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HORNE SHOWER PANEL
WITH TIMED FLOW CONTROL FOR SURFACE MOUNTING
INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

Note: The S110A, S407A and their variants, do not contain an integral thermostatic shower or mixing valve to regulate the temperature of the delivered warm water. These shower panels are designed to be served individually, or in a group, from a suitably sized Horne group thermostatic mixing valve such as the Horne 15 or Horne 20. Help to determine the optimal size of TMV for any specific group shower installation is available using our Valve Sizing Tool at **https://b.link/WhatSizeTMV**

Supply Water Pressure Requirements

The minimum water pressure required to achieve a spray at the shower head is a dynamic head of 5m (8 psi, 0.5 bar).

Note that the dynamic head is the pressure measured with the water running.

Supply Water Temperature Requirements

The water supply to the S110A should be premixed through a thermostatic mixing valve (TMV) upstream of the shower. This mixing valve should be set such that the water discharging from the shower outlet does not exceed 41°C. Information regarding the optimal size of valve for a group showering application is available using our Valve Sizing Tool at **https://b.link/WhatSizeTMV**

Temperature Adjustment

The mixed water temperature is determined by setting of the upstream thermostatic mixing valve (TMV) and *cannot be adjusted by the user*.

Water and Energy Conservation

Horne shower panels are factory-fitted with flow regulators at the shower outlet; to reduce the flow rate, and conserve water and energy. The drawings at the end of this document provide information for accessing the flow restrictors/regulators for removal or replacement.

Alternative Water Entry

These instructions feature shower panels with top entry water supply via copper pipe. For some installations that may be better suited to rear-entry water supply. panels with soft-PEX flexible hose are also available. More specific instructions for installation of these panels is given at the end of the installation section.

Adjustment of Flow Duration

The push-button, Timed Flow Control Cartridge supplied with all variants has an adjustable duration, and is factory set to 45 seconds (maximum duration). This can be readjusted using the supplied Hex Key through the hole in the front of the Push-button. See Drawing PA713 on pages 10-11.

Also note that ligature-resistant models (e.g. S110ALR, S110BLR) are also available, which feature a ligature -resistant shroud around the push-button timed flow control.

SECTION 1: INSTALLATION

The surface mounting enclosure is supplied with fixings to attach it to a wall. Consideration should be given to the type of wall fittings required, however, as different substrates will require different fittings. It is the responsibility of the installer to ensure that the fixings used are appropriate for the wall substrate.

This panel features a single mixed water inlet pipe at top left of the enclosure (A variants) or a single braided stainless-steel hose inlet through its rear (B variants).

Recommended Mounting Heights – guidance only

When considering what height to mount the shower panel, local user needs should be accounted for (e.g. height of users, size of shower enclosure, etc).

Model	Height for support screw
S110 and S407	2.0m above finished floor level
S406 (swivel-head, see p9)	2.1m above finished floor level

Installation Procedure

1) Mark the position for the panel

Identify a suitable position for the pre-plumbed enclosure and mark a spot for the support screw on the wall, on the intended centreline of the shower panel, at the height indicated in the table above. See Figure 1.

2) Install the Support Screw

Drill a hole in the wall and insert a wall plug and screw (7mm hole if using the supplied plug), leaving the head of the screw protruding approximately 12mm from the wall. Note that a stainless-steel screw is supplied for this (corrosion resistant).

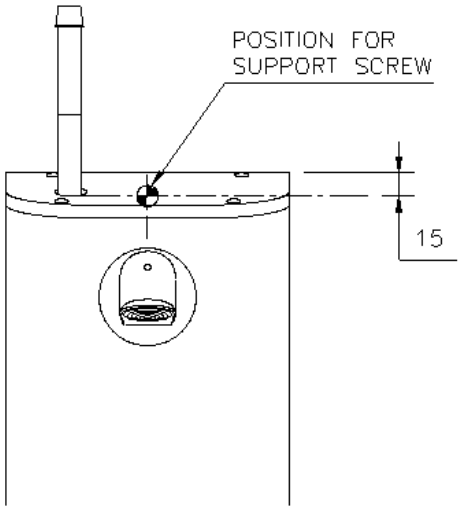


Figure 1.

3) Hang the Enclosure on the Support Screw

Release the top cover of the pre-plumbed enclosure by removing the four Torx T20 screws. Hang the pre-plumbed enclosure on the support screw by the larger hole in the middle of the back strap and let this take the weight of the enclosure, see Figure 2.

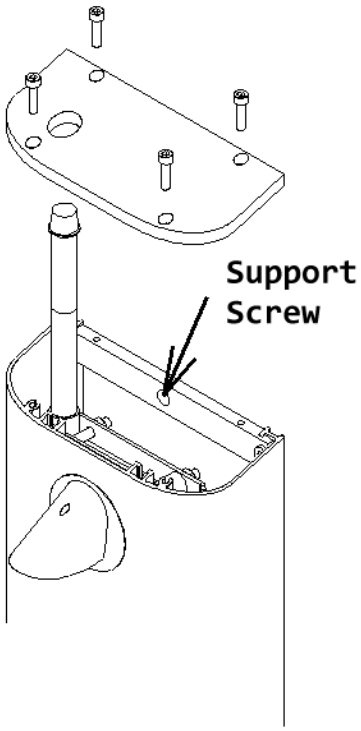


Figure 2.

4) Mark Out the 4 Support Holes.

Ensure that the Enclosure is hanging true and then mark out the positions for the 2 upper support holes. Remove the bottom cover of the pre-plumbed Enclosure and mark out the 2 lower support holes, see Figure 3.

5) Drill Support Holes.

Carefully remove the pre-plumbed Enclosure from the temporary support screw and, being careful not to scratch the casing or its top and bottom covers, lay it down where it will not be damaged. Drill 4 x support holes (7mm for the supplied plugs) to mount the panel.

