wrench.

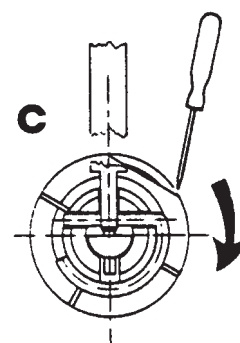
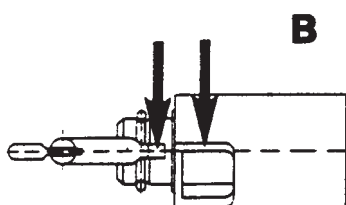
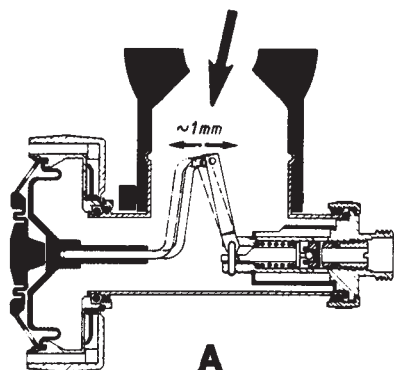
TESTING AND ADJUSTMENT OF REGULATOR CYKLON 300 Art. No. 2980

First stage valve:

1. Connect the regulator to the test equipment.
2. Connect the test manometer hose to one of the low pressure outlets.
3. Open the LP valve (=20 bar).
4. 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 12.5 bar (the maximum pressure) taking into account any rise in pressure. If the needle continues to move to a higher pressure reading there is a fault in the seal between the valve seat and piston, or the O-ring.
5. Close the LP valve, and open the HP valve (=200/300 bar). Purge intermittently with the purge button, check the tightness, and adjust the pressure to 8.5-11.5 bar.
6. Close the LP valve and purge it fully.

Second stage valve:

1. Open the LP valve. Check the secondary pressure. It should be between 12 and 12.5 bar.
2. Check to make sure that the clearance between the control unit and the low pressure valve is approximately 1mm. 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:

1. Close the LP valve, and empty the regulator completely by means of the purge button.
2. Unscrew and remove the low pressure hose from the second stage valve.
3. 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.
4. Fit the hose and open the LP valve. Check the clearance once again.
5. Close the LP valve.

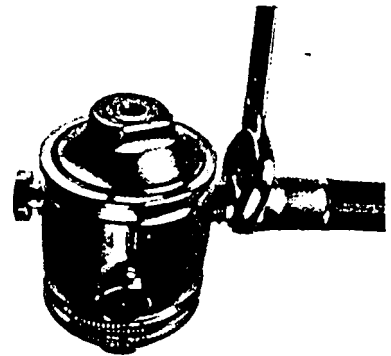
Adjustment of ejector sleeve:

1. Open the HP valve.
2. 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 air and the inhalation resistance is minimal.
3. Close the HP valve and purge fully with the purge button. Tighten the nut moderately.

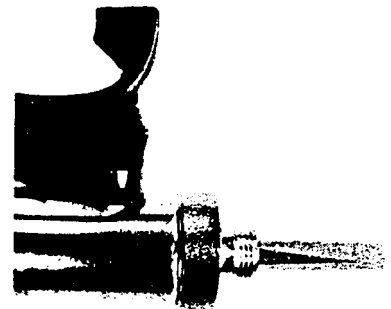
Schlußjustierung des Lungenautomaten

Zusammenbau von Reduzierung und Dosierung (1. und 2. Stufe)

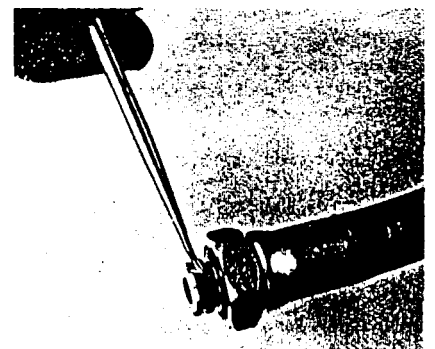
1. Anschluß Niederdruckschlauch mit 1. Stufe.
Achte darauf, daß die Dichtung (19) sich unten im Gewindeanschluß "R" befindet, (Nylondichtung Nr. 1013) bevor man mit Hilfe eines Maulschlüssels SW 13 festzieht.



2. Bei der Voreinstellung der 2. Stufe gehe in folgender Weise vor:
 - a) Schraube mit Hilfe eines Schraubenziehers den Ventilsitz (34) so ein, daß ein kleinstmögliches Spiel zwischen dem Steuerhebel (32) und der Steuerhülse (47) entsteht, gemäß Abbildung.
 - b) Kontrolliere das Spiel dadurch, daß mit dem Zeigefinger der Steuerhebel bewegt wird. (s.Abb.)



3. Anschluß Mitteldruckschlauch zur 2. Stufe.
Kontrolliere, ob der O-Ring (45) nicht fehlt oder defekt ist. Leicht einfetten mit Siliconpaste. Überwurfmutter des Mitteldruckschlauches mit dem Maulschlüssel SW 17 festziehen (s.Abb.).



4. Anschluß des Lugenautomaten gemäß den Anweisungen an die Testausrüstung oder gleichwertige Prüfeinrichtungen.
5. Achte darauf, daß die Stellschraube (21) nicht zu weit eingeschraubt ist, so daß Druck entsteht.
Öffne das Testboxventil so, daß jetzt der volle Flaschendruck in die 1. Stufe kommt. Stelle nun den Mitteldruck mit der Stellschraube (21) Imbus 5 oder 6 mm bis etwa 6 bar ein.
6. Drehe jetzt das Ventil (bei der Prüfung) auf LP.
7. Lasse etwas Mitteldruck ab. Dabei wird der Druckunterschied gegenüber vorher genau eingestellt. Dieser Druckunterschied beruht auf dem Hochdruck (Primärdruck) und soll innerhalb der auf der unten angegebenen Tabelle liegenden Werte liegen.
8. Ändere jetzt bei der Druckprüfung einige Male zwischen HP und LP. Entlüfte die 2. Stufe durch Niederdrücken des Luftduschenknopfes (27) zwischen dem Wechsel von HP auf LP und kontrolliere das Prüfmanometer (für Mitteldruck), das bei jedem Wechsel mit verändertem Druck stehenbleibt. Lies den Druckunterschied ab, der sich ohne Veränderung gemäß der unteren Tabelle verhalten soll.

Beachte: Auf dem Mitteldruckmanometer wird die Funktion des Reduzierventils (1. Stufe) wie folgt abgelesen:

- a) Wenn der Zeiger des Manometers schnell bei dem justierten Druck anhält, ohne daß er langsam sein Steigen fortsetzt, ist das Reduzierventil in einem guten Zustand.
- b) Wenn der Druck, nachdem der Manometerzeiger steht, langsam weiter steigt, aber nach einer weiteren geringeren Druckerhöhung stehenbleibt, so kann das zugelassen werden, mit einer Toleranz von 0,2 bar.
- c) Wenn der Druck fortsetzt zu steigen um mehr als 0,2 bar oder bis zu einem Druck, der so hoch ist, daß das Dosierungsventil (2.Stufe) abbläst, liegt ein Fehler der Dichtung zwischen dem Sitz (16), Ventilkolben (8) oder O-Ring (17) vor.

Wenn dies der Fall ist, müssen die fehlerhaften Teile ausgetauscht werden. Verfahre gemäß den oben angegebenen Demontierungsanweisungen.

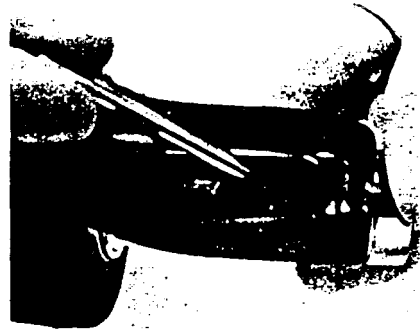
Richtwerte für Druckdifferenzen bei der 1. Stufe:

Der Mitteldruck beruht auf den unterschiedlichen Hochdrücken (s. folgende Tabelle)

Hochdruck	Mitteldruck
20 bar ... 150 bar	1,5 bar
20 bar ... 200 bar	2,2 bar
20 bar ... 300 bar	3,3 bar

Feineinstellung des Lungenautomaten

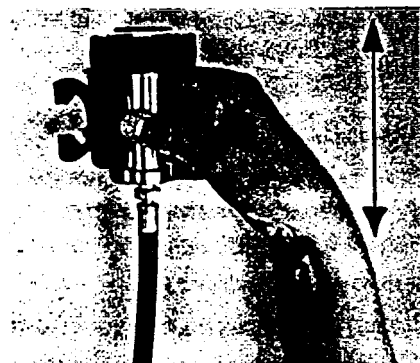
1. Drehe die Injektorhülse (48) des Dosierventils so, daß die halbe Öffnung sichtbar ist, egal welche Seite der Injektorhülse bis zur Mitte der Nut des Steuerhebels reicht. Dies reicht aus, um die volle Injektorwirkung zu erreichen und einen kontinuierlichen Luftablaß zu vermeiden.



2. Die Testprüfung (Einstellung) soll auf 20 bar stehen.

- 3a Halte die 2. Stufe so, wie die Figur es zeigt und mache vorsichtig schüttelnde, vertikale, wiederholende Bewegungen. Der Zweck ist die Kontrolle, ob die Membrane (26), das Membranröhrchen (47) (Steuermembranhülse) und der Ventilhebel (32) nicht die Dichtungsfunktion des Niederdruckventils beeinflussen, wenn ein Gleichgewicht zwischen dem ankommenden Druck an der Dichtung (34) und dem unter Federspannung stehenden Ventilkolben mit der Ventilplatte (39) erreicht ist.

Zur gleichen Zeit kontrollieren Sie nochmals, ob das Spiel des Ventilshebels im Membranröhrchen (47) den früher gegebenen Anweisungen entspricht. Das Spiel wird größer, wenn die Stufe unter Druck steht und muß deshalb später während der Feinregulierung neu eingestellt werden.



- b) Während die 2. Stufe in der obigen Position gehalten wird, vorsichtig den Mitteldruck erhöhen, bis Luft auszutreten beginnt.
- c) Verringere den Mitteldruck gerade soweit, daß das Niederdruckventil wieder schließt.(Die 2.Stufe läßt keine Luft mehr ab). Die normalerweise dafür erforderliche Drucksenkung beträgt höchstens 1/4 Drehung der Druckeinstellschraube (21).

