

EPSILON INWARD GLIDER DOOR SYSTEM



COMMONLY FITTED FROM 2007 ON POPULAR VEHICLES:

Optare METROCITY, SOLO SE SF FF, TEMPO, VERSA

- **SERVICE & ROUTINE MAINTENANCE GUIDELINES**
- **SENSITIVE EDGE – SETTINGS & CHECKS**
- **PNEUMATIC CYLINDERS, FILTER REGS & VALVES DATA**
- **AIR BLEED & PRESSURE APPLIED ELE/PNEU CIRCUITS**
- **ELEC/PNEU SYSTEM- FAULT FINDING**

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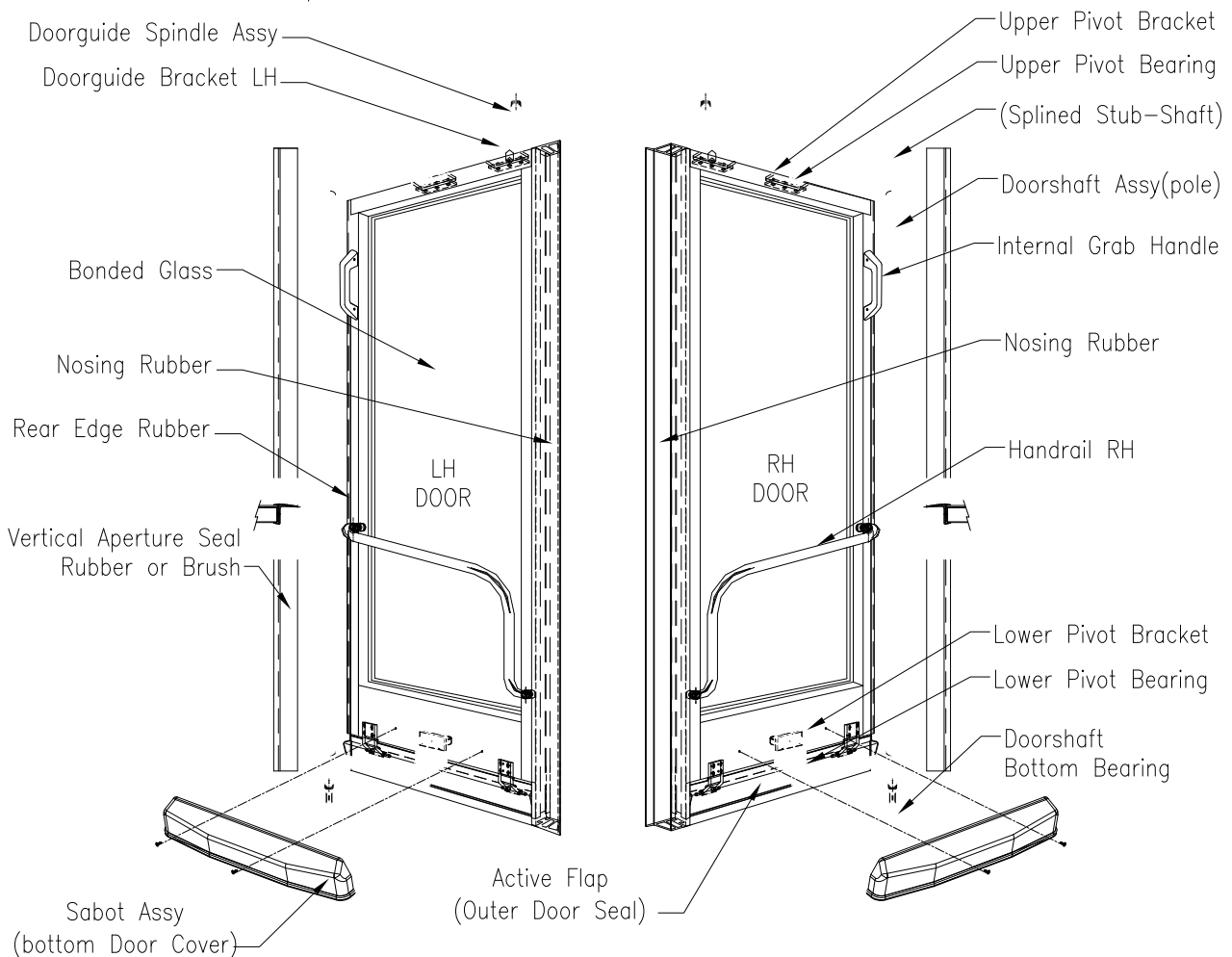
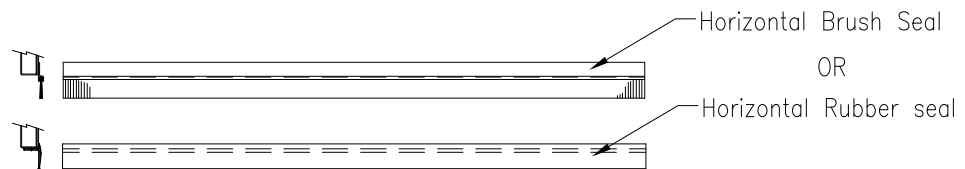
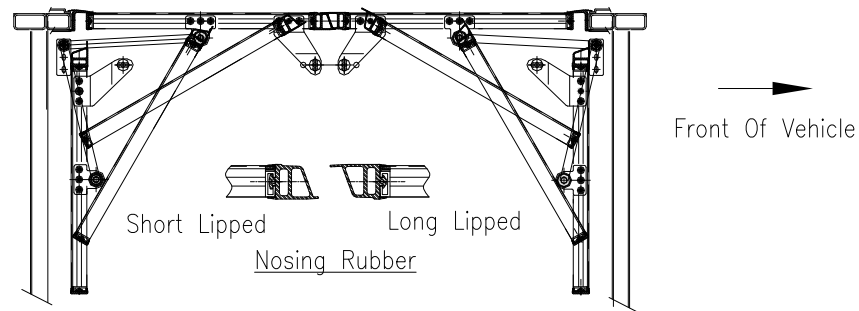
INTRODUCTION

EPSILON INWARD GLIDING DOORS SYSTEM

Transport Door Solutions door system is a most durable system. By drawing on technology gained worldwide on both bus and rail, Transport Door Solutions have created doors for the P.S.V. market that are tough, reliable, maintainable, easy to install. The doors utilise specially designed aluminium extrusions, which make them more resistant to damage and vandalism. The basic overall design allows easy installation and adjustment which means lower installation and maintenance costs. Control systems include: Pneumatic, Electro-Pneumatic or Electric.

- Configuration:** Single or Double Door Systems
- Movement:** Doors will glide inboard of aperture, either finishing inside or protrude outside of vehicle.
- Applications:** For entrance (front) & Exit (mid) for embark or disembark on off side or nearside of vehicle.
- Control Options:** Pneumatic, Electric or Manual means of operation.
- Material & Finish:** Aluminium extrusion construction & powder coated.

Typical Double Glider Doors Movement Layout



Door Viewed from Inside vehicle

DOOR SHELFPLATE PNEUMATIC DRIVE UNITS

Configuration: For Double & Single Door Systems

Applications: For entrance (front) & Exit (mid) for embark or disembark on off side or nearside of vehicle.

A, Doors that glide inboard of aperture, either finishing inside or protrude outside of vehicle.

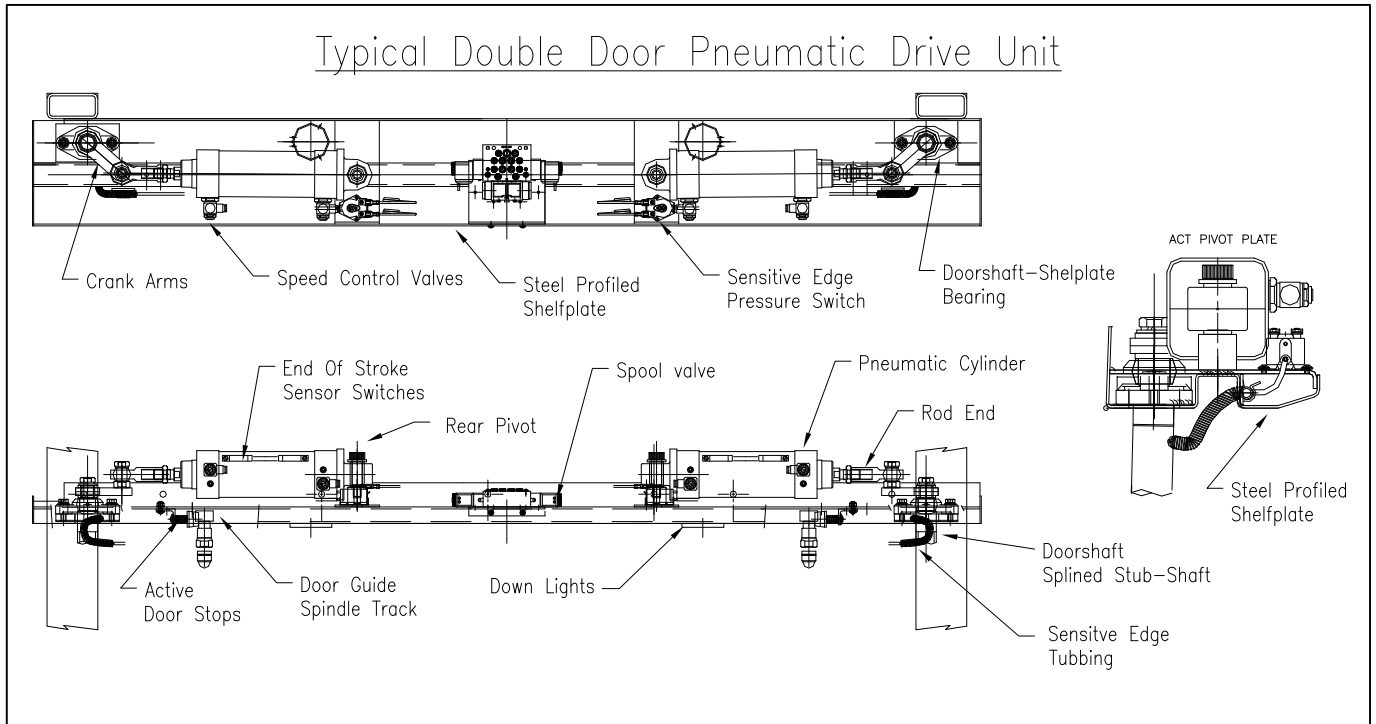
B, Doors that fold inboard of aperture, either finishing inside or protrude outside of vehicle.

C, Doors will move outboard towards the front or rear of the aperture, and finish close to side of the vehicle.

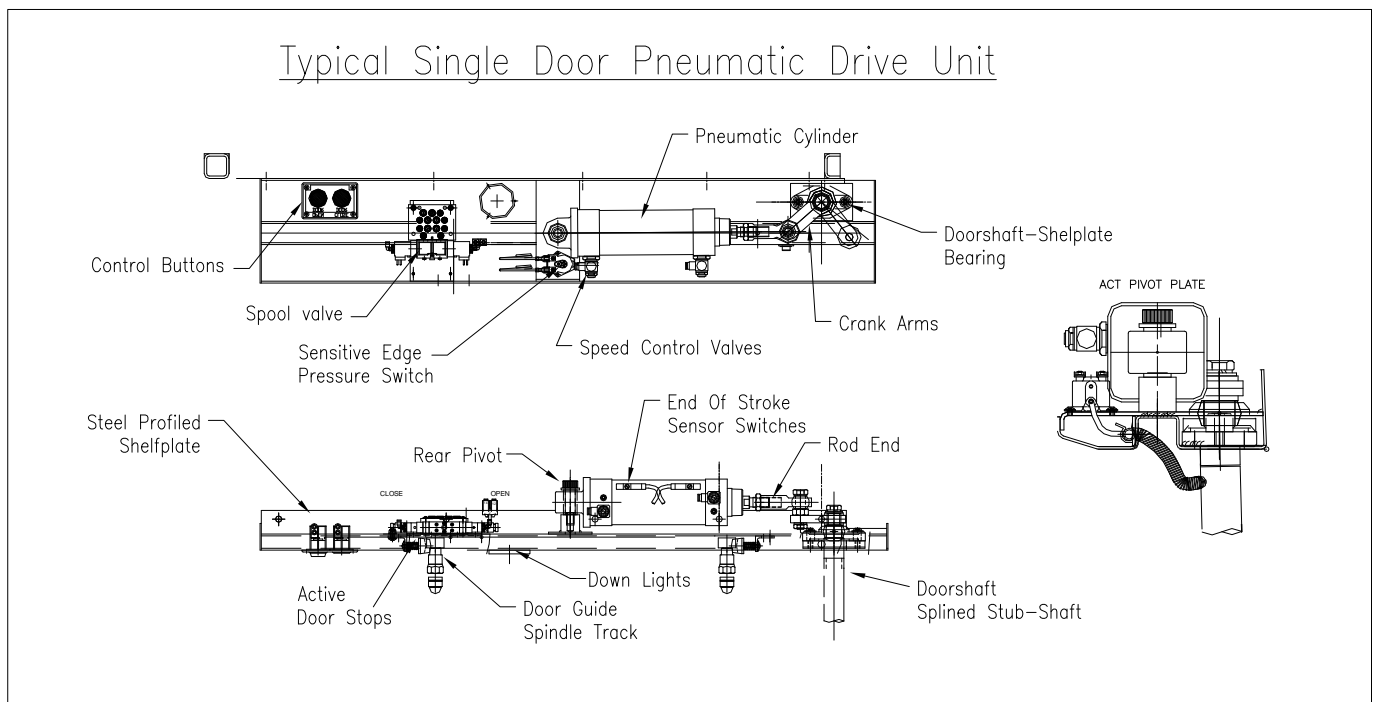
Control Options: Pneumatic, Electric or Manual means of operation.

Material & Finish: Mild steel construction & powder coated.

