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PARTS & ACCESSORIES

CATALOG



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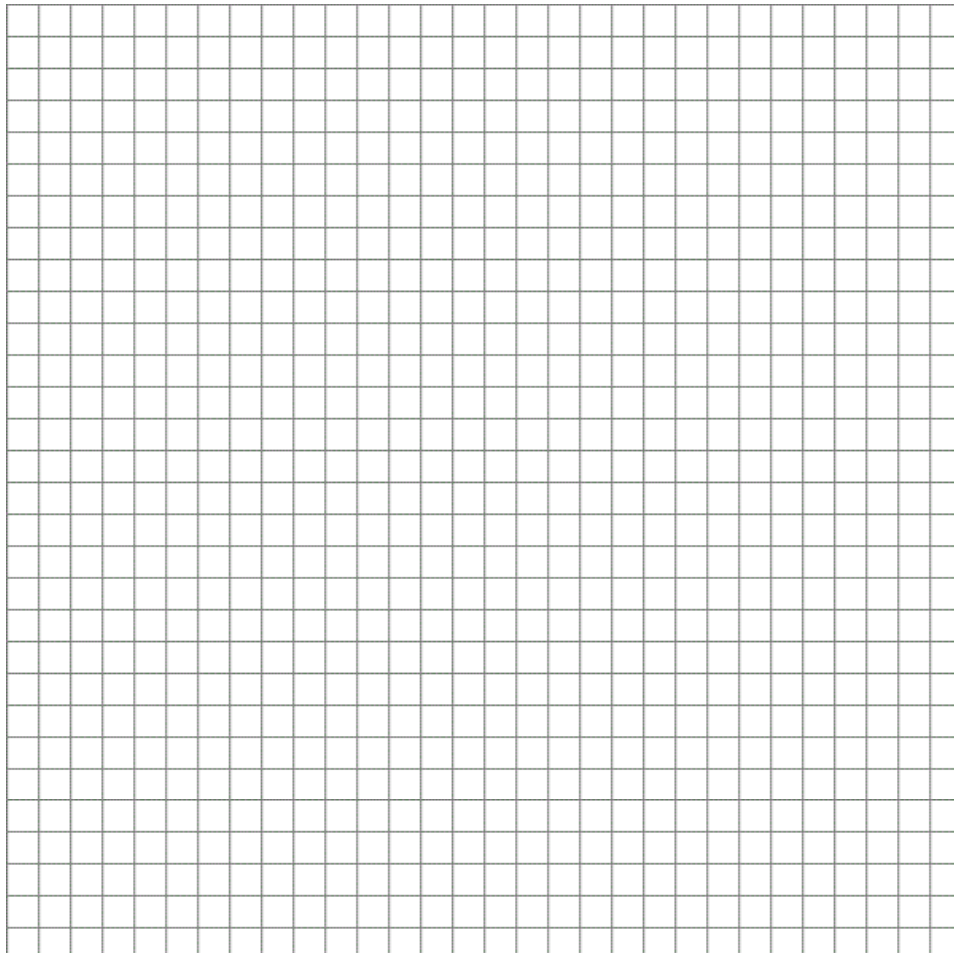


PARTS AND ACCESSORIES CATALOG

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NOTES:



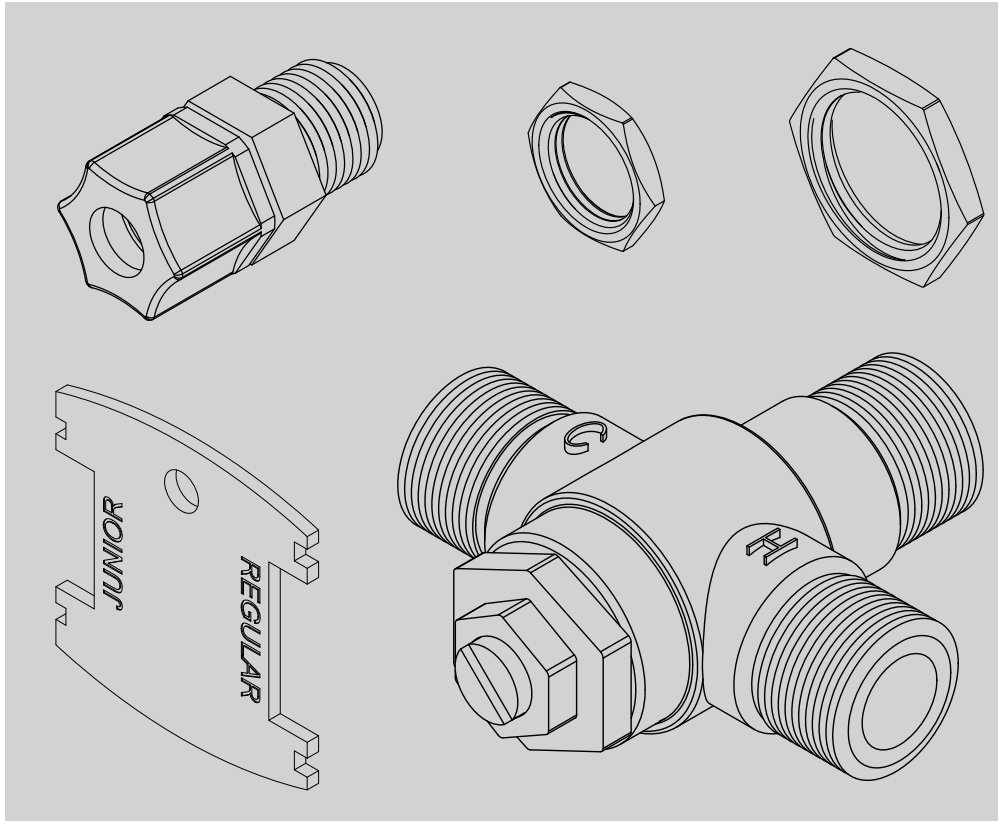
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

1



COMMON HARDWARE & FITTINGS

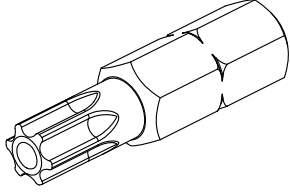
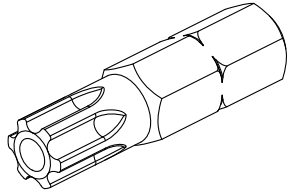
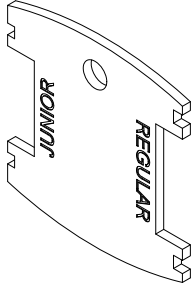
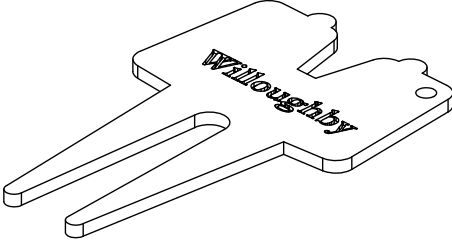
THESE ITEMS:

BITS, TOOLS, & HARDWARE KITS _____
SCREWS, NUTS, & FASTENERS _____
VALVE HARDWARE - CLIPS, O-RINGS, FITTINGS _____
PLUMBING FITTINGS - FERRULES, ELBOWS, ADAPTERS _____
TUBING - PNEUMATIC & WATER _____
INLINE VALVES & FLEX HOSES _____
TRANSFORMERS, WIRING, & CONNECTORS _____

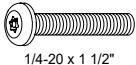



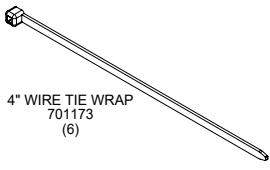




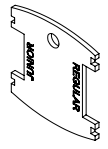
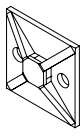




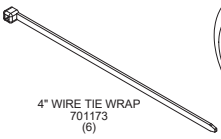
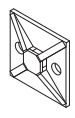
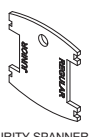





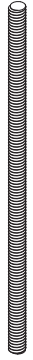
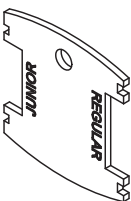
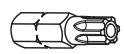
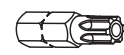
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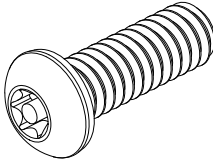
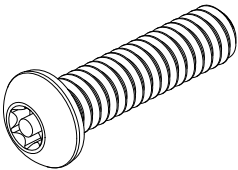
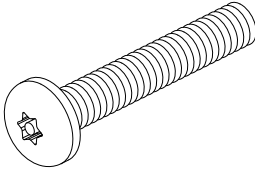
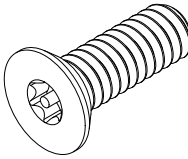
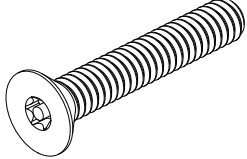
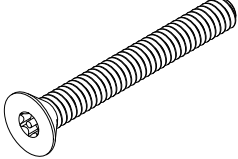
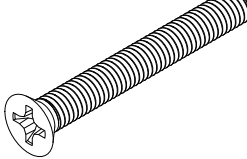
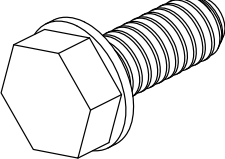
BITS & TOOLS

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: T-27</p> <p>TT27 SECURITY BIT</p>	
	<p>P/N: T-30</p> <p>TT30 SECURITY BIT</p>	
	<p>P/N: 800116A</p> <p>UNIVERSAL SECURITY SPANNER</p>	
	<p>P/N: SPR</p> <p>SOAP CAP (PLUG) REMOVER TOOL</p>	

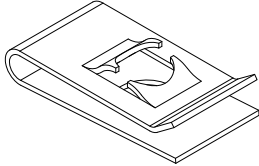
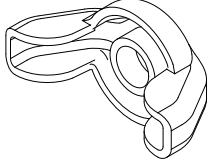
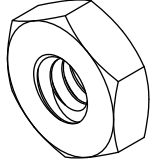
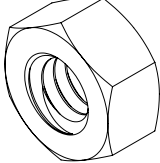
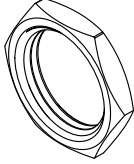
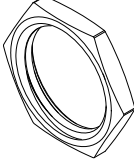
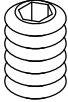
HARDWARE KITS

	P/N & DESCRIPTION	KIT
	<p>P/N: 801256</p> <p>HARDWARE KIT, WAV-PEDESTAL</p>	 <p>1/4-20 x 1 1/2" SECURITY SCREW 800125 (6)</p>  <p>1/4-20 x 1" SECURITY SCREW 800114 (8)</p>  <p>1/4-20 x 1 1/2" SECURITY SCREW (FLAT HEAD) 800127 (5)</p>  <p>1/4-20 x 3/4" SECURITY SCREW 4502SSN (8)</p>  <p>4" WIRE TIE WRAP 701173 (6)</p>  <p>1/4-20 TINERMAN NUT 800113 (15)</p>  <p>T-30 PINNED TORX BIT (1)</p>  <p>T-27 PINNED TORX BIT (1)</p>  <p>T-25 PINNED TORX BIT (1)</p>  <p>SECURITY SPANNER TOOL 800116A (1)</p>  <p>4 WAY WIRE TIE BASE 701206 (4)</p>
	<p>P/N: 800168</p> <p>HARDWARE KIT, WAF-PEDESTAL</p>	 <p>1/4-20 x 3/4" SECURITY SCREW 4502SSN (4)</p>  <p>1/4-20 x 1" SECURITY SCREW 800114 (2)</p>  <p>1/4-20 x 1 1/2" SECURITY SCREW (FLAT HEAD) 800127 (2)</p>  <p>1/4-20 WING NUT 800119 (8)</p>  <p>4" WIRE TIE WRAP 701173 (6)</p>  <p>4 WAY WIRE TIE BASE 701206 (4)</p>  <p>SECURITY SPANNER TOOL 800116A (1)</p>  <p>GROMMET, Ø2-1/8" 800107 (4)</p>  <p>1/4-20 TINERMAN NUT 800113 (8)</p>  <p>TT30 PINNED TORX BIT (1)</p>  <p>TT27 PINNED TORX BIT (2)</p>  <p>T-25 PINNED TORX BIT (1)</p>  <p>ALLTHREAD 1/4-20 X 6" 800117 (4)</p>
	<p>P/N: 800258</p> <p>HARDWARE KIT, SPANNER & BITS</p>	 <p>SECURITY SPANNER TOOL 800116A (1)</p>  <p>TT30 PINNED TORX BIT (1)</p>  <p>TT27 PINNED TORX BIT (1)</p>

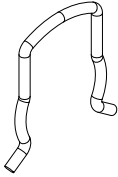
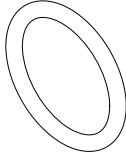
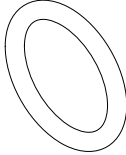
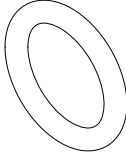
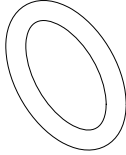
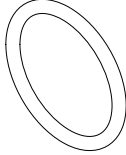
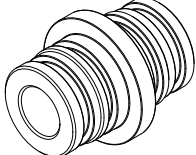
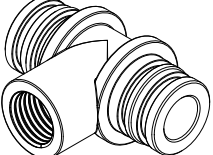
SCREWS

	P/N & DESCRIPTION	COMPONENT
	P/N: 4502SSN SECURITY SCREW, BUTTON HEAD, 1/4-20 X 3/4"	BIT: TT27 
	P/N: 800114 SECURITY SCREW, BUTTON HEAD, 1/4-20 X 1"	BIT: TT27 
	P/N: 800125 SECURITY SCREW, BUTTON HEAD, 1/4-20 X 1-1/2"	BIT: TT27 
	P/N: 4503SSN SECURITY SCREW, FLAT HEAD, 1/4-20 X 3/4"	BIT: TT27 
	P/N: 800127 SECURITY SCREW, FLAT HEAD, 1/4-20 X 1-1/2"	BIT: TT30 
	P/N: 4509SSN SECURITY SCREW, FLAT HEAD, 1/4-20 X 2"	BIT: TT30 
	P/N: 800131 PHILLIPS SCREW, FLAT HEAD #10-32 X 2-1/2"	
	P/N: 800133 HEX SCREW, #10 X 1/2"	

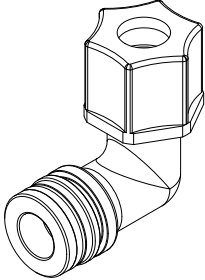
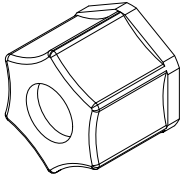
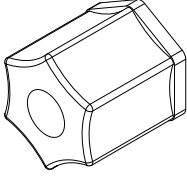
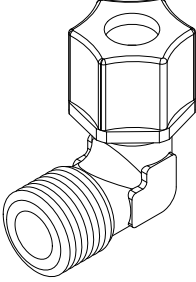
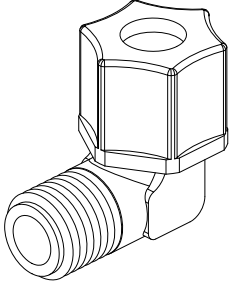
NUTS & FASTENERS

	P/N & DESCRIPTION	COMPONENT
	P/N: 800113 TINNEMAN CLIP, 1/4-20	
	P/N: 800119 WING NUT, 1/4-20	
	P/N: 701166 HEX NUT, 10-24	
	P/N: 600613N HEX NUT, 1/4-20	
	P/N: 320313 LOCK NUT, BRASS, 3/8" MIP	
	P/N: 600612N LOCK NUT, BRASS, 3/4" MPT	
	P/N: 540010 SET SCREW, #8-32 X 1/4"	

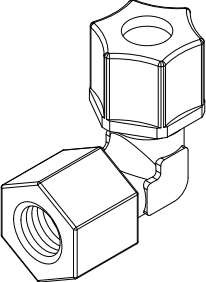
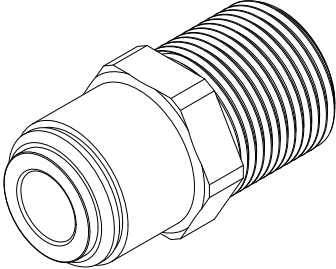
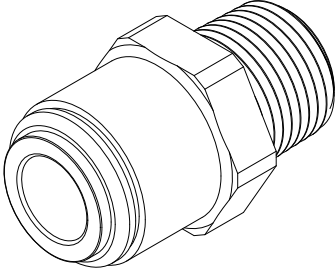
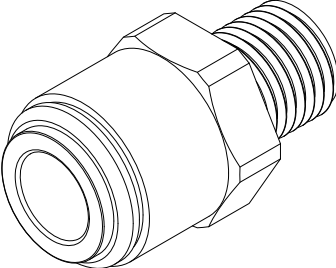
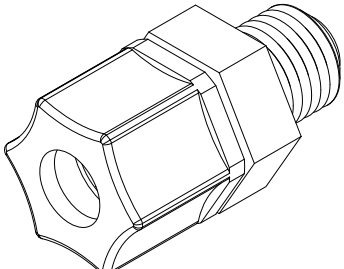
VALVE HARDWARE CLIPS, O-RINGS, FITTINGS

	P/N & DESCRIPTION	COMPONENT
	P/N: 980140 VALVE SPRING CLIP, ROUND	
	P/N: 980164 O-RING, #015	
	P/N: 600114 O-RING, #115	
	P/N: 600120 O-RING, #111	
	P/N: 600129 O-RING, #013	
	P/N: 600131 O-RING, #017	
	P/N: 980197 VALVE COUPLING	
	P/N: 980196 VALVE TEE	

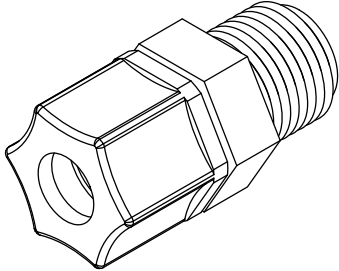
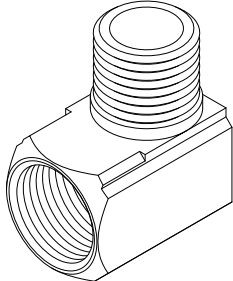
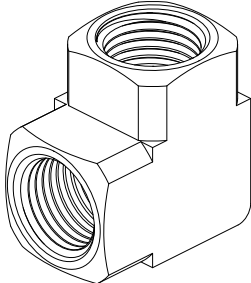
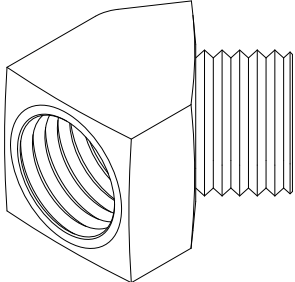
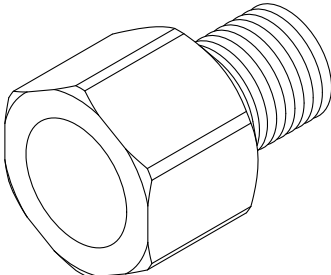
PLUMBING FITTINGS

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 980600A</p> <p>VALVE ELBOW, PLASTIC, 3/8" TUBE</p>	
	<p>P/N: 320559</p> <p>FERRULE NUT, NYLON, 3/8" TUBE</p>	
	<p>P/N: 320555</p> <p>FERRULE NUT, NYLON, 1/4" TUBE</p>	
	<p>P/N: 320577</p> <p>ELBOW, FERRULE, NYLON, 3/8" TUBE X 3/8" MPT</p>	
	<p>P/N: 320579</p> <p>ELBOW, FERRULE, NYLON, 3/8" TUBE X 1/4" MPT</p>	

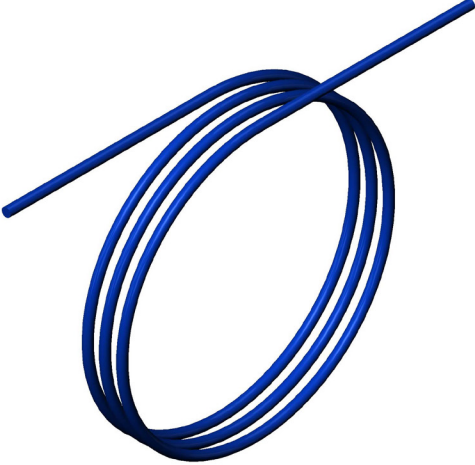

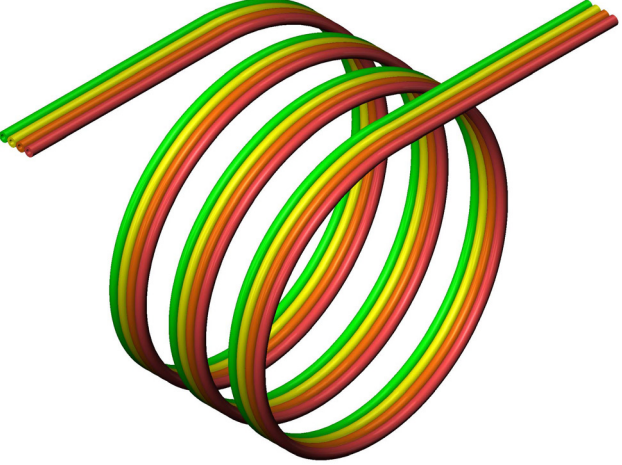
PLUMBING FITTINGS (CONT.)

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 320614</p> <p>ELBOW, FERRULE, NYLON, 3/8" TUBE X 1/4" FPT</p>	
	<p>P/N: 320440</p> <p>ADAPTER FITTING, PTC, 3/8" TUBE X 1/2" MPT</p>	
	<p>P/N: 320400</p> <p>ADAPTER FITTING, PTC, 3/8" TUBE X 3/8" MPT</p>	
	<p>P/N: 320429</p> <p>ADAPTER FITTING, PTC, 3/8" TUBE X 1/4" NPT</p>	
	<p>P/N: 321010</p> <p>CONNECTOR, FERRULE, NYLON, 3/8" TUBE X 1/4" MPT</p>	

PLUMBING FITTINGS (CONT.)

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 320566</p> <p>CONNECTOR, FERRULE, NYLON, 3/8" TUBE X 3/8" MPT</p>	
	<p>P/N: 320598LF</p> <p>ELBOW, BRASS (LEAD FREE), 1/2" NPT STREET</p>	
	<p>P/N: 320600LF</p> <p>ELBOW, BRASS (LEAD FREE), 1/2" FPT X 1/2" FPT</p>	
	<p>P/N: 320581LF</p> <p>ELBOW, 45° BRASS (LEAD FREE), 1/2" NPT STREET</p>	
	<p>P/N: 320546</p> <p>ADAPTER FITTING, BRASS, 1/4" FPT X 1/8" MPT</p>	


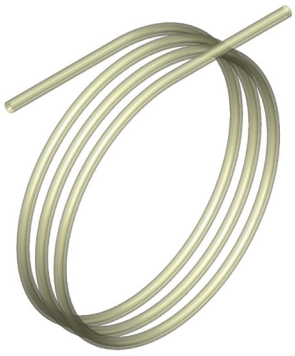
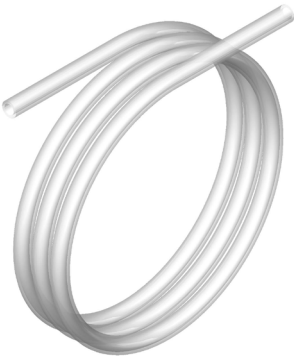
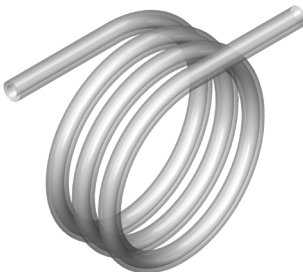
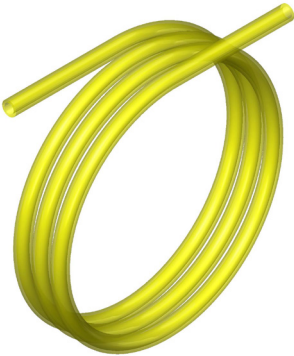
TUBING PNEUMATIC

	P/N & DESC.	COMPONENT
	<p>P/N: 600475</p> <p>Ø1/8" TUBING, PNEUMATIC, BLUE</p> <p>SPECIFY FT. ____</p>	
	<p>P/N: 600470</p> <p>Ø1/8" TUBING, PNEUMATIC, RED</p> <p>SPECIFY FT. ____</p>	
	<p>P/N: 800035</p> <p>Ø1/8" TUBING, PNEUMATIC, 4 COLORS EACH (R, O, Y, G)</p> <p>SPECIFY FT. ____</p>	

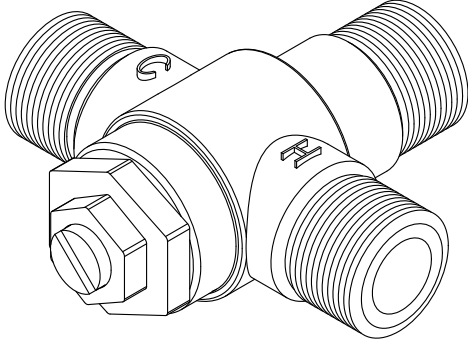
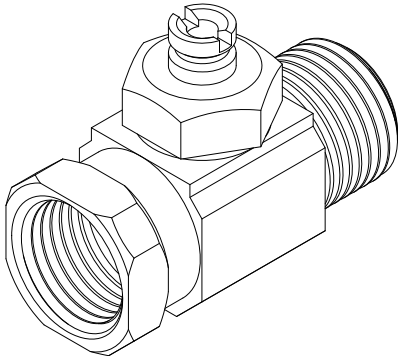
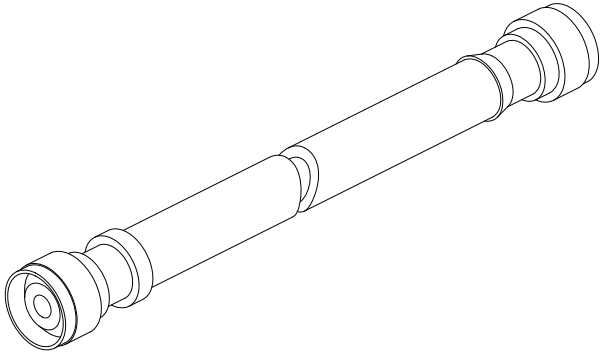
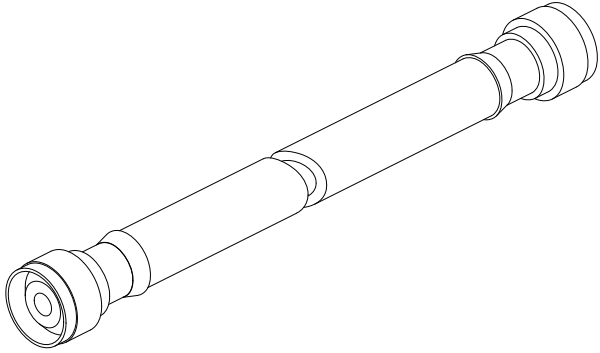
TUBING WATER

	P/N & DESC.	COMPONENT	P/N & DESC.	COMPONENT
	<p>P/N: 600523</p> <p>Ø3/8" TUBING, NATURAL (NSF)</p> <p>SPECIFY FT. ____</p>		<p>P/N: 600523G</p> <p>Ø3/8" TUBING, GREEN (NSF)</p> <p>SPECIFY FT. ____</p>	
	<p>P/N: 600523B</p> <p>Ø3/8" TUBING, BLUE (NSF)</p> <p>SPECIFY FT. ____</p>		<p>P/N: 600523O</p> <p>Ø3/8" TUBING, ORANGE (NSF)</p> <p>SPECIFY FT. ____</p>	
	<p>P/N: 600523BLK</p> <p>Ø3/8" TUBING, BLACK (NSF)</p> <p>SPECIFY FT. ____</p>		<p>P/N: 600523R</p> <p>Ø3/8" TUBING, RED (NSF)</p> <p>SPECIFY FT. ____</p>	

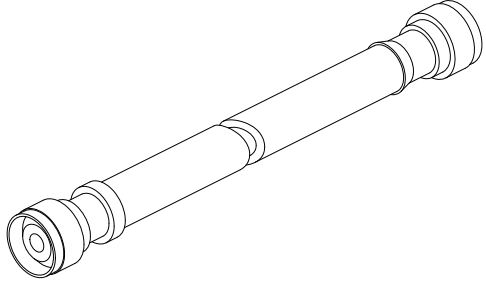
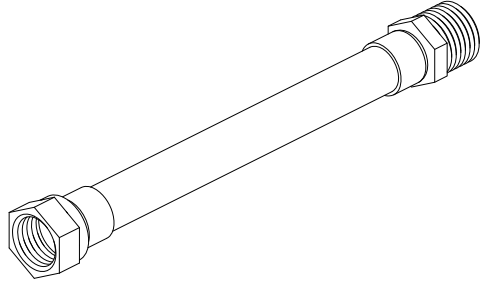
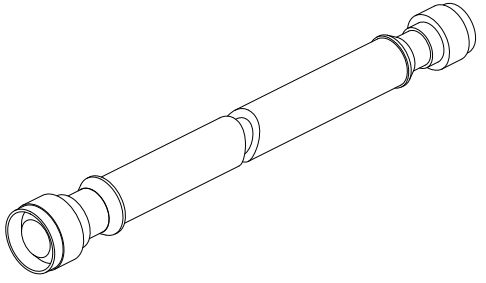
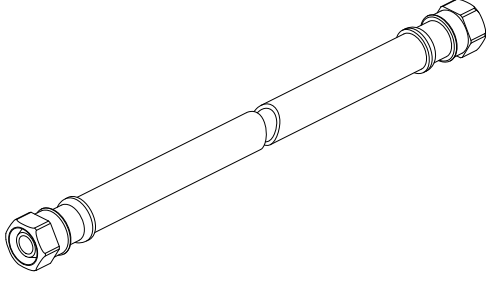
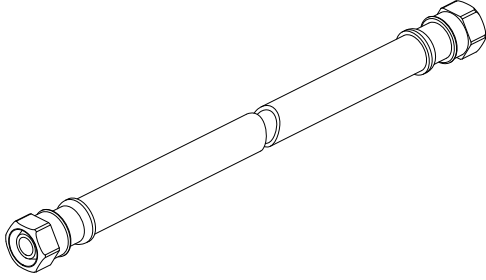
TUBING WATER (CONT.)

