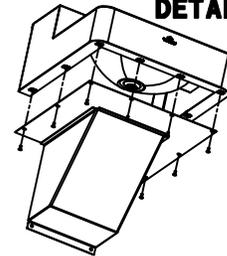
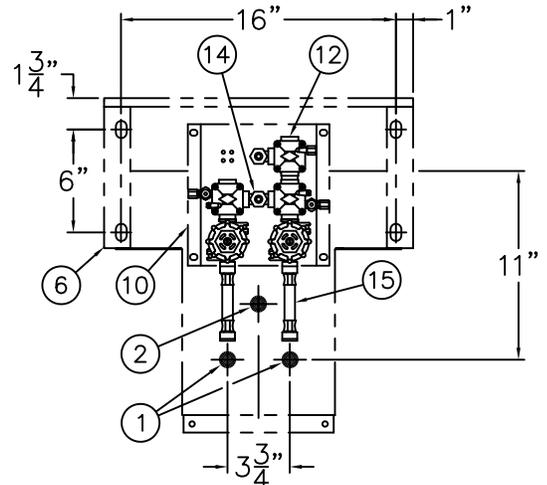


REFERENCE DRAWINGS

HARDWARE PACKAGE	9957-900-001
-SW SLEEVE / MT TEMPLATE	9925-218-001
AIR CONTROL CONNECTION	9905-006-001
-4 AIR-CONTROL (HOT & COLD)	9905-000-003
-MVC1 S/T TIME-TROL	9900-001-004
-EVS1 S/T MASTER-TROL	9905-330-004



BOTTOM PLATE ASSEMBLY VIEW. SHOWN FOR REFERENCE ONLY. NOTE: NOT TO SCALE.



INSTALLATION INSTRUCTIONS

- A- ROUGH-IN FOR THE FOLLOWING CONNECTIONS:
 1/2" NPS LAVY SUPPLY CONNECTION(S) ①.
 1-1/2" OD PLAIN END WASTE OUTLET ②.
- B- SECURE 1/2"-13 UNC STUDS ③ PROVIDED TO INSTALLED WALL SLEEVE ANCHOR TAPPINGS OR TO WALL ANCHORS BY OTHERS ④ INSTALLED AS INDICATED.
- C- SEPARATE BOTTOM ENCLOSURE ⑤ AND POSITION FIXTURE ⑥ INTO PLACE. SECURE FIXTURE TO ANCHORING STUDS ③ WITH WASHERS ⑦ AND NUTS ⑧ PROVIDED.
- D- USING BOTTOM ENCLOSURE ⑤ AS A TEMPLATE, LOCATE WALL ANCHORS ⑨ (BY OTHERS). INSTALL ENCLOSURE AS SHOWN IN DETAIL.
- E- MAKE UP CONNECTION TO LAVY WASTE 1-1/2" OD PLAIN END ② (SUITABLE FOR COMPRESSION CONNECTION).
- F- MOUNT OPTIONAL VALVE ASSEMBLY ⑩ TO WALL WITHIN FIXTURE.

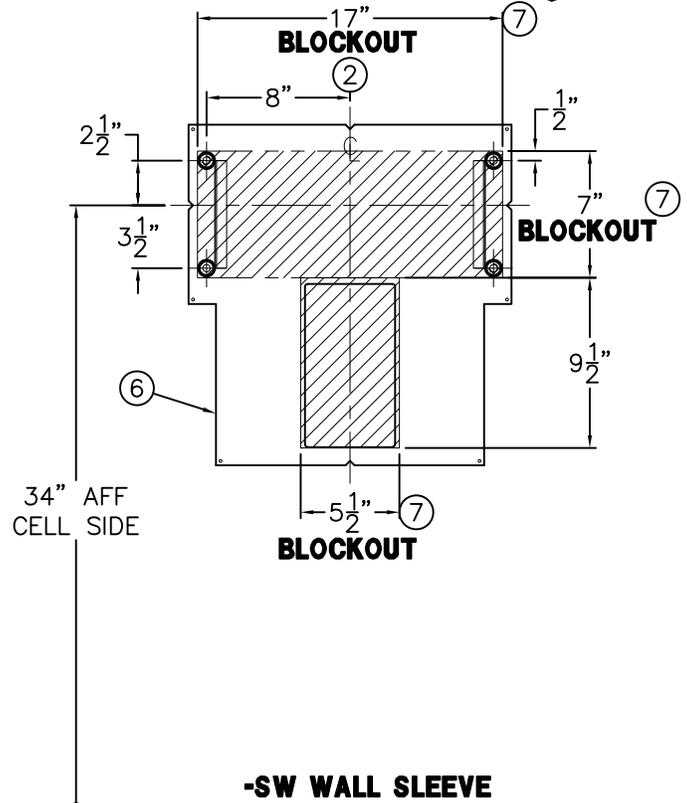
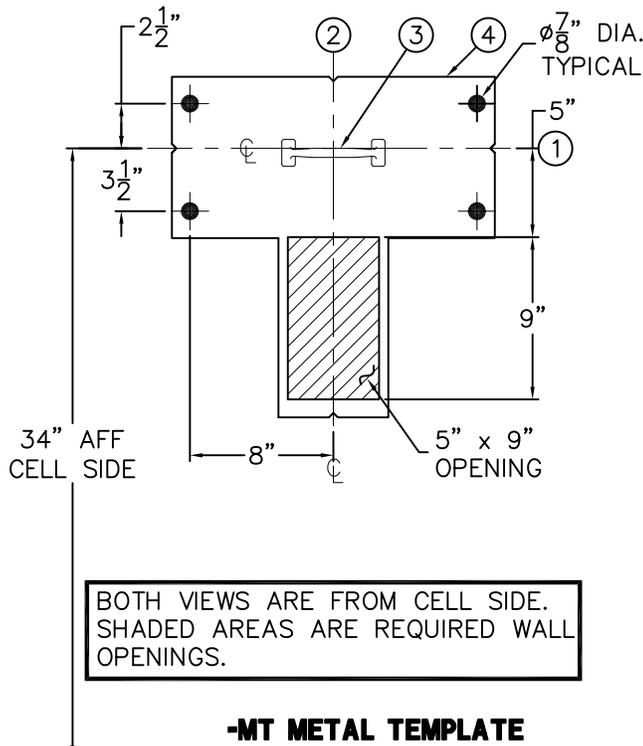
- G- CONNECT 1/8" OD POLYETHYLENE AIR LINES (NOT SHOWN) TO PUSHBUTTON(S) ⑪ AND SERVOMOTOR ⑫. HAND TIGHTEN USING FERRULE NUTS PROVIDED. NOTE: WHEN METERING VALVES ARE SPECIFIED, THE AIR LINES CONNECT DIRECTLY TO THE TIMER.
- H- CONNECT 1/4" OD POLYETHYLENE WATER LINES (NOT SHOWN) TO BUBBLER ⑬ AND COMPRESSION NUT ⑭. HAND TIGHTEN: USING FERRULE NUTS PROVIDED.
- I- AFTER THOROUGHLY FLUSHING THE SUPPLY LINES ① LINES. MAKE-UP SUPPLY CONNECTION(S) (1/2" NPS FEMALE). NOTE: SUPPLY INLET CONNECTION WILL ACCOMMODATE 1/2" NPT MALE ADAPTER. THREAD FLEX CONNECTOR HOSE ⑮ TO VALVE INLET AND TO SUPPLY STUB OUTS.