Typical Double Door Pneumatic Drive Unit



Typical Single Door Pneumatic Drive Unit



ROUTINE MAINTENANCE GUIDELINES FOR PNEUMATIC GLIDER DOOR SYSTEMS

The following is the recommended minimum routine maintenance required for power operated door systems. It is important that any components found to be damaged or defective are replaced as soon as practically possible. Failure to do so could result in further damage to other components.

1.0 Daily Checks

- 1.1 Check that the movement of all door leaves & active flaps are all running smoothly and free and should be within the operating speed/cushioning guide lines.
For Opening fully in 2.0 to 3.0 seconds & Closing fully in 2.5 to 3.5 seconds.
- 1.2 While operating the doors visually inspect for any signs of wear & damage.
- 1.3 Check for loose door handrails & grab handles. If found to be loose must be corrected
- 1.4 Check for loose door leaves in the fully close and open positions a good holding force (min 150N to 200N)
- 1.5 Check Sensitive Edge or Sensadour operation on all door leaves (if fitted).
- 1.6 Check Functionality of all push buttons/dump valves and emergency opening handle (if fitted).

1.7 Cleaning Guidelines.

- 1.7.1 It is recommended exterior door surfaces are washed regularly to remove dirt and other impurities, please **DO NOT** use high pressure washers.
- 1.7.2 Use low pressure wash system, either manually by hand/hose or as provided by typical bus wash machines.
- 1.7.3 Soft brushes must be used for a gentle cleaning process.
- 1.7.4 Warm mild soapy water or similar gentle cleaning solution to be used. **DO NOT** use aggressive cleaning chemicals, as this can cause rubbers to stick together.
- 1.7.5 Particular care to be taken where horizontal brush seals are fitted.

2.0 Six Monthly Initial Inspection.

- 2.1 Repeat %Daily Check +as above.
- 2.2 Check filter regulator output pressure. Nominal 6.0bar to 6.5bar (87-95psi)
- 2.2 Check filter regulator for contamination from vehicle air supply. Drain the bowl if any water is present, replace or clean (with warm soapy water only) the filter element as appropriate if dirty or replace complete filter/reg assy
- 2.4 Inspect the pneumatic system for leaks, ensure all pipes & connectors, fittings are free of damage and are all fully pushed home into the fittings/connectors .
- 2.5 Operate the doors to check door alignment in the fully CLOSE positions against aperture seals and doors in the fully OPEN in a firm position, under pressure. Adjust cylinder / actuator drive linkage if required. (Doorstops, if fitted, are correctly adjusted to stop doors when in the fully open position).
Note when in the open or close position NO distortion (excessive load) should occur to the Door guide Spindle
- 2.6 Inspect condition of the door guide roller & spindle assembly, replace if worn or damaged. Also check the running clearance approx. 2.0mm-3.0mm top of guide roller to the guide channel on the underside of shelfplate also should be dry and free from grease.
- 2.7 Check doorframes for paint cracks and chips. Repair damaged areas with appropriate powder coat compatible paint.

3.0 Six Monthly Manual Inspection.



SAFETY NOTE: Before any initial checks are undertaken, release all the air from the door system via the filter regulator located near the shelfplate or dump valve

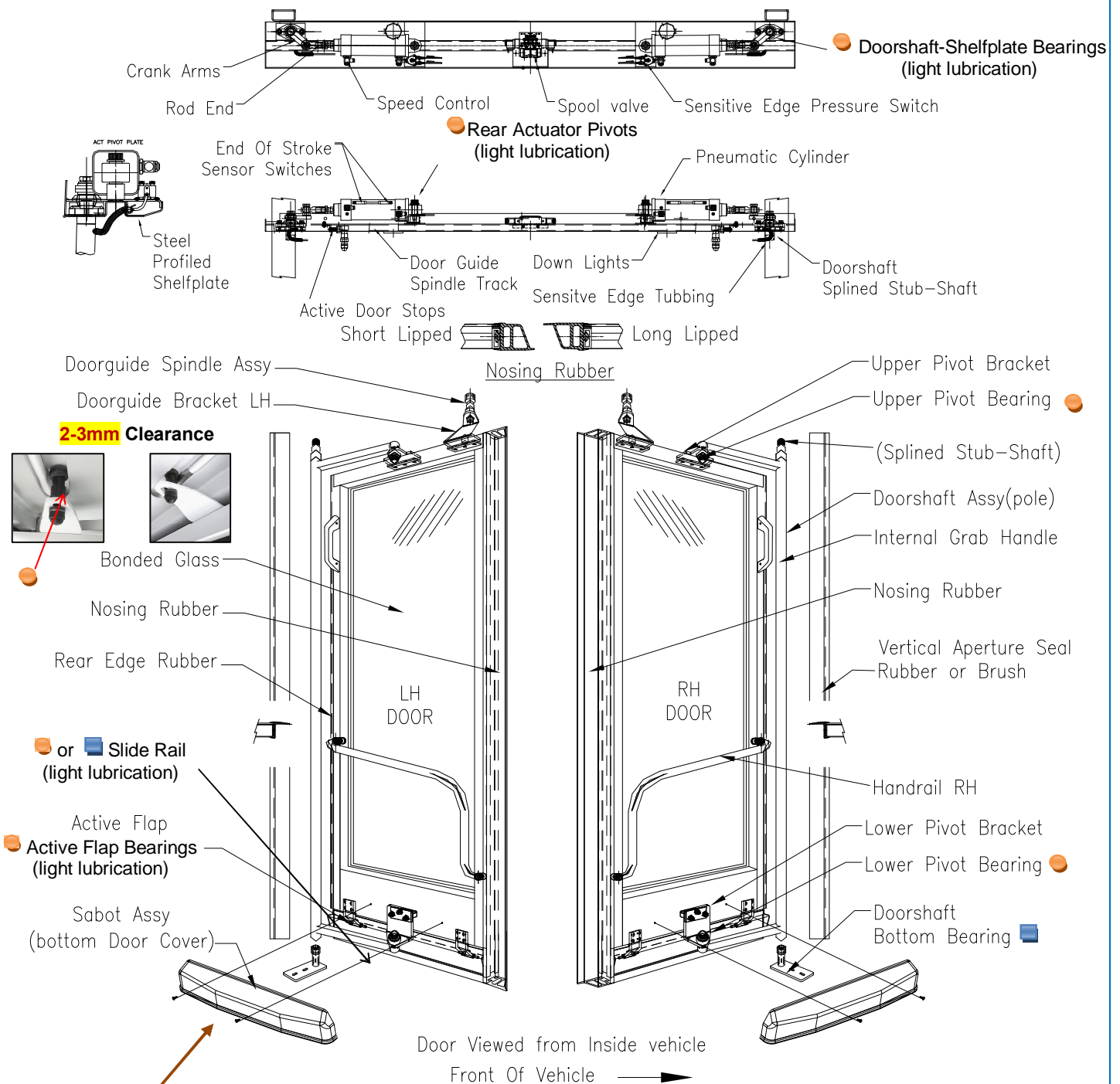
- 3.1 Before commencing any inspection check internal area of shelfplate system for dirt, oil & dust. Clean as necessary to be removed. (Note: Do not use aggressive cleaning chemicals.)
- 3.2 Inspect all mechanical linkages for wear . tear also movement to be free & smooth : door pivot bearings, cylinder rod ends, active flap springs/bearings
- 3.3 Check the condition of the shelfplate drive linkage rod end bearings. Replace if more than 0.5mm free play.
- 3.4 Inspect all electrical cables/plugs have a good connections and are free from damaged.
- 3.5 Note. Because the open & close reed switches are magnetic sensors. Always keep them free from ferrous dust as this can distort or impede the signal therefore giving false readings. Check that reed switches are secure.
- 3.6 Check tightness of all bolted screws. Tighten if loose.

3.7 Inspection of Doorshafts (pillar tubes)

- 3.7.1 Check condition of doorshafts top spherical flange bearing mounted on shelfplate, Replace if more than 0.5mm free play and ensure pillar tube shaft rotates with self-aligning bearing.
M8 fixing screw are tight also M12 retaining bolt is secure to eliminate upward movement of doorshaft.
- 3.7.2 Check condition of doorshafts bottom bearing. Replace if more than 2mm horizontal movement
- 3.7.3 Check condition of doorshafts upper and lower arms bearings on the end of arms. Replace if more than 0.5mm
- 3.7.4 Check tightness of all bolted-screws. Tighten if loose

4.0 Six Monthly Lubrication as required

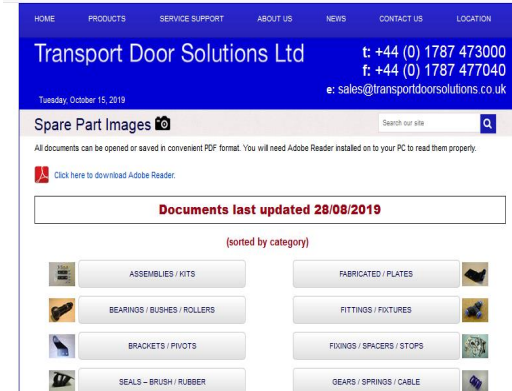
-  = Denotes **Grease** Lubrication. Use Corrosion Block high performance (Blue in colour) long-lasting, non-drying, excellent salt water resistance, (Alternatives: K2EP (Red) Morris long life grease)
-  = Denotes **Spray** Lubrication. Use AC90 spray, TF2 (with Teflon surface protection) spray or GT85 spray.
Do not get any lubricates on any surface where you might stand or tread.
- * Do Not Use WD40 Original for lubrication only use as cleaning agent





Inner Sabot Cover: To remove cover pop out plastic screw caps, Then using PZ2 bit screw driver, slacken off screws, then pull up cover vertically to remove

FOR SPARES OR REPLACEMENT PARTS

See TDS website for latest spare part image sheets > www.transportdoorsolutions.co.uk/spare-parts-images
Sorted by product category and door system location: shelfplate or door leaf kit



Recommended Lubricants

-  **Grease** Lubrication. Use Corrosion Block high performance (Blue in colour). long-lasting, non-drying, excellent salt water resistance, (Alternatives: K2EP (Red) Morris long life grease)
-  **Spray** Lubrication. Use AC90 spray, TF2 (with Teflon surface protection) spray or GT85 spray.
Do not get any lubricates on any surface where you might stand or tread.



TYPICAL TOOL REQUIREMENTS



SPANNERS	ALLEN KEYS
Open & Closed Ended size in mm	Hex & Ball Nose Ends size in mm
24, 23, 22, 19, 17, 16, 15, 14, 13, 12, 10, 8, 7, 4, A/F	1.5, 2.0, 2.5, 3.0, 4.0, 5.0, 6.0, 8.0, 12. A/F
Adjustable Spanner	Tee Bar Type
Up To 25mm Opening S-M-L	3.0, 4.0, 5.0, 6.0, 8.0. A/F
Sockets	
22, 19, 17, 16, 13, 12, 10, 8, 7, 4, A/F	



"SCREW DRIVERS BITS"	MISCELLANEOUS
4mm Flat Blade Screwdrivers (S-M-L)	Internal & External Circlip Pliers
No.PZ2 Pozi-Drive Screwdriver	Pliers flat & tapered ends
No.PZ2 Pozi-Drive Bit	Stanley Knife
No.PZ3 Pozi-Drive Bit	Scissors
	Hammer small Combination type



BOLT / SCREW TIGHTENING TORQUE	
M6	12 Nm
M8	25 Nm
M10	52 Nm
M12	94 Nm
M16	90 Nm
M20	150 Nm

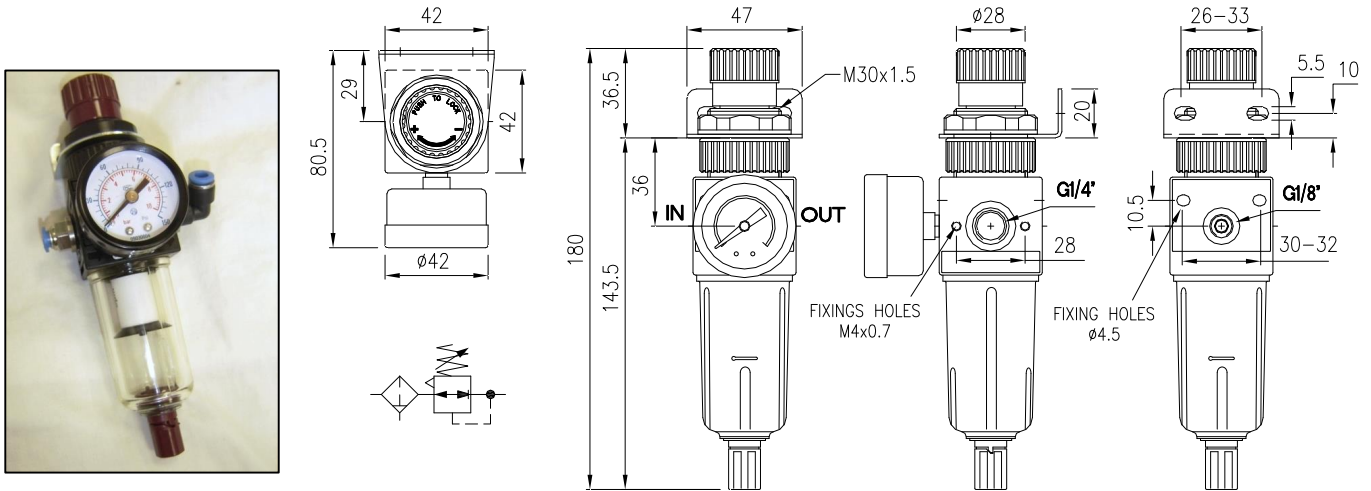
NUT TIGHTENING TORQUE	
M6	7 Nm
M8	17 Nm
M10	36 Nm
M12	55 Nm
M14	80 Nm
M16	120 Nm

TYPICAL PNEUMATIC FILTER REGULATORS

High performance, sensitive unit with rolling diaphragm and with high flow rate, Lockable safety knob, over pressure relief function, high level of condensate separation