	P/N & DESC.	COMPONENT		P/N & DESC.	COMPONENT
	P/N: 600523V Ø3/8" TUBING, VIOLET (NSF) SPECIFY FT. ____			P/N: 600471 Ø1/4" TUBING, NATURAL (NSF) SPECIFY FT. ____	
	P/N: 600523W Ø3/8" TUBING, WHITE (NSF) SPECIFY FT. ____			P/N: 600520 Ø5/8" TUBING, CLEAR (NSF) SPECIFY FT. ____	
	P/N: 600523Y Ø3/8" TUBING, YELLOW (NSF) SPECIFY FT. ____				

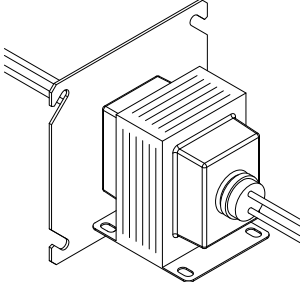
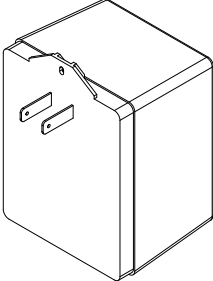
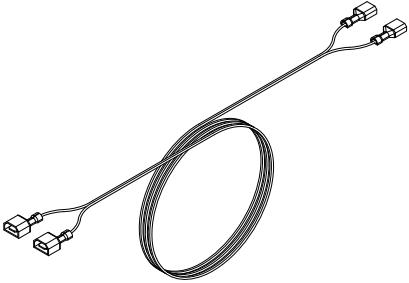
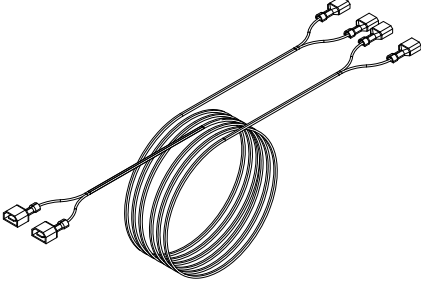
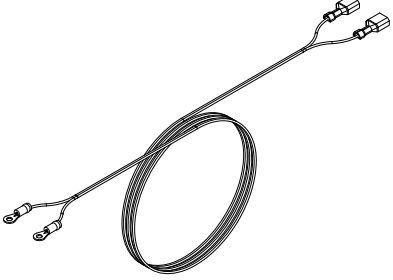
INLINE VALVES & FLEX HOSES

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 700480ELF</p> <p>INLINE THERMOSTATIC MIXING VALVE, POWERS</p>	
	<p>P/N: 380259LF</p> <p>INLINE SCREWDRIVER STOP, 1/2" MPT X 1/2" FPT</p>	
	<p>P/N: 980506</p> <p>6" FLEX HOSE, STAINLESS STEEL, 1/2" FIP X 1/2" FIP</p>	
	<p>P/N: 980520</p> <p>20" FLEX HOSE, STAINLESS STEEL, 1/2" FIP X 1/2" FIP</p>	

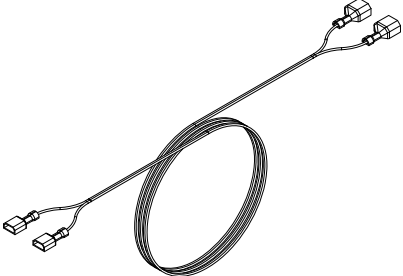
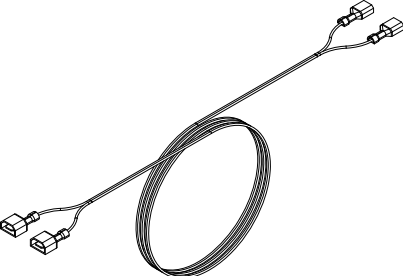
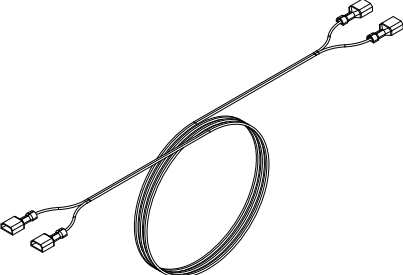
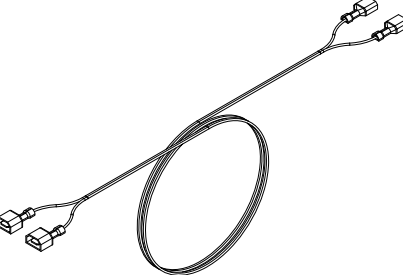
FLEX HOSES

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 320512</p> <p>48" FLEX HOSE, STAINLESS STEEL, 1/2" FIP X 1/2" FIP</p>	
	<p>P/N: 320511SS</p> <p>20" FLEX HOSE, STAINLESS STEEL, 1/2" FIP X 1/2" MIP</p>	
	<p>P/N: 320508SS</p> <p>20" FLEX HOSE, STAINLESS STEEL, 1/2" FIP X 3/8" FIP</p>	
	<p>P/N: 320462SS</p> <p>20" FLEX HOSE, STAINLESS STEEL, 3/8" FIP X 3/8" FIP</p>	
	<p>P/N: 320462SS-48</p> <p>48" FLEX HOSE, STAINLESS STEEL, 3/8" FIP X 3/8" FIP</p>	

TRANSFORMERS & WIRING HARNESES

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 701272</p> <p>(TF24H) HARD-WIRE TRANSFORMER</p>	
	<p>P/N: 701210</p> <p>(TF24P) PLUG-IN TRANSFORMER</p>	
	<p>P/N: 701403</p> <p>WIRING HARNESS, SINGLE CONTROLLER (HARD-WIRE TRANSFORMER)</p>	
	<p>P/N: 701310-8</p> <p>WIRING HARNESS, DUAL CONTROLLERS (HARD-WIRE TRANSFORMER)</p>	
	<p>P/N: 701310-6</p> <p>WIRING HARNESS, 1 & 2 CONTROLLERS (PLUG-IN TRANSFORMER)</p>	

WIRING HARNESSES (CONT.)

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 701315</p> <p>WIRING HARNESS, 8', FEMALE-FEMALE</p>	
	<p>P/N: 701316</p> <p>WIRING HARNESS, 8', MALE-FEMALE</p>	
	<p>P/N: 701111-5</p> <p>WIRING HARNESS, 5' RED, PNEUTRONIC-TO-VALVE</p>	
	<p>P/N: 701146-4</p> <p>WIRING HARNESS, 4' RED, PUSH BUTTON EXTENSION</p>	

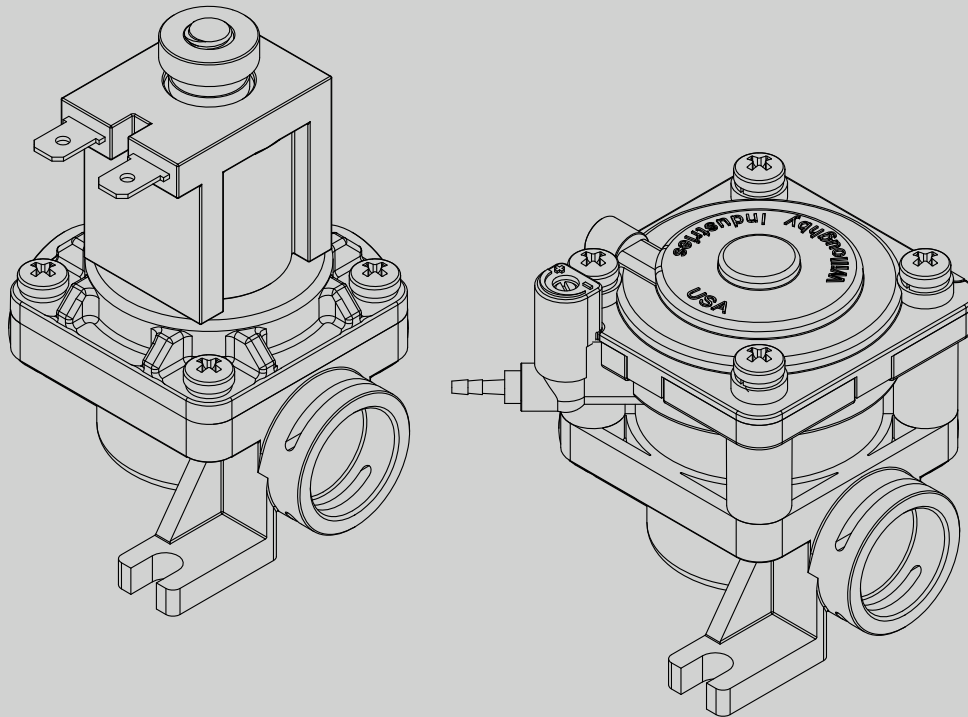
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

2



VALVE IDENTIFICATION GUIDE

THESE ITEMS:

PNEUMATIC / MECHANICAL VALVES- IDENTIFICATION _____

ELECTRONIC VALVES- IDENTIFICATION _____

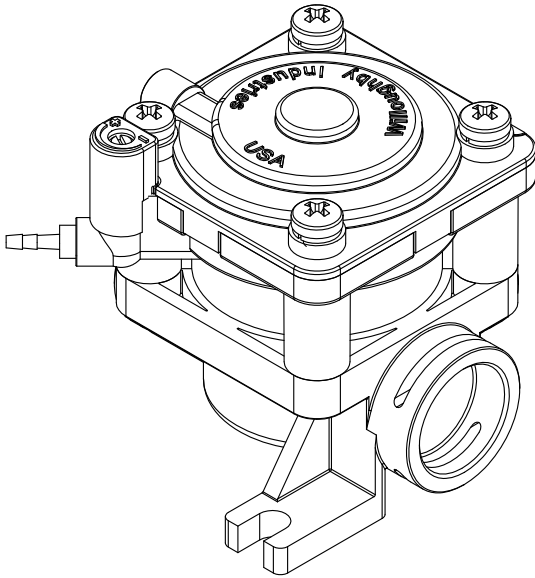
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22

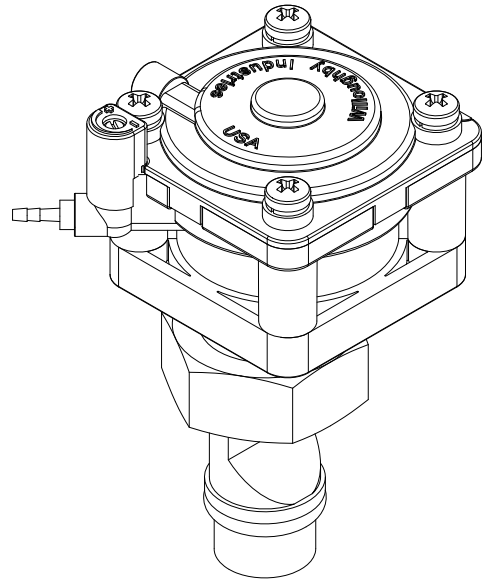
23

PNEUMATIC / MECHANICAL VALVE IDENTIFICATION

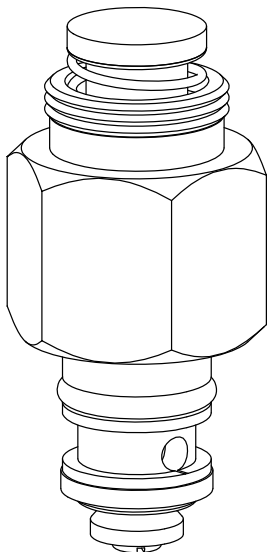
LEAD-FREE PNEUMATIC BEGIN: SECTION 3



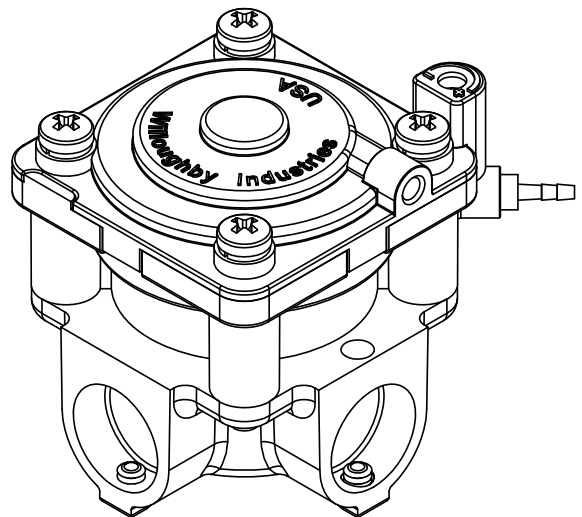
LEAD-FREE RETROFIT BEGIN: SECTION 4



BRASS-BODY MECHANICAL BEGIN: SECTION 5

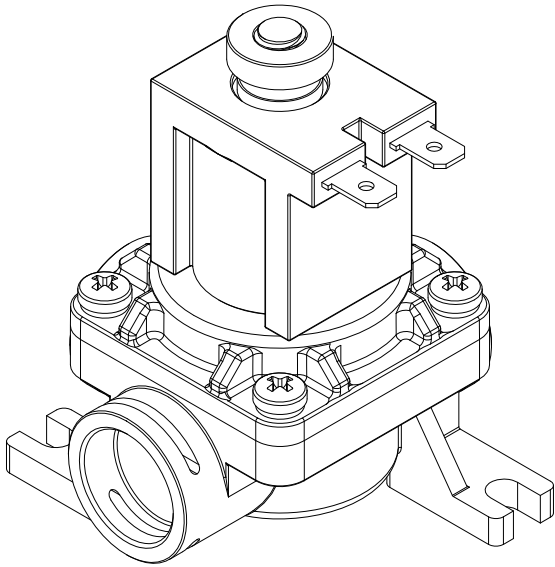


BRASS-BODY PNEUMATIC BEGIN: SECTION 6

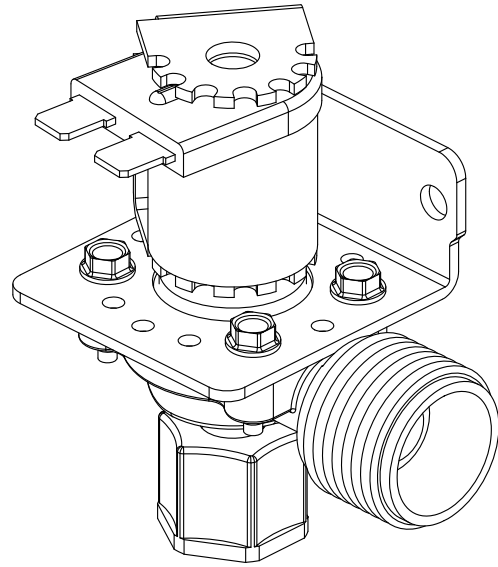


ELECTRONIC VALVE IDENTIFICATION

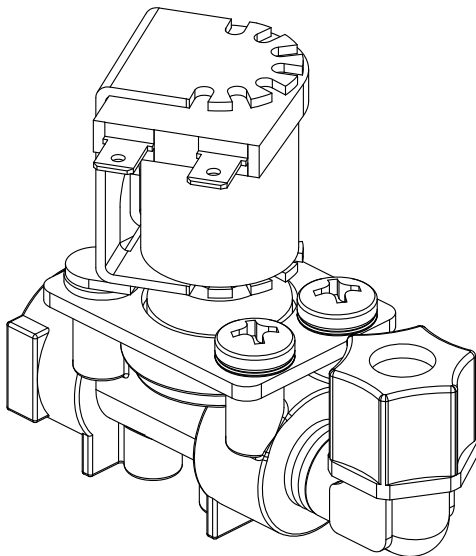
LEAD-FREE ELECTRONIC
BEGIN: SECTION 7



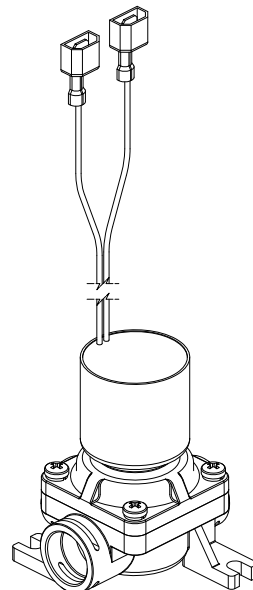
ELECTRONIC
BEGIN: SECTION 8



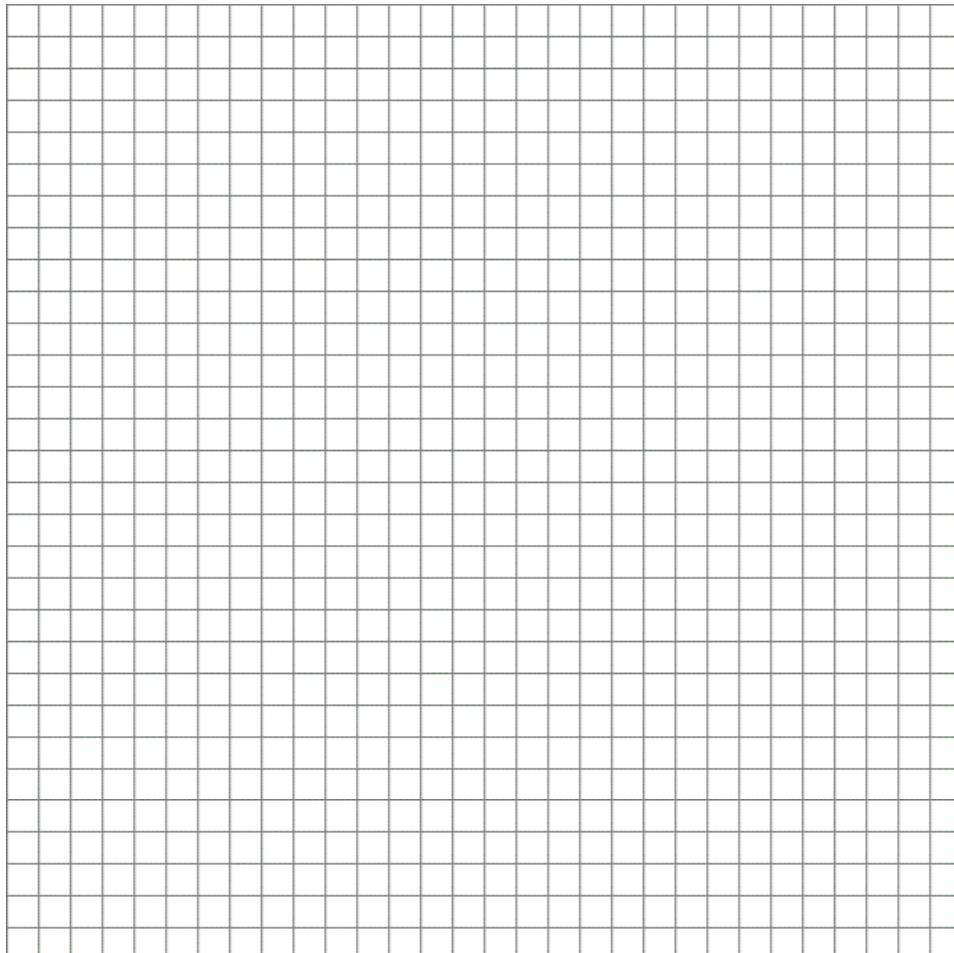
ELECTRONIC WASH FOUNTAIN
BEGIN: SECTION 8



LEAD-FREE BATTERY OPERATED
BEGIN: SECTION 10



NOTES:

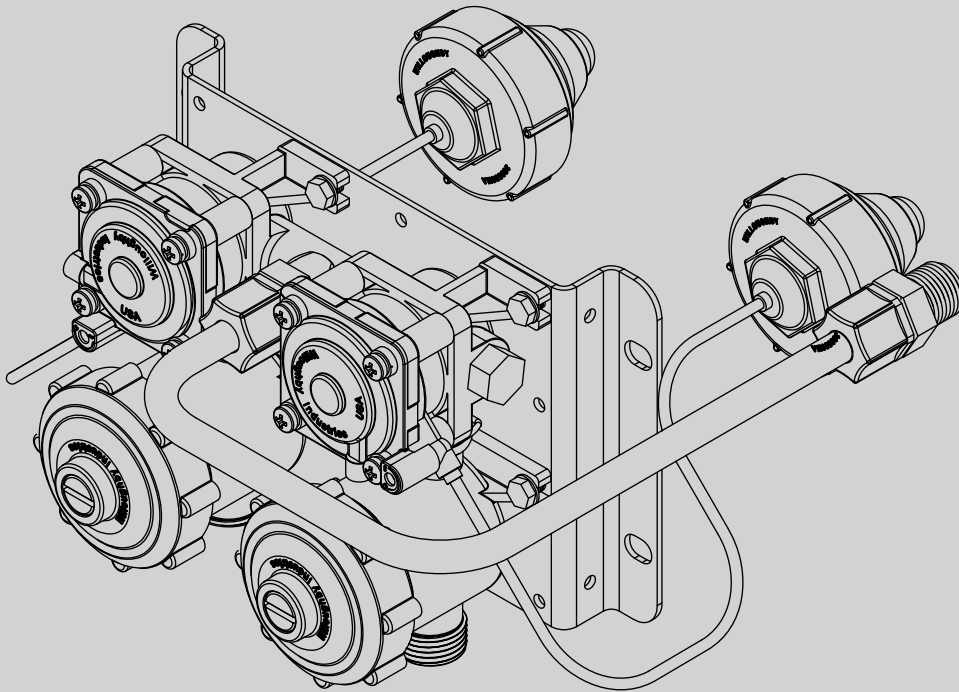


PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION 3



PNEUMATIC VALVES & PARTS- LEAD FREE

THESE ITEMS:

SINGLE TEMP. PNEUMATIC VALVES- OVERVIEW	_____
DUAL TEMP. PNEUMATIC VALVES- OVERVIEW	_____
PML METERING VALVE OPERATION	_____
PML COMPLETE METERING VALVE ASSEMBLIES	_____
PML METERING VALVE COMPONENTS & KITS	_____
PSL NON-METERING VALVE OPERATION	_____
PSL COMPLETE NON-METERING VALVE ASSEMBLIES	_____
PSL NON-METERING VALVE COMPONENTS & KITS	_____

BEGIN ON PAGE:

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41

PML1 / PSL1

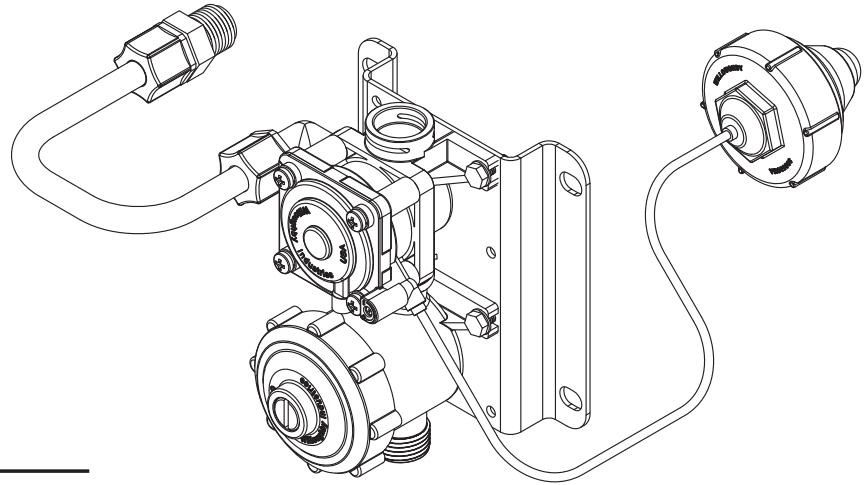
Single Temperature

Lead-free

Pneumatic Valve



Recommended Specifications



(PML1 SHOWN)

Single Temperature, Lead-free Pneumatic Valve assembly shall be: Willoughby Model No. **P__L1** (Select from options list)

The valve assembly shall use diaphragms to pneumatically activate non-hold-open metering (5-90 second) or non-metering pneumatic valves. The vandal-resistant push buttons shall be keyed/non-removable from the front of the fixture and shall require less than 5 lbs of force to operate.

The plastic valve checkstop/strainer shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the filler/bubbler/shower head. Water inlet is 1/2" MPT and is reversible for either top or bottom supply. A galvanized wall mounting plate is provided, wall anchoring hardware provided by others.

Flexible tubing is supplied for walls up to 8" thick. Recommended operating pressure shall be 35-70 psi. Recommended max operation temperature is 110° Fahrenheit. The valve must be supplied with tempered water. The maximum length for tubing between the push button actuator and the valve is 10 feet. The pneumatic system is entirely self-contained and shall require no outside air supply. Cost reducing manifolded valves shall consist of multiple valve assemblies served by a common supply line.

Valve complies with NSF-61 standard.

*LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.

Model Number:

- PML1 Single Temp. Metering
 PSL1 Single Temp. Non-metering

Flow Selection (choose one):

- 0.5 GPM Flow (lavatories)
 1.0 GPM Flow (bottle fillers)
 1.5 GPM Flow (showers)
 2.0 GPM Flow (showers)
 NFC (No Flow Control) (showers, up to MA2)

Push Button:

- PBH Ligature-resistant Pneumatic Push Button*
 PLPB Pneumatic Palm Push Button

Options:

- MA2 (Double Manifold, No flow limitation)
 -MA3 (Triple Manifold, 0.5 GPM flow only)
 -MA4 (Quad Manifold, 0.5 GPM flow only)
 -TMV In-line Thermostatic Mixing Valve



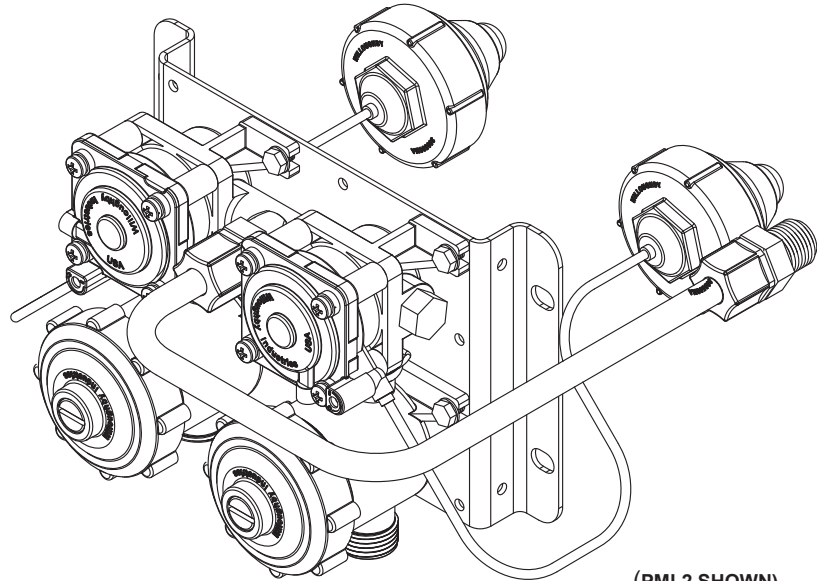
WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov



visit our website at www.willoughby-ind.com
 5105 West 78th Street • Indianapolis, IN. 46268

PML2 / PSL2 Dual Temperature Lead-free Pneumatic Valve



(PML2 SHOWN)

Recommended Specifications

Dual Temperature, Lead-free Pneumatic Valve assembly shall be:
Willoughby Model No. **P__L2** (Select from options list)

The valve assembly shall use diaphragms to pneumatically activate non-hold open metering (5-90 second) or non-metering pneumatic valves. The vandal-resistant push buttons shall be keyed/non-removable from the front of the fixture and shall require less than 5 lbs of force to operate.

The plastic valve checkstop/strainer shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the filler/bubbler/shower head. Water inlet is 1/2" MPT and is reversible for either top or bottom supply. A galvanized wall mounting plate is provided, wall anchoring hardware provided by others.

Flexible tubing is supplied for walls up to 8" thick. Recommended operating pressure shall be 35-70 psi. Recommended max operation temperature is 110° Fahrenheit. The maximum length for tubing between the push button actuator and the valve is 10 feet. The pneumatic system is entirely self-contained and shall require no outside air supply. Cost reducing manifolded valves shall consist of multiple valve assemblies served by a common supply line. Valve complies with NSF-61 standard.

* This is not a substitute for a thermostatic mixing valve. The delivered water temperature is the result of the two combined inlet temperatures and cannot be adjusted by this valve assembly. The hot side of the valve must be supplied with tempered water.

*LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.

Model Number:

- PML2 Dual Temp. Metering
- PSL2 Dual Temp. Non-metering

Flow Selection (choose one):

- 0.5 GPM Flow (lavatories)
- 1.5 GPM Flow (showers)
- 2.0 GPM Flow (showers)
- NFC (No Flow Control) (showers, up to MA2)

Push Button:

- PBH Ligature-resistant Pneumatic Push Button*
- PLPB Pneumatic Palm Push Button

Options:

- MA2 (Double Manifold, No flow limitation)
- MA3 (Triple Manifold, 0.5 GPM flow only)
- MA4 (Quad Manifold, 0.5 GPM flow only)
- TMV In-line Thermostatic Mixing Valve



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov



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PML: METERING VALVES

VALVE OPERATION DIAGRAM



WHEN THE VALVE IS CLOSED:

BEGIN

PUSH BUTTON IS PUSHED, WHICH INCREASES SYSTEM AIR PRESSURE INSIDE VALVE BODY

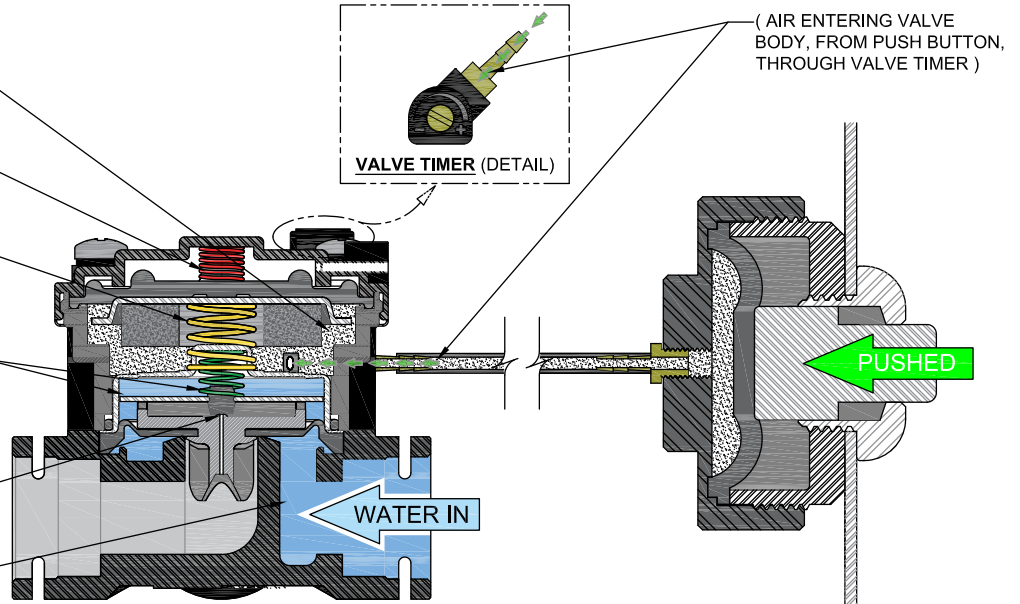
AIR-SIDE-SPRING IS COMPRESSED AGAINST THE TOP COVER BY THE MAGNET-SPRING

MAGNET-SPRING HOLDS MAGNET, MAGNET-CUP, AND AIR-SIDE-DIAPHRAGM UP AND AWAY FROM THE BARRIER-CUP

WATER-SIDE-SPRING AND BLEED-ORIFICE WATER PRESSURE PRESS ACTUATOR-DISK / DIAPHRAGM AGAINST THE VALVE-BASE, STOPPING THE WATER FLOW

BLEED-ORIFICE IN DIAPHRAGM GUIDE IS CLOSED BY THE RUBBER STOPPER IN ACTUATING-DISK

SUPPLY WATER IS HELD IN THE VALVE BODY SUPPLY INLET BY THE WATER-SIDE-DIAPHRAGM



WHEN THE VALVE IS OPENED:

CONTINUE

PUSH BUTTON IS RELEASED AFTER BEING PUSHED, CREATING A VACUUM THAT LOWERS THE AIR PRESSURE IN THE VALVE BODY

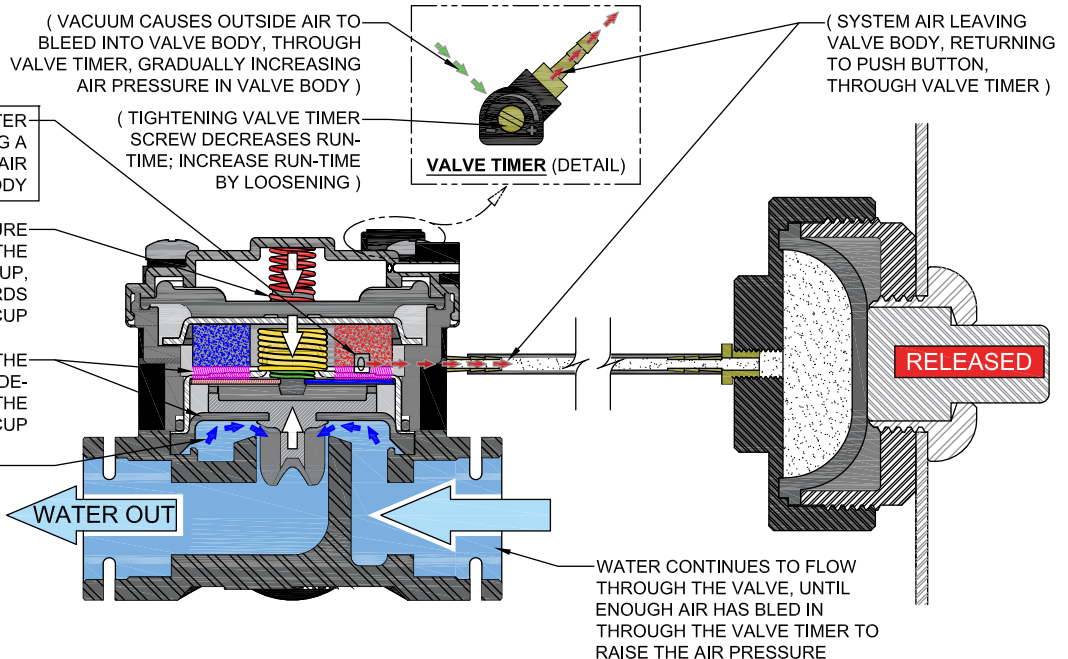
(VACUUM CAUSES OUTSIDE AIR TO BLEED INTO VALVE BODY, THROUGH VALVE TIMER, GRADUALLY INCREASING AIR PRESSURE IN VALVE BODY)

(TIGHTENING VALVE TIMER SCREW DECREASES RUN-TIME; INCREASE RUN-TIME BY LOOSENING)

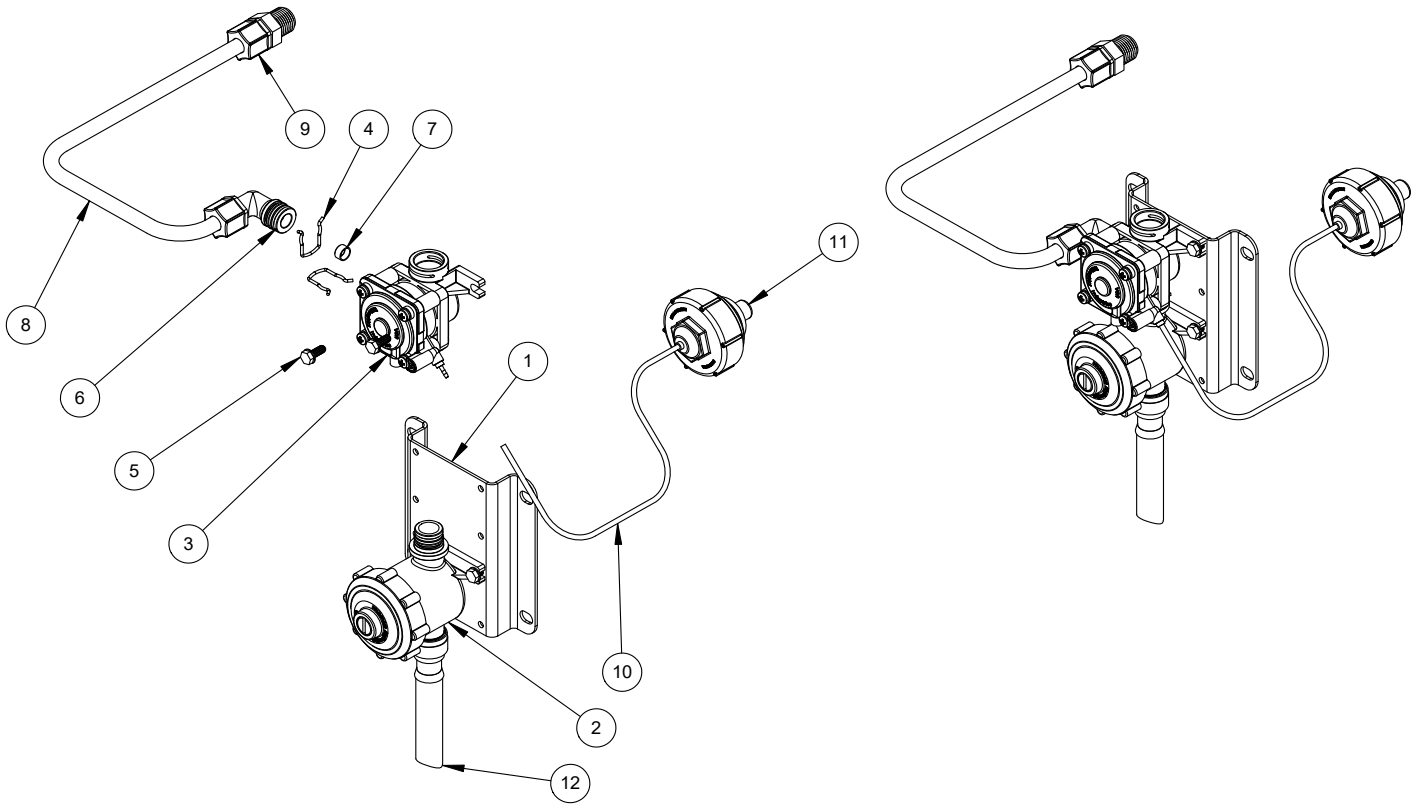
THE DECREASED AIR PRESSURE AND AIR-SIDE-SPRING FORCE THE AIR-SIDE-DIAPHRAGM, MAGNET-CUP, AND MAGNET DOWN TOWARDS THE BARRIER-CUP

THE MAGNET ATTRACTS THE ACTUATOR-DISK / WATER-SIDE-DIAPHRAGM UP TOWARDS THE BARRIER CUP

AS THE MAGNET PULLS THE ACTUATOR-DISK TOWARDS THE BARRIER CUP, THE WATER PRESSURE PUSHES THE WATER-SIDE-DIAPHRAGM UPWARDS, OPENING THE VALVE



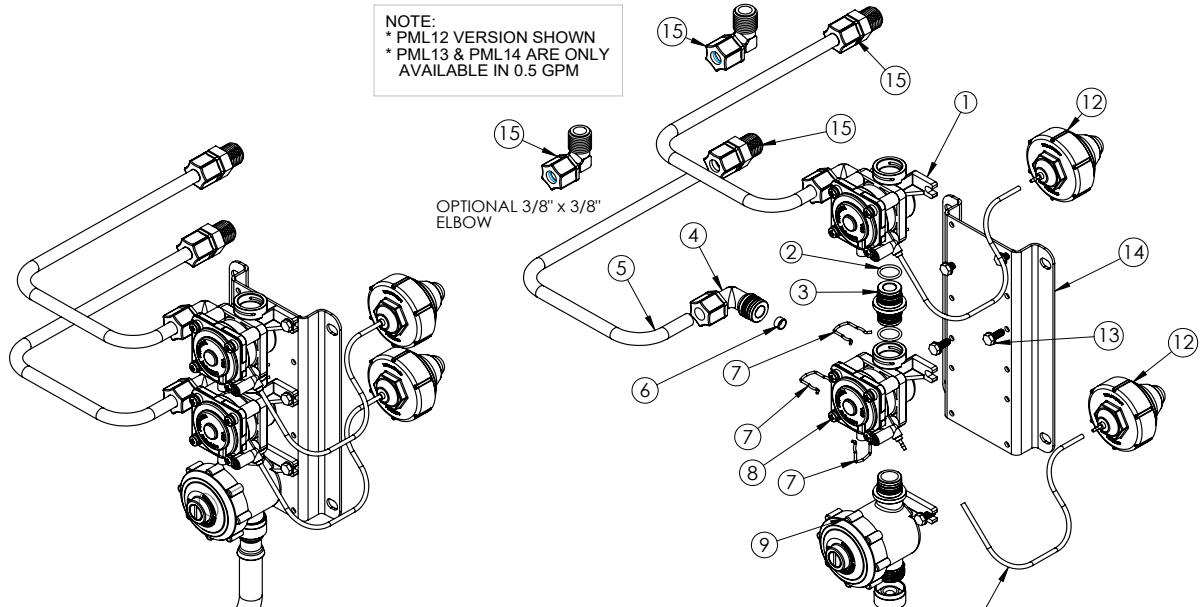
PML1 SINGLE TEMPERATURE METERING VALVES



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980501	PML11 VALVE MOUNTING BRACKET	---
2	980183	CHECKSTOP ASSEMBLY	11
3	980406PL	PNEUMATIC VALVE ASSEMBLY, LEFT-PLUGGED PORT	3
4	980140	SPRING CLIP	1
5	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
6	980600A	VALVE FITTING ASSEMBLY, 3/8" ELBOW	1
7	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
8	600523	FLEXIBLE TUBING, 3/8" (10mm) O.D. (20 FT. TOTAL)	1 (SOLD PER FOOT)
9	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
10	600470	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (RED)	1 (SOLD PER FOOT)
11	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
12	980506	6" STAINLESS STEEL FLEX HOSE	1
	980520	20" STAINLESS STEEL FLEX HOSE	1

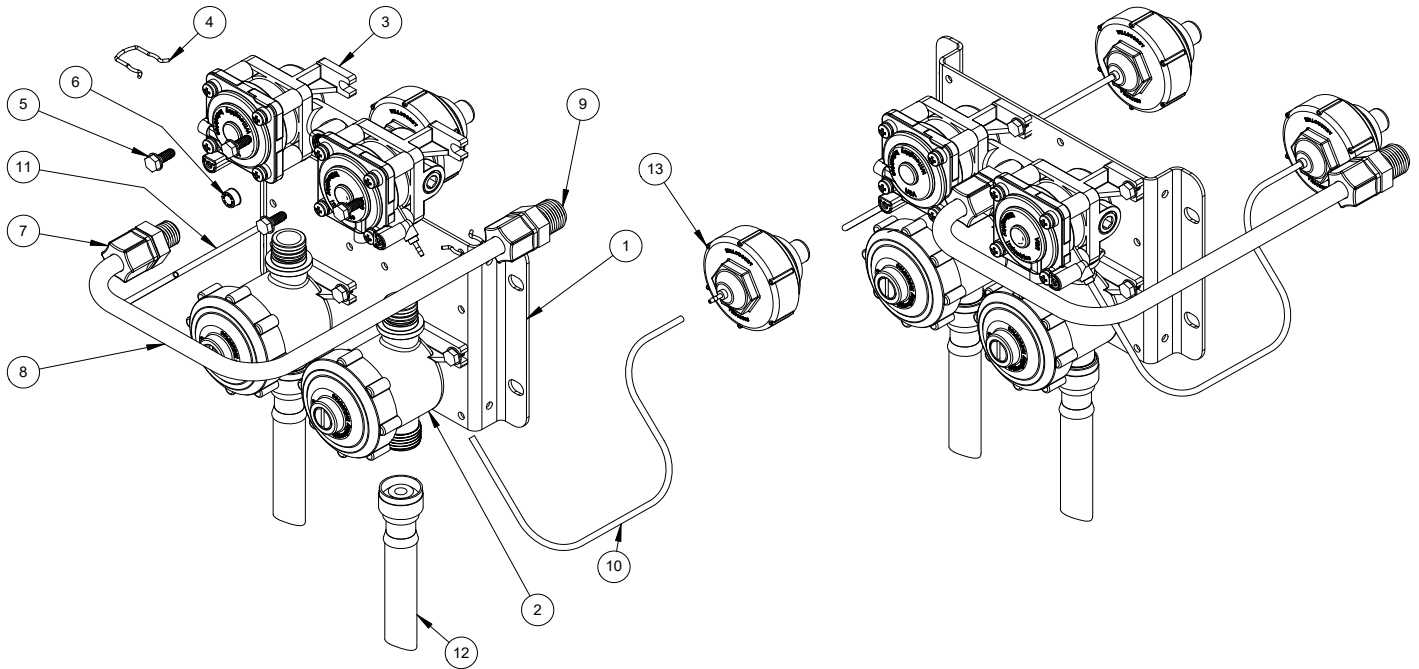
SEE PAGE 33 FOR INDIVIDUAL METERING VALVE ASSEMBLIES

PML1 SINGLE TEMPERATURE METERING VALVES (MANIFOLDED)



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980406PL	PNEUMATIC VALVE ASSEMBLY, LEFT-PLUGGED PORT	3
2	980164	'O'-RING, #015	1
3	980197	PLASTIC VALVE COUPLING	1
4	980600A	VALVE FITTING ASSEMBLY, 3/8" ELBOW	1
5	600523	FLEXIBLE TUBING, 3/8" (10mm) O.D. (20 FT. TOTAL)	1 (SOLD PER FOOT)
6	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
7	980140	SPRING CLIP	1
8	980406L	PNEUMATIC VALVE ASSEMBLY, LEFT HAND	3
9	980183	CHECKSTOP ASSEMBLY	11
10	980506	6" STAINLESS STEEL FLEX HOSE	1
	980520	20" STAINLESS STEEL FLEX HOSE	1
11	600470	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (RED)	1 (SOLD PER FOOT)
12	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
13	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
14	9805012	PML12 VALVE MOUNTING BRACKET	---
	9805013	PML13 VALVE MOUNTING BRACKET	---
	9805014	PML14 VALVE MOUNTING BRACKET	---
15	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1

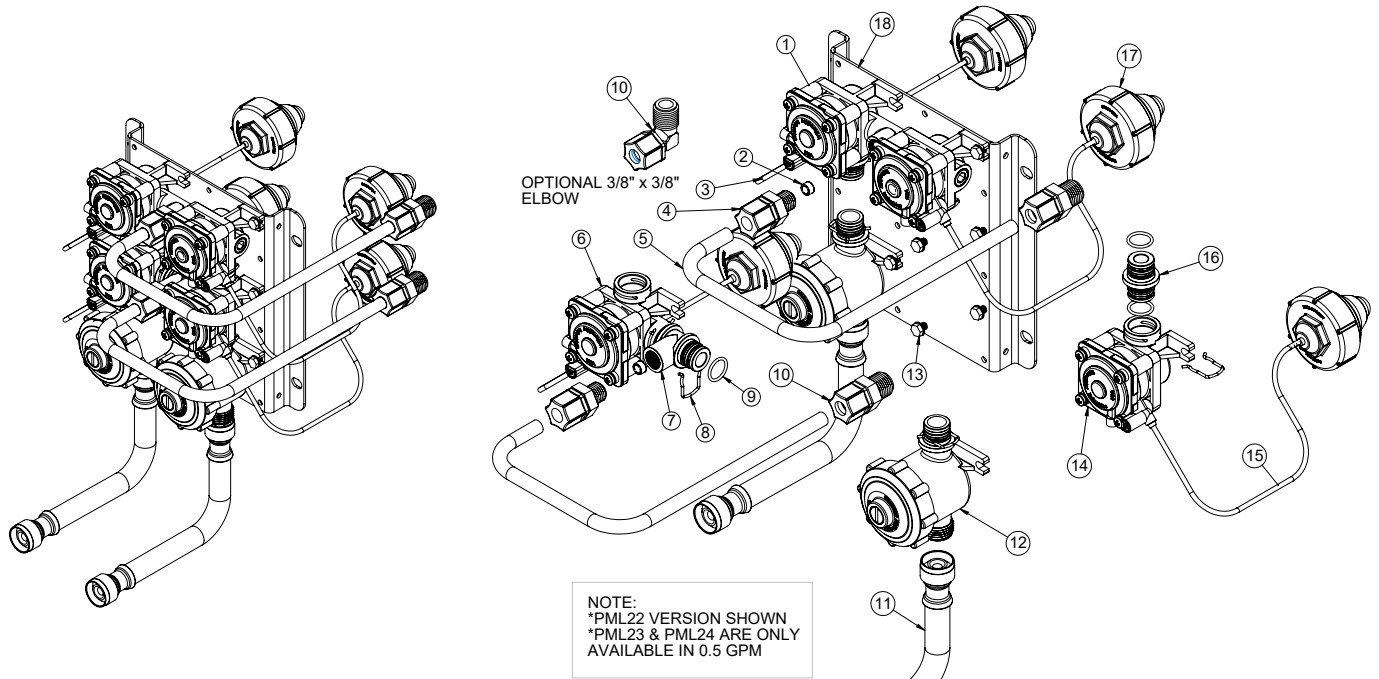
SEE PAGE 33 FOR INDIVIDUAL METERING VALVE ASSEMBLIES

PML2 DUAL TEMPERATURE METERING VALVES

ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980502	PML21 VALVE MOUNTING BRACKET	---
2	980183	CHECKSTOP ASSEMBLY	11
3	980407	PML2 VALVE ASSEMBLY	3
4	980140	SPRING CLIP	1
5	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
6	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
7	321010	CONNECTOR, 3/8" TUBE x 1/4" MPT	1
8	600523	FLEXIBLE TUBING 3/8" (10mm) O.D. (20 FT. TOTAL)	1 (SOLD PER FOOT)
9	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
10	600475	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (BLUE)	1 (SOLD PER FOOT)
11	600470	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (RED)	1 (SOLD PER FOOT)
12	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1
13	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12

SEE PAGE 33 FOR INDIVIDUAL METERING VALVE ASSEMBLIES

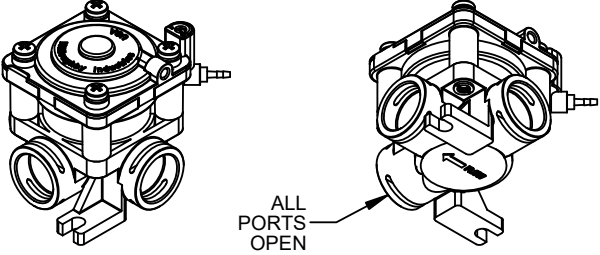
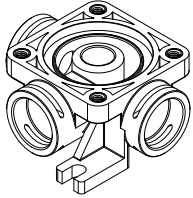
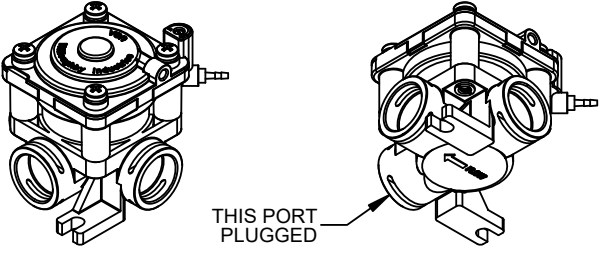
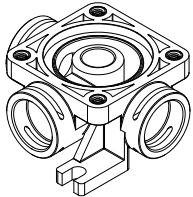
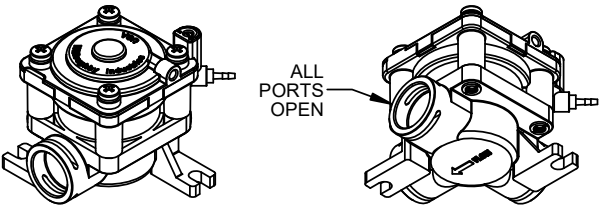
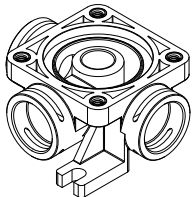
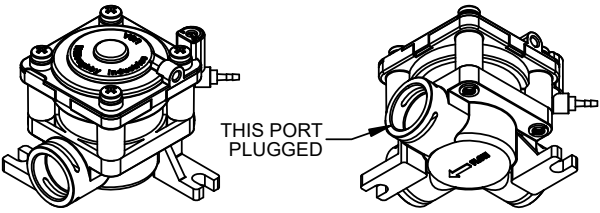
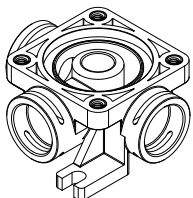
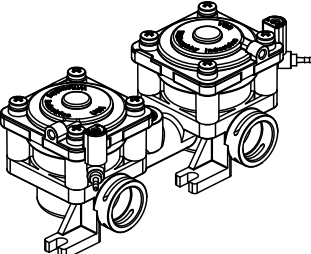
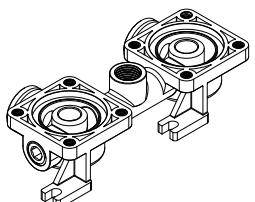
PML2 DUAL TEMPERATURE METERING VALVES (MANIFOLDED)



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980407	PML2 VALVE ASSEMBLY	3
2	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
3	600470	PNEUMATIC TUBING, 1/16" I.D. (RED)	1 (SOLD PER FOOT)
4	321010	CONNECTOR, 3/8" TUBE x 1/4" MPT	1
5	600523	FLEXIBLE TUBING 3/8" (10mm) O.D. (20 FT. TOTAL)	1 (SOLD PER FOOT)
6	980406R	PNEUMATIC VALVE ASSEMBLY, RIGHT HAND	3
7	980196	PLASTIC VALVE 'T'	1
8	980140	SPRING CLIP	1
9	980164	'O'-RING #015	1
10	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
11	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1
12	980183	CHECKSTOP ASSEMBLY	11
13	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
14	980406L	PNEUMATIC VALVE ASSEMBLY, LEFT HAND	3
15	600475	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (BLUE)	1 (SOLD PER FOOT)
16	980197	PLASTIC VALVE COUPLING	1
17	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
18	9805022	PML22 VALVE MOUNTING BRACKET	---
	9805023	PML23 VALVE MOUNTING BRACKET	---
	9805024	PML24 VALVE MOUNTING BRACKET	---

SEE PAGE 33 FOR INDIVIDUAL METERING VALVE ASSEMBLIES

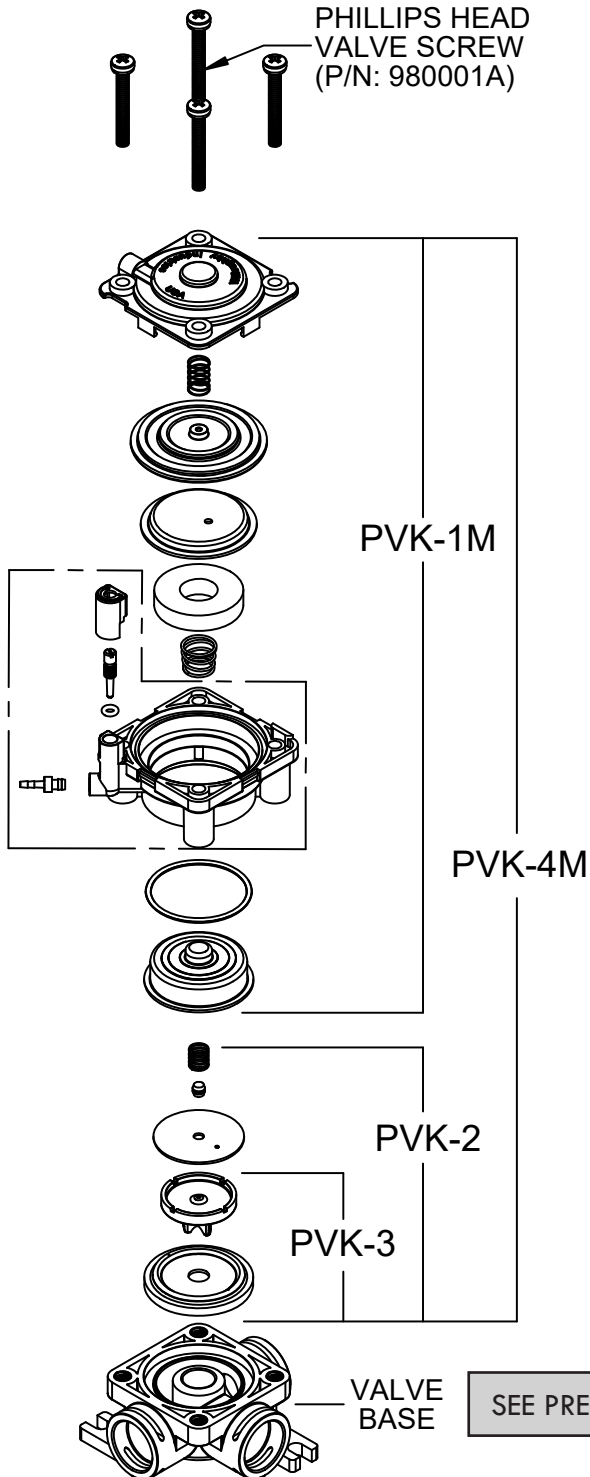
PML INDIVIDUAL METERING VALVE ASSEMBLIES / BASES

	PART NUMBER	VALVE ASSEMBLY	BASE ONLY P/N
	<p>P/N: 980406L PML, LEFT HAND</p>		<p>P/N: 980420</p> 
	<p>P/N: 980406PL PML, PLUGGED LEFT PORT</p>		<p>P/N: 980420L</p> 
	<p>P/N: 980406R PML, RIGHT HAND</p>		<p>P/N: 980420</p> 
	<p>P/N: 980406PR PML, PLUGGED RIGHT PORT</p>		<p>P/N: 980420R</p> 
	<p>P/N: 980407 PML2, DUAL TEMPERATURE</p>		<p>P/N: 980415</p> 