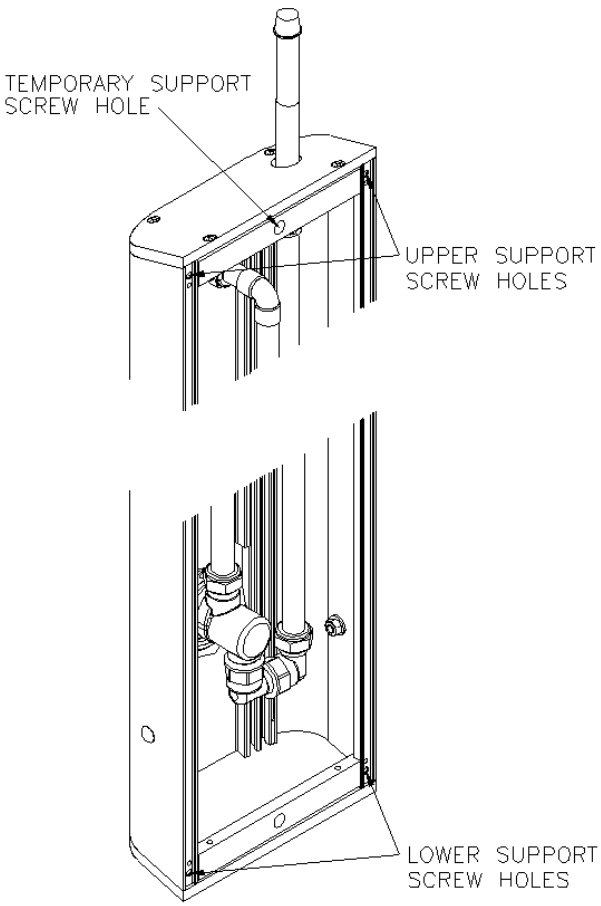


Figure 3

6) Attach the Enclosure to the Wall

Carefully re-hang the pre-plumbed enclosure on the temporary screw. Put the 4 supplied screw bushes in the mounting holes in the panel and then attach the panel firmly to the wall using 4 stainless-steel screws, Figure 4.

A bead of silicon mastic can be used, if required, to cover any gaps behind the panel on uneven walls. Do not mastic the lower End Cap to the wall.

N.B. It is important to use the supplied screw bushes.

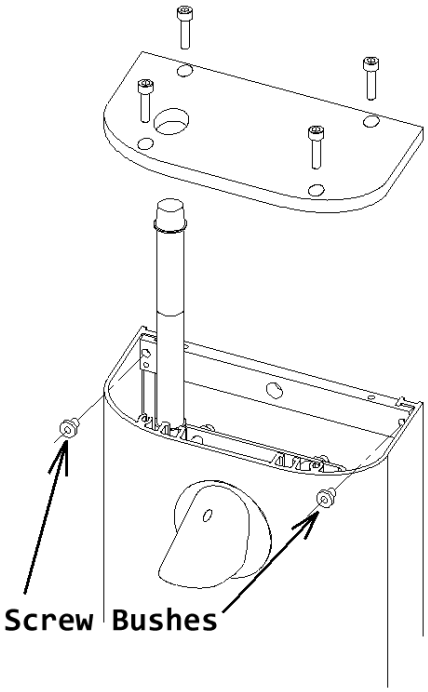


Figure 4.

7) Connect the Supply Pipe

N.B. Ensure that the top cover of the pre-plumbed enclosure is replaced prior to connecting up the supply pipe.

The fitting of an isolation valve is required as close as practicable to the water supply inlet of the shower panel.

Connect the MIXED water supply to the inlet at the top of the panel.

DO NOT OPEN THE WATER SUPPLY AT THIS STAGE AS IT HAS NOT BEEN FLUSHED OUT TO REMOVE DEBRIS IN THE PIPEWORK. SUCH DEBRIS CAN DAMAGE THE UPSTREAM MIXING VALVE MECHANISM AND THE SHOWER TIMED FLOW CONTROL CARTRIDGE

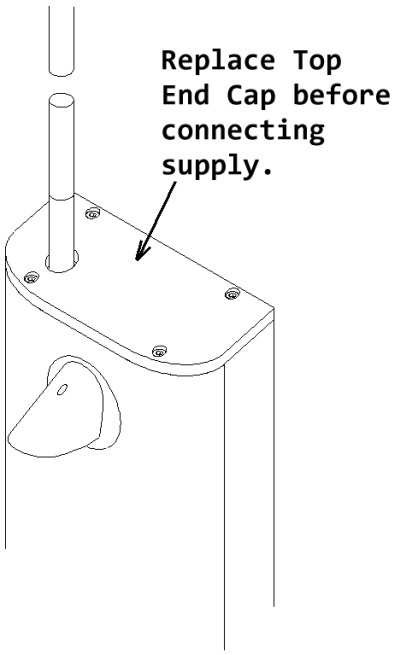


Figure 5.

8) Flush the Pipework

Flush out the supply pipework in accordance with Water Supply (Water Fittings) regulations 1999 and Water Byelaws 2014 (Scotland).

Where a Horne thermostatic mixing valve is installed to deliver pre-mixed warm water to the shower panel, use the relevant sized Horne Flushing Kit to flush the water supplies, at high velocity, upstream of the mixing valve, as illustrated in Figure 6. Where another manufacturer's mixing valve is installed, please refer to their relevant TMV instruction manual.

