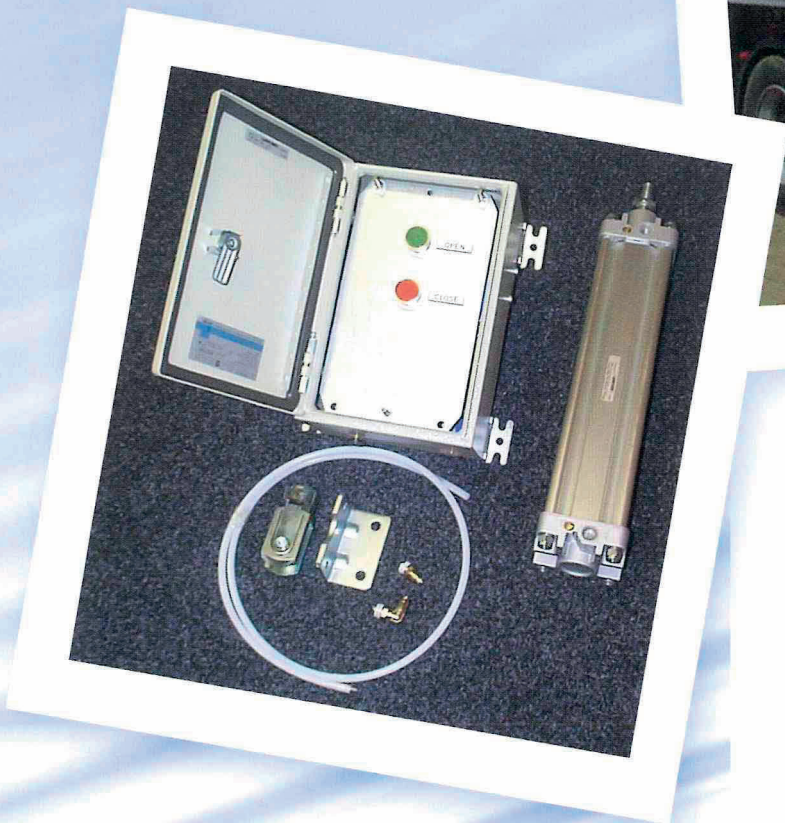




Pneumatically Operated Shutters

- **Open and Close at the touch of a button**
- **Quiet, smooth operation**
- **Safe to use**



- **No exterior handles**
- **Built in safety operation**
- **Suitable for operation to -40°C**
- **Long life**

Innovation on the move

Whiting Pneumatically Operated Shutters

Whiting Shutters have proven in service to be durable, low maintenance and reliable.

The full range of Whiting Shutters is available pneumatically operated.

Push button controls can be installed either in a remote control box or, using the CEE specification, set in the vehicle rear frame. A lockable control box is optional.

The CEE specification has a two handed operation for additional safety and includes a command push button in addition to the standard open and close buttons.

For further safety an internal release is available with each type of control.

The shutter will only operate when the control buttons are pressed. Releasing the buttons causes the shutter to stop.

Incorporated in the air circuits is a pressure control valve which adjusts closing force to ensure safety when closing.

The pneumatic operating cylinder is guaranteed to operate down to temperatures of -40°C.



▲ Roof mounted operating cylinder



▲ Rear mounted control box

j R Industries

J R INDUSTRIES LTD

Caxton Place, Pentwyn, Cardiff, CF23 8XN, United Kingdom.

Tel: +44 (0) 29 2054 9966 Fax: +44 (0) 29 2054 9046

All products produced by J R Industries carry ISO 9002 quality accreditation gained in December 1988.



Q05815

Whiting Pneumatically Operated Shutters

All shutter movements are controlled by the operator pushing or releasing buttons situated in a control box or on the vehicle body/rear frame.

With a full pneumatic system the push button operates jet valves (page 14 & 14a), direct air to a shuttle valve in the control box, which in turn directs air to the open or close circuit.

With electro-pneumatic, the buttons operate electric switches, which cause a solenoid in the control box to direct air to the open or close circuit.

Types of System:

There is a range of options for pneumatically operated shutters

1. Basic one hand control where control box has two buttons inside the cover. One button, green, is for opening the shutter and the other button, red, is for closing. The shutter will stop when either button is released. The control box is usually sited towards the rear of the vehicle and mounted beneath the chassis. It should be sited such that the operator can see the shutter in motion.

Disadvantages of this system

- a) Control box cannot be accessed if the vehicle is on a loading bay.
 - b) One hand control, thus allowing operator to have other hand free.
- Drawing SW 34 refers. (Appendix 1.)

2. Basic two hand control. Control box mounted as above but the operating buttons are remotely sited. They are usually fitted within the inner face of the vehicle rear frame in a recessed pan, not supplied. There are three buttons, one command (black), one green (up) and one red (down). The operator has to utilise two hands to operate the shutter, one on the command button the other on either the up or down button. Releasing any button causes the shutter to stop. The buttons must be spaced such that the command button cannot be used with the same hand as that for the up/down buttons.
Drawing SW 487 refers. (Appendix 2.)

3. As two but electro pneumatic. The push buttons in 2 above operate air valves, known as jet valves. With the electro pneumatic option, the push buttons operate electric switches. Inside the control box the air circuit is operated by an electric solenoid rather than an air shuttle valve, as in 2. Allows use with synchronised control tail lifts i.e. shutter and tail lift will work in unison.
Drawing SW 586 refers. (Appendix 3.)