NOTE: RECOMMENDED WATER FLOW PRESSURE 25 PSI MINIMUM & 100 PSI MAXIMUM. MAXIMUM WORKING WATER SUPPLY TEMPERATURE IS 130° 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.

ACORN ENGINEERING COMPANY
 P.O. BOX 3527 Industry, CA 91744
 15125 Proctor Ave Industry, CA 91746
 (626) 336-4561 FAX (626) 961-2200

TITLE 18" WIDE FRONT ACCESS HANDICAPPED LAVY #1652FALRB		
MANUFACTURE DATE JANUARY 2012 TO PRESENT	DATE ISSUED 06/25/12	DRAWING NUMBER 9925-227-001
	DATE REVISED 12/01/22	



BOTH VIEWS ARE FROM CELL SIDE. SHADED AREAS ARE REQUIRED WALL OPENINGS.

INSTALLATION INSTRUCTIONS:

-MT METAL TEMPLATES

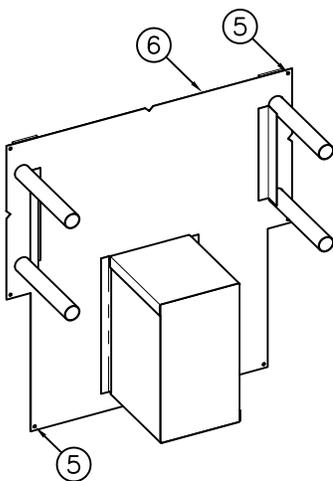
- A-METAL TEMPLATES ARE USED TO LAYOUT REQUIRED WALL OPENINGS FOR SUBSEQUENT FLAME CUTTING OR CORE DRILLING.
- B-STRIKE A HORIZONTAL CHALK LINE ON THE WALL 34" ABOVE FINISHED FLOOR. THIS WILL LOCATE CENTERLINE FOR HORIZONTAL NOTCHES ① ON THE TEMPLATE.
- C-STRIKE A VERTICAL CHALK LINE ON THE WALL TO INDICATE THE CENTERLINE OF FIXTURE. THIS WILL LOCATE THE VERTICAL NOTCHES ② ON THE TEMPLATE.
- D-USING HANDLE ③ ON THE TEMPLATE ④. PLACE TEMPLATE AGAINST THE WALL. ALIGN NOTCHES ON CHALK LINES & MARK FOR WALL OPENINGS.

-SW WALL SLEEVES

WALL SLEEVES ARE INSTALLED IN FORMS USING NAILS HOLES ⑤ PROVIDED OR GROUTED INTO BLOCK OR CEMENT WALLS BECOMING A PERMANENT PART OF THE WALL.

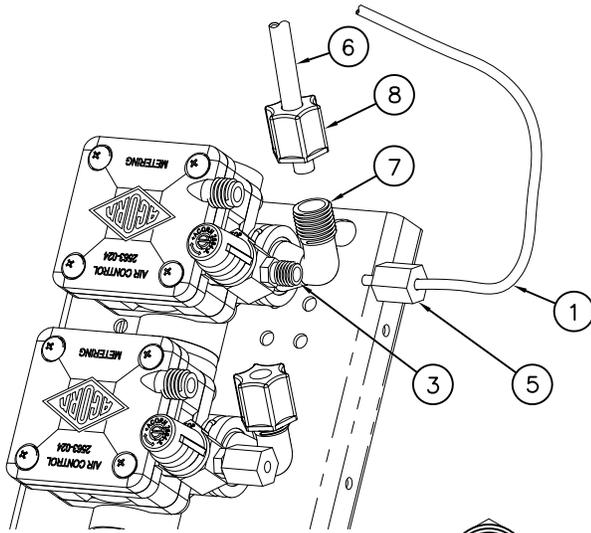
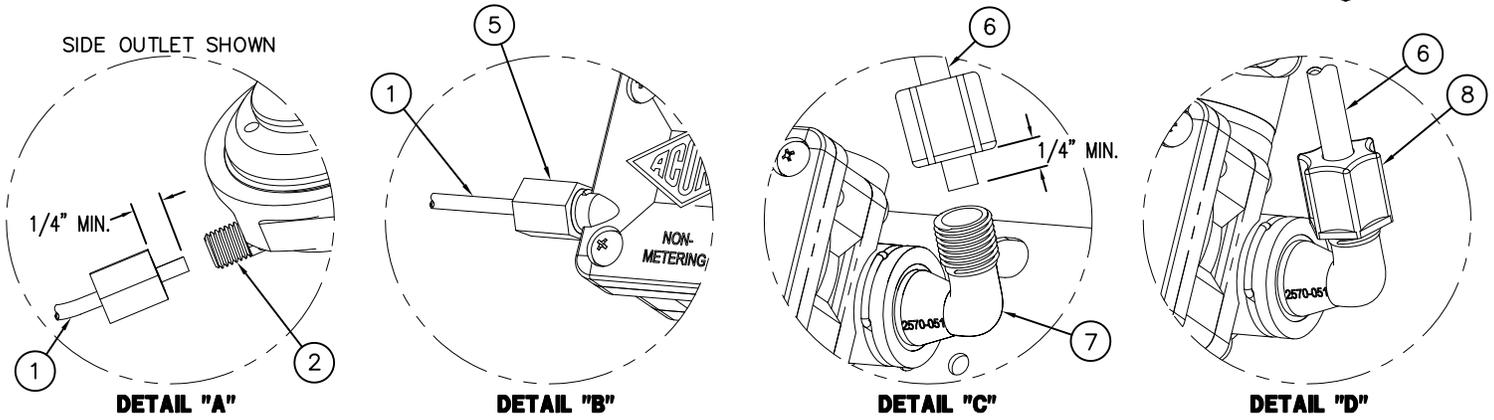
NOTE: FOR POURED WALL CONSTRUCTION, TEMPORARY BRACING SHOULD BE INSTALLED WITHIN SLEEVE OPENING TO PREVENT DEFORMATION TO SLEEVE WHICH MAY OCCUR DURING POUR. DO NOT POUR CONCRETE DIRECTLY ON TOP OF WALL SLEEVE.

