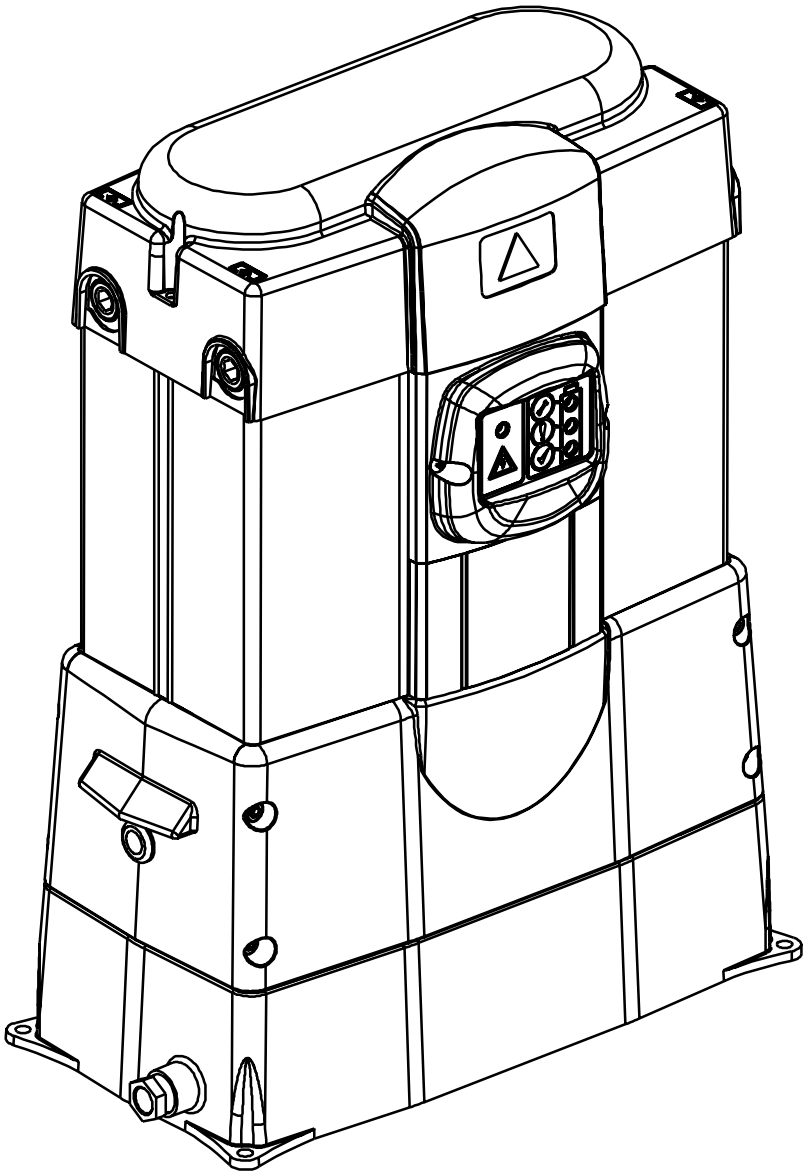
domnick hunter

PNEUDRI



PNEUDRI MiDAS

MAINTENANCE MANUAL

DATE : 12Sep01 **REV:** 0

domnick hunter filters limited,Durham road, Birtley Co. Durham DH3 2SF, Tel: 091 410 5121 Telex: 537282 Telefax: 091 410 7621

FOREWORD

The compressed air dryer systems have been designed and manufactured to ensure that maximum safety and performance is achieved. It is expected that users of these systems will employ safe working practices and ensure that when installing, commissioning, operating or maintaining the equipment, any legal requirements are fulfilled. For example, in the UK, users should refer to the Health and Safety Act, 1974.

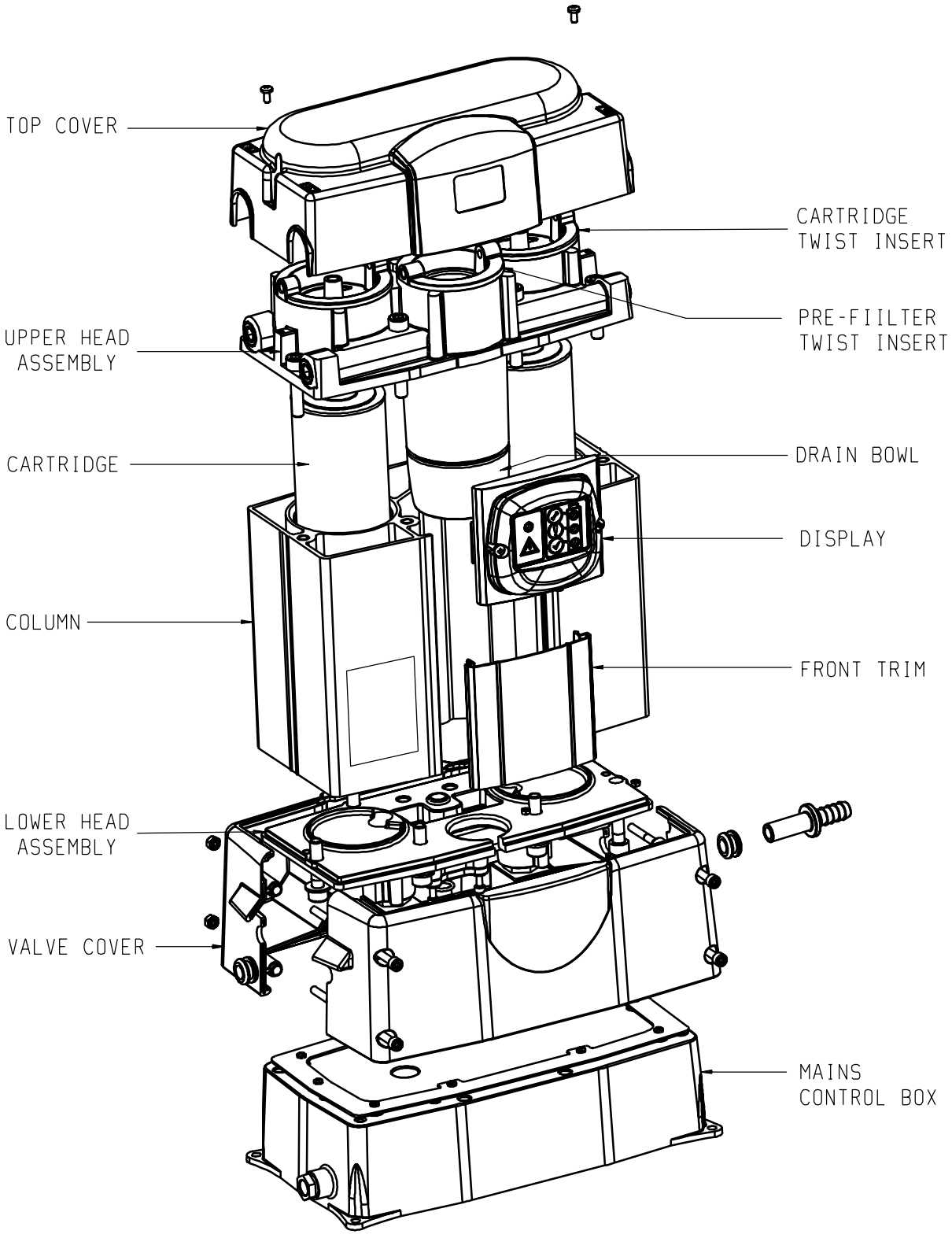
All ancillary equipment such as pipework, valves, fittings etc., must be suitable for the pressures and capacities involved.

Replacement parts are available from your distributor or the manufacturers (see front page for information). The adoption of a regular servicing policy is strongly recommended and will result in ensuring that a high performance is achieved. Serial numbers and customer order numbers should be referred to in any communication. (Serial numbers can be found on the identification plate attached to the dryer). The figure number and the appropriate diagram in this manual and the item number (shown in circle,) will also assist in part identification.
Any warranty will be invalidated if the dryer is not installed in accordance with the manufacturers recommendations or non-approved parts substituted. Substitute parts could reduce the performance or service life in addition to creating potential hazards.

The manufacturers reserve the right to modify the contents of this manual without notice. The data given is a guideline to users and in no way binding on the manufacturers.

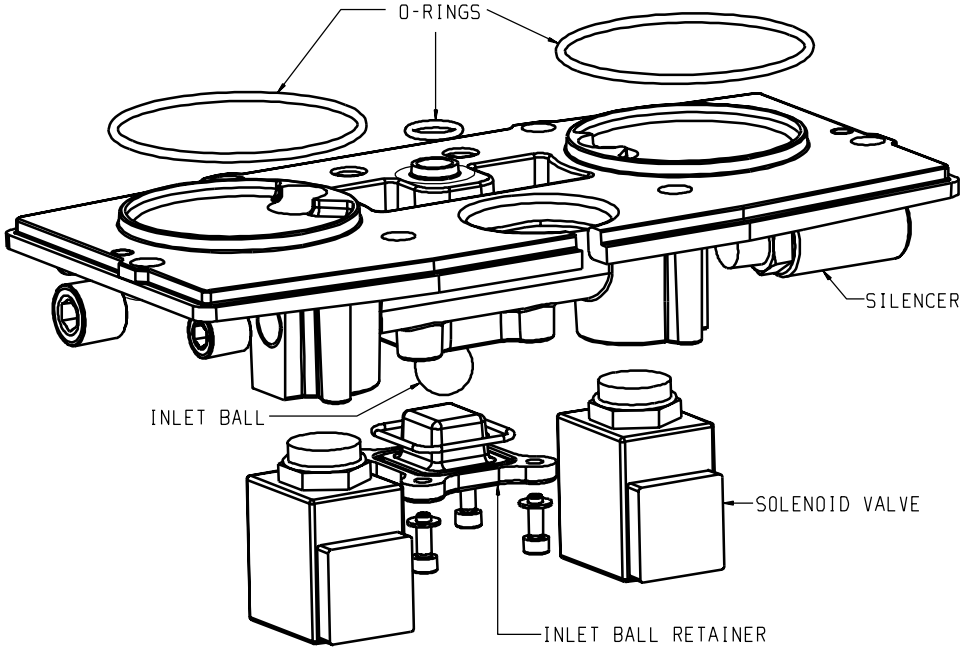
BEFORE SERVICING OR DISMANTLING ALL PRESSURE MUST BE RELEASED FROM THE SYSTEM AND ITS ASSOCIATED PIPEWORK AND ANY ELECTRICAL SUPPLY ISOLATED.

MIDAS CONSTRUCTION



SECTION A1

LOWER HEAD ASSEMBLY



LOWER HEAD ASSEMBLY

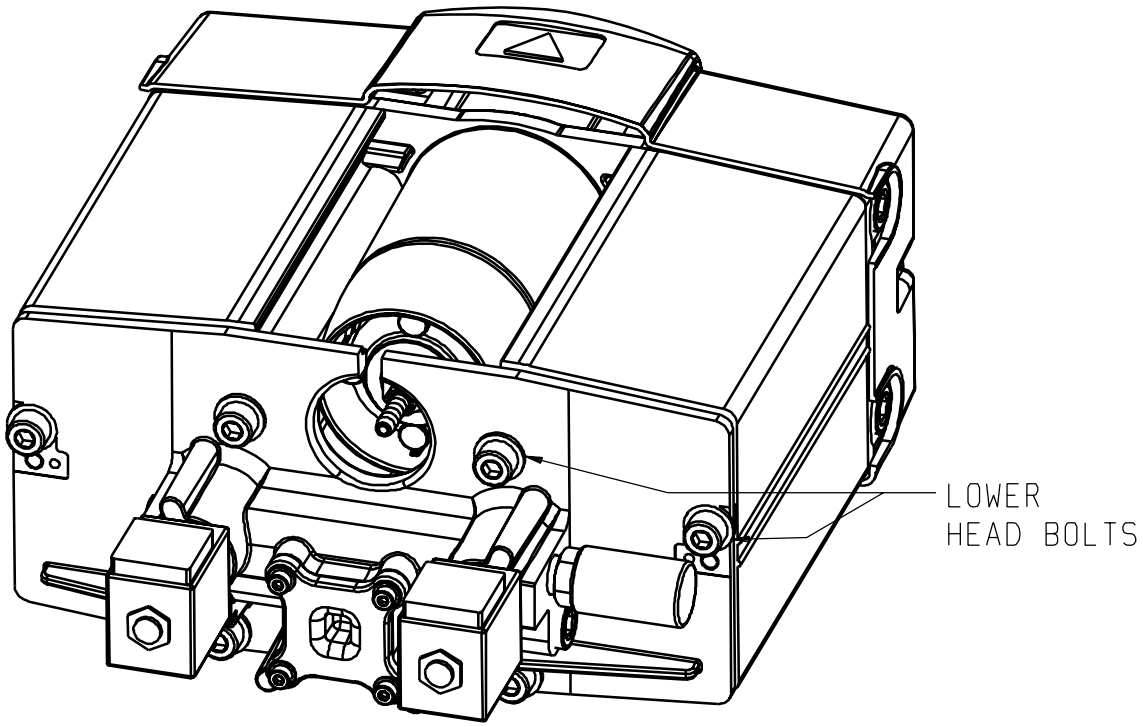
SECTION A1

A1.1a LOWER HEAD REMOVAL

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 6 lower head bolts

A1.1b LOWER HEAD REASSEMBLE

1. Re-assemble in reverse order.
   6 bolts to be torqued to (20lbf-ft) (27Nm) (see Torque sequence detail A1.5)
   Ensure all o-rings (3 off) are in place before assembly.

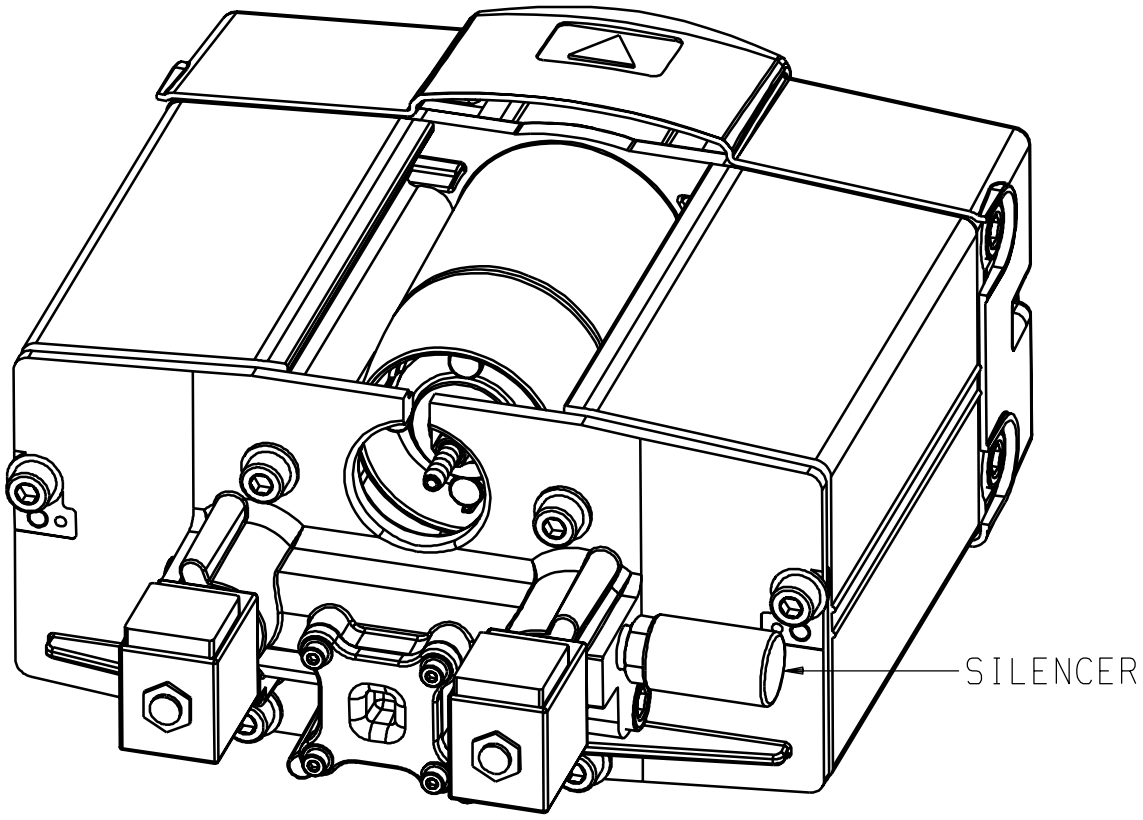


A1.2a SILENCER REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Lie dryer down.
4. Remove valve cover.
5. Remove silencer.

