



**apeks**  
TECHNICAL SUPPORT

# **STATUS FIRST STAGE REGULATOR ELECTRONICS**



## **MAINTENANCE MANUAL FOR AUTHORISED TECHNICIANS**

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## AMENDMENTS RECORD:

Amendments and approval of this document can only be carried out by the relevant people listed on the Approved list of signatures, which is listed in the Apeks Quality Manual. To instigate a change, a Task / Change request form, (Form No. 'DESI/10002'), must be completed and passed to the relevant person(s) for approval which are listed on the Approved List of Signatures. When approval has been granted and recorded this table can then be completed and the document up issued.

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1	106	Page 10 Caution Note added to steps 4, 5 and 6 Warning user to depressurise regulator prior to fitting Hydrostatic Diaphragm and End Cap	2/01/2008	2	M.Winward	ACD

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Status First Stage Regulator Electronics Maintenance Manual  
 (AP5927 Issue 1)


## INTRODUCTION


This manual provides factory prescribed procedures for the correct maintenance and repair of the Apeks STATUS first stage regulator electronics. The parts shown in this manual are used throughout the STATUS range. It is not intended to be used as an instructional manual for untrained personnel. The procedures outlined within this manual are to be performed only by personnel who have received factory authorised training through an Apeks Service & Repair Seminar. If you do not completely understand all of the procedures outlined in this manual, contact Apeks to speak directly with a Technical Advisor before proceeding any further.

## WARNINGS, CAUTIONS & NOTES

Pay special attention to information provided in warnings, cautions, and notes that are accompanied by one of these symbols:

 **WARNINGS** indicate a procedure or situation that may result in serious injury or death if instructions are not followed correctly.

 **CAUTIONS** indicate any situation or technique that will result in potential damage to the product, or render the product unsafe if instructions are not followed correctly.

 **NOTES** are used to emphasise important points, tips, and reminders.

## STATUS NOTES

Apeks Status first stage regulators contain micro-electronics that carry out two functions.

Firstly, it calculates whether the first stage is supplying gas to the second stage at the correct medium pressure (M.P.) in order for it to perform at its best. Secondly it calculates a service schedule, calculated by both usage and an internal, annual clock. All of this information is displayed to the user via an LCD display upon pressurisation.

### Medium Pressure Status

If the M.P. is too high or too low, the LCD display will display 'HI' or 'LO' respectively. This will also be followed by a flashing 'SVC' sign, indicating to the user that the regulator requires an inspection by a service technician. It is then at the technician's discretion

whether the regulator needs a M.P. adjustment or if a high pressure (H.P.) leakage has occurred and a full service is required. This is dependant on the condition of the components within the first stage or the length of time since the regulator was last serviced (if close to one year, a full service is recommended).

If the M.P. is correct and there is no leakage, then the LCD display will show 'OK' for a small length of time and then it will disappear.

### Service Status

The Status indicator will display 'SVC' either annually or after a specific time of usage, whichever comes first. This informs the user that the regulator needs to be inspected by a Service technician.

It is recommended that the Apeks Status first stage regulator should have an interim service carried out annually regardless of usage, with a full service being performed every two years.


The regulator's previous service history, along with the general condition of the first stage, dictate whether a full service is required or if an interim is satisfactory, i.e. if it was fully serviced the previous year, then only an interim service will be necessary.


### Battery- Important notes

**NOTE:** If at all unsure about the correct functionality of the Apeks Status first stage or if the Status indicator displays 'HI' or 'LO' then it must be officially inspected immediately.

It is vital that the battery is replaced during both an interim and full service. This resets the Service Status indicator, with both the annual and usage counters restarting from zero.

If however, the regulator has only had an adjustment of the M.P., then the battery does not need replacing until the unit does display 'SVC'.

 **NOTE:** Removing the battery resets the Service Status indicator. Ensure battery is replaced with a new one every time.

 **WARNING:** When handling and disposing of batteries, please observe the following instructions to prevent accidents.

Never swallow- keep out of reach of children.

Never charge, heat or expose to open flames- this can lead to fire and cause it to explode.

Never disassemble the battery.

Never short circuit the battery by reversing the +tive and - tive terminals when mounting or by touching it with a metal object.

Do not allow the electrodes to come into contact with your skin or fingers. The moisture from your skin may cause discharge resulting in chemical burns.

### An Official Inspection consists of:

1. A pressurised immersion test of the entire unit to check for air leakage.
2. Checking for stable medium pressure that is within the acceptable range.
3. Checking that all parts are tightly fastened together and that no parts are loose.
4. A visual inspection of the Environmental Diaphragm looking for tears or holes and checking the general condition.
5. A visual inspection of any filters for debris or discolouration.
6. Pulling back hose protectors and checking that the hoses are secure in the hose crimps.

If a regulator fails steps 1,2, or 3 the entire regulator should be serviced. If a regulator fails 4 or 5 it will be at the technician's discretion whether or not a full service is required. Failure of step 6 requires replacement of the Hose.

### GENERAL GUIDELINES

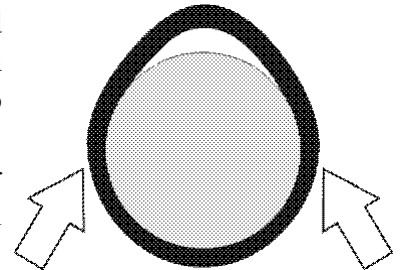
1. In order to correctly perform the procedures outlined in this manual, it is important to follow each step exactly in the order given. Read over the entire manual to become familiar with all procedures and to learn which specialty tools and replacement parts will be required before commencing disassembly. Keep the manual open beside you for reference while performing each procedure. Do not rely on memory.
2. All service and repair should be carried out in a work area specifically set up and equipped for the task. Adequate lighting, cleanliness, and easy access to all required tools are essential for an efficient repair facility.
3. During disassembly, reusable components should be segregated and not allowed to intermix with non-reusable parts or parts from other units. Delicate parts, including inlet fittings and valve seats which contain critical sealing surfaces, must be protected and isolated from other parts to prevent damage during the cleaning procedure.
4. Use only genuine Apeks parts provided in the 1st stage service kit (AP0227). DO NOT attempt to substitute an Apeks part with another manufacturer's, regardless of any similarity in shape or size.
5. Do not attempt to reuse mandatory replacement parts under any circumstances, regardless of the amount of use the product has received since it was manufactured or last serviced.
6. When reassembling, it is important to follow every torque specification prescribed in this manual, using a calibrated torque wrench. Most parts are made of either marine brass or plastic, and can be permanently damaged by undue stress.

