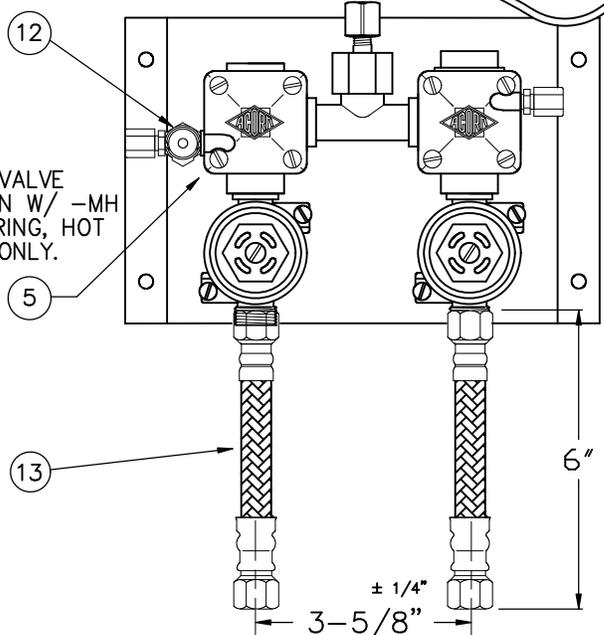


REFERENCE DRAWINGS	
ASSEMBLIES	NUMBER
VALVE BODY	9955-005-003
STOP	9956-040-003
FIXTURE TRIM	9957-170-001
AIR-CONTROL SERVOMOTORS	
METERING	9955-000-002
NON-METERING	9955-001-002

NOTE:
THIS VALVE
SHOWN W/ -MH
METERING, HOT
SIDE ONLY.



INSTALLATION INSTRUCTIONS:

- A- PRIOR TO INSTALLATION OF THE FIXTURE, MOUNT PUSH-BUTTONS ① AND BUBBLER ② TO THE BACKSPASH.
- B- INSTALL THE PLUMBING FIXTURE TO THE WALL INCLUDING UPPER SUPPORT PLATE ⑧.
- C- TO ADJUST PUSHBUTTON ASSEMBLY: LOOSEN THE LOCKNUT ⑨ AND ROTATE THE ADJUSTING SLEEVE ⑩ AS REQUIRED. WHEN PROPERLY ADJUSTED, THERE WILL BE NO PLAY AND ONLY MINOR TENSION AT THE BUTTON.
- D- MOUNT THE AIR-CONTROL VALVE ASSY. ③. LOCATE AS REQ'D. MAX. ALLOWABLE DISTANCE BETWEEN PUSHBUTTON AND AIR-CONTROL SERVOMOTOR IS 10 FEET. WALL FASTENERS BY OTHERS.
- E- CONNECT 1/8" OD POLYETHYLENE AIR LINES ④ TO DIAPHRAGM RETAINERS ⑪ AND SERVOMOTORS ⑤ HAND TIGHT. USE FERRULE NUTS PROVIDED. SEE DETAIL "AA". NOTE: WHEN METERING VALVES ARE SPECIFIED THE AIR LINES CONNECT DIRECTLY TO THE TIMER ⑫.
- F- CONNECT 1/4" OD POLYETHYLENE WATER LINE ⑥ TO BUBBLER ② AND COMPRESSION NUT ⑦ HAND TIGHT USING FERRULE NUTS PROVIDED.

- G- AFTER THOROUGHLY FLUSHING THE SUPPLY LINES, MAKE-UP SUPPLY CONNECTIONS (1/2" NPS FEMALE). (NOTE: SUPPLY INLET CONNECTION WILL ACCOMODATE 1/2" NPT MALE ADAPTER). THREAD FLEX CONNECTOR HOSE ⑬ TO VALVE ⑤ INLET AND TO SUPPLY STUBOUTS.
- H- SEE APPROPRIATE SERVOMOTOR REFERENCE DRAWING FOR DETAILS AND TIMING INSTRUCTIONS.