4. Stelle den Mitteldruck in der Prüfbank auf Hochdruck.

- a) Drehe die Öffnung der Injektorhülse (48) so, daß sie voll sichtbar ist.
- b) Drücke die Luftdusche (27), so daß durch den Injektoreffekt ein kontinuierlicher Luftstrom entsteht.
- c) Stoppe den Luftstrom, indem die Hand vor die Mundstücksöffnung der 2. Stufe gehalten wird.
- d) Drehe die Öffnung der Injektorhülse etwas zur Seite. Wiederhole vorangegangene Prozedur, bis die Injektorwirkung nicht länger eine kontinuierliche Luftströmung hervorruft.
Diese Justierung ist empfindlich, und es ist wichtig, daß die Einstellung so genau ausgeführt wird, daß man mit Hilfe des Injektoreffektes die maximale Luftleistung erreicht, aber ein kontinuierliches Abblasen, was durch die Venturiwirkung hervorgerufen wird, vermieden wird.

6. Sperre die Luftzufuhr ab und erzeuge in der 2. Stufe Unterdruck, um zu kontrollieren, ob eine Undichtigkeit in der Membrane, den O-Ringen usw. vorliegt.

7. Führe eine Schlußkontrolle durch, indem die 1. Stufe in ein Wasserbad gelegt wird, um nachzusehen, ob irgendwo Luft austritt. Kontrolliere, den festen Sitz aller Anschlüsse und kontrolliere mit einem Ein- und Ausatemwiderstandsgerät, ob die technischen Daten mit Anleitung übereinstimmen.

Der Lungenautomat ist nun betriebsbereit.

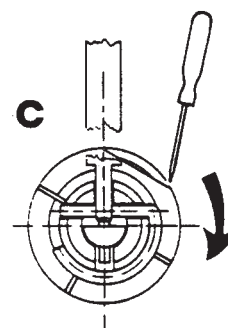
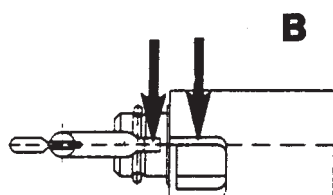
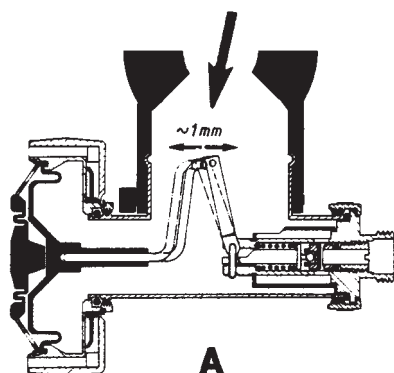
TESTING AND ADJUSTMENT OF REGULATOR CYKLON 5000 (DIVEAIR) Art. No. 2950, 3950

First stage valve:

1. Connect the regulator to the test equipment.
2. Connect the test manometer hose to one of the low pressure outlets.
3. Open the LP valve (=20 bar)
4. 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 11,5 bar (the maximum pressure) taking into account any rise in pressure. If the needle continues to move to a higher pressure reading there is a fault in the seal between the valve seat an piston, or the O-ring.
5. Close the LP valve, and open the HP valve (=200/300 bar). Purge intermittently with the purge button, check the tightness, and adjust the pressure to 9 - 10 bar.
6. Close the LP valve and purge it fully.

Second stage valve:

1. Open the LP valve. Adjust the sec. pressure to 11,5-12,0 bar.
2. Check to make sure that the clearance between the control unit and the low pressure valve is approximately 1mm. 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.

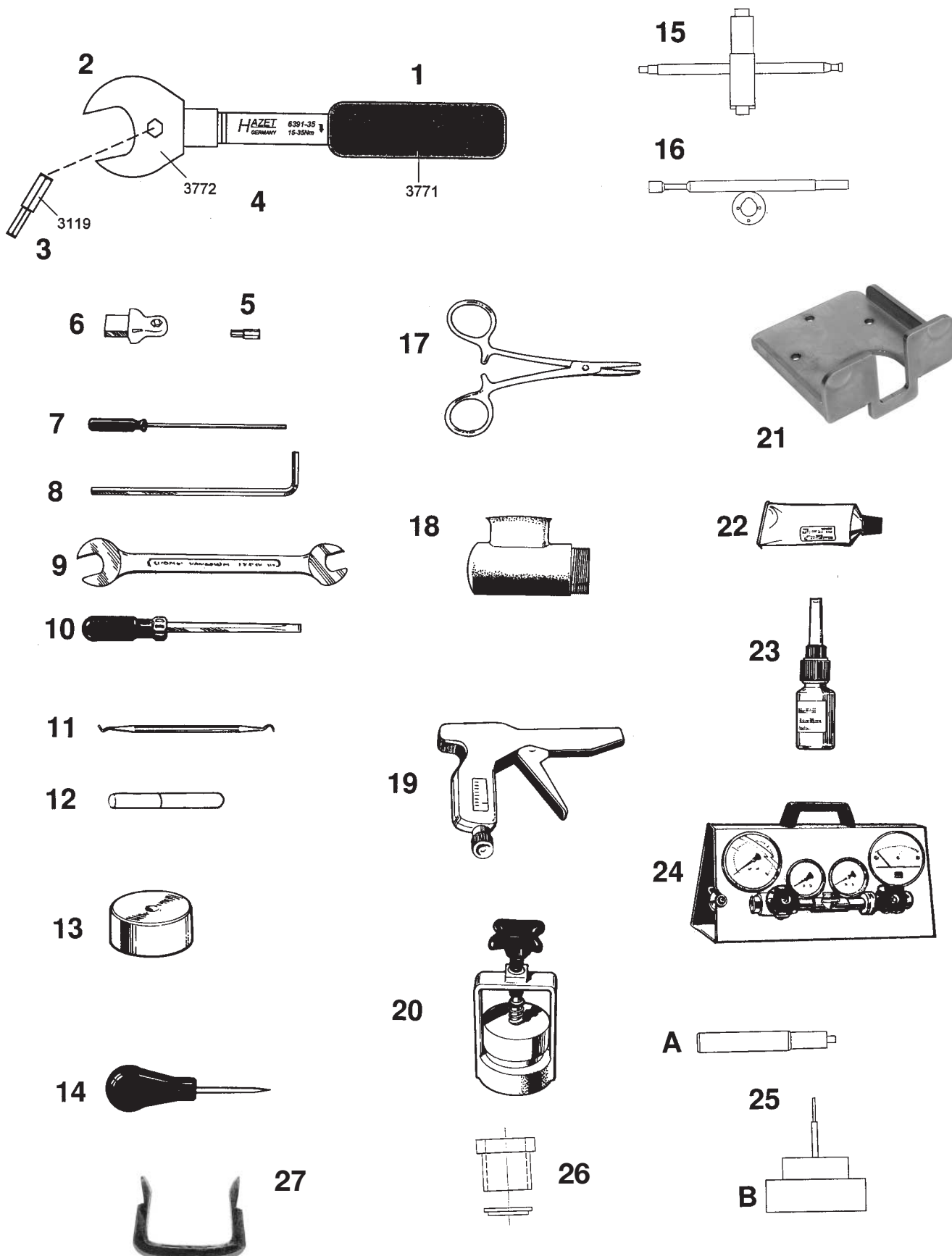


Adjustment of the clearance:

1. Close the LP valve, and empty the regulator completely by means of the purge button.
2. Unscrew and remove the low pressure hose from the second stage valve.
3. 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 approx 10 bar.
4. Fit the hose and open the LP valve. Check the clearance once again.
5. Close the LP valve.

Adjustment of ejector sleeve:

1. Open the HP valve.
2. 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 air and the inhalation resistance is minimal.
3. Close the HP valve and purge fully with the purge button. Tighten the nut moderately.





SERVICE TOOL

1	3771	Torque wrench 30 Nm
2	3772	Open ended insert tool 27 mm with holder inset tool
3	3119	Bits 6 mm, length 40 mm
4	3773	Torque wrench set. Inkl. 3771, 3772, 3119
5	2883	Bits 6 mm, length 30 mm (For old type of yoke)
6	3774	Bits holder for Yoke
	8510	Allen wrench 1,27 mm
7	2706	Allen wrench 1,5 mm
	3761	Allen wrench 4 mm
8*	2714	Allen wrench 3 mm
	1246	Allen wrench 5 mm
	2275	Allen wrench 6 mm
9*	1354	Open end wrench I - 13 mm
	1388	Open end wrench 14 - 15 mm
	1312	Open end wrench 16 - 17 mm
10*	2893	Screw driver 3,5 mm
	2885	Screw driver 8,5 mm
11	2297	O-rings remover
12	2299	Drift for low pressure valve
13	3138	Holder for 2299
14	1304	Awl
15	3605	Combination tool no I
16	3606	Combination tool no 2
	3875	Tool No. 3605 and 3606 in a box
17	2705	Adjusting tool
18	2894	Test fixture for low pressure valve
19	2150	Plastic band pliers
20	2112	Assembly tool
21	3397-10	Fixture for first stages
22	2587	Grease silicone 10 g
	8507	Grease Gleitmo 594 10 g
23	3139	Oil silicon 20 g
24	3460	Regulator test
25	3879	Toolkit:
	3717	Assembly drift A
	3757	Assembly fixture B
26	3758	Assembly fixture
27	3601	Dismounting tool for Triton

*Accessories

3873	Toolkit for Triton 2nd Stage:
8510	Allen wrench 1,27 mm
3601	Dismounting tool
3758	Assembly fixture

T E S T B O X oder P R Ü F B A N K einfache AUSFÜHRUNG

Die Testvorrichtung ist für 300 bar-Automaten gedacht. 200-bar-Automaten können angeschlossen werden, wenn die Kupplung G mit dem Hochdruckausgang F verbunden wird.

Die Testausrüstung ist abgestimmt, um evtl. Undichtigkeiten im LA zu finden und für die Einstellung des Mitteldruckes der 1. Stufe.

