

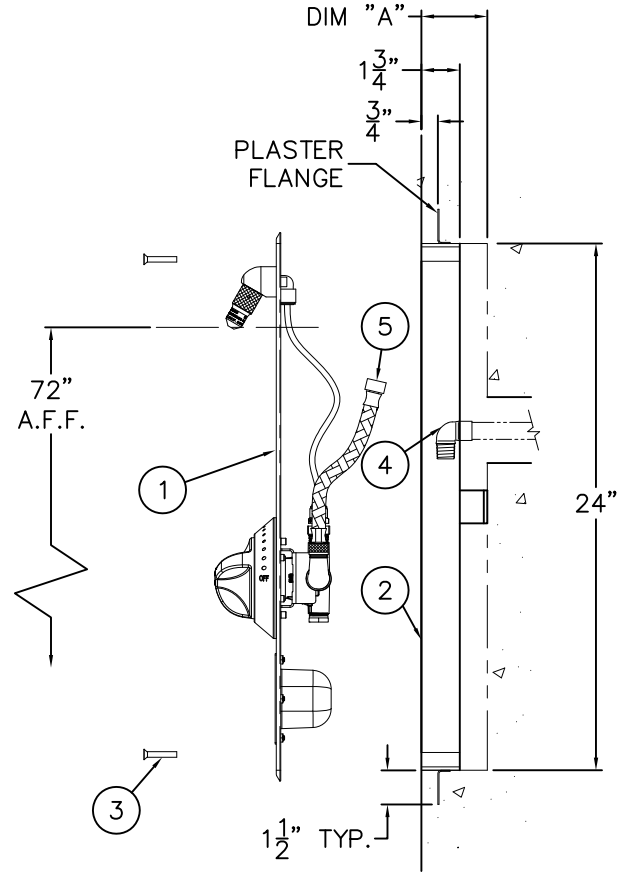
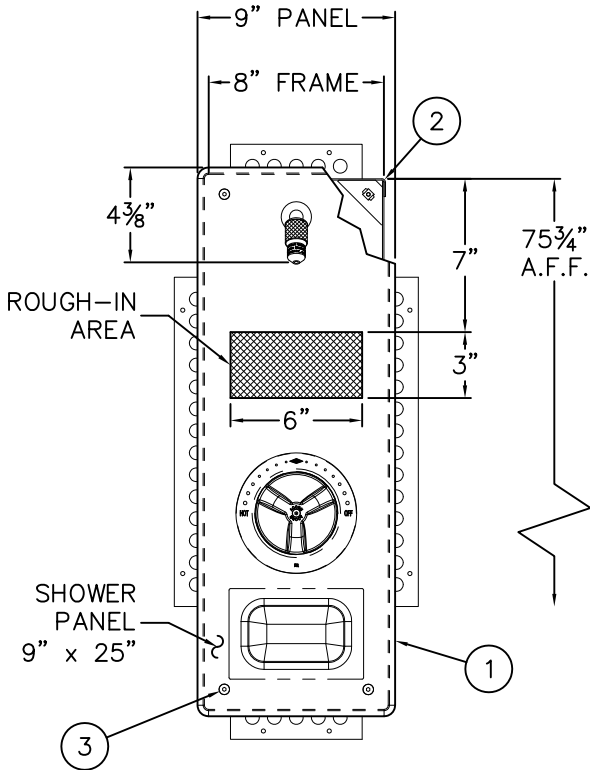


REFERENCE DRAWINGS

SHOWERHEAD	9970-122-001	TINNERMAN NUT	9951-007-001
FLO-CLOZ	9975-000-001	PANEL SCREW	9951-005-001
METER-MATIC	9975-020-003	VALVE CONNECTION	9905-006-001
T/P VALVE (SHOWN)	9975-005-002	VALVE BODY	9975-090-001
T/P VALVE ADJUSTMENT	9900-007-001	PUSHBUTTON/ESCUTCHEON	9957-300-001
T/P VALVES PRIOR TO JUNE 2014	9975-006-001		

VALVE DEPTH

MODELS	DIM "A"
411 415 417 418 419	3"
410 416	4 1/2"



NOTE:
 MAXIMUM RECOMMENDED WORKING PRESSURE IS 100PSI; TEMPERATURE IS 130°F; OUTLET TEMPERATURE IS RECOMMENDED AT A MAXIMUM OF 105°F.