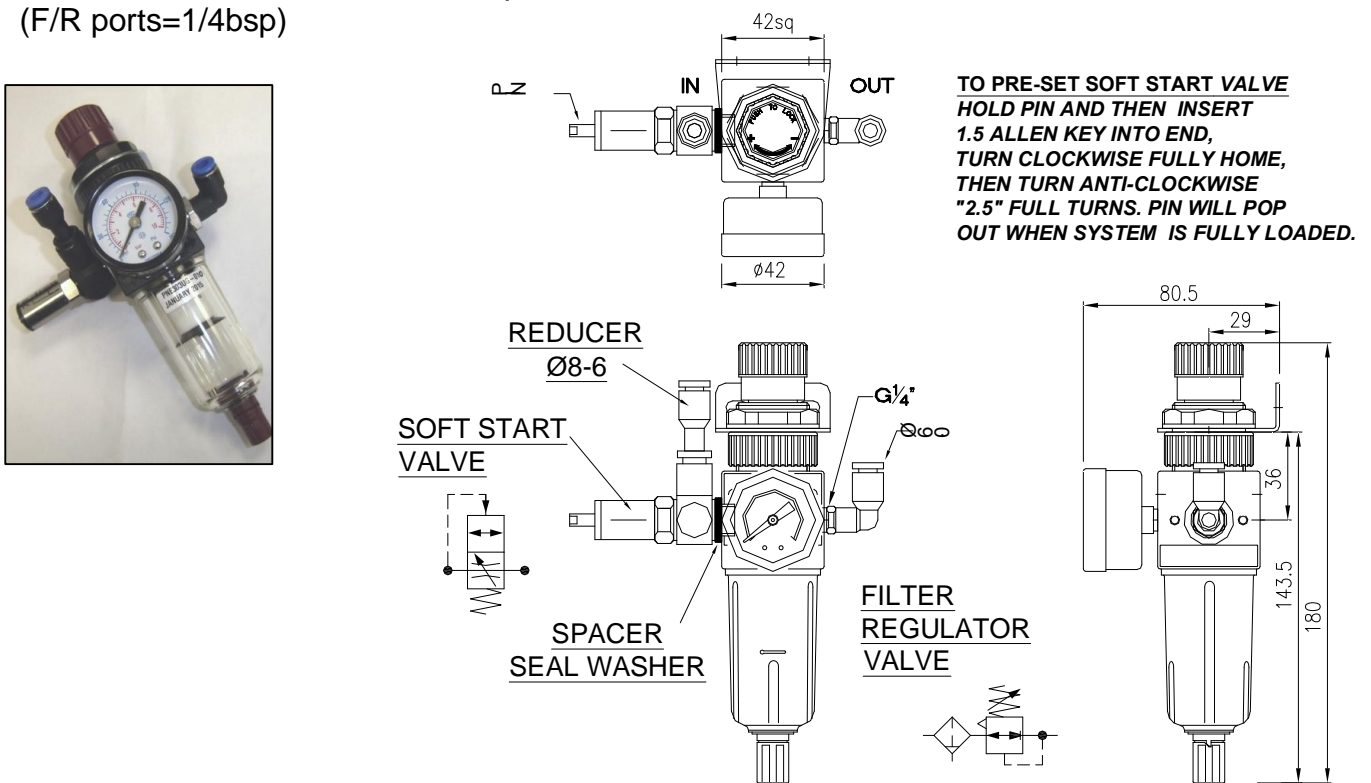
PNE303UG-02 = Modular Filter Regulator Assy.

With standard push in 6mm inlets & outlets. (F/R ports=1/4bsp)



PNE303UG-10 = Modular Filter Regulator Assy.

With soft start valve and standard push in 6mm or 8mm inlet & 6mm outlets. (F/R ports=1/4bsp)



MAINTENANCE INFORMATION

This Unit is designed to operate in clean, dry compressed air systems. When fitting a replacement unit we recommend that the air feed pipes and valve units are checked to ensure they are free of contamination, i.e. oil carries over and water condensation.

These impurities may have possibly caused the deterioration of your original equipment and by following the above checks you can help prolong the service life of this replacement unit.

It is the end users responsibility to check and maintain the quality of their compressed air and any excessive oil/water carries-over and may invalidate the warranty on items designed for use on clean compressed air systems.

TYPICAL PNEUMATIC & ELECTRIC BUTTONS

STANDARD FEATURES

Compact envelope size, with maximum depth of 43mm to suit most bodywork structures

Protection to Ip65

Interchangeable pneumatic and electric switches
 Pneumatic micro switch 3/2 N/C function
 Pneumatic micro switch 3/2 N/O function
 Electric micro V3 type switch N/C or N/O function

Lightweight strong construction in non-corrosive material with wipe clean facias

OPTIONS

For Pressure Applied, Air Bleed or Electrical installations

Twin or single switches assemblies

Facias Flush mounted with raised or flush button inserts. Red, Green & black.

Suitable for multi button panel assembly applications

ELECTRICAL MICRO SWITCH

Terminals:
 Three 6.3mm quick tab connections

Electrical Rating:
 Recommended maximum 10A on 125 or 250Vac

Mechanical Life:
 In excess of 10 million operations

Operating Temperature:
 -10°C +70°C

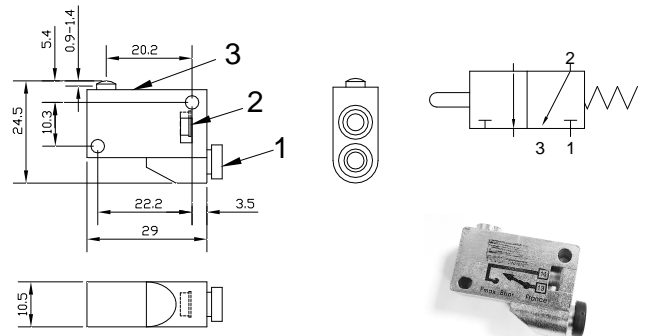
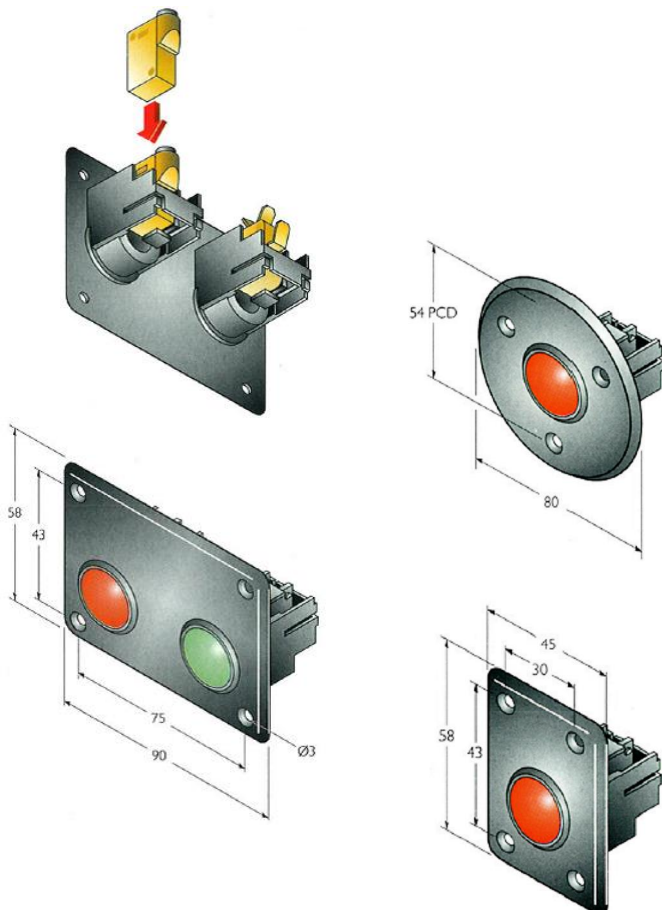
3/2 PNEUMATIC LIMIT SWITCH

Connections:
 2 x Ø4.0mm push in type

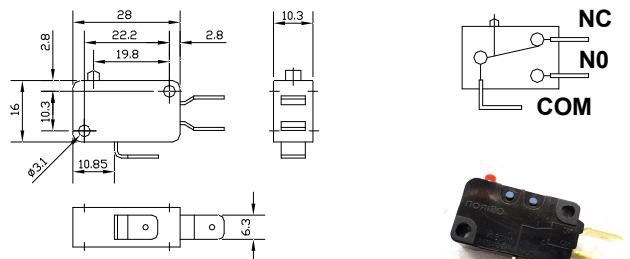
Operating Pressure:
 3 to 9 bar

Operating Temperature:
 -15°C +60°C

Mechanical Life:
 In excess of 10 million operations



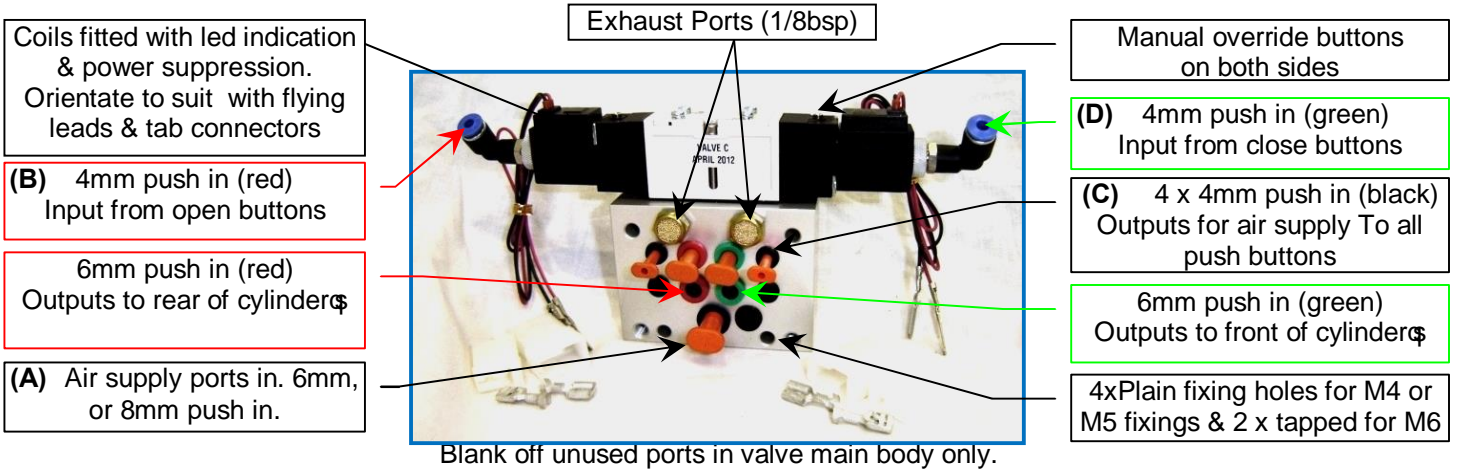
PNEUMATIC 3/2 N/C LIMIT VALVE



ELECTRICAL MICRO SWITCH

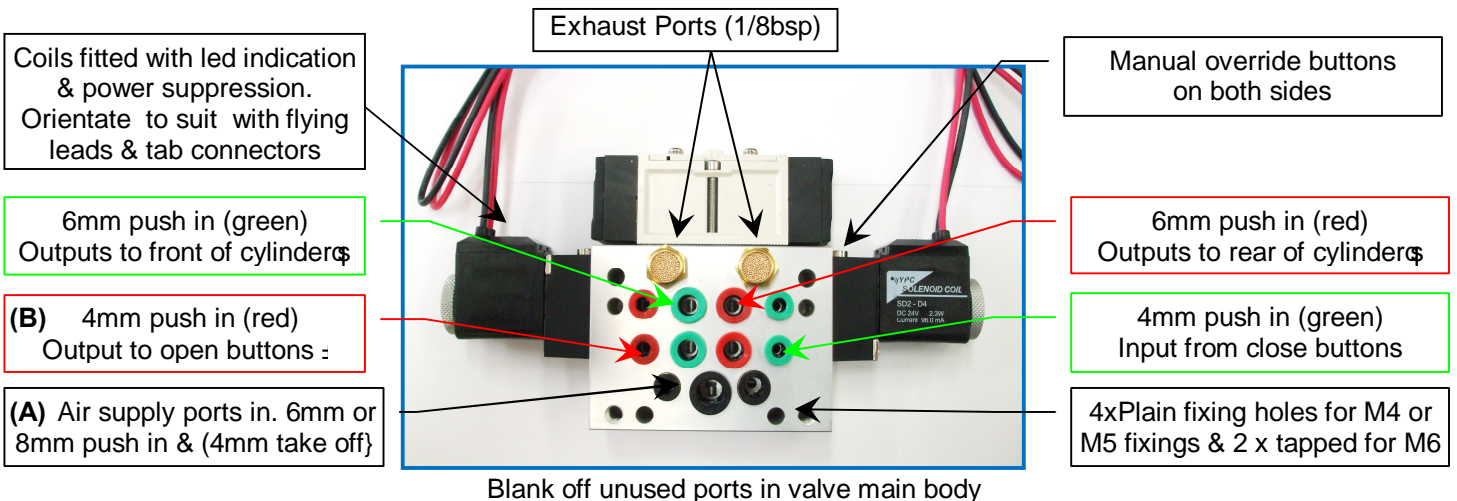
TYPICAL ELEC/PNEUMATIC SPOOL VALVES FUNCTION

VAL003U = PRESSURE APPLIED 24V DOUBLE SOLENOID SPOOL VALVE DATA



How PRESSURE APPLIED spool valve works: - With air supplied into valve main body (A) and the door is in the fully close position. With a 4mm BLACK pipe from outlet ports (C) on valve main body to N/C momentary push button valve into port No.1. & then with a single 4mm air pipe RED from button port No.2 input port (B) elbow on the spool valve. By depressing the open button momentarily, air will pilot the chamber causing a pressure to rise and will shunt the spool from one side to the other, this will allow air into cylinder extending the ram to open the door. As the button is released air from input (B) will exhaust from button port No3. The spool in the chamber will remain in its position until a close push button is momentarily pressed. The cycle then reverses itself.