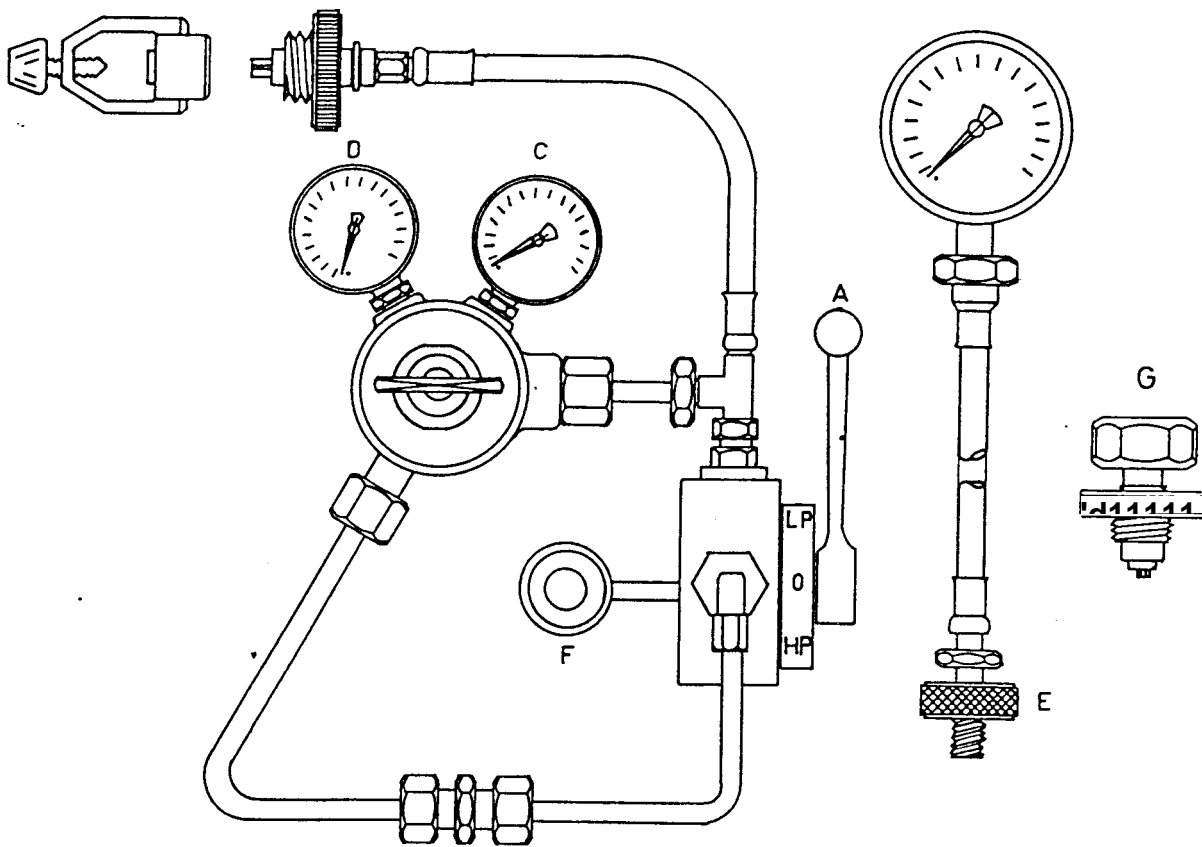
Anschluß

Die Test- oder Prüfbank sollte an einer Wand oder mit einer Werkbank befestigt sein.

1. Hebel A soll in geschlossener Position "0" stehen.
2. Schließe den Hochdruckschlauch B an einen Preßluftbehälter mit einem Druck von 150 -300 bar an.
3. Öffne das Behälterventil (PTG).
4. Kontrolliere den Hochdruck am Manometer C und den Niederdruck am Manometer D. Der Hochdruck soll nie kleiner als 150 bar sein. Der Niederdruck soll immer 20 bar betragen.
5. Verbinde die bewegliche Kupplung E mit dem Anschluß LP der ersten Stufe.
6. Schließe die erste Stufe an den Hochdruckanschluß F an.
7. Die Testvorrichtung ist nun betriebsbereit. Ein Wechsel zwischen Hochdruck HP und Niederdruck LP wird mit dem Hebel A vorgenommen.

Zur Beachtung:

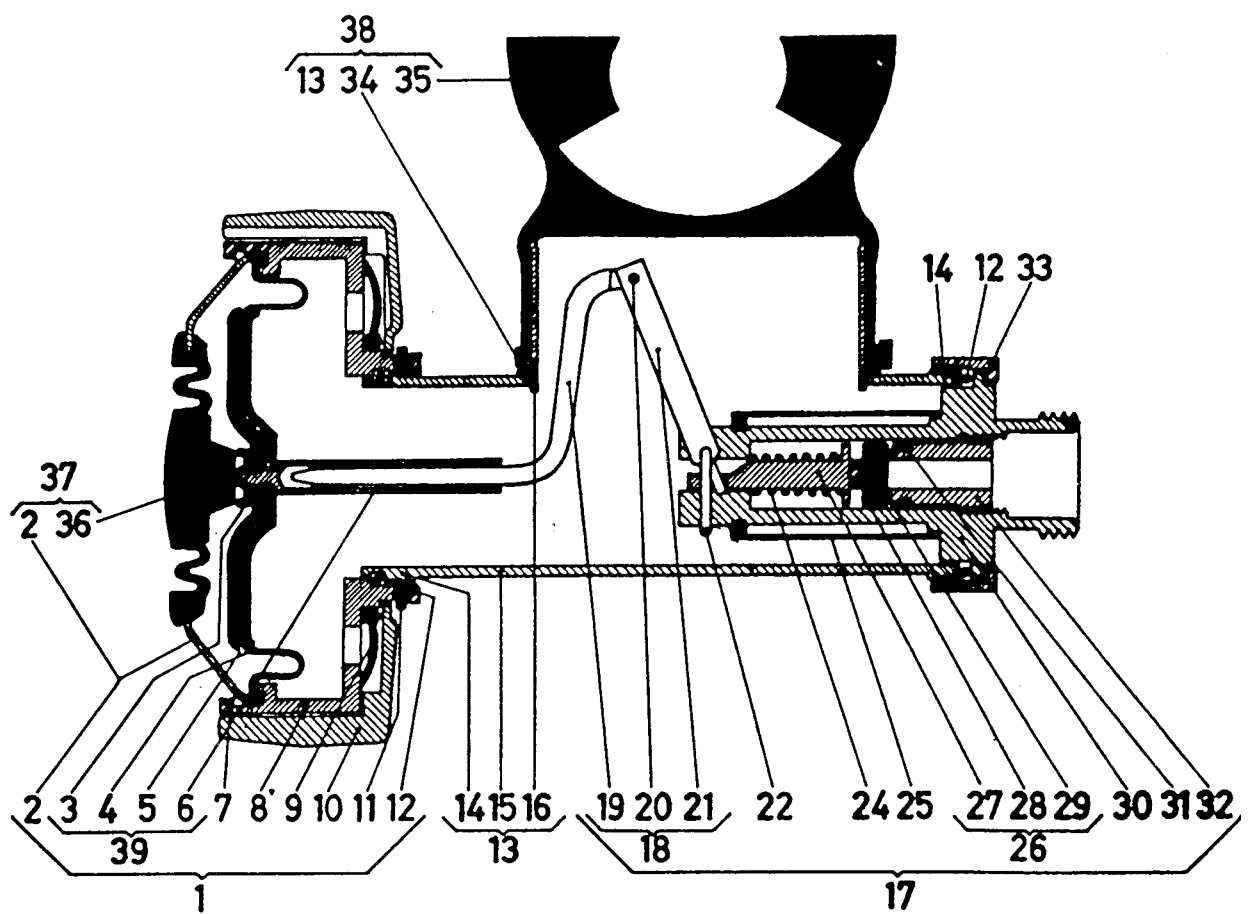
Der Bügelanschluß wird bei internationalen Flaschenventilen benutzt und mit dem Handrad-Anschluß B des Hochdruckschlauches verbunden.