- A-INSTALL SLEEVE WITH FLANGE ⑥ ON CHASE SIDE OF WALL.
- B-POSITION AND ALIGN TOP AND BOTTOM NOTCHES ② WITH VERTICAL CENTERLINE OF FIXTURE LOCATION.
- C-TOP OF FLANGE ⑥ TO BE LOCATED AT 38-1/2" ABOVE THE FINISHED FLOOR CELL SIDE FLOOR (LAVY BACKSPASH HEIGHT).
- D-WHEN SLEEVES ARE NOT AVAILABLE USE BLOCKOUT ⑦ DIMENSIONS SHOWN.

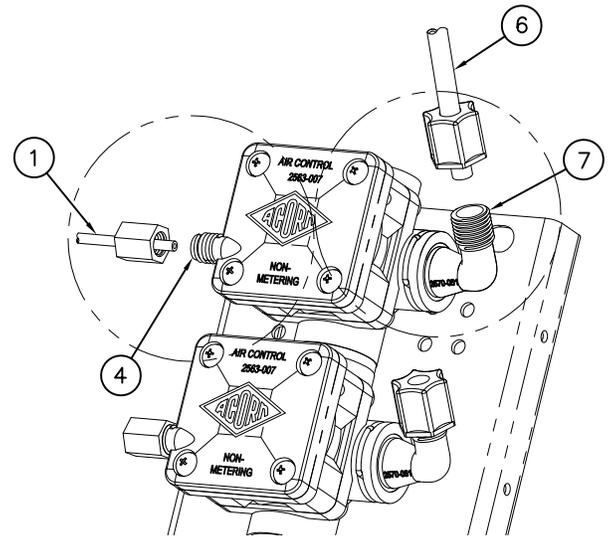
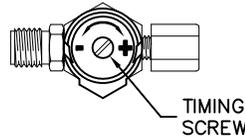


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<p>TITLE -SW WALL SLEEVE & -MT METAL TEMPLATE-CAT #1652FA & #1652FALRB</p>		
<p>MANUFACTURE DATE</p> <p>MAY 1996</p> <p>TO PRESENT</p>	<p>DATE ISSUED</p> <p>05/22/96</p> <p>DATE REVISED</p> <p>03/01/13 D</p>	<p>DRAWING NUMBER</p> <p>9925-218-001</p>



METERING



**NON-METERING
DIRECT ACTING**

TIMING IS ADJUSTABLE FROM 5 TO 60 SECONDS AND IS ACCOMPLISHED BY ROTATING TIMING SCREW. TURING THE SCREW CLOCKWISE INCREASES WHILE COUNTERCLOCKWISE DECREASES TIMING.

REFERENCE DRAWINGS

REFERENCE DRAWINGS	
ASSEMBLIES	DRAWING
VALVE BODY	9955-006-003
CHECKSTOP	9956-040-003
FIXTURE TRIM	9957-051-001
AIR-CONTROL SERVOMOTORS	
METERING	9955-000-003
NON-METERING	9955-001-003

INSTALLATION INSTRUCTIONS:

- A- MOUNT FIXTURE IN ACCORDANCE TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- B- ASSEMBLE SPOUTS AND PUSHBUTTONS TO FIXTURE.
- C- CONNECT 1/8" O.D. POLYETHYLENE AIR LINE (1) TO PUSHBUTTON (2), AND VALVE TIMER ASSEMBLY (3) SEE DETAIL "A". NOTE: FOR DIRECT ACTING: ASSEMBLE TO AIR PORT (4), SEE DETAIL "B". HAND TIGHTEN FERRULE NUT (5) PROVIDED.
- D- CONNECT 1/4" O.D. POLYETHYLENE WATER LINES (6) TO VALVE ASSEMBLY ELBOW (7) SEE DETAILS "C", AND "D". HAND TIGHTEN FERRULE NUT (8) 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.

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 BEFORE INSERTING TUBING INTO CONNECTION OPENING BEFORE TIGHTENING.
- 3) TUBING SHOULD BE FREE OF KINKS FOR 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.



