



apeks
TECHNICAL SUPPORT

STATUS FIRST STAGE REGULATOR ELECTRONICS



**MAINTENANCE MANUAL
FOR
AUTHORISED TECHNICIANS**

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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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.

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

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1. Remove the pressure sensor plug from the regulator body.



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

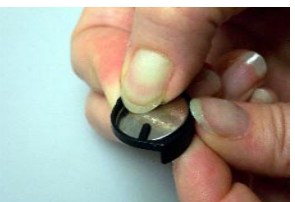
2. Clean the sensor port with a wire brush.



3. Remove the sensor plug and inspect the sensor port for damage.



4. Reinstall the sensor plug and tighten the plug.



This Ends Disassembly

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

REASSEMBLY PROCEDURES

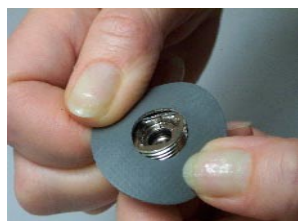
Fitting of Dry Sealed Chamber

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

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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.

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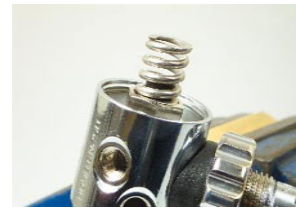
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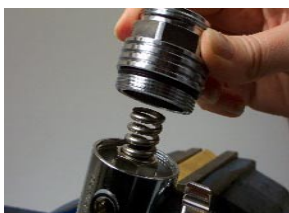
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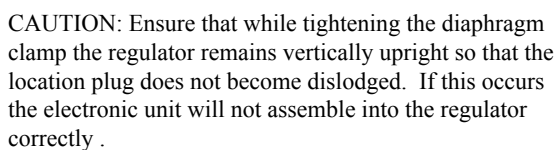


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WARNING: Compressed air can be highly explosive and is dangerous if misused. Ensure cylinder valve is opened slowly. Use Eye and Ear Personal Protective Equipment when performing any tests involving Compressed air.

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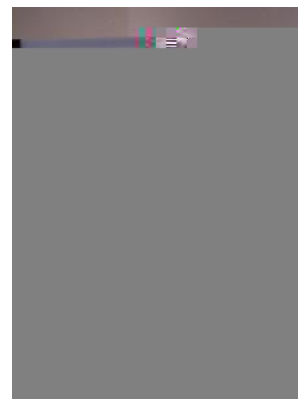


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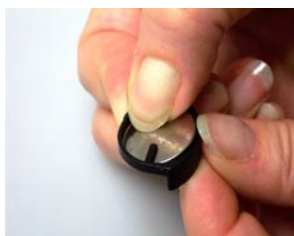
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CAUTION: If the pressure gauge rapidly exceeds 11 bar, then there is a HP leak. Quickly close the cylinder valve and purge the regulator. Refer to the troubleshooting table for the causes of the leak.

[illegible][illegible]

1. Remove the battery from the electronic unit. The battery is located on the back of the electronic unit. To remove the battery, turn the electronic unit over and use a small screwdriver to pry the battery out of its compartment.



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. Reassemble the electronic unit by attaching the battery cover. The cover is located on the back of the electronic unit. To attach the cover, align the cover with the electronic unit and push it into place.



2. Reassemble the first stage regulator by attaching the electronic unit. The electronic unit is located on the back of the first stage regulator. To attach the electronic unit, align the electronic unit with the first stage regulator and push it into place.



3. Reassemble the first stage regulator by attaching the pressure sensor. The pressure sensor is located on the back of the first stage regulator. To attach the pressure sensor, align the pressure sensor with the first stage regulator and push it into place.



NOTE: The pressure sensor is located on the back of the first stage regulator. To attach the pressure sensor, align the pressure sensor with the first stage regulator and push it into place.

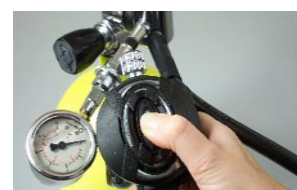
1. Remove the end cap from the first stage regulator. The end cap is located on the front of the first stage regulator. To remove the end cap, turn the first stage regulator over and use a small screwdriver to pry the end cap out of its compartment.



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.

2. Reassemble the first stage regulator by attaching the end cap. The end cap is located on the front of the first stage regulator. To attach the end cap, align the end cap with the first stage regulator and push it into place.

3. Reassemble the first stage regulator by attaching the pressure sensor. The pressure sensor is located on the back of the first stage regulator. To attach the pressure sensor, align the pressure sensor with the first stage regulator and push it into place.