ERSATZTEILLISTE 2. Stufe Nr. 1133 / 200 + 300 bar

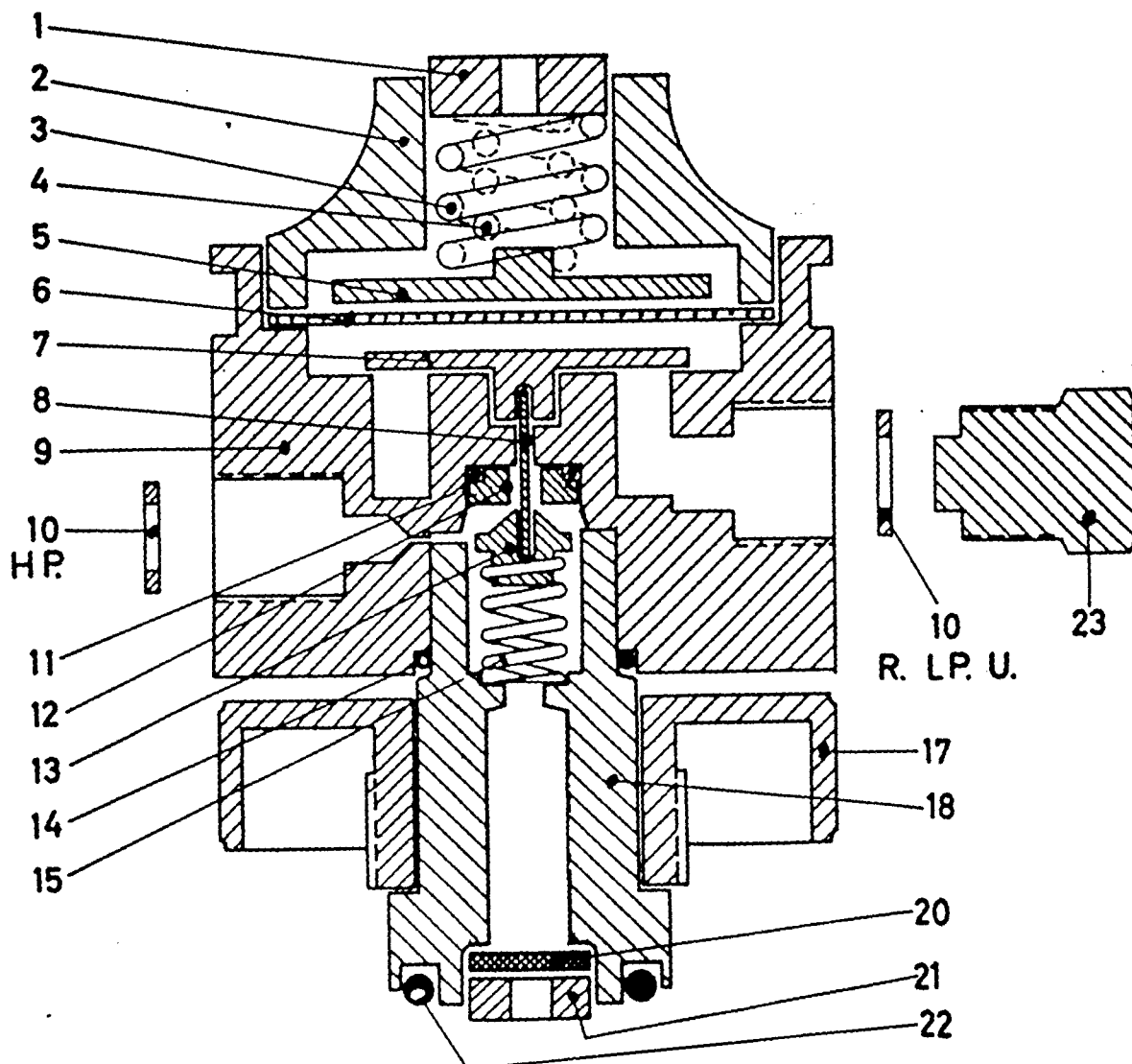
<u>Nr. in</u> der Skizze	Ersatzteilnummer	Beschreibung
-	1133	Zweite Stufe
1	2000	Membrangehäuse komplett
2	2001	Membrandeckel
3	1136	Membranmutter
4	2133/NEU 2577	Steuermembrane
5	2132	Membranzentrum,2. Stufe
6	1139	Steuerhülse
7	1140	Sprengring
8	1141	Membrangehäuse
9	1982/NEU 2579	Ausatemmembrane
10	1999	Ausatemmembrangehäuse
11	1144	Sprengring
12	1145	O-Ring, 2 St. 22,1x1.6
13	1146	Mundstücksrohr komplett
14	1147	Gewinding, 2 ST.
15	1148/NEU 3200	Munstücksrohr
16	1149/NEU 1167	Spannband
17	1150	Niederdruckventil komplett
18	1151	Steuerhebel komplett
19	1152	Membranverbindungsstange
20	1153	Gelenk
21	1154	Hebel
22	1155	Steuerhebelachse
24	1157	Niederdruckfeder
25	2307	Injektorhülse
26	1159	Ventilkolben komplett
27	1160	Ventilstange
28	1161	Ventilkolben
29	1162	Ventilplättchen
30	1163	Ventilgehäuse
31	1164	O-Ring 4,48x1,78
32	1165	Ventilsitz
33	1166	Überwurfmutter
34	1167	Panduitband 0,6mm (Spannband)
35	1168/NEU 3202	Bißmundstück
36	2004	Luftduschenknopf
37	2005	Membrandeckel mit
38	2087	Mundstücksrohr mit Bißmundstück
39	2086	Einatemmembrane incl.Steuerhülse
	(2577 NEU	Steuermembrane komplett)

DOSERINGSVENTIL NR 1133 300 ATÖ



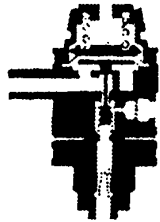
ERSATZTEILLISTE 1. Stufe Nr. 2305 - 300 bar

Nr. in der Skizze	Ersatzteilnummer	Beschreibung
-	2305	1. Stufe
1	1184	Druckeinstellschraube
2	1185	Membrandeckel
3	1186	Äußere Druckregulierungsfeder
4	1187	Innere "
5	1188	Oberes Membranzentrum
6	1189	Membrane 1. Stufe
7	1176	Unteres Membranzentrum
8	2182	Ventilnadel
9	2306	Ventilgehäuse
10	1013	Nylondichtung, 4 Stück
11	1156	O-Ring 7,1 x 1,6
12	2302	Ventilsitz
13	1179	Ventilkolben
14	1233	O-Ring 11,1 x 1,6
15	1180	Hochdruckfeder
17	2222	Handrad R 5/8"
18	2175	Hochdruckventilgehäuse
20	1182 /NEU 1377	Sinterfilter (Bronzefilter)
21	1183	Lochschaube
22	1007	O-Ring 11,3x2,4



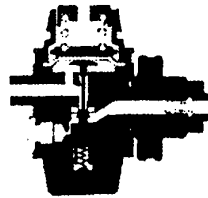
Mitteldrücke für Poseidon Lungenautomaten
einzustellen bei 20 bar Flaschenvordruck

Cyclon 300



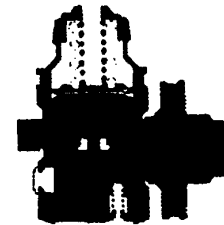
12bar

Cyklon 5000 (alt)



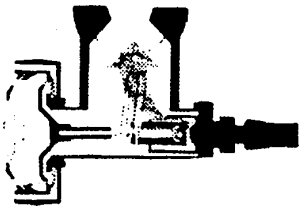
12 bar

Cyklon 5000 (neu)

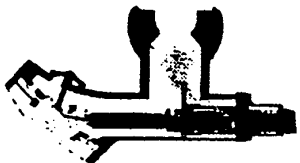


11bar

Cyklon



Jetstream

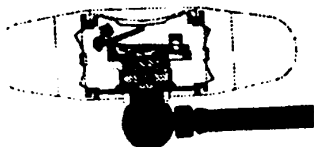


10.5 bar

10.5 bar

9 bar

Triton



entfällt

entfällt

9 bar

Rausdrücken des Ventilsitzes Nr. 2302

1. Stufe Cyklon.

Einsatzhilfe für den O-Ring Nr. 2856

Anschlag von innen 2. Stufe Jetstream.

Rausziehen des Ventilsitzes Nr. 2803

1. Stufe Jetstream u. 1. Stufe Cyklon 5000

Unterseite vom Ring, (ein Stift)

Ventilgehäuseverschlußmutter Nr. 2974

2. Stufe Jetstream lösen oder festschrauben.

Draufsicht vom Ring, (zwei Stifte)

Druckausgleichsgehäuse Nr. 2823

1. Stufe Jetstream u. 1. Stufe Cyklon 5000
lösen oder festschrauben.

1. Lösen oder festschrauben

des Niederdruckventilgehäuse Nr. 2857

2. Stufe Jetstream.

2. Zerlegen und komplettieren

der Inflatorkupplungen der Trockentauch-
anzüge, Unisuit, Jetsuit u. Unisuit Exclusiv

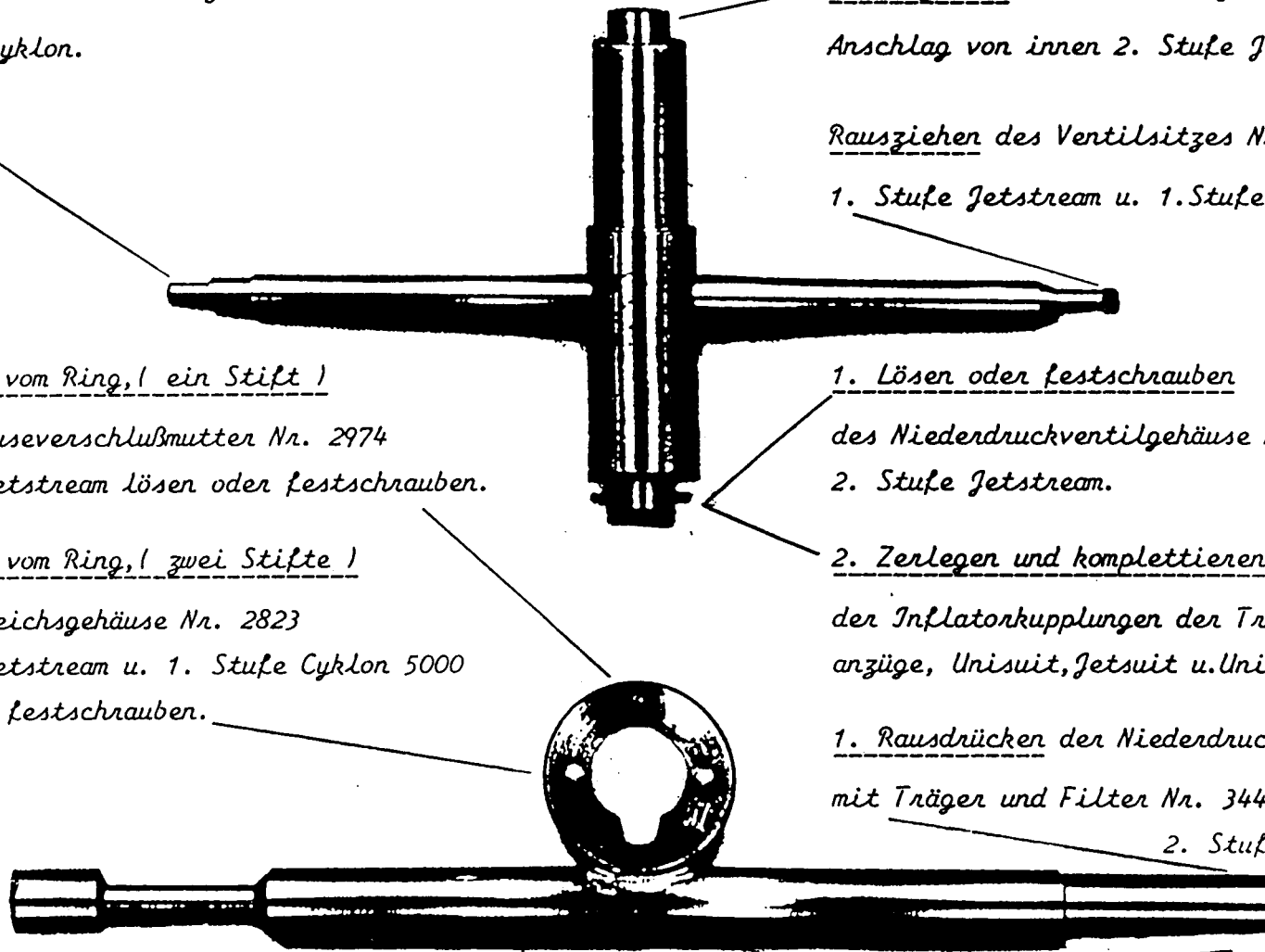
1. Rausdrücken der Niederdruckmanschette
mit Träger und Filter Nr. 3440