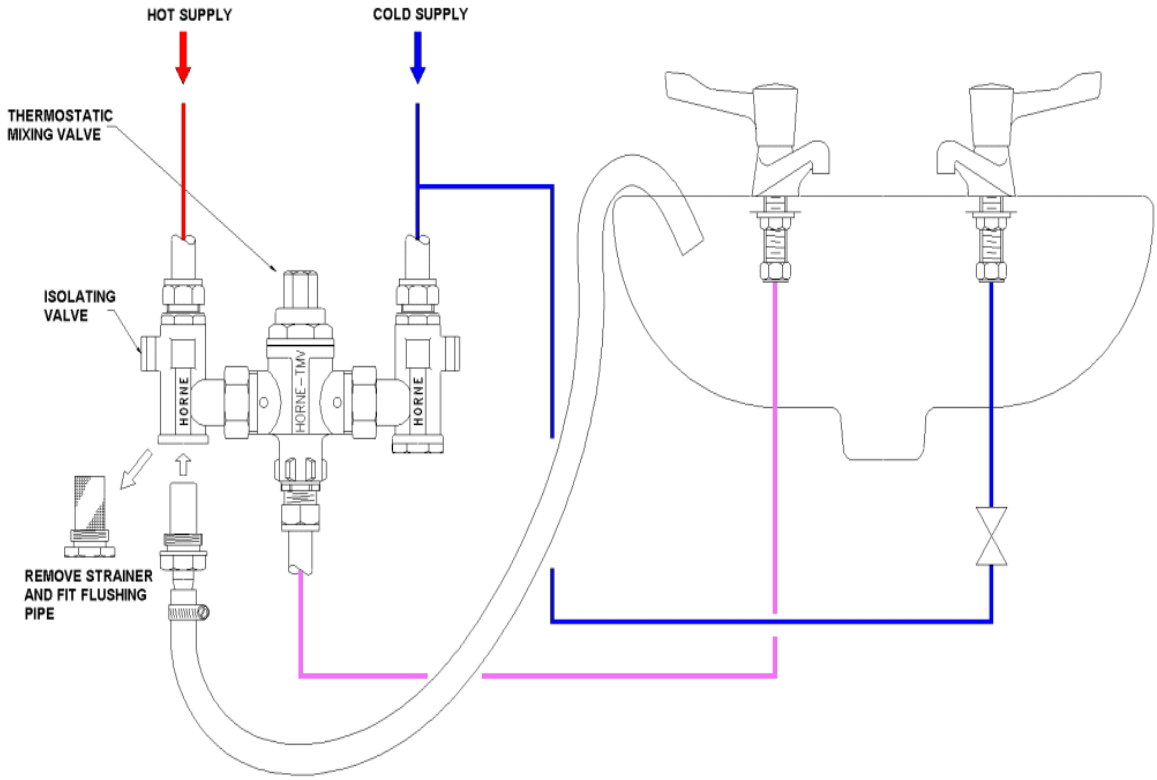


Figure 6.

CLOSE TMV ISOLATION VALVE, REMOVE STRAINER CAP AND FIT FLUSHING KIT. REOPEN FLOW VIA FLUSHING PIPE UNTIL WATER RUNS CLEAR. REPEAT FOR COLD SUPPLY

NOTE THAT IF THE SYSTEM IS NOT TO BE COMMISSIONED IMMEDIATELY AND/OR THERE IS ANY DANGER OF FREEZING, THE PIPES AND (UPSTREAM) VALVE MUST BE DRAINED TO AVOID DAMAGE.

9) Test for Leaks in Pipework

Open the mixed water supply and check for any leaks at the supply pipe joint. Water should not flow from the spray head as the push button timed flow control has not been pressed. Make good any leaks found.

The upstream supply mixing valve should be commissioned as per its manufacturer's instructions and the temperature recorded at the shower head.

Supplementary Installation Instructions for B, Rear Entry, Variants.

Horne shower panels are available in versions with a concealed, rear-entry flexible braided stainless-steel inlet hose rather than top entry copper pipework. The hose used is UK Water Regulation 4 Approved SOFT-PEX (cross-linked polyethylene). It is not EPDM lined. These shower versions have Product References with the suffix **B**, e.g. **S110B**.

The main difference, from an installation point of view, is that the mixed water supply may have to be connected before the pre-plumbed enclosure is attached to the wall. Accordingly, Point 7 on the attached installation instructions (Connect the supply Pipe) should be performed before Point 6 (Attach the Pre-plumbed Enclosure to the wall) unless alternative access is available to the connection, e.g. via an access panel.

Care should be taken to ensure that the weight of the pre-plumbed enclosure is taken by the mounting screws and NOT by the hose.

SECTION 2: COMMISSIONING

ENSURE THE PIPEWORK FEEDING THE UPSTREAM MIXING VALVE HAS BEEN FLUSHED OUT PRIOR TO COMMISSIONING THE SHOWER

Run the shower by pressing the push button timed flow control. The shower will run for approx. 45 seconds before the flow stops and the button needs to be pushed again. Allow the shower to run until the water temperature has stabilised, pressing the push button as required to maintain the flow.

Record the water temperature at the shower head. If the temperature is in excess of 41°C the setting of the upstream thermostatic mixing valve should be adjusted. Please refer to the TMV manufacturer's commissioning instructions for resetting the TMV temperature and performing a cold water failure (thermal shut-off) test.

NB: Ensure that the Flow Control push button remains pressed during the thermal shut-off test.

SECTION 3: MAINTENANCE

Note that maintenance of the upstream Thermostatic Mixing Valve (TMV) supplying the shower panel is essential in order to ensure the continued safety of those using the shower panel. Any problems relating to water temperature are a function of the TMV, and will not be a problem of the shower itself.

Timed Flow Control

The Timed Flow Control (TFC) Cartridge supplied with all variants has an adjustable duration, and is factory set to 45 seconds (maximum duration). This is adjusted using the supplied Hex Key through the hole in the front of the push button – see drawing PA713 below.

If the duration of the timed flow control begins to shorten or lengthen significantly then this could be a sign that the cartridge requires cleaning. Over a period (or if the water supplies have not been flushed through adequately on a new installation), sediment and other particulate matter can get trapped in the Timed Flow Control and disrupt the timing. The Timed Flow Control (TFC) cartridge can be removed for cleaning or replacement (spare parts are not available) as per drawing PA713.

NB: For **-LR models**, which include a conical shroud around the timed flow control button, the cartridge can only be removed by removing the shower panel from the wall. To do this, first isolate the water supply upstream of the panel, then purge the water from the internal pipework by pressing in and holding the TFC button until the flow stops. Disconnect the shower supply pipes from top entry pipework. Remove the top and bottom cover caps with a TORX T20 driver and unscrew the four wall fixings. Lift the Enclosure from its support screw to remove it, being sure to support its weight if rear-entry supply hoses are still connected behind. Using a 3mm hex key loosen the grub screws and locknut holding the LR shroud in place, being careful to catch the shroud as it disengages to prevent scratching the chromium plating. Now unscrew the TFC cartridge as per drawing PA713.

External Cleaning

Note that if the timed-flow control, enclosure and shower accessories require cleaning, then care must be taken not to scratch them in the process. Wash off any surface dust with the shower spray before cleaning with a soft cloth and soapy water. Never use cleaners containing abrasives or solvents as they may damage the chromium plating.