VAL102U = AIR BLEED 24V DOUBLE SOLENOID SPOOL VALVE DATA



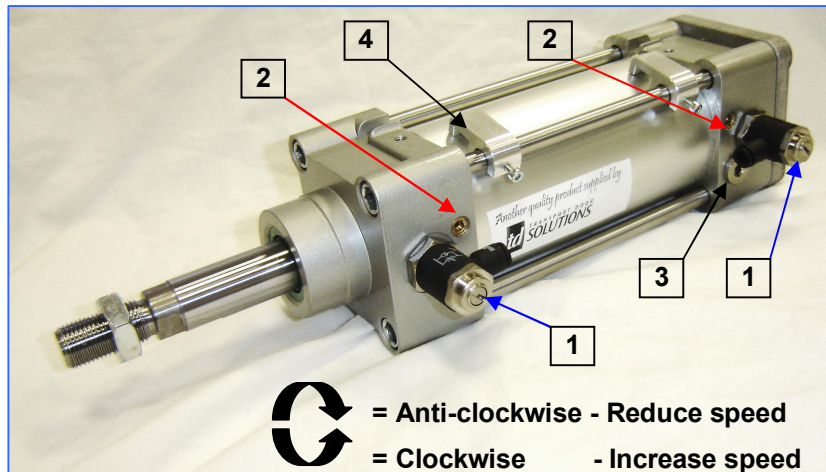
How AIR BLEED spool valve works: - With air supplied into valve main body (A) and the door is in the fully close position, air pressure is maintained in both ends of the spool valve chamber. A single 4mm air pipe RED from outlet port (B) of the valve main body to an N/C momentary push button valve into port No1. By depressing the button momentarily, Air is exhausted from button port No2 the air in the open side of spool valve chamber to atmosphere via the button causing a pressure imbalance and will shift the spool to the left, thus allowing air into cylinder extending the ram to open the door. As the button is releases air pressure will return to the spool valve chamber and the spool will remains in its position until a close push button is momentarily pressed. The cycle then reverses itself.

BASIC VALVE SPECIFICATIONS

Valve Specification	Materials	Coil Specification
Pressure Range 1.5 - 10 bar	Valve Body Die-cast aluminium	Voltage DC 24v(12v) -10% + 15% of rated
Sectional Area 16.0	Spool Aluminium	Coil Insulation Class F-Class or equivalent
Response Time 25ms min	Seals NBR	Holding Power 2.5 Watt, for 24/12v. DC
Frequency 5c/sec	Cap Zinc Pressure Die-Cast	Off min. Residual V10% or less
Lubrication Not required	Pilot Parts Glass Filled Nylon	<u>Materials</u>
Flow rate 900 LTR/M @ 5bar	Armature Stainless Steel	Moulding Glass Pressure Nylon
	Armature Seals Viton	Indicator Cap Polycarbonate

TYPICAL PNEUMATIC CYLINDER SETTING DATA

SPEED & CUSHION CONTROL SETTINGS



1 = Adjustable **flow** controls for open & closing speeds

2 = Adjustable **cushion** controls for open & closing damping at end of stroke.

3 = 1/8bsp port at end, outlet ports for attaching sensadoor detection valve

4 = Universal reed switch brackets x 2

Cylinders by other manufacturers and suppliers will have flow controls as shown below. and some may not be fitted with adjustable cushion but pre-fixed.

Typical Pneumatic Cylinder (actuator)

Transport Door Solutions pneumatic cylinder comply with ISO 6431 and DIN 24335 for European automotive supply. They are available all having (2 15/32+) to give the required thrust. All actuators feature:

- Typical TDS cylinders Ø63mm bores x 100mm stroke double acting actuation
- Adjustable speed regulators for open/close.
- Built in cushioning on open/close.
- Some have built in sensor ports on open/close which enable sensing without interference from cushioning and speed adjustment in both directions.
- Stainless Steel piston rod with extra long threaded nose to accommodate installation tolerances.
- High fibre nitrile seals.
- Maintenance free factory lubricated for up to eight years or two million cycles.
- Effective thrust 1244N (opening), 1092N (closing) at 5 bar.
- Operating temperatures . 30°C to +80°C



A=4 TURNS



B=4 TURNS



C=4 TURNS



D=3 TURNS



E=3 TURNS



F=5 TURNS

Example. Speed setting is based on a cylinder with a 63mm bore x 100 stroke:-

1/ Air pressure set @ 6.5bar ±0.5

2/ Double Glider Doors: Cylinders speeds Opening 2.0 to 3.0sec. Closing 2.5 to 3.5sec.

3/ Single Glider Door: Cylinder speeds Opening 2.0 to 3.0sec. Closing 3.0 to 3.5sec.

CYLINDER SPEEDSETTING (FLOW CONTROLS):-

- (i) Turn clockwise until fully in.
- (ii) Turn anti-clockwise full turns to suit flow control, as shown above.

CUSHION SETTING (END OF STROKE DAMPING):-

- (i) Turn clockwise until fully in.
- (ii) Turn anti-clockwise One 1/4 turn
- (iii) Turning anti-clockwise =reduces damping & clockwise will increase damping.

IMPORTANT NOTE FOR SPEED & CUSHION CONTROLS

Cushion Controls = Is a very fine adjustment, if turned **clockwise fully in**. This will result in stopping piston (ram) from reacting or extending fully.

Speed Controls = If turned **clockwise fully in**, this will result in stopping piston (ram) from moving.

PISTON ROD END ADJUSTMENT INFORMATION



Fig.1

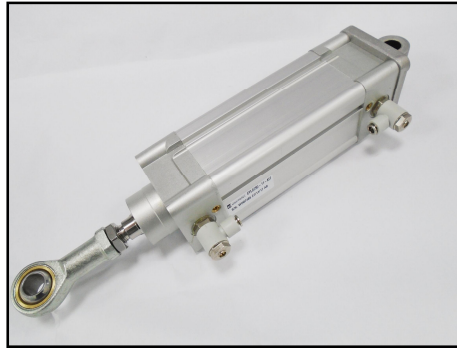


Fig.2

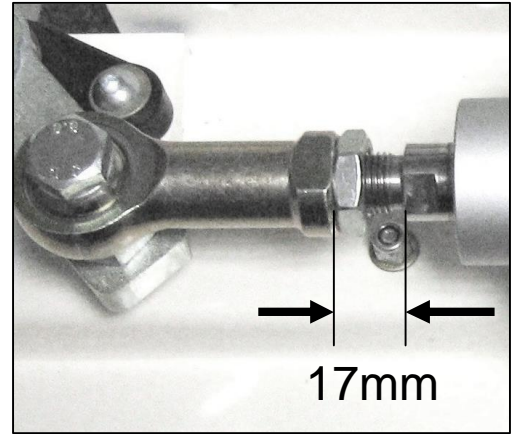


Fig.3

To ensure that the doors are firm against their stops in the fully open position and firm against the aperture (portal) seals in the closed position, you may need to adjust the actuator rod end to suit
Fig.1 =Showing various types of rod ends.

Fig.2 =Showing typical pneumatic cylinder factory pre-assembly

Fig.3 =Standard factory setting of rod end

- Release the air pressure from the door system at the filter regulator.
- To make the door firmer against the door-open stops, release the locknut (using an open 24mm spanner) and turn the piston rod anti/counter-clockwise (using an open 17mm spanner) thus increasing the overall length.
- To make the door firmer against the aperture seals in the closed position, release the locknut and turn the piston rod clockwise, thus reducing the overall length.
- Turn on air supply and cycle door to check adjustment was successful. Re-adjust if necessary.
- Once door set-up is satisfactory, tighten lock nut to 120Nm.
-

Once set in the correct position, the rod end should be approximately 17mm (± 5 mm) from the piston rod shoulder as shown in the Fig.3 above.

If the thread expires before achieving the correct setting, the splined crank arm will need to be repositioned.

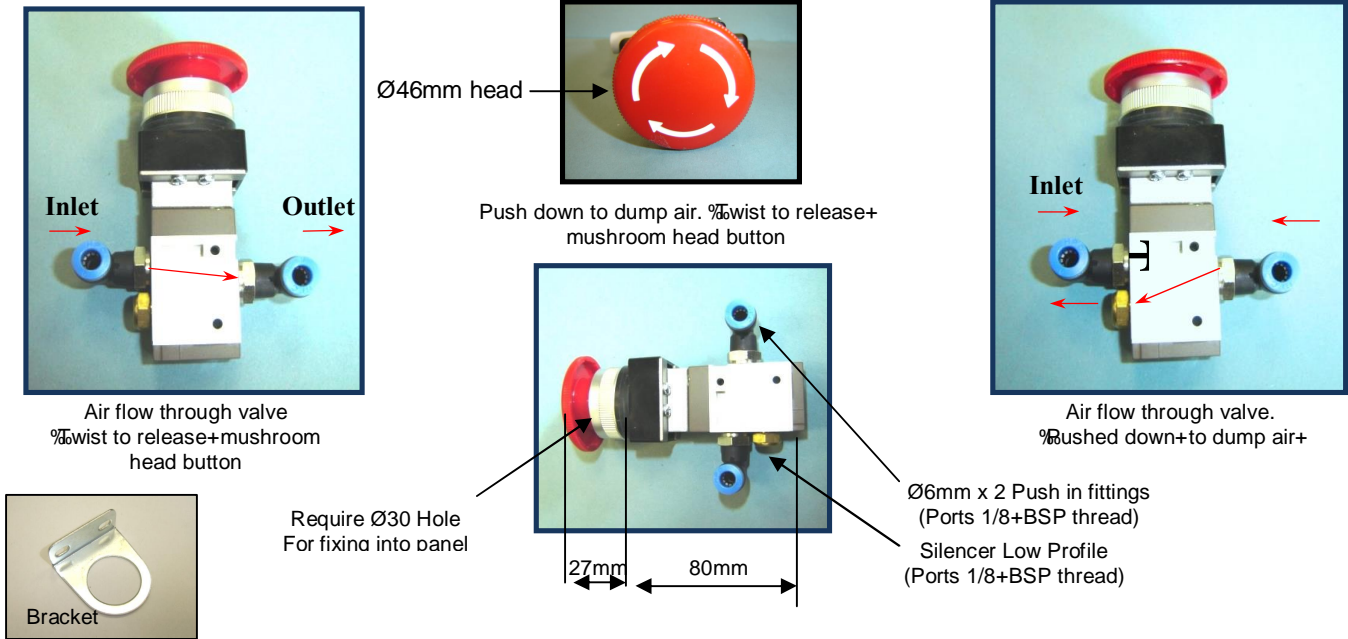
MANUAL DUMP VALVE INFORMATION

Dump valves are optional within the pneumatic system controlling the door(s). They are intended to be used when there is a requirement to evacuate (dump) the air from the door pneumatic system quickly. Such circumstances could be, but not limited to, the need to remove air from the system to service / maintain the doors or in cases of emergency when air in the system prohibits or impedes quick opening of the doors. Air is evacuated from the system on the door side of the dump valve. The air pressure is still maintained on the vehicle side of the valve.

Push Dump Valve:

Fitted with 6mm push in fittings + bracket

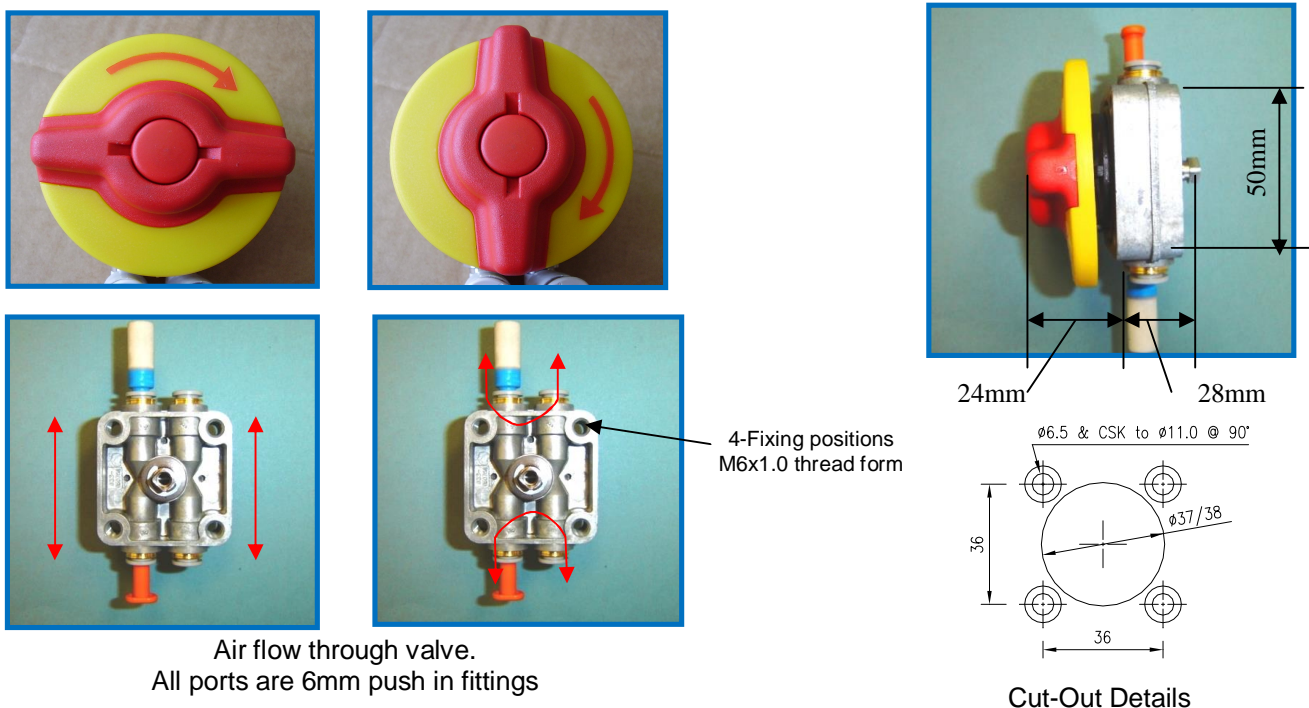
Generally, the air is evacuated by pushing down on the red mushroom head button. Due to its construction, the button will stay locked in the down position. Air can be reintroduced to the doors by twisting the button, whereupon it will pop back up to its open state.