2. Stufe Jetstream.

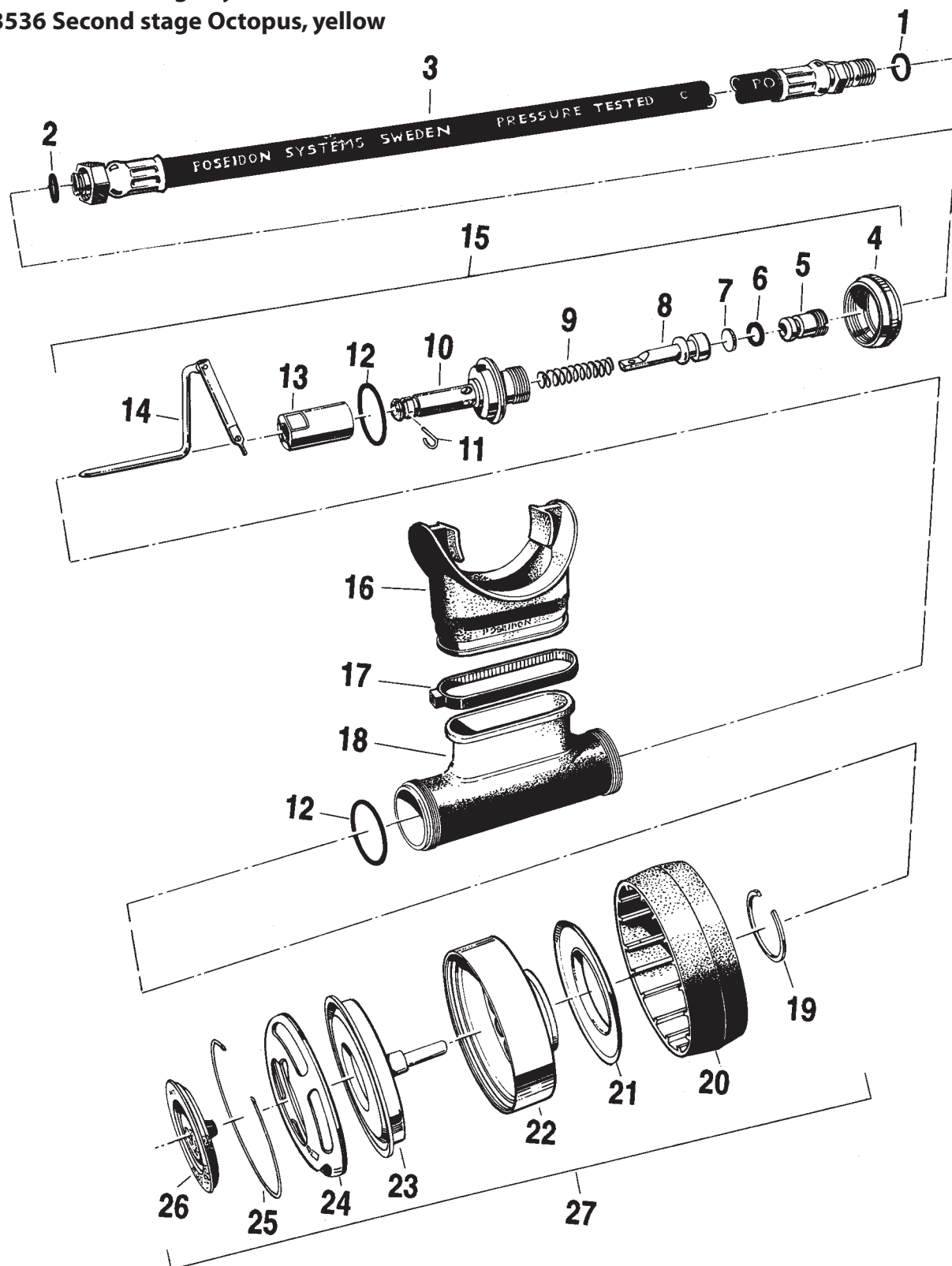
Einsatzhilfe für alle Ventilsitze 1. Stufe.

2. Einpassen des O-Ringes Nr. 2856

2. Stufe Jetstream.



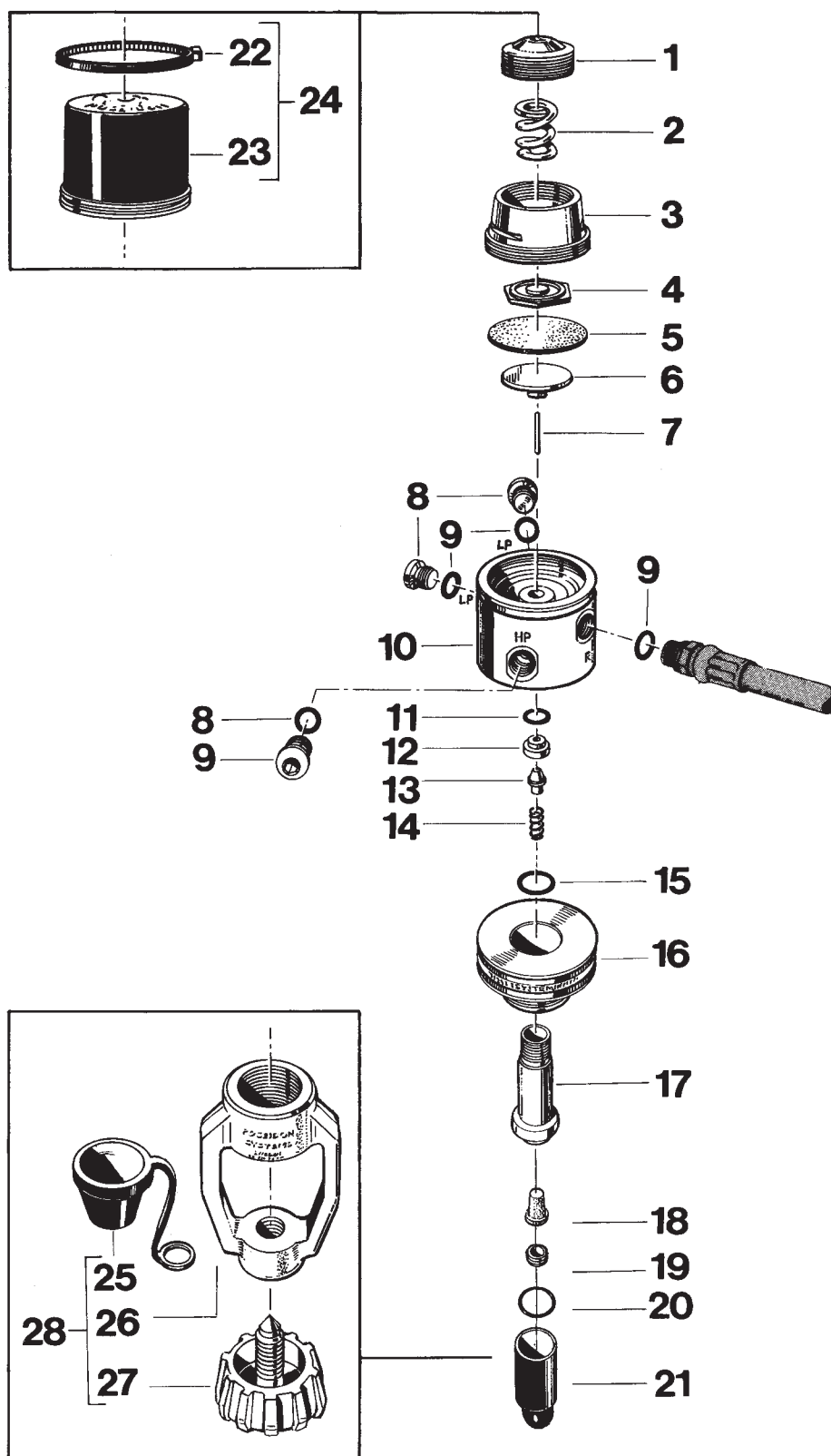
1133 Second stage Cyklon 300, yellow/black
3354 Second stage Cyklon 5000 (Diveair), black
3536 Second stage Octopus, yellow



1133 Second stage Cyklon 300, yellow/black
3354 Second stage Cyklon 5000 (Diveair), black
3536 Second stage Octopus, yellow

Pos.	No.	
1	2782	O-ring
2	1156	O-ring
3	2946	Low pressure hose 70 cm UNF 3/8"
	2947	Low pressure hose 90 cm UNF 3/8"
4	1166	Connecting ring
5	1165	Valve seat
6	1164	O-ring
7	1162	Rubber plate
8	2429	Valve piston
9	1157	Pressure spring
10	1163	Valve housing
11	1155	Lever pin
12	1145	O-ring (2 pcs)
13	2307	Ejector sleeve
14	1151	Operating device
15	1150	Low pressure valve (incl. 5-14)
16	3202	Mouth piece
17	1167	Locking strap
18	3200 10	Mouth piece tube black
	3200 30	Mouth piece tube yellow
19	1144	Locking ring
20	1999 10	Cover for exhalation diaphragm, black
	1999 30	Cover for exhalation diaphragm, yellow
21	2579	Exhalation diaphragm
22	1141	Diaphragm, housing
23	2577	Inhalation diaphragm
24	2001	Cover for inhalation diaphragm
25	1140	Locking ring
26	2004	Purge button
27	2000 10	Diaphragm housing incl. 19-26, black
	2000 30	Diaphragm housing incl. 19-26, yellow

