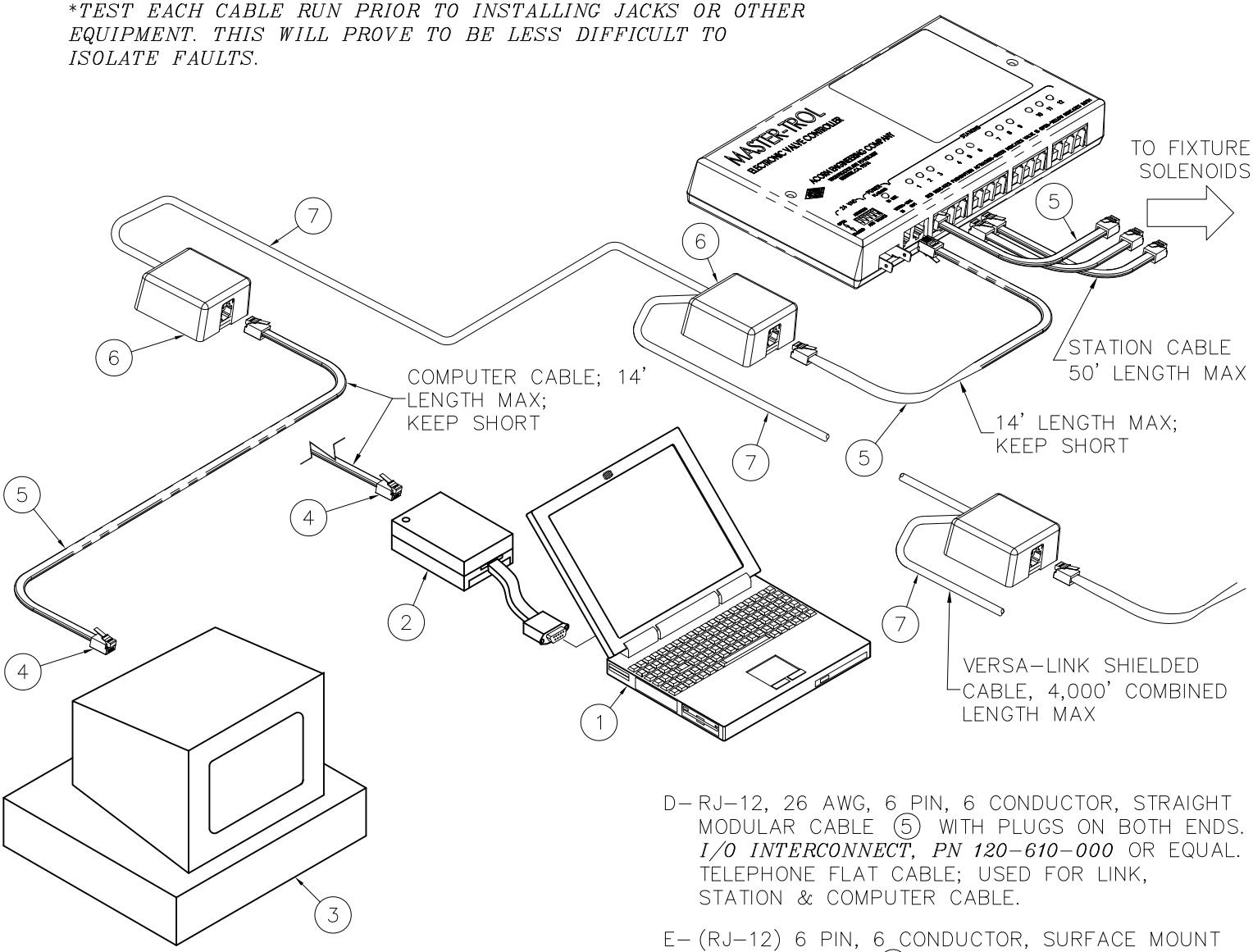
**TEST EACH CABLE RUN PRIOR TO INSTALLING JACKS OR OTHER EQUIPMENT. THIS WILL PROVE TO BE LESS DIFFICULT TO ISOLATE FAULTS.*



MANUFACTURER'S NAMES AND MODEL NUMBERS ARE PROVIDED FOR REFERENCE ONLY.

HARDWARE (COMPUTER ONLY)

A– OPTION –CLT LAPTOP COMPUTER (1) IS ONLY AVAILABLE WITH A *WINDOWS 7* OPERATING SYSTEM FOR SINGLE–LINK SYSTEMS ONLY. RS–232 TO RS–485 CONVERTER (2), COM1 TO TO VERSA–LINK (VIA RJ–12 SOCKET) PROVIDED.

B– OPTION –CDT DESKTOP COMPUTER (3) IS PROVIDED WITH A *WINDOWS 7* OPERATING SYSTEM FOR SINGLE–LINK OR MULTPLE–LINK (UP TO 8 LINKS) SYSTEMS.

MISCELLANEOUS HARDWARE

C– 6 PIN, 6 WIRE, RJ–12 PHONE PLUGS (4). *AMP INC. P/N #5–555042–3* OR EQUAL BY OTHERS.

D– RJ–12, 26 AWG, 6 PIN, 6 CONDUCTOR, STRAIGHT MODULAR CABLE (5) WITH PLUGS ON BOTH ENDS. *I/O INTERCONNECT, PN 120–610–000* OR EQUAL. TELEPHONE FLAT CABLE; USED FOR LINK, STATION & COMPUTER CABLE.

E– (RJ–12) 6 PIN, 6 CONDUCTOR, SURFACE MOUNT MODULAR JACK (6) BY OTHERS. NOTE: JACK MAY INCLUDE A SNAP ON COVER AND/OR DOUBLE SIDED ADHESIVE TAPE TO BE USED WHEN SCREW MOUNTING IS NOT DESIRED.

F– VERSAL–LINK CABLE (7), 24 AWG SHIELDED TWISTED PAIR CABLE. *BELDON, PART NUMBER #9501* OR EQUAL. 4,000' COMBINED MAX PER RUN.