SEE THE NEXT PAGE FOR **PML** VALVE ASSEMBLY COMPONENTS

PML VALVE ASSEMBLY COMPONENTS & KITS (PVKs)

*COMMON TO ALL PML VALVES



NOTES:

- PARTS LISTED IN PVK COMPONENT KITS ARE NOT SOLD INDIVIDUALLY
- PVK-1M, PVK-2, & PVK-3 PARTS ARE AVAILABLE IN KIT FORM ONLY
- COMPONENT KIT PART NUMBERS ARE LISTED IN THE EXPLODED VIEW,

SEE THE FOLLOWING PAGE FOR DETAILS

PART NUMBER

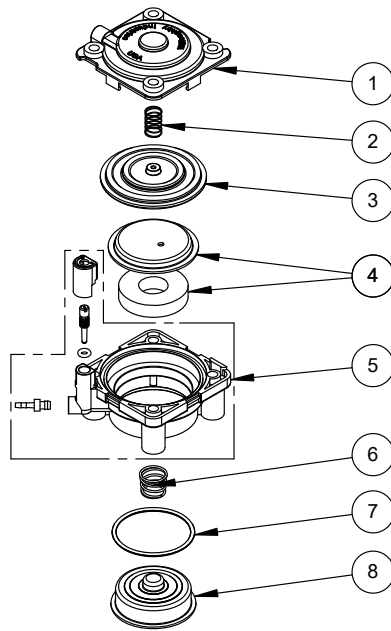
VALVE ASSEMBLY

P/N: PVK-4M

**COMPLETE PML REBUILD KIT
INCLUDES: PVK-1M, PVK-2, PVK-3, & 380897**

P/N: PVK-1M

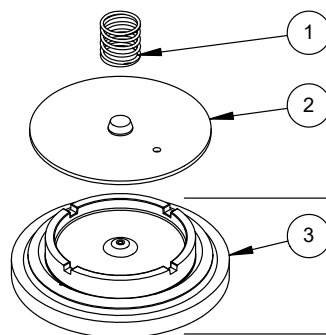
**PML AIR-SIDE
REBUILD KIT**



ITEM #	DESCRIPTION	QTY.
1	AIR SIDE TOP COVER	1
2	AIR SIDE SPRING	1
3	DIAPHRAGM, AIR SIDE, PNEUMATIC METERING VALVE	1
4	METERING VALVE MAGNET/CUP ASSEMBLY	1
5	METERING VALVE BODY ASSEMBLY	1
6	SPRING, AIR SIDE MAGNET	1
7	O-RING M1.5x32 BUNA-70	1
8	BARRIER CUP	1

P/N: PVK-2

**WATER-SIDE
ASSEMBLY KIT**

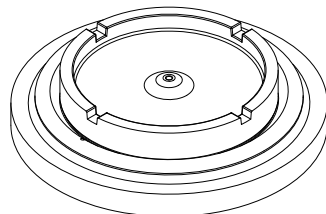


ITEM #	DESCRIPTION	QTY.
1	SPRING, WATER SIDE DIAPHRAGM	1
2	WATER SIDE DISK ASSEMBLY	1
3	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1

PVK-3
(ITEM #: 3)

P/N: PVK-3

**WATER-SIDE
DIAPHRAGM**



**NOTE: PVK-3 IS
INCLUDED IN PVK-2**

PSL: NON-METERING VALVES

VALVE OPERATION DIAGRAM



WHEN THE VALVE IS CLOSED:

BEGIN

PUSH BUTTON IS IN RELEASED POSITION, KEEPING THE SYSTEM AIR PRESSURE LOW

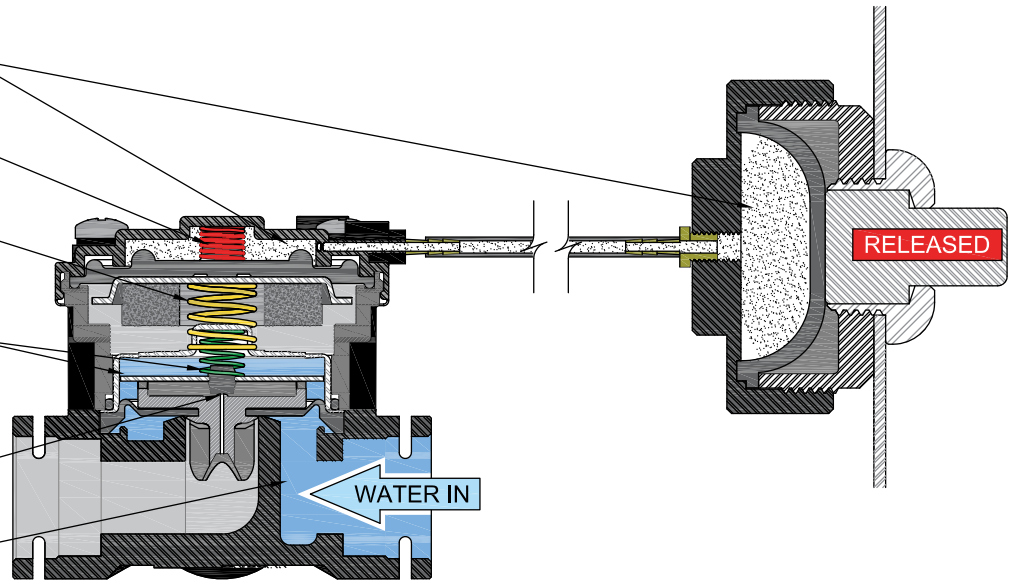
AIR-SIDE-SPRING IS COMPRESSED AGAINST THE TOP COVER BY THE MAGNET-SPRING

MAGNET-SPRING HOLDS MAGNET, MAGNET-CUP, AND AIR-SIDE-DIAPHRAGM UP AND AWAY FROM THE BARRIER-CUP

WATER-SIDE-SPRING AND BLEED-ORIFICE WATER PRESSURE PRESS ACTUATOR-DISK / DIAPHRAGM AGAINST THE VALVE-BASE, STOPPING THE WATER FLOW

BLEED-ORIFICE IN DIAPHRAGM GUIDE IS CLOSED BY THE RUBBER STOPPER IN ACTUATING-DISK

SUPPLY WATER IS HELD IN THE VALVE BODY SUPPLY INLET BY THE WATER-SIDE-DIAPHRAGM



WHEN THE VALVE IS OPENED:

CONTINUE

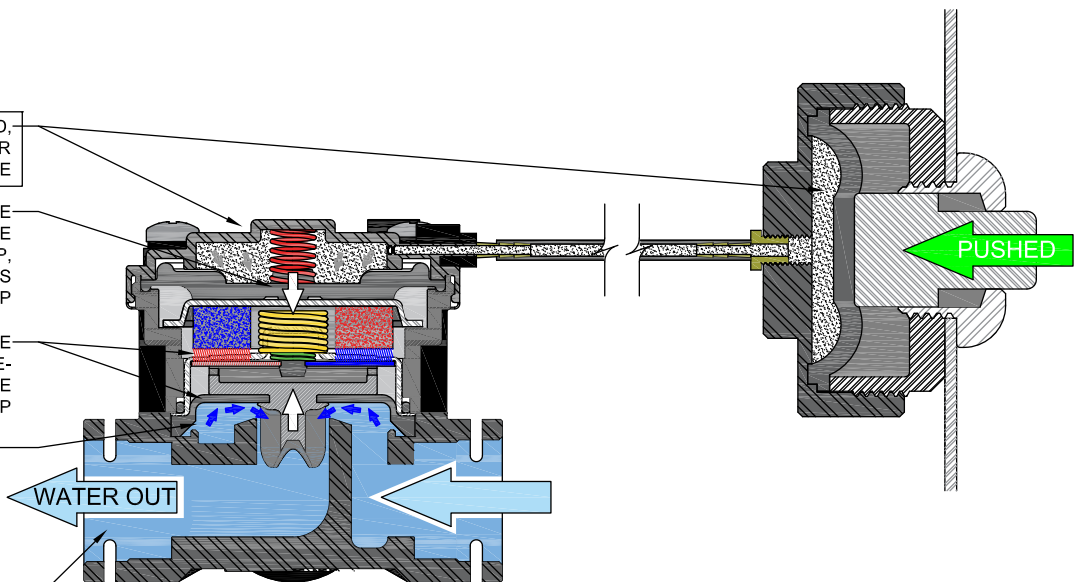
PUSH BUTTON IS PUSHED, INCREASING THE SYSTEM AIR PRESSURE

THE INCREASED AIR PRESSURE AND AIR-SIDE-SPRING FORCE THE AIR-SIDE-DIAPHRAGM, MAGNET-CUP, AND MAGNET DOWN TOWARDS THE BARRIER-CUP

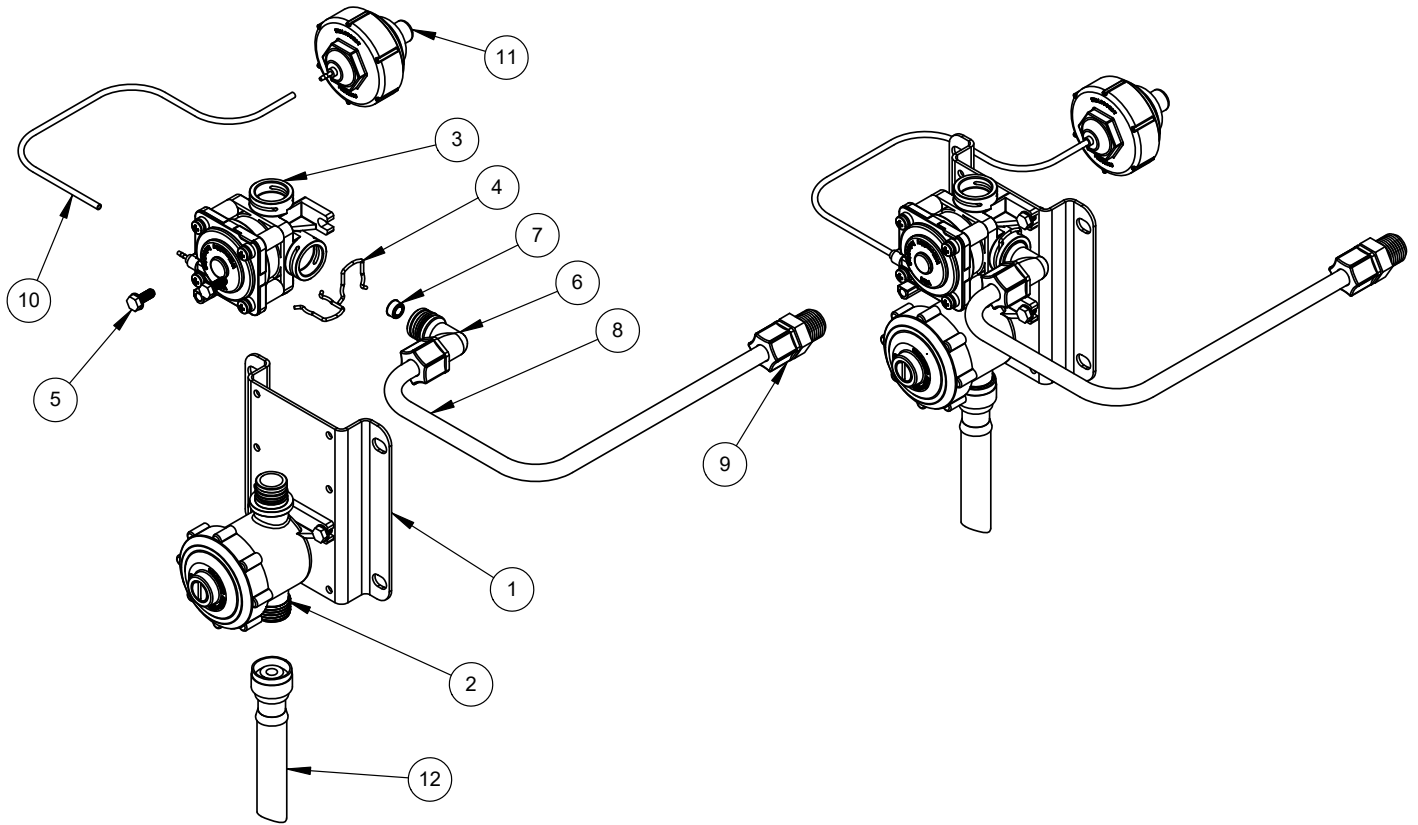
THE MAGNET ATTRACTS THE ACTUATOR-DISK / WATER-SIDE-DIAPHRAGM UP TOWARDS THE BARRIER CUP

AS THE MAGNET PULLS THE ACTUATOR-DISK TOWARDS THE BARRIER CUP, THE WATER PRESSURE PUSHES THE WATER-SIDE-DIAPHRAGM UPWARDS, OPENING THE VALVE

WATER CONTINUES TO FLOWS THROUGH THE VALVE AS LONG AS THE PUSH BUTTON IS HELD



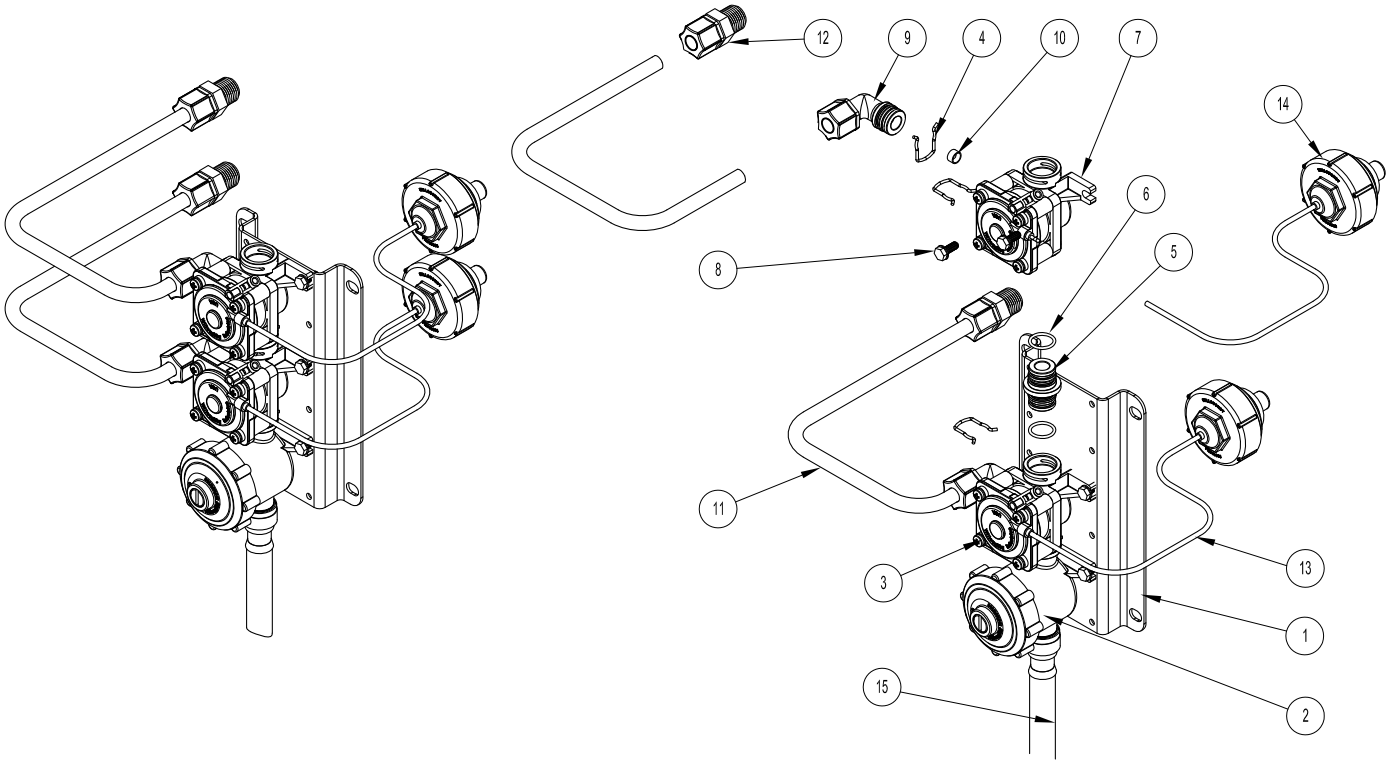
PSL1 SINGLE TEMPERATURE NON-METERING VALVES



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980501	PML11 VALVE MOUNTING BRACKET	---
2	980183	CHECKSTOP ASSEMBLY	11
3	980403PL	PNEUMATIC VALVE ASSEMBLY, LEFT-PLUGGED PORT	3
4	980140	SPRING CLIP	1
5	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
6	980600A	VALVE FITTING ASSEMBLY, 3/8" ELBOW	1
7	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
8	600523	FLEXIBLE TUBING, 3/8" (10mm) O.D. (20 FT. TOTAL)	1 (SOLD PER FOOT)
9	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
10	600470	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (RED)	1 (SOLD PER FOOT)
11	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
12	980506	6" STAINLESS STEEL FLEX HOSE	1
	980520	20" STAINLESS STEEL FLEX HOSE	1

SEE PAGE 41 FOR INDIVIDUAL NON-METERING VALVE ASSEMBLIES

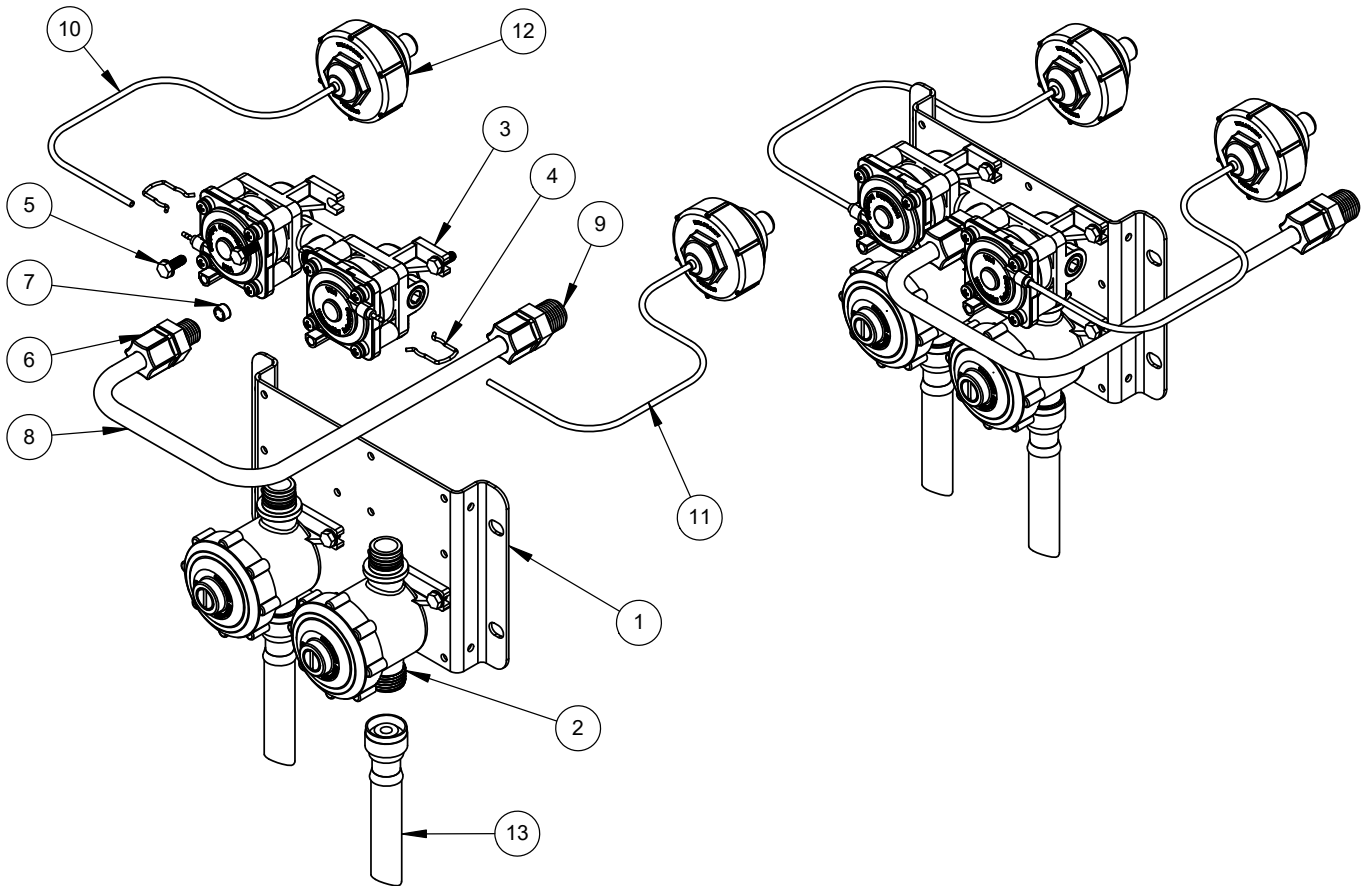
PSL1 SINGLE TEMP. NON-METERING VALVES (MANIFOLDED)



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	9805012	PML12 VALVE MOUNTING BRACKET	---
	9805013	PML13 VALVE MOUNTING BRACKET	---
	9805014	PML14 VALVE MOUNTING BRACKET	---
2	980183	CHECKSTOP ASSEMBLY	1
3	980403	PNEUMATIC SELF-CLOSING VALVE ASSEMBLY	3
4	980140	SPRING CLIP	1
5	980197	PLASTIC VALVE COUPLING	1
6	980164	O-RING, #015	1
7	980403PL	PNEUMATIC SELF-CLOSING VALVE ASSEMBLY- LEFT PLUGGED PORT	3
8	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
9	980600A	VALVE FITTING ASSEMBLY, 3/8" ELBOW	1
10	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
11	600523	FLEXIBLE TUBING 3/8" OD X 1/4" ID	1 (SOLD PER FOOT)
12	300566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
13	600470	PNEUMATIC TUBING 1/16" ID (RED)	1 (SOLD PER FOOT)
14	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
15	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1

SEE PAGE 41 FOR INDIVIDUAL NON-METERING VALVE ASSEMBLIES

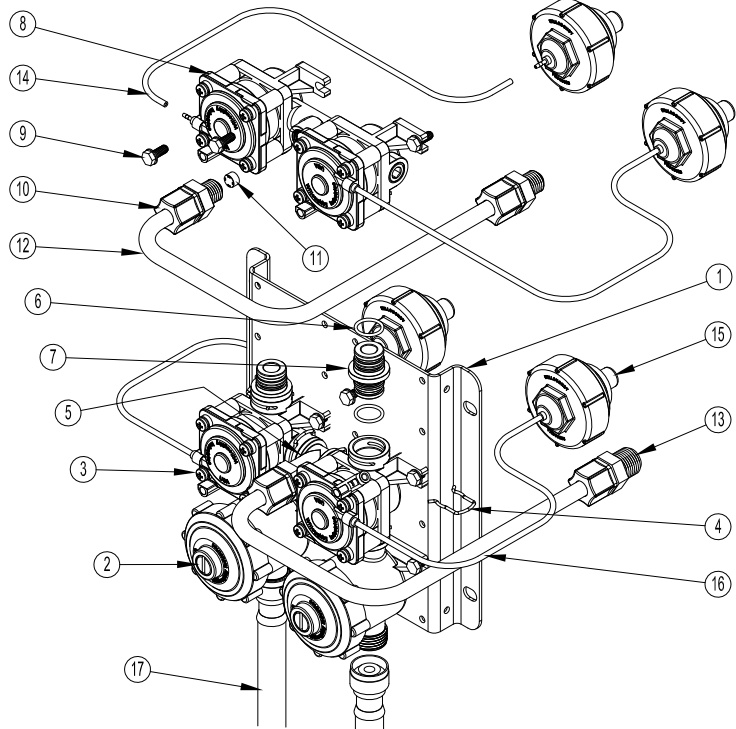
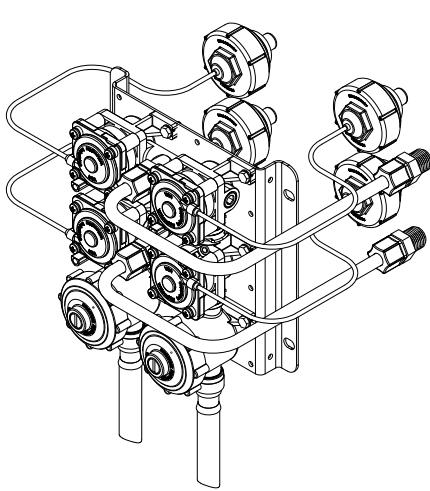
PSL2 DUAL TEMPERATURE NON-METERING VALVES



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980502	PML21 VALVE MOUNTING BRACKET	---
2	980183	CHECKSTOP ASSEMBLY	11
3	980404	PNEUMATIC SELF-CLOSING VALVE ASSEMBLY- DUAL TEMP	3
4	980140	SPRING CLIP	1
5	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
6	321010	CONNECTOR, 3/8" TUBE x 1/4" MPT	1
7	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
8	600523	FLEXIBLE TUBING 3/8" (10mm) O.D. (20 FT. TOTAL)	1 (SOLD PER FOOT)
9	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
10	600470	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (RED)	1 (SOLD PER FOOT)
11	600475	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (BLUE)	1 (SOLD PER FOOT)
12	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
13	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1

SEE PAGE 41 FOR INDIVIDUAL NON-METERING VALVE ASSEMBLIES

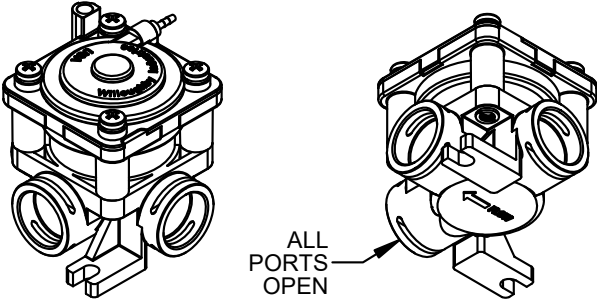
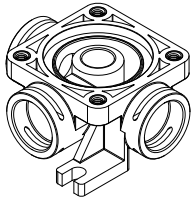
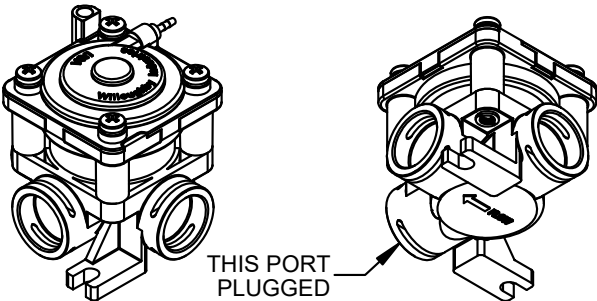
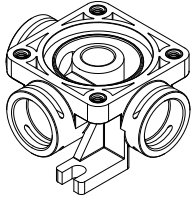
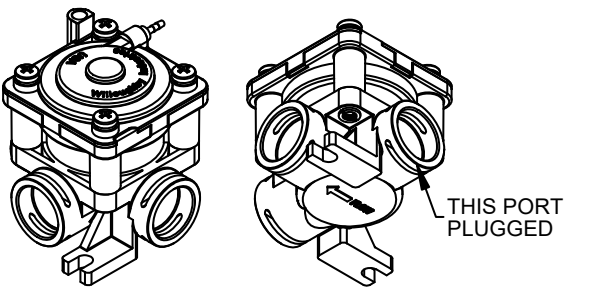
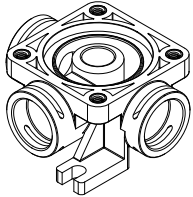
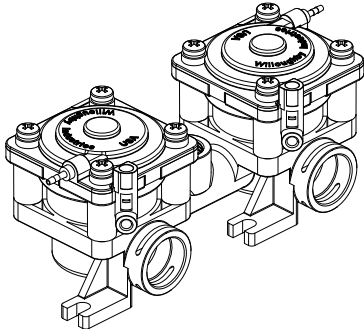
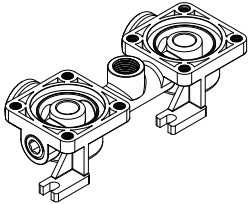
PSL2 DUAL TEMP. NON-METERING VALVES (MANIFOLDED)



