

INSTALLATION INSTRUCTIONS

- A—SHUT OFF VALVE WATER SUPPLY AT EXISTING STOP(S) ①. REPAIR OR REPLACE STOP(S) IF REQ'D.
- B—REMOVE EXISTING FULCRUM & ROCKER ARM ASSEMBLY ②.
- C—REMOVE EXISTING PUSHBUTTON(S) & PUSHROD(S) ③.
- D—INSTALL AIR-CONTROL PUSHBUTTON(S) ⑤ TO BACKSPLASH. **FOR CORE DRILLED WALL PUSHBUTTON:** 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. SEE DETAIL "B".
- E—REMOVE EXISTING VALVE CARTRIDGE ④. REMOVE ANY LIME BUILD UP WITHIN VALVE BODY CHAMBER AND FLUSH.
- F—LUBRICATE UPPER & LOWER O-RINGS ⑪ ON RETRO-AIR CARTRIDGE WITH LUBRICANT PROVIDED. INSTALL RETRO-AIR SERVOMOTOR CARTRIDGE(S) ⑥. HAND TIGHTEN KNURLED NUT ⑦ TO VALVE BONNET. **NOTE:** TIMER ASSEMBLY SHOULD BE POSITION FACING OUTWARD.
- G—CONNECT 1/8" O.D. PLASTIC AIRLINE ⑧ FROM PUSH BUTTON ⑤ TO SERVOMOTOR TIMER ASSEMBLY. HAND TIGHTEN FERRULE NUTS AS SHOWN IN DETAIL A.

- H—TURN WATER ON. CHECK FOR LEAKS.
- I—SET TIMING AT SERVOMOTOR. TIMING IS ADJUSTABLE FROM 5 TO 60 SECONDS AND IS ACCOMPLISHED BY ROTATING THE TIMING SCREW (SEE DETAIL AA). TURNING THE SCREW CLOCKWISE INCREASES TIMING, COUNTERCLOCKWISE DECREASES TIMING.

NOTE:

ASSEMBLY SHOWN CAN ONLY BE USED ON PENAL-TROL VALVES MANUFACTURED FROM JUNE 1978 TO PRESENT. VALVES MANUFACTURED PRIOR TO THIS DATE REQUIRE SPECIAL PUSHBUTTON ASSY. CONTACT FACTORY FOR DETAILS.

REFERENCE DRAWINGS	
Metering Servomotor	9955-000-002
Pushbutton	9957-300-001
Cartridge	9955-203-001
Stops	9956-000-002

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
P.O. BOX 3527 INDUSTRY, CA. 91744
(626) 336-4561 FAX (626) 961-2200