Rotary Dump Valve:

Fitted with 6mm push in fittings + Bracket

Generally, the air is evacuated by rotating in direction of arrow. Due to its construction, the valve will stay locked in position. Air can be reintroduced to the doors by twisting the handle backwards to its open state.



N.O. REED SWITCHES & SENSITIVE EDGE LOW PRESSURE SWITCH SETTING CHECK INSTRUCTIONS

IMAGES ARE SHOWN AS VIEWED FROM INSIDE VEHICLE- OUT

The Entrance or Exit Door Ways must be fully installed and operating correctly, pre-set as below before final setting. It may be necessary to make a fine adjustment to the reed-switches & low pressure switch to suit operation of the door systems.

1/ Air pressure set @ 6.5 bar ± 0.5

2/ Double Glider Doors: Cylinders speeds Opening 2.0 to 3.0sec Closing 2.5 to 3.5sec

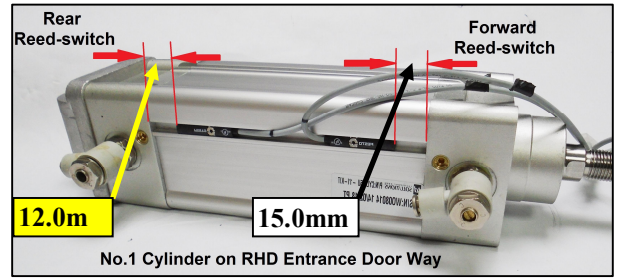
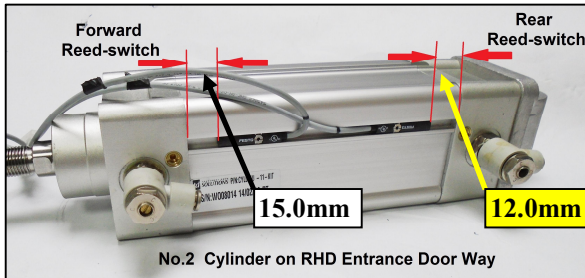
3/ Single Glider Door: Cylinder speeds Opening 2.0 to 3.0sec Closing 3.0 to 3.5sec

Notes:

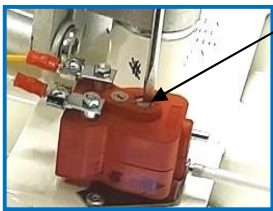
Basic sensitive edge test piece will not meet any legal PASS, used only to confirm system is operating use object approximately Width= 50, Height =60 to 100, Length 350mm min.

You must consult the sensitive edge safety operation specification that is required to suit country and local authority

Double Glider Doors Reed-switches Setting Instruction

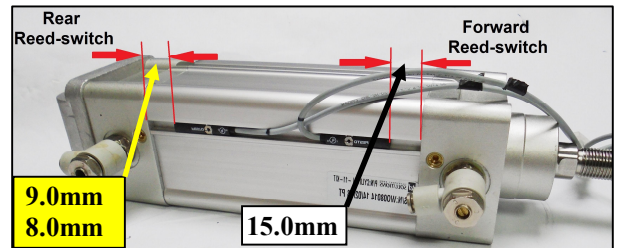


Single Glider Door Reed-switches Setting Instruction

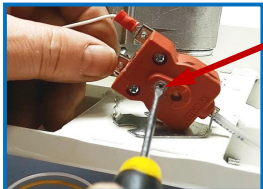


For Single Door final setting of $1/3^{\text{rd}}$ anti-clock wise from lamp $\delta\text{ON}\delta$.

For Double Doors as calibrated

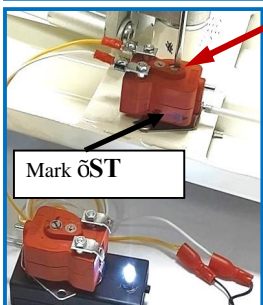


WLND Low Pressure Switch Calibration Instruction If Required



Stage.1 Screw (METAL) On underside of pressure switch

1. Gently rotate air screw in a clockwise direction until fully in.
2. Then rotate air screw out **1**- turn anti-clockwise
3. Setting Tolerance: **+ 0.0**, **- 0.25** (1/4) of a turn.



Stage.2 Screw (GREY) On Top side of pressure switch

With pipe from nosing rubber connected to pressures switch, Attach a lamp or continuity tester.

IMPORTANT: Pressure switch **must not** be connected to vehicle electrical system when setting pressure switch.

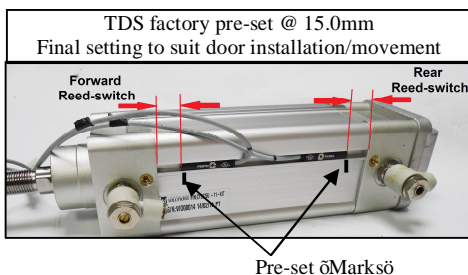
(Disconnect 2-way PLUG for white and yellow cables).

1. Gently rotate TOP screw in a clockwise direction until LAMP is $\delta\text{ON}\delta$.
2. Then rotate TOP screw out $3/4$ of a turn anti-clockwise
3. Setting Tolerance: Min **0.0** . Max **1.0** full turn.

Pressure switch should now be set correctly to increase sensitivity turn top screw clockwise.

Do not screw Anti-Clockwise more than $3/4$ of a turn Max

DETAILS BELOW ARE FOR REFERENCE ONLY FOR CYL075U ACTUATORS



1: Using TDS 63mm bore cylinders fitted with **Normal Open** reed-switches.

2: The magnetic operating tolerance dimension are taken from ends of cylinder body extrusion as shown.

Min setting @ **8.0mm** & Max setting @ **20.0mm**

4: Finer adjustment can be made to suit door installation & movement on cylinder as required on final setting.

5: When calculating position of reed-switches it is all ways best to start with reed-switch away from piston magnet. Setting dimension being 0.0 , then moving reed-switch toward magnet as if piston is coming towards reed switch, using tester to get correct signal.

For minium position, moveing pass magnet signal drops off then back in opposite direction untill signal, this is then the Maxium position for action of piston magnet movement.

ADJUSTABLE SENSITIVE EDGE LOW PRESSURE SWITCH

Fault finding check list

FOR RE-CALIBRATION OF PRESSURE SWITCH P/No: ELE051K SEE INSTRUCTION SHEET INST-100-16D @ 3

- 1:1 Check electrical signal from pressure switch by shorting out contacts with door in open Position, either relay will energize and solenoid will activate.
 - 1:1.1. Check silver pipe is connected to lower port on pressure switch see fig.1
No response.
 - 1:1.2. Check operation of spool valve, open/close door electrically & pneumatic via buttons
No response
 - 1:1.3 Use manual over rides on spool valve to check operation of valve see fig.3
No response
 - 1:1.4 Check air pressure
- 2:1 Check for power (pos & neg) supplies to coils and relay. Repeat 1a.
- 2:2 Check relay operation by neg feed to (-) No 1. When active will illuminate
- 2:3 Check pressure switch by pulsing air into lower port see fig.1
- 3:1 Check sensitive edge with door in open position remove pipe (silver).from pressure switch, Depress nosing rubber and a small puff of air will exhaust from pipe. Need to place pipe Against cheek or wet end to indicate air signal.
No response.
 - 3:1.1 Check silver pipe from pressure switch to nosing rubber for kinking
 - 3:1.2 Check for cuts or holes in nosing rubber
 - 3:1.3 Check for top & bottom bungs are in place and not leaking by soapy water over end and Then depress nosing rubber. If bubbles appear reseal end with mastic
- 4:1 Circuit drawing=PWL303. REV.1.
- 5 Sensitivity of sensitive edge system

Above 5kph (3mph) sensitive edge normally isolated. So edge can't be activated to open doors or detection is

 - 5:1 If doors open on their own when fully close and below 5kph the sensitive edge may be too sensitive and activating from vibration of vehicle.
 - 5:1.1 Detection of sensitive edge is too LIGHT requires adjustment as shown in Fig.2.
 - 5:1.2 **If doors open just when doors are fully closed.**

Nosing rubbers on leading edge of doors are too close and are compressing together sending signal to open doors.
1= Require door adjustment.. 2=Reed switch(s) setting to cut off detection is too late, requires adjustment.
 - 5:1.4 **When doors go to close from fully open position and re-open before closing.**
 - 5:1.5 Bottom edge of leading nosing rubbers are catching, rubbing on step, floor or an obstruction.
Rubbbers require adjusting to give clearance on door travel, Remove obstruction.
 - 5:1.6

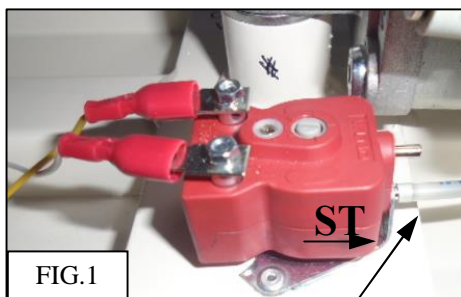


FIG.1
Fit 4mm tube to lower port for
"RISING pressure detection"



FIG.2
Adjusting screw
Clockwise=heavy detection
Anti-clockwise=light detection

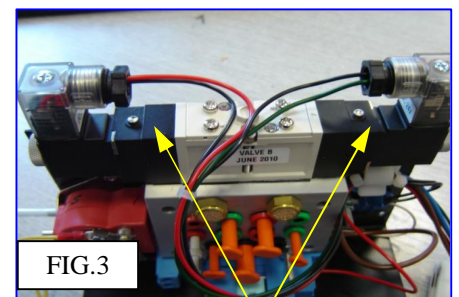
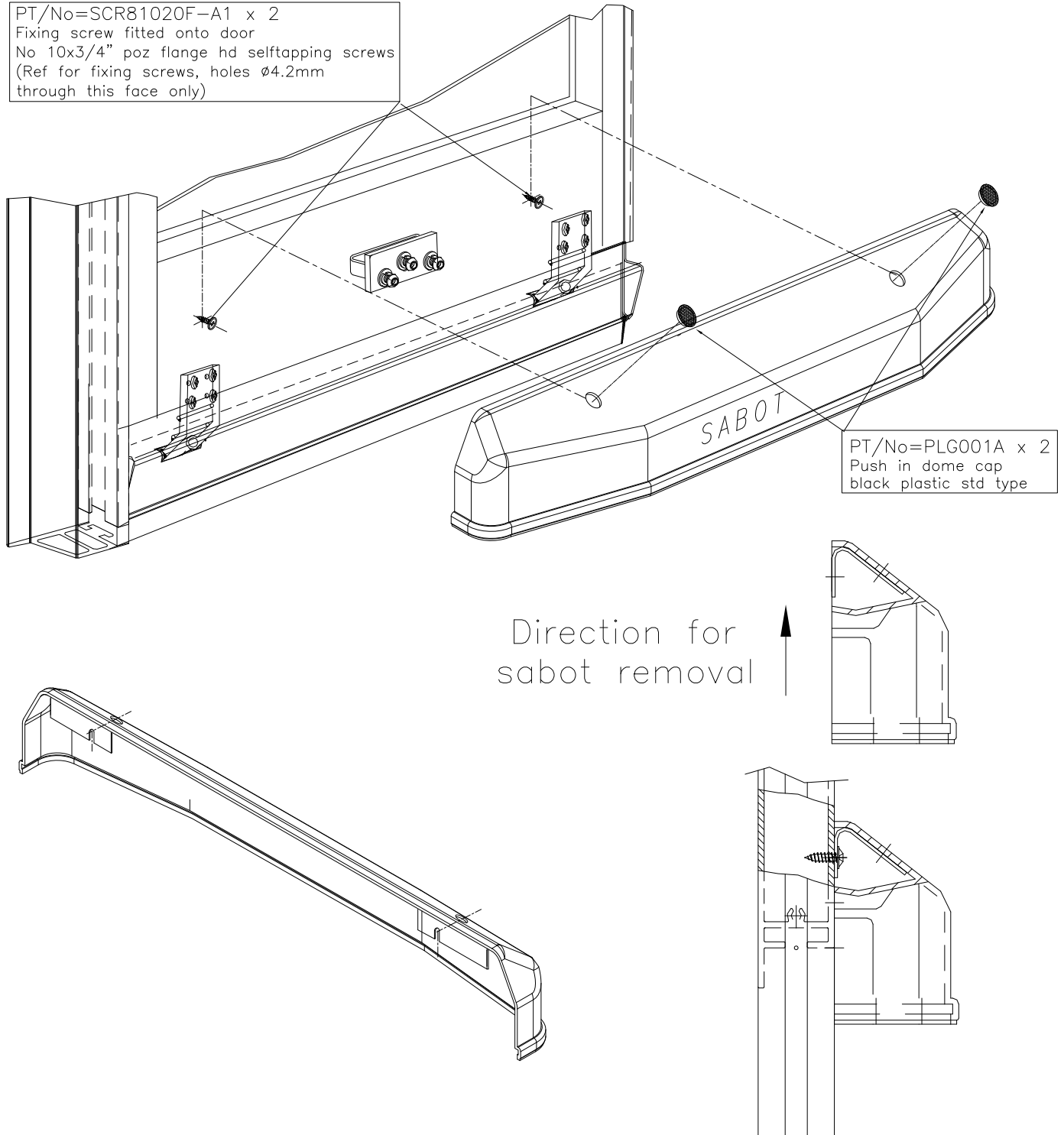