A1.2b SILENCER REASSEMBLE

1. Re-assemble in reverse order

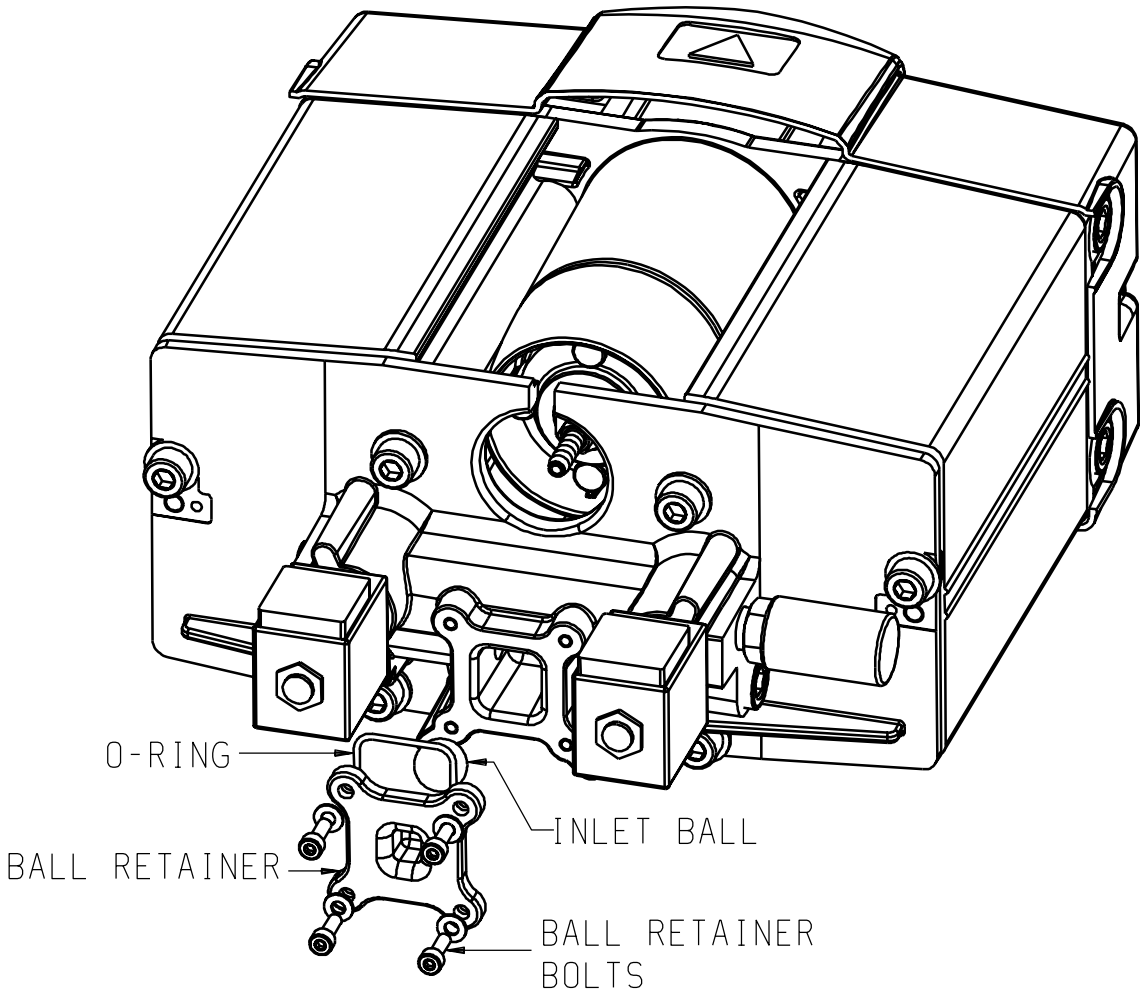


A1.3a INLET BALL RETAINER REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Loosen and remove display.
6. Remove valve cover.
7. Disconnect solenoid valve plugs.
8. Remove 4 bolts for ball retainer.
9. Remove ball

.A1.3b RE-ASSEMBLY Of INLET BALL RETAINER

1. Re-assemble in reverse order as above
   Torque setting for 4 bolts (2.2lbf-ft) (3 Nm)

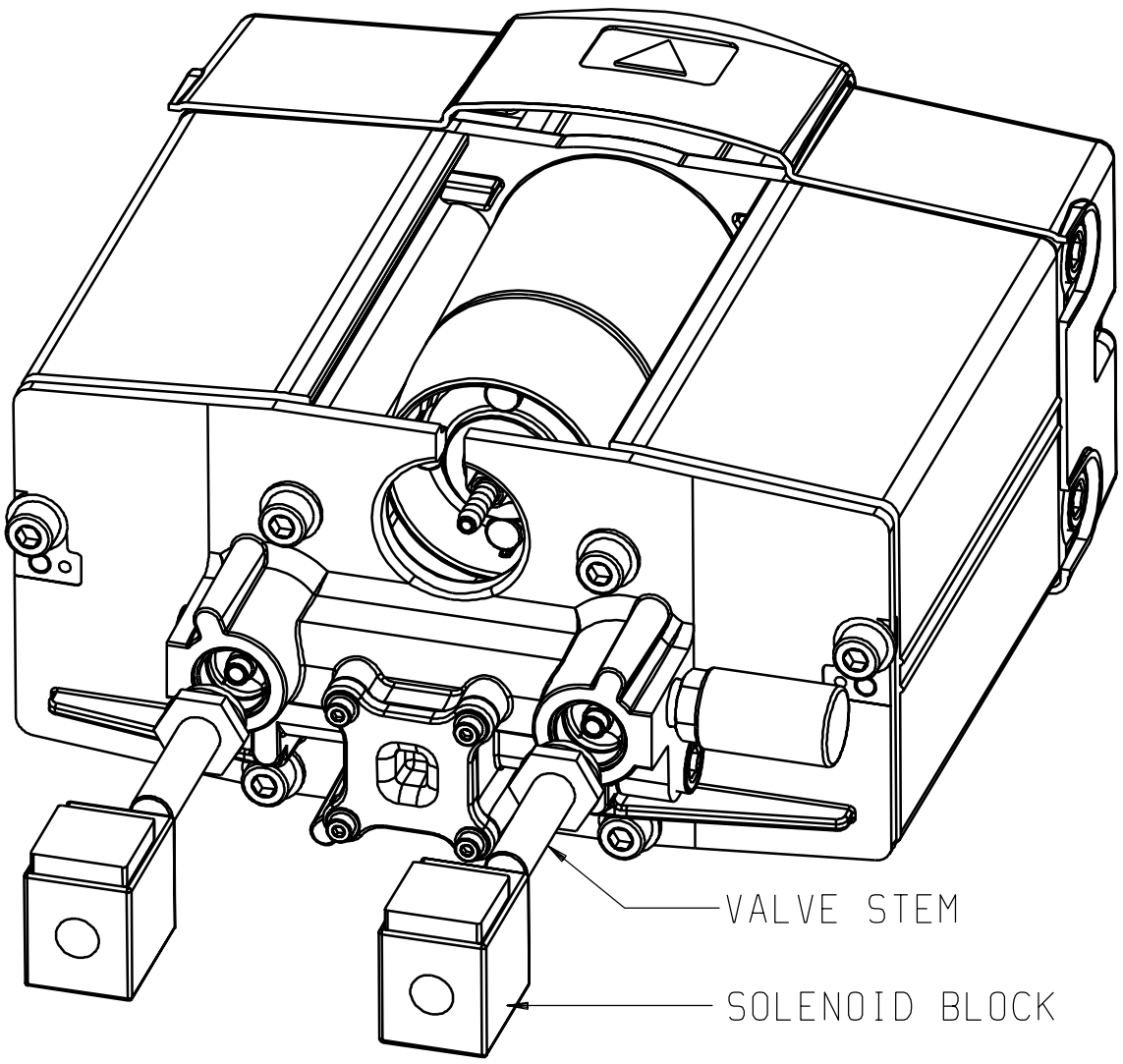


A1.4a SOLENOID VALVE REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Loosen display
6. Remove valve cover.
7. Disconnect solenoid valve plugs.
8. Remove solenoid block retainer (clip or nut)
9. Remove valve stem and plunger

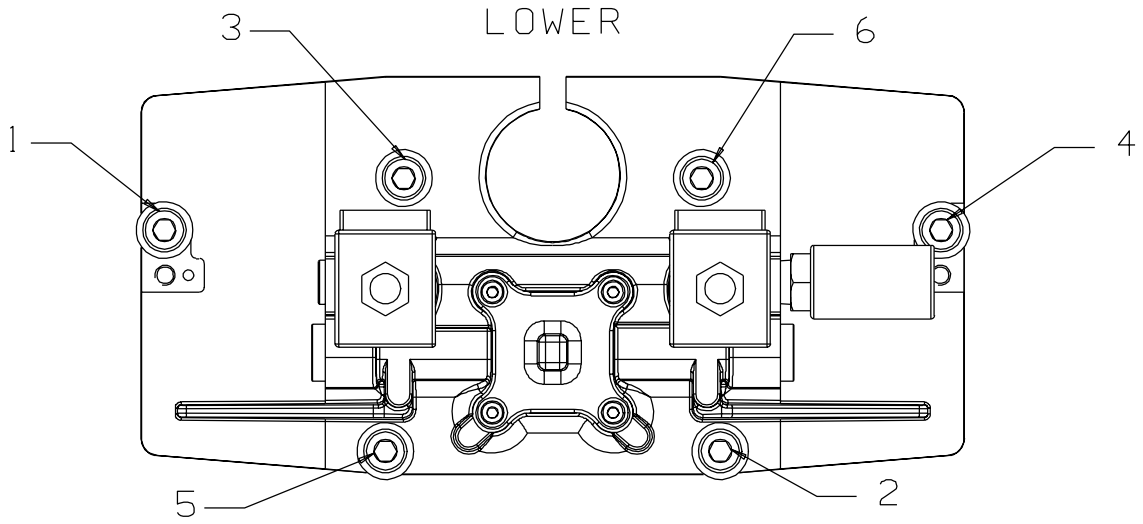
.**A1.4b RE-ASSEMBLY OF SOLENOID VALVE**