COMPUTER CABLE: (5) CONNECTS COMPUTER TO VERSA–LINK MODULAR JACK. SEE 'D' ABOVE.

LINK CABLE: (5) CONNECTS MODULAR JACK TO VALVE CONTROLLER. SEE 'D' ABOVE.

STATION CABLE: (5) CONNECTS ELECTRONIC VALVE CONTROLLER TO FIXTURE SOLENOID VALVE. SEE 'D' ABOVE. ONE CABLE, 14 FEET LONG PER SOLENOID PROVIDED. 50 FEET MAX.

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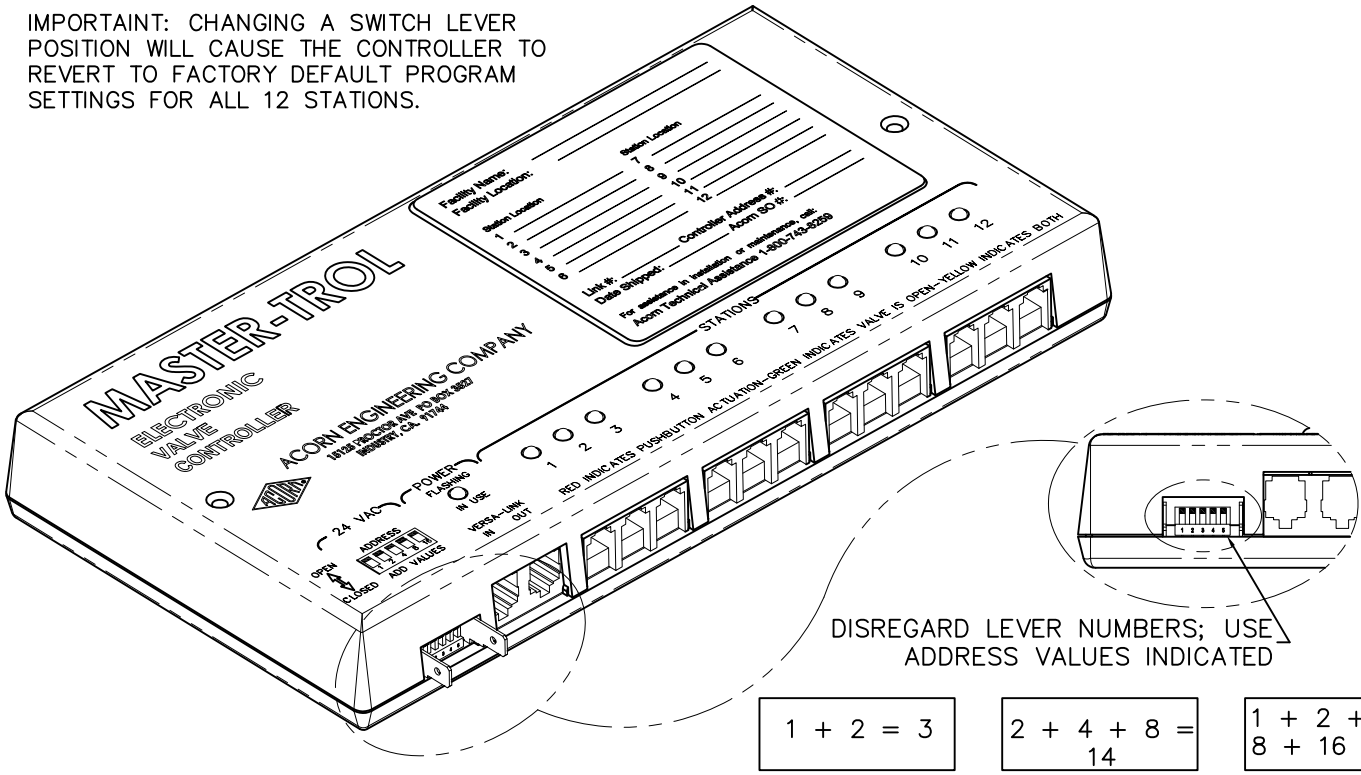
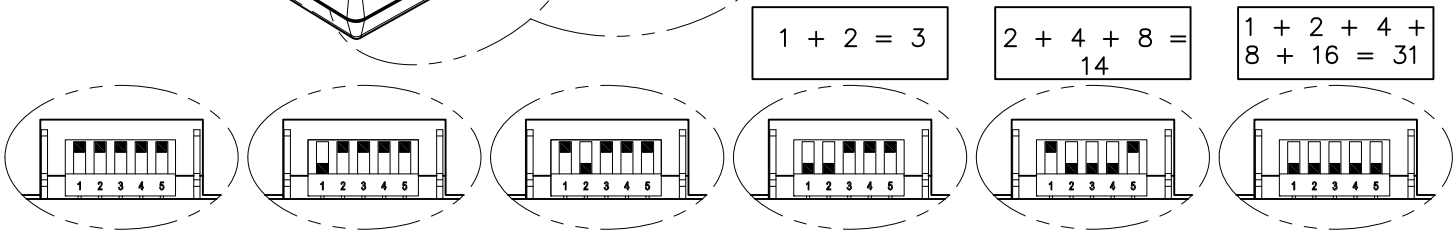
(626) 336–4561 FAX (626) 961–2200

TITLE		
MASTER-TROL HARDWARE SPECIFICATIONS AND REQUIREMENTS		
MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
JANUARY 1994 TO PRESENT	**11/09/95**	**9905-304-001**
	DATE REVISED **05/13/15 F**	

IMPORTAINT: CHANGING A SWITCH LEVER POSITION WILL CAUSE THE CONTROLLER TO REVERT TO FACTORY DEFAULT PROGRAM SETTINGS FOR ALL 12 STATIONS.