4. Reassemble the first stage regulator by attaching the pressure sensor. The pressure sensor is located on the back of the first stage regulator. To attach the pressure sensor, align the pressure sensor with the first stage regulator and push it into place.

This Ends Reassembly

IMMERSION TEST

1. Immerse the first stage regulator in water. The first stage regulator is located on the back of the first stage regulator. To immerse the first stage regulator in water, place the first stage regulator in a container of water.



NOTE: The first stage regulator is located on the back of the first stage regulator. To immerse the first stage regulator in water, place the first stage regulator in a container of water.

2. Immerse the first stage regulator in water. The first stage regulator is located on the back of the first stage regulator. To immerse the first stage regulator in water, place the first stage regulator in a container of water.

3. Immerse the first stage regulator in water. The first stage regulator is located on the back of the first stage regulator. To immerse the first stage regulator in water, place the first stage regulator in a container of water.

This Ends Testing

SYMPTOM		POSSIBLE CAUSE		TREATMENT
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SYMPTOM	POSSIBLE CAUSE	TREATMENT
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	HÉÄ P[!äæcc^!^	HÉÄ Q}•^!c! ^, !äæcc^!^É
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	ÍÉÄ Tæä}^! ^&c! [}ä&~}äc!~æ~ c^	ÍÉÄ Ü^] æ&^! Tæä}^! ^&c! [}ä&~}äc!É
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Öä•] æ^!±USq!~[, ^ä!ä^!±PQ!æ}ä!c@^!^!±ÜXÖq! 'æ•@ä}*	FÉÁÁÁ Pä* @Ä] ^•~!^!&!^~]	FÉÁÁÁÜ ^æ•^!•^!Væä!^!F
	GÉÁÁÁØæ~ c^! ^&c! [}ä&•	GÉÁÁÁÜ^] æ&^! ^&c! [}ä&•É
Öä•] æ^!±PQq!~[, ^ä!ä^!±ÜXÖq! 'æ•@ä}*	FÉÁÁÁ T^ä~ { ^!] ^•~!^!c [! @ä* @	FÉÁÁÁCEäb~•c! T^ä~ { ÄÜ!^•~!^!c [! ä!c , ^~}ÄJ!æ}ä!FÉ!äæ!É
	GÉÁÁÁ Pä* @Ä] ^•~!^!&!^~]	GÉÁÁÁÜ ^æ•^!•^!Væä!^!F
	HÉÁÁÁØæ~ c^! ^&c! [}ä&•	HÉÁÁÁÜ^] æ&^! ^&c! [}ä&•É
Öä•] æ^!ä! 'æ•@ä}*!±ÜXÖq!	FÉÁÁÁCE} }~æ!Á&[~}c^!^!c}ä!^ä	FÉÁÁÁÜ^] æ&^!äæcc^!^
	GÉÁÁÁW•æ*^!&[~}c^!^!c&^!ä!^ä	GÉÁÁÁÜ^] æ&^!äæcc^!^
	HÉÁÁÁØæ~ c^! ^&c! [}ä&•	HÉÁÁÁÜ^] æ&^! ^&c! [}ä&•É

E!Ö|^&c! [}ä&•!|^]|æ&^ { ^}c!^!äc!ÉÜEGG!Ä&[}ä•c•Ä [~Ä Tæä}!Ö|^&c! [}ä&ÁW}äc!Ç!D!æ}ä!Ü!^•~!^!Ü^}•[!ÄCF!DÉ!ÄV@^•^!æ!^!} []É•^!c!ä&^æ!^!äc^ { •É!Q~Äc@^!^!æ!^!ä!æ { æ*^ä! [!Ä~æ~|c^É!ä [c@!c@^! Tæä}!Ö|^&c! [}ä&ÁW}äc!æ}ä!Ü!^•~!^!Ü^}•[!Ä { ~•c!ä!^!c&@æ}*^ä!~[!Ä}^, !&[{ } [] }c!~! [{ ^æ!|^]|æ&^ { ^}c!^!äc!æ•!c@^!^!æ!^!~æ&c [!^!ä!æ||ä!ä!æc!ä!æ•!æ!ä}æ!É