INSTALLATION INSTRUCTIONS:

- A- DISASSEMBLE SHOWER PANEL ASSEMBLY ① FROM WALL MOUNTING FRAME ② BY REMOVING VANDAL RESISTANT SCREWS ③ FROM THE PANEL.
- B- INSTALL MOUNTING FRAME ② AT DESIRED HEIGHT WITH THE FRAME FACE FLUSH WITH THE FINISHED WALL. REFERENCE DIM 'A' FOR VALVE DEPTH BLOCKOUT.
- C- PROVIDE SUPPLY ROUGH-INS ④ IN THE AREA INDICATED. THOROUGHLY FLUSH SUPPLY LINES.

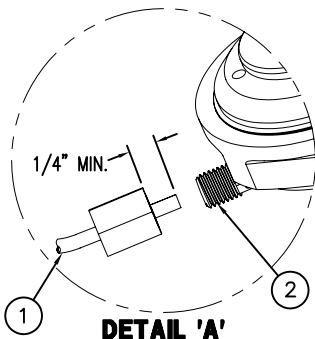
- D- MAKE UP SUPPLY CONNECTIONS TO 1/2" NPS ⑤ HOSE END INLETS WHILE SUPPORTING PANEL OFF THE FLOOR. NOTE: SUPPLY INLET CONNECTION WILL ACCOMMODATE 1/2" NPT MALE ADAPTER.
- E- ASSEMBLE THE SHOWER PANEL ① TO THE MOUNTING FRAME ② USING SCREWS PROVIDED.

WARNING:
 PRIOR TO MAKING INSTALLATION, SUPPLY LINES MUST BE FLUSHED OF ALL FOREIGN MATERIAL SUCH AS PIPE DOPE, CHIPS, SOLDER, ETC. VALVE MUST BE DRAINED PRIOR TO BEING SUBJECTED TO FREEZING TEMPERATURES.

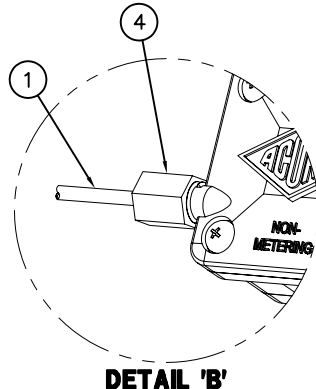
ACORN ENGINEERING COMPANY P.O. BOX 3527 Industry, CA 91744 15125 Proctor Ave Industry, CA 91746 (626) 336-4561 FAX (626) 961-2200	TITLE APEX FLUSH MOUNTED SHOWER (410B SERIES)		
	MANUFACTURE DATE SEPTEMBER 2010 TO PRESENT	DATE ISSUED 10/28/10	DRAWING NUMBER 9900-000-003
	DATE REVISED 06/01/14 G		



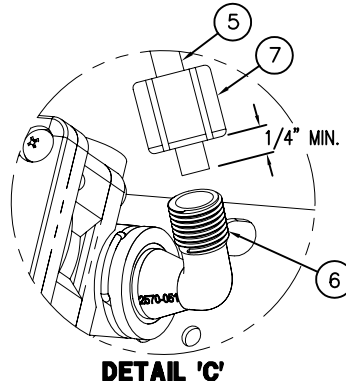
SIDE OUTLET SHOWN



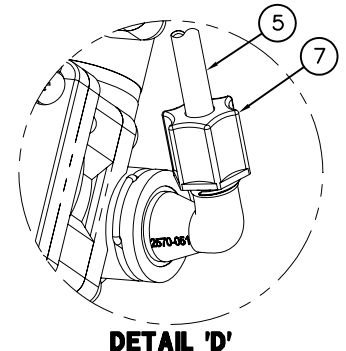
DETAIL 'A'