DISREGARD LEVER NUMBERS; USE ADDRESS VALUES INDICATED



ADDRESS SET TO "32" | ADDRESS SET TO "1" | ADDRESS SET TO "2" | ADDRESS SET TO "3" | ADDRESS SET TO "14" | ADDRESS SET TO "31"

*WHEN SWITCH LEVERS ARE IN THE UP OR OPEN POSITION THE COMPUTER RECOGNIZES THE ADDRESS AS "32"

USE ADDRESS VALUES INDICATED ON COVER TO ASSIGN AN ADDRESS

CONTROLLER ADDRESS

EACH CONTROLLER MUST HAVE ITS ADDRESS SET PRIOR TO BEGINNING THE PROGRAMMING SEQUENCE SO THE COMPUTER WILL KNOW WHICH CONTROLLER AND VALVE STATION TO ACCESS.

THERE IS A FIVE LEVER DIP SWITCH LOCATED ON THE BOTTOM OF THE CONTROLLER TO DESIGNATE A CONTROLLER ADDRESS. THE DIP SWITCH IS CAPABLE OF DESIGNATING 32 ADDRESS VALUES.

BEFORE DESIGNATING A CONTROLLER ADDRESS; ZERO THE DIP SWITCH BY ENSURING ALL THE SWITCH LEVERS ARE OPEN OR AWAY FROM THE SWITCH NUMBER NUMBERS. *WHEN ALL THE SWITCH LEVERS ARE IN THE UP OR OPEN POSITION THE COMPUTER RECOGNIZES THE ASSIGNED CONTROLLER ADDRESS AS 32.

REFER TO WIRING PLAN REQUESTED TO ASSIGN THE APPROPRIATE CONTROLLER ADDRESS. CONTROLLER NUMBER ON THE WIRING PLAN INDICATES THE CONTROLLER ADDRESS.

INSTALLATION INSTRUCTIONS:

A–TO ASSIGN A CONTROLLER ADDRESS LOCATE THE DIP SWITCH LOCATED ON THE BOTTOM OF THE CONTROLLER BETWEEN THE POWER LUGS AS SHOWN.

B–ROTATE THE DIP SWITCHES TO THE CLOSED POSITION TO ASSIGN A CONTROLLER ADDRESS.
NOTE: THE ADDRESS VALUES MUST TOTAL TO THE APPROPRIATE CONTROLLER ADDRESS.

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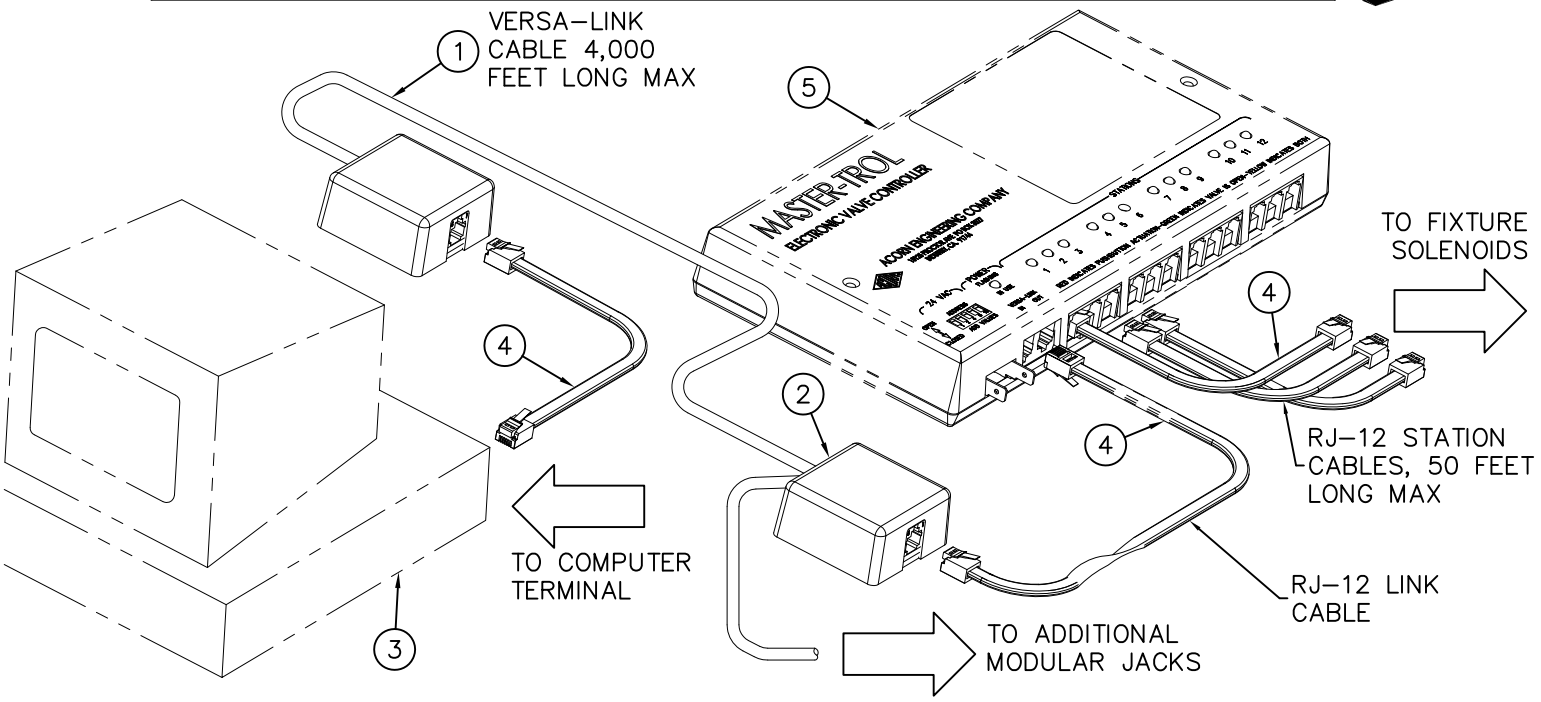
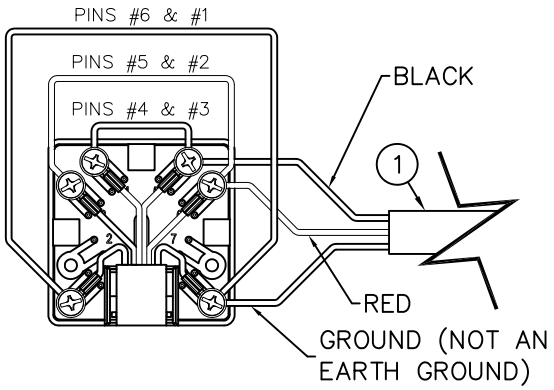
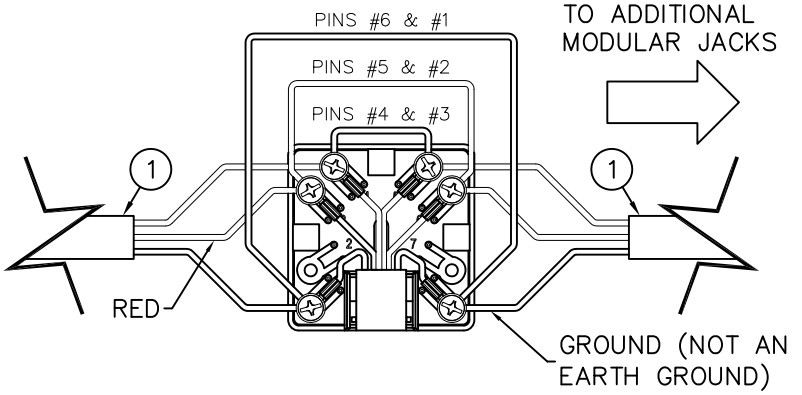
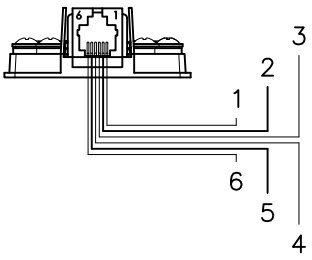
TITLE		
SETTING EVS CONTROLLER ADDRESS		
MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
OCTOBER 1995 TO PRESENT	**10/31/95**	**9905-307-001**
	DATE REVISED **01/18/13**	