Whiting Pneumatically Operated Shutters

4. Twin button system. There may be occasions when the vehicle is used for loading/unloading at road level as well as dock level. In this instance two sets of buttons can be supplied. The builder mounts one set towards the top of the vehicle rear frame and on the other set towards the bottom thus allowing safe operation at both levels. Can be full pneumatic or electro pneumatic. Drawing SW 602 refers. (Appendix 4.)
5. There may be times when a vehicle is left loaded but not in a secure location. In this instance it is advisable to have an isolation switch in the control box, which has to be key lockable, thus allowing the operator to isolate the operating buttons and prevent access to the vehicle/trailer. Drawing SW 563 refers. (Appendix 5.)
6. The roof cylinder is manufactured to suit the door size and its operation is common to all systems. It is suitable for use to -40°C and has a Linear warranty of 20KM, equivalent to 4 million cycles with a 2.5m long cylinder.

ALL SYSTEMS HAVE INTERNAL SAFETY RELEASE AS STANDARD

Internal release is a push button control, mounted inside the vehicle body, which allows the operator to open the shutter from inside of the vehicle.

Whiting Pneumatically Operated Shutters

System Requirement Options

Standard

You will need to strengthen the vehicle roof to accept the operating cylinder, utilising our roof mounting plate.

The minimum header for a 80mm cylinder is 120mm and for a 63mm cylinder it is 100mm. As a rough guide the 80mm cylinder is for insulated shutters and the 63mm for dry freight. TECH SERVICES WILL CONFIRM ACTUAL REQUIREMENT.

NB. There is a loss of approximately 120mm interior height for the length of the cylinder.

Vehicle length will have to cater for the roof cylinder length. The cylinder length is generally around the same as shutter aperture height.

On trailers an auxiliary air tank is required to power the system. Air supply to the tank is either via a dedicated port on the chassis or a pressure protection valve.

The pressure protection valve has to be connected to the chassis air circuit. See page 8 for circuit. Many rigid vehicles will be fitted with this valve. The shutter system should be connected to port number 2.4. IF IN DOUBT CONSULT WITH VEHICLE MANUFACTURER.

Water in the system will cause valves to malfunction. The control box has a water separator inside an automatic drain valve at the bottom of the housing.

Whiting Pneumatically Operated Shutters

Installer

Do you require one hand or two-hand control? - **See page 1**

Do you require full air system or electro pneumatic system? - **See page 1**

Do you want a key lockable control box or a plain T type key? T type key is standard.

Will you require one or two sets of operating buttons for use at dock and road level? - **See page 1**

Will the vehicle be left loaded and unattended? If yes we recommend an isolation valve within the base and a key lockable box. - **See page 1**

With trailer applications consideration should be given to fitting an additional air dryer in the system – not supplied.

Product Supplied to Installer

Roof mounted cylinder c/w mounting plate.

Control box.

All pipework.

All push buttons.

All unions/connections.

Clevis to attach door to piston.

Modified/strengthened top panel.

Auxiliary air tank and fittings - optional.

Fitting instructions.

Setting instructions.

Pressure protection valve – optional

- see page 8 for circuit

Whiting Pneumatically Operated Shutters

Fitting Instructions

As per separate fitting instructions for shutter and pneumatic system (attached)

NB.

Control box must be mounted vertically with drain valve facing downwards.

Control box should be sited away from areas susceptible to road spray and potential damage from "blown" tyres or shattered mudwings.

We recommend an illuminated panel behind the internal safety release, option for permanently illuminated switch with electro pneumatic system.

Not supplied.

With trailer applications consideration should be given to fitting an additional air dryer in the system – not supplied.

Whiting Pneumatically Operated Shutters

Setting Instructions

All control boxes have adjusters to set opening and closing speeds and closing pressure.

SETTING IS THE RESPONSIBILITY OF THE INSTALLER.

Appendix 7 or 8 & 9

Setting Control Box

1. Remove metal plate in control box to access adjusters.
2. Using pressure adjuster (I) set system pressure to 6 – 8 bar. Lift black knob and rotate to adjust pressure. When pressure is set push the black button down to lock.
3. Set opening speed. Turn opening valve adjuster (A) anti clockwise to increase speed and clockwise to reduce speed.
4. Set closing cycle
 - i. Turn pressure regulating valve adjuster (C) and closing damper (D) fully anti clockwise.
 - ii. Set closing speed adjuster (B) fully clockwise.
 - iii. Press closing button(s) and hold down.
 - iv. Slowly turn pressure regulating valve adjuster (C) clockwise until door starts to close smoothly. Lock locking nut on adjuster screw.
 - v. Turn closing speed adjuster (B) anti clockwise to reduce speed to set closing time to 11-13 seconds.

Roof cylinders have damping adjusters for the opening and closing cycles to prevent damage being caused to the cylinder.

Appendix 9

Setting Roof Cylinders

Whiting Pneumatically Operated Shutters

5. Setting roof cylinder dampers (appendix 9)

- i. Opening: open shutter. As shutter nears full open, turn closing damper screw (D) at rear of cylinder clockwise to increase damping (arrow on casting shows damping adjustment). Ensure damper is set such that final 150mm – 220mm is damped.
- ii. Closing: close shutter. Adjust damper screw (D) at the front of the cylinder as above.

NB: Front of cylinder is piston rod end.

SETTING IS THE RESPONSIBILITY OF THE INSTALLER

Should any air leaks be heard then this must be traced and rectified immediately.

IMPORTANT NOTICE

Alterations to air brake systems may be notifiable under the terms of the Goods Vehicle (Plating & Testing) Regulations 1982.