1. Re-assemble in reverse order as above
   Torque setting on valve stems (3.6lbf-ft) (5 Nm)

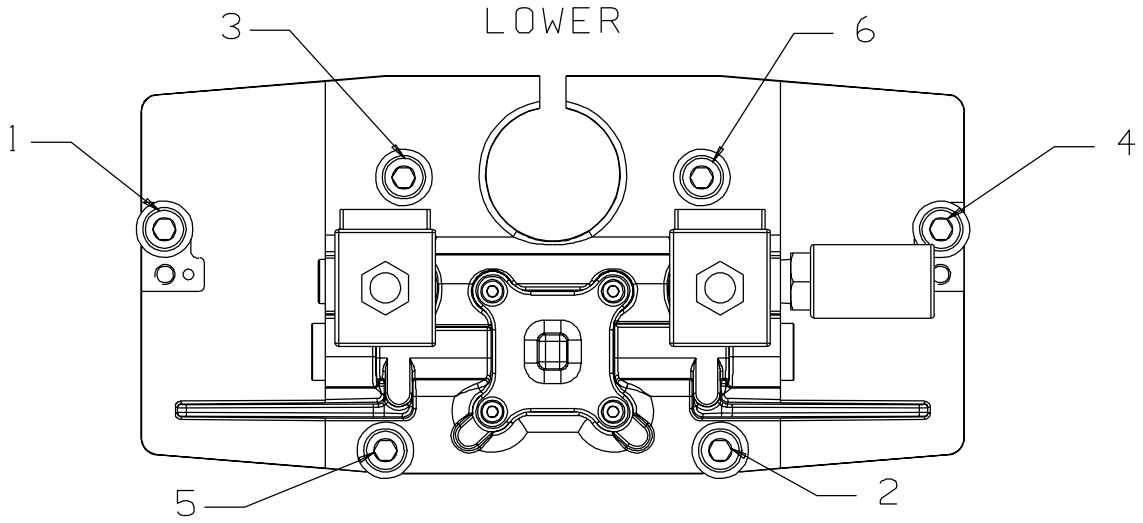


A1.5 Torque

Torque all bolts to 27N/M



TORQUE SEQUENCE DETAILS



TORQUE SEQUENCE DETAILS

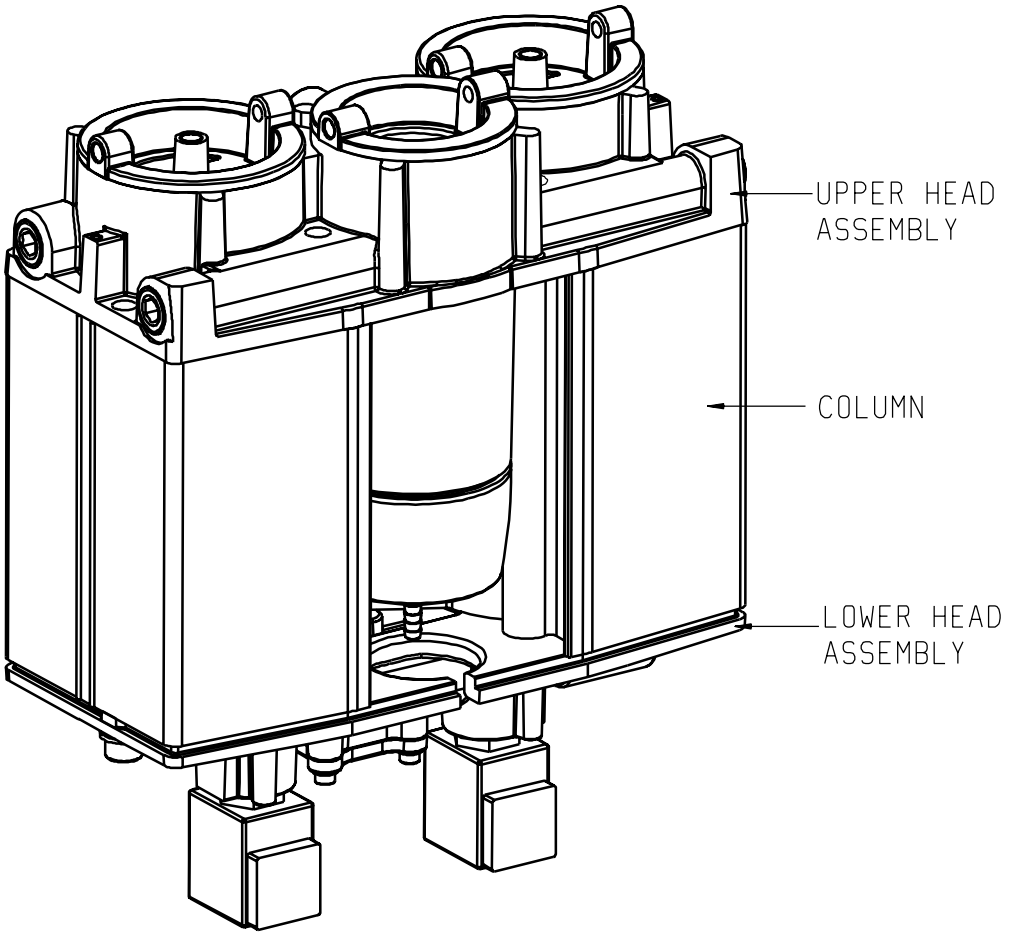
SECTION A2

COLUMN ASSEMBLY

A2.1 Desiccant Cartridge Replacement

A2.2 Column Replacement

A2.3 Torque sequence & Settings



COLUMN ASSEMBLY

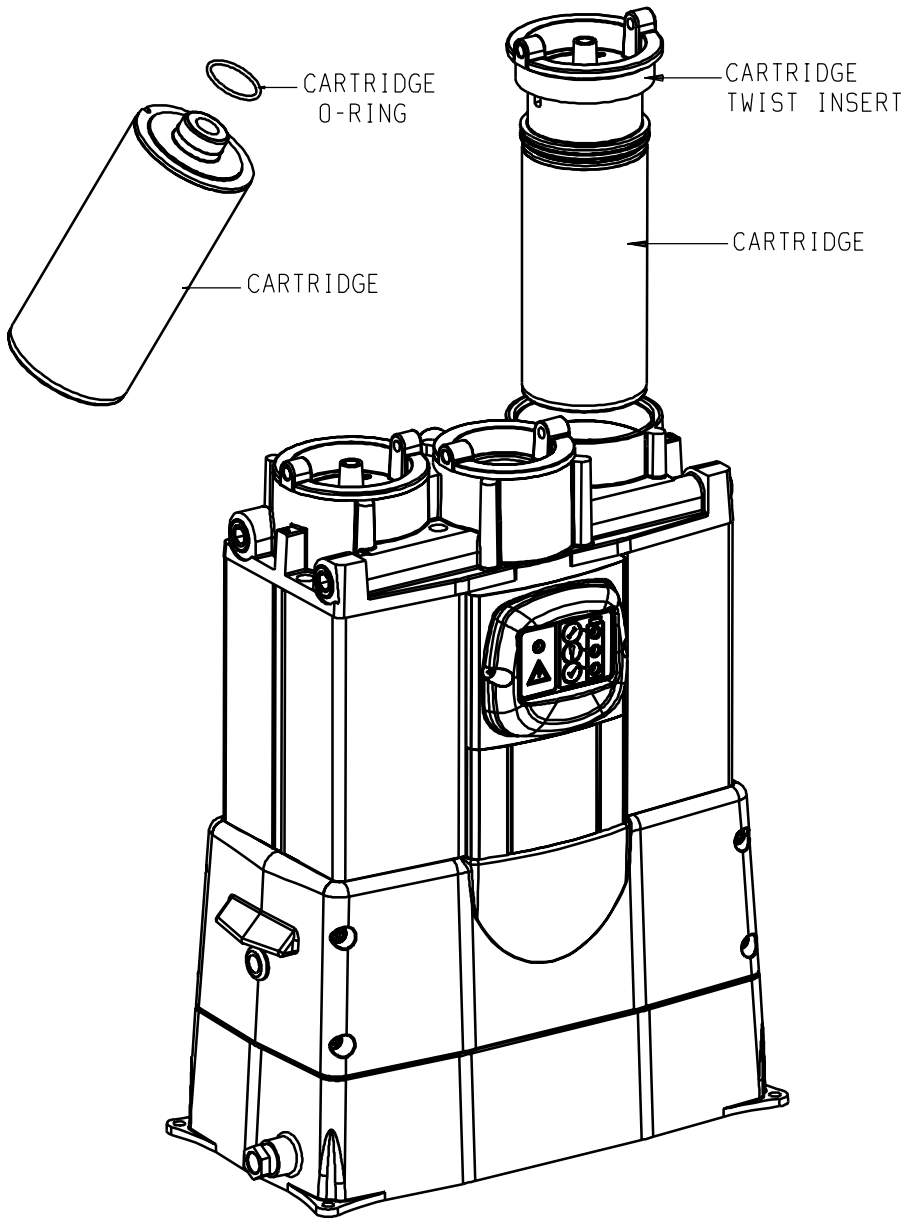
SECTION **A2**

A2.1a CARTRIDGE REPLACEMENT

1. Ensure dryer is fully depressurised.
2. Remove top cover.
3. Remove cartridge twist inserts.(Anti-clockwise)
4. Remove cartridge from inserts

A2.1b CARTRIDGE REASSEMBLY

1. Reassemble in reverse order
1. Ensure o-ring on cartridge is in place.



COLUMN ASSEMBLY

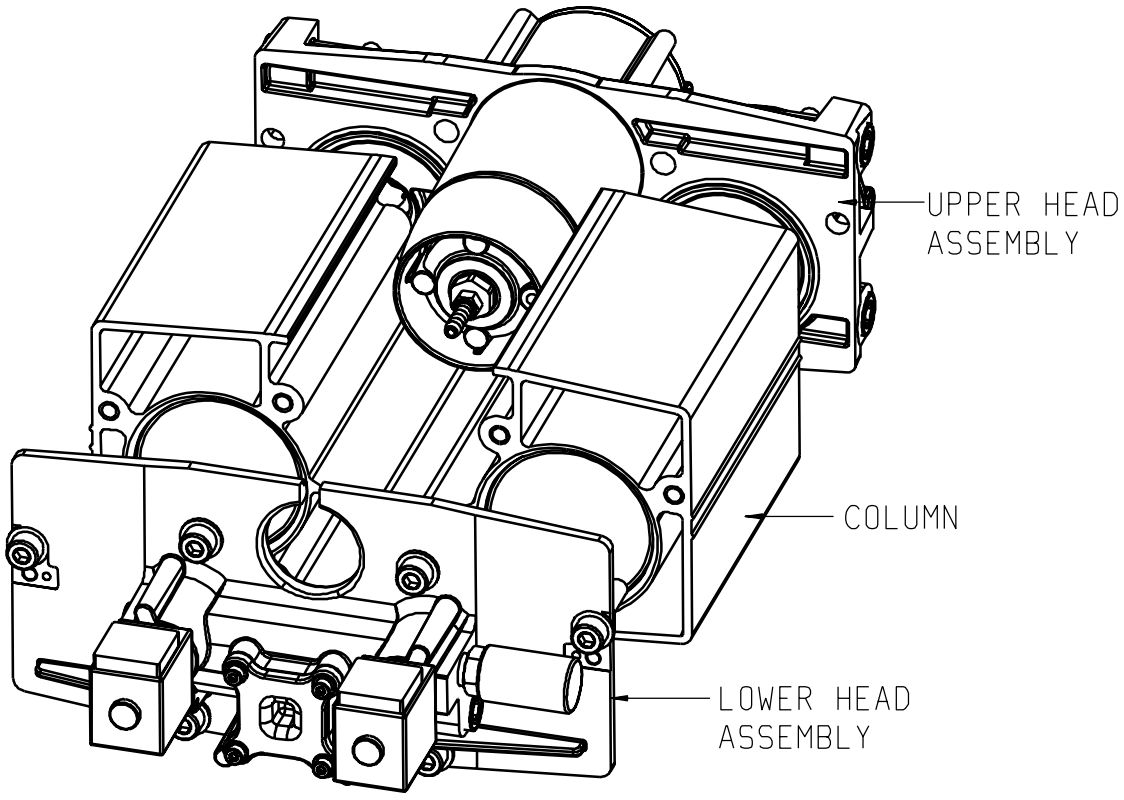
SECTION **A2**

A2.2a COLUMN REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 6 lower head bolts
10. Remove lower head.
11. Remove top cover.
12. Remove filter and cartridge inserts
13. Remove 6 bolts from top head.

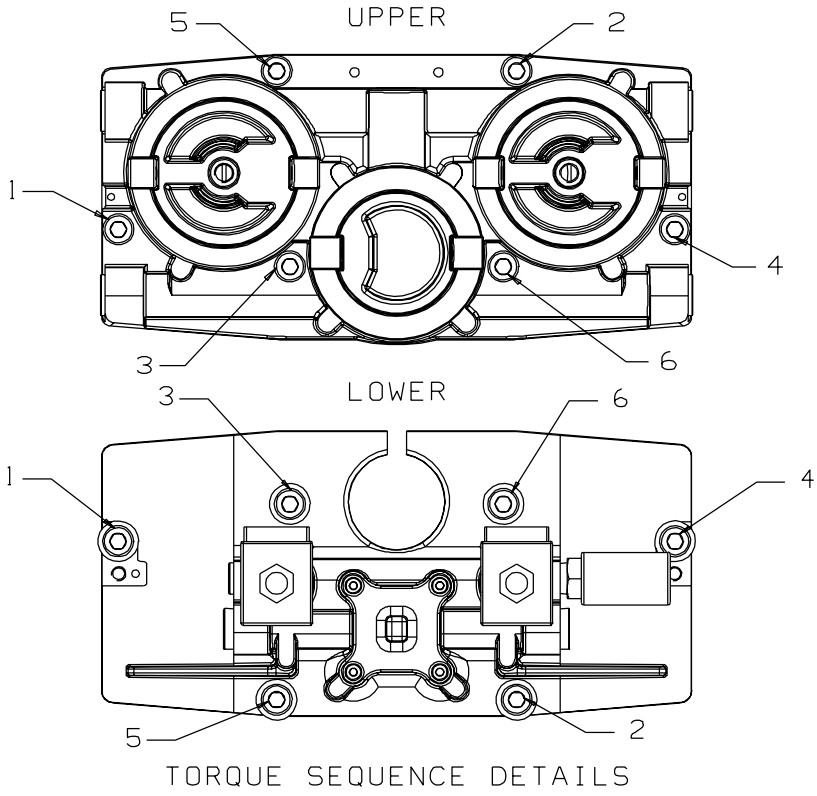
A2.2b COLUMN REASSEMBLE

1. Re-assemble in reverse order.
   6 bolts to be torqued to (20lbf-ft) (27Nm) (see Torque sequence detail A1.5)
   Ensure all o-rings (3 off top head and 3 off bottom head) are in place before assembly.