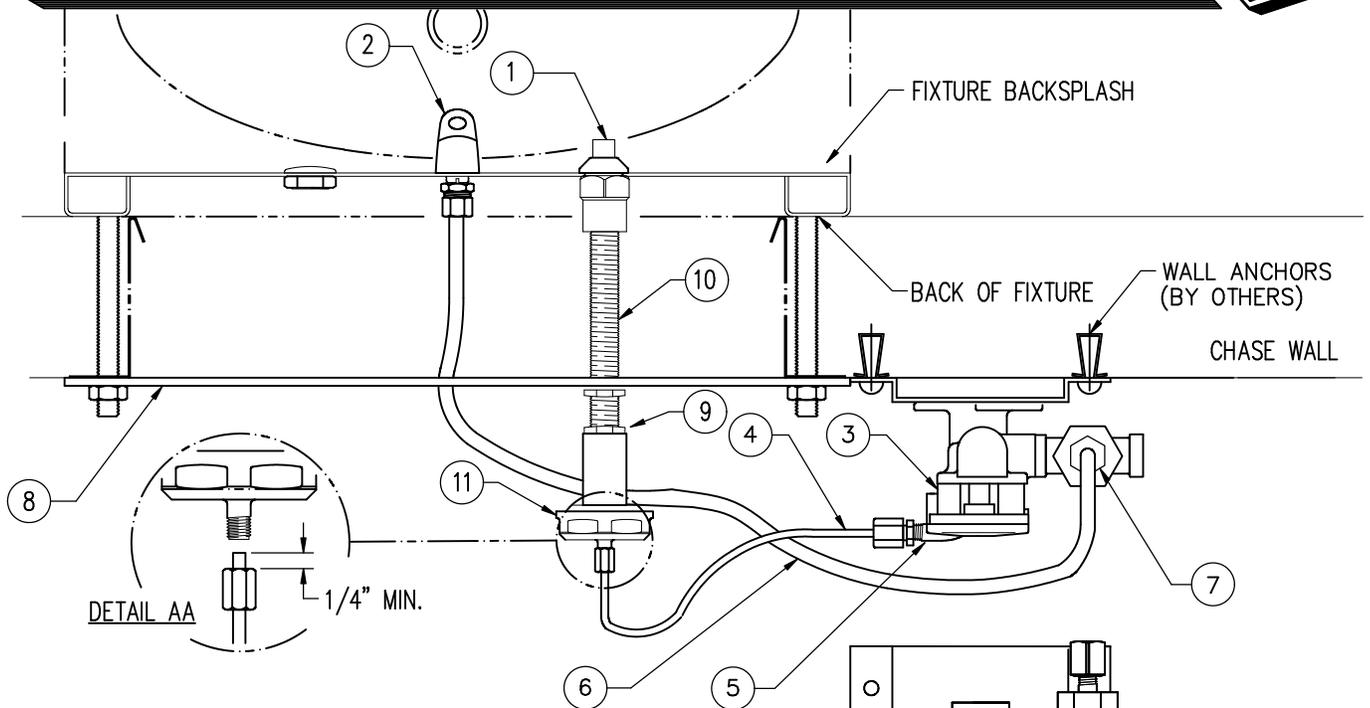
NOTE:
MAXIMUM RECOMMENDED WORKING PRESSURE IS 100 PSI; TEMPERATURE IS 130°F; OUTLET TEMPERATURE IS RECOMMENDED AT A MAXIMUM OF 105°F.

WARNING:
PRIOR TO MAKING INSTALLATION, SUPPLY LINES MUST BE FLUSHED OF ALL FOREIGN MATERIAL SUCH AS PIPE DOPE, CHIPS, ETC. VALVE MUST BE DRAINED PRIOR TO BEING SUBJECTED TO FREEZING TEMPERATURES. MAXIMUM RECOMMENDED OUTLET WATER TEMPERATURE IS 105°F.