Should details be required they must be entered on the VGT10 form and submitted to:
Goods vehicle Centre
91-92 The Strand, Swansea SA1 2DH

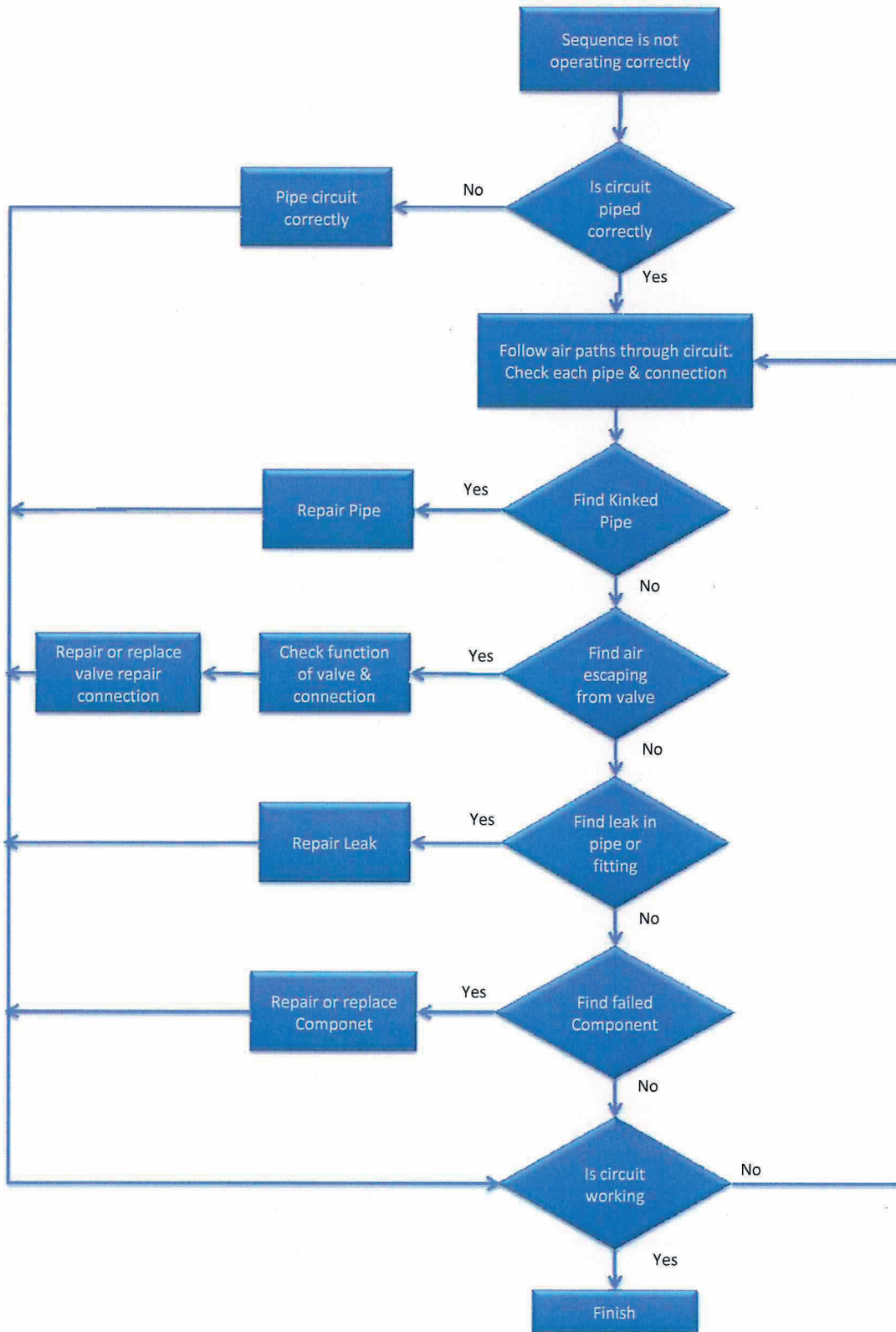
No fee is payable and the vehicle does not normally require testing

Whiting Pneumatically Operated Shutters

Fault Diagnosis

FAULT	POSSIBLE CAUSE	RECTIFICATION
Shutter will not open/close. Air "hiss" can be heard.	Sticking jet valve(s) caused by water in system	Change jet valve(s). Drain water from system.
	Low system pressure	Set system pressure to 6-8 bar
	Leak in system	Check all unions/connections
	Obstruction in pipe(s)	Check pipes for kinking or deformation
Shutter slow to operate	Low system pressure	Set system pressure to 6-8 bar
	Obstruction in pipe(s)	Check pipes for kinking or deformation
	Control box incorrectly set	Re set control box
	Grease or oil in shutter tracks	Clean tracks and lubricate with CRC5-56
	Missing rollers	Fit rollers
	Loose roller base clamps or roller clamps	Re-fit/tighten