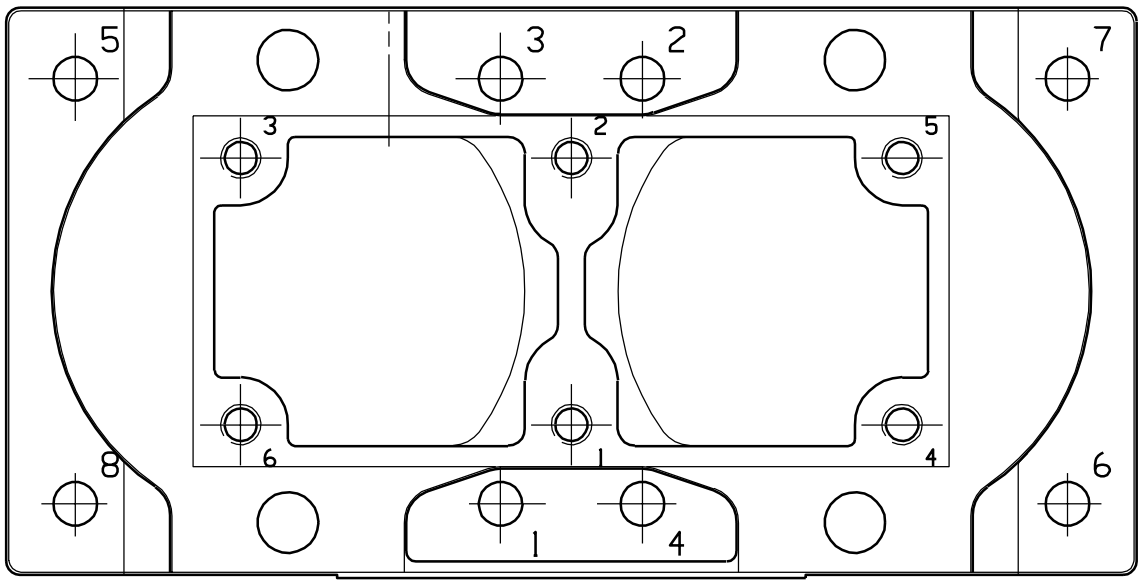


A2.3 Torque Settings

Torque all bolts to 27 N/M

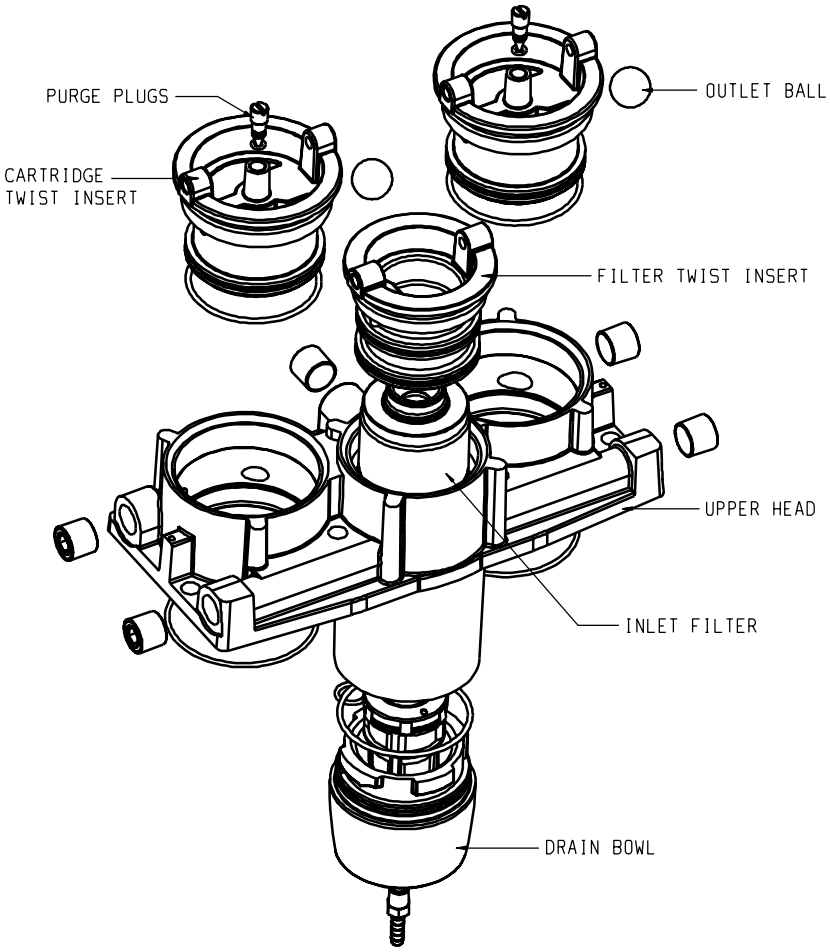


TORQUE SEQUENCE DETAILS



SECTION A3

UPPER HEAD ASSEMBLY



UPPER HEAD REPLACEMENT

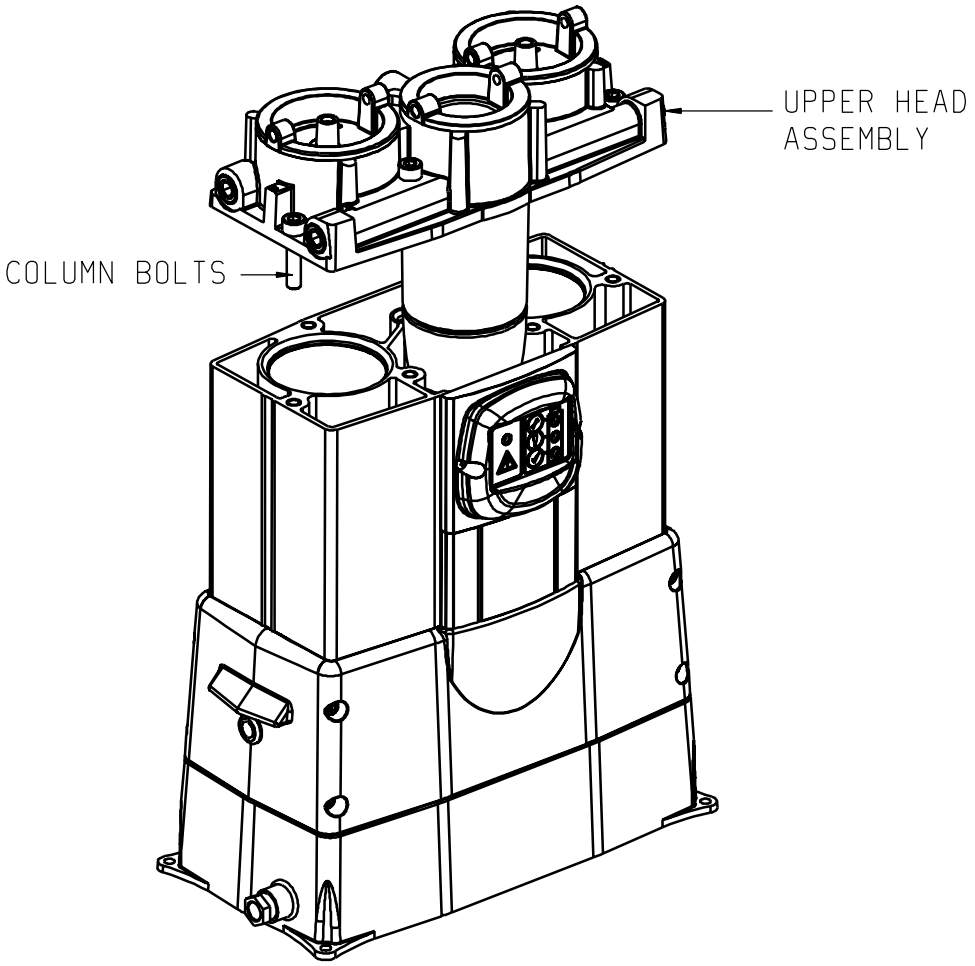
SECTION A3

A3.1a UPPER HEAD REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove the top cover.
3. Remove pipework.
4. Remove front trim.
5. Remove filter and cartridge twist inserts,
   be careful of oulet ball falling from cartridge twists insert.
6. Remove drain bowl by pushing bowl up and rotating approx 90 deg.from right to left (as viewied from front) then pull down.
7. Remove 6 bolts and lift off top head.

A3.1b UPPER HEAD REASSEMBLE

1. Reassemble in reverse order.
   6 bolts to be torqued to (20lbf-ft) (27Nm) (see Torque sequence detail A3)

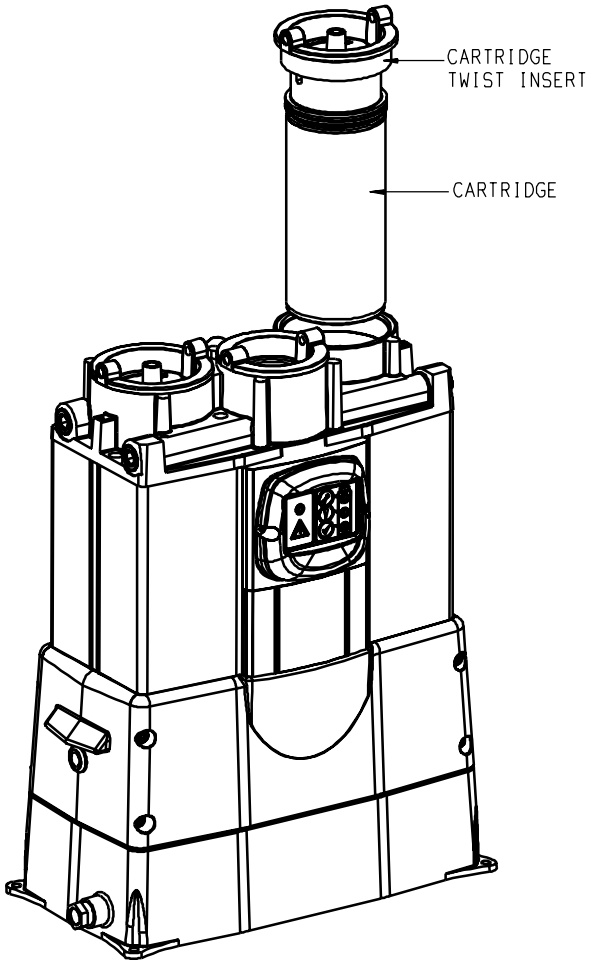


A3.2a CARTRIDGE TWIST INSERT REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove the top cover.
3. Remove cartridge twist insert (Anti-clockwise)
4. Remove cartridge from insert.
5. Remove puge plug.

A3.2b CARTRIDGE TWIST INSERT REASSEMBLE

1. Reassemble in reverse order.
2. Set purge flow.

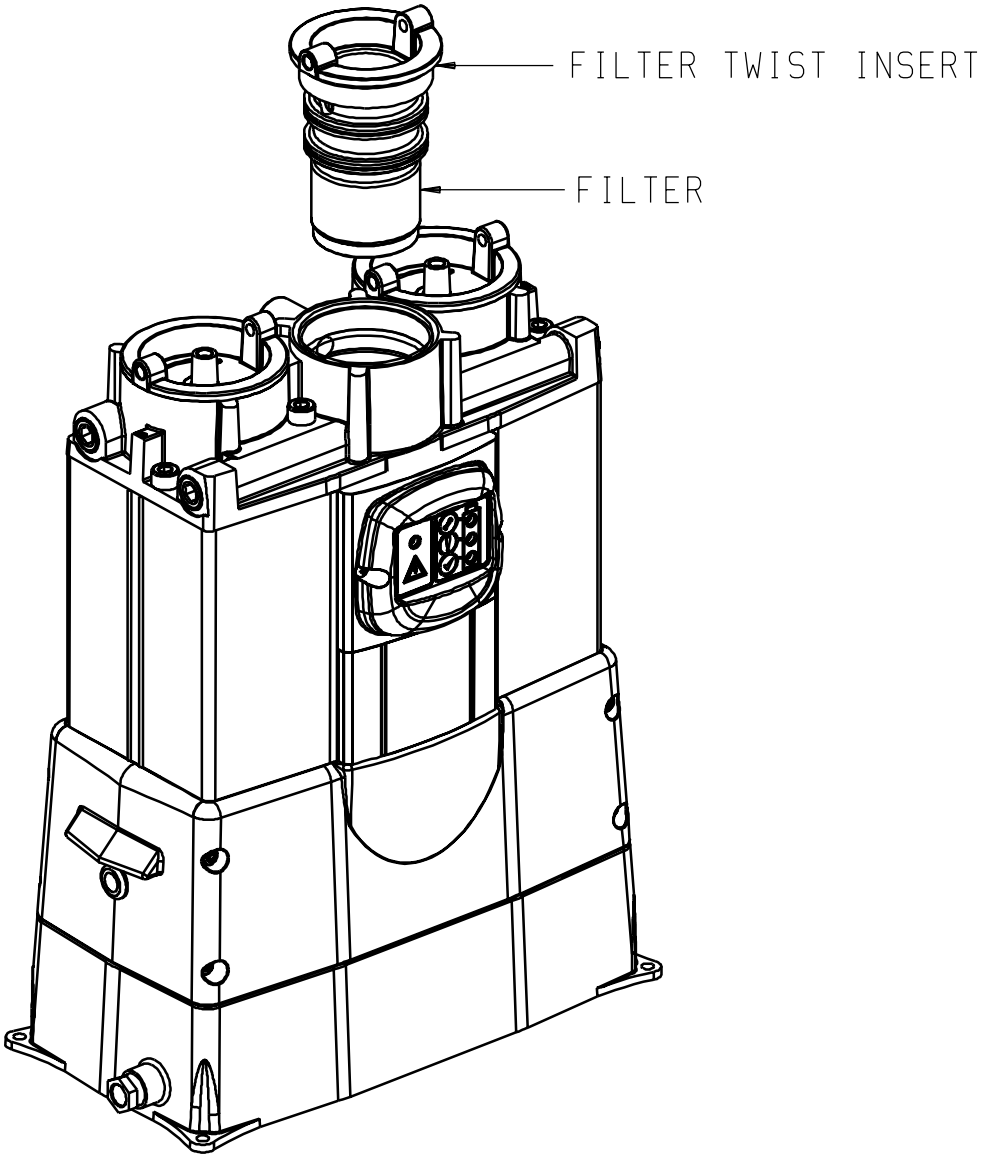


A3.3a FILTER TWIST INSERT REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove the top cover.
3. Remove filter twist insert.(Anti-clockwise)
4. Unscrew filter.

A3.3b FILTER TWIST INSERT REASSEMBLE

1. Reassemble in reverse order.

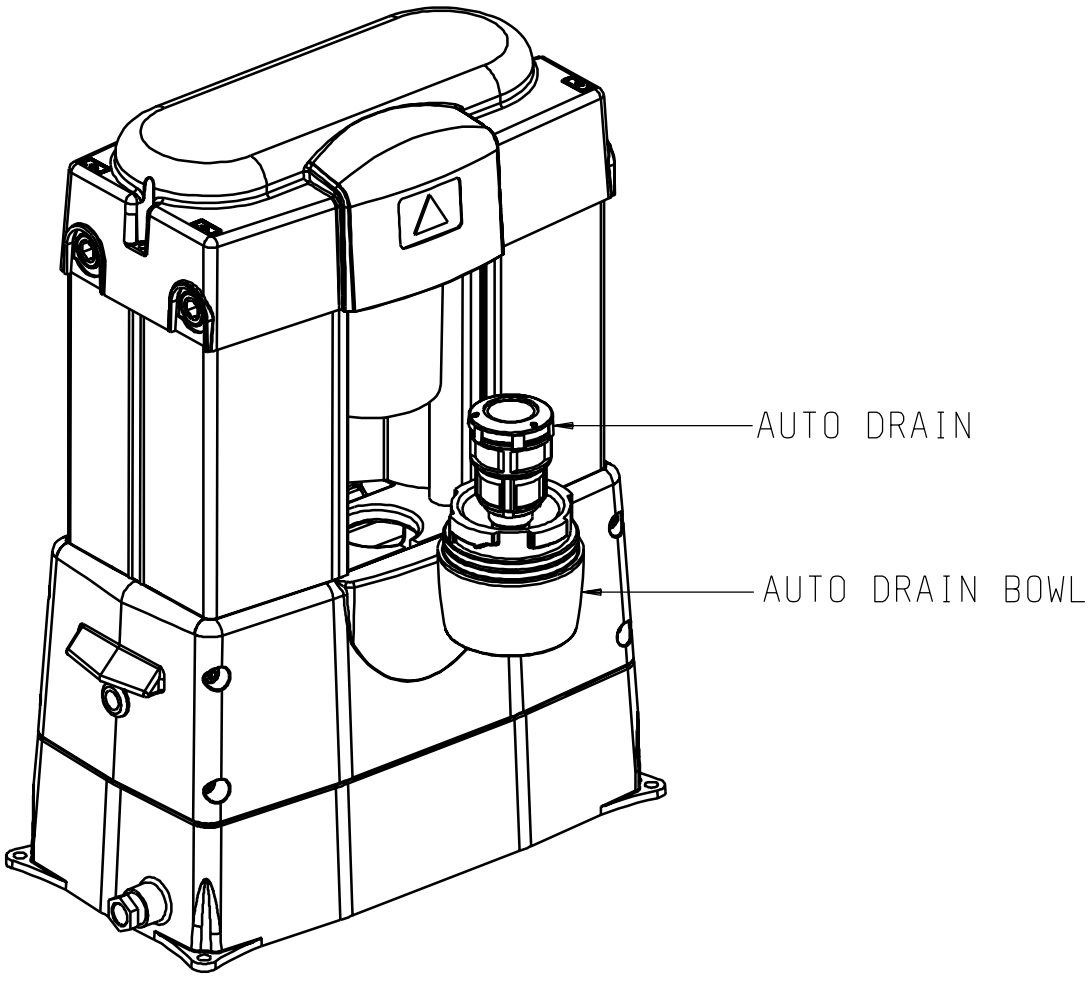


A3.4a DRAIN BOWL and AUTO DRAIN REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove front trim.
3 Loosen display pozi screws
4. Unlock and remove drain bowl ,by first pushing up then rotating from left to right as viewed from the front. Pull drain down and remove.
5. Remove auto drain - (Note nut of auto drain turns into housing to remove auto drain)