### GENERAL CONVENTIONS

Unless otherwise instructed, the following terminology and techniques are assumed:


1. When instructed to remove, unscrew, or loosen a threaded part, turn the part anti-clockwise.
2. When instructed to install, screw in, or tighten a threaded part, turn the part clockwise.
3. When instructed to remove an 'O' Ring, use the pinch method (see figure below) if possible, or use a brass, aluminium or plastic 'O' Ring removal tool. Avoid using hardened steel picks, as they may damage 'O' Ring sealing surfaces. All 'O' Rings that are removed are discarded and replaced with brand new 'O' Rings.


**Pinch Method**  
 Press upwards on sides of 'O' Ring to create a protrusion.  
 Grab 'O' Ring or insert 'O' Ring tool at protrusion.



4. The following acronyms are used throughout the manual: MP is Medium Pressure; HP is High Pressure; PN is Part Number.
5. Numbers in parentheses reference the key numbers on the exploded parts schematics. For example, in the statement, "...remove 'O' ring (4) from...", the number 4 is the key number to the Spring Carrier 'O' Ring.

### DISASSEMBLY PROCEDURES

 **NOTE:** Before performing any disassembly, refer to the exploded parts drawing, which references all mandatory replacement parts. These parts should be replaced with new, and must not be reused under any circumstances - regardless of the age of the regulator or how much use it has received since it was last serviced.

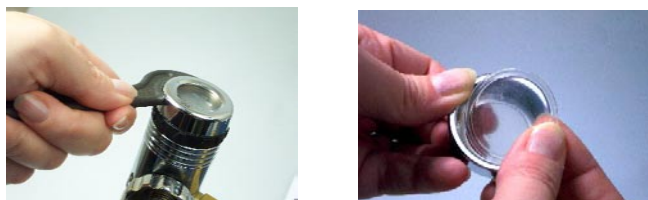
 **CAUTION:** Use only a plastic, brass or aluminium 'O' Ring removal tool (PN AT54) when removing 'O' Rings to prevent damage to the sealing surface. Even a small scratch across an 'O' Ring sealing surface could result in leakage. Once an 'O' Ring sealing surface has been damaged, the part must be replaced with new. DO NOT use a dental pick, or any other steel instrument.

## DISASSEMBLY PROCEDURES

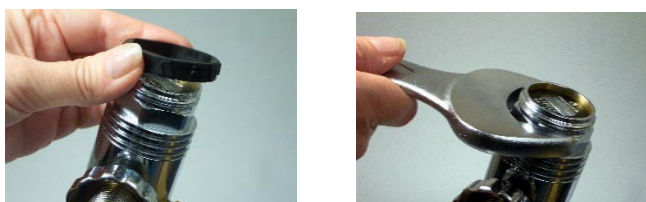
The following procedures show the correct method of servicing the dry sealed chamber on all STATUS first stage regulators. The dry sealed chamber contains the micro-electronics for the STATUS regulator. This sub assembly is serviced using the same procedure regardless of the first stage model.

### Removal of STATUS Dry Sealed Chamber

- Using a C Spanner (PN AT30) unscrew the Environmental End Cap (1). Remove the Hydrostatic Diaphragm from the environmental end cap




- Remove the Logo Ring (8) and using a 34mm open ended spanner (AT47) unscrew the Diaphragm Clamp (9).



- This will remove the Main Electronic Unit (4), the Spring Adjuster (7) and the Spring (11).



 **NOTE:** The thickness of the spanner must not exceed 11mm or it will not fit between the thread and the flange. The correct spanner can be purchased from Apeks (PN AT47)

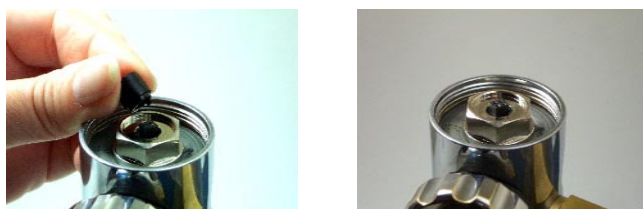
- Remove the 'O' ring (10) from the Diaphragm Clamp. (9)




- Using an 'O' ring removal tool (AT54) carefully prise the Silica Gel Packet out of the Diaphragm Clamp (9).

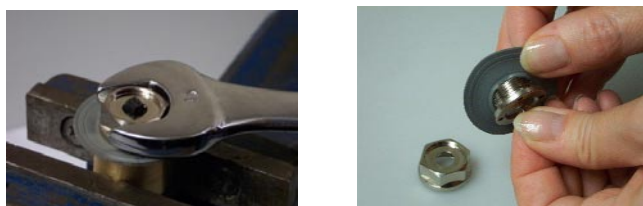


- Remove the Location Plug (12) and using an 'O' ring removal tool (AT54) carefully prise the Diaphragm assembly out by levering evenly around the whole circumference.




 **NOTE:** Take care when removing the Diaphragm assembly so as not to damage the seating face of the Valve Body (18) or bend the stem of the valve lifter (17).