TITLE

RETRO-AIR PENAL-TROL CONVERSION TO METERING AIR-CONTROL 3386-3387 SERIES

MANUFACTURE DATE

**MAY 1995
TO PRESENT**

DATE ISSUED

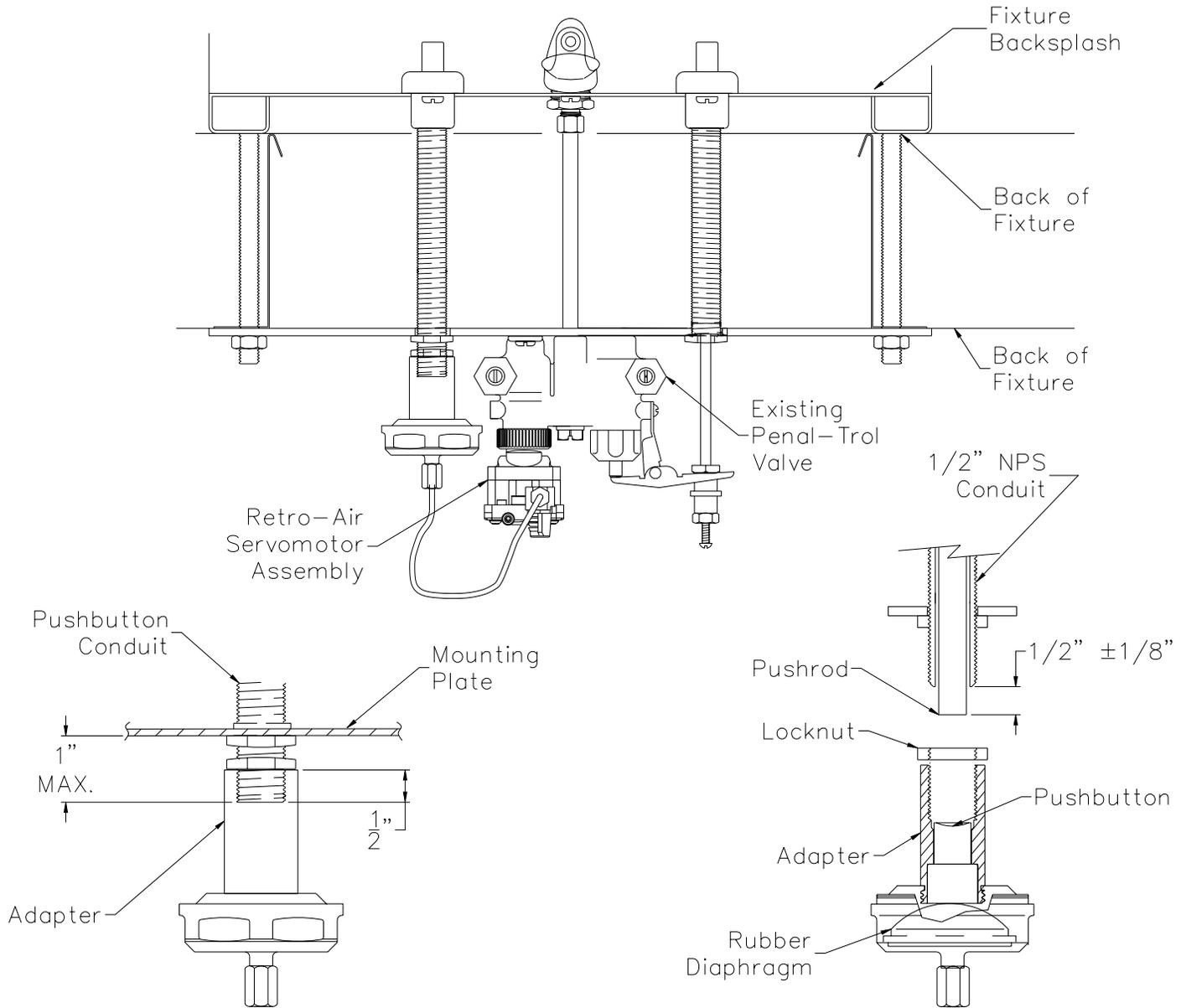
5/1/95

DATE REVISED

4/22/99

DRAWING NUMBER

9905-015-001



REQUIRED DIMENSIONS FOR CLEARANCE OF RETRO-AIR

Detail intended to show pushbutton conduit assembly. Conduit to protrude a maximum of 1" behind mounting plate for clearance of Retro-Air Metering Valve.

- A- CUT PUSHROD TO REST SNUG AGAINST BUTTON.
- B- THREAD 1/2" NPS CONDUIT INTO ADAPTER NO MORE THAN 1/2".
- C- SECURE CONDUIT IN PLACE WITH LOCKNUT.
- D- POSITION BUTTON TO REST UPON RUBBER DIAPHRAGM WHILE EXISTING PUSHBUTTON ASSEMBLY IS IN OFF POSITION.