PART NO.	DESCRIPTION	APPLICATION
CEÚ€IHE	QEUÉÁc•cÁ*æ~*^	Q}c^! { ^ããæc^Á}!••~!^Ác^•cä}*
CEVÍI	±UqÜã} *Á!^ { [çæ Á]ã&\	±UqÜã} *Á!^ { [çæ
CEVHE	ÔÁ•]æ}}^!	Ü^ { [çæ Á[-ÄÖãæ]@!æ* { ÄÖ æ {]ÁBÄÖ}ãÄÖæ]
CEVİİ	Øã!•cÁÜcæ*^ÁY[! \ÁPæ}ã ^	Ô æ {]ã} *ÁXæ ç^ÁÓ[ã^ã}ÁXã&^
CEVÍH	Ü^ { [çæà ~PÚXæ ç^ÁÜ^æcÁV[[Ü^ { [çæ Áæ}ãÄã}•cæ æcä[}Á[-ÄPÚXæ ç^ÁÜ^æcÁçØÜÜD
}Dæ	V[!~^Á, !^}&ÉÁB { Á[!Á ã-D-c	Q}•cæ æcä[}Á[-ÄÖæ æ}&^ÁÜ ~*ÁBÄÖQBÄÖ[]^&cä[}
}Dæ	Î { { ÄCE ^}Á\^~Äãc~[!Ác[!~^Á, !^}&@	Q}•cæ æcä[}Á[-ÄÖæ æ}&^ÁÜ ~*ÁBÄÖQBÄÖ[]^&cä[}
CEVHI	FFDFÎ+Á•]æ}}^!Á	P[•^ÁÜ^ { [çæ
CEVHI	Î { { ÄCE ^}Á\^~	Ó æ} \ã} *ÁÜ ~*•Á
CEVHI	Î { { ÄCE ^}Á\^~	Ü^ { [çæ Á[-ÄÖæ æ}&^ÁÜ ~*ÉÄÖQBÄÖ[]^&cä[}ÁBÄÜ]!ã} *Á CEáb•c^!
CEVİİ	HI { { Á[]^}Á^}ããã•]æ}}^!Á	Ü^ { [çæ Á[-ÄÖ æ&\ÁÜ^æ! ÉÁV~} *•c^}Áæ}ããYVYÄÖãæ]@!æ* { Ä Ö æ {]
CEVHH	HDI+Á!ã} *Á•]æ}}^!Á	Ü^ { [çæ Á[-ÄÖ æ {]ã} *ÁB~c
CEVGF	Xæ ç^ÁŠã~c^!ÄÖæ•c^!^!	Øæ•c^}ã} *Áæ}ãÄ~}~æ•c^}ã} *Á[-Ä& æ {]ã} *Á}~cÁBÄçæ ç^Á ã~c^!
}Dæ	GHGÁ[!ÁHE€Äãæ!ÄÖãçã} *Á&^ ã}ã^!	V^•cä} *Á[-Ä!^~ æc[!]



AP0430



AT54



AT30



AT48



AT53



AT34



AT37



AT38



AT47





AT33



AT21

Notes:

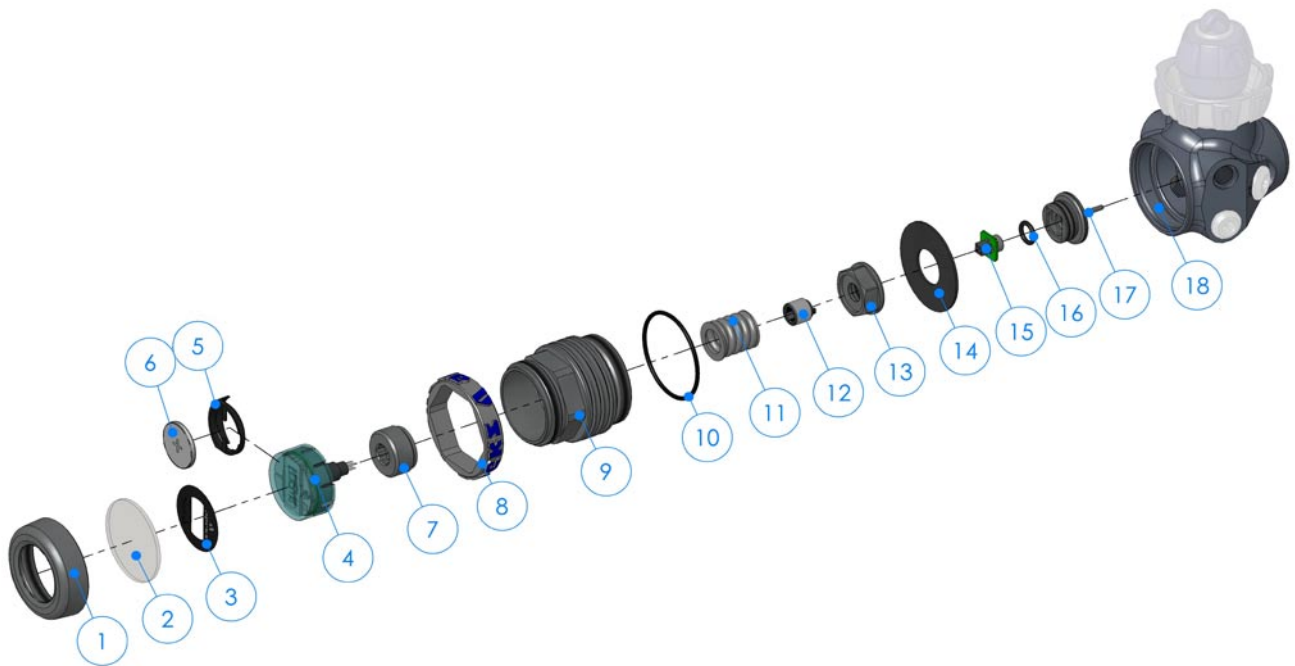
1. Photos not to scale.
2. Actual tools may differ from those shown.