PNEUMATIC FAULT DIAGNOSIS CHART



Whiting Pneumatically Operated Shutters

Pneumatic Push Buttons

Part No: 3016095670000 – Green



Part No: 3016095670010 – Red



Part No: 3016095670020 – Black



Pneumatic Jet Valve

Part No: 3016095680000



Whiting Pneumatically Operated Shutters

4mm T Connector

Part No: 3020000050900



Pneumatic Elbow

Part No: 301609563000

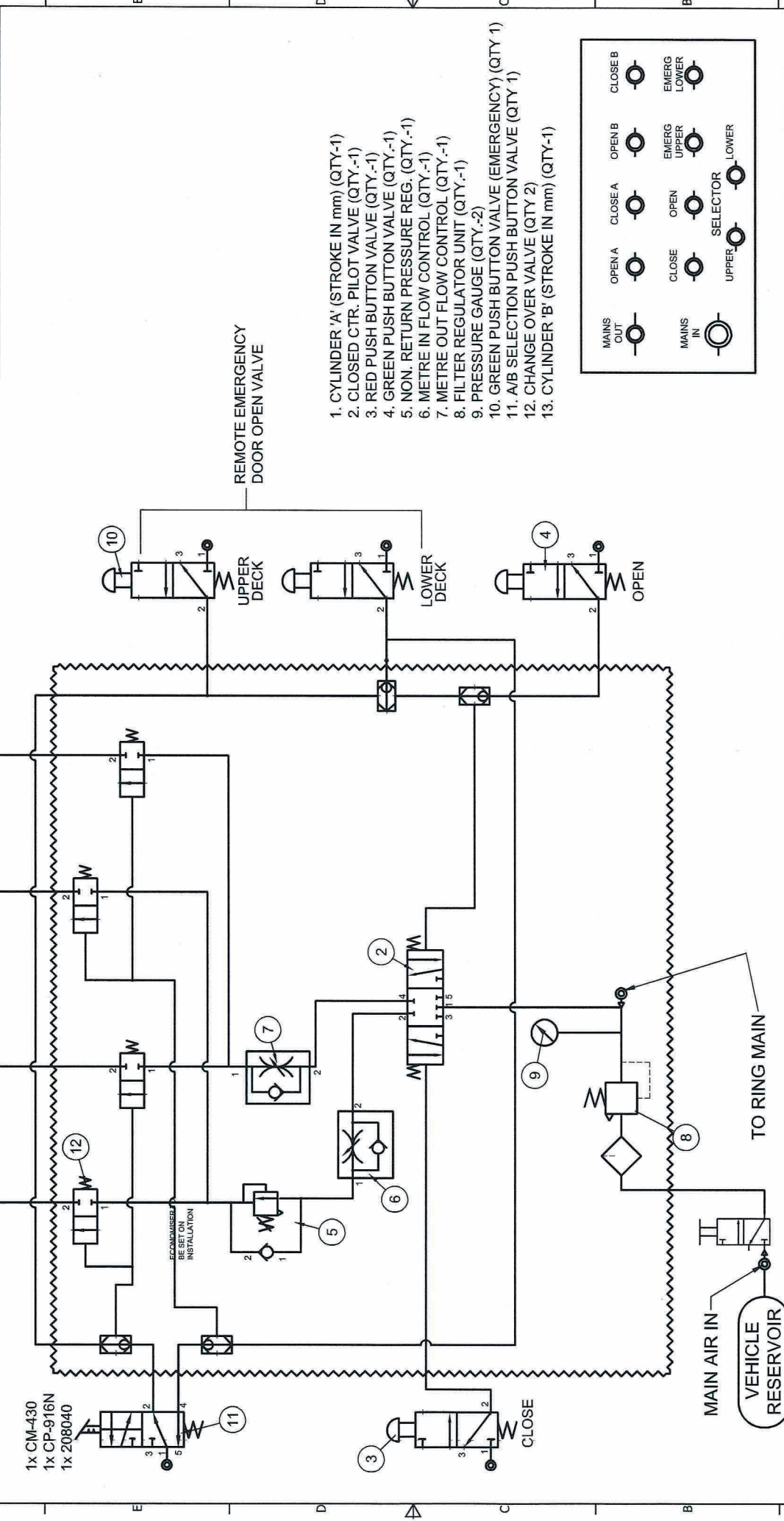


Pneumatic Straight Connector

Part No: 3016095621000



REVISION HISTORY			
REV	DESCRIPTION	DATE	APPROVED
1	FIRST ISSUE	07/07/1998	
2	PART No ADDED	06/08/2000	AS
3	CIRCUIT REDRAWN	20/06/2005	KH
4	CIRCUIT REDRAWN	25/10/2005	KH
5	AIR ADDED TO ITEM 11	13/10/2011	KH



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS IN MM BEFORE SURFACE TREATMENT REMOVE ALL BURS AND SHARP EDGES X ±0.1 ±0.01 ±0.005 ±0.05 XX ±0.01 ±0.001 ±0.005 ±0.05 XXX ANGLE MATERIAL: FINISH COLOUR: IF IN DOUBT ASK! DO NOT SCALE		DRAWN: AS PART No: 3016095630899 CUSTOMER: BODY/BUILDER: PROJECT: PNEUMATIC SCALE: 1:1 TOTAL MASS: FORMAT: AUTOCAD	TITLE: TWIN CYLINDER PNEUMATIC DOOR LAYOUT - (UMP 7496) DRAWING No: SW 449 Sheet No: 1 of 1
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J Industries Ltd
 139 Alfred Owen Way,
 Tel: (020) 206 7630 Fax: (020) 206 7633
 E-mail: technical@industries.co.uk
 Web: www.industries.co.uk
 THIS DRAWING AND COPYRIGHT IN IT ARE THE PROPERTY OF INDUSTRIES LTD
 AND MUST NOT BE REPRODUCED IN PART OR WHOLE OR PASSED ON TO OTHERS WITHOUT PERMISSION.

1. CYLINDER (STROKE IN mm) (QTY.-1)
2. CLOSED CTR. PILOT VALVE CM-9580 (QTY.-1)
3. RED PUSH BUTTON AI-3512Q (QTY.-1)
4. GREEN PUSH BUTTON AI-3513Q (QTY.-2)
5. NON. RETURN PRESSURE REG. AM-5352 (QTY.-1)
6. METRE IN FLOW CONTROL 484080 (QTY.-1)
7. METRE OUT FLOW CONTROL 454080 (QTY.-1)
8. FILTER REGULATOR UNIT C-11-HA-0 (QTY.-1)
9. PRESSURE GAUGE G40-10 BAR (QTY.-1)
10. BLACK PUSH BUTTON AI-3511Q (QTY.-1)
11. CONTROL BUTTON JET VALVE AI-9400 (QTY.-4)
12. AND UNIT AM-5161 (QTY.-2)
13. OR UNIT AM-5163 (QTY.-1)
14. 8mm NYLON TUBING TN-08-NAT
15. 4MM NYLON TUBING TN-04-NAT
16. SWIVEL ELBOW 3/8"x8mm 203080 (QTY.-2)
17. 4mm PUSH IN T-PIECES 700040 (QTY.-2)
18. ON/OFF VALVE CL-9130 (QTY 1)
19. BLACK BUTTON CP-916N (QTY 1)

NOTES
 1. OPEN, CLOSE & COMMAND VALVES TO BE FITTED DIRECTLY TO VEHICLE BODY NOT TO THE CONTROL BOX.