- Using the Valve Lifter Tool (AT21) and a 3/4" Spanner (AT33), remove the clamping nut (13) from the Diaphragm assembly. Remove the diaphragm ring (14) from the valve lifter (17)



- Carefully remove the Pressure Sensor (15) from the Valve Lifter (17).



-  **CAUTION:** When removing the Pressure Sensor, do so by pulling gently on the black plug,

- Using an 'O' ring removal tool (AT54) carefully remove the 'O' Ring (16) from the groove in the Valve Lifter.



- Carefully prise the Battery Carrier (5) from the main electronic unit using your fingernail or an 'O' Ring removal tool.



- Remove the Battery (6) from the Battery Carrier (5) by holding the edge of the carrier and pushing the battery out as shown.



## This Ends Disassembly

Before starting reassembly, perform parts cleaning and lubrication according to the procedures outlined in 'Cleaning & Lubrication' on page 14.

## REASSEMBLY PROCEDURES

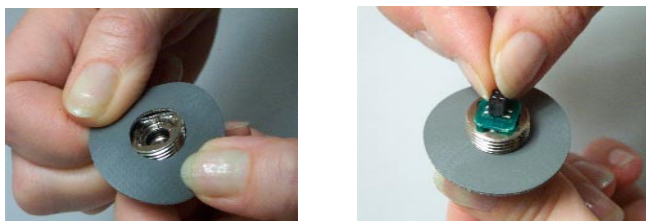
### Fitting of Dry Sealed Chamber

1. Install a new greased 'O' Ring (16) into the groove in the Valve Lifter (17) using the 'O' Ring Removal tool (AT54).



- CAUTION:** Take care not to scratch the 'O' Ring groove or damage the 'O' Ring with the sharp point of the tool.

2. Place a new diaphragm ring (14) onto the valve lifter (17).

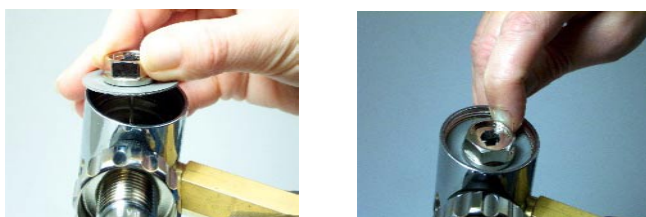


3. Secure the valve lifter fastener tool (AT21) into the vice and tighten the clamping nut (13) onto the valve lifter (17) using a torque wrench. Torque to 12-14Nm.



- CAUTION:** Torque wrench must be kept straight so that the assembly does not slip out of the tool or damage to the valve lifter can occur.

4. Drop the diaphragm assembly through the centre hole of the Valve Body (18) and press the Diaphragm (14) into the Body. Run your finger around the edge of the diaphragm to make sure it is properly seated.



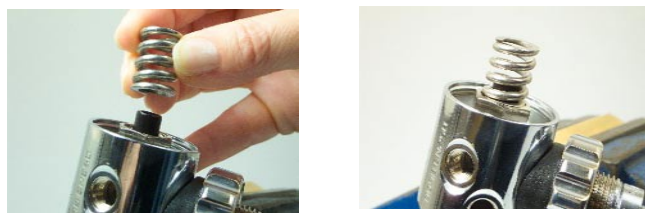
5. Place the location plug (12) over the socket with the small oval lug aligned with the small oval hole in the pressure sensor (15).



6. Press the location plug (12) firmly so that it sits flat on the top face of the clamping nut. (13)



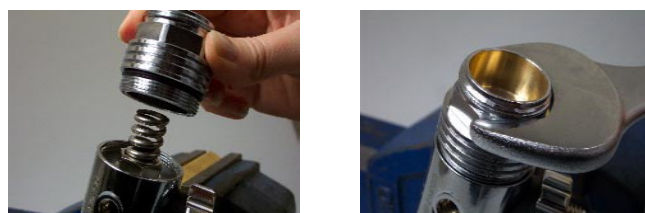
7. Place the Spring (11) on the clamping nut (13) over the location plug.



8. Install a new lubricated 'O' ring (10) onto the Diaphragm Clamp (9).



9. Thread the Diaphragm Clamp (9) onto the Valve Body (18), making sure that the Spring (11) remains on the Clamping Nut (13), until hand tight. Using a 34mm open ended spanner (PN AT30) tighten the Diaphragm Clamp (9) until there is metal to metal contact.





**CAUTION:** Ensure that while tightening the diaphragm clamp the regulator remains vertically upright so that the location plug does not become dislodged. If this occurs the electronic unit will not assemble into the regulator correctly .

10. Refit the Logo Ring (5).



**NOTE:** Refer to the appropriate first stage manual to complete the assembly.

## SETTING OR ADJUSTING THE FIRST STAGE



**WARNING:** Compressed air can be highly explosive and is dangerous if misused. Ensure cylinder valve is opened slowly. Use Eye and Ear Personal Protective Equipment when performing any tests involving Compressed air.

1. Attach the first stage (with no Blanking Plugs fitted) to a fully charged 232 or 300 bar cylinder. Slowly open the cylinder valve, this will remove any particles or contaminants from the first stage.



2. Install new lubricated 'O' rings on all of the Blanking Plugs . Using a 5mm Allen key, install all of the Blanking Plugs into the Valve Body.