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(626) 336-4561 FAX (626) 961-2200

TITLE HAND OPERATED AIR-CONTROL VALVE CONNECTIONS

MANUFACTURE DATE

**JANUARY 1999
TO PRESENT**

DATE ISSUED

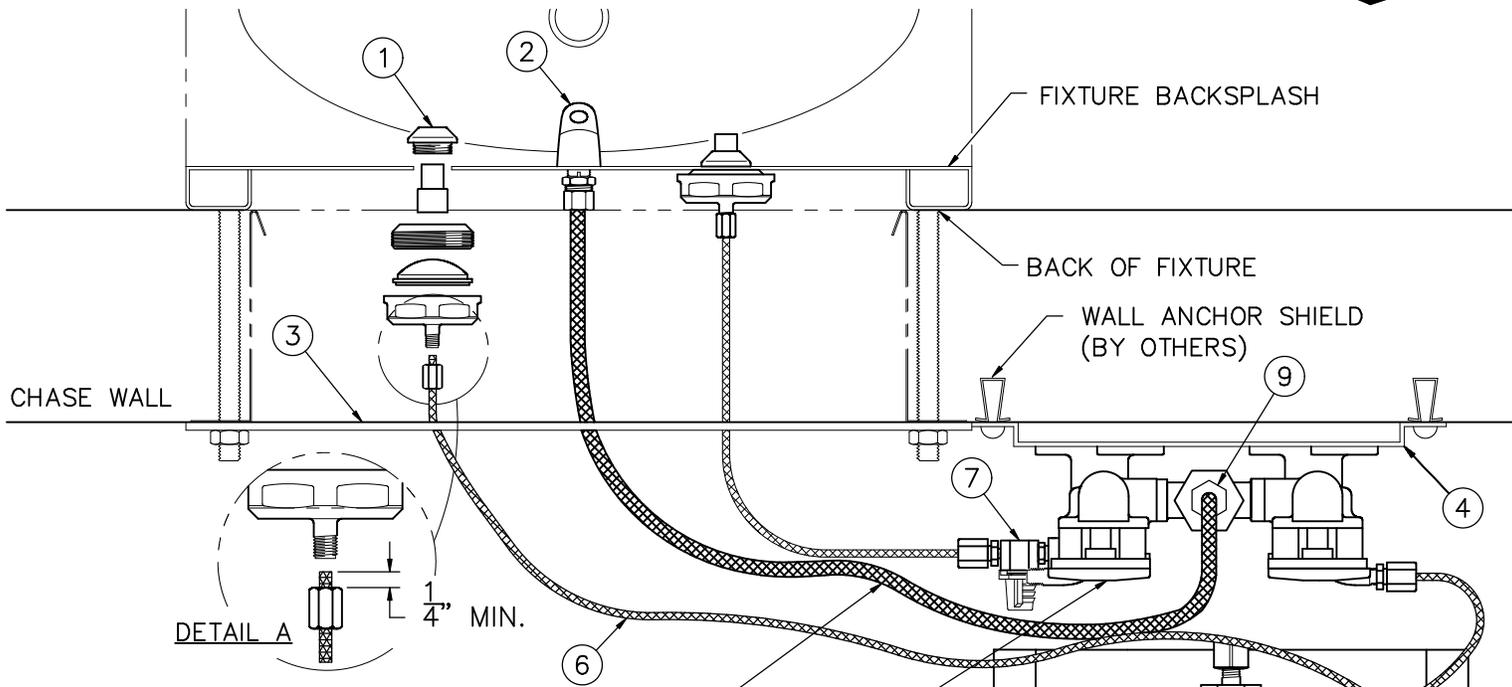
04/22/10

DATE REVISED

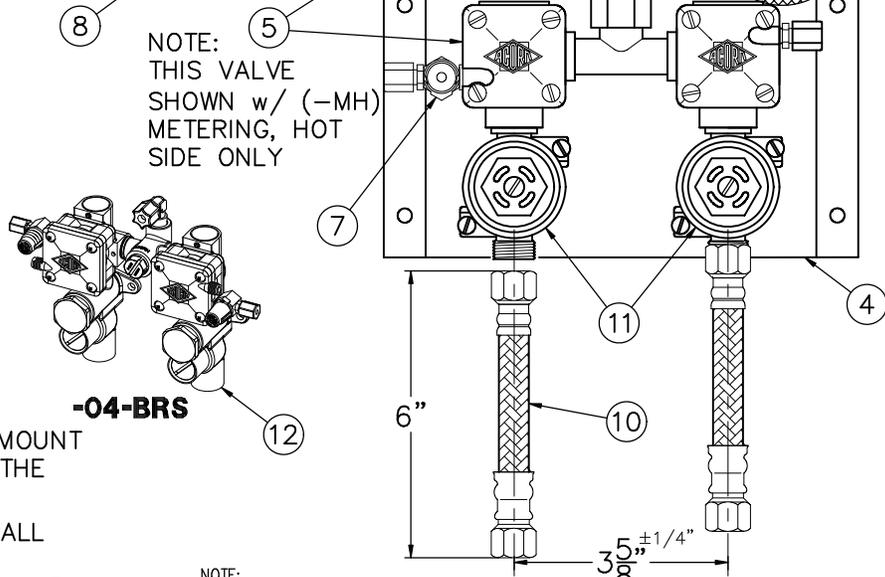
10/11/10

DRAWING NUMBER

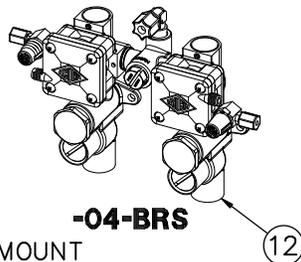
9905-006-001



REFERENCE DRAWINGS	
ASSEMBLIES	NUMBER
VALVE BODY	9955-005-003
CHECKSTOP	9956-040-003
FIXTURE TRIM	9957-050-001
-PBH/BPH TRIM	9957-060-001
AIR-CONTROL SERVOMOTORS	
METERING	9955-000-003
NON-METERING	9955-001-003



NOTE: THIS VALVE SHOWN w/ (-MH) METERING, HOT SIDE ONLY



INSTALLATION INSTRUCTIONS:

- A- PRIOR TO INSTALLATION OF THE FIXTURE, MOUNT PUSHBUTTONS (1) AND BUBBLER (2) TO THE BACKSPASH.
- B- INSTALL THE PLUMBING FIXTURE TO THE WALL INCLUDING UPPER SUPPORT PLATE (3).
- C- MOUNT THE AIR-CONTROL VALVE ASSEMBLY (4). LOCATE AS REQUIRED. MAXIMUM ALLOWABLE DISTANCE BETWEEN PUSHBUTTON (1) AND AIR-CONTROL SERVOMOTOR (5) IS 10 FEET. WALL ANCHORING HARDWARE ARE BY OTHERS.
- D- CONNECT 1/8" O.D. POLYETHYLENE AIR LINES (6) TO PUSHBUTTONS (1) AND SERVOMOTOR (5). HAND TIGHTEN USING FERRULE NUTS PROVIDED. SEE DETAIL A. NOTE: WHEN METERING VALVES ARE SPECIFIED, AIR LINES CONNECT DIRECTLY TO VALVE TIMER (7).
- E- CONNECT 1/4" O.D. POLYETHYLENE WATER LINE (8) TO BUBBLER (2) AND COMPRESSION NUT (9). HAND TIGHTEN USING FERRULE NUTS PROVIDED.

- F- AFTER THOROUGHLY FLUSHING THE SUPPLY LINES, MAKE-UP 1/2" NPS FEMALE SUPPLY CONNECTIONS. NOTE: SUPPLY INLET CONNECTION WILL ACCOMODATE 1/2" NPT MALE ADAPTER. THREAD FLEX CONNECTOR HOSE (10) TO CHECKSTOPS (11) AND TO SUPPLY STUB OUTS. FOR OPTIONAL -04-BRS BRASS BODY VALVE, MAKE UP CONNECTION TO CHECK STOPS (12).
- G- SEE APPROPRIATE SERVOMOTOR REFERENCE DRAWING FOR DETAILS AND TIMING INSRUCTIONS.

NOTE:
 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.

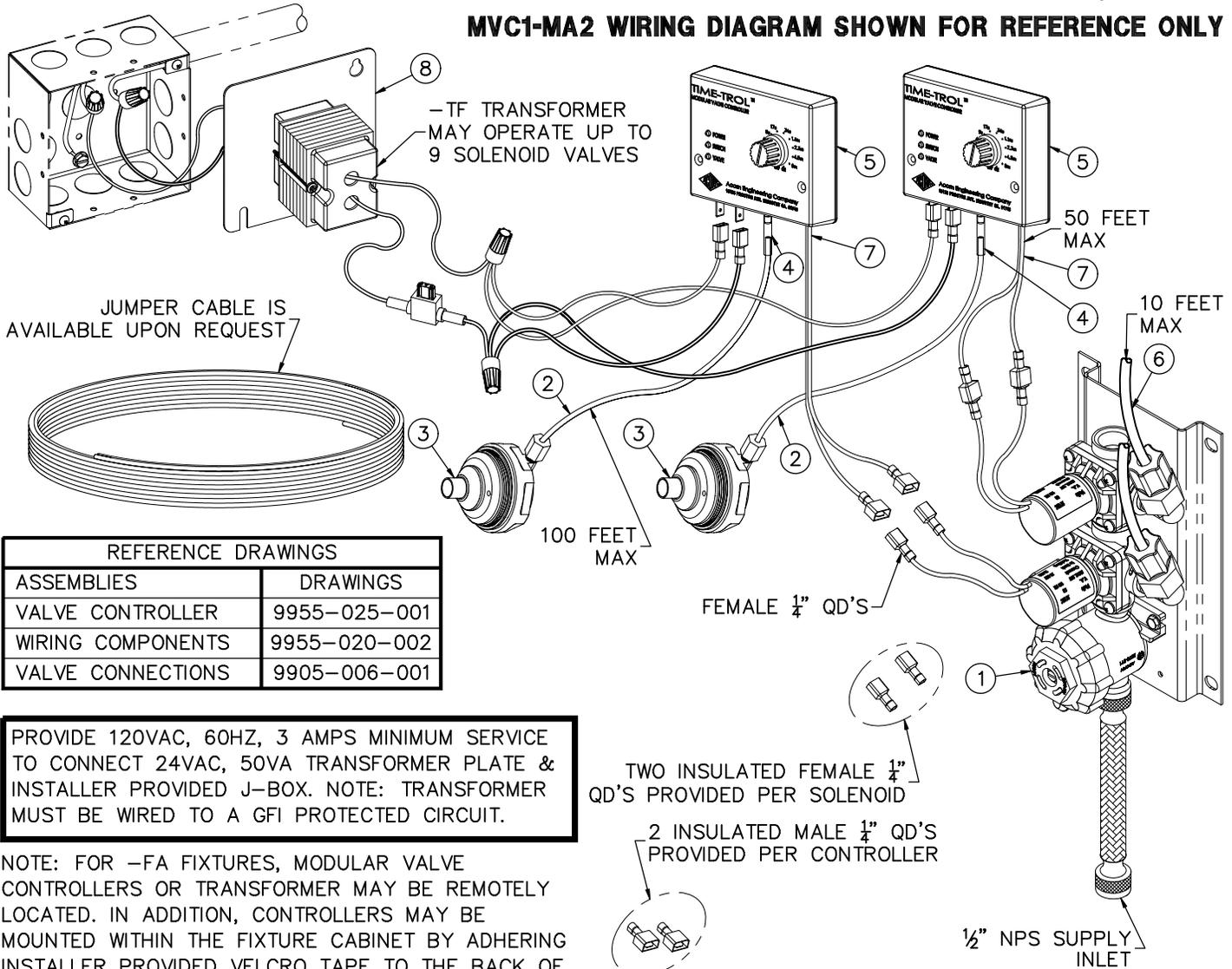


ACORN ENGINEERING COMPANY
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 15125 Proctor Ave Industry, CA 91746
 (626) 336-4561 FAX (626) 961-2200

TITLE (04-SERIES) HOT & COLD AIR-CONTROL VALVE ASSEMBLY - NEW STYLE		
MANUFACTURE DATE SEPT 1995 TO PRESENT	DATE ISSUED 11/1/95	DRAWING NUMBER 9905-000-003
	DATE REVISED 11/18/13 F	



MVC1-MA2 WIRING DIAGRAM SHOWN FOR REFERENCE ONLY



REFERENCE DRAWINGS	
ASSEMBLIES	DRAWINGS
VALVE CONTROLLER	9955-025-001
WIRING COMPONENTS	9955-020-002
VALVE CONNECTIONS	9905-006-001

PROVIDE 120VAC, 60HZ, 3 AMPS MINIMUM SERVICE TO CONNECT 24VAC, 50VA TRANSFORMER PLATE & INSTALLER PROVIDED J-BOX. NOTE: TRANSFORMER MUST BE WIRED TO A GFI PROTECTED CIRCUIT.