TO REMOVE FLOW REGULATOR

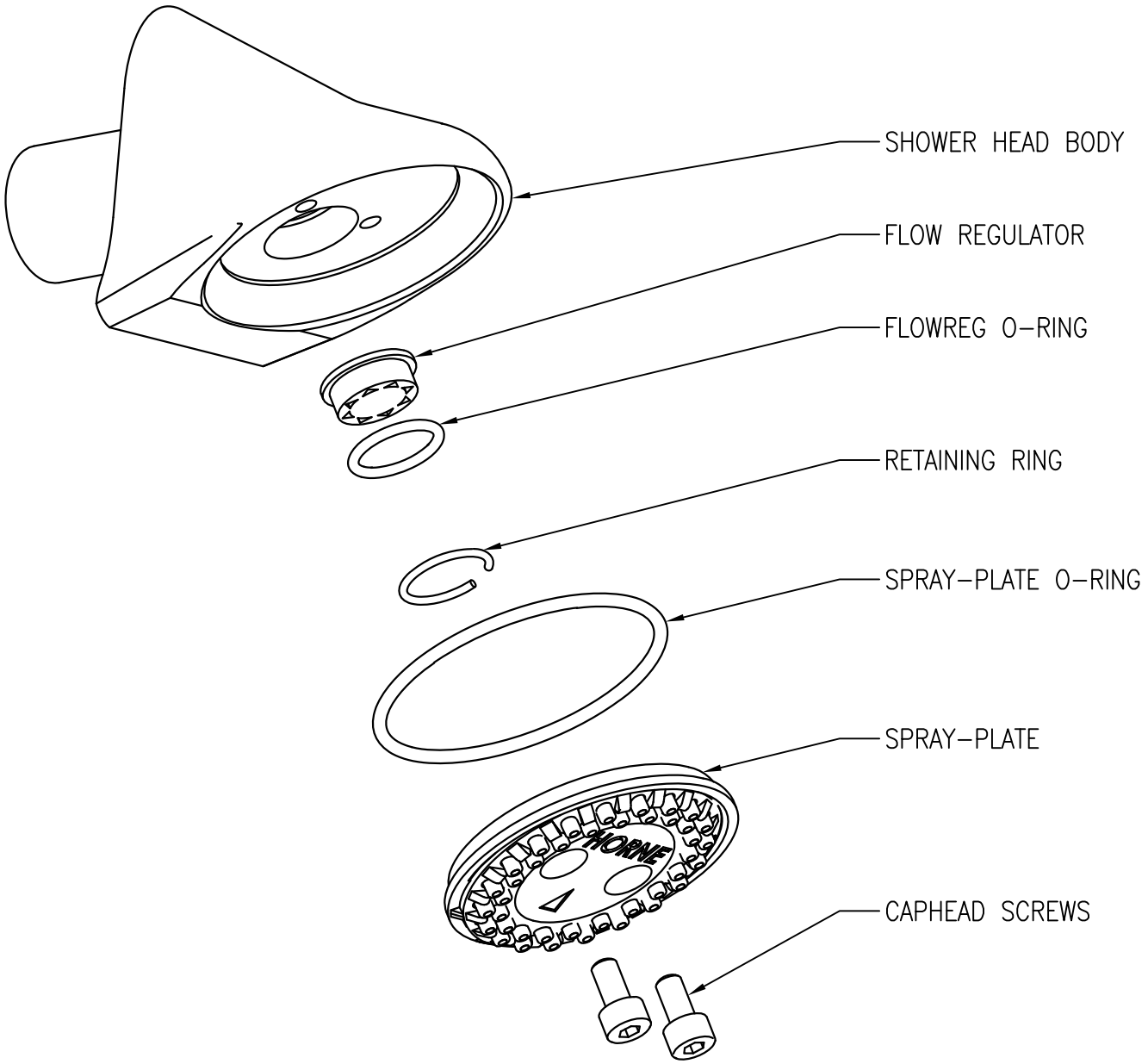
1> REMOVE THE 2 CAPHEAD SCREWS (USING 3MM HEX KEY)
2> PRISE SPRAYPLATE OUT WITH A BLADE OR SIMILAR
3> REMOVE THE RETAINING RING
4> REMOVE FLOW REGULATOR WITH ITS O–RING

STEPS <3> AND <4> CAN BE DONE BY TURNING ON THE WATER SUPPLY AND CATCHING THE PARTS IN A BUCKET

TO RE–FIT FLOW REGULATOR

1> INSERT FLOWREG INTO HOLE, FLANGED SIDE UP (FACING THE WATER SUPPLY)
2> PUSH O–RING INTO GAP AROUND FLOWREG
3> INSERT RETAINING RING
4> FIT THE LARGE O–RING ONTO THE SPRAYPLATE AND FIT THE SPRAYPLATE
5> RE–FIT THE CAPHEAD SCREWS

NOTE THAT THE SPRAY PLATE CAN BE FITTED IN 2 DIFFERENT ORIENTATIONS TO ALLOW GREATER OR LESSER 'THROW' OF THE WATER.



MATERIAL : MATERIAL SPECIFICATION

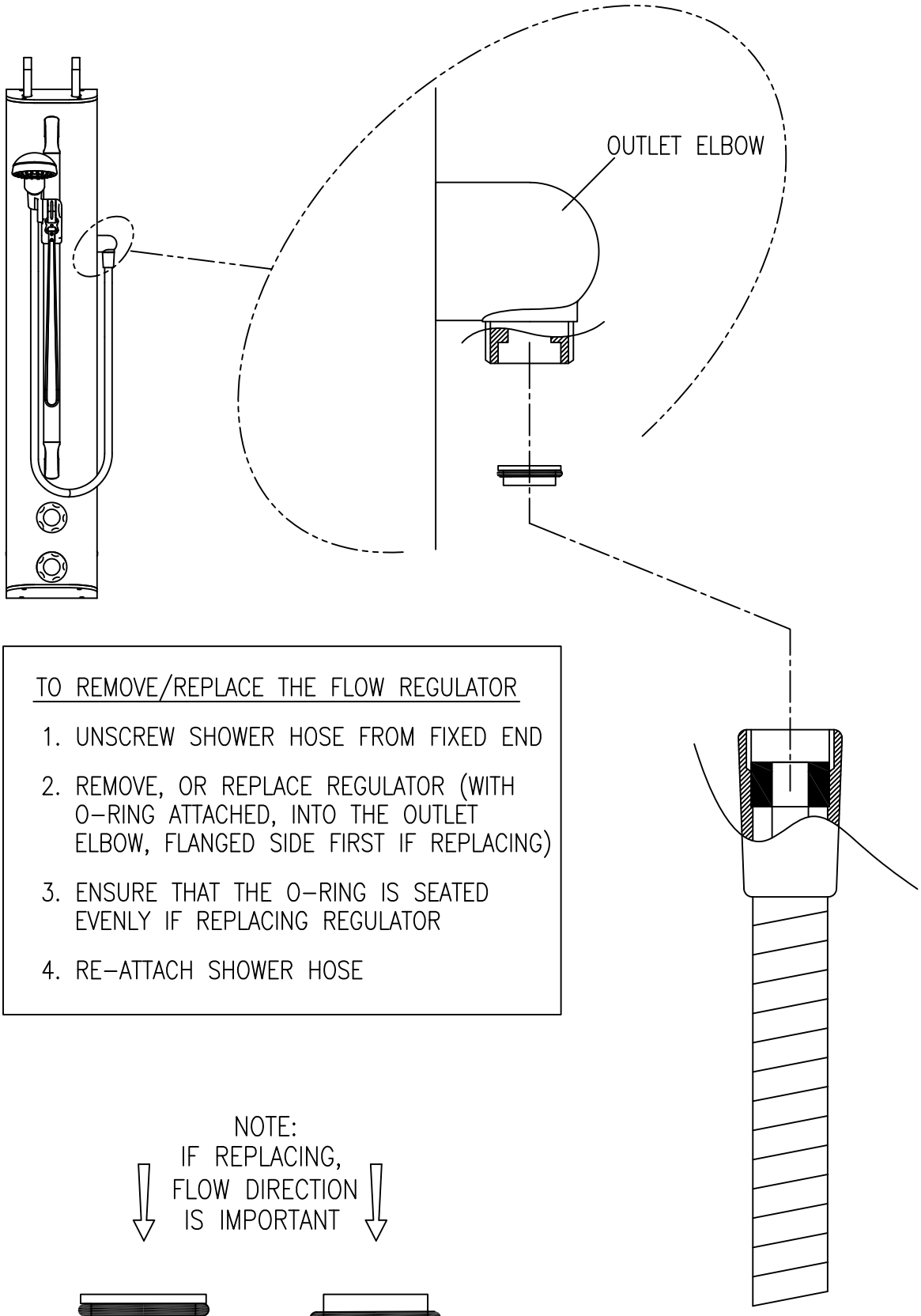
HORNE ENGINEERING LTD.
JOHNSTONE
RENFREWSHIRE