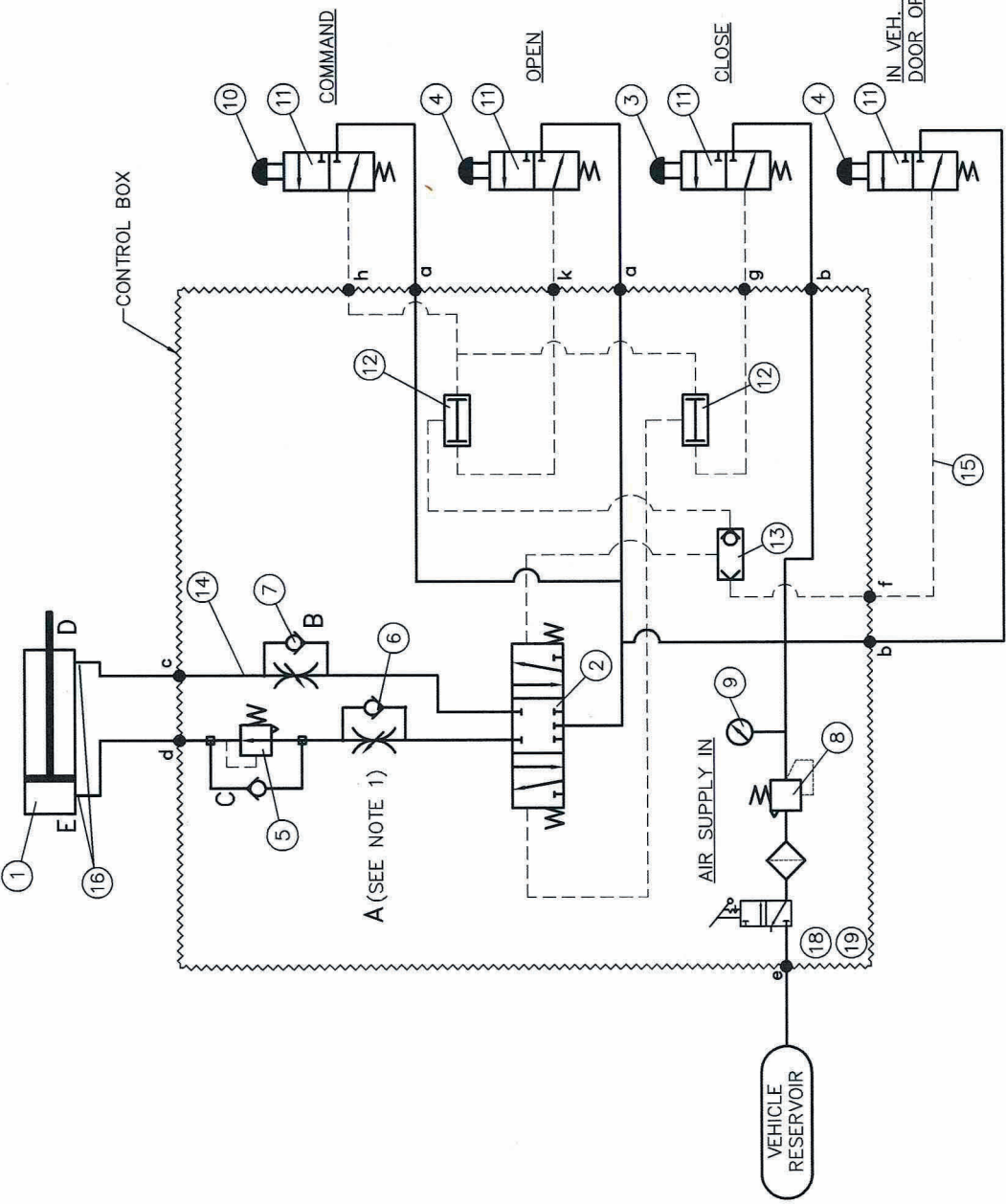
ISSUE	ISSUE NUMBER	DATE	MOD. NO.	DESCRIPTION
7	KH	20/10/00		PORTS ADDED TO DIAGRAM
6	KH	20/10/00		ITEMS 18 AND 19 ADDED
5	KH	21/10/00		OUTLINE OF CONTROL BOX AMENDED
4	AS	31.3.99		BULKHEAD PLATE AMENDED
3	AS	82.99		PART NO. FOR CIRCUIT ADDED
2	AS	27.1.99		PART No.S & LETTERS ADDED
1	AS	26.1.99		FIRST ISSUE