3. Attach a M.P. test gauge (0-20 bar) to a medium pressure hose and thread the hose into a MP Port. If your test gauge does not have an over pressure relief valve, you must attach a properly adjusted second stage to the first stage to act as the relief valve, in case of a H.P. Leak. **MAKE SURE BLANKING PLUGS ARE INSTALLED IN ANY OPEN PORTS.**



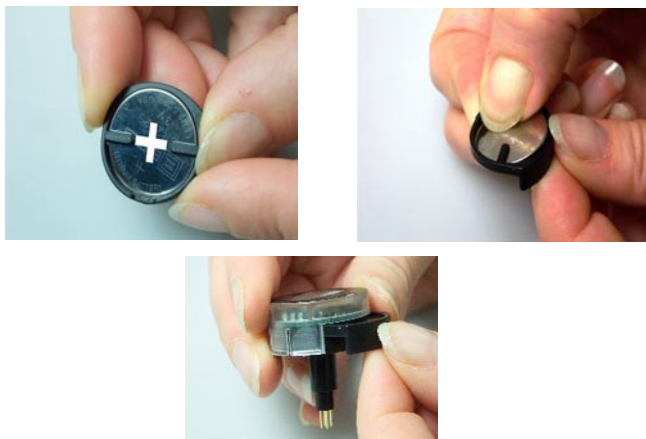
**CAUTION:** If the pressure gauge rapidly exceeds 11 bar, then there is a HP leak. Quickly close the cylinder valve and purge the regulator. Refer to the troubleshooting table for the causes of the leak.


4. Assuming there are no leaks, close the cylinder valve and depressurise the regulator by opening the gauge relief valve or by pressing the purge button of the second stage regulator. Adjust the medium pressure by turning the Spring Adjuster (7): Turning in the Spring Adjuster increases the MP; Turning out the Spring Adjuster decreases the MP. Turn the Spring Adjuster in 1/8th turn increments and purge the relief valve several times after each adjustment. When the MP is between 9 and 10 bar , purge the relief valve on and off 10-15 times. After cycling, watch the gauge needle. The first stage MP should "lock-up" between 9 and 10 bar. Make any adjustments as necessary. Allow the first stage to stay pressurised for several minutes and check the MP again to make sure it remains "locked-up" between 9 and 10 bar. If the MP creeps upward more than 0.25 bar, then there is a leak. Refer to the troubleshooting table for possible causes.



5. Close the cylinder valve and de-pressurise the regulator by opening the gauge relief valve or by pressing the purge button of the second stage regulator. Close the relief valve and re-pressurise the system. The M.P. should still read between 9 and 10 bar. If the pressure reading is different than the original setting, repeat steps 3 and 4 until the M.P. is stable.

6. Insert a new battery into the battery carrier (5). Place one side of the battery into the carrier underneath the tabs and press the remaining side into position with the '+' side up. Slide the carrier into the main electronic unit.



 **CAUTION:** Ensure that the battery is inserted with the positive (+) side up, failure to do so will destroy the electronic unit and pressure sensor.

## Final Assembly


1. With the regulator still pressurised, insert the main electronic unit (4) into the Diaphragm Clamp (6).



2. Whilst applying very gentle downward pressure, rotate the electronic unit until a positive location is found. Press the electronic unit home so that it sits below the end of the diaphragm clamp.




3. Within a 20 second period, the LCD should display 'OK' to signify that the regulator is set correctly.

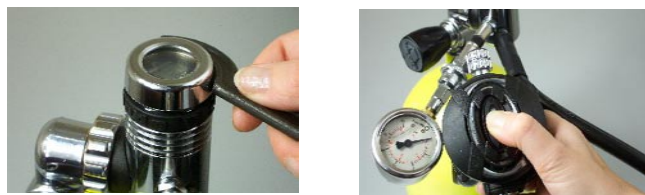
 **NOTE:** If the LCD does not display at all, de-pressurise the regulator completely of gas and wait 20 seconds before repeating step 2. If the pressure is correct, but there is still no display, or the LCD displays 'HI', 'LO', or 'SVC' please refer to trouble shooting table on page 11.

4. Install a new Hydrostatic Diaphragm (2) into the environmental end-cap (1).



 **CAUTION:** Prior to re-assembling the environmental end cap, the system **MUST** be depressurised. This avoids the possibility of the hydrostatic diaphragm sticking to the top of the LCD display and dislodging the electronic unit. For the same reason the hydrostatic diaphragm must not be pressed whilst tightening the end cap into place.

5. Thread the Environmental End Cap (1) onto the Diaphragm Clamp (9) until hand tight. Using the C Spanner (PN AT30), tighten the Environmental End Cap (1) until there is metal to metal contact.
6. Once the environmental End Cap (1) is fully tightened, the regulator can then be re-pressurised for final testing. If the LCD displays 'HI', 'LO', or 'SVC' please refer to trouble shooting table on page 11.




7. Close the cylinder valve and depressurise the regulator. Remove the test gauge and reinstall the Blanking Plug.

This Ends Reassembly

## IMMERSION TEST

With the Blanking Plugs and at least one properly adjusted second stage installed, slowly open the cylinder valve and pressurise the first stage. Completely Submerge the first stage in fresh water and check for leaks.

 **NOTE:** Do not confuse bubbles from trapped air with a true air leak. If there is an air leak, bubbles will come out in a steady constant stream.

Assuming that there are no leaks, close the cylinder valve and depressurise the regulator. Remove the first stage from the valve and secure the Protective Cap in place with the Yoke Clamp Screw. If the regulator has a DIN connection replace the Protective DIN Cap.

If a leak is detected, note the source of the leak and refer to the troubleshooting table on page 11 for possible causes and corrective actions.