LUBRICANT / CLEANER	APPLICATION	SOURCE
Ó@iã•c[ËŠ~à^i^T ÔÖËFFF ÇŠ~à!ã&æ}cD	Œ ±UqÜã} *ã^æ •	ŒE]^\•T æiã}^ãÖ~ã] {^}cãŠcã ÚP^ŒEÚFÍJÍÉÁ[! Š~à!ã&æcã[}^V^&@} [[*ã^• HFÉÁ T [!c[}^Úc!^c Ræ&\•[}ÉÁUPÁÁ Í Í ÍÉÁWÚŒ Çí€€ÁÍ Í Í É Í € Í
<div>  CAUTION: ÁÁÜã ã&[}^ã!~àà^!ã!^~ã!^•ã} [Á]~à!ã&æcã[}^Á[!Á]!^•^!ÇæcãÇ^Ác!^æc {^}cÉÁÁÖÜÁPUVÁ æ}]] ^ã*!^æ•^Á[!Á•]!æ^Ác[Á•ã ã&[}^ã!~àà^!ã}æ!c•ÁÇ^•ÉÁÖãæ} @!æ* { ÉÁÖŒ@æ~•cãXæ Ç^•ÉÁÁÖ[ã] *Á•[Á { æ^Á&æ~•^ãæÁ&@^ { ã&æ Áà!^æ\ã [, }^ãæ}ã!}!^ { æ~!^ã^c^!ã[!æcã[}^Á[-Ác@^Á { æc^!ãæ É </div>		
Óã[Œ ÇÖ ~æ}ã} *ã^*^}cD	Óã[[*ã&æ ã { }^!•ã[}^Á'~ãã~[!Á!^•æã Á •cæã} ^••Á•c^ ~æ}ã!ã!æ••Á}æ!c•É	Û[^}cãÖãÇ^•ãŠcã FGGEFGÍÁŠæ\^ÁÜãÉÁÚ[!c• { [~c@É Pæ}c•ÉÁÚUFÁÍPP
Y @ãc^!ãããcã ~ããÇã}^*æ!ÁÇF€€Á!ÉD ÇÖ ~æ}ã} *ã^*^}cD	ŒE&ãã!ãæc@Á~[!Á!^•æã ~æ}ã!ã!æ••Á •c^ ~æ}ã!ã!æ••Á}æ!c•É	%P[~•^@[!ã+!~ãã^
<div>  CAUTION: ÁÁÖ[Á] [cã~•^Á { ~!ãæcã&ãæ&ãã~[!Ác@^Á& ~æ}ã} *Á[-Áæ}^Á}æ!c•ÉÁÖÇ^}Áã~Á•c! [] * ^Áãã ~c^ãÉÁ { ~!ãæcã&ãæ&ããã}Á@æ! { Á&@! [{ ^Á] æcã} *Áæ}ã! { æ~Á ~æÇ^!ãæ!^•ãã~^Ác@æcã•Á@æ! { ~ Ác[±UqÜã} *Á •^æ ~æ}ã! [c@^!Á]æ!c• </div>		
Šã~ãã!ãã•@ , æ•@ã} *ã^c^!^*^}cããã ~c^ãã ,ãc@Á , æ! { Á , æc^! ÇÖ ~æ}ã} *ã^*^}cD	Ö^*!^æ•^!~[!Á!ãæ••ãæ}ã!cæã} ^••Á•c^ ~æ}ã!c•]æ!c•LÁ*^}^!æ Á& ~æ}ã} *Á•[!~cã[}^Á[-!Á] æcã&ãæ}ã!~ãà^!	%P[~•^@[!ã+!~ãã^