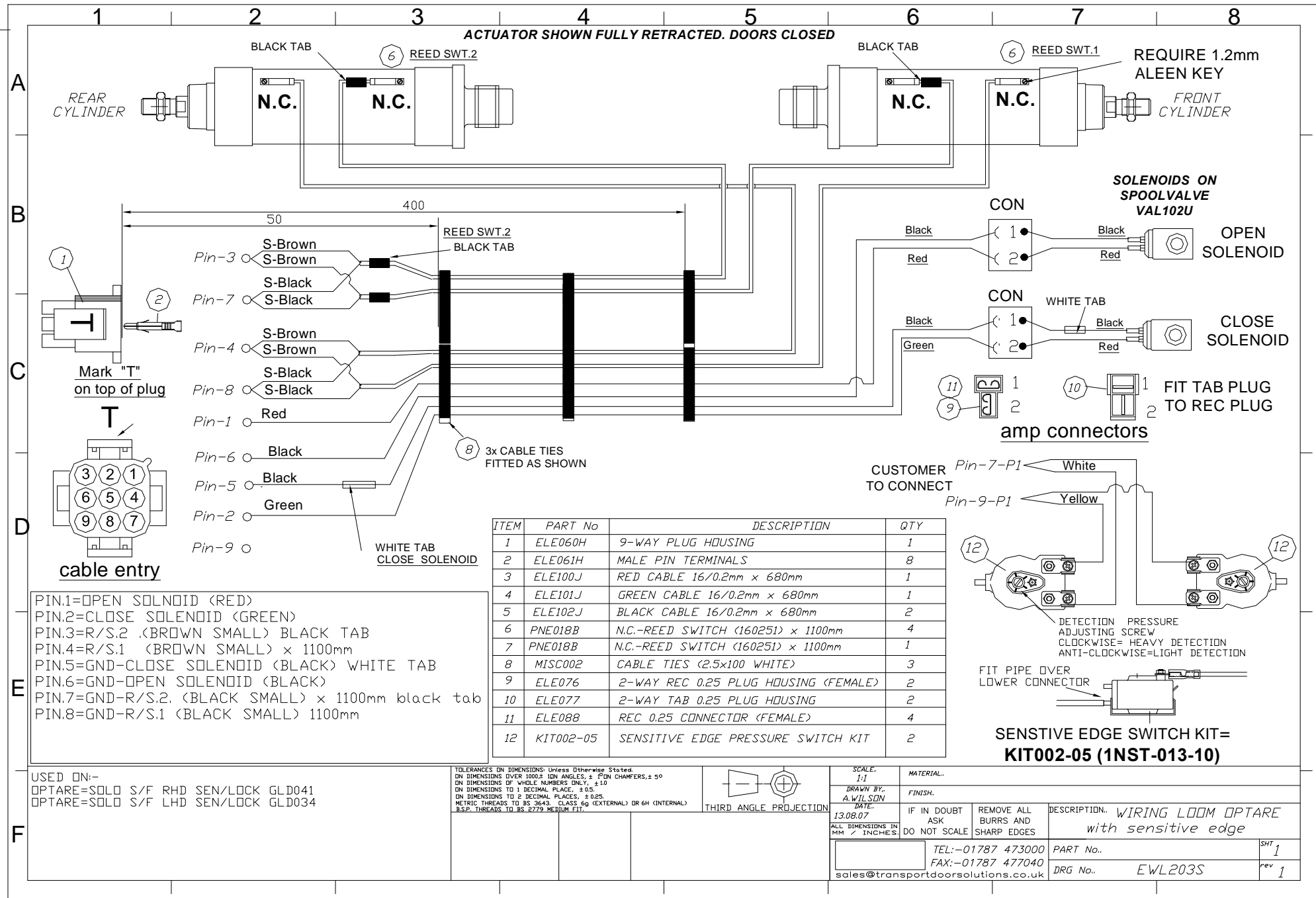
FIG.3
Pneumatic override buttons
to open or close door(s)

SABOT REMOVAL & FITTING INSTRUCTION

- 1st: Remove Black plastic cap either pushing up & out from underneath sabot or prise out from under lip of plug on front face carefully.
- 2nd: Using PZ2 bit screw driver, slacken off fixing screws approx 2-turns anti-clockwise (do not remove screws)
- 3rd: Slide ABS/STEEL Sabot in a upward direction to remove sabot. Reverse action to refit sabots

PT/No=SCR81020F-A1 x 2
Fixing screw fitted onto door
No 10x3/4" poz flange hd selftapping screws
(Ref for fixing screws, holes \varnothing 4.2mm
through this face only)



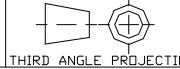


PIN.1=OPEN SOLNOID (RED)
 PIN.2=CLOSE SOLENOID (GREEN)
 PIN.3=R/S.2 (BROWN SMALL) BLACK TAB
 PIN.4=R/S.1 (BROWN SMALL) x 1100mm
 PIN.5=GND-CLOSE SOLENOID (BLACK) WHITE TAB
 PIN.6=GND-OPEN SOLENOID (BLACK)
 PIN.7=GND-R/S.2. (BLACK SMALL) x 1100mm black tab
 PIN.8=GND-R/S.1 (BLACK SMALL) 1100mm

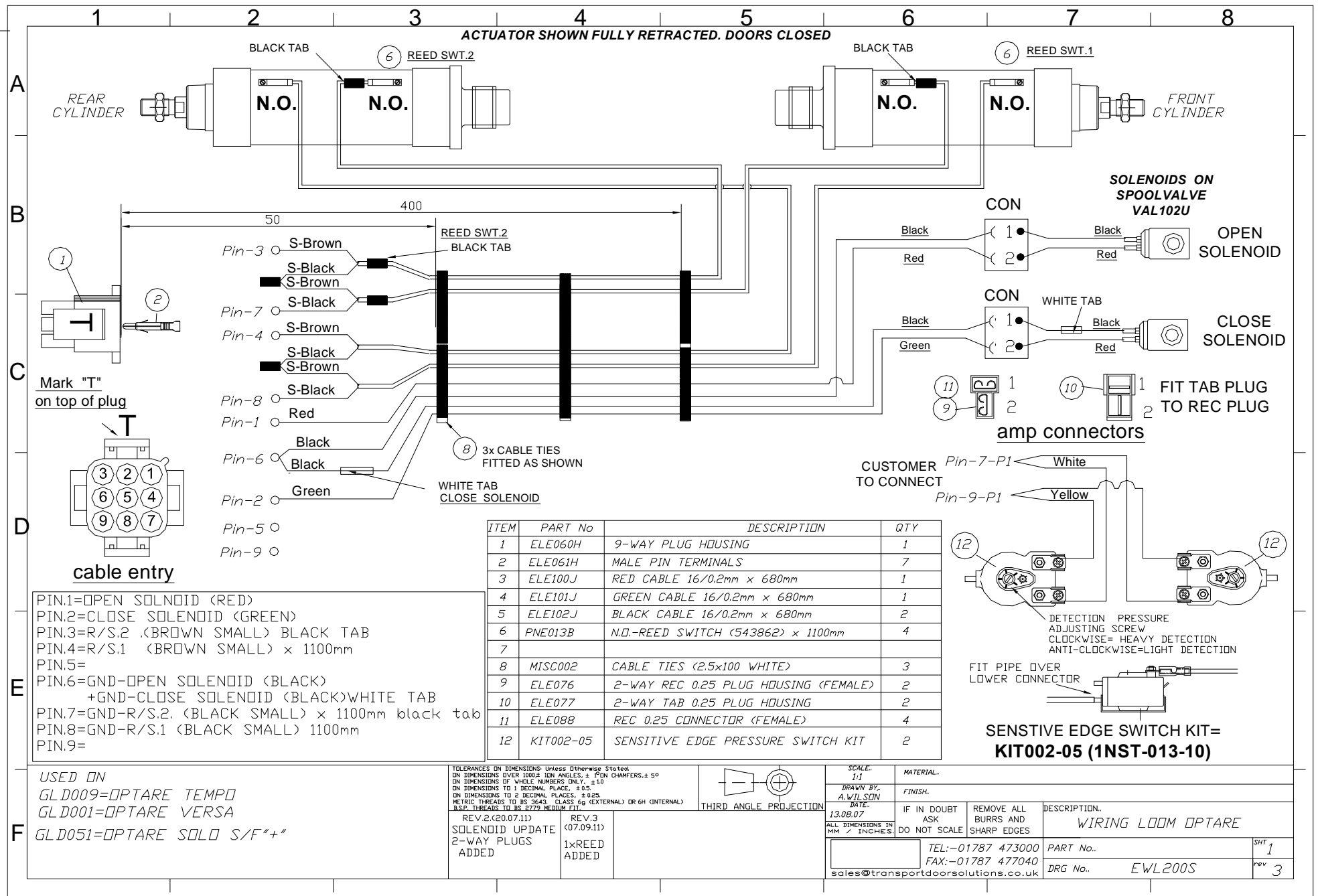
ITEM	PART No	DESCRIPTION	QTY
1	ELE060H	9-WAY PLUG HOUSING	1
2	ELE061H	MALE PIN TERMINALS	8
3	ELE100J	RED CABLE 16/0.2mm x 680mm	1
4	ELE101J	GREEN CABLE 16/0.2mm x 680mm	1
5	ELE102J	BLACK CABLE 16/0.2mm x 680mm	2
6	PNE018B	N.C.-REED SWITCH (160251) x 1100mm	4
7	PNE018B	N.C.-REED SWITCH (160251) x 1100mm	1
8	MISC002	CABLE TIES (2.5x100 WHITE)	3
9	ELE076	2-WAY REC 0.25 PLUG HOUSING (FEMALE)	2
10	ELE077	2-WAY TAB 0.25 PLUG HOUSING	2
11	ELE088	REC 0.25 CONNECTOR (FEMALE)	4
12	KIT002-05	SENSITIVE EDGE PRESSURE SWITCH KIT	2

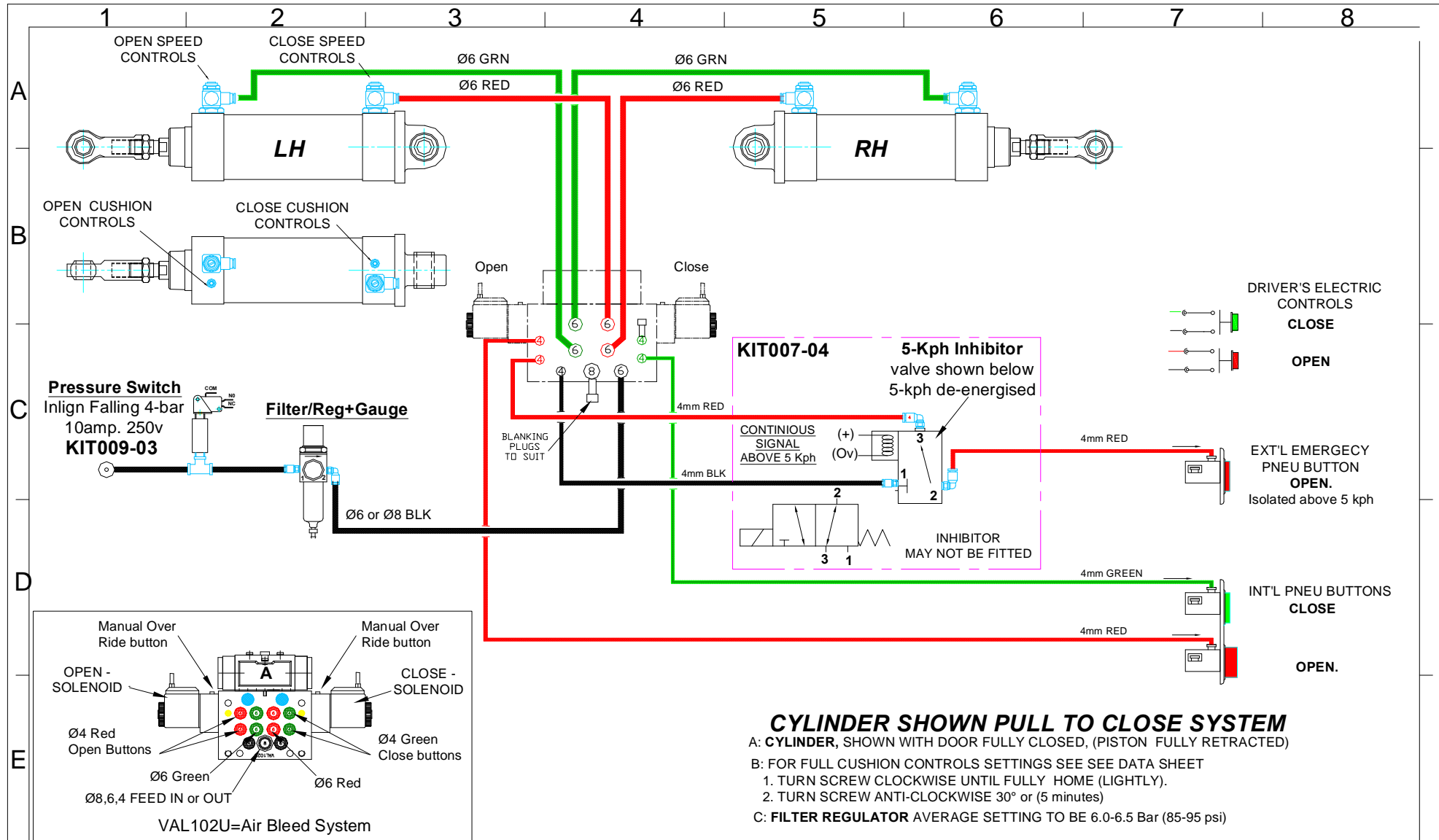
USED ON:-
 OPTARE=SOLO S/F RHD SEN/LOCK GLD041
 OPTARE=SOLO S/F LHD SEN/LOCK GLD034

TOLERANCES ON DIMENSIONS: Unless Otherwise Stated.
 DN DIMENSIONS OVER 1000: DN ANGLES: ± PIN CHAMFERS: ± 5°
 DN DIMENSIONS OF WHOLE NUMBERS ONLY: ± 1.0
 DN DIMENSIONS TO 1 DECIMAL PLACE: ± 0.5
 DN DIMENSIONS TO 2 DECIMAL PLACES: ± 0.25
 METRIC THREADS TO BS 3643. CLASS 6g (EXTERNAL) DR 6H (INTERNAL)
 B.S.P. THREADS TO BS 2779 MEDIUM FIT.