This Ends Testing

## Table 1 - Troubleshooting Guide

SYMPTOM	POSSIBLE CAUSE		TREATMENT
High Pressure Creep (also causes second stage leaks)	1. HP Valve (14) is worn or damaged.		1. Replace HP Valve.
	2. Removable HP Valve Seat(13) is worn or damaged. (FSR Only)		2. Replace Removable HP Valve Seat.
	3. 'O' ring on Removable HP Valve Seat (12) is damaged or worn.		3. Replace 'O' ring.
	4. HP Balance Plug internal wall damaged.		4. Replace HP Balance Plug.
	5. 'O' ring inside HP Balance Plug (16) is damaged or worn.		5. Replace 'O' ring.
	6. 'O' ring on HP Balance Plug (12) is damaged or worn.		6. Replace 'O' ring.
	7. HP Valve Seat in Valve Body (11) is worn or damaged.		7. Replace Valve Body.
External air leakage or Environmental diaphragm distended or burst	1. Blanking Plug 'O' rings (12,28,29) are worn or damaged.		1. Replace 'O' Ring.
	2. Diaphragm (9) worn or damaged.		2. Replace diaphragm.
	3. Diaphragm sealing surface damaged.	3a. Valve Body	3a. Replace Valve Body.
		3b. Diaphragm Clamp	3b. Replace Diaphragm Clamp.
		3c. Valve Lifter	3c. Replace Valve Lifter.
		3d. Clamping Nut	3d. Replace Clamping Nut.
	4. Clamping nut (13) loose.		4. Tighten Clamping nut.
	5. Pressure Sensor 'O' ring damaged.		5. Replace 'O' Ring.
	6. Connector 'O' ring (12) worn or damaged.		6. Replace 'O' Ring.
7. Diaphragm Clamp (6) loose.		7. Tighten Diaphragm Clamp.	
8. 'O' ring on HP Balance Plug (17) worn or damaged.		8. Replace 'O' Ring.	
Restricted air flow or high inhalation resistance through entire system	1. Cylinder valve not completely open.		1. Open valve, check fill pressure.
	2. Cylinder valve requires servicing		2. Switch to different cylinder.
	3. Conical Filter (35) or Disc Filter (21) is clogged.		3. Replace filter.
	4. Very Low Medium Pressure.		4. Adjust Medium Pressure to between 9 and 10 bar.

## Table 2 - LCD Fault Guide

SYMPTOM	POSSIBLE CAUSE	TREATMENT
No Display	1. Regulator not pressurised	1. Pressurise regulator and re-check.
	2. 20 second pressurised reading time period has not lapsed	2. De-pressurise regulator completely, wait 20 seconds and re-pressurise.
	3. No battery	3. Insert new battery.
	4. Pressure sensor faulty	4. Replace Pressure sensor*
	5. Main electronic unit faulty	5. Replace Main electronic unit.*
	6. Blocked sensor	6. Remove debris from underside of valve lifter.
Display 'LO' followed by 'SVC' flashing	1. Medium pressure too low	1. Adjust Medium Pressure to between 9 and 10 bar.
	2. Faulty electronics	2. Replace electronics*
Display 'OK' followed by 'HI' and then 'SVC' flashing	1. High pressure creep	1. Please see Table 1
	2. Faulty electronics	2. Replace electronics*
Display 'HI' followed by 'SVC' flashing	1. Medium pressure too high	1. Adjust Medium Pressure to between 9 and 10 bar.
	2. High pressure creep	2. Please see Table 1
	3. Faulty electronics	3. Replace electronics*
Display flashing 'SVC'	1. Annual counter expired	1. Replace battery
	2. Usage counter exceeded	2. Replace battery
	3. Faulty electronics	3. Replace electronics*

\* Electronics replacement kit AP0228 consists of Main Electronic Unit (4) and Pressure Sensor (15). These are non-serviceable items. If they are damaged or faulty, both the Main Electronic Unit and Pressure Sensor must be exchanged for new components from a replacement kit as they are factory calibrated as a pair.

## Table 3 - Recommended Tool List

PART NO.	DESCRIPTION	APPLICATION
AP0430	I.P. test gauge	Intermediate pressure testing
AT54	'O' Ring removal pick	'O' Ring removal
AT30	C spanner	Removal of Diaphragm Clamp & End Cap
AT48	First Stage Work Handle	Clamping Valve Body in Vice
AT53	Removable HP Valve Seat Tool	Removal and installation of HP Valve Seat (FSR)
n/a	Torque wrench, Nm or lbf/ft	Installation of Balance Plug & DIN Connection
n/a	6mm Allen key bit for torque wrench	Installation of Balance Plug & DIN Connection
AT34	11/16" spanner	Hose Removal
AT37	5mm Allen key	Blanking Plugs
AT38	6mm Allen key	Removal of Balance Plug, DIN Connection & Spring Adjuster
AT47	34mm open ended spanner	Removal of Black Pearl, Tungsten and XTX Diaphragm Clamp
AT33	3/4" ring spanner	Removal of Clamping Nut
AT21	Valve Lifter Fastener	Fastening and unfastening of clamping nut & valve lifter
n/a	232 or 300 bar Diving cylinder	Testing of regulator



AP0430



AT54



AT30



AT48



AT53



AT34



AT37



AT38



AT47



AT33





AT21

Notes:

1. Photos not to scale.
2. Actual tools may differ from those shown.

## Table 4 - Recommended Lubricants & Cleaners

LUBRICANT / CLEANER	APPLICATION	SOURCE
Christo-Lube® MCG-111 (Lubricant)	All 'O' Ring seals	Apeks Marine Equipment Ltd PN AP1495, or  Lubrication Technologies 310 Morton Street Jackson, OH 45640, USA (800) 477-8704
 <b>CAUTION:</b> Silicone rubber requires no lubrication or preservative treatment. DO NOT apply grease or spray to silicone rubber parts (eg. Diaphragm, Exhaust Valves.) Doing so may cause a chemical breakdown and premature deterioration of the material.		
Biox (Cleaning agent)	Biological immersion fluid for reusable stainless steel and brass parts.	Solent Divers Ltd 122-128 Lake Rd, Portsmouth, Hants, PO1 4HH
White distilled vinegar (100 gr.) (Cleaning agent)	Acid bath for reusable stainless steel and brass parts.	"Household" grade
 <b>CAUTION:</b> Do not use muriatic acid for the cleaning of any parts. Even if strongly diluted, muriatic acid can harm chrome plating and may leave a residue that is harmful to 'O' Ring seals and other parts		
Liquid dishwashing detergent diluted with warm water (Cleaning agent)	Degreaser for brass and stainless steel parts; general cleaning solution for plastic and rubber	"Household" grade

## Cleaning & Lubrication Procedure

### General Cleaning of all Parts

1. Place all components in an ultrasonic cleaning bath containing an appropriate cleaning solution, such as Biox.
2. The components should be cleaned for 6 minutes, depending upon their condition. Longer cleaning times may be used if required.
3. Rinse the components in warm fresh water.
4. The components should then be blown dry or left to dry naturally.