ITEM NO.	PART #	DESCRIPTION	SEE CATALOG SECTION #:
1	9805022	PML22 VALVE MOUNTING BRACKET	---
	9805023	PML23 VALVE MOUNTING BRACKET	---
	9805024	PML24 VALVE MOUNTING BRACKET	---
2	980183	CHECKSTOP ASSEMBLY	11
3	980403	PNEUMATIC SELF-CLOSING VALVE ASSEMBLY	3
4	980140	SPRING CLIP	1
5	980196	PLASTIC VALVE T	1
6	980164	O-RING, #015	1
7	980197	PLASTIC VALVE COUPLING	1
8	980404	PNEUMATIC SELF-CLOSING VALVE ASSEMBLY- DUAL TEMP	3
9	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
10	321010	3/8" TUBE x 1/4" MPT CONNECTOR	1
11	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
12	600523	FLEXIBLE TUBING 3/8" OD X 1/4" ID	1 (SOLD PER FOOT)
13	300566	3/8" x 3/8" MPT CONNECTOR	1
14	600475	PNEUMATIC TUBING 1/16" ID x 1/8" OD (BLUE)	1 (SOLD PER FOOT)
15	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
16	600470	PNEUMATIC TUBING 1/16" ID (RED)	1 (SOLD PER FOOT)
17	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1

SEE PAGE 41 FOR INDIVIDUAL NON-METERING VALVE ASSEMBLIES

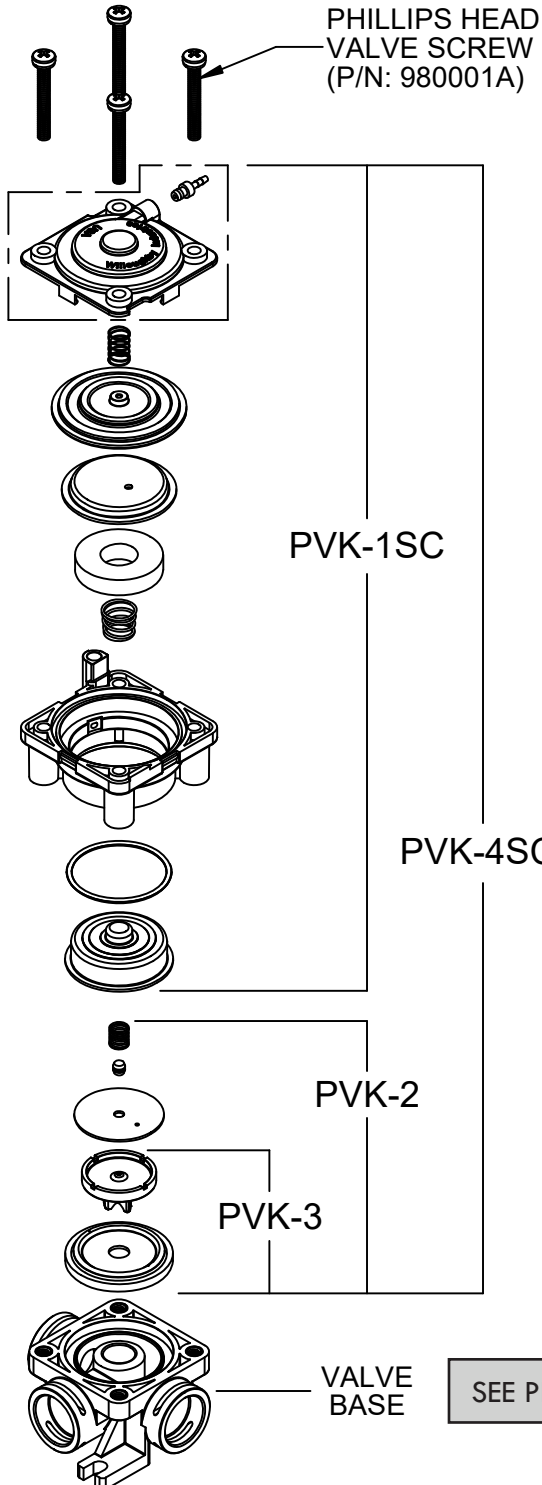
PSL INDIVIDUAL NON-METERING VALVE ASSEMBLIES / BASES

	PART NUMBER	VALVE ASSEMBLY	BASE ONLY P/N
	<p>P/N: 980403 PSL, ALL PORTS OPEN</p>		<p>P/N: 980420</p> 
	<p>P/N: 980403PL PSL, PLUGGED LEFT PORT</p>		<p>P/N: 980420L</p> 
	<p>P/N: 980403PR PSL, PLUGGED RIGHT PORT</p>		<p>P/N: 980420R</p> 
	<p>P/N: 980404 PSL2, DUAL TEMPERATURE</p>		<p>P/N: 980415</p> 

SEE THE NEXT PAGE FOR **PSL** VALVE ASSEMBLY COMPONENTS

PSL VALVE ASSEMBLY COMPONENTS & KITS (PVKs)

*COMMON TO ALL PSL VALVES



NOTES:

- PARTS LISTED IN **PVK** COMPONENT KITS ARE NOT SOLD INDIVIDUALLY
- **PVK-1SC, PVK-2, & PVK-3** PARTS ARE AVAILABLE IN KIT FORM ONLY
- COMPONENT KIT PART NUMBERS ARE LISTED IN THE EXPLODED VIEW,

SEE THE FOLLOWING PAGE FOR DETAILS

PART NUMBER

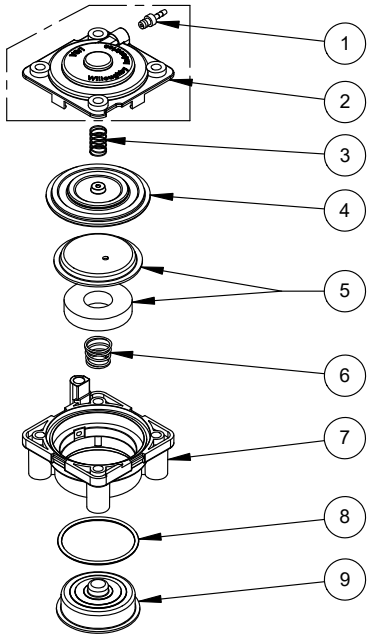
VALVE ASSEMBLY

P/N: PVK-4SC

**COMPLETE PSL REBUILD KIT
INCLUDES: PVK-1SC, PVK-2, PVK-3, & 380897**

P/N: PVK-1SC

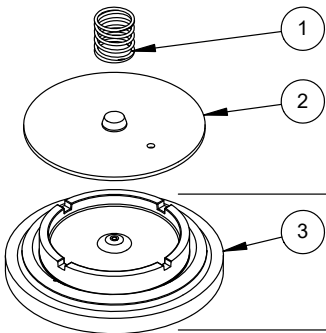
**PSL AIR-SIDE
REBUILD KIT**



ITEM #	DESCRIPTION	QTY.
1	FITTING, HOSE BARB, PUSH-IN, 1/16" (BRASS)	1
2	AIR SIDE TOP COVER	1
3	AIR SIDE SPRING	1
4	DIAPHRAGM, AIR SIDE, PNEUMATIC METERING VALVE	1
5	METERING VALVE MAGNET/CUP ASSEMBLY	1
6	SPRING, AIR SIDE MAGNET	1
7	BODY, MOLDED WI PNEU. MTRG.	1
8	O-RING M1.5x32 BUNA-70	1
9	BARRIER CUP	1

P/N: PVK-2

**WATER-SIDE
ASSEMBLY KIT**

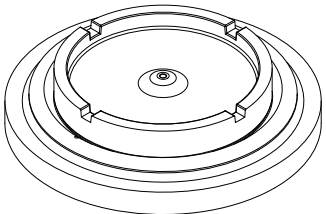


ITEM #	DESCRIPTION	QTY.
1	SPRING, WATER SIDE DIAPHRAGM	1
2	WATER SIDE DISK ASSEMBLY	1
3	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1

PVK-3
(ITEM #: 3)

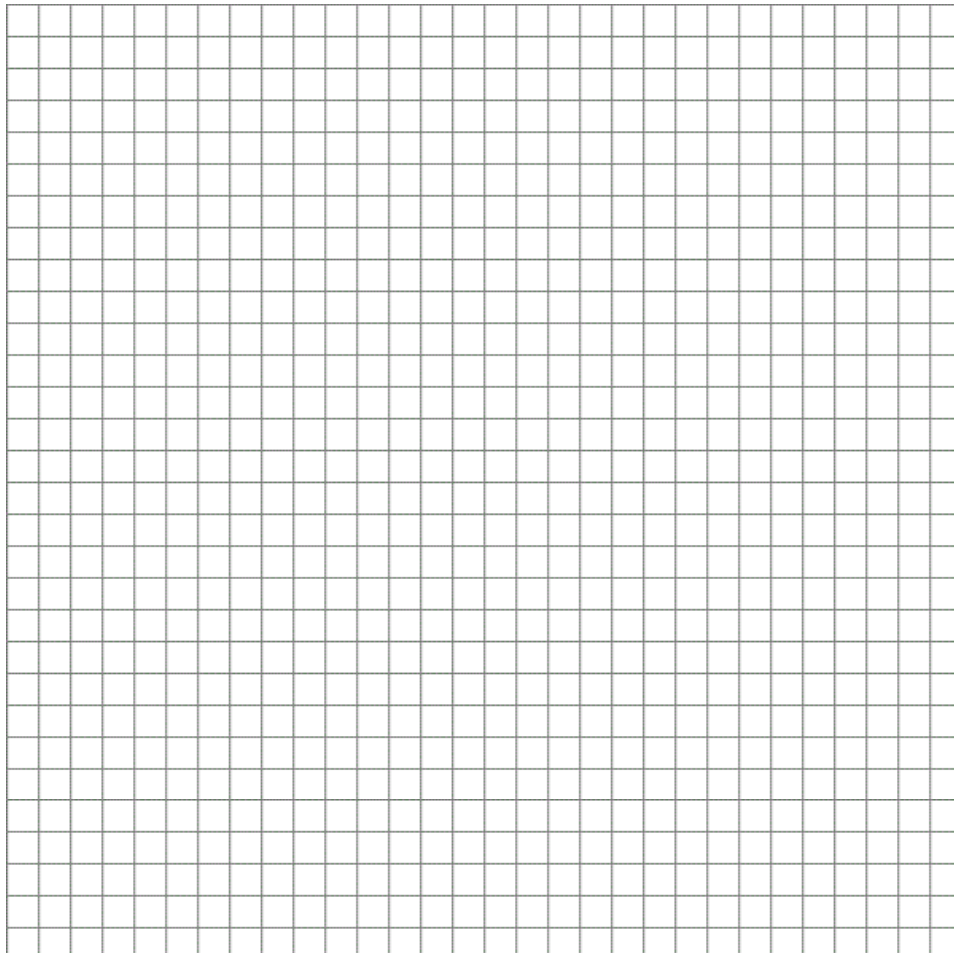
P/N: PVK-3

**WATER-SIDE
DIAPHRAGM**



NOTE: PVK-3 IS INCLUDED IN PVK-2

NOTES:



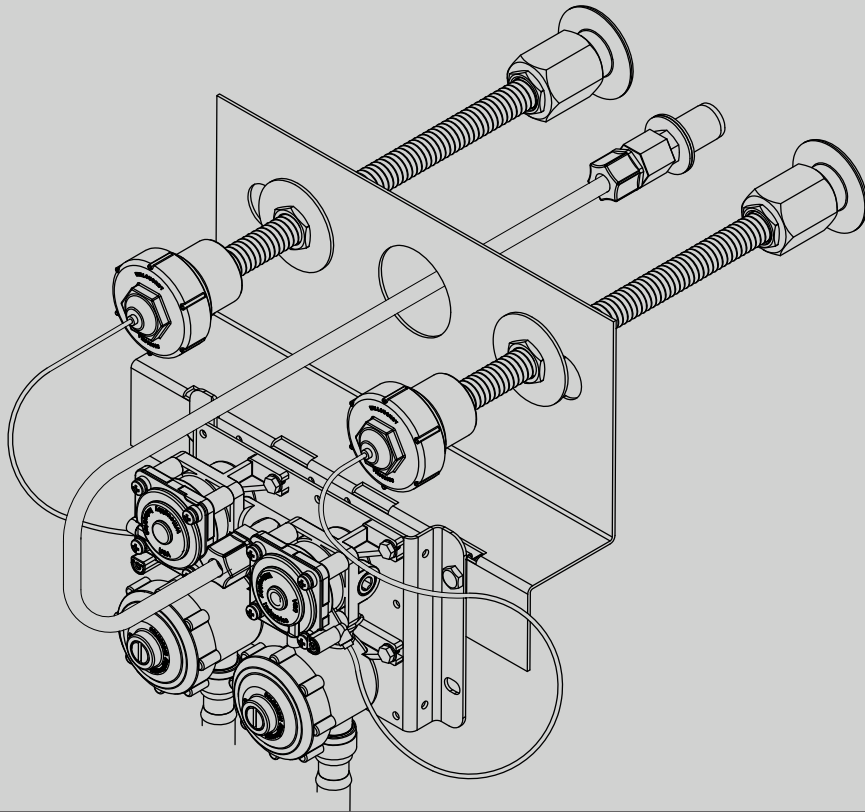
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

4



PNEUMATIC RETROFIT VALVES- LEAD FREE

THESE ITEMS:

DUAL TEMP. REPLACEMENT PNEUMATIC VALVES- OVERVIEW
REPLACEMENT PNEUMATIC VALVE ASSEMBLY
& COMPONENTS _____
BEHAVIORAL HEALTHCARE PNEUMATIC FAUCET- OVERVIEW_

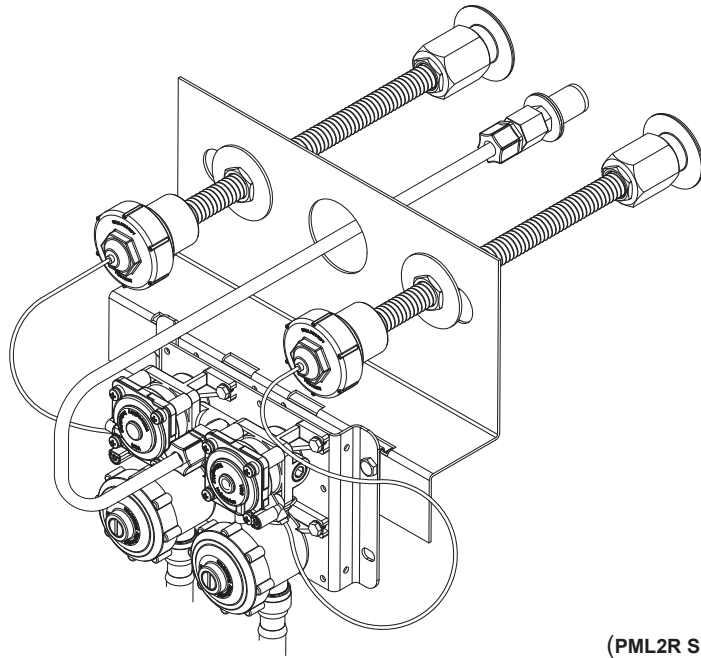
BEGIN ON PAGE:

46

47

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PML2R / PSL2R Dual Temperature Replacement Pneumatic Valve



(PML2R SHOWN)

Recommended Specifications

Dual Temperature, Lead-free, Replacement Pneumatic Valve assembly shall be: Willoughby Model No. **P__L2R**
(Select from options list)

This valve is designed to replace existing valves on china and aluminum fixtures with integral bubblers. The valve assembly shall use diaphragms to pneumatically activate non-hold open metering (5-90 second) or non-metering pneumatic valves. The vandal-resistant push buttons shall be keyed/non-removable from the front of the fixture and shall require less than 5 lbs of force to operate.

The plastic valve checkstop/strainer shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the filler/bubbler/shower head. Water inlet is 1/2" MPT and is reversible for either top or bottom supply. A galvanized wall mounting plate is provided, wall anchoring hardware provided by others.

Flexible tubing is supplied for walls up to 8" thick. Recommended operating pressure shall be 35-70 psi. Recommended max operation temperature is 110° Fahrenheit. The maximum length for tubing between the push button actuator and the valve is 10 feet. The pneumatic system is entirely self-contained and shall require no outside air supply. Cost reducing manifolded valves shall consist of multiple valve assemblies served by a common supply line.

Valve complies with NSF-61 standard.

Model Number:

- PML2R Dual Temp. Metering
 PSL2R Dual Temp. Non-metering

Inlet Connection (choose one):

- 3/4"
 1"

Options:

- MA2 (Double Manifold, No flow limitation)
 -MA3 (Triple Manifold, 0.5 GPM flow only)
 -MA4 (Quad Manifold, 0.5 GPM flow only)
 -TMV In-line Thermostatic Mixing Valve

* This is not a substitute for a thermostatic mixing valve. The delivered water temperature is the result of the two combined inlet temperatures and cannot be adjusted by this valve assembly. The hot side of the valve must be supplied with tempered water.

** Push buttons require minimum Ø1-5/16" round or 1-1/8" square backsplash openings.



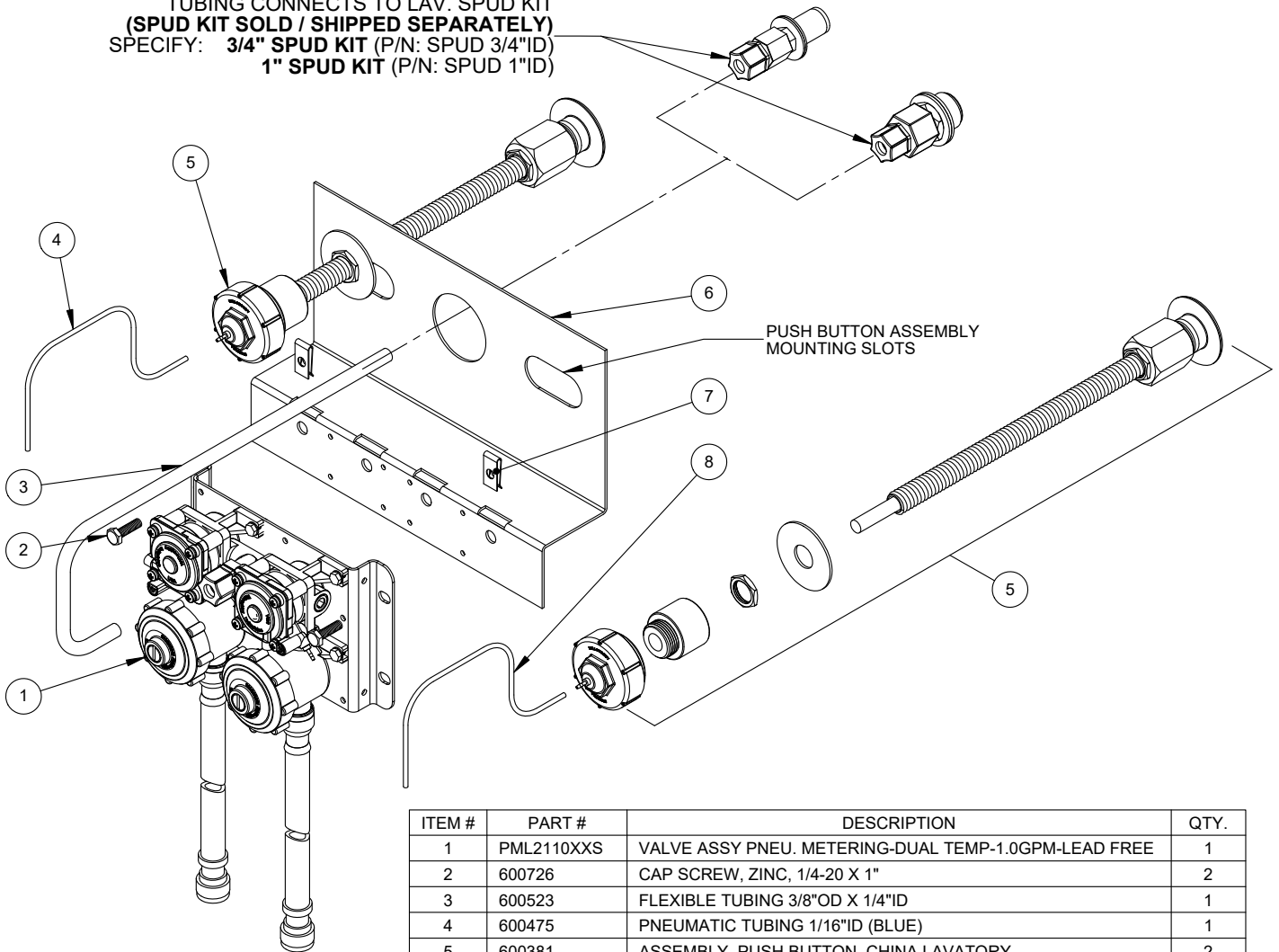
WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

FOR PNEUMATIC VALVE ASSEMBLY DETAILS: SEE SECTION 3
FOR PUSH BUTTONS: SEE SECTION 12

PML2R REPLACEMENT VALVE ASSEMBLY FOR CHINA LAV.

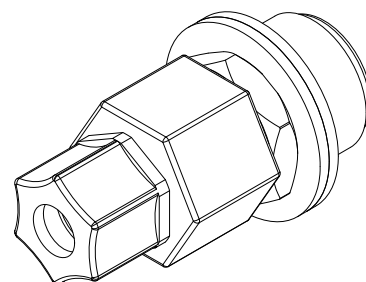
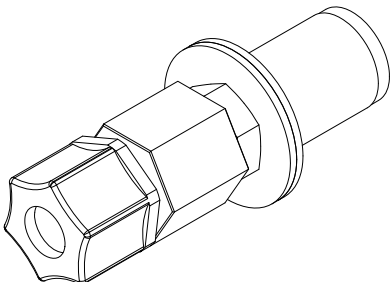
TUBING CONNECTS TO LAV. SPUD KIT
 (SPUD KIT SOLD / SHIPPED SEPARATELY)
 SPECIFY: 3/4" SPUD KIT (P/N: SPUD 3/4"ID)
 1" SPUD KIT (P/N: SPUD 1"ID)

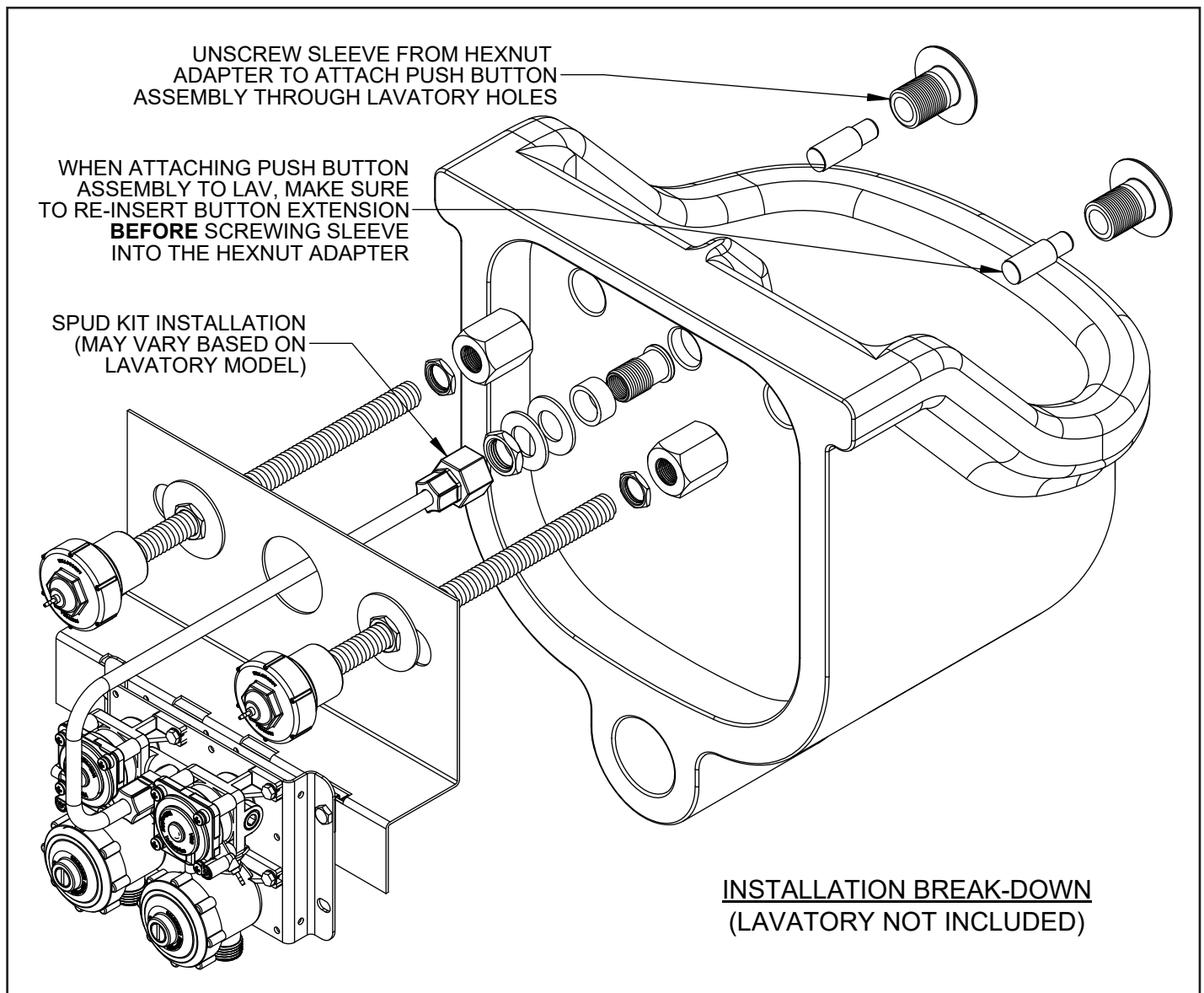


ITEM #	PART #	DESCRIPTION	QTY.
1	PML2110XXS	VALVE ASSY PNEU. METERING-DUAL TEMP-1.0GPM-LEAD FREE	1
2	600726	CAP SCREW, ZINC, 1/4-20 X 1"	2
3	600523	FLEXIBLE TUBING 3/8"OD X 1/4"ID	1
4	600475	PNEUMATIC TUBING 1/16"ID (BLUE)	1
5	600381	ASSEMBLY, PUSH BUTTON, CHINA LAVATORY	2
6	500023	BRACKET, CHINA LAV, 14GA. GALV.	1
7	800113	TINNERMAN NUT 1/4-20, S/S	2
8	600470	PNEUMATIC TUBING 1/16"ID (RED)	1

P/N: SPUD 3/4"ID

P/N: SPUD 1"ID



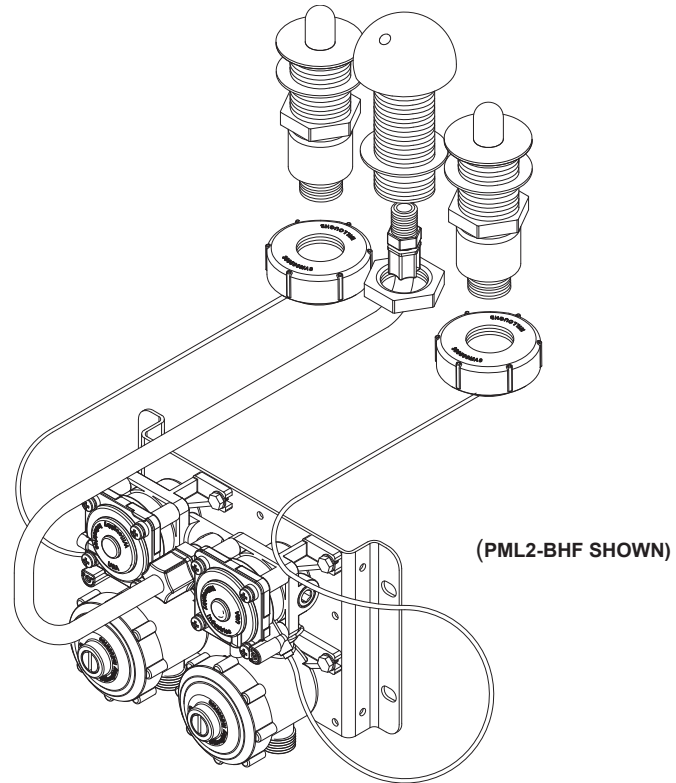
PML2R REPLACEMENT VALVE ASSEMBLY FOR CHINA LAV.

PML-BHF

Lead-free

Behavioral Healthcare

Pneumatic Faucet



Recommended Specifications

Lead-free Behavioral Healthcare Pneumatic Faucet shall be: Willoughby Model No. **PML-BHF**
(Select from options list on the following page)

The Behavioral Healthcare Faucet is designed to either retrofit existing lavatories or be specified for new design. Faucet shall be deck mounted, requiring (3) $\text{\O}1-5/16"$ to $\text{\O}1-1/2"$ faucet holes (faucet holes between 4" centerset to 8" centerset are recommended). Bubbler and push buttons shall be machined from T303 stainless steel and shall have ligature-resistant hemispherical designs.

Valve constructed of stainless steel and plastic materials and complies with NSF-61 standard. The valve assembly shall use a diaphragm to pneumatically activate a non-hold-open metering (5-90 second) pneumatic valve assembly. The push button shall require less than 5 lbs. of force to operate. Vandal resistant stainless steel push button and keyed pump body shall be non-removable from the top of the fixture deck. The valve flow is 0.5 GPM.