ACORN ENGINEERING COMPANY
 P.O. BOX 3527 INDUSTRY, CA. 91744
 (626) 336-4561 FAX (626) 961-2200

TITLE **RETRO-AIR REPLACEMENT DETAIL FOR CLEARANCE**

MANUFACTURE DATE

**MAY 1995
 TO PRESENT**

DATE ISSUED

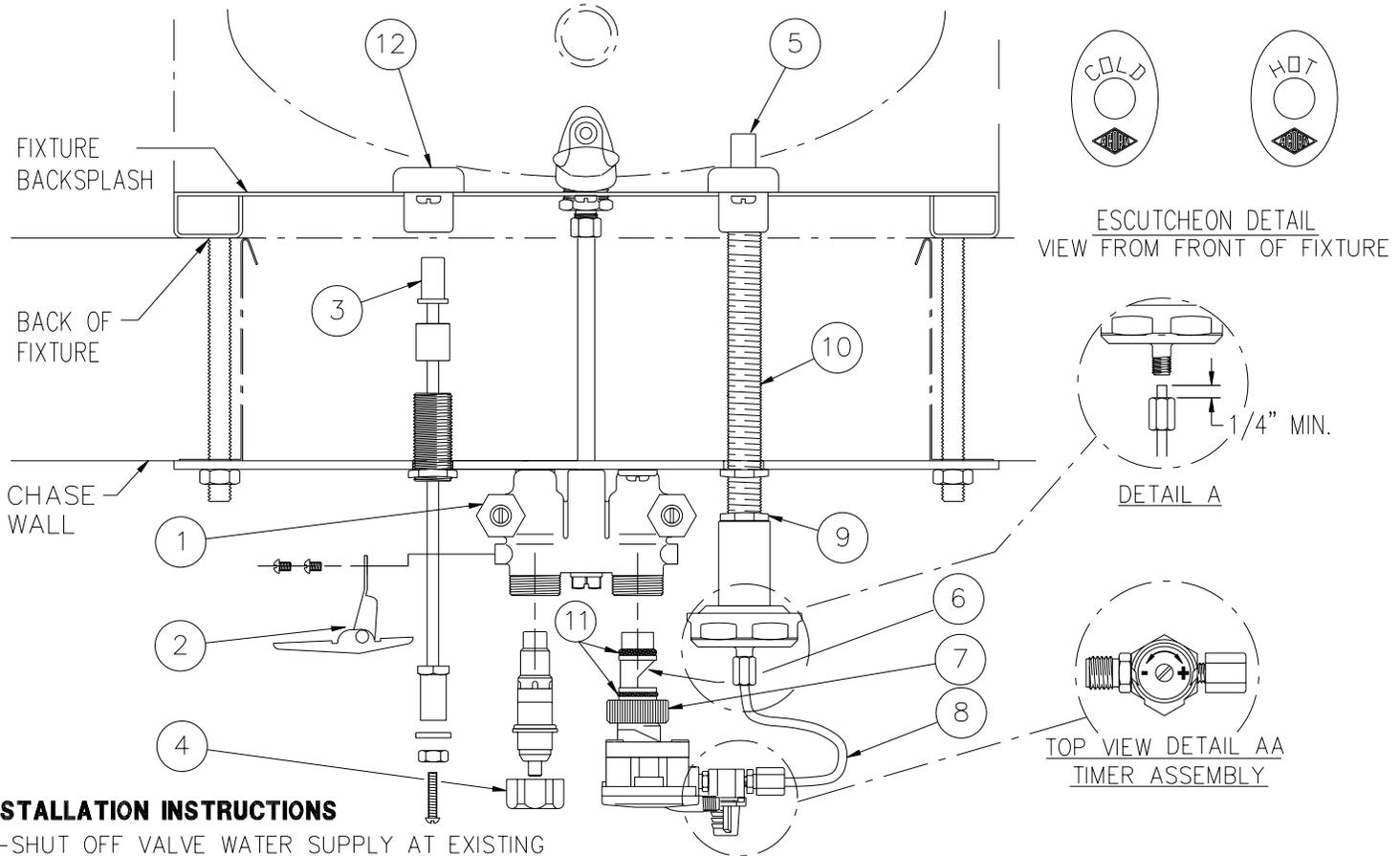
05/16/95

DATE REVISED

12/19/00

DRAWING NUMBER

9905-015-002



INSTALLATION INSTRUCTIONS

- A-SHUT OFF VALVE WATER SUPPLY AT EXISTING STOP(S) ①. REPAIR OR REPLACE STOP(S) IF REQ'D.
- B-REMOVE EXISTING FULCRUM & ROCKER ARM ASSEMBLY ②.
- C-REMOVE EXISTING PUSHBUTTON(S) & PUSHROD(S) ③. LEAVE EXISTING ESCUTCHEON ⑫.
- D-ASSEMBLE RETRO-AIR PUSHBUTTON ASSEMBLY ⑤ FROM REAR TO EXISTING ESCUTCHEON ⑫. 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.
- E-REMOVE EXISTING VALVE CARTRIDGE ④. REMOVE ANY LIME BUILD UP WITHIN VALVE BODY CHAMBER AND FLUSH.
- F-LUBRICATE UPPER & LOWER O-RINGS ⑪ ON RETRO-AIR CARTRIDGE WITH LUBRICANT PROVIDED. INSTALL RETRO-AIR SERVOMOTOR CARTRIDGE(S) ⑥. HAND TIGHTEN KNURLED NUT ⑦ TO VALVE BONNET. NOTE: TIMER ASSEMBLY SHOULD BE POSITION FACING OUTWARD.
- G-CONNECT 1/8" O.D. PLASTIC AIRLINE ⑧ FROM PUSH BUTTON ⑤ TO SERVOMOTOR TIMER ASSEMBLY. HAND TIGHTEN FERRULE NUTS AS SHOWN IN DETAIL A.