NOTE: FOR -FA FIXTURES, MODULAR VALVE CONTROLLERS OR TRANSFORMER MAY BE REMOTELY LOCATED. IN ADDITION, CONTROLLERS MAY BE MOUNTED WITHIN THE FIXTURE CABINET BY ADHERING INSTALLER PROVIDED VELCRO TAPE TO THE BACK OF THE CONTROLLER AND ONTO FIXTURE CABINET.

INSTALLATION INSTRUCTIONS:

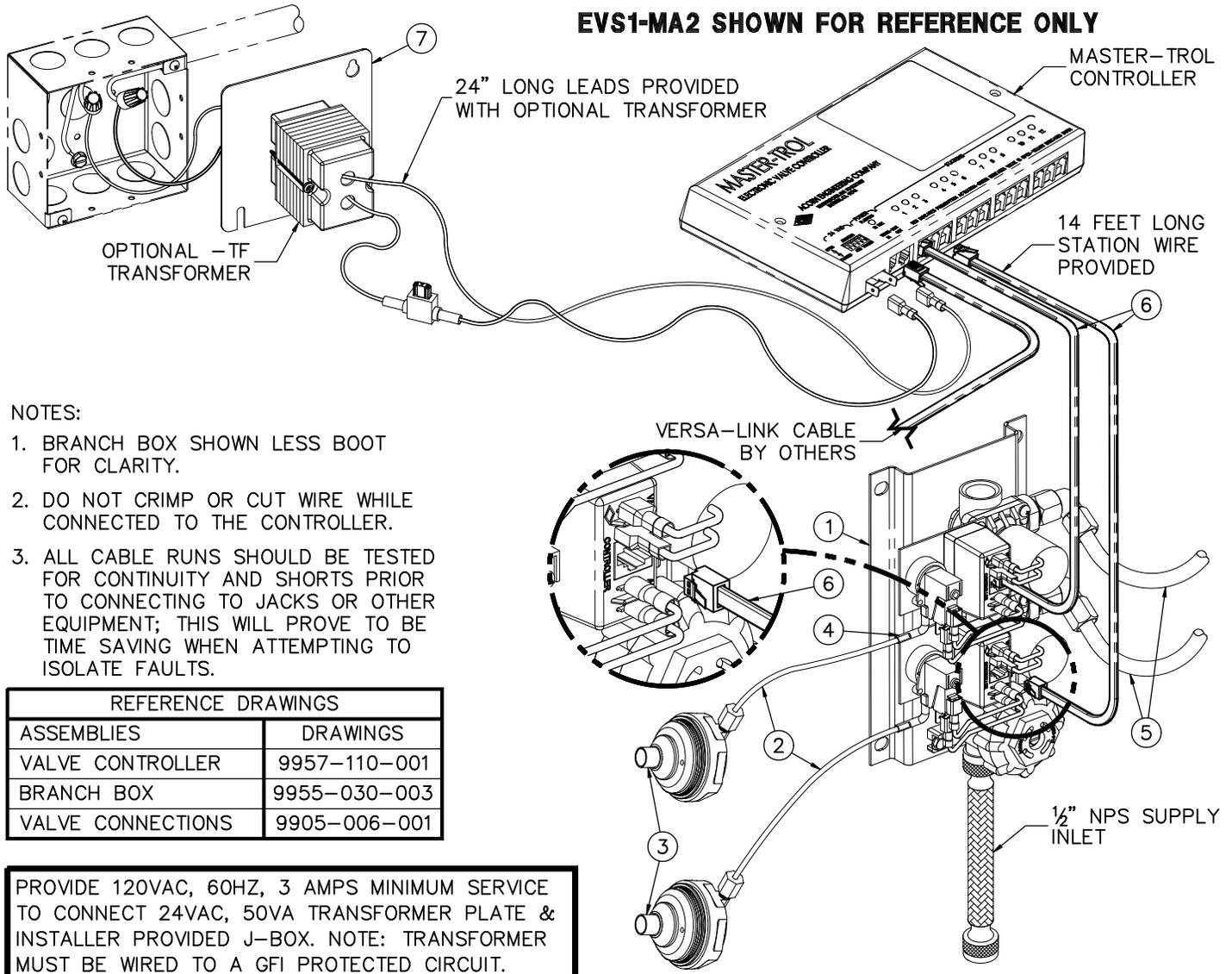
- A- ROUGH-IN & INSTALL FIXTURE PER MANUFACTURER'S INSTRUCTIONS.
- B- MOUNT SOLENOID VALVE ASSEMBLY (1) WITHIN THE CHASE OR FIXTURE FRAME / CABINET AS REQUIRED A MAXIMUM OF 10 FEET FROM THE FIXTURE.
- C- CONNECT AIR TUBING (2) TO MOUNTED PUSHBUTTON ASSEMBLY (3) AND HAND TIGHTEN FERRULE NUT. CONNECT THE TAG END OF THE AIR TUBING (2) TO THE VALVE CONTROLLER TUBE (4) AT THE POSITION MARKED "ACTUATOR" ON THE CONTROLLER (5). AIR TUBING FITS INSIDE THE CONTROLLER TUBE (4).