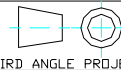


SCALE: 1:1	MATERIAL:	FINISH:	
DRAWN BY: A.W.J.S/DV	DATE: 13.08.07	IF IN DOUBT ASK DO NOT SCALE	REMOVE ALL BURRS AND SHARP EDGES
ALL DIMENSIONS IN MM / INCHES.	DESCRIPTION: WIRING LOOM OPTARE with sensitive edge	TEL: -01787 473000	FAX: -01787 477040
	PART No.:	DRG No.:	EWL203S
		SHT 1	rev 1



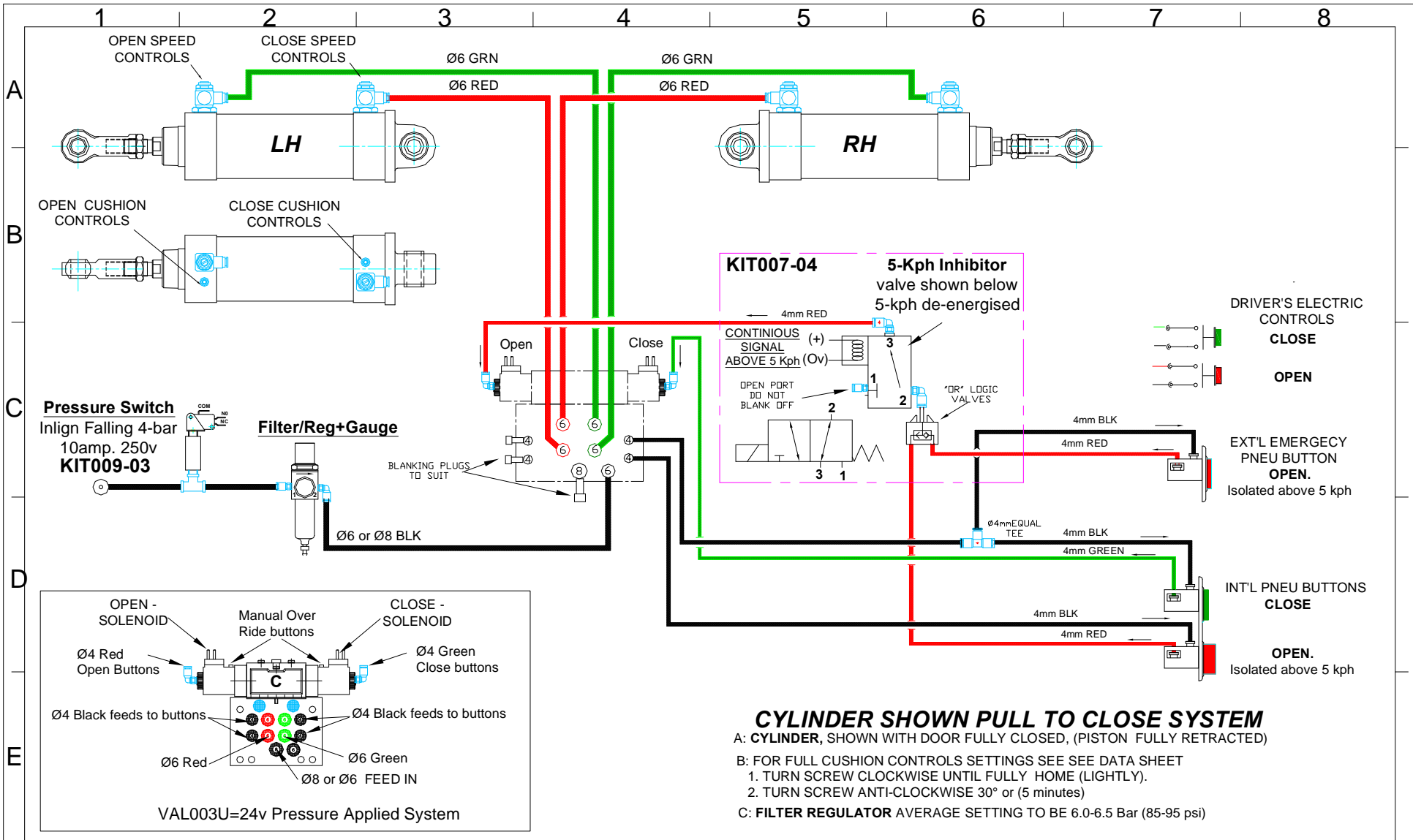


TOLERANCES ON DIMENSIONS: Unless Otherwise Stated.
ON DIMENSIONS OVER 1000± 10N ANGLES, ± P ON CHAMFERS, ± 5°
ON DIMENSIONS OF WHOLE NUMBERS ONLY, ± 1.0
ON DIMENSIONS TO 1 DECIMAL PLACE, ± 0.5.
ON DIMENSIONS TO 2 DECIMAL PLACES, ± 0.25.
METRIC THREADS TO BS 2643 - CLASS 6g (EXTERNAL) OR 6H (INTERNAL)
R.S.P. THREADS TO BS 2779 MEDIUM FIT.



SCALE: 1:1	MATERIAL:
DRAWN BY: A.WILSON	FINISH:
DATE: 03/09/2013	IF IN DOUBT ASK DO NOT SCALE
ALL DIMENSIONS IN MM / INCHES	REMOVE ALL BURRS AND SHARP EDGES
TEL: -01787 473000	
FAX: -01787 477040	
sales@transportdoorsolutions.co.uk	

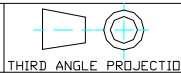
DESCRIPTION:	TWIN PNE CYLINDER AIR BLEED SYSTEM CONTROL CIRCUIT	
PART No.	(VAL102U)	SHT 1
DRG No.	PWL306-02	rev 1



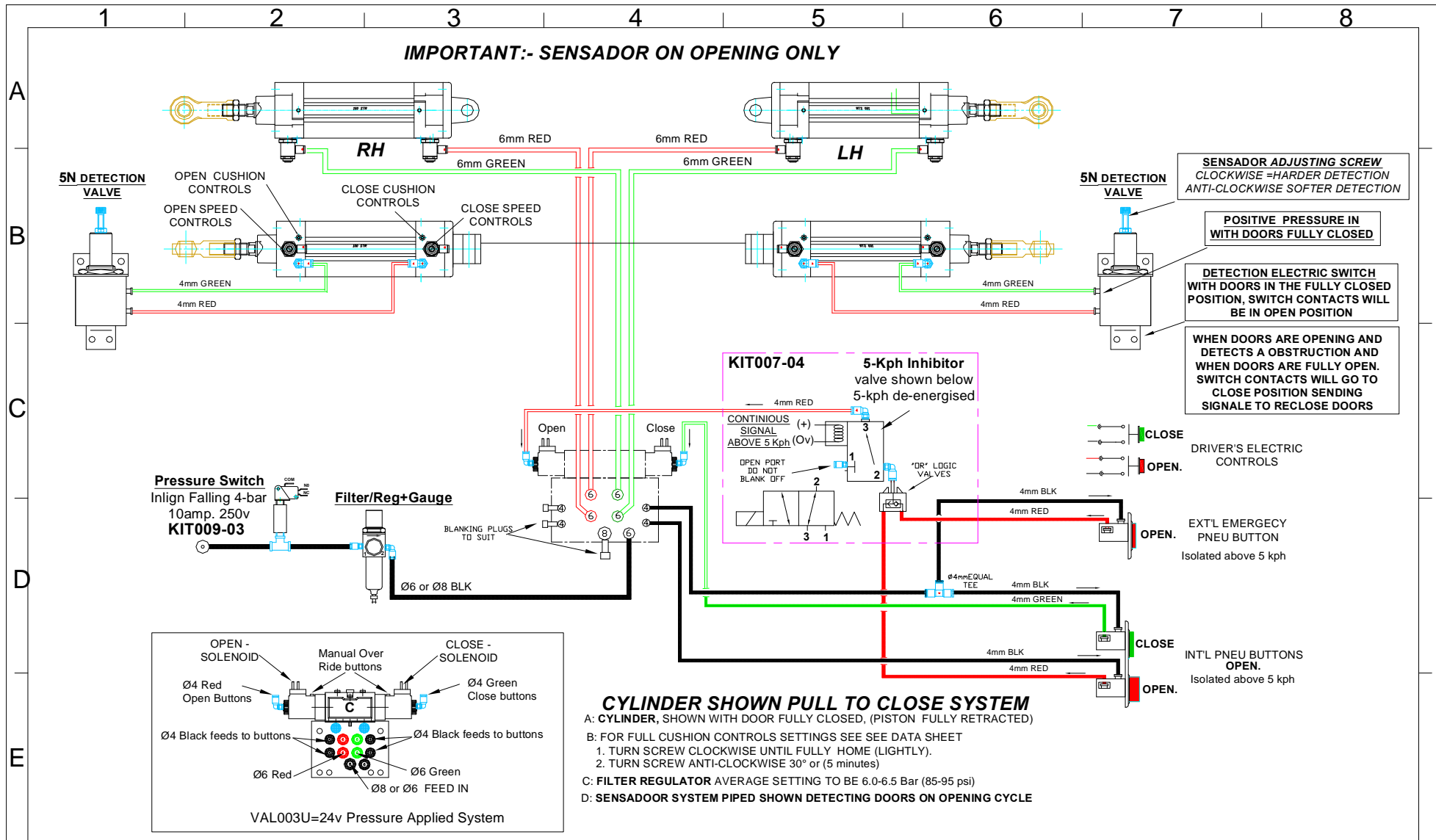
CYLINDER SHOWN PULL TO CLOSE SYSTEM

- A: CYLINDER, SHOWN WITH DOOR FULLY CLOSED, (PISTON FULLY RETRACTED)
- B: FOR FULL CUSHION CONTROLS SETTINGS SEE DATA SHEET
 1. TURN SCREW CLOCKWISE UNTIL FULLY HOME (LIGHTLY).
 2. TURN SCREW ANTI-CLOCKWISE 30° or (5 minutes)
- C: FILTER REGULATOR AVERAGE SETTING TO BE 6.0-6.5 Bar (85-95 psi)

TOLERANCES ON DIMENSIONS: Unless Otherwise Stated
ON DIMENSIONS OVER 1000± 10N ANGLES, ± 5°
ON DIMENSIONS OF WHOLE NUMBERS ONLY, ± 1.0
ON DIMENSIONS TO 1 DECIMAL PLACE, ± 0.5
ON DIMENSIONS TO 2 DECIMAL PLACES, ± 0.25
METRIC THREADS TO BS 3643 - CLASS 4g (EXTERNAL) OR 6H (INTERNAL)
R&P - THREADS TO BS 2772 MEDIUM FIT



SCALE: 1:1	MATERIAL:	DESCRIPTION: TWIN PNE CYLINDER PRESSURE APPLIED SYSTEM CONTROL CIRCUIT	
DRAWN BY: A.WILSON	FINISH:	PART No.:	(VAL003U)
DATE: 03/09/2013	IF IN DOUBT ASK	DRG No.:	PWL307-02
ALL DIMENSIONS IN MM / INCHES	REMOVE ALL BURRS AND SHARP EDGES	TEL:-01787 473000 FAX:-01787 477040 sales@transportdoorsolutions.co.uk	SHT 1 rev 1

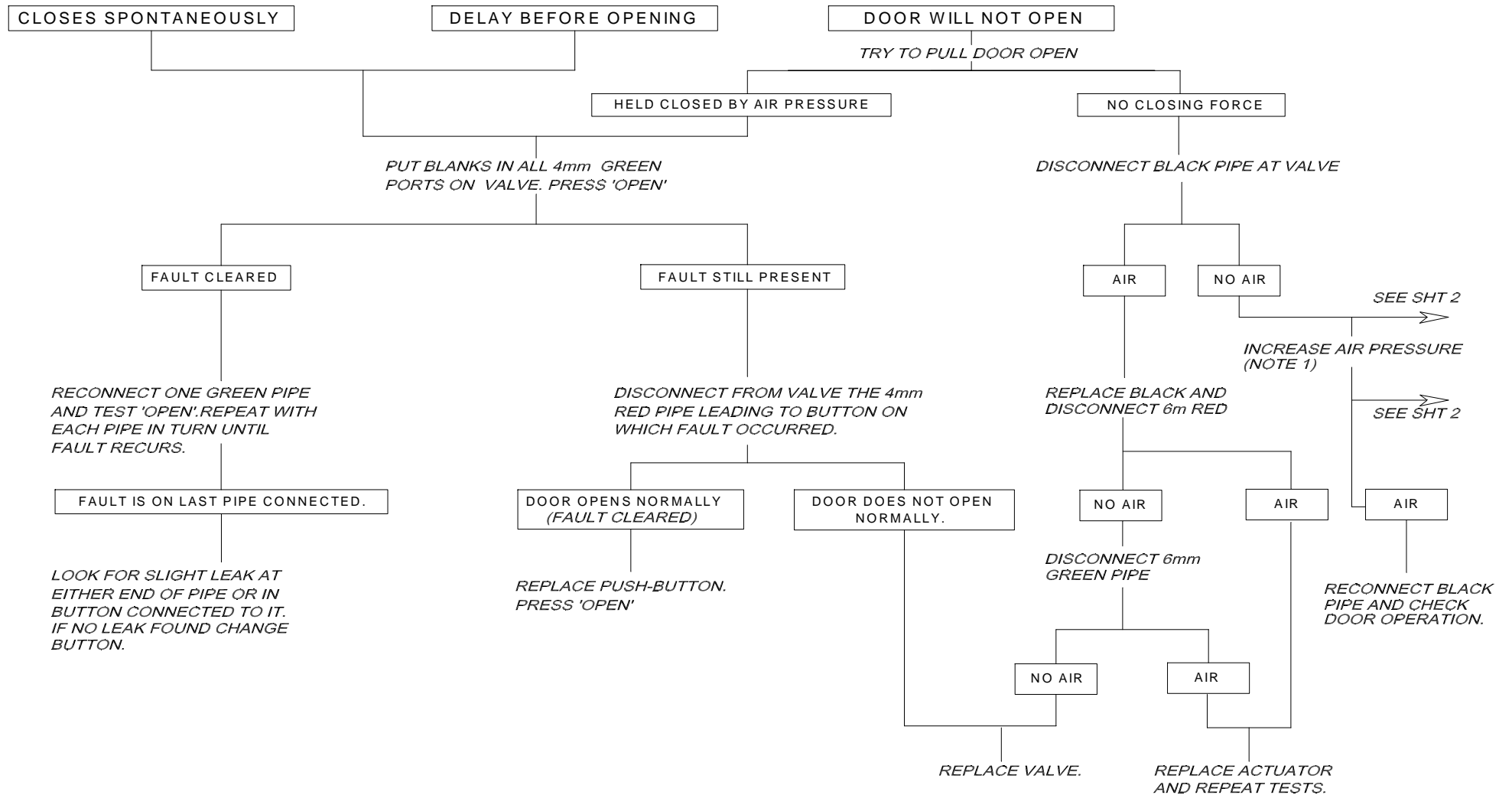


F	TOLERANCES ON DIMENSIONS: Unless Otherwise Stated: ON DIMENSIONS OVER 1000± 10N ANGLES, ± P ON CHAMFERS, ± 5° ON DIMENSIONS OF WHOLE NUMBERS ONLY, ± 1.0 ON DIMENSIONS TO 1 DECIMAL PLACE, ± 0.05 ON DIMENSIONS TO 2 DECIMAL PLACES, ± 0.025 METRIC THREADS TO BS 3643, CLASS 6g (EXTERNAL) OR 6H (INTERNAL) R&P THREADS TO BS 2779 MEDIUM FIT	 THIRD ANGLE PROJECTION	SCALE: 1:1	MATERIAL:	DESCRIPTION: TWIN PNE CYLINDER PRESSURE APPLIED SYSTEM CONTROL CIRCUIT	PART No. (VAL003U)	SHT 1
			DRAWN BY: A.WILSON DATE: 02/12/2013 ALL DIMENSIONS IN MM / INCHES:	FINISH: IF IN DOUBT ASK DO NOT SCALE REMOVE ALL BURRS AND SHARP EDGES			