A3.4b DRAIN BOWL and AUTO DRAIN REASSEMBLE

1. Reassemble in reverse order.
   Auto drain to be torqued to (2.5Nm) (1.8lbf.ft)

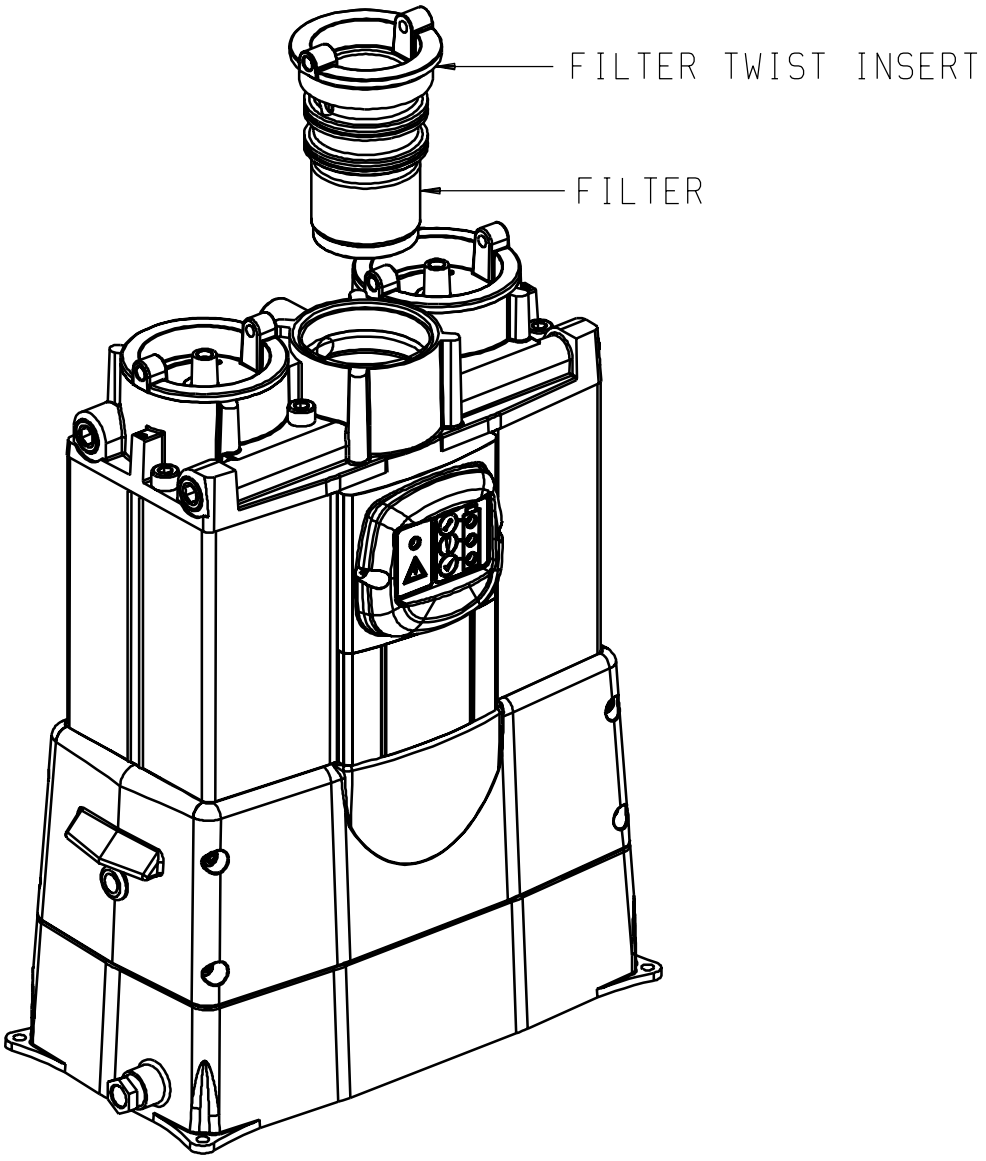


A3.5a FILTER REPLACEMENT

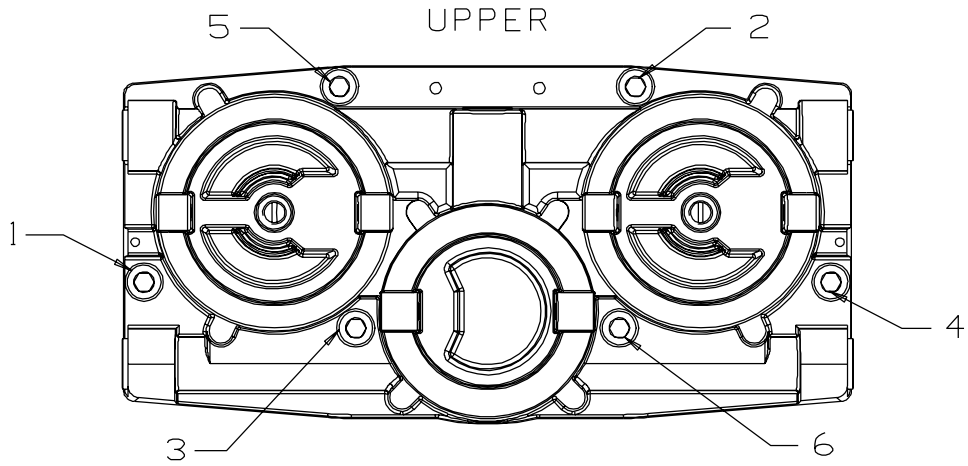
1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove the top cover.
3. Remove filter twist insert.(Anti-clockwise)
4. Unscrew filter.

A3.5b FILTER REASSEMBLY

1. Reassemble in reverse order.



A3.6a TORQUE SEQUENCE DETAIL

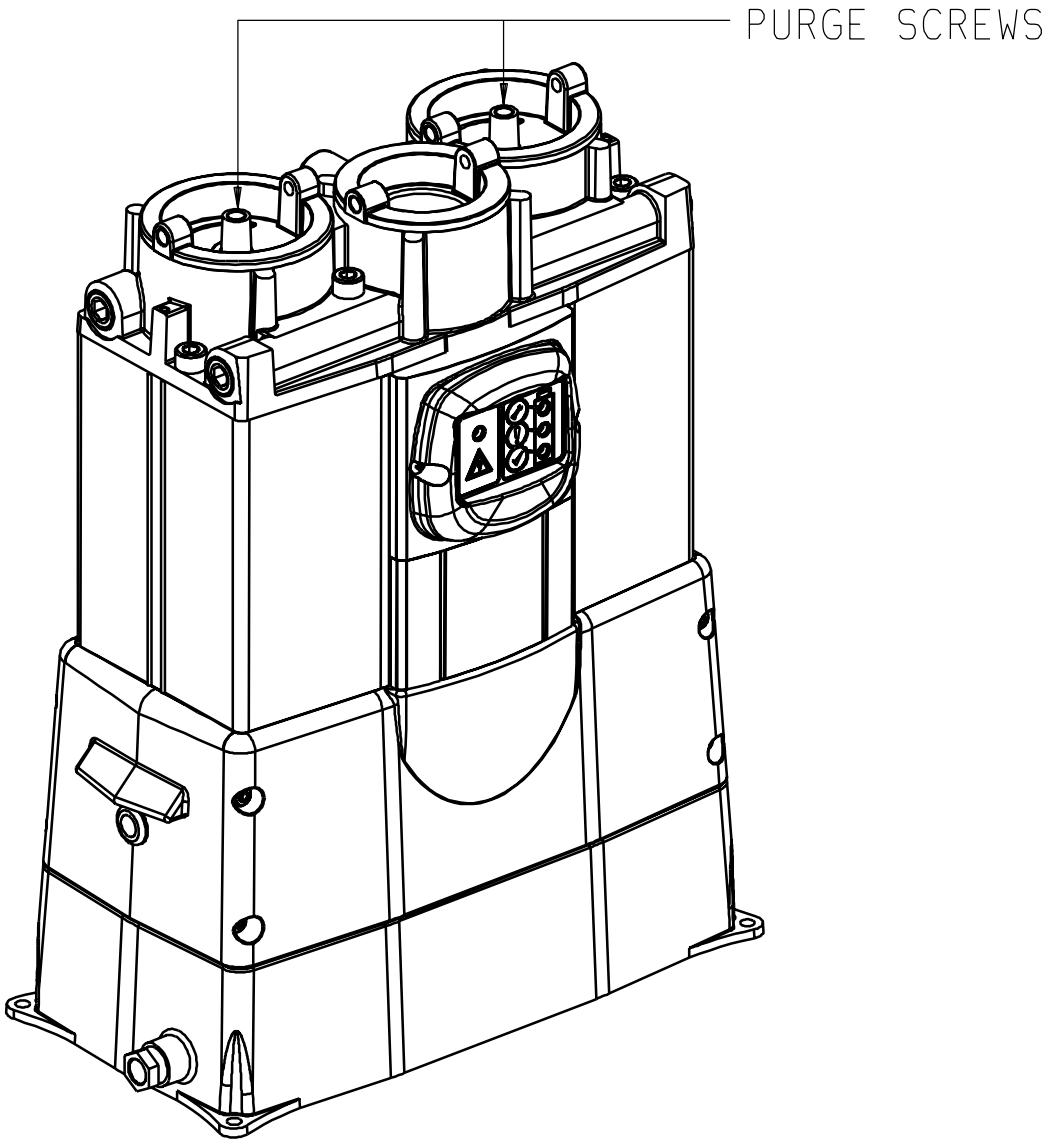


SECTION A4

PURGE SETTINGS

A4.1 Purge Screw Replacement

A4.2 Purge Adjustment

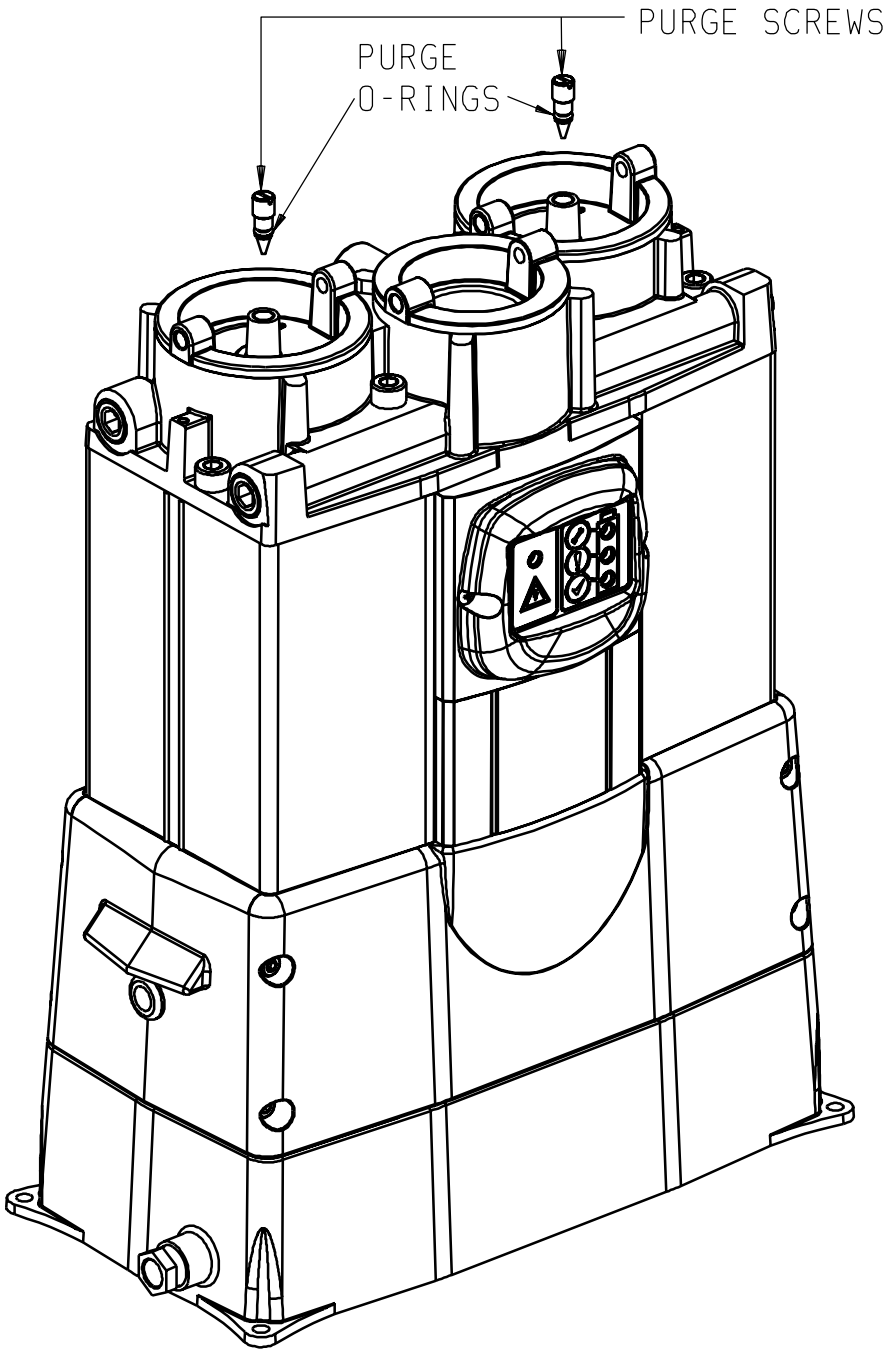


A4.1a Purge Screw Replacement.

1. Ensure dryer is fully depressurised and electrically isolated
2. Remove top cover.
3. Unscrew purge plugs.

A4.1b Purge Screw Reassembly

1. Reassemble ensuring purge is set correctly. See A4.2



A4.2 PURGE FLOW

DRYER MODEL	MUST BE SET AT MINIMUM SYSTEM PRESSURE	
	SCFM	L/MIN
DAS 1	0.6	17.0
DAS 2	1.0	28.32
DAS 3	1.6	45.31
DAS 4	2.0	56.64
DAS 5	2.6	73.63
DAS 6	3.0	84.95
DAS 7	4.0	113.30

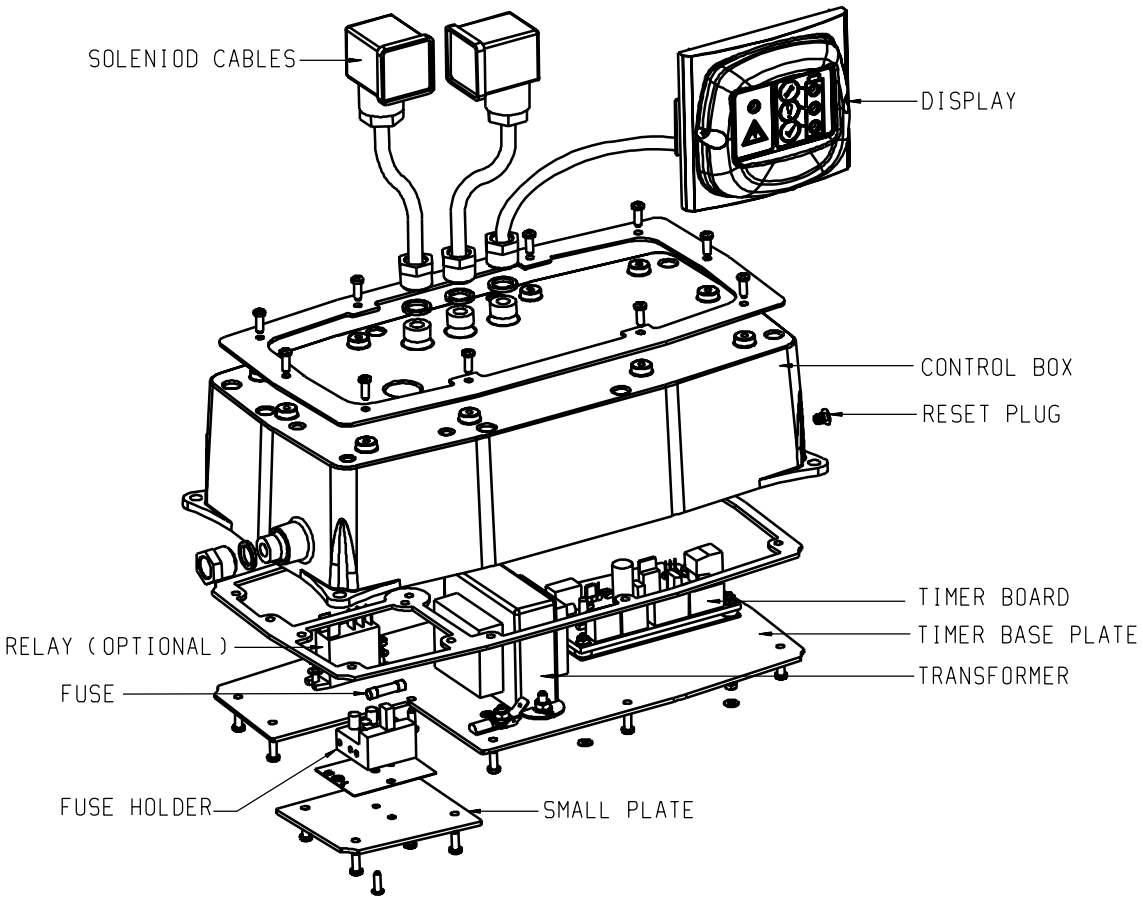
PURGE SETTING

1. Gain access to the lower head by removing the front valve cover.
2. Replace silencer 1/4"bsp fitting with a suitable fitting to connect a flow meter
3. Allow dryer to cycle at its minimum pressure. (Note dryer to be in upright position)
4. Do not connect the flow meter until straight after a blow down has occured.
5. After a blow down connect flow meter and adjust one of the purge screws. Once set to required flow remove meter and allow blow down of other chamber.
6. Set flow to this chamber.
7. remove fitting and reconnect silencer.
8. Reassemble valve covers.