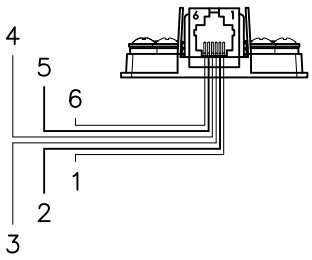
1/2











VERSA-LINK CONNECTION DETAIL

1. VERSA–LINK CABLE, 24AWG SHIELDED TWISTED PAIR ① WIRE CONNECTION TO SURFACE MOUNTED MODULAR JACK ②.

   ** EXISTING MASTER–TROL SYSTEMS MAY INCLUDE MMJ STLE JACKS & CABLING IN LIEU OF MODULAR JACKS AND RJ–12 USED CURRENTLY.

NOTES:

① VERSA–LINK CABLE, 24AWG SHIELDED TWISTED PAIR.

② SURFACE MOUNTED MODULAR JACK.

③ DESKTOP COMPUTER SHOWN FOR REFERENCE ONLY.

④ 6–CONDUCTOR, MODULAR CABLE WITH RJ–12 PLUGS ON EACH END.

⑤ MASTER–TROL CONTROLLER

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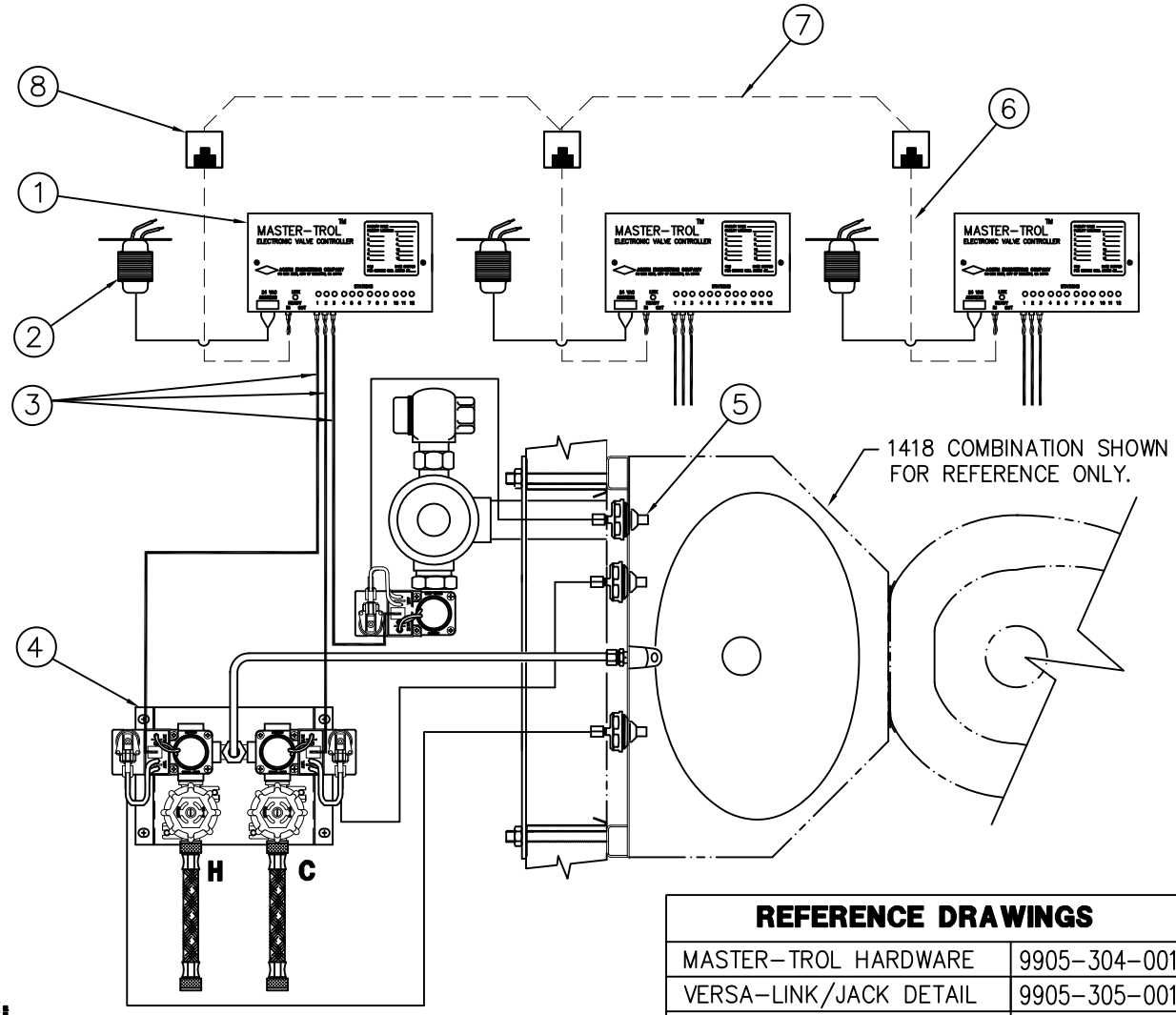
TITLE **MASTER-TROL VERSA-LINK JACK CONNECTION DETAIL**