- H-TURN WATER ON. CHECK FOR LEAKS.
- I-SET TIMING AT SERVOMOTOR. TIMING IS ADJUSTABLE FROM 5 TO 60 SECONDS AND IS ACCOMPLISHED BY ROTATING THE TIMING SCREW (SEE DETAIL AA). TURNING THE SCREW CLOCKWISE INCREASES TIMING, COUNTERCLOCKWISE DECREASES TIMING.

NOTE:

ASSEMBLY SHOWN CAN ONLY BE USED ON PENAL-TROL VALVES MANUFACTURED FROM JAN 1969 TO JUNE 1978.

REFERENCE DRAWINGS

Metering Servomotor	9955-000-002
Cartridge	9955-203-001
Stops (1969-1976)	9956-000-001
Stops (1976 -1978)	9956-000-002

NOTE:

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

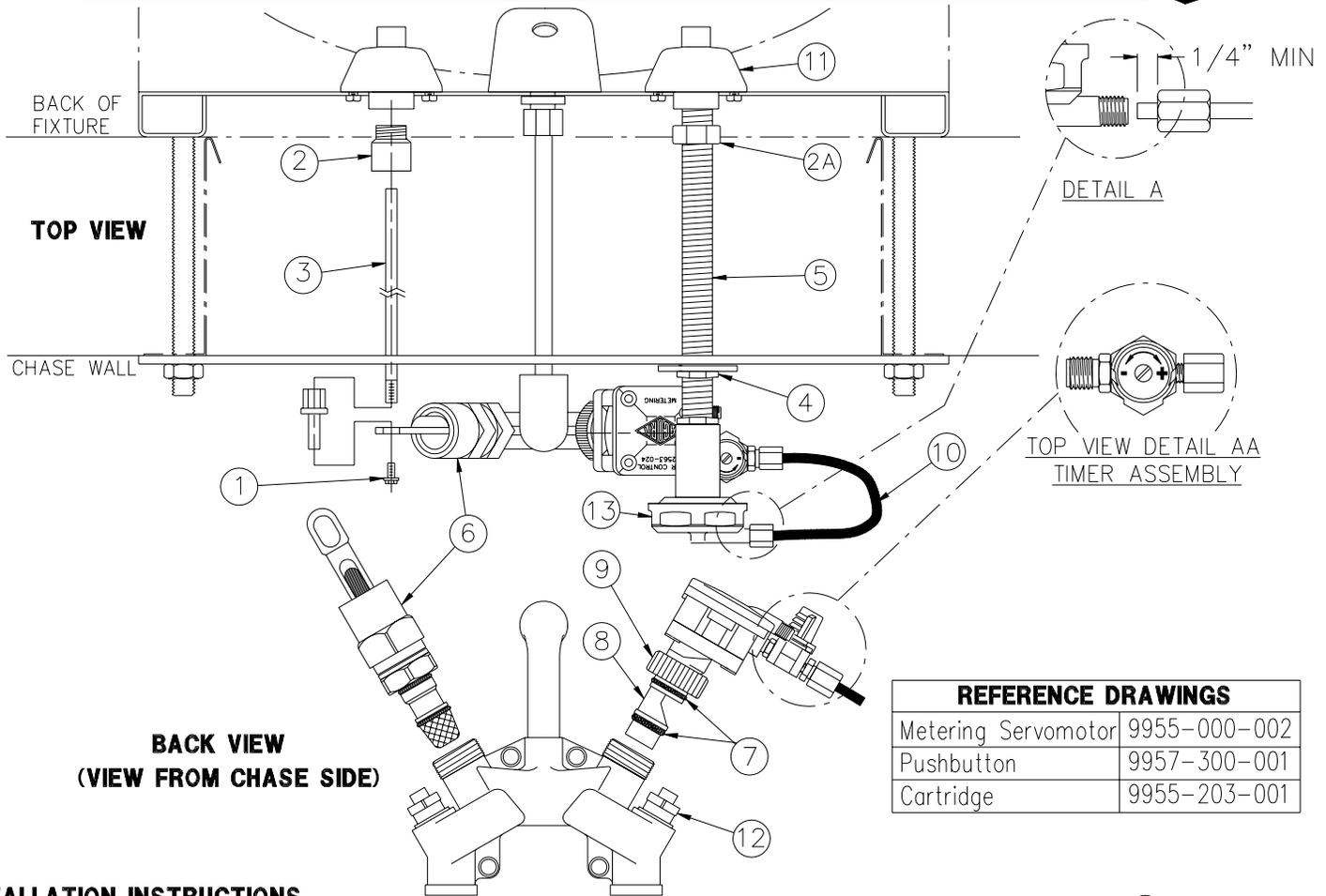
WARNING:

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
 P.O. BOX 3527 INDUSTRY, CA. 91744
 (626) 336-4561 FAX (626) 961-2200

TITLE
RETRO-AIR OLD STYLE PENAL-TROL CONVERSION TO METERING AIR-CONTROL 3386-3387 SERIES

MANUFACTURE DATE MAY 1995 TO PRESENT	DATE ISSUED 10/4/95	DRAWING NUMBER 9905-016-001
	DATE REVISED	



REFERENCE DRAWINGS	
Metering Servomotor	9955-000-002
Pushbutton	9957-300-001
Cartridge	9955-203-001

INSTALLATION INSTRUCTIONS

- A-SHUT OFF VALVE WATER SUPPLY AT EXISTING STOP(S) (12)
- B-REMOVE EXISTING VALVE CARTRIDGE (6). REMOVE ANY LIME BUILD UP WITHIN VALVE BODY CHAMBER AND FLUSH.
- C-LUBRICATE UPPER & LOWER O-RINGS (7) ON RETRO-AIR CARTRIDGE WITH LUBRICANT PROVIDED. INSTALL RETRO-AIR SERVOMOTOR CARTRIDGE(S) (8). HAND TIGHTEN KNURLED NUT (9) TO VALVE BONNET. **NOTE:** TIMER ASSEMBLY SHOULD BE POSITIONED FACING OUTWARD.
- D-REMOVE EXISTING SCREW & NUT (1) REMOVE EXISTING OUTER PUSHROD ADAPTER (2). REMOVE EXISTING PUSHROD(S) (3).
- E-INSTALL ACORN PUSHROD ADAPTER (2A) WITH RETRO-AIR PUSHBUTTON ASSEMBLY, TO BACK OF EXISTING PUSHBUTTON (11).
- F-TO ADJUST PUSHBUTTON ASSEMBLY: LOOSEN THE LOCKNUT (4) AND ROTATE THE ADJUSTING SLEEVE (5) AS REQUIRED. WHEN PROPERLY ADJUSTED, THERE WILL BE NO PLAY AND ONLY MINOR TENSION AT THE BUTTON.

- G-CONNECT 1/8" O.D. PLASTIC AIRLINE (10) FROM PUSH BUTTON RETAINER (13) TO SERVOMOTOR TIMER ASSEMBLY. HAND TIGHTEN FERRULE NUTS AS SHOWN IN DETAIL A.
- H-TURN WATER ON. CHECK FOR LEAKS.
- I-SET TIMING AT SERVOMOTOR. TIMING IS ADJUSTABLE FROM 5 TO 60 SECONDS AND IS ACCOMPLISHED BY ROTATING THE TIMING SCREW (SEE DETAIL AA). TURNING THE SCREW CLOCKWISE INCREASES TIMING, COUNTERCLOCKWISE DECREASES TIMING.

NOTE:

ASSEMBLY SHOWN CAN ONLY BE USED ON EXISTING METCRAFT TEMPUS II VALVE ASSEMBLIES.

NOTE:

DEPENDING ON VALVE CHAMBER & SEATING CONDITION, VALVE MAY NOT SEAL PROPERLY. ACORN ENGINEERING CO. CAN ASSUME NO RESPONSIBILITY FOR THIS CONDITION.

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
 P.O. BOX 3527 INDUSTRY, CA. 91744
 (626) 336-4561 FAX (626) 961-2200

TITLE
RETRO-AIR METCRAFT CONVERSION TO METERING AIR-CONTROL 3386-3387 SERIES

MANUFACTURE DATE	DATE ISSUED	DRAWING NUMBER
MAY 1995	1/10/96	9905-017-001
TO PRESENT	DATE REVISED	