FAULT FINDING

(Sheet 1)

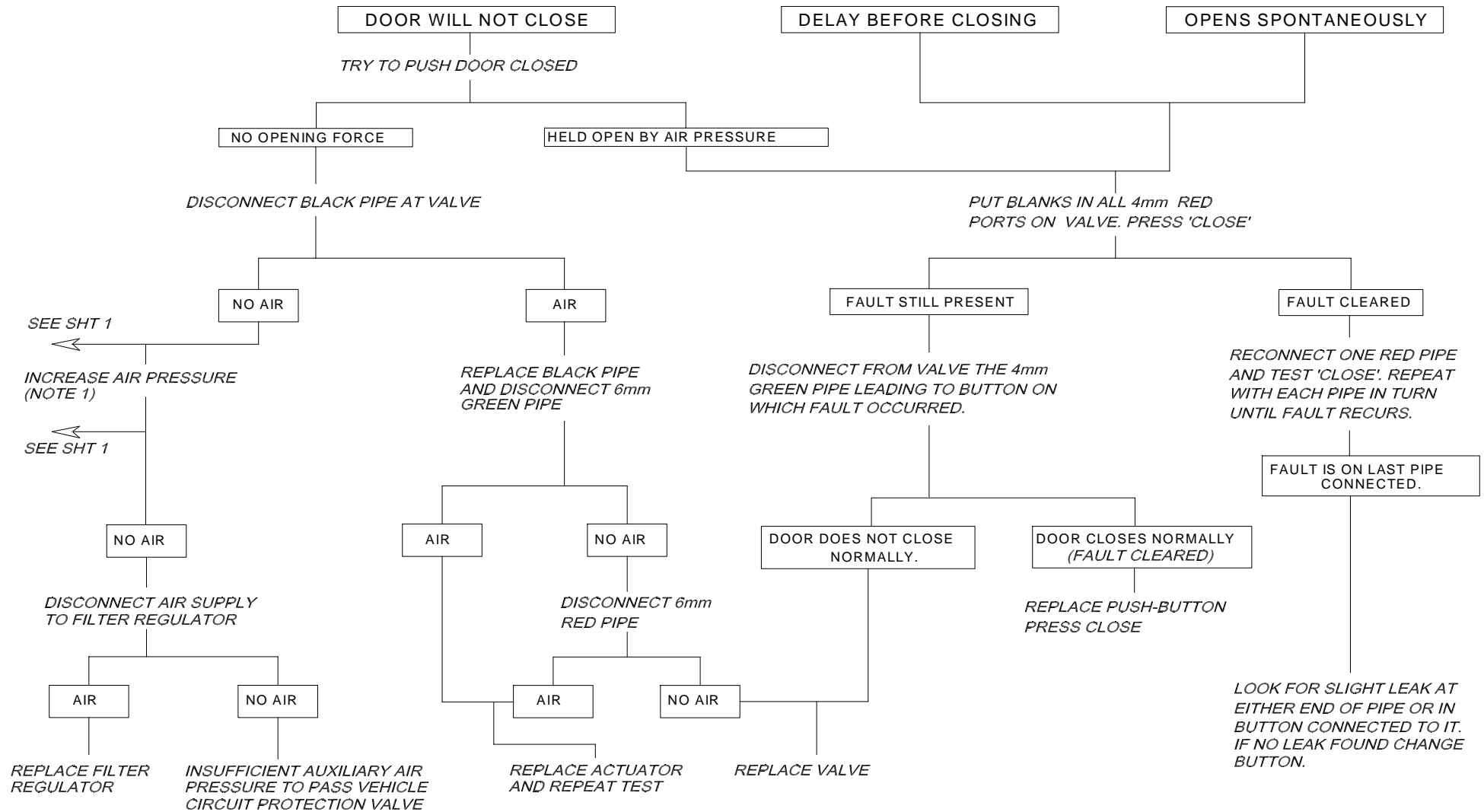
AIR-BLEED DOOR CONTROL SYSTEM



FAULT FINDING

(Sheet 2)

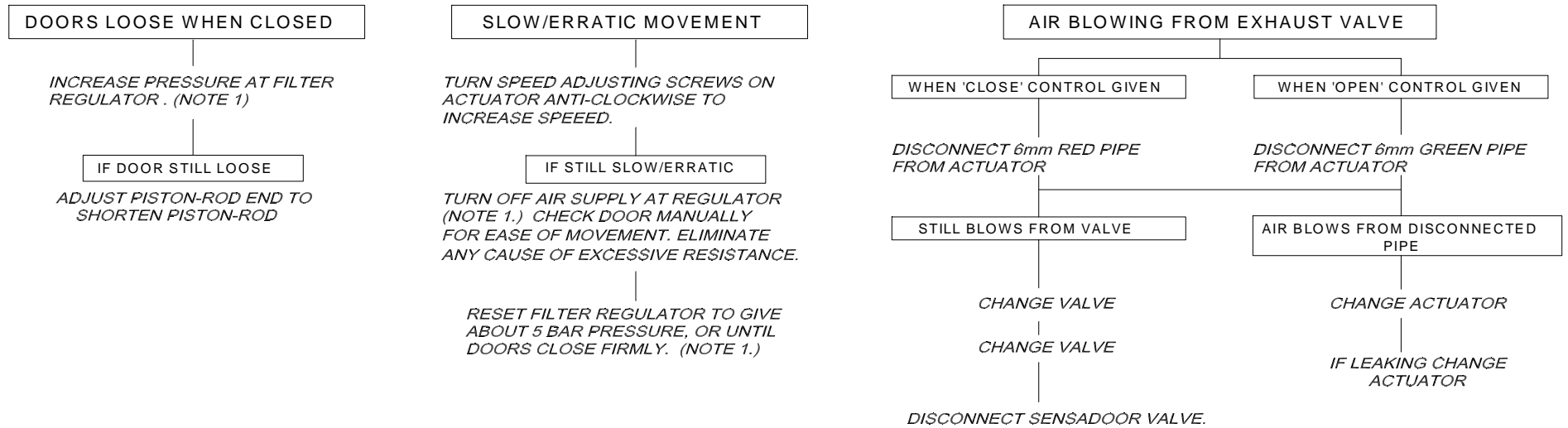
AIR-BLEED DOOR CONTROL SYSTEM



FAULT FINDING

(Sheet 3)

AIR-BLEED DOOR CONTROL SYSTEM



1 TO ADJUST PRESSURE REGULATOR

LIFT BLACK LOCKING KNOB AND TURN CLOCKWISE TO INCREASE PRESSURE - ANTI-CLOCKWISE TO REDUCE PRESSURE AND TURN THE AIR OFF INTO THE DOOR PNEUMATIC SYSTEM. WHEN ALL CHECKS AND ADJUSTMENTS HAVE BEEN MADE RETURN THE AIR TO DOOR SYSTEM WORKING PRESSURE OF 5.5 BAR (85 psi) WITHIN GREEN ZONE ON PRESSURE GAUGE.

2 TO REMOVE THE CRANK ARM FROM THE STUB SHAFT

UNSCREW THE HEXAGON HEADED SCREW ON TOP OF THE CRANK ARM ABOUT 10mm. STRIKE THE HEAD OF THE SCREW TO RELEASE THE CRANK FROM THE SPLINE. PLACE A WEDGE UNDER THE DOOR FOR SUPPORT - REMOVE SCREW AND CRANK ARM.

WHEN RE-ASSEMBLING ENSURE THAT THE CRANK ARM IS 40 TO THE BODY SIDE WITH THE DOOR IN THE CLOSED POSITION UNLESS OTHERWISE SPECIFIED.

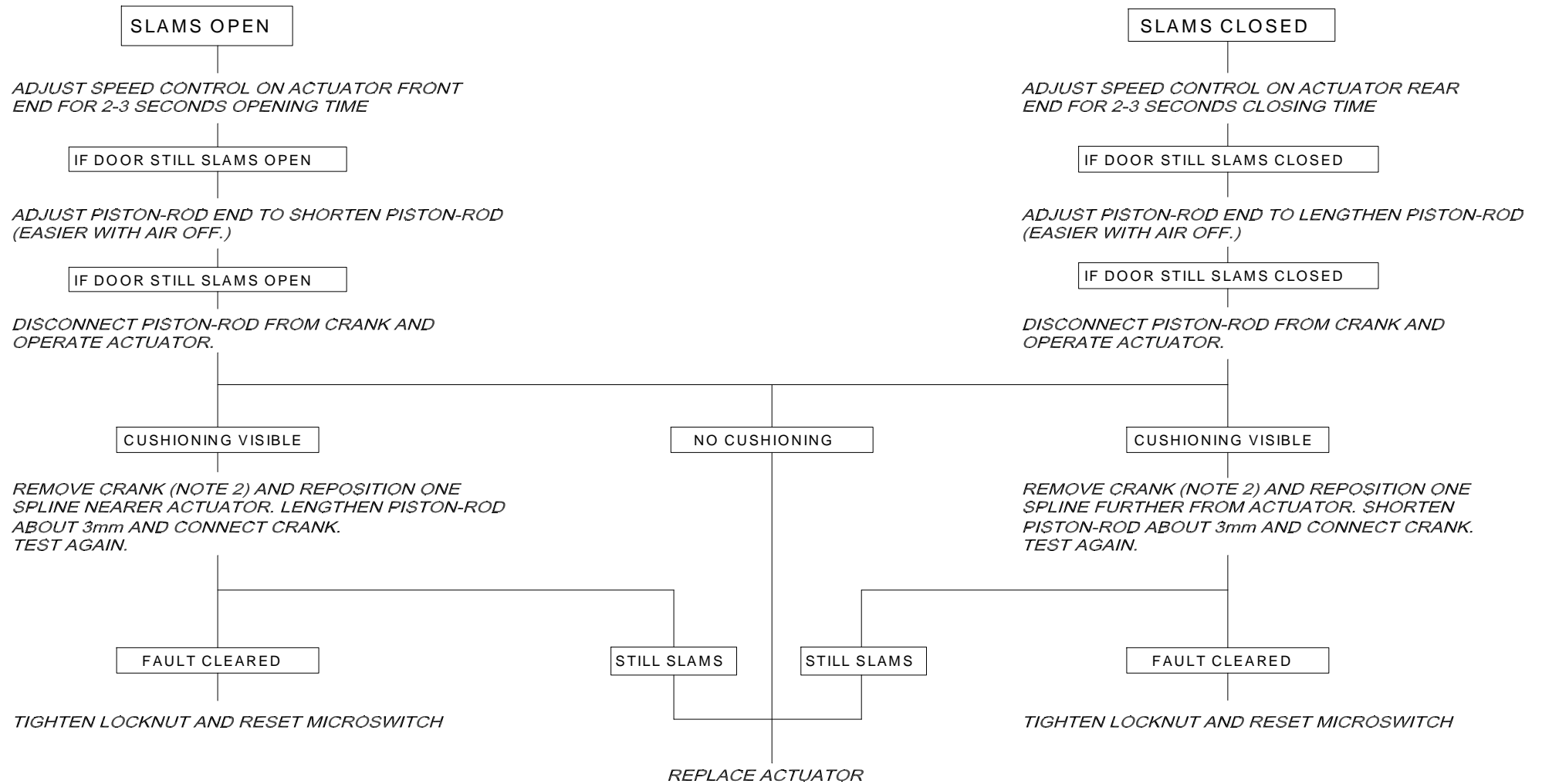
3 SENSITIVE EDGE/ OBSTACLE DETECTION DEVICE FUNCTION.

IF FITTED MUST BE ISOLATED ELECTRICAL BY DISCONNECTING TERMINALS ON E.P. VALVE OR PNEUMATICALLY BY PLUGGING SEN/PORTS BEFORE CHECKS AND ADJUSTMENTS ARE MADE. THIS TO AVOID ANY MISLEADING SIGNALS

FAULT FINDING

(Sheet 4)

AIR-BLEED DOOR CONTROL SYSTEM





SHEET FOR NOTES/COMMENTS >

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