### Lubrication and Dressing

All 'O' Rings should be lubricated with Christo-Lube® MCG-111. Dress the 'O' Rings with a very light film of grease, and remove any visible excess by running the 'O' Ring between thumb and forefinger. Avoid applying excessive amounts of Christo-Lube grease, as this will attract particulate matter that may cause damage to the 'O' Ring.

### Nitrox

When it comes to issues of nitrox safety and compatibility, the concerns lie primarily with the first stage as it is subjected to high inlet pressures. High inlet pressures lead to adiabatic compression or heating of the gas. As they leave the factory, standard Apeks regulators are suitable for use with oxygen enriched gases (i.e. nitrox, etc.) providing the oxygen content does NOT EXCEED 40% (EAN40).

Any Apeks regulator, when properly cleaned, lubricated and assembled, is authorised for use with enriched air nitrox (EAN) up to 100% (EAN100). It is authorised because it has undergone adiabatic compression testing and the authorised service kit components and lubricants are compatible in elevated oxygen environments. During cleaning, a mild detergent is used to remove condensed hydrocarbons (compressor oils) from the inside passageways of the first stage. For the first stage to remain EAN100 compatible, only use hyperfiltered compressed gas (hydrocarbons < 0.1 mg/m<sup>3</sup>). Ordinary compressed breathing air to BS EN 12021:1999 does not meet this criteria. Once ordinary breathing air is used, the first stage is no longer EAN100 compatible until it is cleaned and serviced again.

Although regulator second stage components are not exposed to high pressure EAN, Apeks recommends that the same cleaning procedures be followed for the complete regulator. This prevents the possibility of cross contamination and guarantees the cleanliness of the entire regulator.



**WARNING:** Please check the regulations regarding Nitrox in your particular country as this may differ from Apeks standard policy.

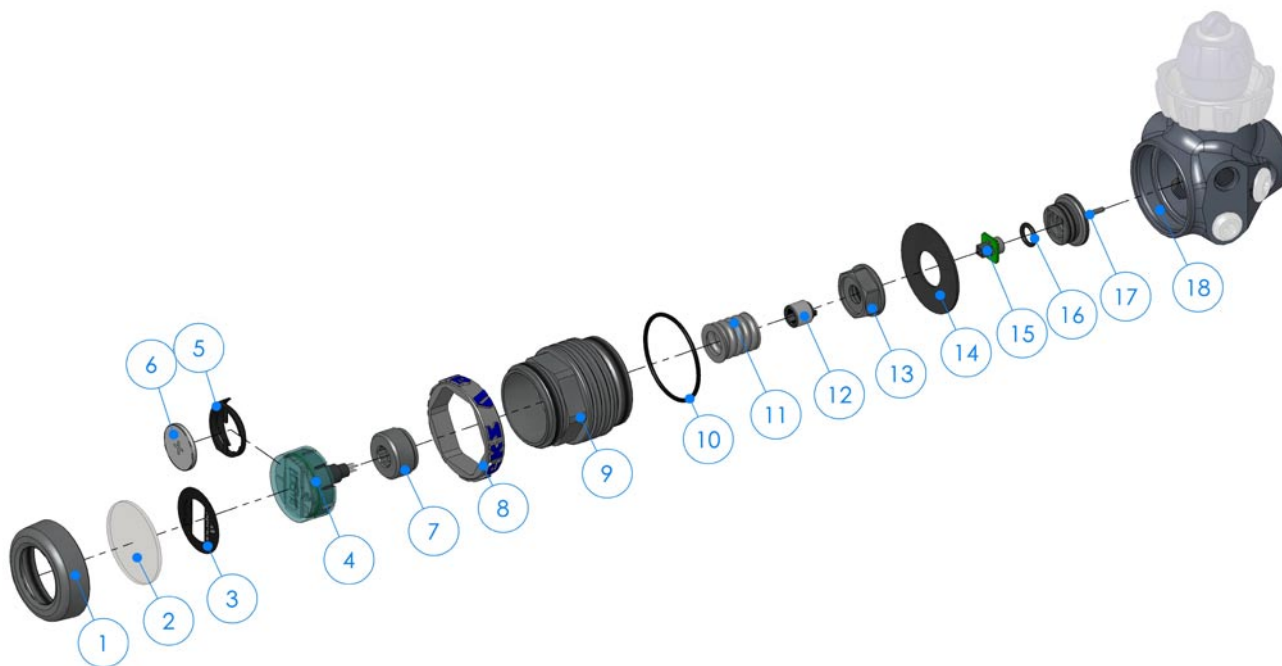
## Table 5 - Torque Specifications

PART NUMBER	DESCRIPTION / KEY NUMBER	TORQUE
AP7505	Clamping Nut (13)	14 Nm / 10.325 lbf.ft

## Table 6 - Test Bench Specifications

TEST	CONDITION	ACCEPTABLE RANGE
Leak Test	Inlet pressure 150 - 232 bar	No Leaks allowed
Medium Pressure	Inlet pressure 150 - 232 bar	9 to 10 bar
Medium Pressure Creep	Inlet pressure 150 - 232 bar	0.25 bar max for 15 seconds after purging regulator