SECTION A5

CONTROL BOX ASSEMBLY

A5.1 EXPLODED VIEW OF CONTROL BOX



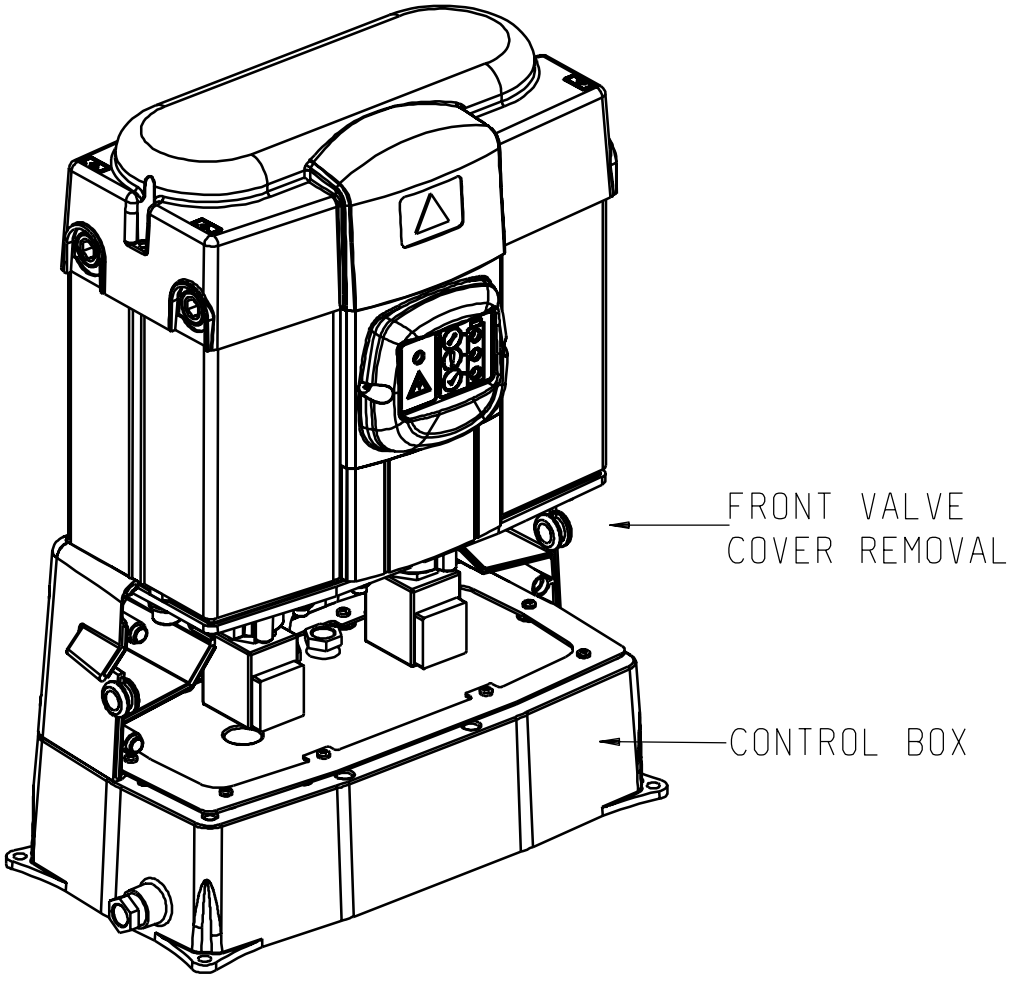
A5.2 CONTROL BOX REMOVAL

A5.2a CONTROLBOX REMOVAL

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box

A5.2b CONTROL BOX REASSEMBLE

1. Reassemble as above in reverse order

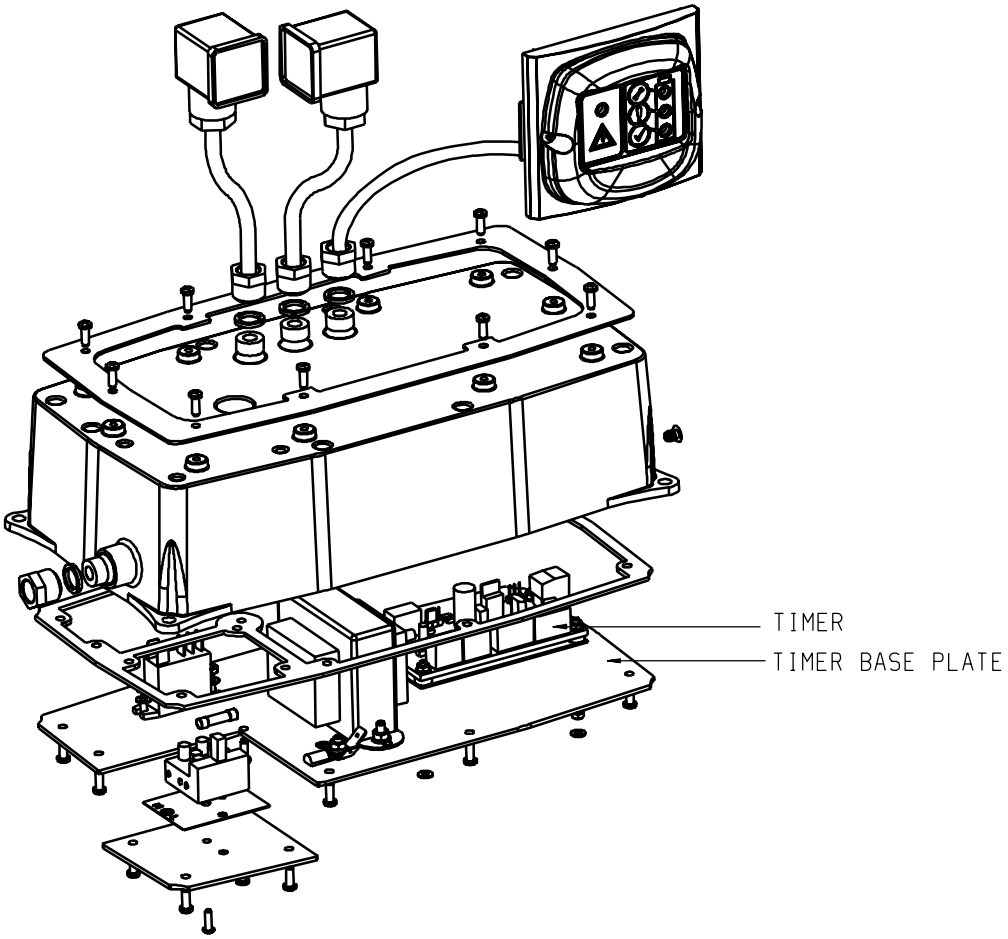


A5.3aTIMER REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 9 screws from timer base plate and open control box.
10. Remove all leads from timer board.
11. Remove 4 nuts from timer board.
12. Remove timer board.

A5.3b TIMER REASSEMBLE

1. Reassemble as above in reverse order. 4 nuts to be torqued to (0.5Nm) (0.4lbf.ft) Pozi retaining screws to be torqued to (0.5Nm) (0.4lbf.ft) See wiring schematic for cable positions.

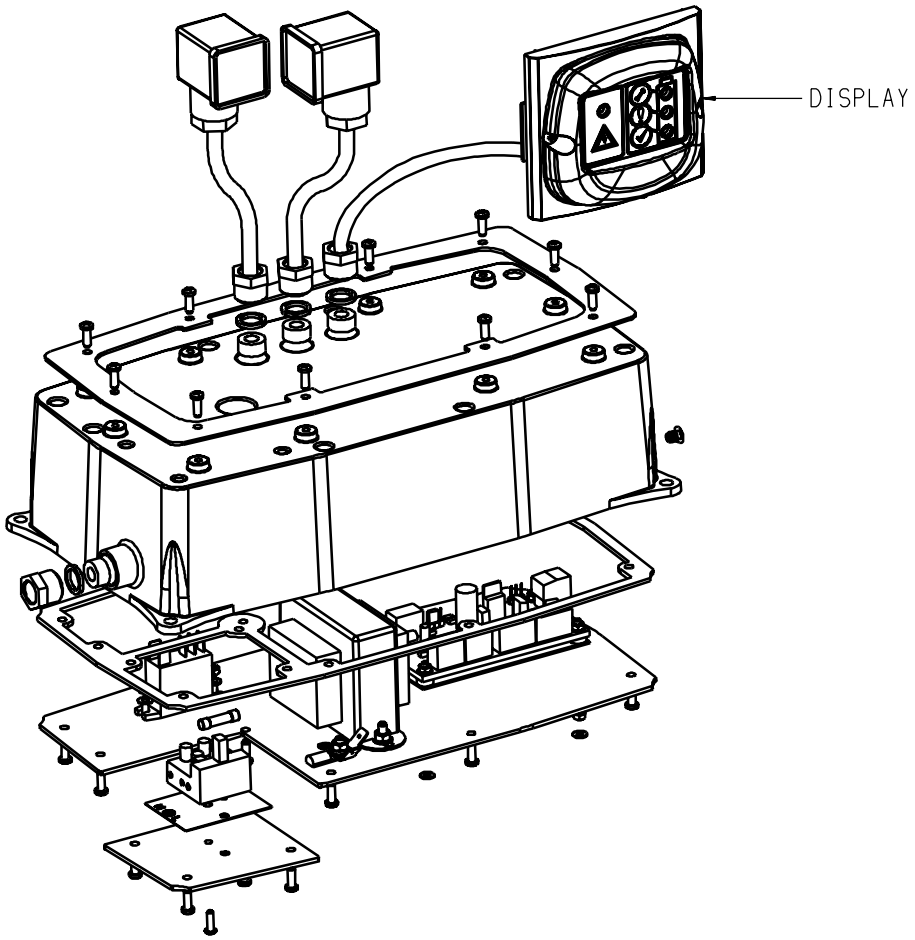


A5.4a DISPLAY REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 9 screws from timer base plate, and open control box.
10. Disconnect display leads from timer board.
11. Loosen cable gland nut and remove display.

A5.4b DISPLAY REASSEMBLE

1. Reassemble as above in reverse order.See wiring schematic for cable positions. Pozi retaining screws to be torqued to (0.5Nm) (0.4lbf.ft)

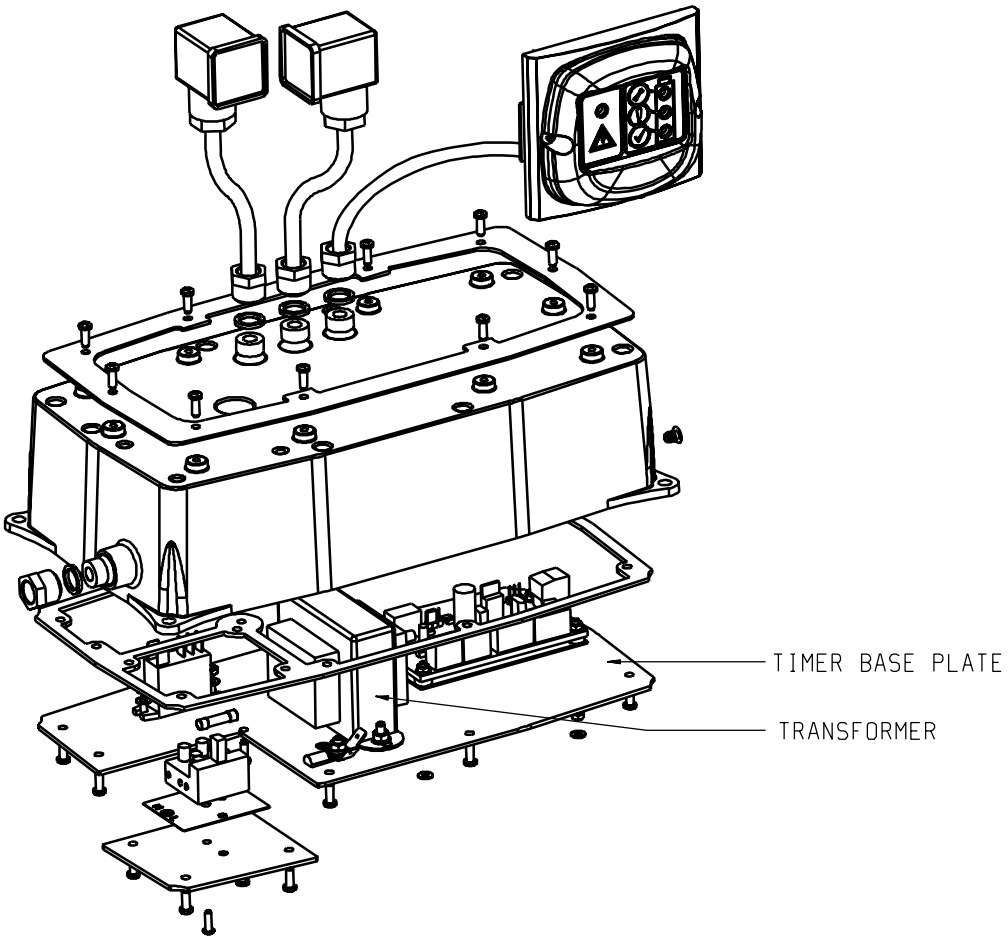


A5.5a TRANSFORMER REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 9 screws from timer base plate, and 4 from the fuse access area.
10. Remove transformer leads from the fuse block and timer board.
11. Remove the transformer holding down nuts and remove transformer.