DETAIL 'B'



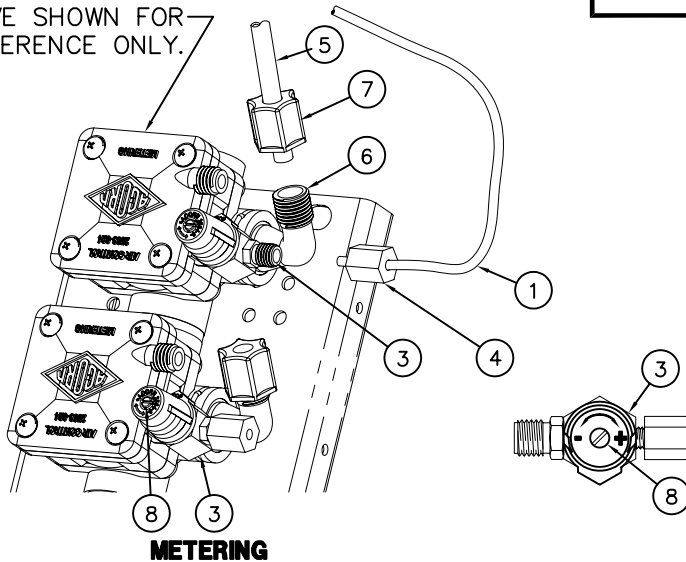
DETAIL 'C'



DETAIL 'D'

NOTE: PENAL-WARE & ECO-RAIN SHOWER FIXTURES USE 1/4" O.D. RISER TUBING WHILE OTHER SHOWER-WARE FIXTURES USE 3/8" O.D. TUBING.

AIR-CONTROL 03M-MA2 VALVE SHOWN FOR REFERENCE ONLY.



METERING

TIMING IS ADJUSTABLE FROM 5 TO 60 SECONDS AND IS ACCOMPLISHED BY ROTATING TIMING SCREW (8). TURNING THE TIMING SCREW CLOCKWISE INCREASES METERING TIME WHILE TURNING THE SCREW COUNTERCLOCKWISE DECREASES METERING TIME.

REFERENCE DRAWINGS	
REPAIR PARTS	DRAWING
VALVE BODY	9955-006-003
CHECKSTOP	9956-040-003
PUSHBUTTON/ESCUTCHEON	9957-300-001
METERING SERVOMOTOR	9955-000-003

NOTE:
 • ALL TUBING SHOULD BE CUT SQUARE AND BE FREE OF BURRS OR DEFORMITIES TO ENSURE A WATER TIGHT CONNECTION.
 • EXTEND TUBING AT LEAST 1/4" BEYOND FERRULE NUT AND INSERT TUBING INTO CONNECTION OPENING BEFORE TIGHTENING.
 • TUBING SHOULD BE FREE OF KINKS TO ENSURE PROPER OPERATION.
 • MAXIMUM RECOMMENDED WORKING WATER PRESSURE IS 100 PSI; TEMPERATURE IS 130° F; OUTLET TEMPERATURE IS RECOMMENDED AT A MAXIMUM OF 105° F.
 WARNING:
 PRIOR TO MAKING INSTALLATION, SUPPLY LINES MUST BE FLUSHED OF ALL FOREIGN MATERIAL SUCH AS PIPE DOPE, CHIPS, SOLDER, ETC. VALVE MUST BE DRAINED PRIOR TO BEING SUBJECTED TO FREEZING TEMPERATURES. MAXIMUM RECOMMENDED OUTLET WATER TEMPERATURE IS 105° F.