PART :
REMOVAL / REPLACEMENT OF FLOW REGULATOR (VANDAL RESISTANT HEAD)

PRODUCT :
HORNE SHOWER PANELS

SCALE	DO NOT SCALE
DRAWN	MJ (18/11/2013)
CHECKED	
ISSUE	2

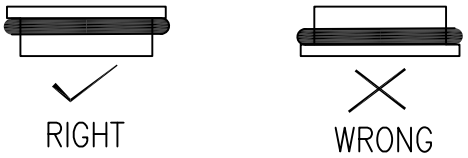
DR'G. No. 10393



TO REMOVE/REPLACE THE FLOW REGULATOR

1. UNSCREW SHOWER HOSE FROM FIXED END
2. REMOVE, OR REPLACE REGULATOR (WITH O–RING ATTACHED, INTO THE OUTLET ELBOW, FLANGED SIDE FIRST IF REPLACING)
3. ENSURE THAT THE O–RING IS SEATED EVENLY IF REPLACING REGULATOR
4. RE–ATTACH SHOWER HOSE

NOTE:
IF REPLACING,
FLOW DIRECTION
IS IMPORTANT



	MATERIAL : N/A			HORNE ENGINEERING LTD. JOHNSTONE RENFREWSHIRE
PART : FLOW REGULATOR REMOVAL/REPLACEMENT INSTRUCTIONS	PRODUCT : HORNE SHOWERS ALL HANDSET MODELS	SCALE	DO NOT SCALE	
		DRAWN	GDP 7/12/05	
		CHECKED		
		ISSUE	3	DR'G. No. 9302B