2305 First stage, Cyklon 300



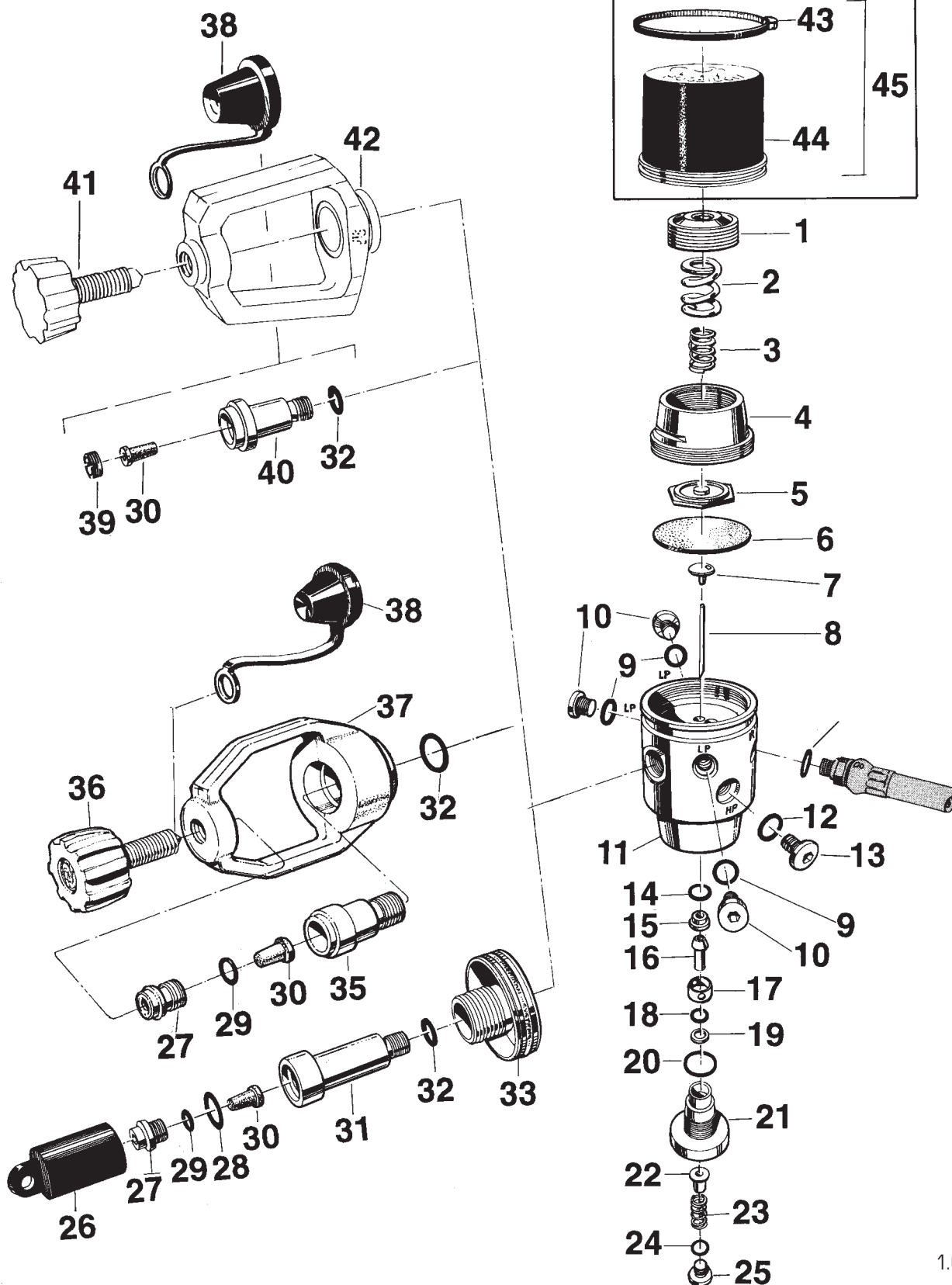


2305 First stage, Cyklon 300

Pos.	No.	
1	3417	Pressure adjusting screw
2	2802	Secondary spring
3	2814	Cover for valve housing
4	2815	Diaphragm centre, upper
5	1189	Diaphragm
6	1176	Diaphragm centre, lower
7	2182	Valve needle
8	2807	Blind screw
9	1013	Gasket
10	2306	Valve housing
11	1156	O-ring
12	2302	Valve seat
13	1179	Valve piston
14	1180	Pressure spring
15	1233	O-ring
16	2222	Wheel G5/8
17	2175	Connection
18	1377	Cup type filter
19	1183	Locking screw
20	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

*Accessories

2962 First stage, Jetstream (USA = ODIN)
2962-10 First stage, Jetstream YOKE
3257 First stage, Diveair (USA = Cyklon 5000)
3257-10 First stage, Cyklon 5000 (Diveair) YOKE

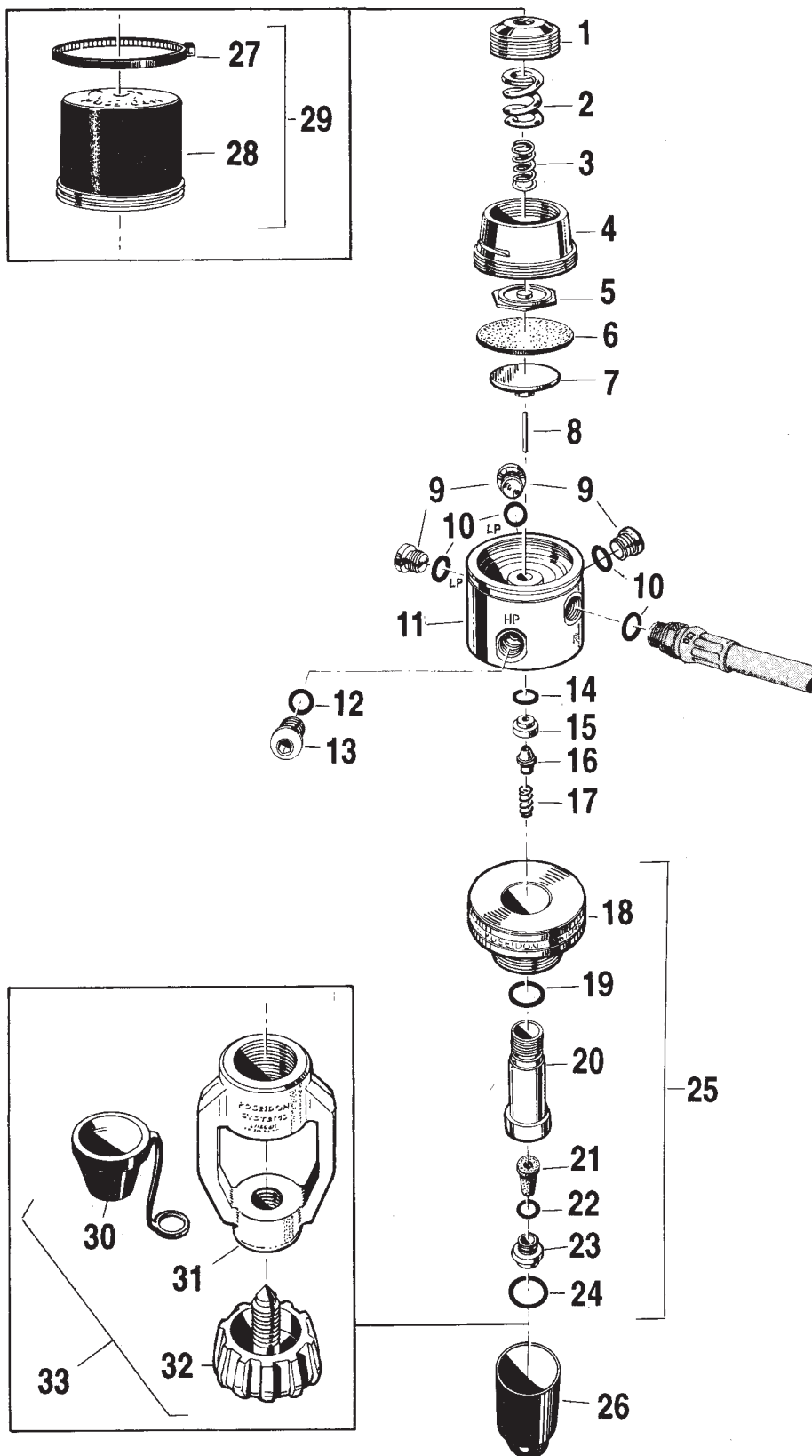



2962 First stage, Jetstream (USA = ODIN)
2962-10 First stage, Jetstream YOKE
3257 First stage, Diveair (USA = Cyklon 5000)
3257-10 First stage, Cyklon 5000 (Diveair) YOKE

Pos.	No.		Pos.	No.	
1	3417	Pressure adjusting screw	36	2922	Knob
2	2802	Pressure spring, outer	37	3473	Yoke
3	3418	Pressure spring, inner	38	2277	Protective cap
4	2814	Cover for valve housing	39	1183	Locking screw
5	3419	Diaphragm centre, upper	40	2825	Connection
6	1189	Diaphragm	41	1227	Knob
7	2816	Diaphragm centre, lower	42	1841	Yoke
8	2817	Valve needle	43*	2778	Locking strap
9	2782	O-ring (4 pcs)	44*	1287	Anti-freeze cap
10	2679	Blind screw UNF 3/8" (3 pcs)	45*	1286	Anti-freeze cup with locking strap
11	2678	Valve housing, Jetstream			
	3258	Valve housing, Cyklon 5000			
12	2918	O-ring			
13	2680	Blind screw UNF 7/16"			*Accessories
14	1156	O-ring			
15	2803	Valve seat			
16	2820	Valve piston			
17	2821	Spacing sleeve			
18	1368	O-ring			
19	2822	Washer			
20	2809	O-ring			
21	2823	Balanced housing			
22	3388	Spring guidance			
23	3387	Pressure spring			
24	1562	O-ring			
25	2807	Blind screw G1/8"			
26	2402	Protective cap			
27	3096	Locking screw			
28	1007	O-ring			
29	2656	O-ring			
30	1377	Cup type filter			
31	2827	Connection			
32	1839	O-ring			
33	2828	Wheel G5/8"			
34	2966	Connection incl. 27-33			
35	3472	Connection			