ISSUE	ISSUE NUMBER	DATE	MOD. NO.	DESCRIPTION
30160956	30799			PRELIMINARY

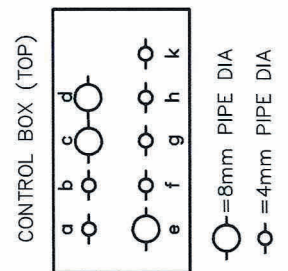
SCALE	SCALE
NTS	NTS

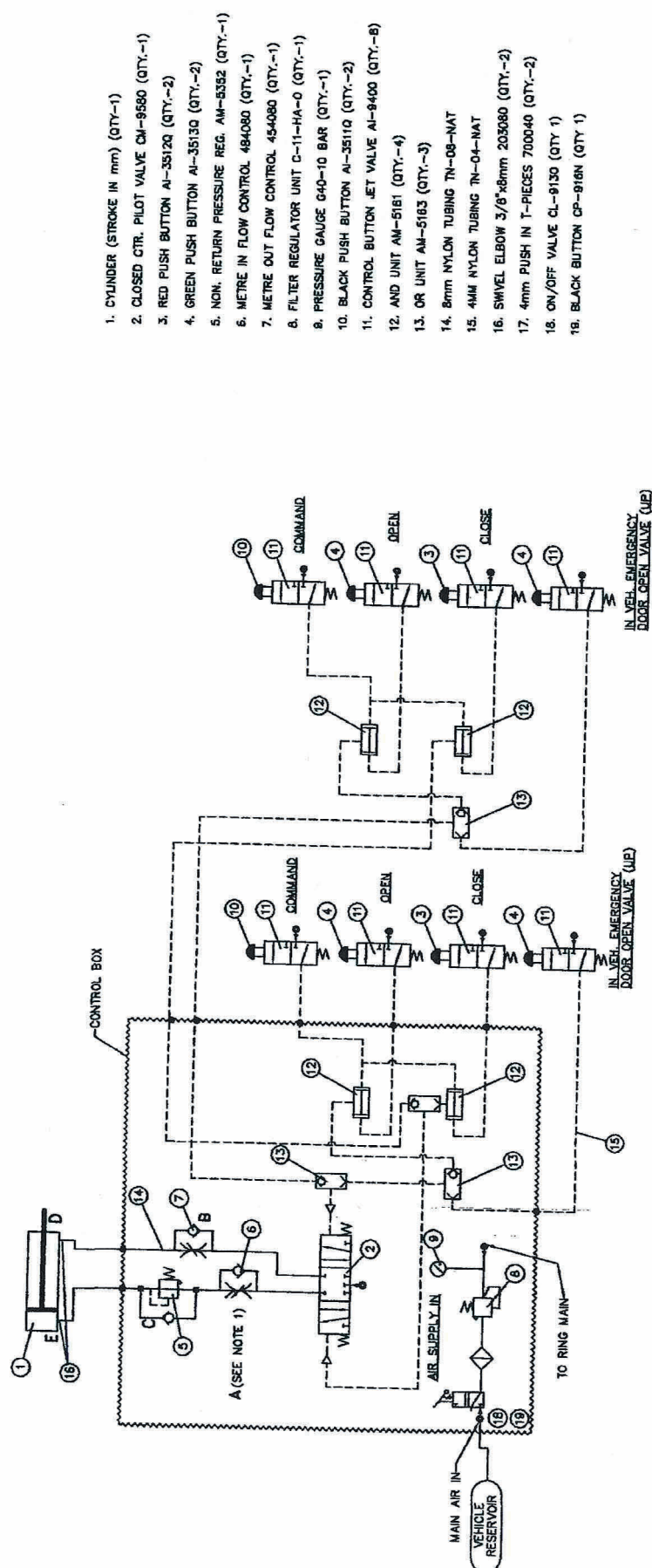
TITLE	ISSUE No.	SHEET OF
SCHEMATIC LAYOUT FOR PNEUMATIC DOOR WITH REMOTE CONTROLS	SW 487	1

J Industries
 J INDUSTRIES LTD.
 1000 WILSON ROAD, SUITE 100
 WILSON, ONTARIO L9L 1Y9
 TEL: (416) 254-1800 FAX: (416) 254-1806
 AND PART NOT BE REPRODUCED IN PART OR WHOLE OR BY ANY MEANS WITHOUT PERMISSION.



- a- MAINS AIR THROUGH 'T' PIECE TO COMMAND & OPEN PUSH BUTTONS
- b- MAINS AIR THROUGH 'T' PIECE TO EMERGENCY & CLOSE PUSH BUTTONS
- c- OUTPUT TO FRONT (UP) OF CYLINDER
- d- OUTPUT TO REAR (DOWN) OF CYLINDER
- e- MAINS AIR INLET
- f- RETURN FROM EMERGENCY DOOR OPEN PUSH BUTTON
- g- RETURN FROM CLOSE PUSH BUTTON
- h- RETURN FROM COMMAND BUTTON
- k- RETURN FROM OPEN PUSH BUTTON