TO REMOVE FLOW–REGULATOR

1. UNSCREW SPRAY–HEAD FROM ANGLED TUBE

2. REMOVE FLOW REGULATOR AND WASHER

3. REPLACE WASHER

4. REFIT SPRAY–HEAD

TO FIT FLOW–REGULATOR

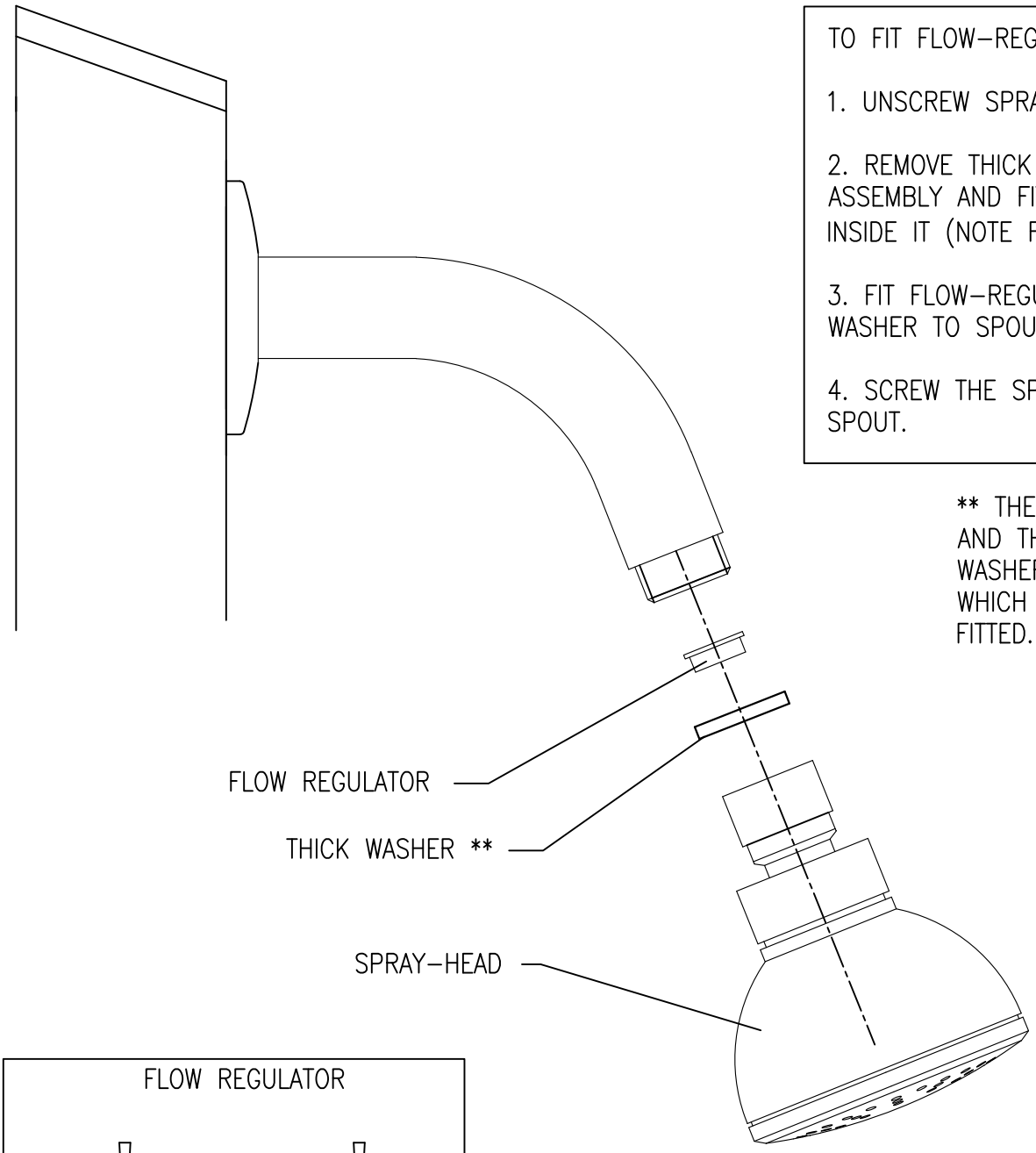
1. UNSCREW SPRAY–HEAD

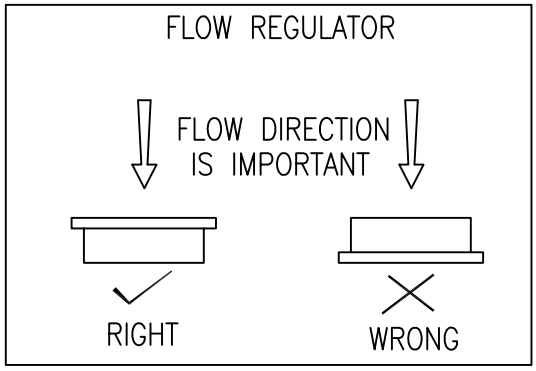
2. REMOVE THICK WASHER FROM ASSEMBLY AND FIT FLOW–REGULATOR INSIDE IT (NOTE FLOW DIRECTION)

3. FIT FLOW–REGULATOR AND THICK WASHER TO SPOUT

4. SCREW THE SPRAY–HEAD TO THE SPOUT.

** THE EXACT NUMBER AND THICKNESS OF WASHERS WILL DEPEND ON WHICH SWIVEL–HEAD IS FITTED.





MATERIAL : N/A

HORNE ENGINEERING LTD.
JOHNSTONE
RENFREWSHIRE

PART :
REMOVAL/REPLACEMENT OF FLOW REGULATOR

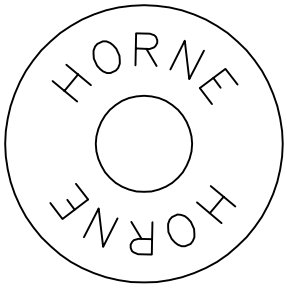
PRODUCT :
TSV1–106A/AB

SCALE	DO NOT SCALE
DRAWN	MJ (1/12/2020)
CHECKED	
ISSUE	5

DR'G. No. 9301B

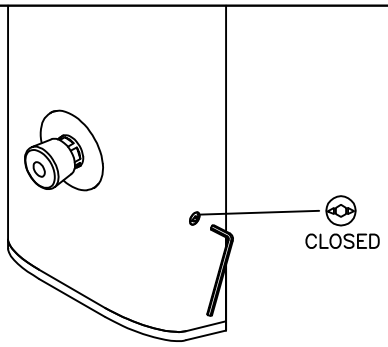
HORNE ENGINEERING LTD, RANKINE STREET, JOHNSTONE. PA5 8BD
INSTRUCTION SHEET FOR ADJUSTING FLOW DURATION CUP
TSV1 TIMED FLOW CONTROL UNITS BUILT AFTER APRIL 2010

1



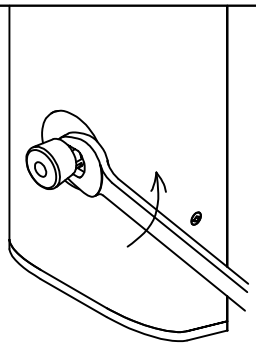
THIS INSTRUCTION SHEET IS ONLY APPLICABLE TO TSV1 PRODUCTS BUILT AFTER APRIL 2010. THESE CAN BE IDENTIFIED BY THE PUSHBUTTON BEING MARKED WITH "HORNE" AS SHOWN ABOVE. IF THE PUSHBUTTON DOES NOT HAVE THIS MARKING THEN THESE INSTRUCTIONS DO NOT APPLY.

2



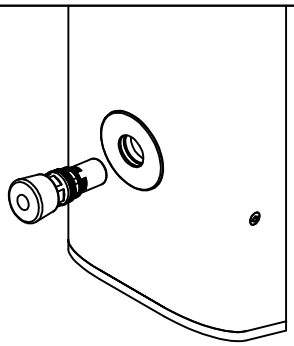
USE A HEX KEY TO ISOLATE THE HOT AND COLD WATER SUPPLIES AT THE LOW LEVEL SERVICING VALVES. THE INDICATOR ARROWS ON THE SERVICING VALVES WILL POINT TO THE FRONT AND THE BACK OF THE PANEL WHEN THE SUPPLIES ARE ISOLATED.

3



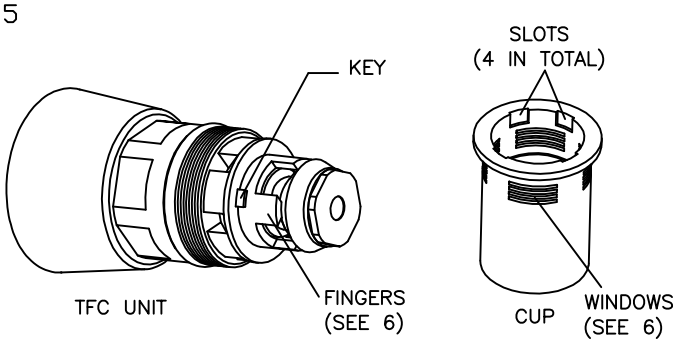
PRESS THE PUSHBUTTON TO RELEASE ANY TRAPPED PRESSURE. USING A SLIM JAW 24mm SPANNER ON THE HEX UNDER THE PUSHBUTTON, UNSCREW THE TIMED FLOW CONTROL CARTRIDGE.