A5.5b TRANSFORMER REASSEMBLE

1. Reassemble as above in reverse order.See wiring schematic for cable positions.
   Pozi retaining screws into control box to be torqued to (0.5Nm) (0.4lbf.ft)
   Torque setting for 2 off transformer nuts (2Nm) (1lbf.ft)

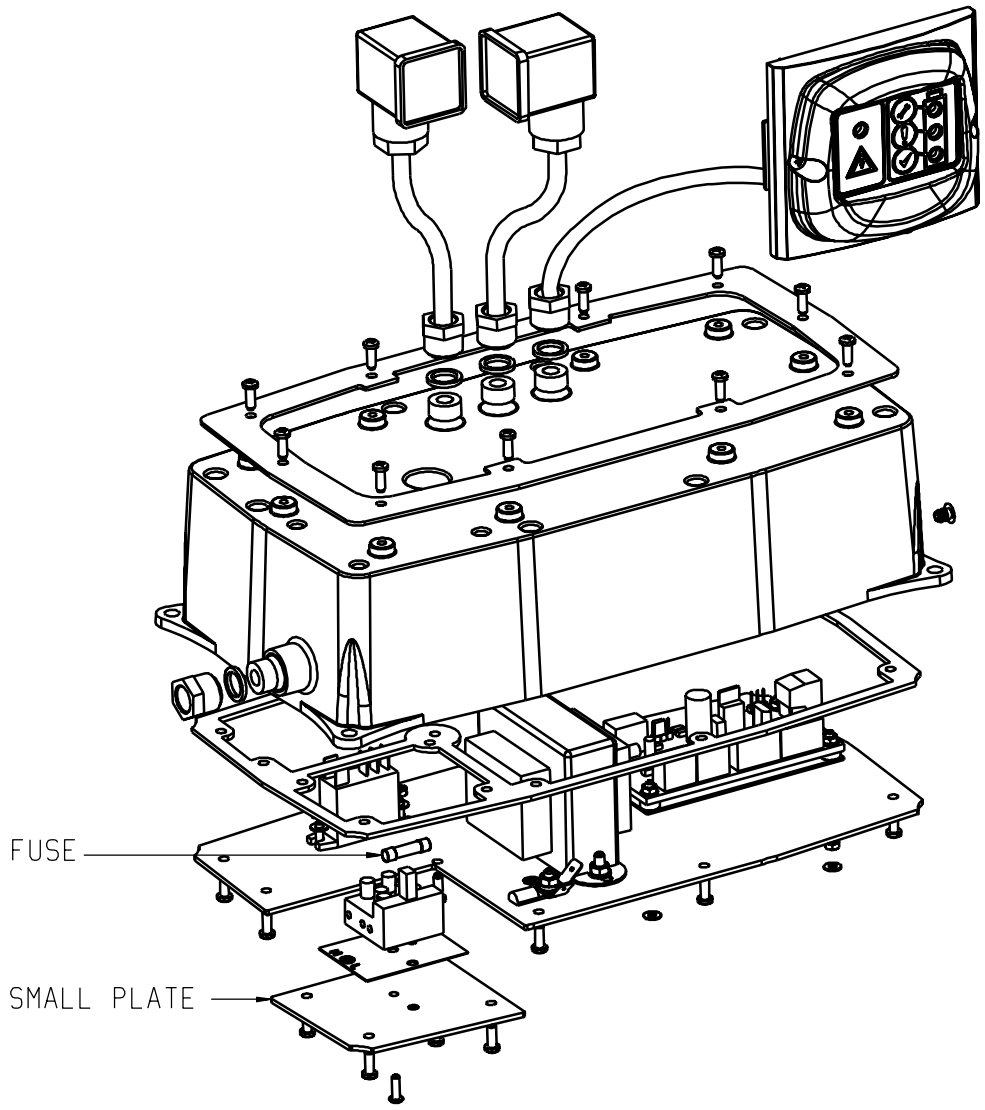


A5.6a FUSE REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Lie dryer down.
4. Remove 4 screws on small plate.
5. Remove fuse from fuse holder.

A5.6b FUSE REASSEMBLE

1. Reassemble as above in reverse order.
   Pozi retaining screws into to be torqued to (0.5Nm) (0.4lbf.ft)

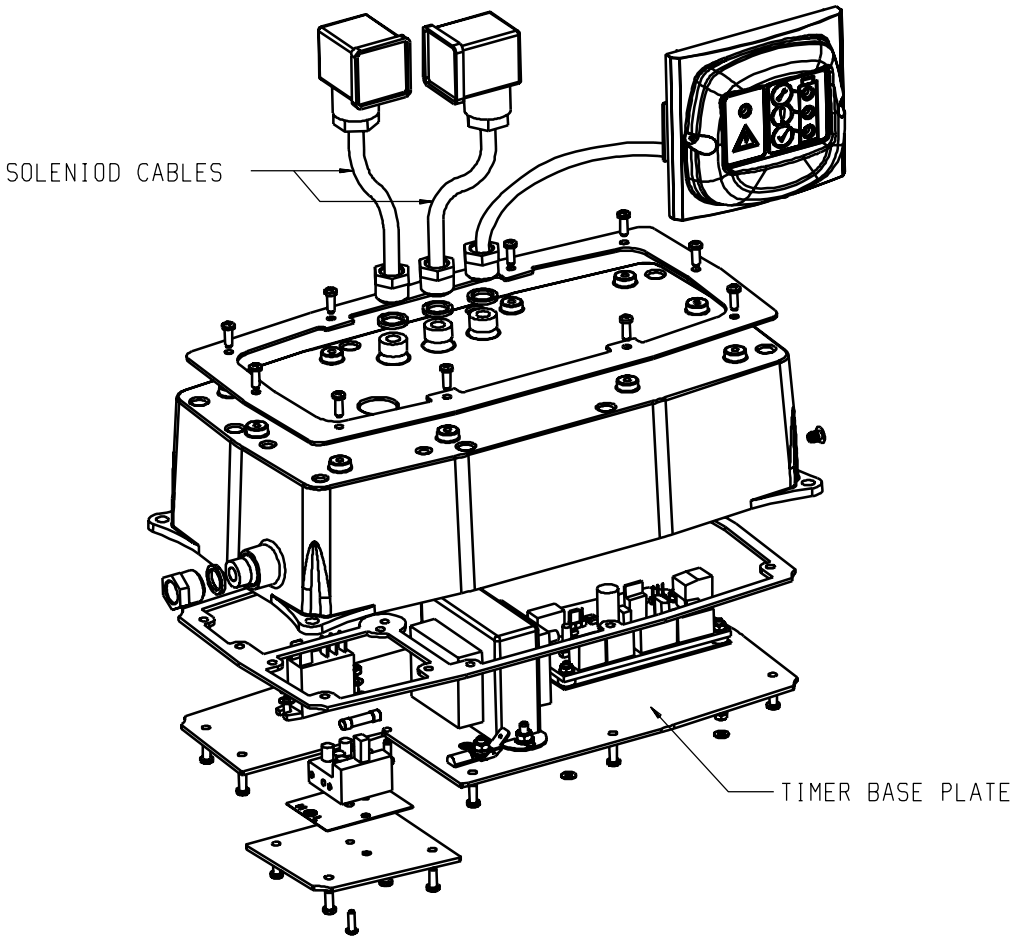


A5.7a SOLENOID CABLE REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 9 screws from timer base plate, and open control box.
10. Disconnect soleniod cables from timer board.
11. Loosen cable gland nuts and remove solenoid cables

A5.7b SOLENOID CABLE REASSEMBLE

1. Reassemble as above in reverse order.See wiring schematic for cable positions. Pozi retaining screws to be torqued to (0.5Nm) (0.4lbf.ft)

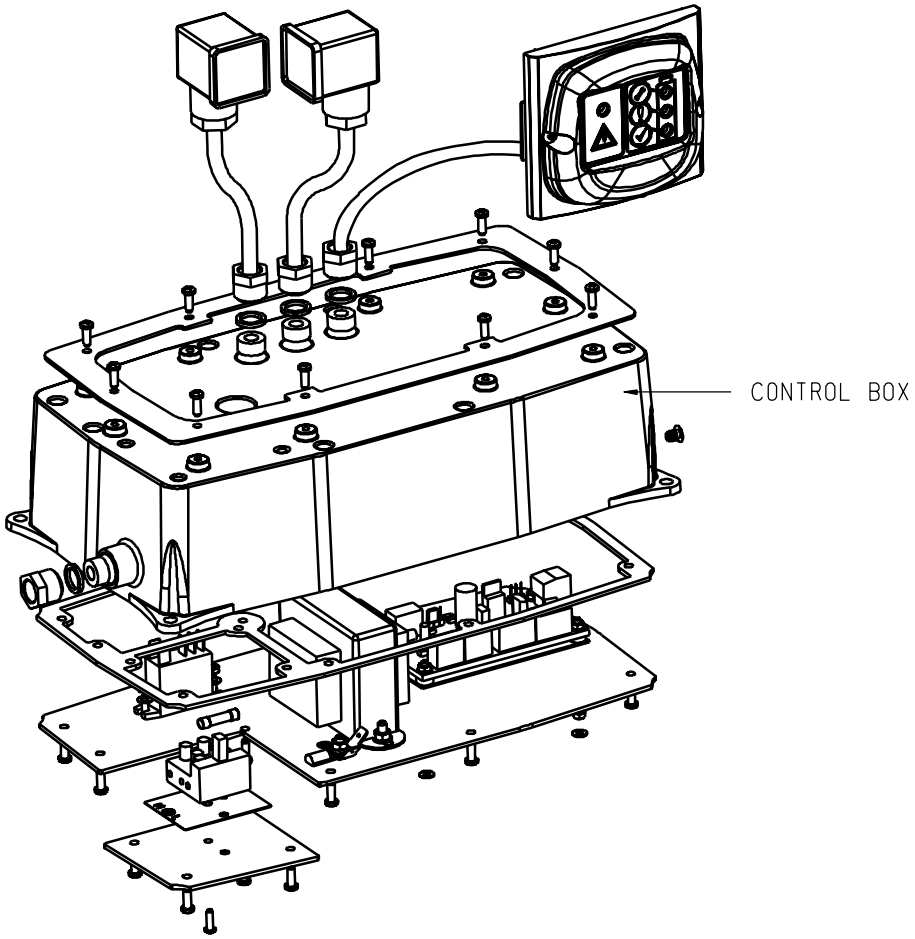


A5.8a CONTROL BOX REPLACEMENT

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 9 screws from timer base plate and 4 from fuse access area.
10. Disconnect soleniod cables and display at the timer board, loosen cable gland nuts
11. Disconnect lead from fuse holder to transformer and mains lead
12 .Remove control box.

A5.8b CONTROL BOX REASSEMBLE

1. Reassemble as above in reverse order.See wiring schematic for cable positions. Pozi retaining screws into control box to be torqued to (0.5Nm) (0.4lbf.ft)

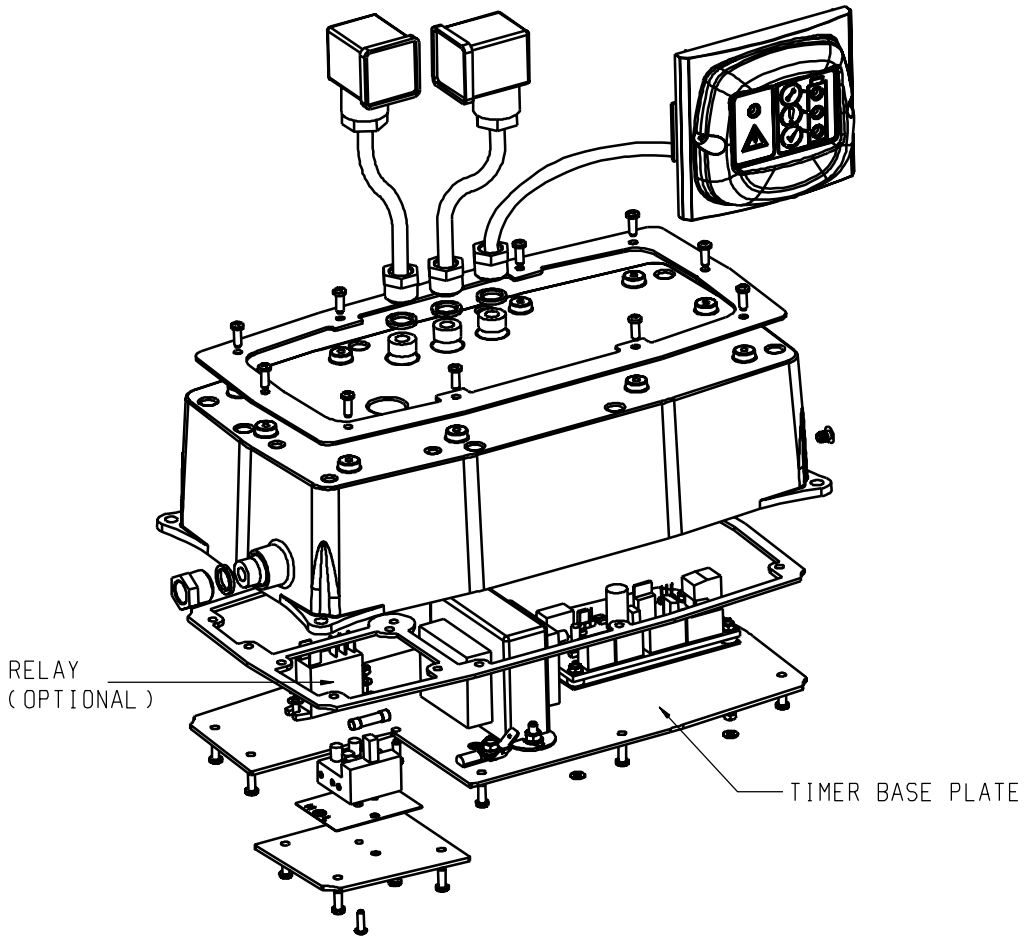


A5.9a RELAY REPLACEMENT (OPTIONAL)

1. Ensure dryer is fully depressurised and electrically isolated.
2. Remove pipework.
3. Remove front trim.
4. Lie dryer down.
5. Remove valve cover.
6. Disconnect solenoid valve plugs.
7. Loosen display
8. Remove control box
9. Remove 9 screws from timer base plate.
10. Remove cables from relay.
11. Loosen relay holding down nuts and remove relay.