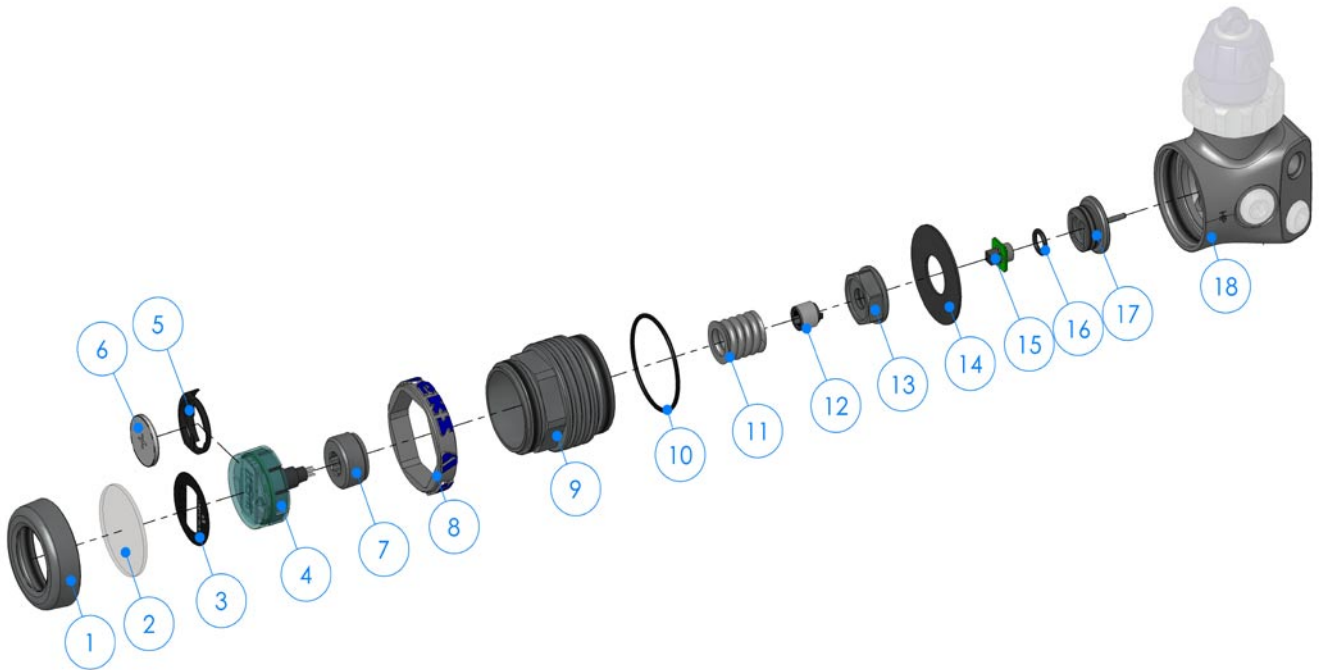
## FSR (XTX200) Status Exploded Parts Diagram



\* All marked items must be replaced when serviced.  
 # Replacement Main Electronic Unit Kit AP0228

1	AP1484	Environmental End Cap	10*	AP7520	'O' Ring
2*	AP1482	Hydrostatic Diaphragm	11	AP1475	Spring
3	AP7510	Status Decal	12	AP7506	Location Plug
4#	AP0151	Main Electronic Unit	13	AP7505	Clamping Nut
5	AP7518	Battery Carrier	14*	AP7501	Diaphragm Ring
6*	AP7504	CR2025 Battery	15#	AP7513	Pressure Sensor
7	AP7508	Spring Adjuster	16*	AP7502	'O' Ring
8	AP5725	Logo Ring	17	AP7512	Status Valve Lifter
9	AP7507/S	Diaphragm Clamp	18	AP5101	Valve Body

## FST (XTX100) Status Exploded Parts Diagram

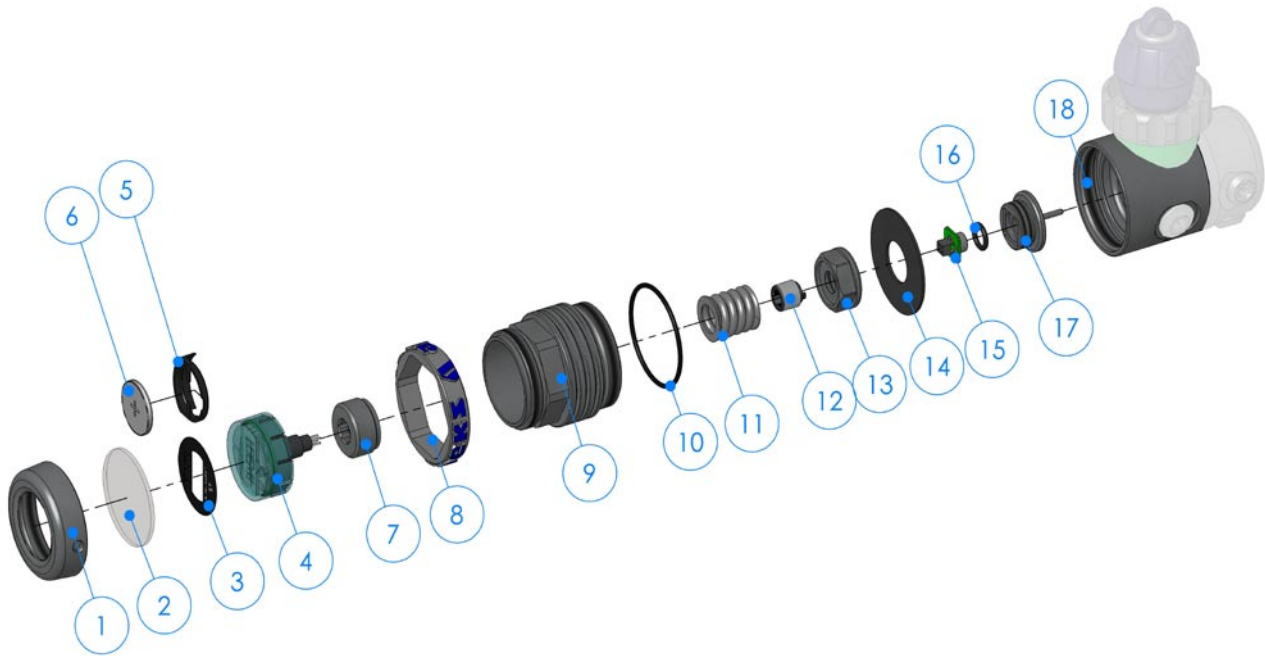


\* All marked items must be replaced when serviced.