ACORN ENGINEERING COMPANY
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(626) 336-4561 FAX (626) 961-2200

TITLE HOT & COLD PUSHROD OPERATED AIR-CONTROL VALVE - NEW STYLE		
MANUFACTURE DATE SEPT 1995 PRESENT	DATE ISSUED 11/1/95	DRAWING NUMBER 9905-010-003
	DATE REVISED	

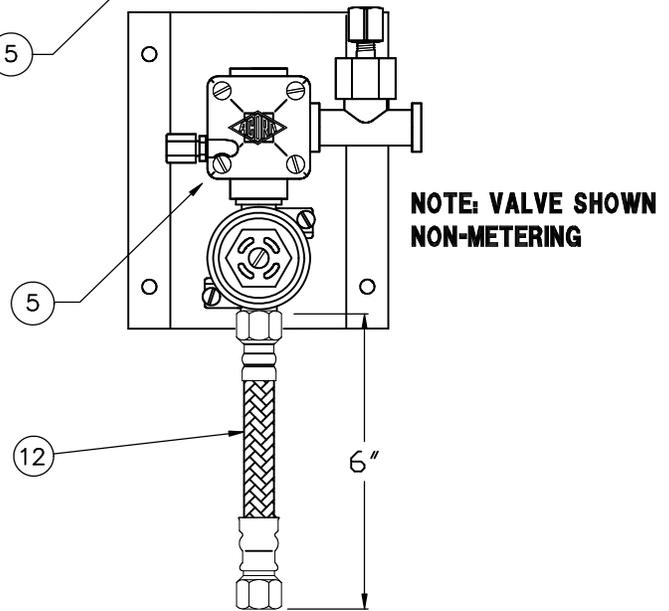


DETAIL AA
1/4" MIN.

REFERENCE DRAWINGS	
ASSEMBLIES	NUMBER
VALVE BODY	9955-006-003
STOP	9956-040-003
FIXTURE TRIM	9957-171-001
AIR-CONTROL SERVOMOTORS	
METERING	9955-000-002
NON-METERING	9955-001-002

INSTALLATION INSTRUCTIONS:

- A- PRIOR TO INSTALLATION OF THE FIXTURE, MOUNT PUSH-BUTTONS ① AND BUBBLER ② TO THE BACKSPASH.
- B- INSTALL THE PLUMBING FIXTURE TO THE WALL INCLUDING UPPER SUPPORT PLATE ⑧.
- C- TO ADJUST PUSHBUTTON ASSEMBLY: LOOSEN THE LOCKNUT ⑨ AND ROTATE THE ADJUSTING SLEEVE ⑩ AS REQUIRED. WHEN PROPERLY ADJUSTED, THERE WILL BE NO PLAY AND ONLY MINOR TENSION AT THE BUTTON.
- D- MOUNT THE AIR-CONTROL VALVE ASSY. ③. LOCATE AS REQ'D. MAX. ALLOWABLE DISTANCE BETWEEN PUSHBUTTON AND AIR-CONTROL SERVOMOTOR IS 10 FEET. WALL FASTENERS BY OTHERS.
- E- CONNECT 1/8" OD POLYETHYLENE AIR LINES ④ TO DIAPHRAGM RETAINERS ⑪ AND SERVOMOTORS ⑤ HAND TIGHT. USE FERRULE NUTS PROVIDED. SEE DETAIL "AA". NOTE: WHEN METERING VALVES ARE SPECIFIED THE AIR LINES CONNECT DIRECTLY TO THE TIMER.
- F- CONNECT 1/4" OD POLYETHYLENE WATER LINE ⑥ TO BUBBLER ② AND COMPRESSION NUT ⑦ HAND TIGHT USING FERRULE NUTS PROVIDED.



NOTE: VALVE SHOWN NON-METERING

- G- AFTER THOROUGHLY FLUSHING THE SUPPLY LINES, MAKE-UP SUPPLY CONNECTIONS (1/2" NPS FEMALE). (NOTE: SUPPLY INLET CONNECTION WILL ACCOMODATE 1/2" NPT MALE ADAPTER). THREAD FLEX CONNECTOR HOSE ⑫ TO VALVE ⑤ INLET AND TO SUPPLY STUBOUTS.
- H- SEE APPROPRIATE SERVOMOTOR REFERENCE DRAWING FOR DETAILS AND TIMING INSTRUCTIONS.