The plastic valve checkstop/strainer shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the filler/bubbler. Water inlet is 1/2" MPT and is reversible for either top or bottom supply. A galvanized wall mounting plate is provided,

Recommended operating pressure shall be 35-70 psi. Recommended max operation temperature is 110° Fahrenheit. The maximum length for tubing between the push button actuator and the valve is 10 feet. The pneumatic system is entirely self-contained and shall require no outside air supply.

* The PML2 valve is not a substitute for a thermostatic mixing valve. In dual temperature valves, the delivered water temperature is the result of the two combined inlet temperatures and cannot be adjusted by this valve assembly. The hot side of the valve must be supplied with tempered water.

An In-line Thermostatic Mixing Valve (TMV) is available (select from options list on the following page).



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

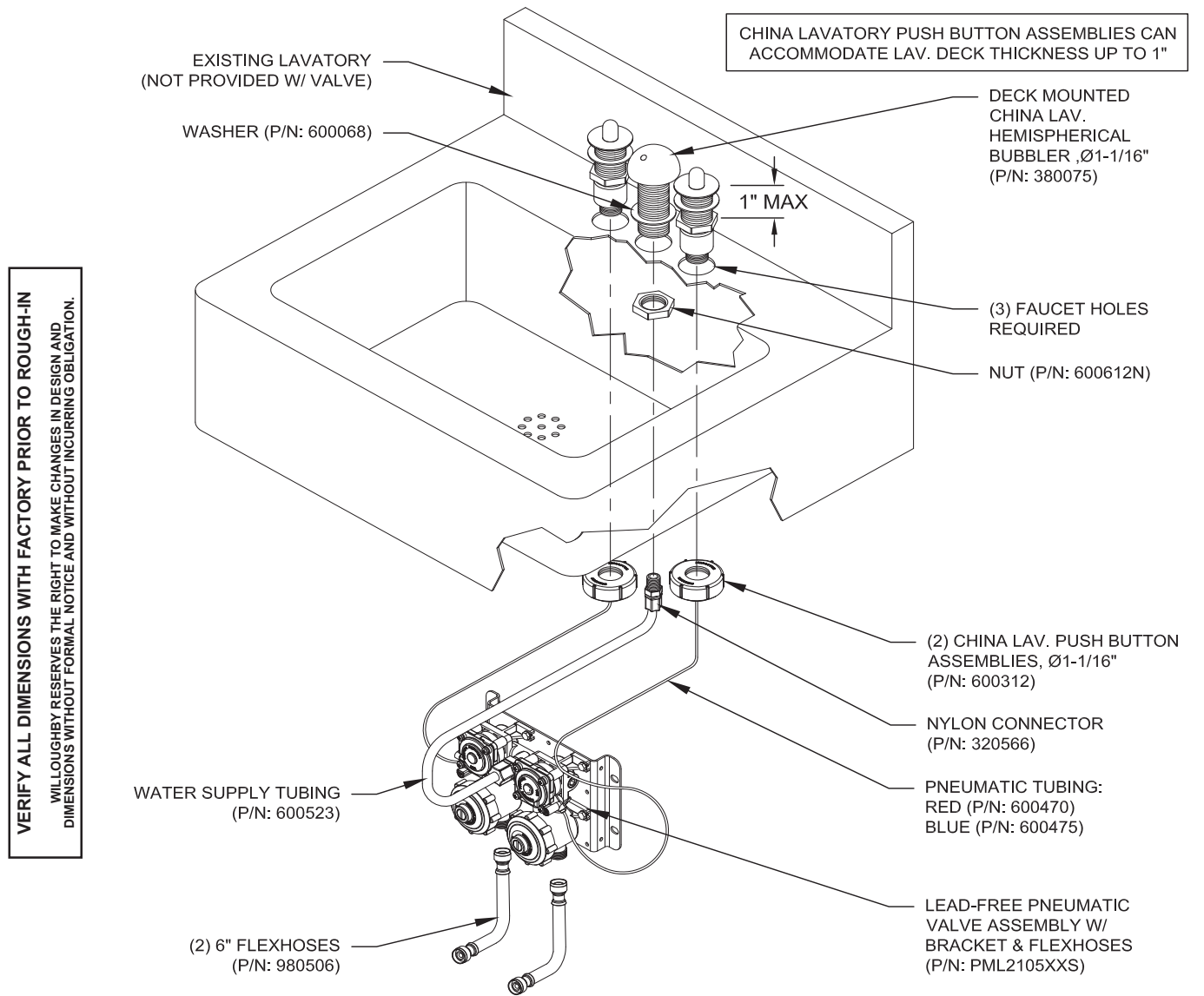
1.) Valve Selection: (Choose One)

- PML1-BHF Single Temperature Metering Valve
- PML2-BHF Dual Temperature Metering Valve

2.) Options:

- TMV In-line Thermostatic Mixing Valve

Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

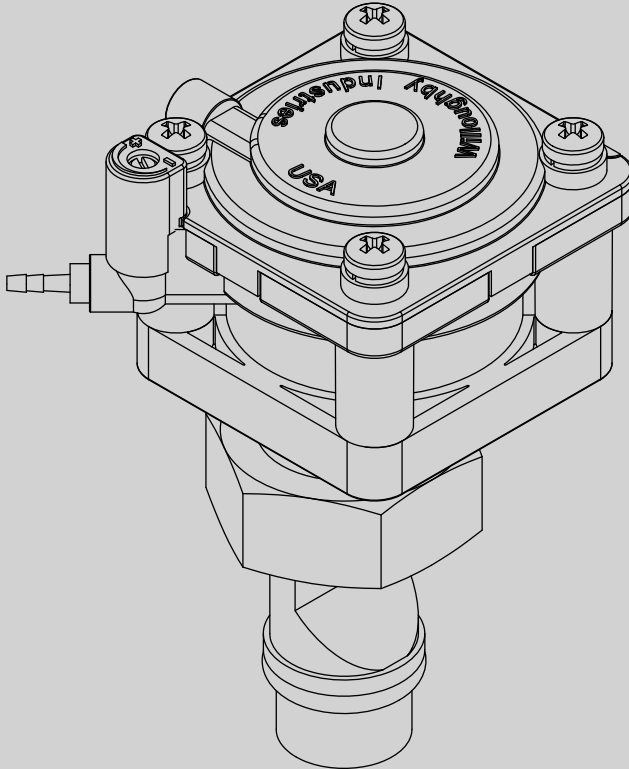


VERIFY ALL DIMENSIONS WITH FACTORY PRIOR TO ROUGH-IN
 WILLOUGHBY RESERVES THE RIGHT TO MAKE CHANGES IN DESIGN AND DIMENSIONS WITHOUT FORMAL NOTICE AND WITHOUT INCURRING OBLIGATION.

PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION

5

MECHANICAL VALVE PARTS & RETROFITS

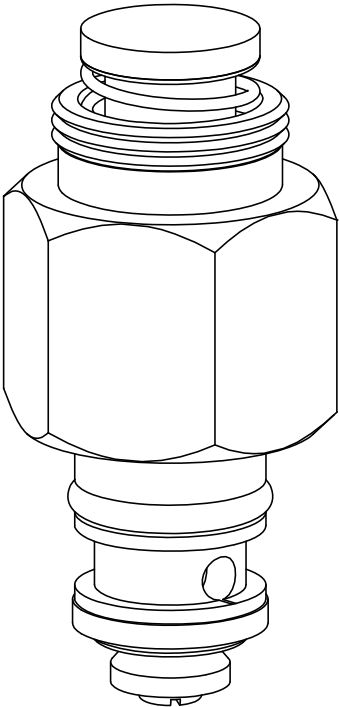
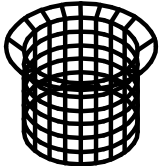
THESE ITEMS:

MECHANICAL VALVE REPLACEMENT PARTS _____
MECHANICAL VALVE REFERENCE DRAWINGS _____
RETROFIT ASSEMBLIES FOR MECHANICAL VALVES- OVERVIEW _____
RETROFIT ASSEMBLIES FOR MECHANICAL VALVES _____

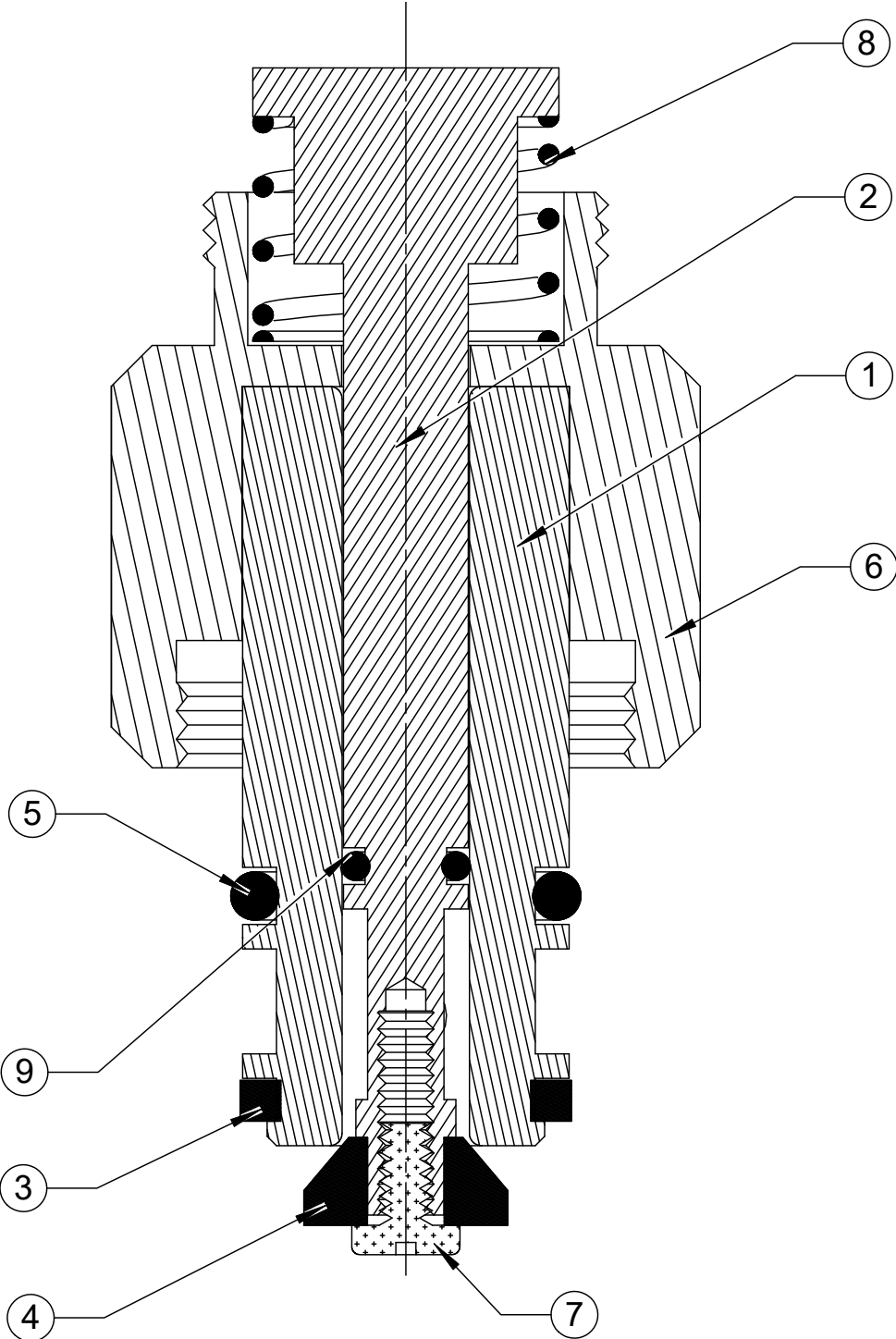
BEGIN ON PAGE:

52
54
58
59

MECHANICAL VALVE REPLACEMENT PARTS

ITEM #	P/N	DESCRIPTION
N/A	600276	<p>SELF-CLOSING MECHANICAL VALVE CARTRIDGE, BRASS FOR REPLACEMENT ONLY</p> <p>(METERING MECHANICAL VALVE CARTRIDGE IS DISCONTINUED AS OF MAY 2012)</p> 
N/A	600181	<p>MECHANICAL CARTRIDGE STRAINER INSERT</p> 
N/A	600103	<p>CARTRIDGE RESEAL KIT (INCLUDES ITEM #S: 3, 4, 5, 7, 9)</p>
1	600604	INSERT BODY, SELF CLOSING
2	600029	BLEEDER STEM
3	600108	O-RING, TETRASEAL #77264-R .612 ID X .070 W
4	600176	FAUCET WASHER (NSF)
5	600105	O-RING 15MM ID x 3MM W
6	380017	INTERMEDIATE NUT
7	600180	SCREW #6-32 x 1/4" SLOTTED PANHEAD, S/S, #77035-P
8	600171	CARTRIDGE RETURN SPRING
9	600115	O-RING (#008) #77035-I

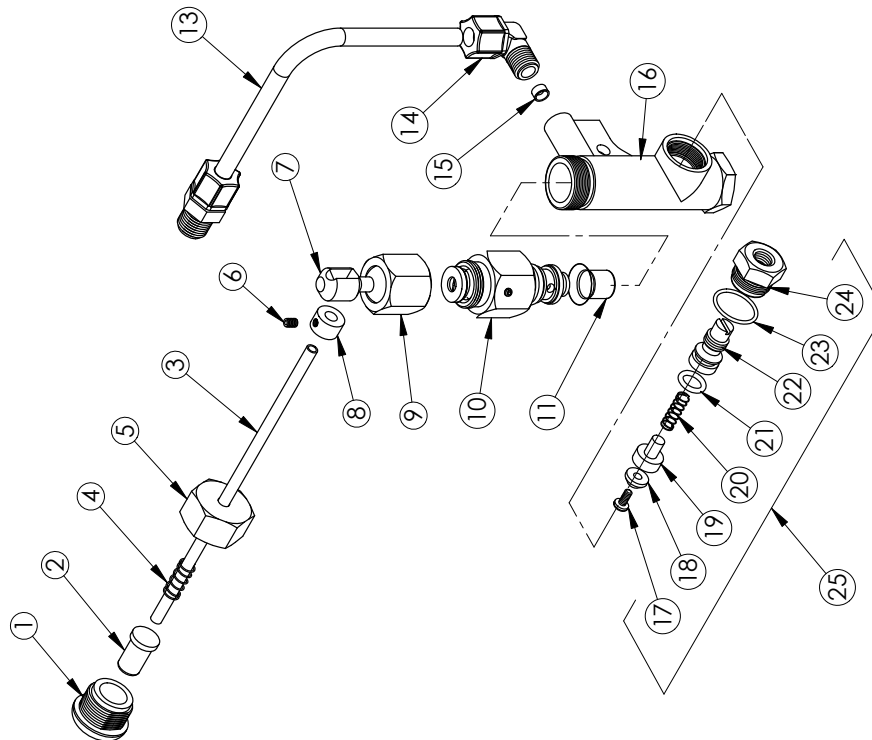
P/N: 600276 SELF-CLOSING MECHANICAL VALVE CARTRIDGE (SECT.)



MECHANICAL VALVE REFERENCE DRAWINGS

DWG#: 920039 (WM1B) MECHANICAL METERING, SINGLE TEMP.

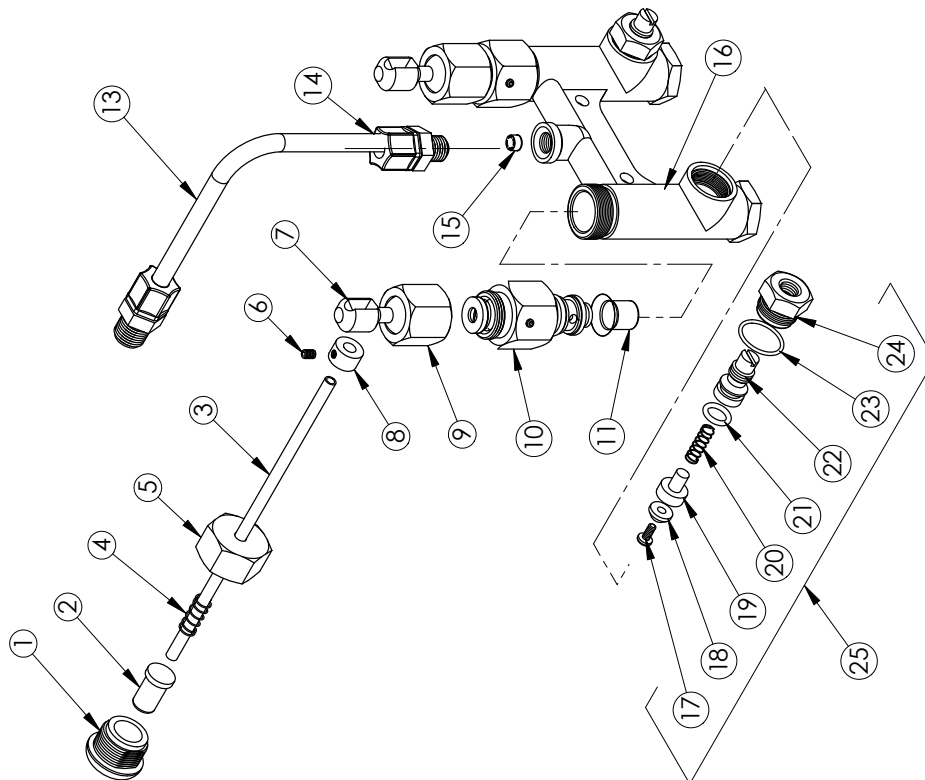
ITEM NO.	PART #	DESCRIPTION	QTY.
1	380145	PUSHBUTTON SLEEVE	1
2	600060	PUSHBUTTON	1
3	115104	PUSHROD (LENGTH=WALL + 6")	1
4	600075	SPRING FOR PUSHROD	1
5	600055	PUSHBUTTON NUT	1
6	600096	SCREW, SOCKET SCREW, S/S, #10-32 X 1/4"	1
7	380118	TOGGLE LEVER, BRASS	1
8	600095	COLLAR 1/4" BRASS SHAFT	1
9	600005	TOGGLE NUT	1
10	N/A	DISCONTINUED METERING CARTRIDGE	1
11	600181	INSERT, STRAINER, T304 S/S (80-MESH)	1
12	320566	3/8" x 3/8" MPT CONNECTOR	1
13	600523	TUBING 3/8 OD X 1/4 ID NATURAL	1
14	320579	ELBOW 3/8" TUBE x 1/4" MPT	1
15	380138	FLOW REGULATOR, 0.5 GPM, RED (MR03)	1
16	380180	VALVE BODY H-CASTING (HALF)	1
17	540001	SCREW #8-32 x 3/8" PANHEAD SLOTTED	1
18	600176	FAUCET WASHER (NSF)	1
19	600091	CHECKSTOP PLUNGER	1
20	600234	SPRING FOR CHECKSTOP	1
21	600120	O-RING (#11) #77035-R .424"ID	1
22	600093	CHECKSTOP STEM	1
23	600768	O-RING (#019)	1
24	600092	CHECKSTOP NUT	1
25	600089	STOP ASSEMBLY	1



MECHANICAL VALVE REFERENCE DRAWINGS (CONT.)

DWG#: 920038 (WM2B) MECHANICAL METERING, DUAL TEMP.

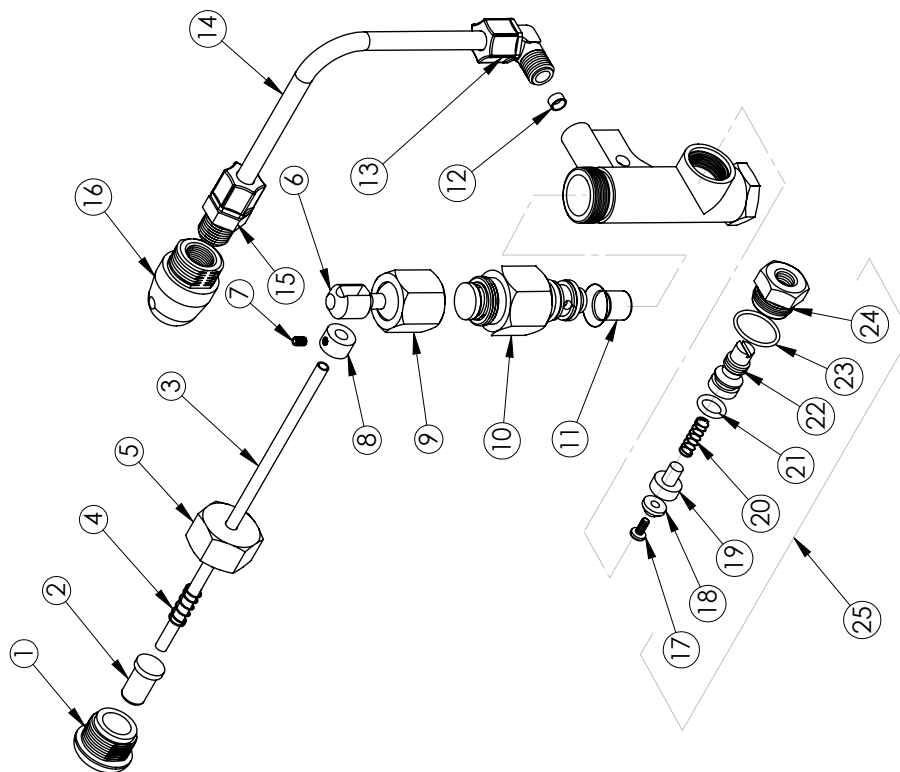
ITEM NO.	PART #	DESCRIPTION	QTY.
1	380145	PUSHBUTTON SLEEVE	2
2	600060	PUSHBUTTON	2
3	115104	PUSHROD (LENGTH=WALL + 6")	2
4	600075	SPRING FOR PUSHROD	2
5	600055	PUSHBUTTON NUT	2
6	600096	SCREW, SOCKET SCREW, S/S, #10-32 X 1/4"	2
7	380118	TOGGLE LEVER, BRASS	2
8	600095	COLLAR 1/4" BRASS SHAFT	2
9	600005	TOGGLE NUT	2
10	N/A	DISCONTINUED METERING CARTRIDGE	2
11	600181	INSERT, STRAINER, T304 S/S (80-MESH)	2
12	320566	3/8" x 3/8" MPT CONNECTOR	1
13	600523	TUBING 3/8" OD X 1/4" ID NATURAL	1
14	321010	3/8" TUBE x 1/4" MPT CONNECTOR	1
15	380138	FLOW REGULATOR, 0.5 GPM, RED (MR03)	1
16	380180	VALVE BODY H-CASTING	1
17	540001	SCREW #8-32 x 3/8" PANHEAD SLOTTED	2
18	600176	FAUCET WASHER (NSF)	2
19	600091	CHECKSTOP PLUNGER	2
20	600234	SPRING FOR CHECKSTOP	2
21	600120	O-RING (#111) #77035-R, .424"ID	2
22	600093	CHECKSTOP STEM	2
23	600768	O-RING (#019)	2
24	600092	CHECKSTOP NUT	2
25	600089	STOP ASSEMBLY	2



MECHANICAL VALVE REFERENCE DRAWINGS (CONT.)

DWG#: 920040 (WSC1B) MECHANICAL SELF-CLOSING, SINGLE TEMP.

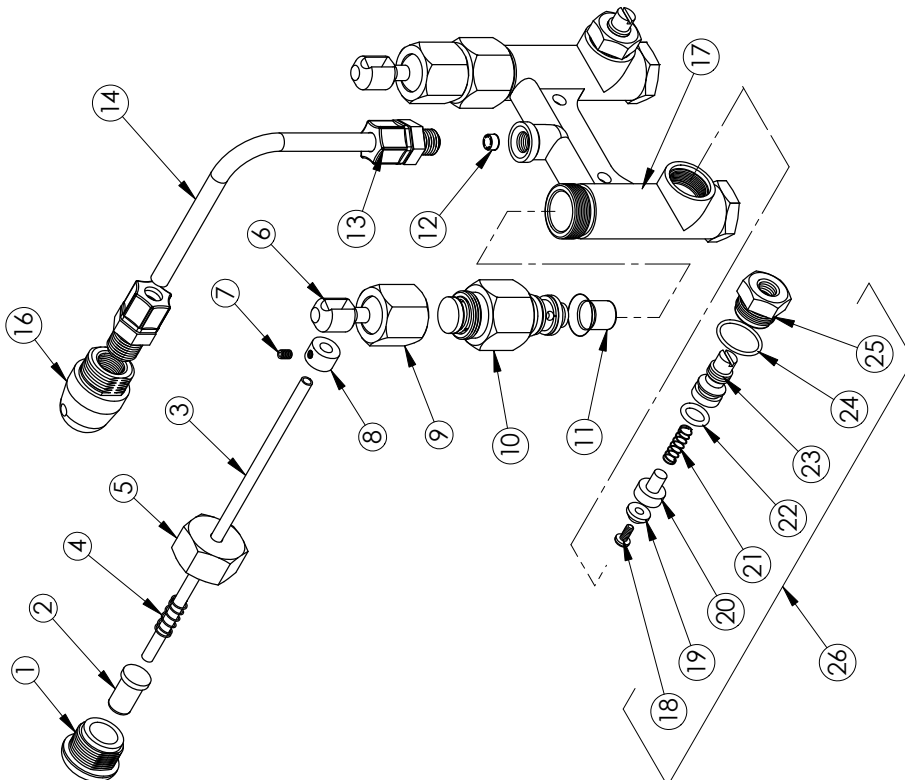
ITEM #	PART #	DESCRIPTION	QTY.
1	380145	PUSHBUTTON SLEEVE	1
2	600060	PUSHBUTTON	1
3	115104	PUSHROD (LENGTH=WALL + 6")	1
4	600075	SPRING FOR PUSHROD	1
5	600055	PUSHBUTTON NUT	1
6	380118	TOGGLE LEVER, BRASS	1
7	600096	SCREW, SOCKET SCREW, S/S, #10-32 X 1/4"	1
8	600095	COLLAR 1/4", T4A	1
9	600005	TOGGLE NUT	1
10	600276	CARTRIDGE SELF-CLOSING	1
11	600181	INSERT, STRAINER, T304 S/S (80-MESH)	1
12	380138	FLOW REGULATOR, 0.5 GPM, RED (MR03)	1
13	320579	ELBOW 3/8" TUBE x 1/4" MPT	1
14	970018	TUBING 3/8 OD X 1/4 ID NATURAL	1
15	320566	3/8" x 3/8" MPT CONNECTOR	1
16	380045	(BP) FILLER/BUBBLER	1
17	540001	SCREW #8-32 x 3/8" PANHEAD SLOTTED	1
18	600176	FAUCET WASHER (NSF)	1
19	600091	CHECKSTOP PLUNGER	1
20	600234	SPRING FOR CHECKSTOP	1
21	600120	O-RING (#111) #77035-R .424"ID	1
22	600093	CHECKSTOP STEM	1
23	600768	O-RING (#019)	1
24	600092	CHECKSTOP NUT	1
25	600089	STOP ASSEMBLY	1



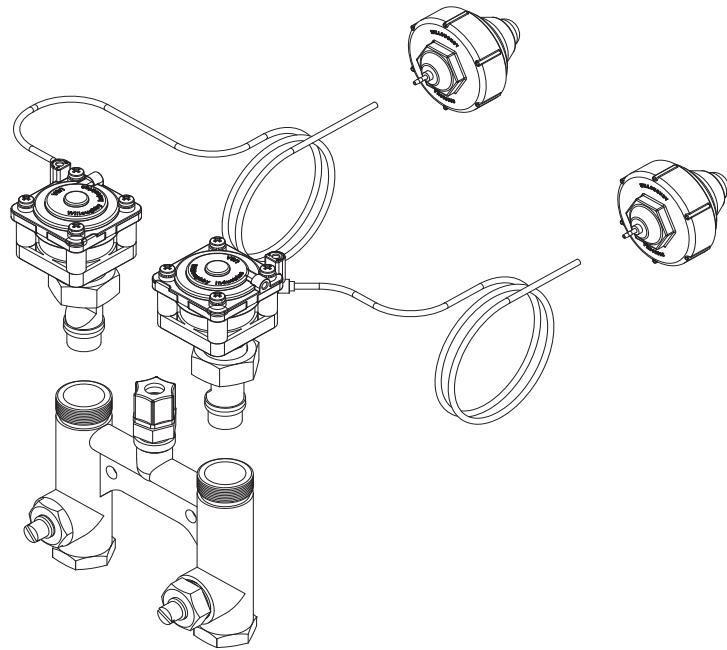
MECHANICAL VALVE REFERENCE DRAWINGS (CONT.)

DWG#: 920014 (WSC2B) MECHANICAL SELF-CLOSING, DUAL TEMP.