3070 First stage, Cyklon 300 and Oceanair (USA=Thor)

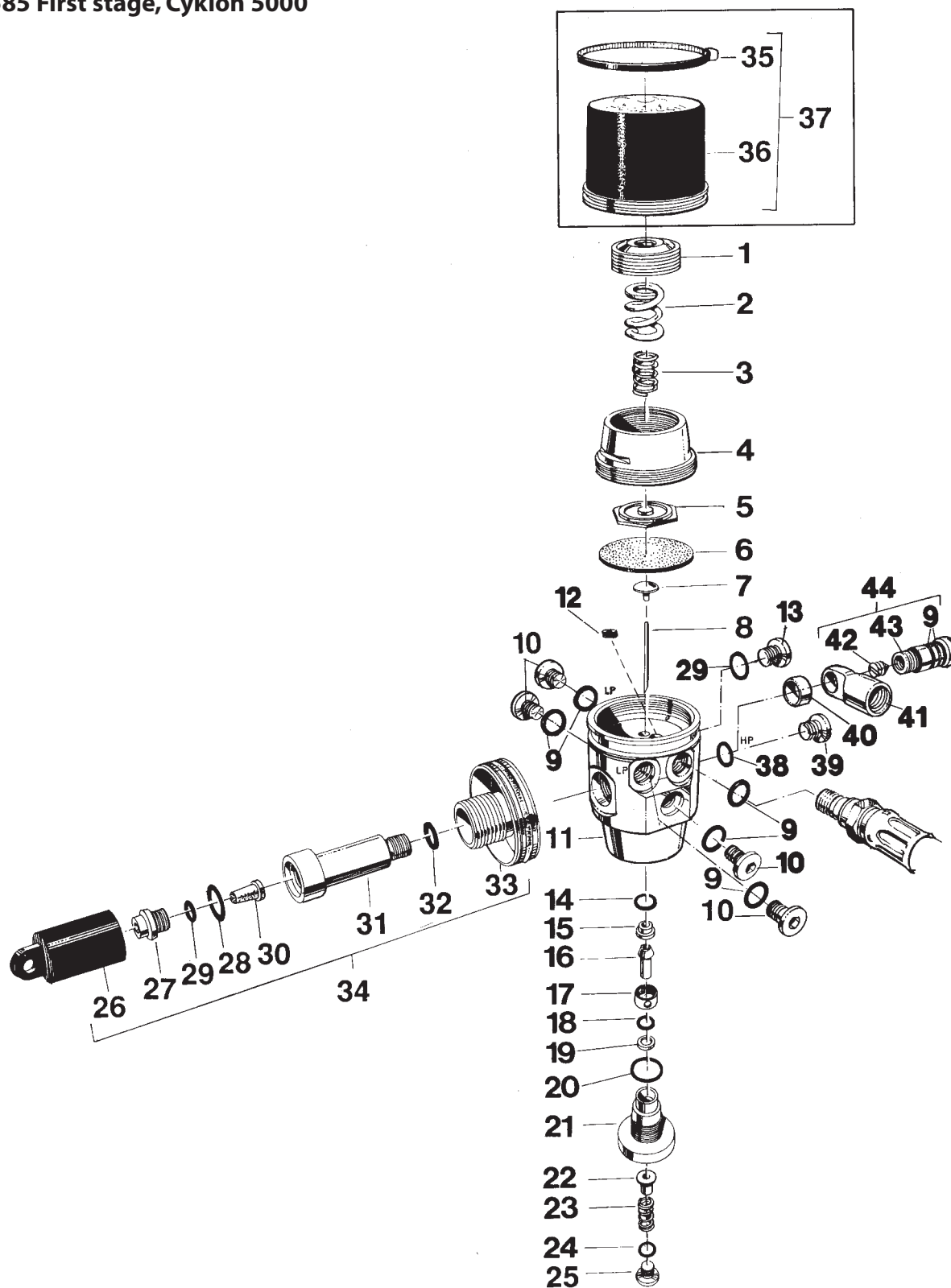


3070 First stage, Cyklon 300 and Oceanair (USA=Thor)

Pos.	No.	
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	2782	O-ring (4st)
11	3023	Valve housing
12	2918	O-ring
13	2680	Blind screw UNF 7/16
14	1156	O-ring
15	2302	Valve seat
16	1179	Valve piston
17	1180	Pressure spring
18	2424	Wheel G5/8"
19	1233	O-ring
20	2423	Connection
21	1377	Cup type filter
22	2656	O-ring
23	3096	Locking screw
24	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-freeze cap with locking strap
30*	2277	Protective cap
31*	2921	Yoke
32*	2922	Knob
33*	2920	Yoke complete incl. 30-32

*Accessories

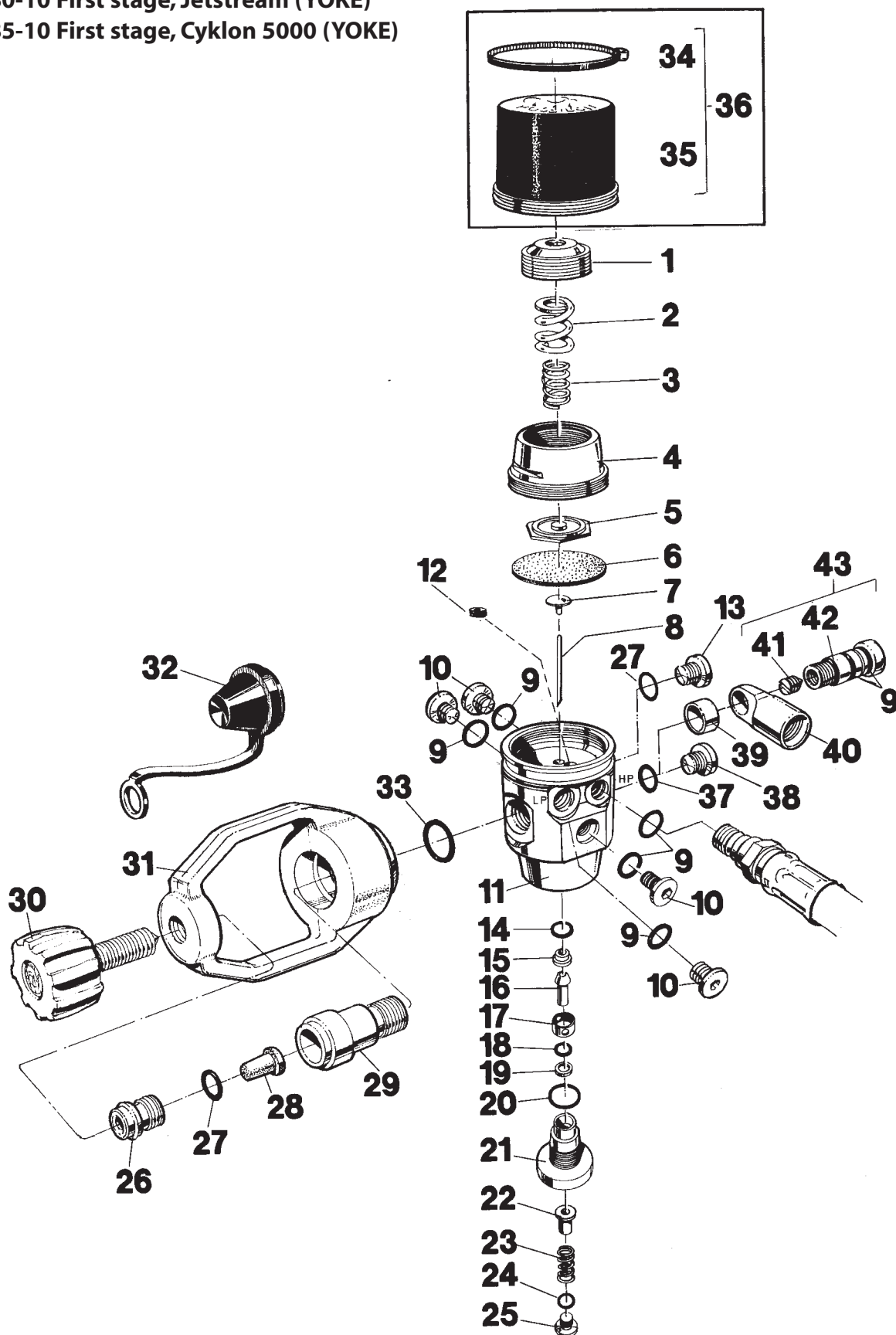
3580 First stage, Jetstream
3585 First stage, Cyklon 5000



3580 First stage, Jetstream
3585 First stage, Cyklon 5000

Pos.	No.				
1	3417	Adjusting screw	38	2918	O-ring
2	2802	Pressure spring, outer	39	2680	Blind screw UNF 7/16"
3	3418	Pressure spring, inner	40	3294	Spacer ring
4	2814	Cover	41	3293	Banjo housing
5	3419	Diaphragm centre, upper	42	1095	Restrictor screw
6	1189	Diaphragm	43	3292	Banjo screw
7	2816	Diaphragm centre, lower	44	3291	Banjo coupling UNF 7/16"
8	2817	Valve needle			incl. 9, 38, 40-43
9	2782	O-ring (7 pcs)			
10	2679	Blind screw UNF 3/8" (4 pcs)			*Accessories
11	3581	Valve housing			
12	3587	Restrictor screw for first stage			
		No. 3585 Cyklon 5000			
13	3024	Blind screw M 7x1			
14	1156	O-ring			
15	2803	Valve seat			
16	2820	Valve piston			
17	2821	Spacing sleeve			
18	1368	O-ring			
19	2822	Washer			
20	2809	O-ring			
21	2823	Balanced housing			
22	3388	Spring guidance			
23	3387	Pressure spring			
24	1562	O-ring			
25	2807	Blind screw G 1/8			
26	2402	Protective cup			
27	3096	Locking screw			
28	1007	O-ring			
29	2656	O-ring (2 pcs)			
30	1377	Cup-type filter			
31	2827	Connection			
32	1839	O-ring			
33	2828	Wheel G 5/8			
34	2966	Connection incl. 27-33			
35	2778	Locking strap*			
36	1287	Anti-freeze cap*			
37	1286	Anti-freeze cap incl. 35-36*			

3580-10 First stage, Jetstream (YOKE)
3585-10 First stage, Cyklon 5000 (YOKE)



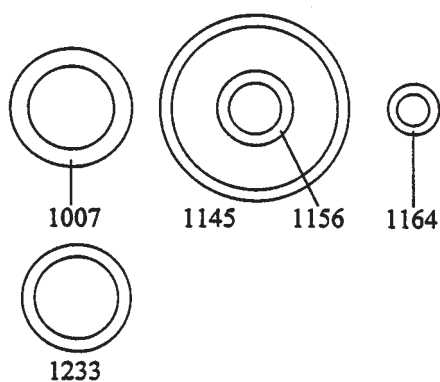
3580-10 First stage, Jetstream (YOKE)
3585-10 First stage, Cyklon 5000 (YOKE)