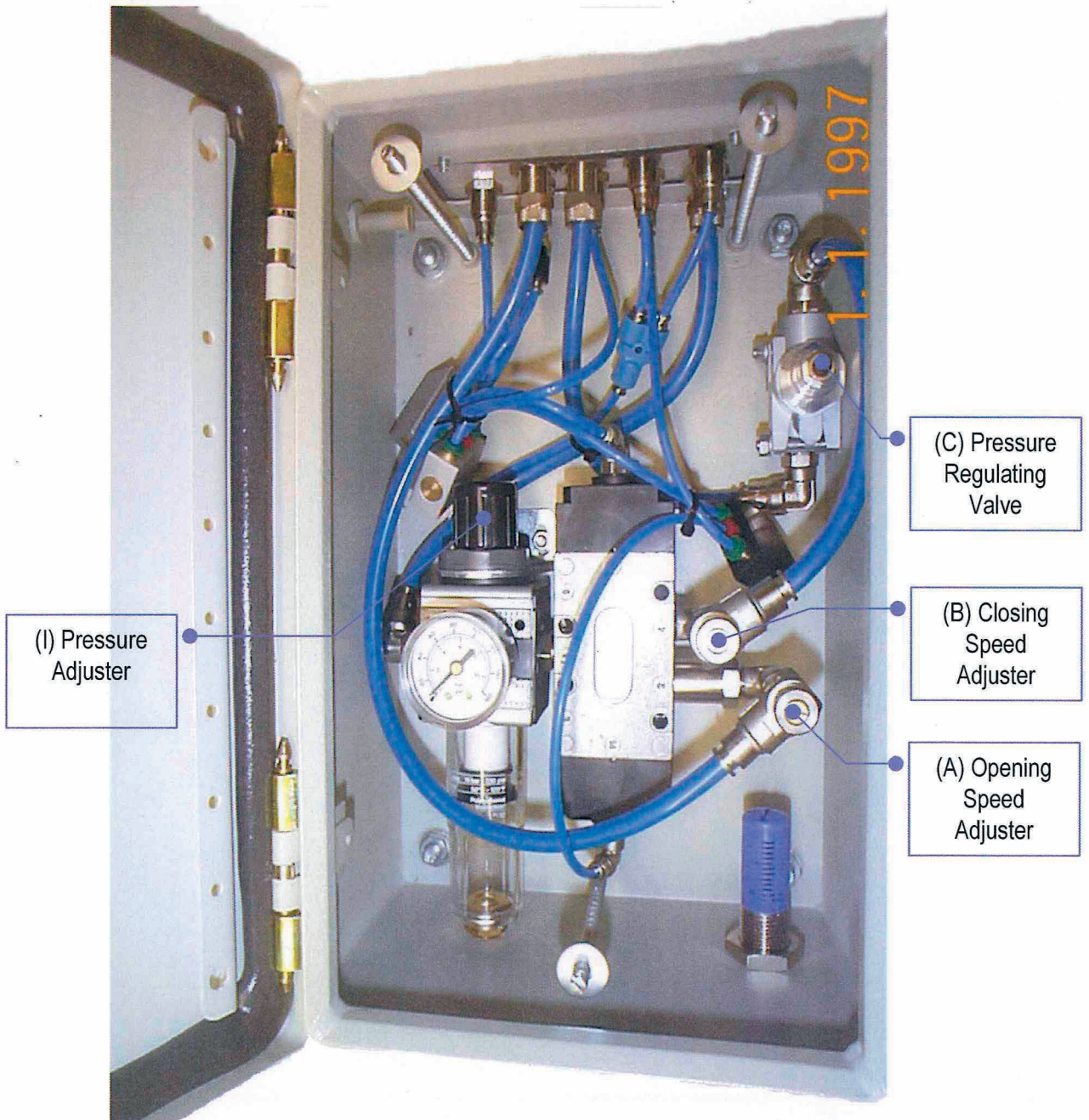


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4. GREEN PUSH BUTTON AI-3513Q (QTY.-2)
5. NON. RETURN PRESSURE REG. AM-5382 (QTY.-1)
6. METRE IN FLOW CONTROL 484080 (QTY.-1)
7. METRE OUT FLOW CONTROL 454080 (QTY.-1)
8. FILTER REGULATOR UNIT C-11-HA-0 (QTY.-1)
9. PRESSURE GAUGE 040-10 BAR (QTY.-1)
10. BLACK PUSH BUTTON AI-3511Q (QTY.-2)
11. CONTROL BUTTON JET VALVE AI-8400 (QTY.-8)
12. AND UNIT AM-5161 (QTY.-4)
13. OR UNIT AM-5163 (QTY.-3)
14. 8mm NYLON TUBING TN-08-NAT
15. 4mm NYLON TUBING TN-04-NAT
16. SWIVEL ELBOW 3/8"x8mm 205080 (QTY.-2)
17. 4mm PUSH IN T-PIECES 700040 (QTY.-2)
18. ON/OFF VALVE CL-9130 (QTY 1)
19. BLACK BUTTON CP-816N (QTY 1)