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
APRIL 2009 TO PRESENT	**01/12/13**	**9905-305-002**
	DATE REVISED	



REFERENCE DRAWINGS	
MASTER–TROL HARDWARE	9905–304–001
VERSA–LINK/JACK DETAIL	9905–305–001
CONTROLLER ADDRESS	9905–307–001
SINGLE TEMP VALVE –EVS1	9905–311–003
HOT & COLD VALVE –EVS2	9905–310–003
FLUSH VALVE –EVS–FVE	9905–315–002

DETAILS:

① Master–Trol Controller (Electronic Valve Controller). Set unique address on each controller in a link before mounting it on wall. (See Dwg #9905–307–001 to set controller address). Controller number on wiring plan drawing (from factory) equals controller address. Locate controller in a dry place within 50 feet of Solenoid valve/branch box.

② 120V Primary Electrical Supply for 24VAC 50VA class 2 Transformer with 2 foot leads (provided) recommended location is at/or near Master–Trol Controller.
NOTE: Transformer must be wired to a G.F.I. Protected Circuit.

③ Station Wires (between Master–Trol Controller Station & branch box) 6 conductor, flat phone cables with RJ–12 plugs at each end (14 ft. provided). NOTE: Mark station # on both ends of wire to which it is connected!
RECOMMENDED CONNECTIONS: On a typical comby connect station #1 to hot side of valve, station #2 to cold side, and station #3 to flush valve; or connect as per Master–Trol map (from factory).

④ Solenoid valve assembly with branch box. Recommended distance is within 10 feet of fixture. Connect air lines from pushbuttons to momentary air switch using 3/16" O.D. tubing adapter piece.

⑤ Pushbutton with 10 feet of air line from factory to be connected with ferrule nut provided.

⑥ Link Wire 6 Conductor flat phone cable with RJ–12 plug at each end. (By others).

⑦ Versa–Link 24 AWG Shielded twisted pair cable (By others) not to exceed 4000 total feet. Up to 32 MT Controller can be hooked up to a single Versa–Link.

⑧ 6–Position 6–Contact Modular Plug (RJ–12 jack) Dwg #9905–305–001.

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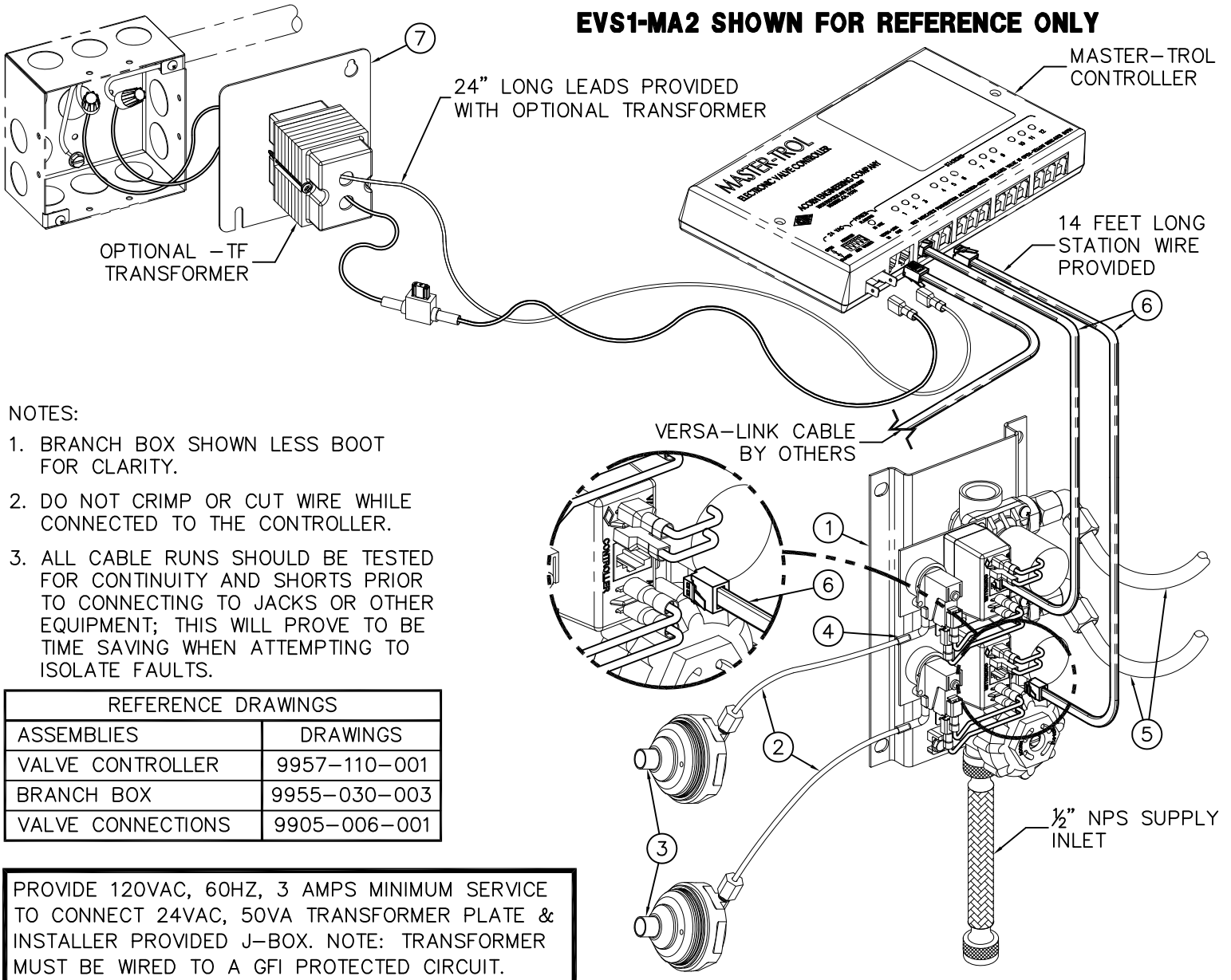
TITLE **MASTER-TROL WIRING DETAIL/UNMONITORED SINGLE VERSA-LINK (BASIC #2)**