4



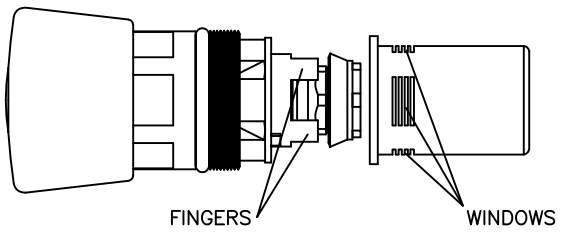
REMOVE THE TIMED FLOW CONTROL CARTRIDGE. BE CAREFUL NOT TO DROP THIS PRECISION PIECE OF EQUIPMENT. DO NOT PUT IT DOWN ANYWHERE WHERE IT COULD BECOME CONTAMINATED WITH DIRT OR DUST, NOR WHERE IT COULD BE STOOD ON.

5



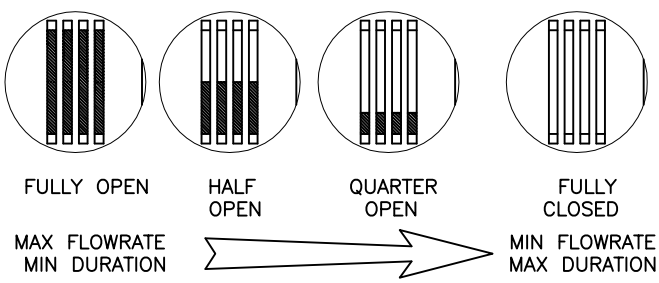
THE TFC UNIT HAS A KEY WHICH FITS INTO ONE OF 4 SLOTS IN THE CUP. THERE ARE THEREFORE 4 ORIENTATIONS OF THE TFC IN THE CUP. EACH OF THESE GENERATES A DIFFERENT FLOWRATE AND FLOW DURATION.

6



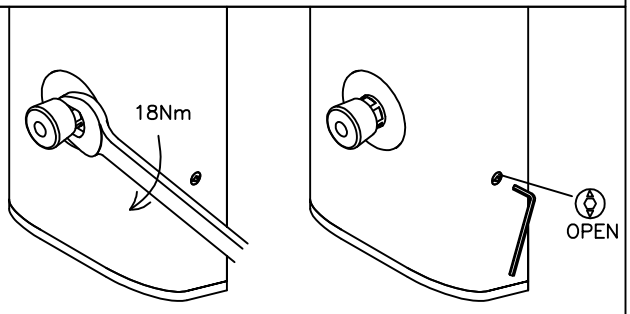
THE TFC UNIT HAS FINGERS WHICH BLANK OFF "WINDOWS" IN THE CUP WHEN ASSEMBLED. THE 4 ORIENTATIONS CORRESPOND TO 4 DIFFERENT DEGREES OF BLANKING. SECTION 7 SHOWS CLOSE–UP VIEWS OF THE WINDOWS AND EXPLAINS THE SIGNIFICANCE OF EACH ORIENTATION

7



THE TFC UNIT HAS FINGERS WHICH COVER THE "WINDOWS" IN THE SIDE WALL OF THE CUP. SELECT THE MOST APPROPRIATE COMBINATION AS ABOVE, AND PUSH THE CUP ONTO THE CARTRIDGE.
NOTE: THE PRODUCT IS SHIPPED IN THE FULLY OPEN CONDITION.

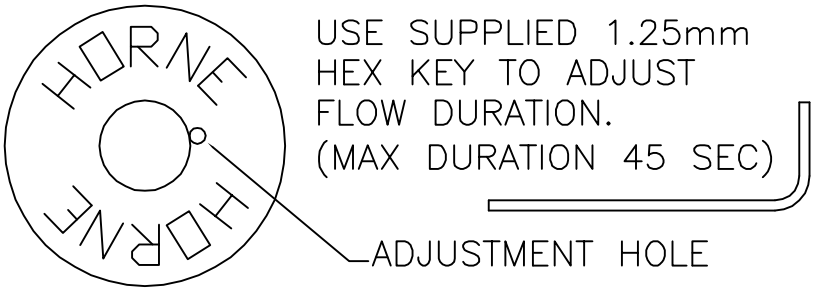
8



PUT THE CARTRIDGE BACK INTO THE SHOWER PANEL.
TIGHTEN DOWN TO 18Nm.
OPEN THE HOT AND COLD SUPPLIES AT THE SERVICING VALVES. THE INDICATOR ARROWS ON THE SERVICING VALVES WILL POINT UP AND DOWN WHEN THE SUPPLIES ARE OPEN.
PUSH THE BUTTON TO PURGE THE AIR AND THEN VERIFY THE PERFORMANCE OF THE CARTRIDGE.

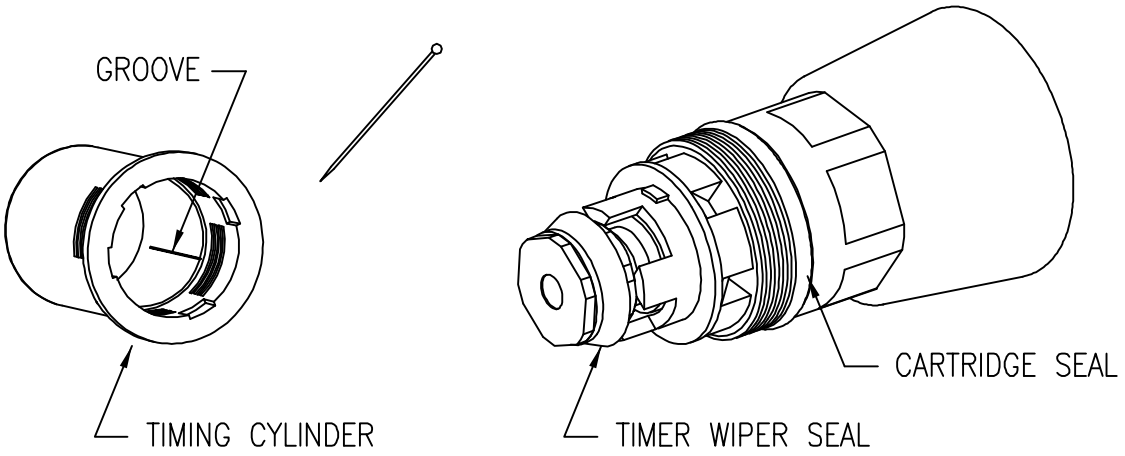
HORNE ENGINEERING LTD, RANKINE STREET, JOHNSTONE. PA5 8BD
INSTRUCTION SHEET FOR ADJUSTING FLOW DURATION CUP
TSV1 TIMED FLOW CONTROL UNITS BUILT AFTER APRIL 2010

ADJUSTING FLOW DURATION THROUGH PISTON TRAVEL



TURN CLOCKWISE TO REDUCE DURATION,
ANTI-CLOCKWISE TO INCREASE DURATION.
(ADJUSTS THE MAXIMUM PISTON STROKE).