- D- CONNECT RISER TUBING (6) TO VALVE ASSEMBLY AND FIXTURE DISCHARGE CONNECTOR. HAND TIGHTEN USING FERRULE NUTS PROVIDED.
- E- CONNECT CONTROLLER WIRES (7) (INDICATED AS "VALVE" ON THE CONTROLLER) FROM VALVE CONTROLLER (2) TO SOLENOID VALVE (1).
- F- MAKE UP CONNECTIONS FROM TRANSFORMER (8) TO CONTROLLERS IN PARALLEL AS SHOWN.
- G- AFTER THOROUGHLY FLUSHING SUPPLY LINES MAKE UP SUPPLY CONNECTIONS.
- H- SET TIMING ON VALVE CONTROLLER (5) TO DESIRED FLOW DURATION.

ACORN ENGINEERING COMPANY P.O. BOX 3527 Industry, CA 91744 15125 Proctor Ave Industry, CA 91746 (626) 336-4561 FAX (626) 961-2200	TITLE MVC1-MA2 TIME-TROL SINGLE TEMP VALVE INSTALLATION		
	MANUFACTURE DATE MAY 1990 TO PRESENT	DATE ISSUED 08/05/10	DRAWING NUMBER 9900-001-004
		DATE REVISED 01/11/13	



EVS1-MA2 SHOWN FOR REFERENCE ONLY



NOTES:

1. BRANCH BOX SHOWN LESS BOOT FOR CLARITY.
2. DO NOT CRIMP OR CUT WIRE WHILE CONNECTED TO THE CONTROLLER.
3. ALL CABLE RUNS SHOULD BE TESTED FOR CONTINUITY AND SHORTS PRIOR TO CONNECTING TO JACKS OR OTHER EQUIPMENT; THIS WILL PROVE TO BE TIME SAVING WHEN ATTEMPTING TO ISOLATE FAULTS.

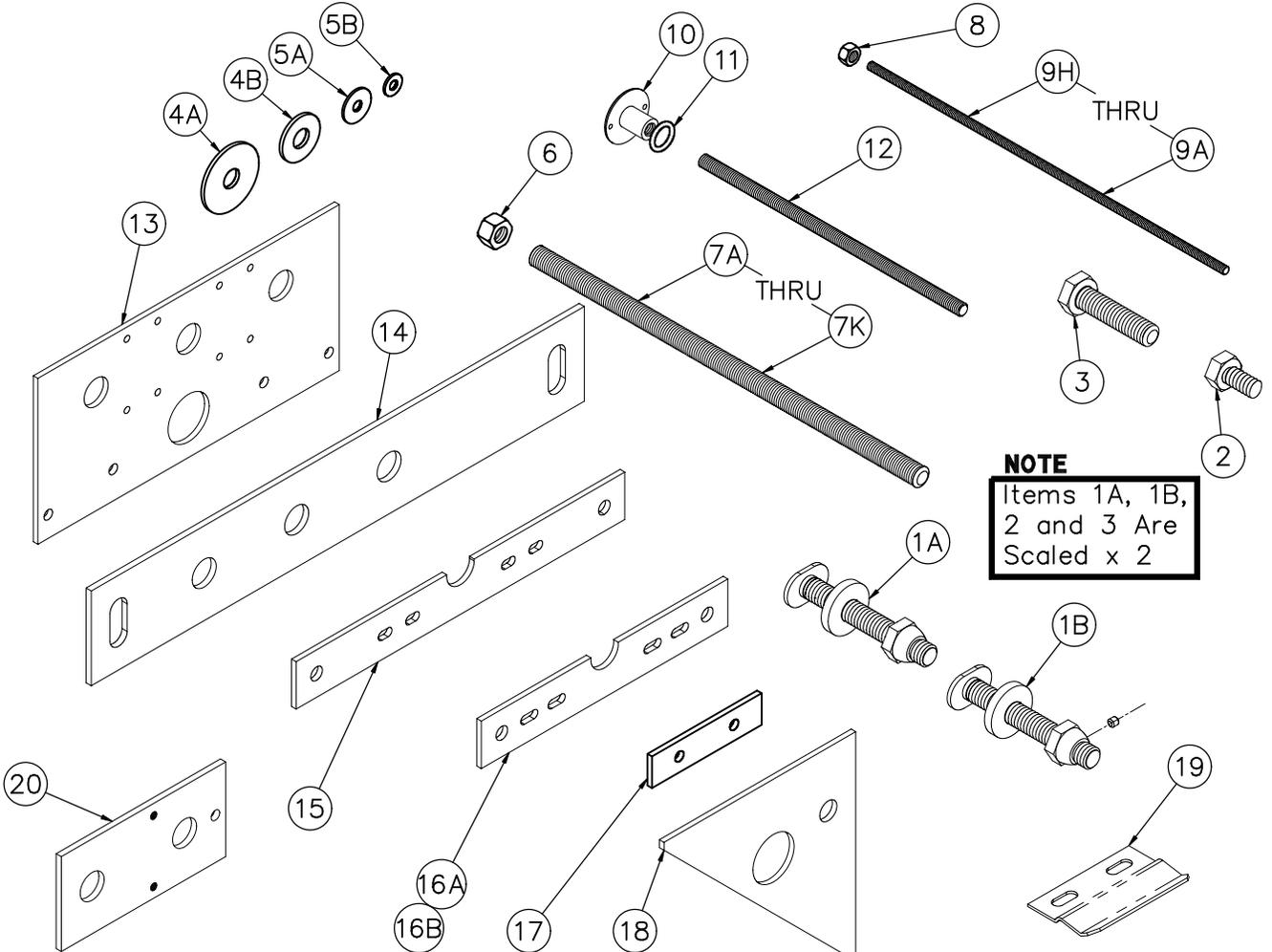
REFERENCE DRAWINGS	
ASSEMBLIES	DRAWINGS
VALVE CONTROLLER	9957-110-001
BRANCH BOX	9955-030-003
VALVE CONNECTIONS	9905-006-001

PROVIDE 120VAC, 60HZ, 3 AMPS MINIMUM SERVICE TO CONNECT 24VAC, 50VA TRANSFORMER PLATE & INSTALLER PROVIDED J-BOX. NOTE: TRANSFORMER MUST BE WIRED TO A GFI PROTECTED CIRCUIT.