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

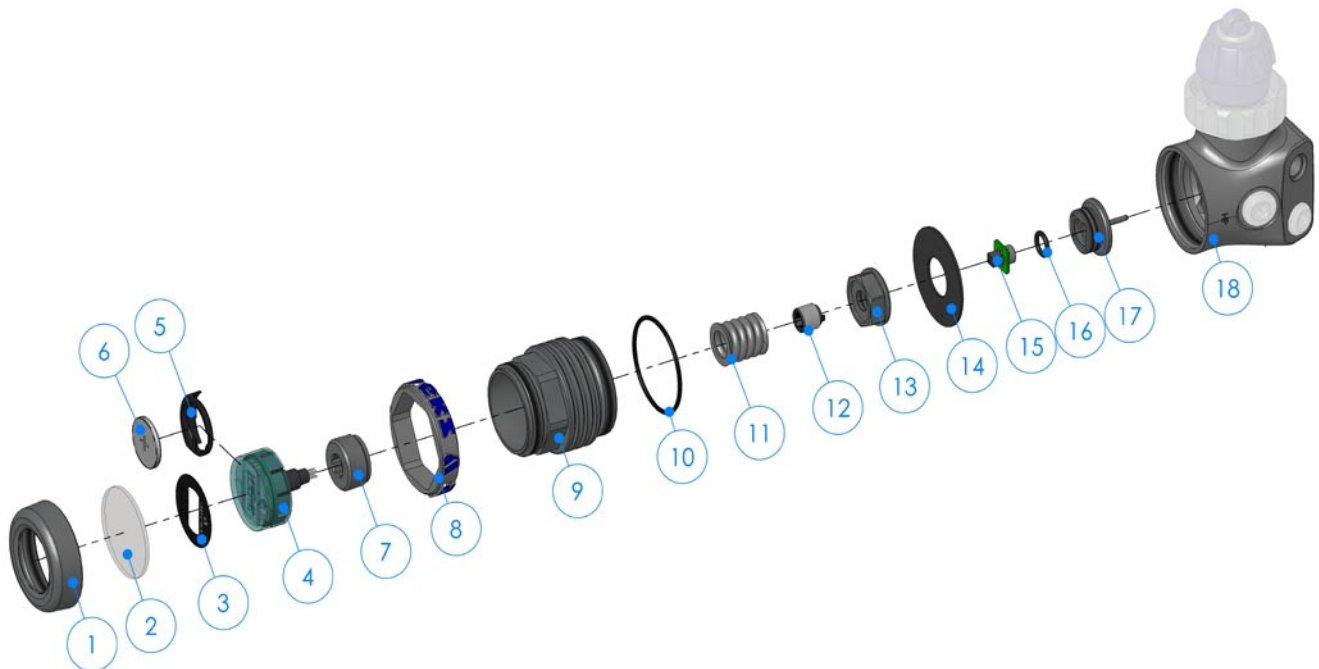
Part Number	Description / Key Number	Torque
CEÚİİ€Í	Ô æ {]ā } *ÁƧ ~ cÁÇFHD	FİÁƧ { ÁĐÁF€ÈHGÍÁ à~È~c

Test	Condition	Acceptable Range
Š^æ\ÁV^•c	Q} ^cÁ] !^••~!^ÁFÍ€ÁÈÁGHGÁàæ!	Ƨ[ÁŠ^æ\•Áæ [, ^āÁ
T^āā~ { ÁÚ!^••~!^	Q} ^cÁ] !^••~!^ÁFÍ€ÁÈÁGHGÁàæ!	JÁc[ÁF€Áàæ!Á
T^āā~ { ÁÚ!^••~!^Ô!^Λ]	Q} ^cÁ] !^••~!^ÁFÍ€ÁÈÁGHGÁàæ!	€ÈGÍÁàæ!Á { æøÁ~[!ÁFÍÁ•^&[} ā•Áæ~c^!Á] ~! *ā } *Á !^*~ æc[!