A5.9b RELAY REASSEMBLE

1. Reassemble as above in reverse order.See wiring schematic for cable positions.
   Torque setting on relay nuts (2Nm) (1.5lbf.ft)
   Pozi retaining screws to be torqued to (0.5Nm) (0.4lbf.ft)



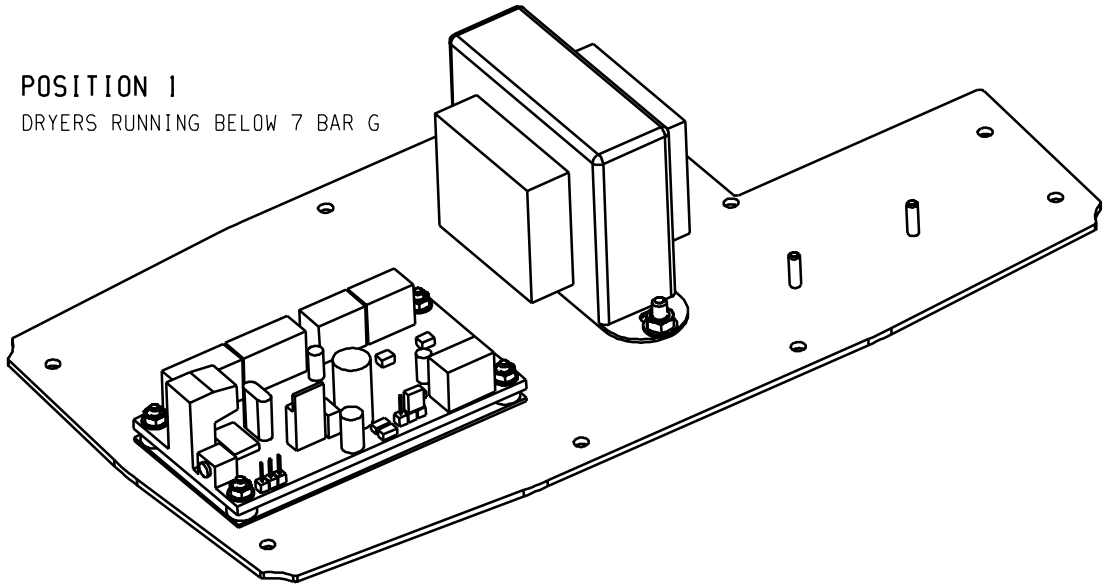
A5.10a TIMER CONFIGURATION

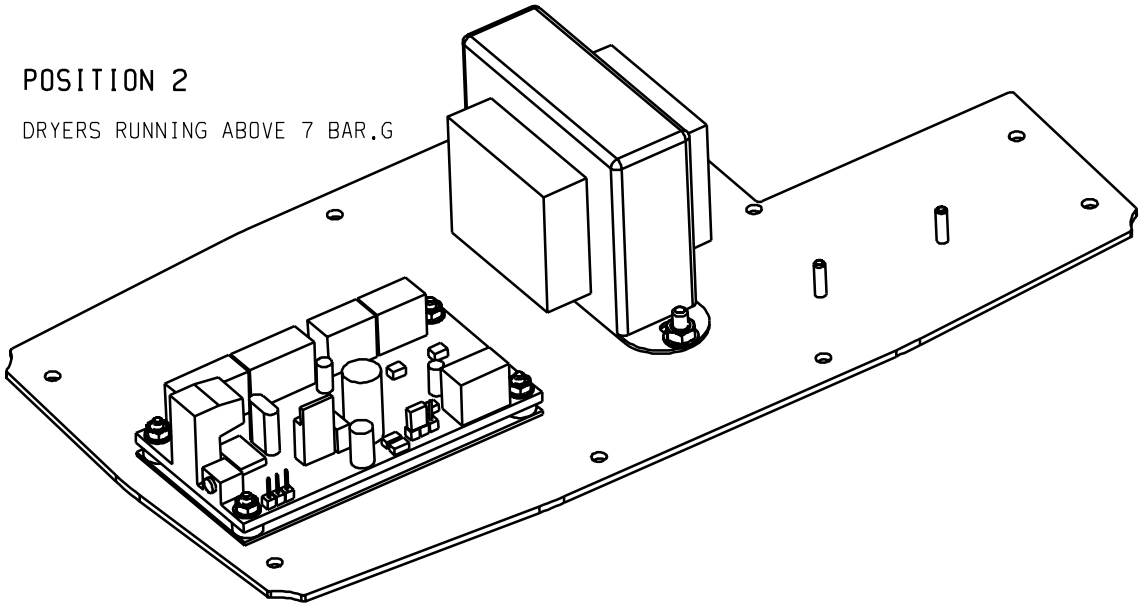
Dryer running with a pressure in excess of 7 bar (Timer Configuration)
The Dryer is factory set to 6 bar min operating condition. If the minimum pressure is in excess of 7 bar the jumper in side the control box requires altering

1. Remove control box
2. Remove 9 screws from timer base plate to give access to timer board.
3. Move jumper to position 2.

A5.10b TIMER CONFIGURATION REASSEMBLY

1. Reassemble as above in reverse order.





A5.11 SERVICE RESET SEQUENCE

Once the dryer has been serviced and all pipework connected, the timer board requires resetting.
To reset the timer do not switch on the air.
Remove the reset button on the control box, Insert a small terminal driver in to the hole and depress and hold the reset button.
Switch the mains power on holding the reset button for 5 seconds.
Remove ternminal driver and switch off mains.
Wait 5 seconds before commencing start up sequence of dryer and replace reset button.

SECTION A6

RECOMMENDED TOOL LIST

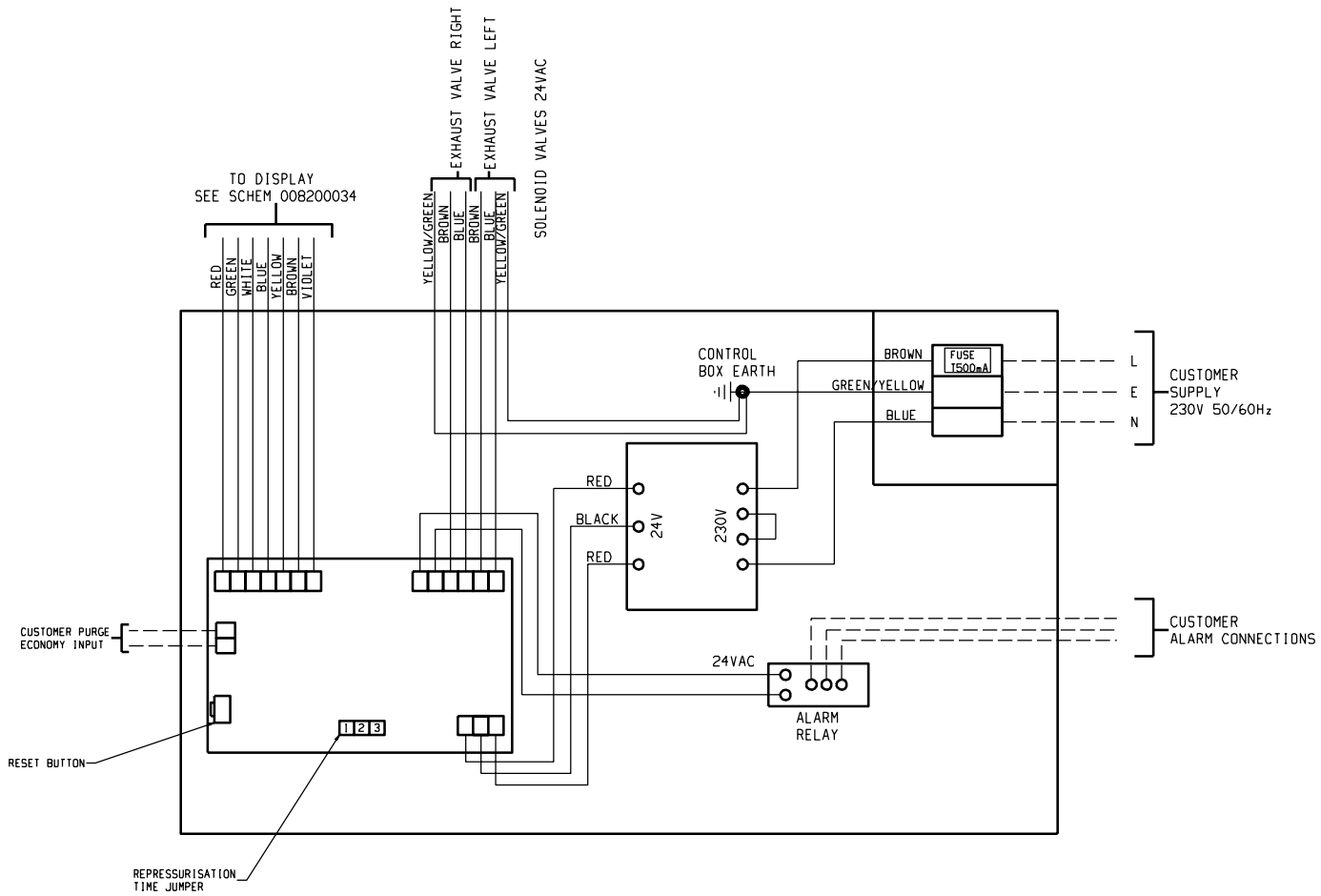
Recommended Tool List

SOCKETS. 5.5mm 7.0mm and 16.0mm
ALLEN KEY SOCKETS. 6mm and 8mm
FLAT BLADE SCEWDRIVER
POZI SCREWDRIVER
FLAT BLADE TERMINAL DRIVE
WIRE STRIPPERS
PLIERS
TORQE DRIVER (0.6NM)
TORQUE WRENCH (5-40Nm)
TOGGLE BAR 5dia x 300mm long
ALLEN KEY 4mm
ALLEN KEY 3/16"
SPANNER 17mm
SPANNER 14mm
6" ADJUSTABLE SPANNER
GREASE
PTFE TAPE
DRAIN BOWL SPANNER
TUBE CUTTERS

SECTION A7

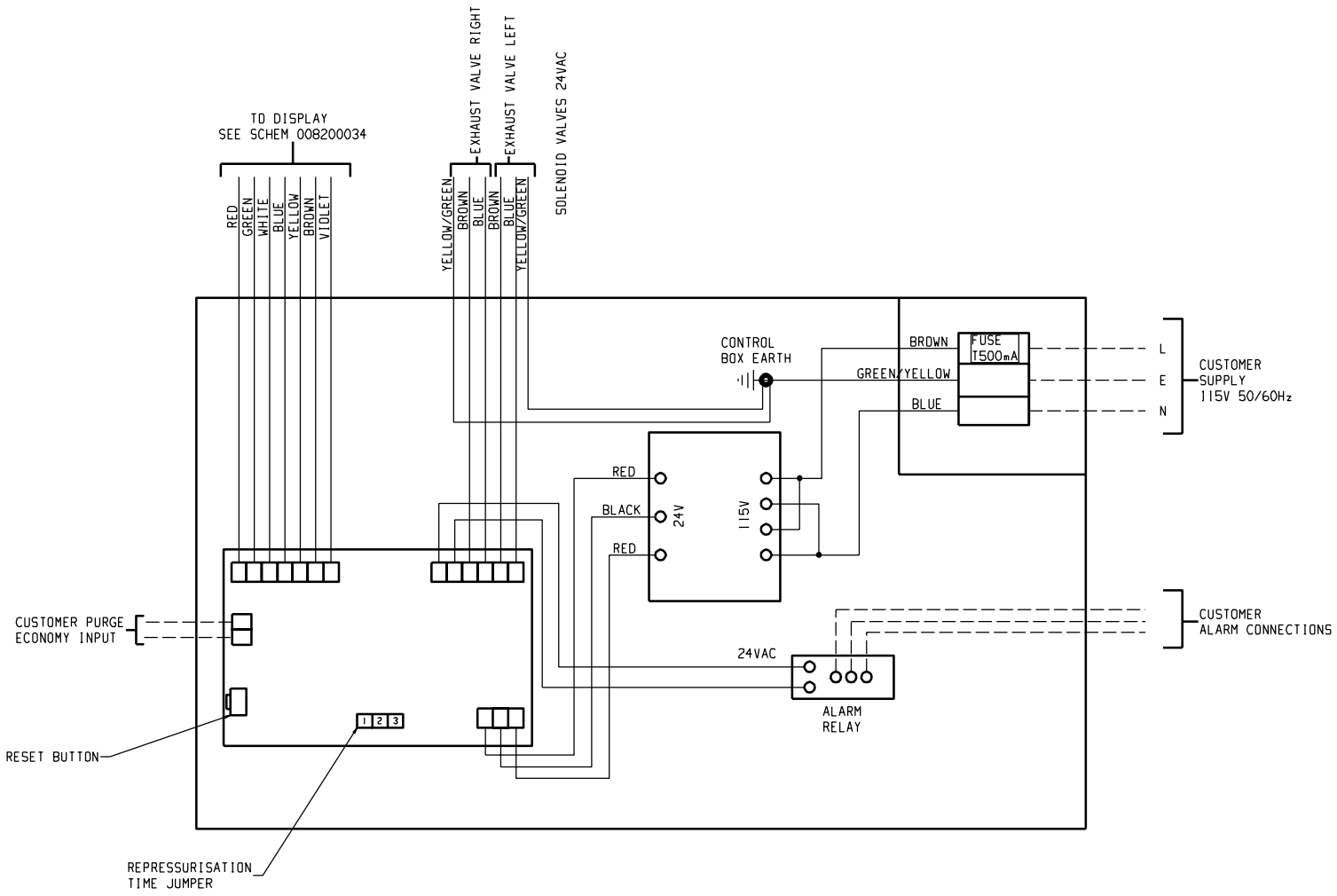
SCHEMATIC DIAGRAMS.

A7.1 - Wiring Schematic (230V)



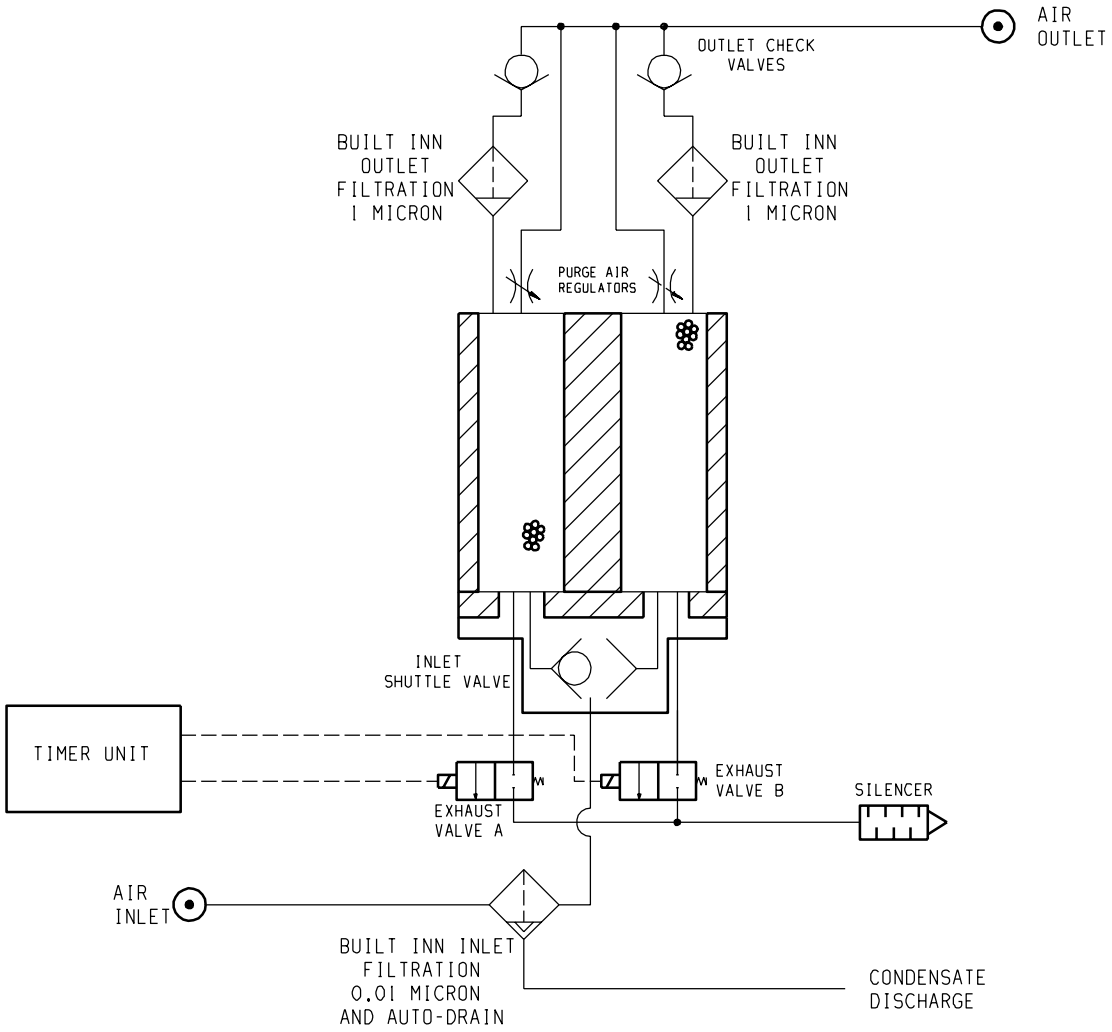
008200035.0

A7.2 - Wiring Schematic (115V)



008200067.0

A7.3 - Piping and Instrumentation Schematic



008200037.2