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
APRIL 1, 1998 TO PRESENT	**05/12/98**	**9905-301-002**
	DATE REVISED **05/08/08**	

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.

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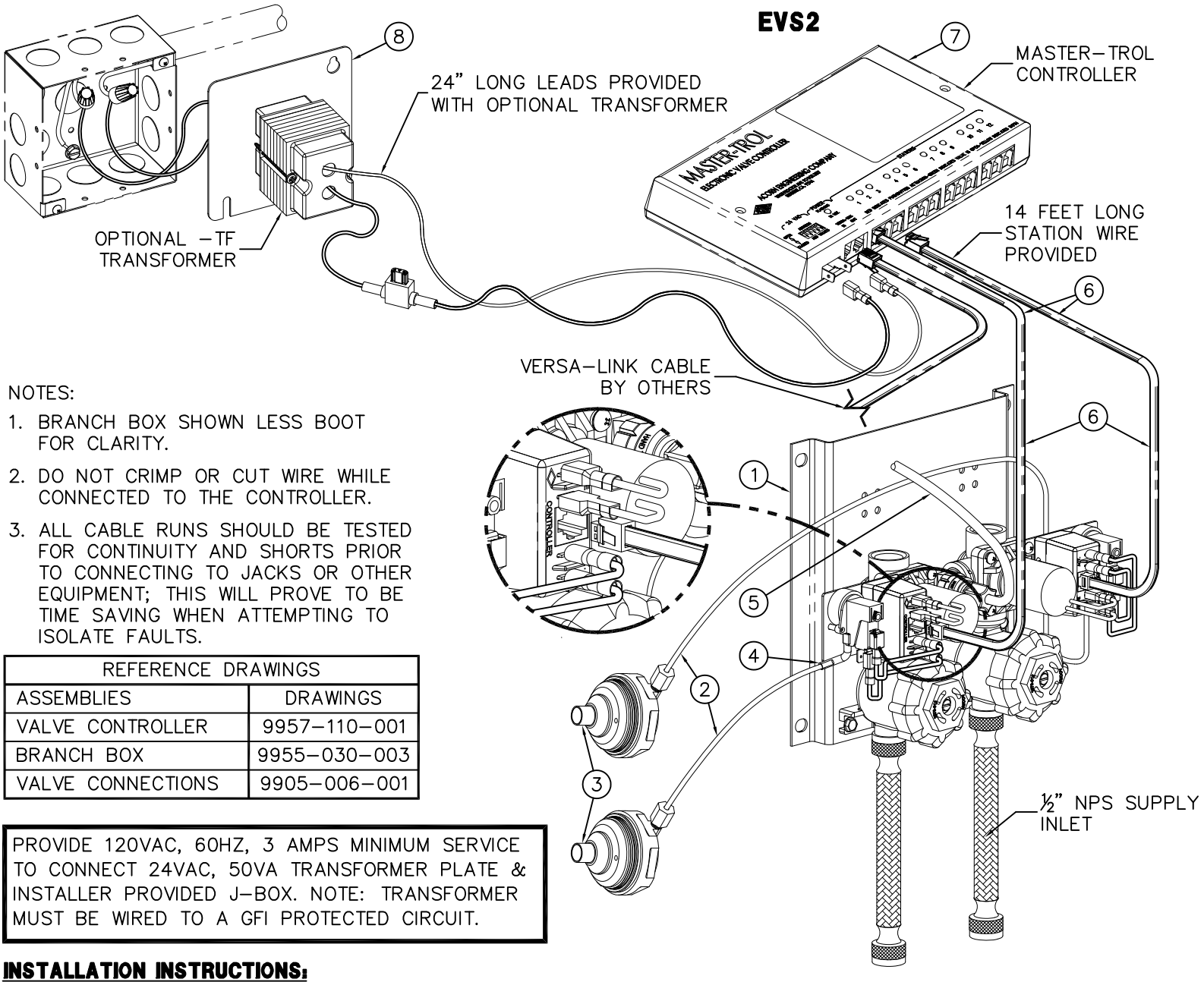
TITLE **EVS1 MASTER-TROL SINGLE TEMP VALVE INSTALLATION**

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
MAY 1998 TO PRESENT	**12/09/10**	**9905-330-004**
	DATE REVISED **05/14/13**	

EVS2



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 (7).