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

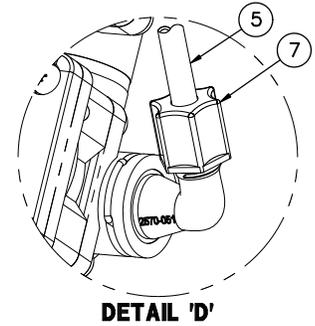
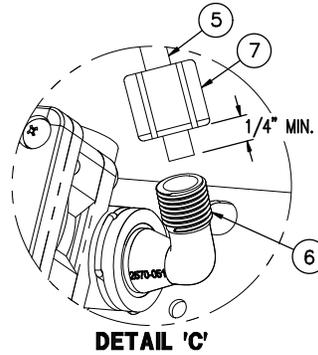
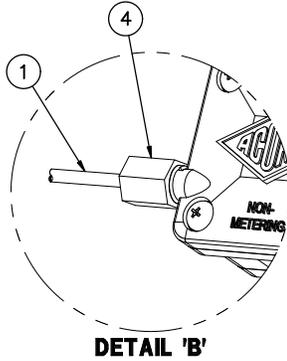
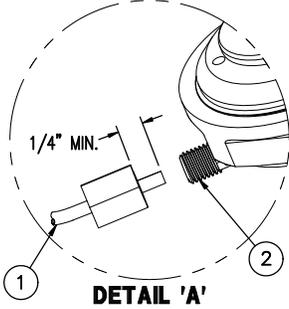
WARNING:
PRIOR TO MAKING INSTALLATION, SUPPLY LINES MUST BE FLUSHED OF ALL FOREIGN MATERIAL SUCH AS PIPE DOPE, CHIPS, ETC. VALVE MUST BE DRAINED PRIOR TO BEING SUBJECTED TO FREEZING TEMPERATURES. MAXIMUM RECOMMENDED OUTLET WATER TEMPERATURE IS 105°F.

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TITLE SINGLE TEMP PUSHROD OPERATED AIR-CONTROL VALVE - NEW STYLE		
MANUFACTURE DATE SEPT 1995 TO PRESENT	DATE ISSUED 11/1/95	DRAWING NUMBER 9905-011-003
	DATE REVISED	

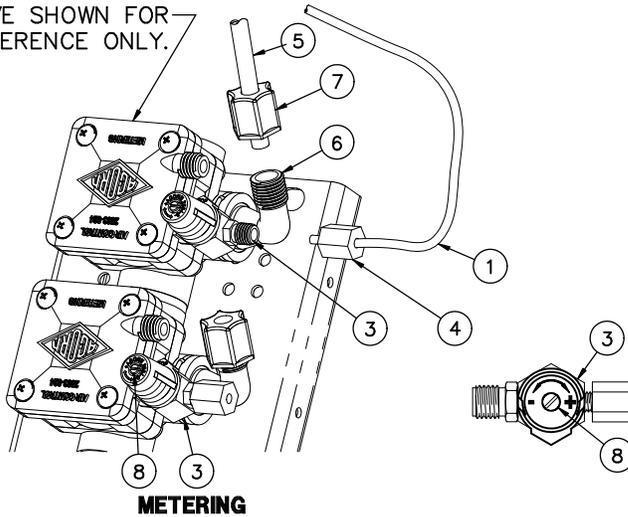


SIDE OUTLET SHOWN



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.



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:
 1. ALL TUBING SHOULD BE CUT SQUARE AND BE FREE OF BURRS OR DEFORMITIES TO ENSURE A WATER TIGHT CONNECTION.
 2. EXTEND TUBING AT LEAST 1/4" BEYOND FERRULE NUT AND INSERT TUBING INTO CONNECTION OPENING BEFORE TIGHTENING.
 3. TUBING SHOULD BE FREE OF KINKS TO ENSURE PROPER OPERATION.
 4. 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.

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.

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.

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TITLE HAND OPERATED, AIR-CONTROL VALVE SHOWER CONNECTIONS		
MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
OCTOBER 2010 TO PRESENT	10/28/10	9900-006-003
	DATE REVISED	