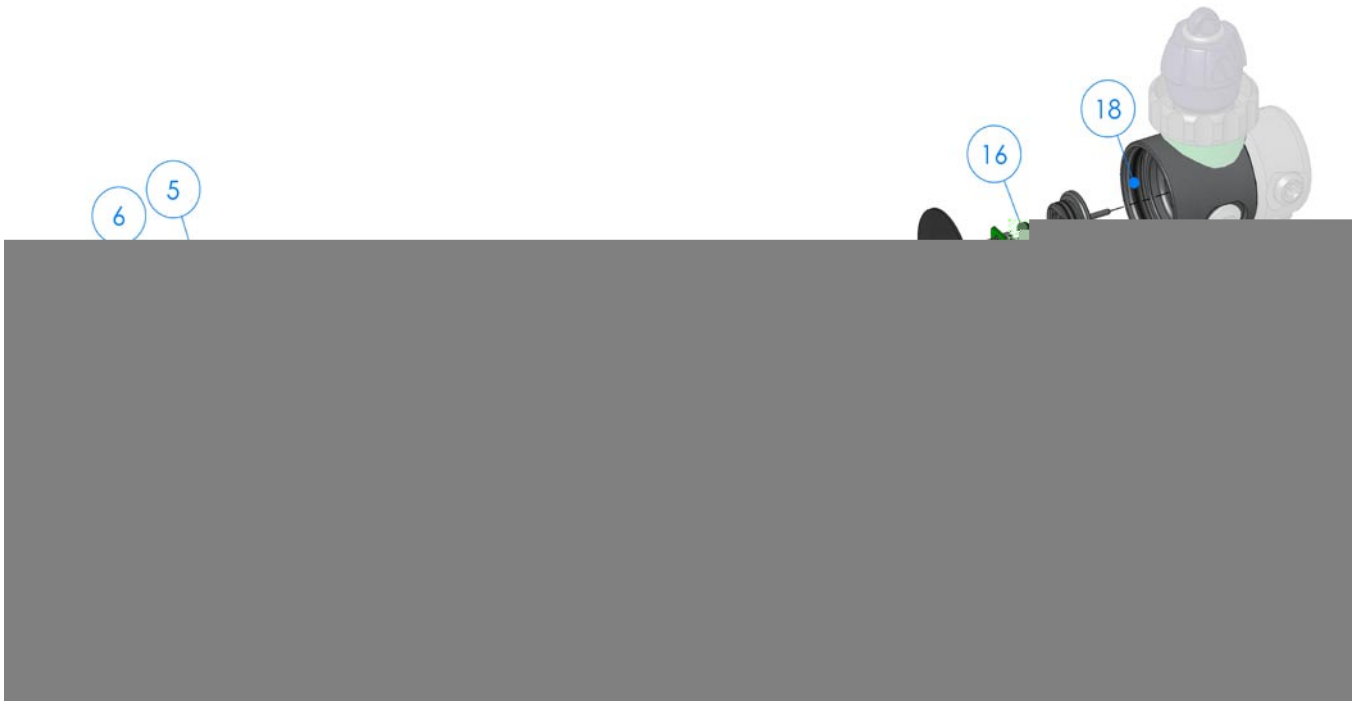
EÁCE||Á { æ! \^āāc^ { •Á { ~•cĀāĀ!^}|æ&^āĀ, @^}Ā•Ā!çā&^āĒ
 ĀĀÜ^}|æ&^ { ^}cĀ T æā}ĀÒ|^&c! [}ā&ĀW}ācĀ SācĀCEÚ€GGĪ

F	CEÚFIĪI	Ò}çā! [} { ^}cæ ĀÒ}āĀÔæ]	F€E	CEÚĪÍG€	±UqÜā}*
GE	CEÚFIĪG	P^ā! [•cæcā&ĀÖāæ]@!æ* {	FF	CEÚFIĪÍ	Ü]!ā}*
H	CEÚĪÍF€	Ùcæc~•ĀÖ^&æ	FG	CEÚĪÍ€Ī	Š[&æcā[}ĀÚ ~*
IĀ	CEÚ€FÍF	T æā}ĀÒ ^&c! [}ā&ĀW}āc	FH	CEÚĪÍ€Í	Ô æ {]ā}*ĀP~c
Í	CEÚĪÍFÌ	Óæcc^!^ĀÔæ! ā^!	FIE	CEÚĪÍ€F	Öāæ]@!æ* { ĀÜā}*
ÎE	CEÚĪÍ€I	ÔÜ€GÍĀÓæcc^!^	FÍĀ	CEÚĪÍFH	Ú!^•~!^ĀÜ^}•[!
Ī	CEÚĪÍ€Ì	Ü]!ā}*ĀCEāb~•c^!	FÎE	CEÚĪÍ€G	±UqÜā}*
ì	CEÚĪÍGÍ	Š[* [ĀÜā]*	FĪ	CEÚĪÍFG	Ùcæc~•ĀXæ ç^ĀŠā~c^!
J	CEÚĪÍ€ĪÜ	Öāæ]@!æ* { ĀÔ æ {]	FÌ	CEÚÍF€F	Xæ ç^ĀÓ[ā^