Pos.	No.				
1	3417	Adjusting screw	38	2680	Blind screw UNF 7/16"
2	2802	Pressure spring, outer	39	3294	Spacer ring
3	3418	Pressure spring, inner	40	3293	Banjo housing
4	2814	Cover	41	1095	Restrictor screw
5	3419	Diaphragm, centre, upper	42	3292	Banjo screw
6	1189	Diaphragm	43	3291	Banjo coupling UNF
7	2816	Diaphragm. centre, lower			7/16"incl. 9,37,39-42
8	2817	Valve needle			
9	2782	O-ring (7 pcs)			*Accessories
10	2679	Blind screw UNF 3/8" (4 pcs)			
11	3581	Valve housing			
12	3587	Restrictor screw for			
		first stage No. 3585 10 Cyklon 5000			
13	3024	Blind screw M 7x1			
14	1156	O-ring			
15	2803	Valve seat			
16	2820	Valve piston			
17	2821	Spacing sleeve			
18	1368	O-ring			
19	2822	Washer			
20	2809	O-ring			
21	2823	Balanced housing			
22	3388	Spring guidance			
23	3387	Pressure spring			
24	1562	O-ring			
25	2807	Blind screw G 1/8"			
26	3096	Locking screw			
27	2656	O-ring			
28	1377	Cup-type filter			
29	3472	Connection			
30	2922	Knob			
31	3473	Yoke			
32	2277	Protective cap			
33	1839	O-ring			
34	2778	Locking strap*			
35	1287	Anti-freeze cap*			
36	1286	Anti-freeze cap incl. 34-35*			
37	2918	O-ring			



Service kit No 3430
for breathing regulator CYKLON 300 (G 1/8") No 1908

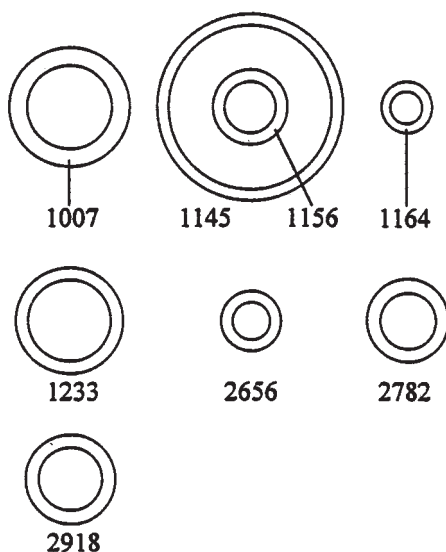
No	pcs	
1167	1	Locking strap
1013	4	Gasket
1162	1	Rubber plate
1189	1	Diaphragm
1377	1	Cup-type filter
2302	1	Valve seat
1007	1	O-ring
1145	2	"
1156	2	"
1164	1	"
1233	1	"





Service kit No 3824
for breathing regulator CYKLON 300 (UNF 3/8") No 2980

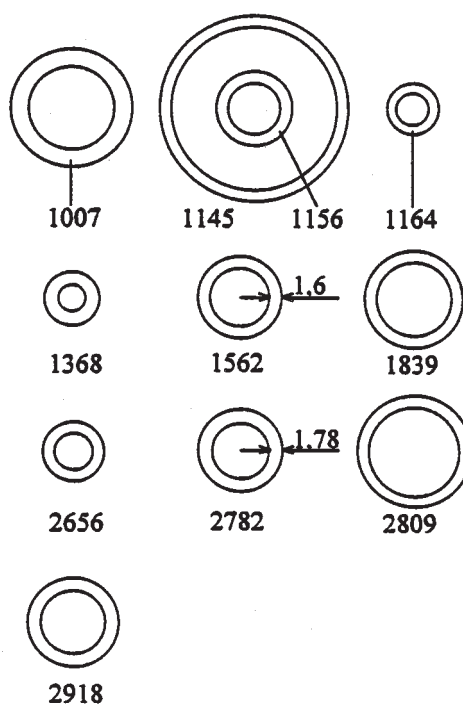
No	pcs	
1167	1	Locking strap
1162	1	Rubber plate
1189	1	Diaphragm
1377	1	Cup-type filter
2302	1	Valve seat
1007	1	O-ring
1145	2	"
1156	2	"
1164	1	"
1233	1	"
2656	1	"
2782	4	"
2918	1	"





Service kit No 3422
for breathing regulator CYKLON 5000 No 2950

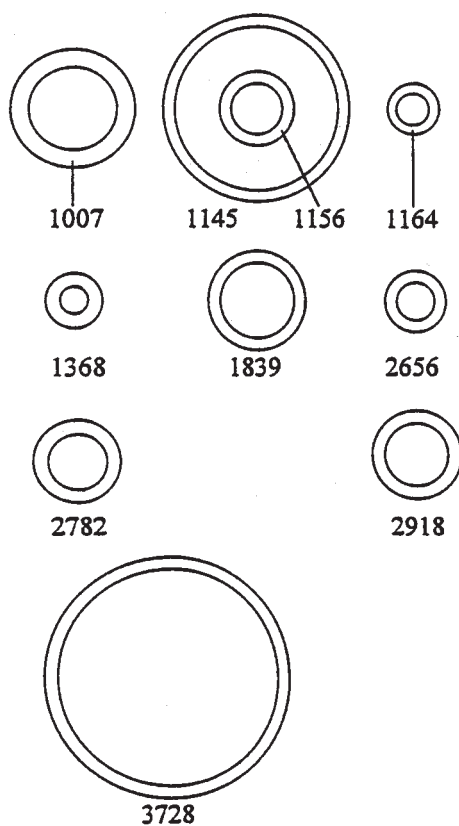
No	pcs	
1167	1	Locking strap
1162	1	Rubber plate
1189	1	Diaphragm
1377	1	Cup-type filter
2803	1	Valve seat
2822	1	Washer
1007	1	O-ring
1145	2	"
1156	2	"
1164	1	"
1368	1	"
1562	1	"
1839	1	"
2656	2	"
2782	5	"
2809	1	"
2918	1	"





Service kit No 3825
for breathing regulator CYKLON 5000 No 3950

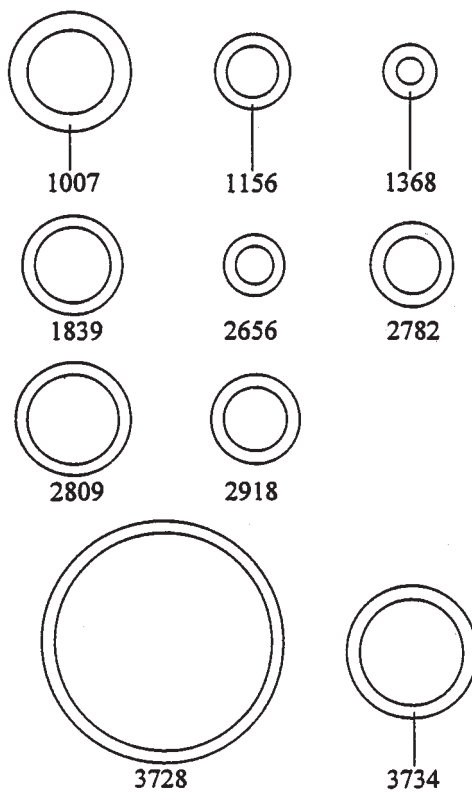
No	pcs	
1167	1	Locking strap
1162	1	Rubber plate
3724	1	Diaphragm
1377	1	Cup-type filter
2803	1	Valve seat
2822	1	Washer
3726	1	Valve sealing
1007	1	O-ring
1145	2	"
1156	2	"
1164	1	"
1368	1	"
3728	1	"
1839	1	"
2656	1	"
2782	4	"
2918	2	"





Service kit No 3769
for first stage No 3720, 3790 and 3880

No	pcs	
3724	1	Diaphragm
1377	1	Cup-type filter
2803	1	Valve seat
2822	1	Washer
3726	1	Valve sealing
1007	1	O-ring
3728	1	"
1156	1	"
1368	1	"
1839	1	"
2656	1	"
2782	4	"
2809	1	" *
2918	2	"



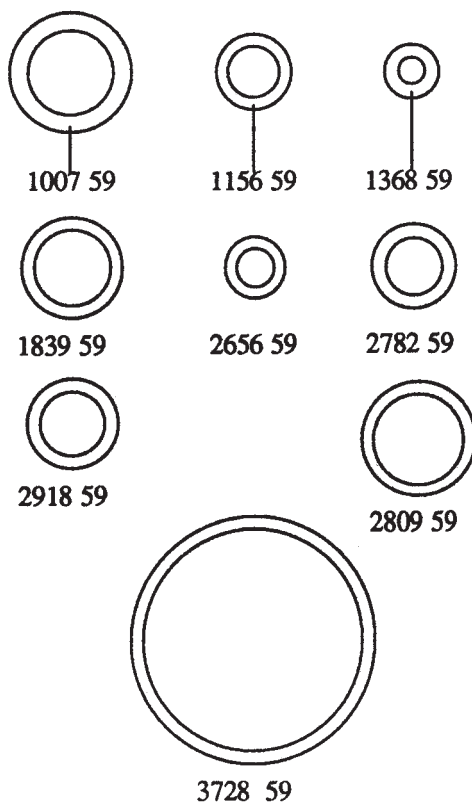
*Only for first stage No 3790 (Jetstream)



Service kit No 3872
for first stage No 3720, 3790 and 3880 with O-rings of Viton

No	pcs	
3724	1	Diaphragm
1377	1	Cup-type filter
2803	1	Valve seat
2822	1	Washer
3726	1	Valve sealing
1007 59	1	O-ring
1156 59	1	"
1368 59	1	"
1839 59	1	"
2656 59	1	"
2782 59	4	"
2809 56	1	" *
2918 59	2	"
3728 59	1	"

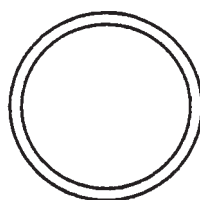
* Only for first stage No 3790





***Service kit No 3551
for second stage Cyklon 300/5000***

No	pcs	
1167	1	Locking strap
1162	1	Rubber plate
1145	2	O-ring
1156	1	"
1164	1	"



1145



1156



1164