F. MAKE UP CONNECTIONS FROM TRANSFORMER (8) TO CONTROLLER AS SHOWN.

G. AFTER THOROUGHLY FLUSHING SUPPLY LINES MAKE UP SUPPLY CONNECTIONS.

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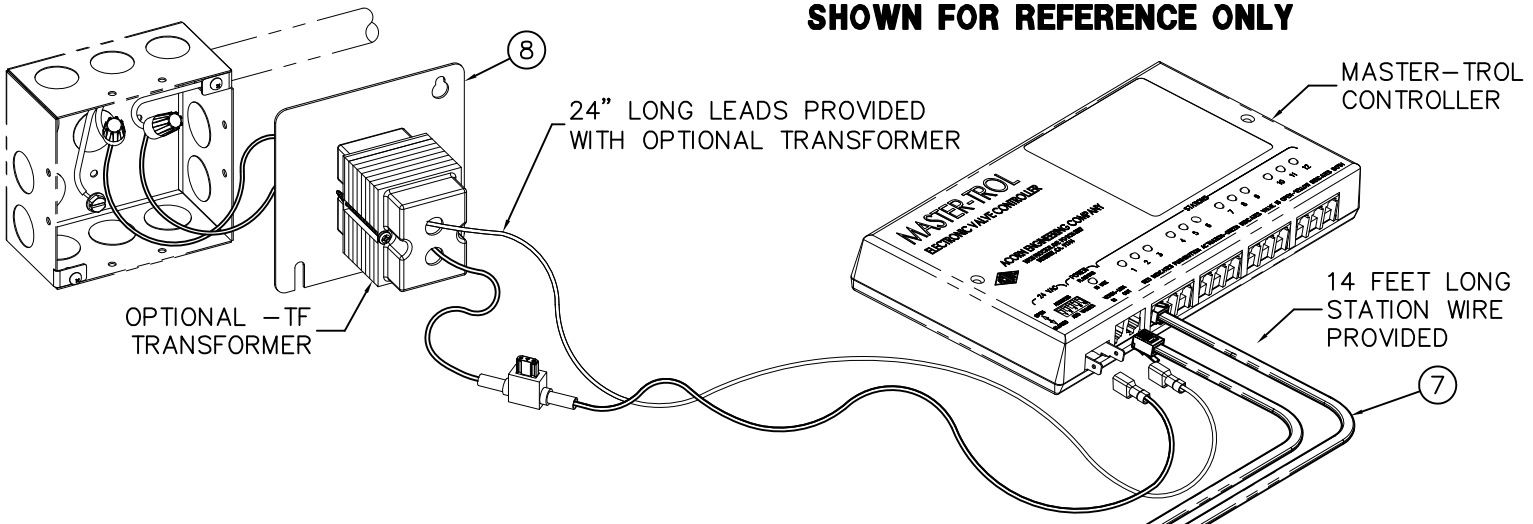
TITLE		
EVS2 MASTER-TROL HOT & COLD VALVE INSTALLATION		
MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
MAY 1998 TO PRESENT	**09/27/13**	**9905-333-001**
	DATE REVISED	

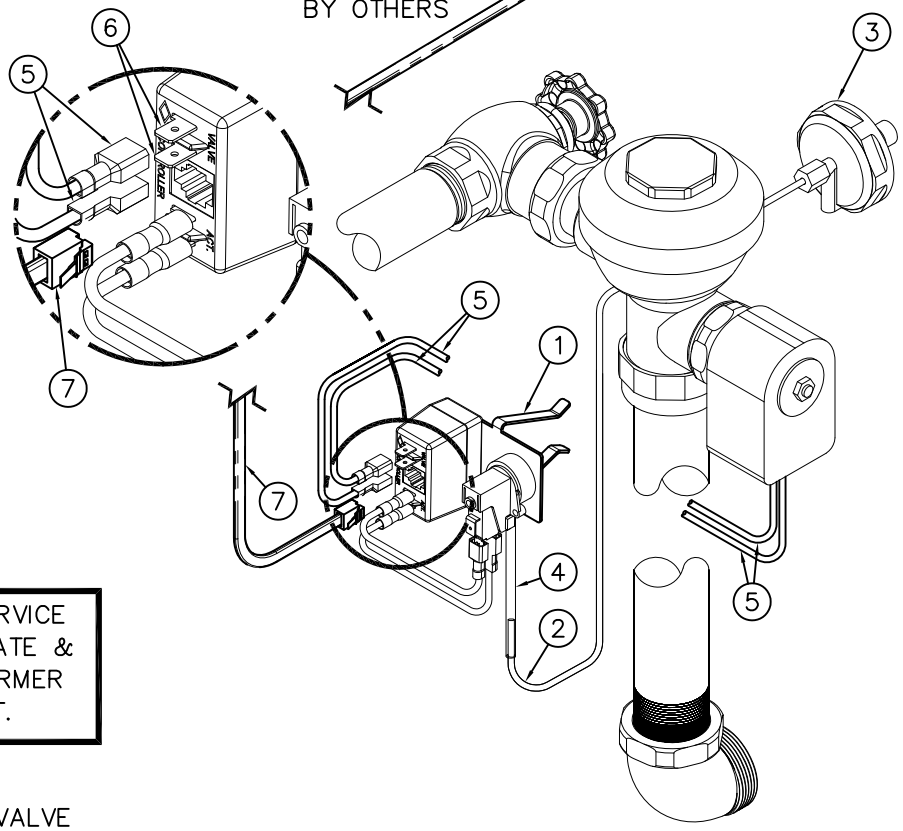
SHOWN FOR REFERENCE ONLY



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
AIR–CONTR PB PLATE	9905–314–001
VALVE CONTROLLER	9957–110–001
BRANCH BOX	9955–030–003



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 AND FLUSH VALVE PER MANUFACTURER'S INSTRUCTIONS.

B. CLIP BRANCH BOX ASSEMBLY (1) TO FLUSH VALVE HORIZONTAL PIPING AS SHOWN.

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 SOLENOID VALVE WIRES (5) TO EVS BRANCH BOX TERMINALS (6) MARKED "VALVE".