CLEANING THE TIMED FLOW-CONTROL CARTRIDGE



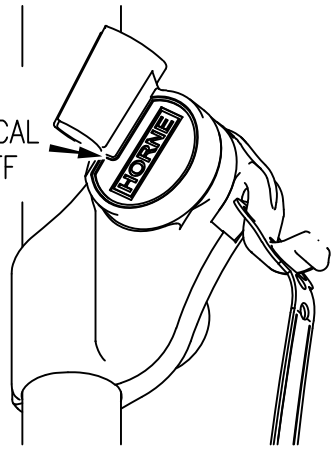
IF THE TFC CARTRIDGE BECOMES JAMMED (WON'T MOVE OUT TO CLOSED POSITION), REMOVE THE CARTRIDGE IN ACCORDANCE WITH STEPS 2-4, THEN PULL THE TIMING CYLINDER FROM THE CARTRIDGE ASSEMBLY. CLEAN OUT THE GROOVE INSIDE THE TIMING CYLINDER BY GENTLY RUNNING THE SHARP END OF A PIN UP AND DOWN THE GROOVE. A SMALL AMOUNT OF DEBRIS SHOULD BE DISLODGED BY THIS ACTION. THE TIMING CYLINDER MAY BE RINSED UNDER CLEAN RUNNING WATER - ABRASIVES SHOULD NOT BE USED.

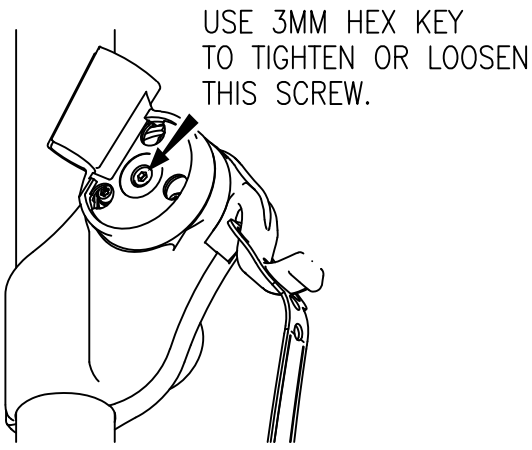
ALL SEALS SHOULD BE FREE FROM DEBRIS AND DAMAGE. THEY MAY BE RINSED UNDER CLEAN RUNNING WATER. THE WIPER SEAL IS NOT USER REPLACEBLE - A NEW TFC SHOULD BE OBTAINED IF ANY DAMAGE IS APPARENT.

RE-ASSEMBLE AND INSTALL ACCORDING TO STEP 8.

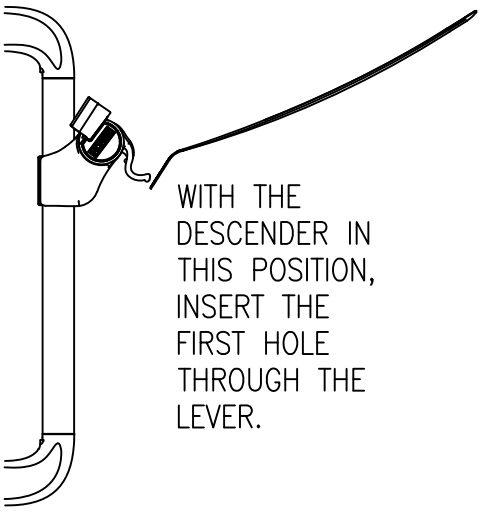
INSTRUCTIONS SPECIFIC TO SHOWER UNITS WITH RISER RAIL

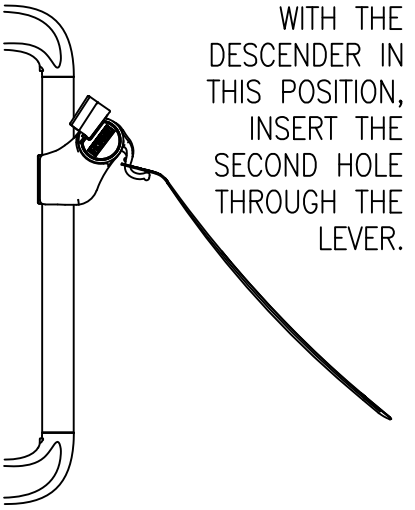
TO ADJUST STIFFNESS OF ROTATING HANDSET HOLDER...

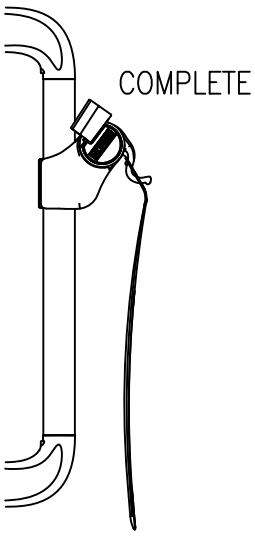




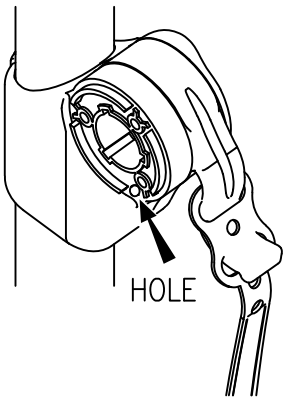
TO FIT THE DESCENDER (FOR ACCESSIBILITY)







TO REMOVE HANDSET HOLDER FROM THE RAIL, FIRST REMOVE DECAL COVER (SEE ABOVE), THEN USE TORX T15 DRIVER TO REMOVE THE 3 SCREWS AND THE ROTATING STIRRUP. REMOVE SCREW–COVER* AND SCREW FROM REVERSE OF HANDSET HOLDER, THEN INSERT A 50MM LONG X 3MM DIAMETER ROD (SCREWDRIVER) INTO THE HOLE AS SHOWN. HANDSET HOLDER WILL THEN SPLIT APART AND CAN BE REMOVED FROM THE RAIL.



* DRILL A SMALL HOLE THOUGH SCREW–COVER TO REMOVE IT.

MAXIMUM LOADINGS FOR THE SHOWER RAIL (WHEN USED AS A GRAB–RAIL):–

LENGTH BETWEEN MOUNTING CENTRES	MAX. LOAD
0.8 M	120Kg
0.675 M	150Kg
0.39M	200Kg
0.29M	200Kg

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