INSTALLATION INSTRUCTIONS:

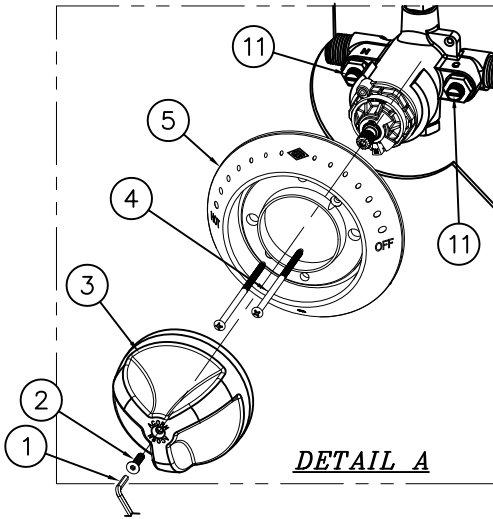
- A- MOUNT FIXTURE IN ACCORDANCE TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- B- ASSEMBLE PUSHBUTTONS AND OR SHOWER NOZZLES TO FIXTURE IF REQUIRED.
- C- CONNECT 1/8" O.D. POLYETHYLENE AIR LINE (1) TO PUSHBUTTON (2) AND VALVE TIMER ASSEMBLY (3). SEE DETAILS 'A' & 'B'. HAND TIGHTEN FERRULE NUT (4) PROVIDED.

- D- CONNECT SHOWER RISER (5) TO VALVE ASSEMBLY ELBOW (6). SEE DETAIL 'C' AND 'D'. HAND TIGHTEN FERRULE NUT (7) PROVIDED.
- E- AFTER THOROUGHLY FLUSHING SUPPLY LINES, MAKE UP CONNECTIONS TO VALVE ASSEMBLY INLET(S) 1/2" NPT OR 1/2" NPS FLEX HOSE AS REQUIRED.

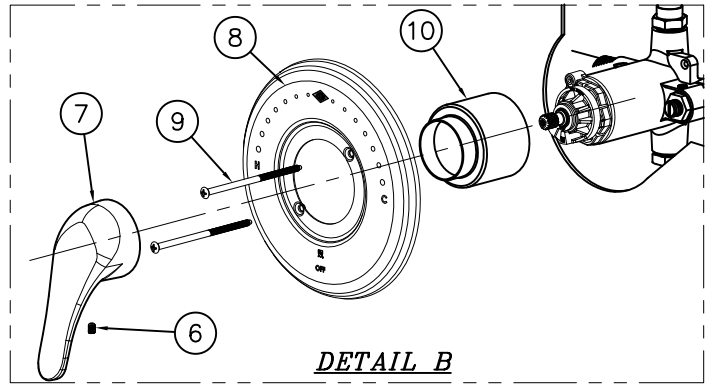
ACORN ENGINEERING COMPANY P.O. BOX 3527 INDUSTRY, CA. 91744 (626) 336-4561 FAX (626) 961-2200	TITLE HAND OPERATED, AIR-CONTROL VALVE SHOWER CONNECTIONS		
	MANUFACTURE DATE OCTOBER 2010 TO PRESENT	DATE ISSUED 10/28/10	DRAWING NUMBER 9900-006-003
		DATE REVISED	



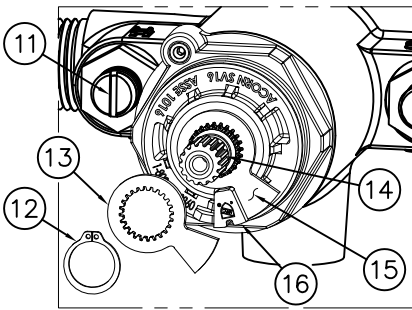
REFERENCE DRAWINGS	
ASSEMBLIES	NUMBER
T/P VALVE	9975-005-002