INSTALLATION INSTRUCTIONS:

- A. ROUGH-IN & INSTALL FIXTURE PER MANUFACTURER'S INSTRUCTIONS.
- B. MOUNT SOLENOID VALVE ASSEMBLY (1) WITHIN THE CHASE OR FIXTURE FRAME / CABINET AS REQUIRED A MAXIMUM OF 10 FEET FROM THE FIXTURE.
- C. CONNECT AIR TUBING (2) TO MOUNTED PUSHBUTTON ASSEMBLY (3) AND HAND TIGHTEN FERRULE NUT. CONNECT THE TAG END OF THE AIR TUBING (2) TO THE BRANCH BOX PRESSURE SWITCH 3/16" OD TUBE (4). AIR TUBING (2) FITS INSIDE THE PRESSURE SWITCH 3/16" OD TUBE (4).
- D. CONNECT RISER TUBING (5) TO VALVE ASSEMBLY AND FIXTURE DISCHARGE CONNECTOR. HAND TIGHTEN USING FERRULE NUTS PROVIDED.
- E. CONNECT STATION WIRE (6) TO BRANCH BOX AND APPROPRIATE LOCATION ON CONTROLLER.
- F. MAKE UP CONNECTIONS FROM TRANSFORMER (8) TO CONTROLLER AS SHOWN.
- G. AFTER THOROUGHLY FLUSHING SUPPLY LINES MAKE UP SUPPLY CONNECTIONS.

ACORN ENGINEERING COMPANY P.O. BOX 3527 Industry, CA 91744 15125 Proctor Ave Industry, CA 91746 (626) 336-4561 FAX (626) 961-2200	TITLE EVS1 MASTER-TROL SINGLE TEMP VALVE INSTALLATION		
	MANUFACTURE DATE MAY 1998 TO PRESENT	DATE ISSUED 12/09/10	DRAWING NUMBER 9905-330-004
		DATE REVISED 05/14/13	



1A	0394-098-001	5/16" CLOSET BOLT ASSY (TOILETS)	9A	0243-021-000	1/4"-20 UNC x 2" LG MLD STL STUD
1B	0394-098-002	5/16" CLST BLT ASSY w/SET SCRW (TOILT)	9B	0243-019-000	1/4"-20 UNC x 3" LG MLD STL STUD
2	0207-001-000	1/4"-20 x 1/2" HX HD CP SCRW (1" WALL)	9C	0243-022-000	1/4"-20 UNC x 7" LG MLD STL STUD
3	0207-005-000	1/2"-13UNCx1-1/4" LG HX HD BLT (1" WLL)	9D	0243-023-000	1/4"-20 UNC x 8" LG MLD STL STUD
4A	0332-008-000	1/2" FLAT WASHER (2" OD)	9E	0243-017-000	1/4"-20 UNC x 9" LG MLD STL STUD
4B	0332-010-000	1/2" FLAT WASHER (1-3/8" OD)	9F	0243-018-000	1/4"-20 UNC x 10" LG MLD STL STUD
5A	0332-004-000	1/4" FLAT WASHER (1" OD)	9G	0243-025-000	1/4"-20 UNC x 13" LG MLD STL STUD
5B	0332-005-000	1/4" FLAT WASHER (5/8" OD)	9H	0243-020-000	1/4"-20 UNC x 13" LG MLD STL STUD
6	0304-001-000	1/2"-13 UNC NUT	10	0355-001-199	-TA TRESHOLD ANCHOR SECURITY NUT
7A	0243-008-000	1/2"-13 UNC x2" LG MLD STL STUD	11	0410-116-000	-TA THRESHOLD ANCHOR O-RING
7B	0243-014-000	1/2"-13 UNC x 3" LG MLD STL STUD	12	0242-010-000	3/8"-16 UNC x 9-1/2" LG STL STUD
7C	0243-009-000	1/2"-13 UNC x 4" LG MLD STL STUD	13	4224-009-199	VALVE SUPPORT PLATE (1741 SERIES)
7D	0243-011-000	1/2"-13 UNC x 4-1/2" LG MLD STL STUD	14	4224-015-199	VALVE SUPPORT PLATE (CAT. #1656)
7E	0243-002-000	1/2"-13 UNC x 8" LG MLD STL STUD	15	4220-003-199	BACK PLATE (#1741 SERIES)
7F	0243-012-000	1/2"-13 UNC x 9" LG MLD STL STUD	16A	4220-000-199	BACK PLATE (ACC. 8"-12" WALL)
7G	0243-001-000	1/2"-13 UNC x 10" LG MLD STL STUD	16B	4220-000-299	BACK PLATE (ACC. 1" WALL)
7H	0243-005-000	1/2"-13 UNC x 12" LG MLD STL STUD	17	0392-015-199	VALVE SUPPORT PLATE (#1835-#1837)
7I	0243-003-000	1/2"-13 UNC x 14" LG MLD STL STUD	18	4224-018-199	FLUSH VALVE SUPPORT PLATE (NEW STYLE)
7J	0243-010-000	1/2"-13 UNC x 16" LG MLD STL STUD	19	4227-000-199	ANCHOR BRACKET, TOILET FLOOR
7K	0243-006-000	1/2"-13 UNC x 16" LG MLD STL STUD	20	4224-002-199	VALVE SUPPORT/ WALL MNT BUBBLER
8	0304-005-000	1/4"-20 UNC NUT			

ITEM	PART NUMBER	DESCRIPTION	ITEM	PART NUMBER	DESCRIPTION
ACORN ENGINEERING COMPANY P.O. BOX 3527 INDUSTRY, CA. 91744 (626) 336-4561 FAX (626) 961-2200					
TITLE MOUNTING HARDWARE, PENAL FIXTURES					
MANUFACTURE DATE			DATE ISSUED		DRAWING NUMBER
OCTOBER 1972			03/01/90		9957-900-001
TO PRESENT			DATE REVISED		
			03/03/2020 E		