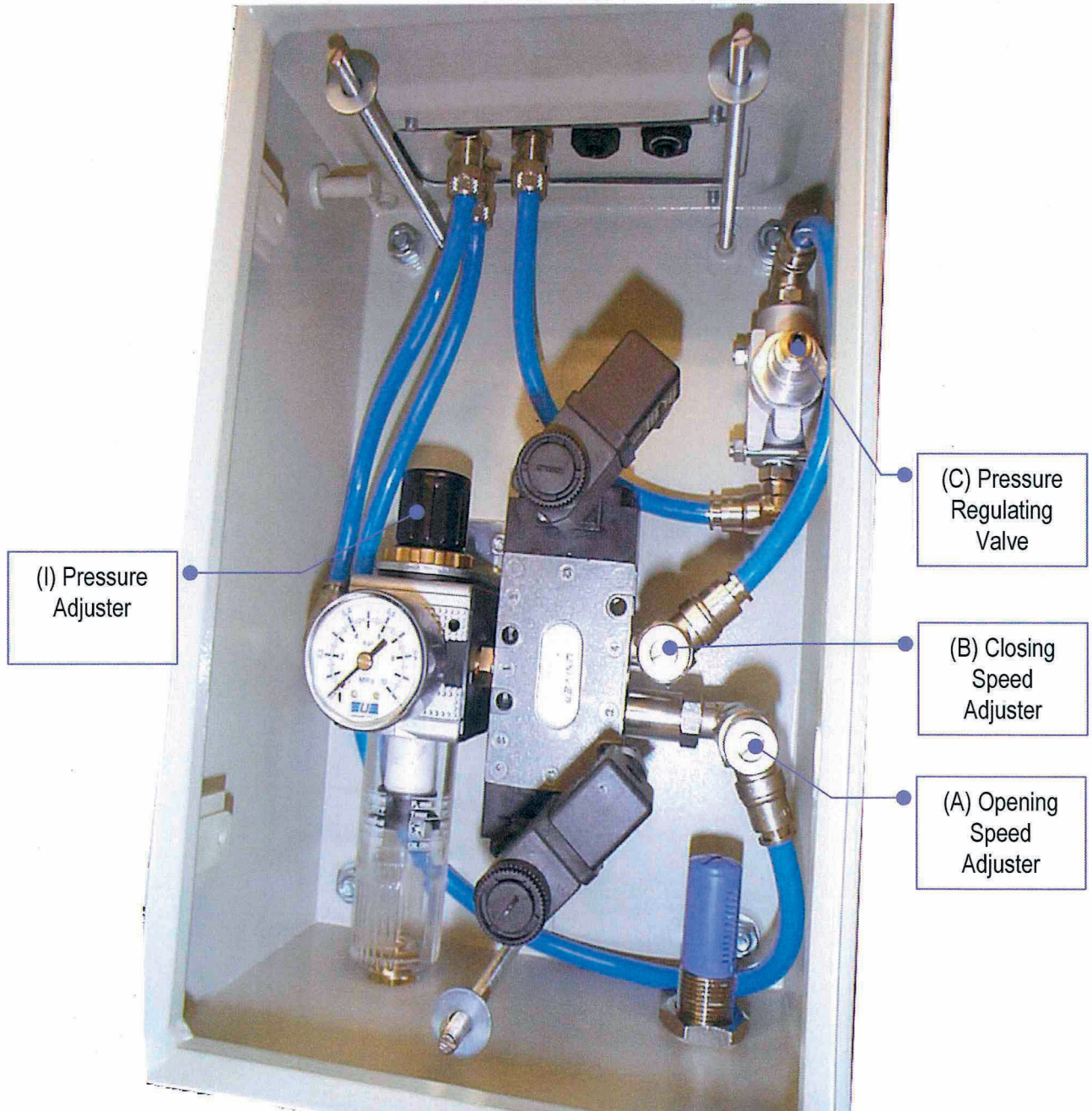
- NOTES**
1. OPEN & CLOSE VALVES TO BE FITTED DIRECTLY TO VEHICLE BODY NOT TO THE CONTROL BOX.
 2. ●-----DENOTES BULKHEAD
 3. ○-----DENOTES MAIN AIR
- LETTERS REFER TO ADJUSTMENT (SEE FITTING INSTRUCTIONS).

- BULKHEAD PLATE**
- | | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 |
| 9 | | | |
- 1-6mm BULKHEADS
 - 2-4mm BULKHEADS
- 1-MANS AIR THROUGH T PIECE TO COMMAND & OPEN PUSH BUTTONS
 - 2-MANS AIR THROUGH T PIECE TO EMERGENCY & CLOSE PUSH BUTTONS
 - 3-OUTPUT TO FRONT (UP) OF CYLINDER
 - 4-OUTPUT TO REAR (DOWN) OF CYLINDER
 - 5-MANS AIR INLET
 - 6-RETURN FROM EMERGENCY DOOR OPEN PUSH BUTTON
 - 7-RETURN FROM CLOSE PUSH BUTTON
 - 8-RETURN FROM COMMAND BUTTON
 - 9-RETURN FROM OPEN PUSH BUTTON

LIST NO.	REV.	DESCRIPTION	DATE
30	EDPSS	DBB	
PNEUMATIC OPERATOR			NTB
DUAL INTERNAL RELEASE			5/11/62
INDUSTRIES			

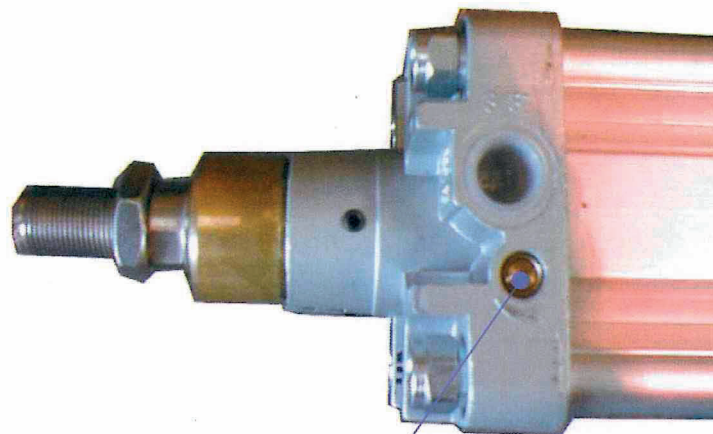


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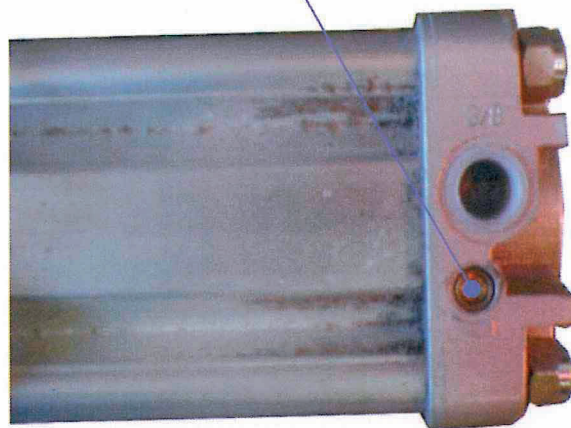
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Cylinder Dampening Adjustment



(D) Dampening
Adjustment
Screw

Front of Cylinder



Rear of Cylinder

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