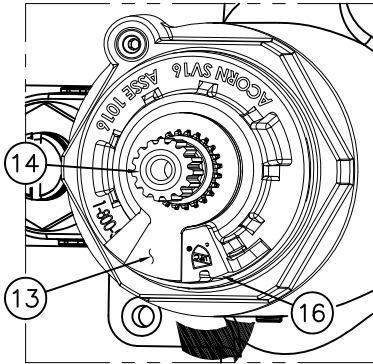
DETAIL A



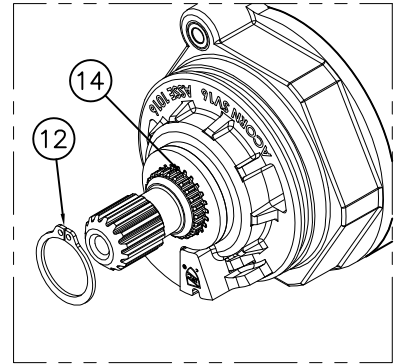
DETAIL B



DETAIL C



DETAIL D



DETAIL E

INSTRUCTIONS:

A-REMOVE TRI-LEVER HANDLE TRIM: SEE DETAIL A

a- USING CENTER REJECT ALLEN WRENCH (1) REMOVE HANDLE SCREW (2) AND REMOVE HANDLE (3).

b- REMOVE ESCUTCHEON (4) BY REMOVING SCREWS (5).

FOR OPTIONAL -LVR LEVER HANDLE TRIM: SEE DETAIL B

a- REMOVE SET SCREW (6) AND HANDLE (7).

b- REMOVE ESCUTCHEON (8) BY REMOVING SCREWS (9).

c- PULL OFF VALVE SLEEVE (10).

TEMPERATURE ADJUSTMENT:

B-ENSURE MAIN WATER SUPPLY IS ON.

C-ENSURE CHECK STOPS (11) ARE OPEN.

D-ENSURE VALVE IS IN THE OFF POSTION.

E-USING SNAP RING PLIERS REMOVE RETAINING RING (12) AND THE FIRST TEMPERATURE LIMIT WASHER (13) ONLY FROM VALVE STEM (14). SEE DETAIL C.

NOTE: IF SECOND TEMPERATURE LIMIT WASHER (15) COMES OFF, RESETTING OF THE OFF STOP MAY BE REQUIRED, KEY AS CLOSE AS POSSIBLE ON THE COUNTER-CLOCKWISE SIDE OF BONNET STOP (16). USING HANDLE (3) OR (7) SLIGHTLY OPEN AND CLOSE VALVE TO ENSURE WATER WILL SHUT OFF. DETAIL C.

TEMPERATURE ADJUSTMENT: CONTINUED:

F- USING HANDLE (3) OR (7) TURN VALVE STEM (14) COUNTER-CLOCKWISE TO INCREASE HOT, CHECKING OUTLET TEMPERATURE UNTIL DESIRED TEMPERATURE IS REACHED (RECOMMENDED 105° TO 110°). SLIDE FIRST TEMPERATURE LIMIT WASHER (9) OVER VALVE STEM (13) AND ENSURE SIDE OF WASHER RESTS AS CLOSE AS POSSIBLE TO CLOCKWISE SIDE OF BONNET LIMIT STOP (16). DETAIL D.

G- WITH VALVE IN THE "ON" POSTION AND WATER RUNNING, USING SNAP RING PLIERS INSTALL RETAINING RING (12). ENSURE RETAINING RING (12) IS INSERTED PROPERLY INTO GROOVE ON VALVE STEM (14). DETAIL E.

H- REINSTALL TRIM IN REVERSE ORDER.



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TITLE **-8 T/P TEMP/PRESS BALANCING MIXING VALVE - TEMPERATURE ADJUSTMENT**

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
APRIL 2014	05/01/14	
PRESENT	DATE REVISED	9900-007-001
	09/01/16 B	