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	380145	PUSHBUTTON SLEEVE	2
2	600060	PUSHBUTTON	2
3	115104	PUSHROD (LENGTH=WALL + 6")	2
4	600075	SPRING FOR PUSHROD	2
5	600055	PUSHBUTTON NUT	2
6	380118	TOGGLE LEVER, BRASS	2
7	600096	SCREW, SOCKET SCREW, S/S, #10-32 X 1/4"	2
8	600095	COLLAR 1/4" BRASS SHAFT	2
9	600005	TOGGLE NUT	2
10	600276	CARTRIDGE SELF-CLOSING	2
11	600181	INSERT, STRAINER, T304 S/S (80-MESH)	2
12	380138	FLOW REGULATOR, 0.5 GPM, RED (MR03)	1
13	321010	3/8" TUBE x 1/4" MPT CONNECTOR	1
14	970018	TUBING 3/8 OD X 1/4 ID NATURAL	1
15	320566	3/8" x 3/8" MPT CONNECTOR	1
16	380045	(BP) FILLER/BUBBLER	1
17	380180	VALVE BODY H-CASTING	1
18	540001	SCREW #8-32 x 3/8" PANHEAD SLOTTED	2
19	600176	FAUCET WASHER (NSF)	2
20	600091	CHECKSTOP PLUNGER	2
21	600234	SPRING FOR CHECKSTOP	2
22	600120	O-RING (#111) #77035-R .424"ID	2
23	600093	CHECKSTOP STEM	2
24	600768	O-RING (#019)	2
25	600092	CHECKSTOP NUT	2
26	600089	STOP ASSEMBLY	2



WRMV / WRSCV Retrofit Valve Assemblies



Recommended Specifications

Retrofit Valve Assembly shall be:
Willoughby Model No. **WR__V-__** (Select from options list)

The Willoughby Retrofit Metering Valve Assembly (WRMV) and Willoughby Retrofit Non-metering Valve Assembly (WRSCV) are designed to easily convert single and dual temperature mechanical valve cartridges, pushrods, and toggles to state-of-the-art pneumatically operated metering or non-metering valve assemblies.

Existing Willoughby valve cartridges manufactured since 1985 can be directly replaced with WRMV and WRSCV retrofit valve assembly kits, specifically Willoughby valve models:

- WM-1 (Single temperature mechanical metering)
- WM-2 (Dual temperature mechanical metering)
- WSC-1 (Single temperature mechanical non-metering)
- WSC-2 (Dual temperature mechanical non-metering)

Certain existing competitors' valves may also be converted to pneumatic operation using the Willoughby WRMV or WRSCV retrofit valve assembly kits. However, conversions may require field modification of existing push button holes in fixture; consult with a Willoughby factory representative for additional details.

The WRMV and WRSCV valve assembly kits shall include:

- Ligature-resistant Push button-operated pneumatic diaphragm pumps*
 - Non-hold-open metering (5-90 seconds) or non-metering pneumatic valve cartridges
 - 5' of 1/8" tubing for each valve
- (All components for both the WRMV and WRSCV kits are the same except for the integral pneumatic valves.)

Vandal-resistant stainless steel push buttons attached to the diaphragm pumps activate the integral pneumatic valve within each valve cartridge via 1/8" pneumatic tubing. The vandal-resistant push buttons shall be keyed/non-removable from the front of the fixture and shall require less than 5 lbs of force to operate.

The pneumatic system is entirely self-contained and requires no outside air supply, eliminating traditional mechanical toggles and pushrod components. Recommended operating pressure will be 35-70 psi. Valves shall withstand pressures up to 90 psi. Recommended max operation temperature is 110° Fahrenheit.

*LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.

Model Number:

- WRMV-1B Single Temp. Metering Valves
- WRMV-2B Dual Temp. Metering Valves
- WRSCV-1B Single Temp. Non-metering Valves
- WRSCV-2B Dual Temp. Non-metering Valves



WARNING: Cancer and Reproductive Harm

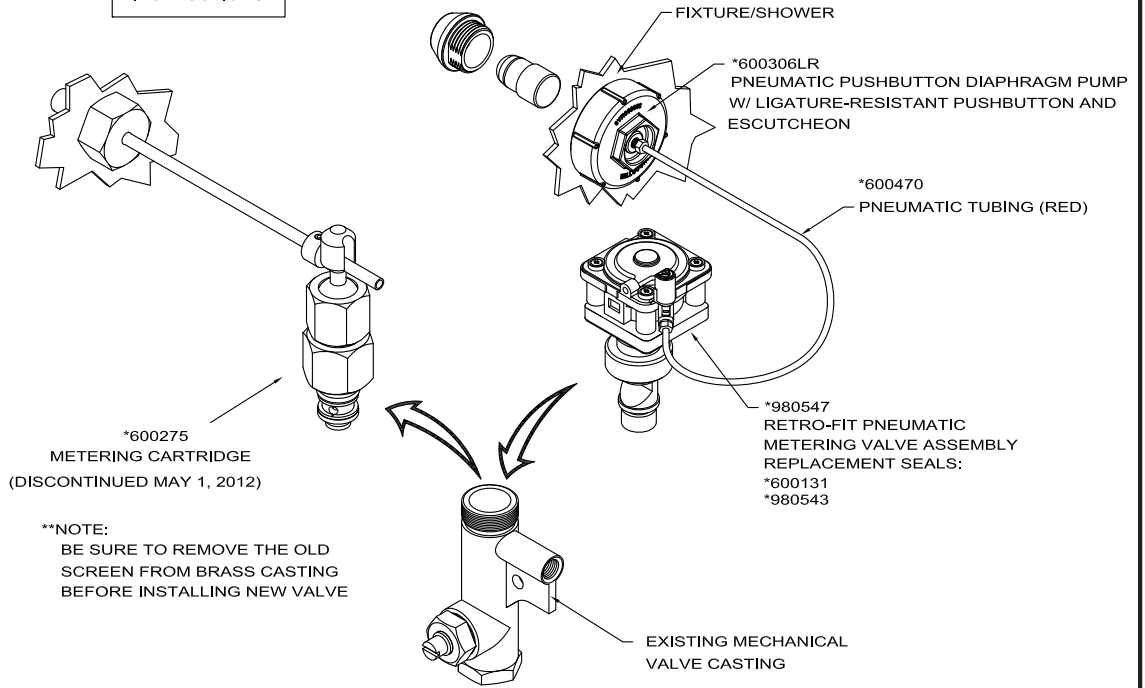
- www.P65Warnings.ca.gov

WRMV / WRSCV ASSEMBLY DETAILS

WRMV-1B

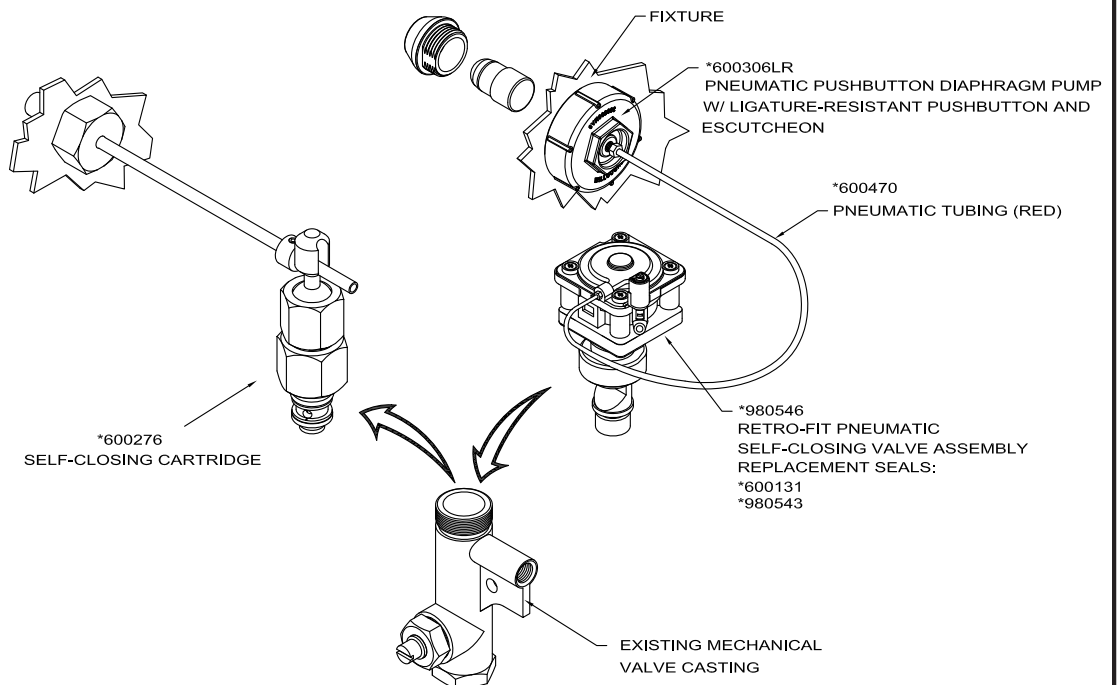
SEE PAGE 2 FOR METERING INSTRUCTIONS

THESE *PART #'S ARE INCLUDED IN A WRMV-1B ASSEMBLY

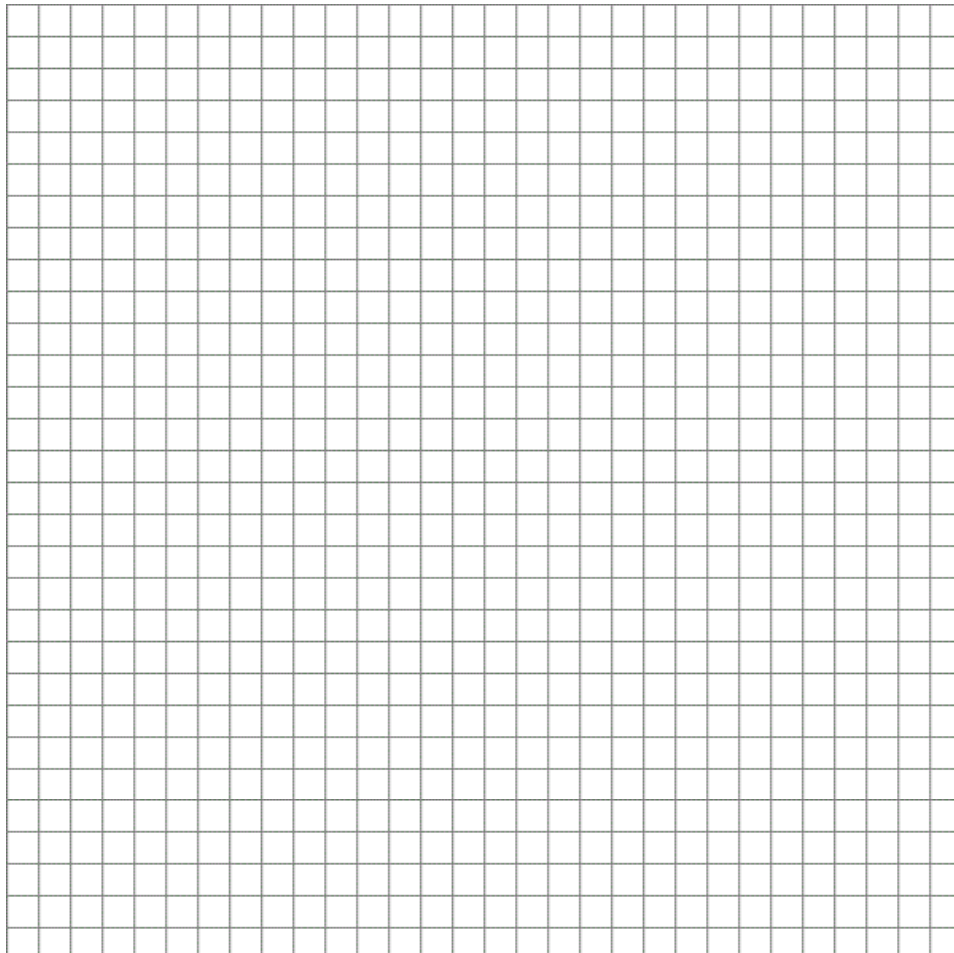


WRSCV-1B

THESE *PART #'S ARE INCLUDED IN A WRSCV-1B ASSEMBLY



NOTES:



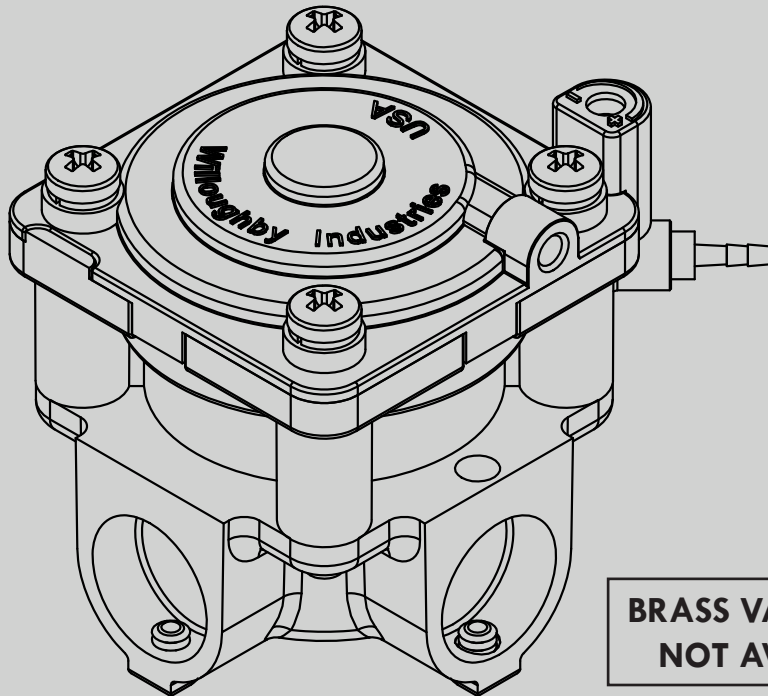
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

6



BRASS VALVE BODY
NOT AVAILABLE

PNEUMATIC VALVE PARTS- BRASS BODIED

THESE ITEMS:

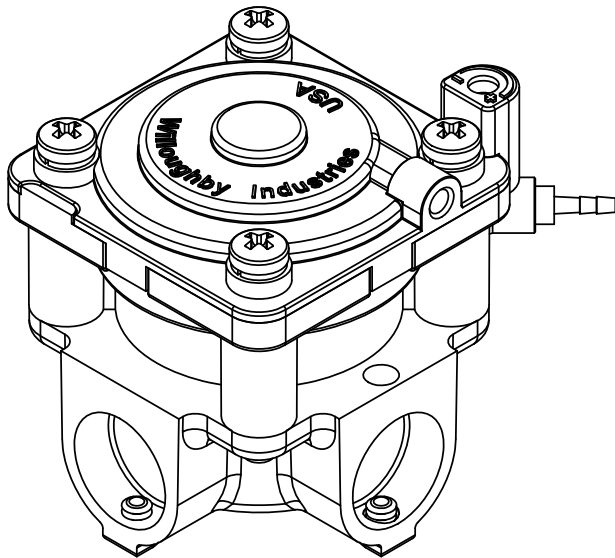
BRASS BODIED PNEUMATIC VALVE PARTS - OVERVIEW _____
WASHFOUNTAIN ELECTRONIC VALVE PARTS _____
PM METERING VALVE PARTS & KITS _____
PS NON-METERING VALVE PARTS & KITS _____

BEGIN ON PAGE:

62
63
66
68

PNEUMATIC VALVE PARTS BRASS BODIED - OVERVIEW

**P/N: 380997WI PRE-2014 BRASS BODIED PNEUMATIC VALVE
IS NO LONGER AVAILABLE FOR DIRECT REPLACEMENT**



**PARTS FOR P/N: 380997WI ARE
AVAILABLE BASED ON VALVE
CONFIGURATION:**

• IF YOU HAVE A **PM** METERING
VALVE ASSEMBLY, SEE:

**PM VALVE ASSEMBLY
COMPONENTS & KITS**

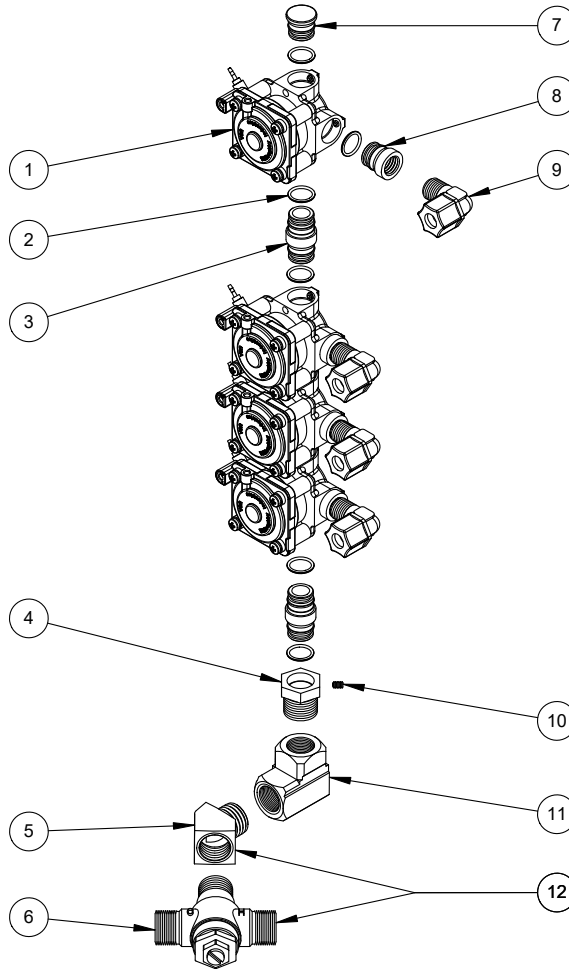
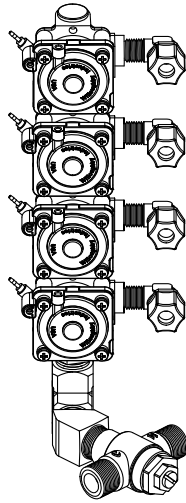
• IF YOU HAVE A **PS** NON-
METERING (OR SELF CLOSING)
VALVE ASSEMBLY, SEE:

**PS VALVE ASSEMBLY
COMPONENTS & KITS**

SEE FOLLOWING PAGES FOR SPECIFIC VALVE COMPONENTS

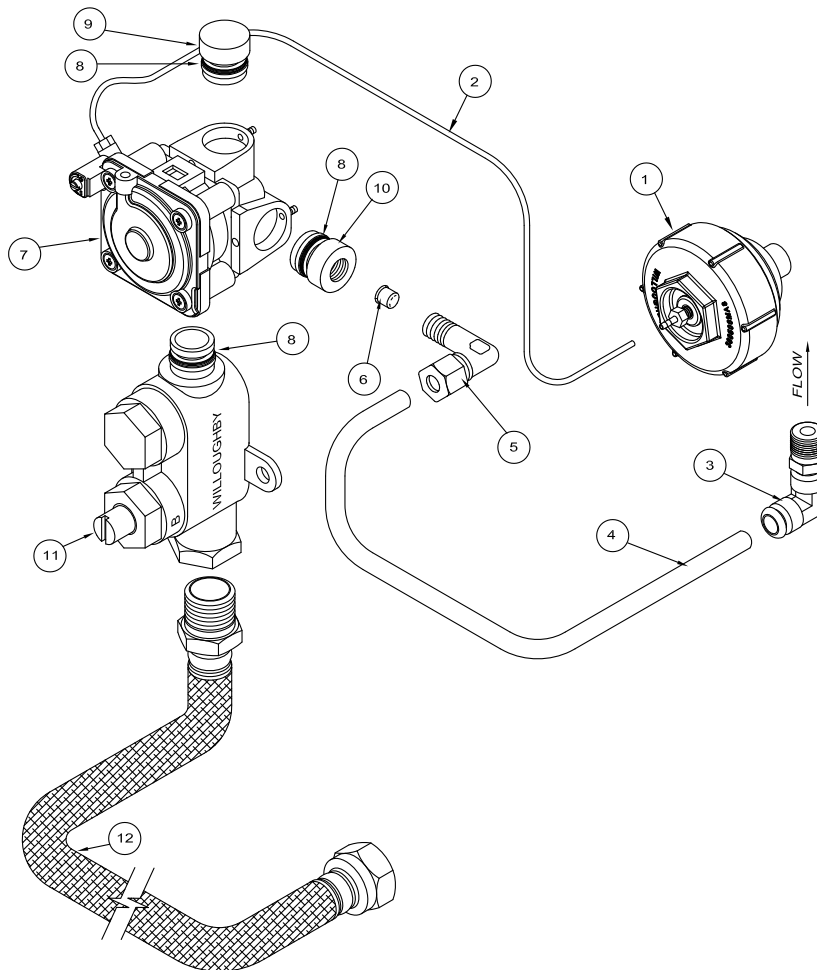
WASHFOUNTAIN PNEUMATIC VALVE ASSM. - BRASS

PRE JULY 2012



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	N/A	WASHFOUNTAIN VALVE, BRASS BODY PNEU. (PARTS AVAILABLE ONLY)	6
2	600130	O-RING, #015	1
3	380999	BRASS COUPLER FITTING	---
4	380992	BRASS VALVE BODY ADAPTOR FITTING	---
5	320581LF	ELBOW FITTING, 45°, 1/2" STREET	1
6	700480ELF	POWERS HYDROGUARD TMV (LFE480) INLINE	1
7	380998	MALE COUPLER PLUG	---
8	380222	ELBOW ADAPTER FITTING	---
9	320579	3/8" TUBE x 1/4" MPT ELBOW	1
10	540010	SET SCREW, #8-32 X 1/4"	1
11	320600LF	ELBOW FITTING, 90° 1/2" FPT X 1/2" FPT	1
12	800034E	THERMOSTATIC MIXING VALVE ASSM. (LFE480)	1

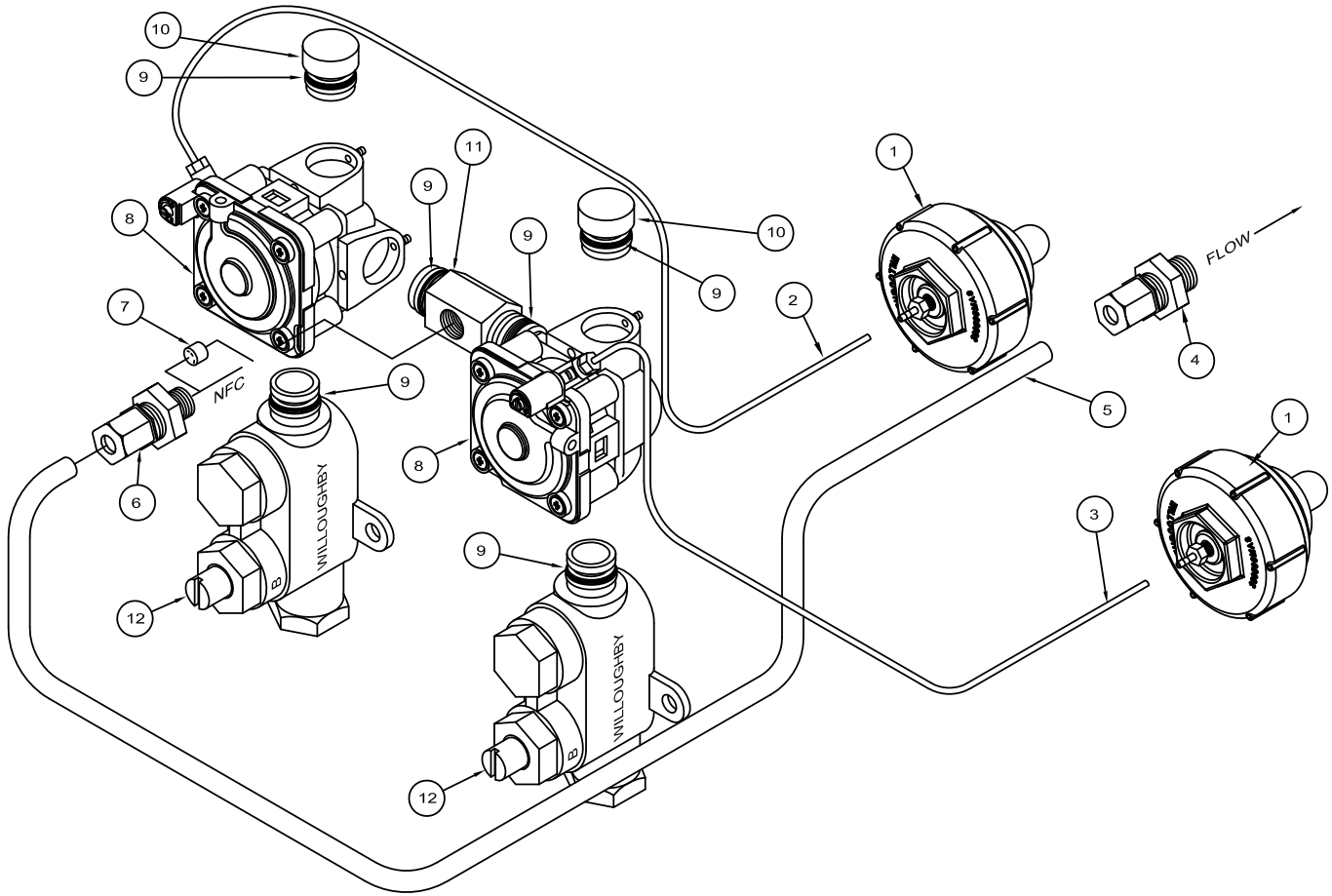
SEE FOLLOWING PAGES FOR PNEUMATIC VALVE COMPONENTS

PM1/PS1 SINGLE TEMP. PNEUMATIC VALVE ASSM. - BRASS

ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
2	600475	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (BLUE)	1 (SOLD PER FOOT)
3	320608	PRESTOLOCK ELBOW, 3/8" TUBE x 3/8" MPT	---
4	600523	FLEXIBLE TUBING 3/8" (10mm) O.D.	1 (SOLD PER FOOT)
5	320579	3/8" TUBE x 1/4" MPT ELBOW	1
6	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
7	N/A	WASHFOUNTAIN VALVE, BRASS BODY PNEU. (PARTS AVAILABLE ONLY)	6
8	600130	O-RING, #015	1
9	380998	MALE COUPLER PLUG	---
10	380222	ELBOW ADAPTER FITTING	---
11	600183	CHECKSTOP ASSEMBLY, BRASS	11
12	320511SS	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE, 1/2" MIP x 1/2" FIP	1

SEE FOLLOWING PAGES FOR PNEUMATIC VALVE COMPONENTS

PM2/PS2 DUAL TEMP. PNEUMATIC VALVE ASSM. - BRASS

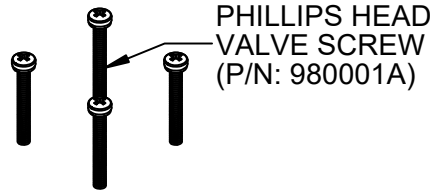


ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	P/N VARIES	PNEUMATIC PUSH BUTTON (VARIES)	12
2	600475	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (BLUE)	1 (SOLD PER FOOT)
3	600470	PNEUMATIC TUBING, 1/16" I.D. x 1/8" O.D. (RED)	1 (SOLD PER FOOT)
4	320566	3/8" x 3/8" MPT CONNECTOR	1
5	600523	FLEXIBLE TUBING 3/8" (10mm) O.D.	1 (SOLD PER FOOT)
6	321010	3/8" TUBE x 1/4" MPT CONNECTOR	1
7	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
8	N/A	WASHFOUNTAIN VALVE, BRASS BODY PNEU. (PARTS AVAILABLE ONLY)	6
9	600130	O-RING, #015	1
10	380998	MALE COUPLER PLUG	---
11	380221	TEE ADAPTER FITTING	---
12	600183	CHECKSTOP ASSEMBLY, BRASS	11
NS	320511SS	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE, 1/2" MIP x 1/2" FIP	1

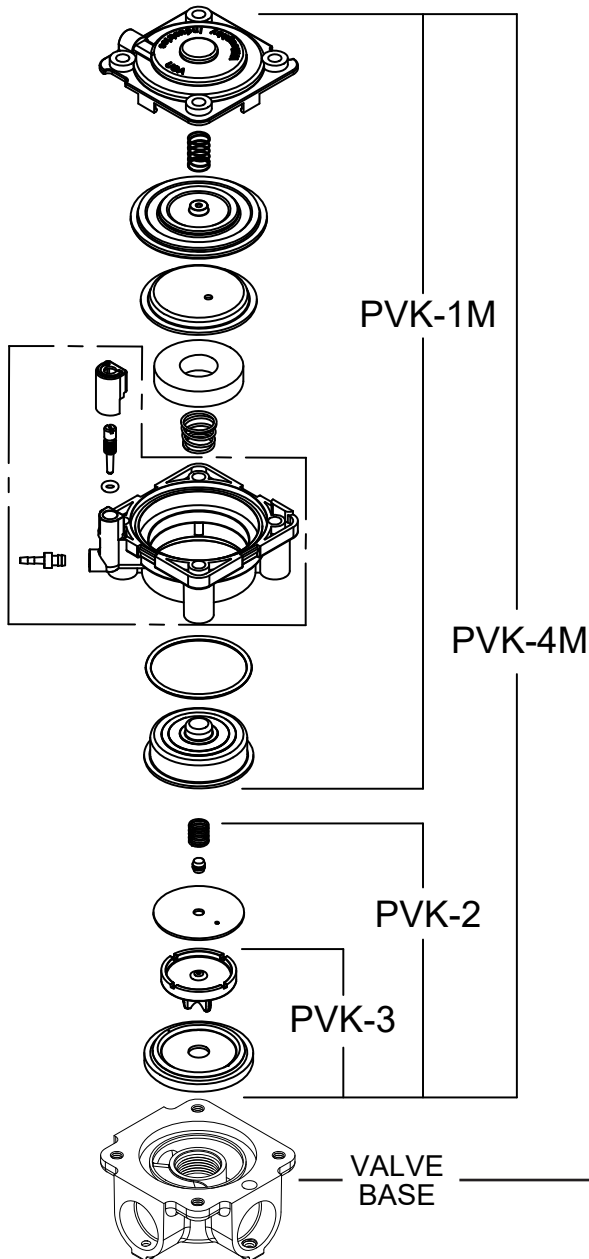
SEE FOLLOWING PAGES FOR PNEUMATIC VALVE COMPONENTS

PM VALVE ASSEMBLY COMPONENTS & KITS (PVKs)