E. CONNECT STATION WIRE (7) TO BRANCH BOX AND APPROPRIATE LOCATION ON CONTROLLER.

F. MAKE UP CONNECTIONS FROM TRANSFORMER (8) TO CONTROLLER AS SHOWN.

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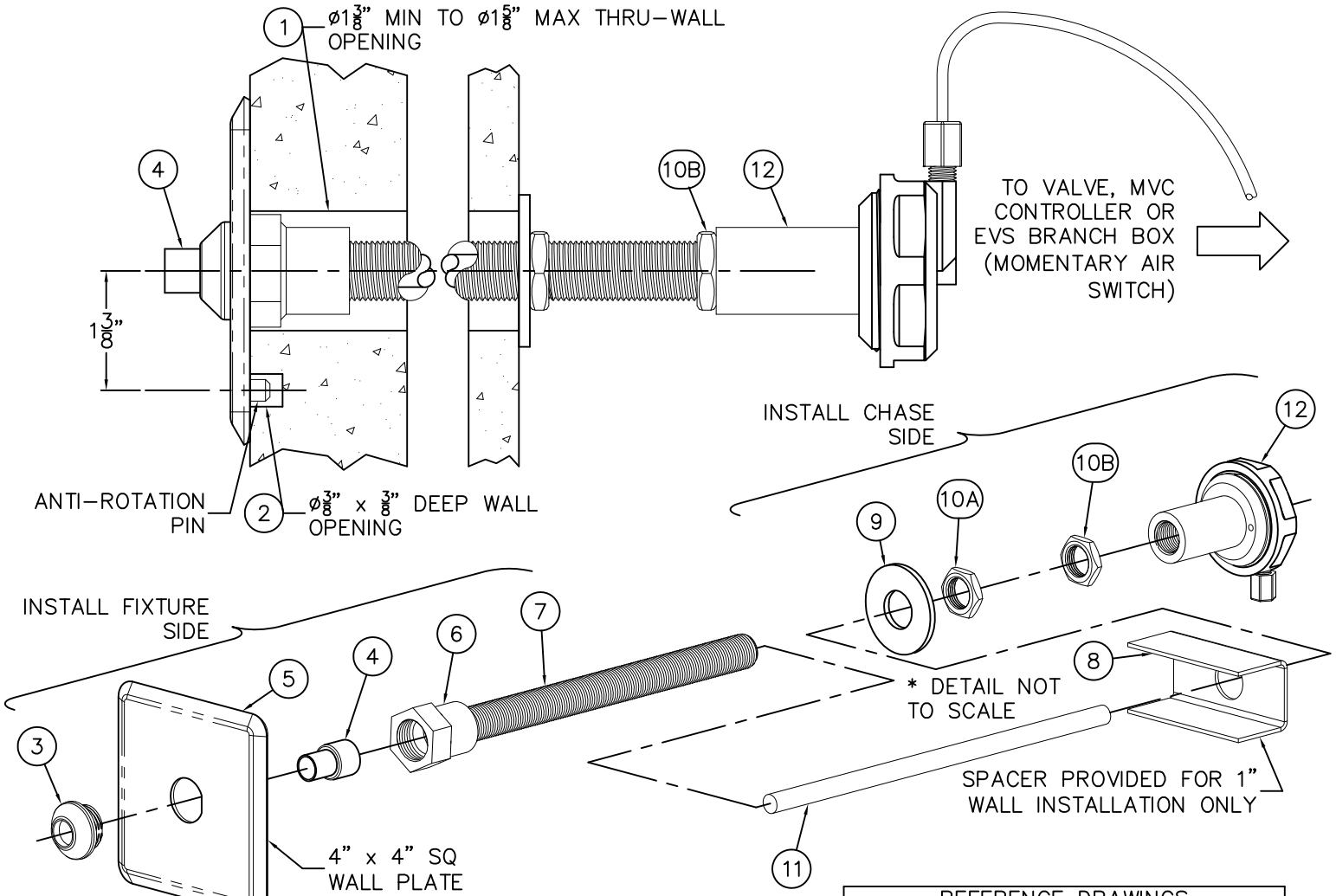
TITLE **EVSFV MASTER-TROL FLUSH VALVE**

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
APRIL, 1998 TO PRESENT	**05/08/98**	**9905-315-002**
	DATE REVISED **05/17/13**	



REFERENCE DRAWINGS	
AIR-CONTROL TRIM	9957-171-001
AIR-CONTROL CONN	9905-006-001

INSTALLATION INSTRUCTIONS:

A. INSTALL THE FIXTURE PER INSTALLATION INSTRUCTIONS PROVIDED.

B. LOCATE & ROUGH-IN FOR REMOTE PUSHBUTTON ASSEMBLY. NOTE: LOCATE PUSHBUTTON USING TUBING PROVIDED. FOR LONGER DISTANCES, CONTACT FACTORY.
- ø1-3/8" THROUGH WALL OPENING (1) FOR PUSHROD ASSEMBLY.
- ø3/8" x 3/8" DEEP MIN. WALL OPENING (2) FOR PLATE ANTI-ROTATION PIN.
- BEFORE INSTALLING, DISASSEMBLE PUSHROD ACTUATOR ASSEMBLY AS SHOWN ABOVE.

C. FROM FIXTURE SIDE: ASSEMBLE PUSHBUTTON ESCUTCHEON (3) AND PUSHBUTTON (4) TO PLATE (5) SECURING WITH HEX BUSHING ADAPTER (6) AND THREADED CONDUIT (7). ALIGN ASSEMBLED CONDUIT (7) AND ANTI-ROTATION PIN WITH WALL OPENINGS AND SLIDE THROUGH WALL.

D. FROM CHASE SIDE: THREAD SPACER (8) IF REQ, FLAT WASHER (9) AND SECURE ASSEMBLY WITH LOCKNUT (10A). INSTALL PUSHROD (11) BEFORE ADDING LOCKNUT (10B) AND ADJUSTING SLEEVE ASSEMBLY (12) TO THREADED CONDUIT.

E. TO COMPLETE INSTALLATION, ADJUST PUSHBUTTON (4) BY LOOSENING LOCKNUT (10B) AND ROTATE THE ADJUSTING SLEEVE (12) AS REQUIRED. WHEN PROPERLY ADJUSTED THERE SHOULD BE NO PLAY AND ONLY MINOR TENSION AT THE BUTTON (4).

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TITLE: **AIR-CONTROL PUSHBUTTON PLATE INSTALLATION**

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
APRIL 1998 TO PRESENT	**03/01/13**	**9905-314-001**
	DATE REVISED	