# Replacement Main Electronic Unit Kit AP0228

1	AP1484/S	Environmental End Cap	10*	AP7520	'O' Ring
2*	AP1482	Hydrostatic Diaphragm	11	AP1475	Spring
3	AP7510	Status Decal	12	AP7506	Location Plug
4#	AP0151	Main Electronic Unit	13	AP7505	Clamping Nut
5	AP7518	Battery Carrier	14*	AP7501	Diaphragm Ring
6*	AP7504	CR2025 Battery	15#	AP7513	Pressure Sensor
7	AP7508	Spring Adjuster	16*	AP7502	'O' Ring
8	AP5725	Logo Ring	17	AP7512	Status Valve Lifter
9	AP7507/S	Diaphragm Clamp	18	AP5102	Valve Body

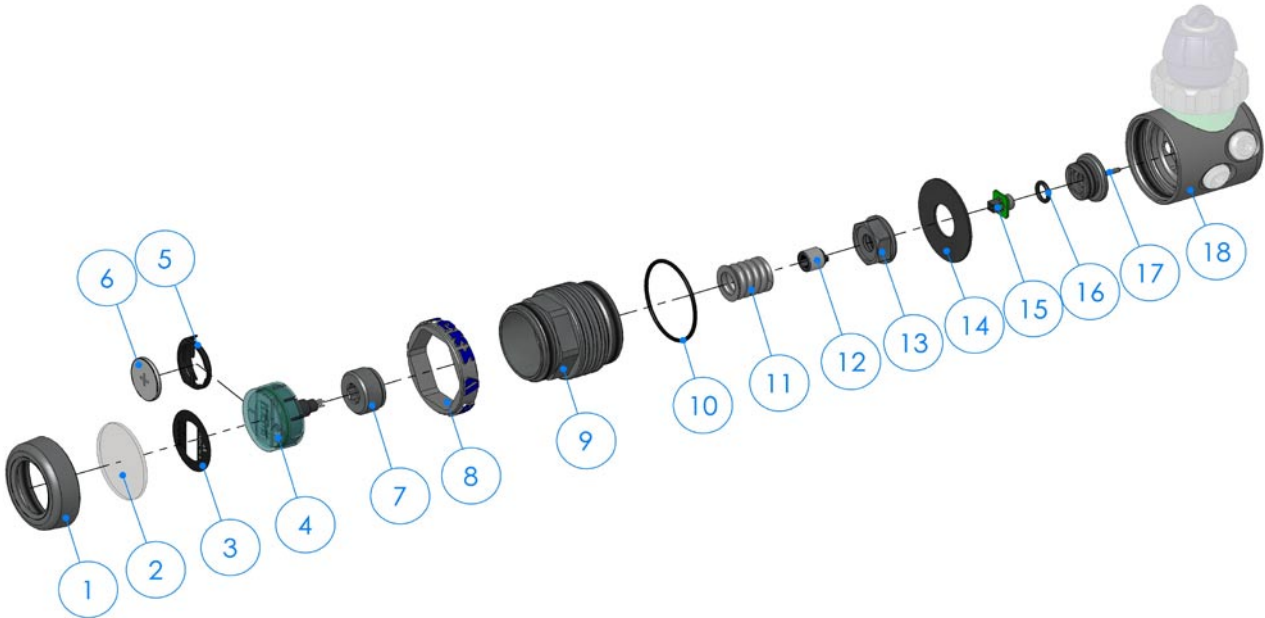
## DST (XTX50) Status Exploded Parts Diagram



\* All marked items must be replaced when serviced.  
# Replacement Main Electronic Unit Kit AP0228

1	AP1484	Environmental End Cap	10*	AP7520	'O' Ring
2*	AP1482	Hydrostatic Diaphragm	11	AP1475	Spring
3	AP7510	Status Decal	12	AP7506	Location Plug
4#	AP0151	Main Electronic Unit	13	AP7505	Clamping Nut
5	AP7518	Battery Carrier	14*	AP7501	Diaphragm Ring
6*	AP7504	CR2025 Battery	15#	AP7513	Pressure Sensor
7	AP7508	Spring Adjuster	16*	AP7502	'O' Ring
8	AP5725	Logo Ring	17	AP7512	Status Valve Lifter
9	AP7507/S	Diaphragm Clamp	18	AP1480	Valve Body

## DS4 (XTX40) Status Exploded Parts Diagram



\* All marked items must be replaced when serviced.  
 # Replacement Main Electronic Unit Kit AP0228

1	AP1484	Environmental End Cap	10*	AP7520	'O' Ring
2*	AP1482	Hydrostatic Diaphragm	11	AP1475	Spring
3	AP7510	Status Decal	12	AP7506	Location Plug
4#	AP0151	Main Electronic Unit	13	AP7505	Clamping Nut
5	AP7518	Battery Carrier	14*	AP7501	Diaphragm Ring
6*	AP7504	CR2025 Battery	15#	AP7513	Pressure Sensor
7	AP7508	Spring Adjuster	16*	AP7502	'O' Ring
8	AP5725	Logo Ring	17	AP7512	Status Valve Lifter
9	AP7507/S	Diaphragm Clamp	18	AP5201	Valve Body





**STATUS FIRST STAGE REGULATOR  
ELECTRONICS  
MAINTENANCE MANUAL  
FOR  
AUTHORISED TECHNICIANS**

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