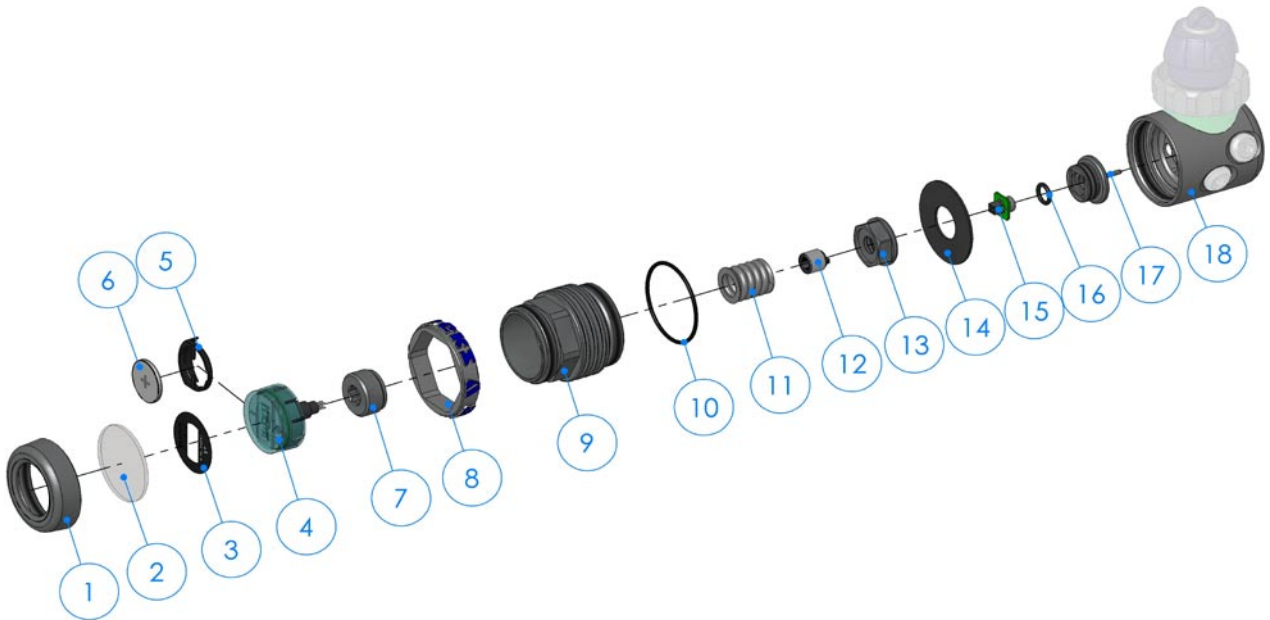
ΕΑΡΕ||Α { æ! \^āāā^ { •Α { ~cāā^!^] |æ&^āĀ , @^} Ā•^! çā&^āĒ
 ĀĀÜ^] |æ&^ { ^} cĀ T æā} ĀÖ| ^&c! [} ā&ĀW} ācĀ S ācĀœŸ€GG Ī

F	œŸŸĪĪİĐÜ	Ö}çā! [] { ^} cæ ĀÖ} āĀÖæ]	F€E	œŸĪĪG€	±UqŸÜā} *
GE	œŸŸĪĪG	P ^ā! [•cæcā&ĀÖāæ] @!æ* {	FF	œŸŸĪĪĪ	Ü] !ā} *
H	œŸĪĪF€	Ùcæc~•ĀÖ^&æ	FG	œŸĪĪ€Ī	Š[&cā[] ĀŸ] ~*
ĪĀ	œŸ€ŸĪF	T æā} ĀÖ ^&c! [] ā&ĀW} āc	FH	œŸĪĪ€Ī	Ö æ {] ā} *ĀP~c
Ī	œŸĪĪFİ	Óæcc^! ^ĀÖæ! !ā^!	FİE	œŸĪĪ€F	Öāæ] @!æ* { ĀÜā} *
ĪE	œŸĪĪ€Ī	ÔÜG€GĪĀÓæcc^! ^	FĪĀ	œŸĪĪFH	Ÿ! ^••~! ^Ü^} •[!
Ī	œŸĪĪ€İ	Ü] !ā} *Āœāb~•c^!	FĪE	œŸĪĪ€G	±UqŸÜā} *
İ	œŸĪĪGĪ	Š[* [ĀÜā} *	Fİ	œŸĪĪFG	Ùcæc~•ĀXæ ç^! Šā~c^!
J	œŸĪĪ€İĐÜ	Öāæ] @!æ* { ĀÖ æ {]	Fİ	œŸĪF€G	Xæ ç^! Ó[ā^



EÁŒ||Á { æ! \^âĤăċ { •Á { ~ċĀāĤĤĤ |æ&^âĤ , @^}Ĥ•Ĥ!ċĀ&^âĤ
ĀĀÜ^}|æ&^ { ^}ċĀ T æĤ}ĤŒ|Ĥ&c! []ă&ĤW}ăċĤSăċĤŒŒGGĤ

F	ŒŸFĤĤĤ	Œ}ċĤ! [] { ^}ċĤ ĤŒ}ăĤŒĤ	FŒE	ŒŸĤĤĤŒ	±UċÜă} *
GE	ŒŸFĤĤĤ	P^ă! [•ċăċă&ĤŒăĤ] @!æ* {	FF	ŒŸFĤĤĤ	Ÿ]Ĥă} *
H	ŒŸĤĤFŒ	Ÿċăċ~•ĤŒ^&æ	FG	ŒŸĤĤŒĤ	Š[&ăċ []ĤŸ ~*
IĀ	ŒŸŒFĤF	T æă}ĤŒ Ĥ&c! []ă&ĤW}ăċ	FH	ŒŸĤĤŒĤ	Œ æ {]ă} *ĤŒ~ċ
Í	ŒŸĤĤFĤ	ŒċċĤ!^ĤŒĤ!ĤăĤ!	FIE	ŒŸĤĤŒF	ŒăĤ]@!æ* { ĤŸă} *
ĤE	ŒŸĤĤŒĤ	ŒŸŒŒĤĤĤĤĤŒĤĤĤĤĤ	FĤĀ	ŒŸĤĤFH	Ÿ!Ĥ••~!ĤŸĤ}•[!
Ĥ	ŒŸĤĤŒĤ	Ÿ]Ĥă} *ĤŒăċ~•ċĤ!	FĤE	ŒŸĤĤŒĤ	±UċÜă} *
Ĥ	ŒŸĤĤĤĤ	Š[* [ĤŸă} *	FĤ	ŒŸĤĤFG	Ÿċăċ~•ĤXăċċ^Šă~ċĤ!
J	ŒŸĤĤŒĤŸŸ	ŒăĤ]@!æ* { ĤŒ æ {]	FĤ	ŒŸFĤĤŒ	Xăċċ^ŒŒ[ă^



ΕΑΠΕΙ|Α { æ! \^āāc^ { •Á { ~•cā^Á!^}|æ&^āÁ, @^}Á•!çā&^āt
 ÁÁÜ^}|æ&^ { ^}cÁ T æā}ÁÒ|Λ&c! [}ā&ÁW}ācÁ SācÁœÜ€GGÍ

F	œÚÍÍÍ	Ò}çā! [] { ^}cæ ÁÔ}āÁÔæ]	F€E	œÚÍÍG€	±UqÜā}*
GE	œÚÍÍG	P^ā! [•cæcā&ÁÔāæ]@!æ* {	FF	œÚÍÍÍ	Ù]!ā}*
H	œÚÍÍF€	Ùcæc~•ÁÔ^&æ	FG	œÚÍÍ€Í	Š[&cā[]ÁÚ]~*
IÀ	œÚ€FÍF	T æā}ÁÔ Λ&c! []ā&ÁW}āc	FH	œÚÍÍ€Í	Ô æ {]ā}*Áß~c
Í	œÚÍÍFÌ	Óæcc^!~ÁÔæ! ā^!	FIE	œÚÍÍ€F	Öāæ]@!æ* { ÁÜā}*
ÎE	œÚÍÍ€I	ÔÜ€GÍÁÓæcc^!~	FÍÁ	œÚÍÍFH	Ú!^•~!^ÁÜ^}•[!
Ï	œÚÍÍ€Ì	Ù]!ā}*Áœāb~•c^!	FÎE	œÚÍÍ€G	±UqÜā}*
Ì	œÚÍÍGÍ	Š[* [ÁÜā]*	FÏ	œÚÍÍFG	Ùcæc~•ÁXæ ç^!Šā~c^!
J	œÚÍÍ€ÏÜ	Öāæ]@!æ* { ÁÔ æ {]	FÌ	œÚÍG€F	Xæ ç^!Ó[ā^



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