***COMMON TO ALL PM VALVES**



BRASS VALVE BODY IS NO LONGER AVAILABLE



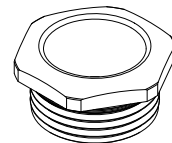
NOTES:

- PARTS LISTED IN **PVK** COMPONENT KITS ARE NOT SOLD INDIVIDUALLY
- **PVK-1M, PVK-2, & PVK-3** PARTS ARE AVAILABLE IN KIT FORM ONLY
- COMPONENT KIT PART NUMBERS ARE LISTED IN THE EXPLODED VIEW,

SEE THE FOLLOWING PAGE FOR DETAILS

OTHER PARTS:

- **VALVE BASE: N/A**
- **BASE INSERT, P/N: 380897**



PART NUMBER

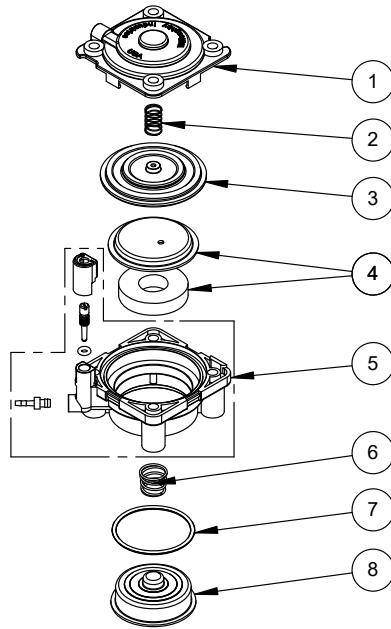
VALVE ASSEMBLY

P/N: PVK-4M

**COMPLETE PML REBUILD KIT
INCLUDES: PVK-1M, PVK-2, PVK-3, & 380897**

P/N: PVK-1M

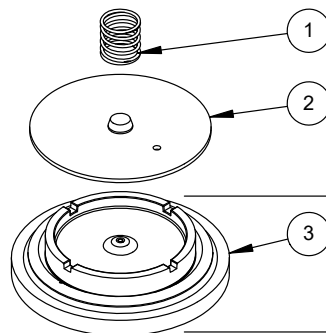
**PML AIR-SIDE
REBUILD KIT**



ITEM #	DESCRIPTION	QTY.
1	AIR SIDE TOP COVER	1
2	AIR SIDE SPRING	1
3	DIAPHRAGM, AIR SIDE, PNEUMATIC METERING VALVE	1
4	METERING VALVE MAGNET/CUP ASSEMBLY	1
5	METERING VALVE BODY ASSEMBLY	1
6	SPRING, AIR SIDE MAGNET	1
7	O-RING M1.5x32 BUNA-70	1
8	BARRIER CUP	1

P/N: PVK-2

**WATER-SIDE
ASSEMBLY KIT**

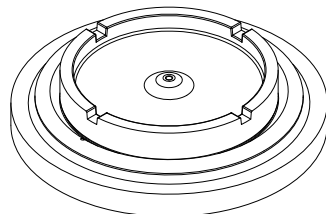


ITEM #	DESCRIPTION	QTY.
1	SPRING, WATER SIDE DIAPHRAGM	1
2	WATER SIDE DISK ASSEMBLY	1
3	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1

PVK-3
(ITEM #: 3)

P/N: PVK-3

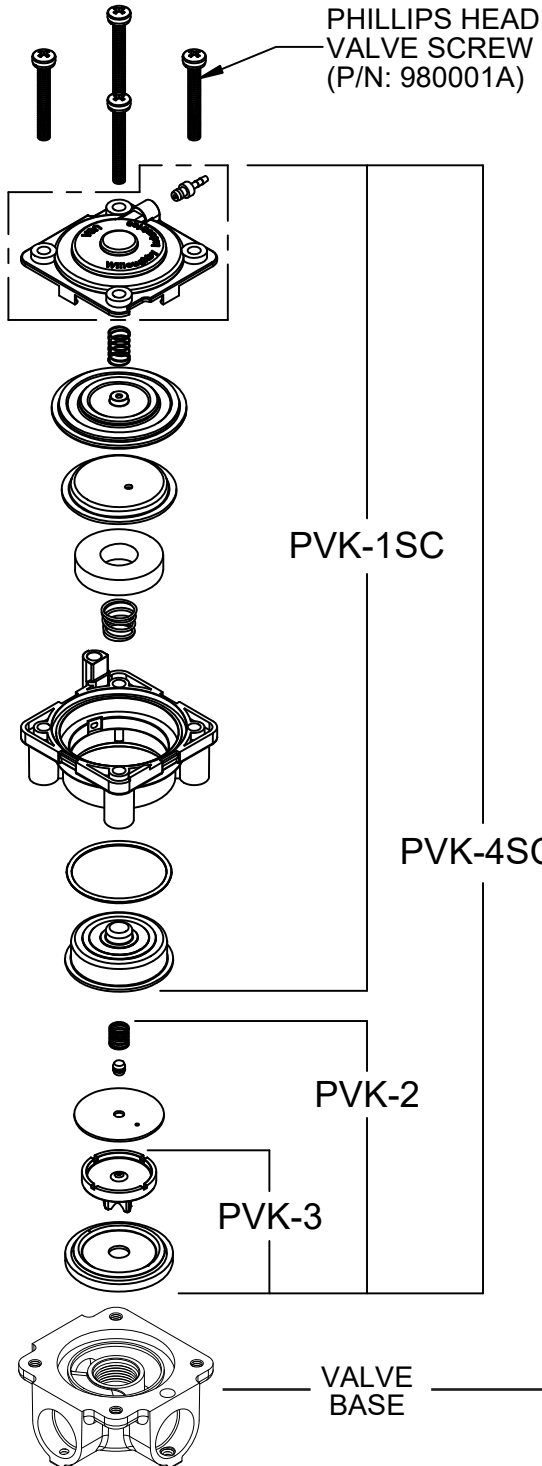
**WATER-SIDE
DIAPHRAGM**



**NOTE: PVK-3 IS
INCLUDED IN PVK-2**

PS VALVE ASSEMBLY COMPONENTS & KITS (PVKs)

***COMMON TO ALL PS VALVES**



BRASS VALVE BODY IS NO LONGER AVAILABLE

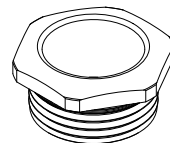
NOTES:

- PARTS LISTED IN **PVK** COMPONENT KITS ARE NOT SOLD INDIVIDUALLY
- **PVK-1SC, PVK-2, & PVK-3** PARTS ARE AVAILABLE IN KIT FORM ONLY
- COMPONENT KIT PART NUMBERS ARE LISTED IN THE EXPLODED VIEW,

SEE THE FOLLOWING PAGE FOR DETAILS

OTHER PARTS:

- **VALVE BASE: N/A**
- **BASE INSERT, P/N: 380897**



PART NUMBER

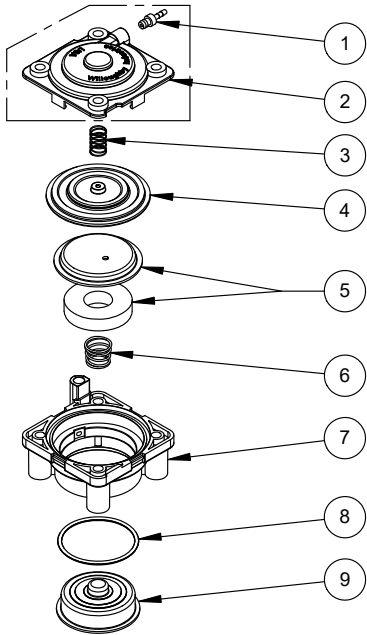
VALVE ASSEMBLY

P/N: PVK-4SC

**COMPLETE PSL REBUILD KIT
INCLUDES: PVK-1SC, PVK-2, PVK-3, & 380897**

P/N: PVK-1SC

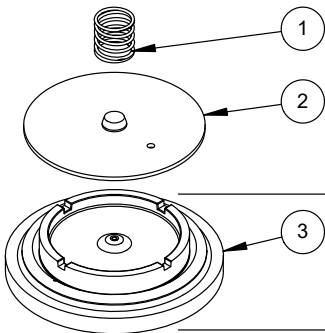
**PSL AIR-SIDE
REBUILD KIT**



ITEM #	DESCRIPTION	QTY.
1	FITTING, HOSE BARB, PUSH-IN, 1/16" (BRASS)	1
2	AIR SIDE TOP COVER	1
3	AIR SIDE SPRING	1
4	DIAPHRAGM, AIR SIDE, PNEUMATIC METERING VALVE	1
5	METERING VALVE MAGNET/CUP ASSEMBLY	1
6	SPRING, AIR SIDE MAGNET	1
7	BODY, MOLDED WI PNEU. MTRG.	1
8	O-RING M1.5x32 BUNA-70	1
9	BARRIER CUP	1

P/N: PVK-2

**WATER-SIDE
ASSEMBLY KIT**

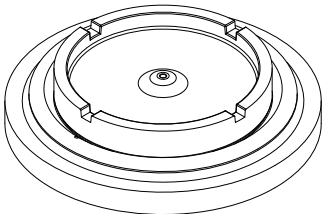


ITEM #	DESCRIPTION	QTY.
1	SPRING, WATER SIDE DIAPHRAGM	1
2	WATER SIDE DISK ASSEMBLY	1
3	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1

PVK-3
(ITEM #: 3)

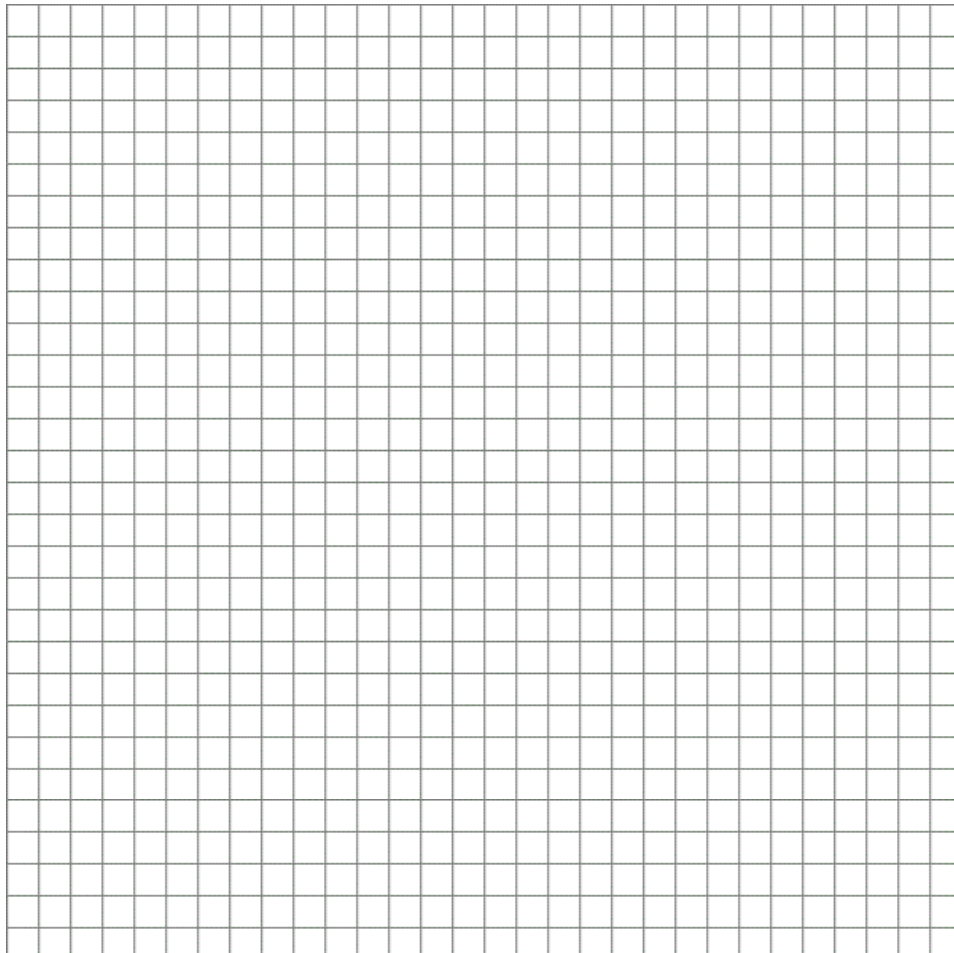
P/N: PVK-3

**WATER-SIDE
DIAPHRAGM**



NOTE: PVK-3 IS INCLUDED IN PVK-2

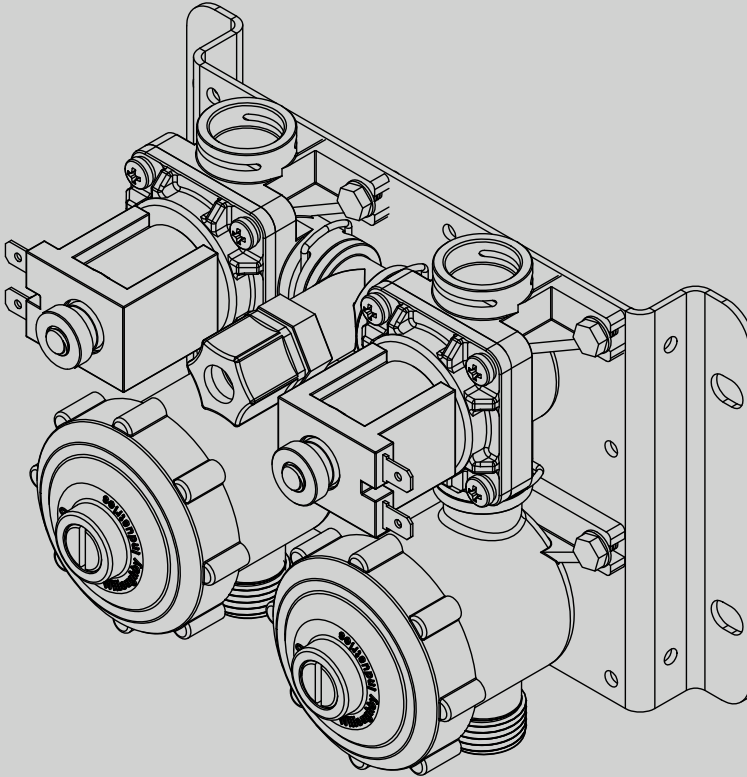
NOTES:



PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION

7

ELECTRONIC VALVES & PARTS- LEAD FREE

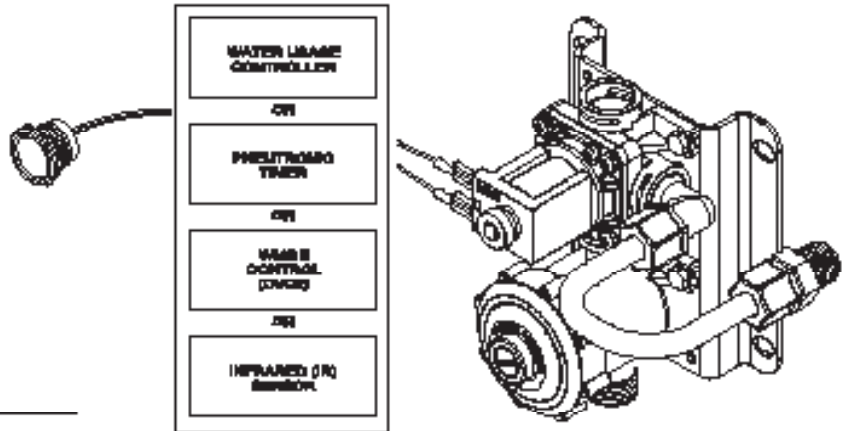
THESE ITEMS:

SINGLE TEMP. ELECTRONIC VALVES- OVERVIEW _____	
DUAL TEMP. ELECTRONIC VALVES- OVERVIEW _____	
E1L1 COMPLETE ELECTRONIC VALVE ASSEMBLIES _____	
E1L2 COMPLETE ELECTRONIC VALVE ASSEMBLIES _____	
E1L ELECTRONIC VALVE COMPONENTS & KITS _____	

BEGIN ON PAGE:

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E1L1 Single Temperature Lead-free Electronic Valve



Recommended Specifications

Single Temperature, Lead-free, Electronic Valve assembly shall be: Willoughby Model No. E1L1 (Select from options list)

Stainless steel push buttons on the fixture shall be wired to an appropriate electronic valve control (select from the list of control choices). The vandal-resistant push buttons shall be keyed/non-removable from the front of the fixture and shall require less than 5 lbs of force to operate.

The plastic valve checkstop/strainers shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the filler/bubbler/shower head. Water inlet is 1/2" MPT and is reversible for either top or bottom supply. A galvanized wall mounting plate is provided, wall anchoring hardware provided by others.

Flexible tubing is supplied for walls up to 8" thick. Recommended operating pressure shall be 35-70 psi. Valve shall withstand pressures up to 80 psi. Recommended max operation temperature is 110° Fahrenheit. Cost-reducing manifolded valves shall consist of multiple valve assemblies served by a common supply line. A 24 volt AC source shall be required for a timer and valve operation, 24 VAC power transformer sold separately.

Valve complies with NSF-61 standard.

**LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.

Flow Selection (choose one):

- 0.5 GPM Flow (lavatories)
- 1.0 GPM Flow (bottle fillers)
- 1.5 GPM Flow (showers)
- 2.0 GPM Flow (showers)
- NFC (No Flow Control) (showers, up to MA2)

Control:

- WUCC-3D10 WUSC-2200 WUSC-2400
- Pneumatic Timer WMS III Control (CVC2)
- Infrared (IR) Sensor

Push Button*:

- PZPB Ligature-resistant Piezo Push Button**

*Not required for IR

Options:

- MA2 (Double Manifold, no flow limitation)
- MA3 (Triple Manifold, 0.5 GPM flow only)
- MA4 (Quad Manifold, 0.5 GPM flow only)
- TMV In-line Thermostatic Mixing Valve



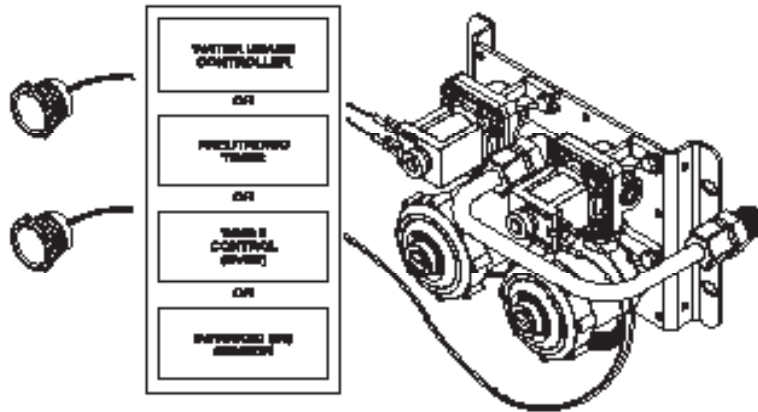
WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov



FOR POWER SUPPLY TRANSFORMERS AND WIRING: [SEE SECTION 1](#)
 FOR ELECTRONIC WATER MANAGEMENT CONTROLS: [SEE SECTION 9](#)
 FOR PUSH BUTTONS OR INFRARED SENSORS: [SEE SECTION 12](#)

E1L2 Dual Temperature Lead-free Electronic Valve



Recommended Specifications

Dual Temperature, Lead-free Electronic Valve assembly shall be: Willoughby Model No. E1L2 (Select from options list)

Stainless steel push buttons on the fixture shall be wired to an appropriate electronic valve control (selected from the list of control choices). The vandal-resistant push buttons shall be keyed/ non-removable from the front of the fixture and shall require less than 5 lbs of force to operate.

The plastic valve checkstop/strainers shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the filter/tubblers/shower head. Water inlet is 1/2" NPT and is reversible for either top or bottom supply. A galvanized wall mounting plate is provided, wall anchoring hardware provided by others.

Flexible tubing is supplied for walls up to 8" thick. Recommended operating pressure shall be 35-70 psi. Valve shall withstand pressures up to 80 psi. Recommended max operation temperature is 110° Fahrenheit. Cost-reducing manifolded valves shall consist of multiple valve assemblies served by a common supply line. A 24 volt AC source shall be required for a timer and valve operation., 24 VAC power transformer sold separately.

Valve complies with NSF-61 standard.

* This is not a substitute for a thermostatic mixing valve. The delivered water temperature is the result of the two combined inlet temperatures and cannot be adjusted by this valve assembly. The hot side of the valve must be supplied with tempered water.

*LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.

Flow Selection (choose one):

- 0.5 GPM Flow (lavatories)
- 1.5 GPM Flow (showers)
- 2.0 GPM Flow (showers)
- NFC (No Flow Control) (showers, up to MA2)

Control:

- WUCC-3010 WUCC-2200 WUCC-2400
- Pneumatic Timer WMS II Control (CVC2)
- Infrared (IR) Sensor

Push Buttons*:

- PZPB Ligature-resistant Piezo Push Button**

**Not required for IR

Options:

- MA2 (Double Manifold, no flow limitations)
- MA3 (Triple Manifold, 0.5 GPM flow only)
- MA4 (Quad Manifold, 0.5 GPM flow only)
- TMV In-line Thermostatic Mixing Valve



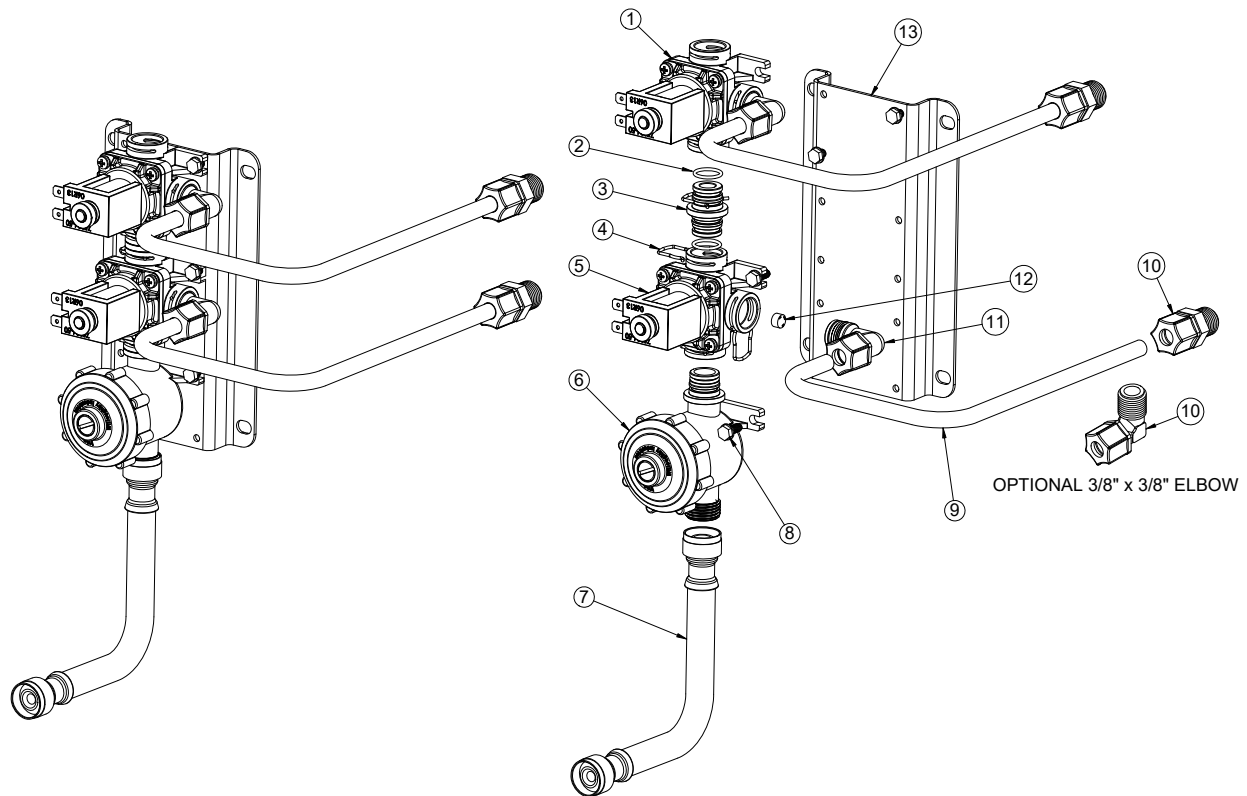
WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov



FOR POWER SUPPLY TRANSFORMERS AND WIRING: [SEE SECTION 1](#)
FOR ELECTRONIC WATER MANAGEMENT CONTROLS: [SEE SECTION 9](#)
FOR PUSH BUTTONS OR INFRARED SENSORS: [SEE SECTION 12](#)

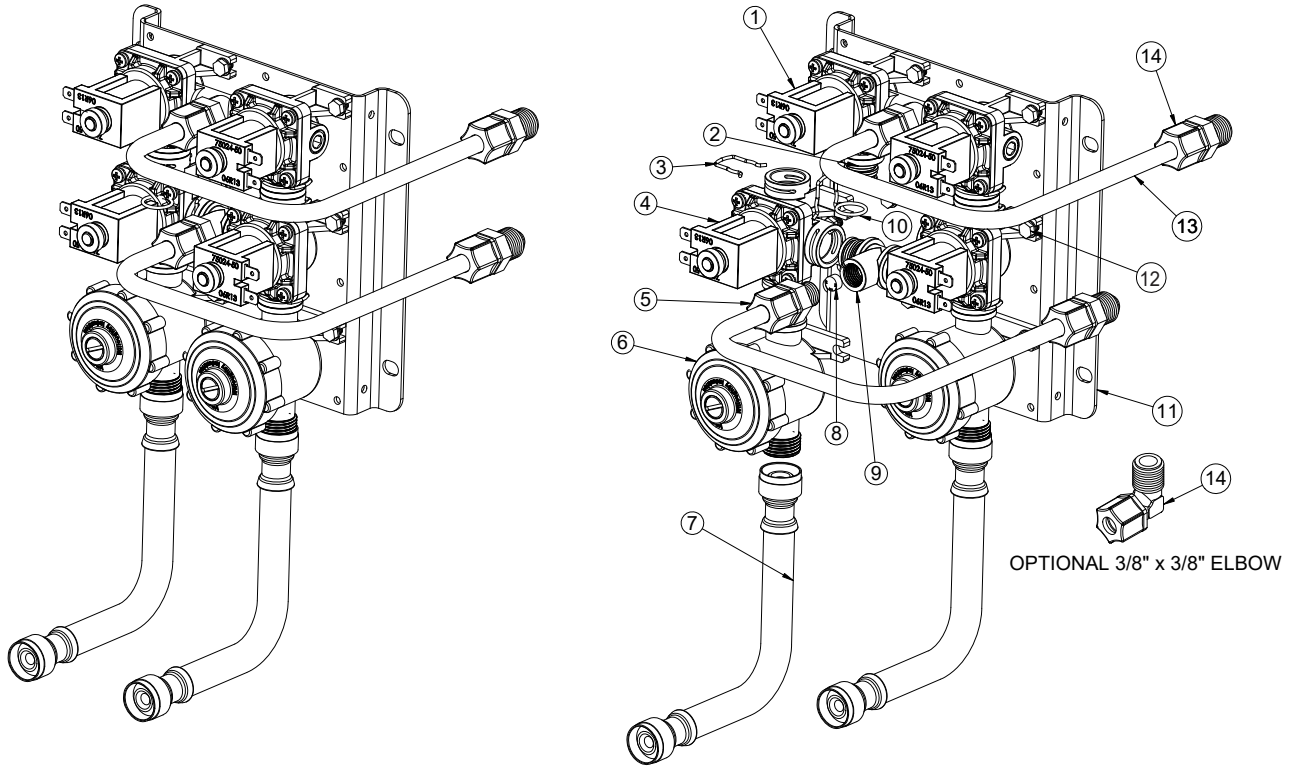
E1L1 SINGLE TEMPERATURE ELECTRONIC VALVES



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980408PR	E1L VALVE ASSEMBLY, RIGHT-PLUGGED PORT	6
2	980164	'O'-RING, #015	1
3	980197	PLASTIC VALVE COUPLING	1
4	980140	SPRING CLIP	1
5	980408	E1L VALVE ASSEMBLY	6
6	980183	CHECKSTOP ASSEMBLY	11
7	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
7	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1
8	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
9	600523	FLEXIBLE TUBING 3/8" (10mm) O.D. 20 FT. TOTAL	1 (SOLD PER FOOT)
10	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
10	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1
11	980600A	VALVE FITTING ASSEMBLY, 3/8" ELBOW	1
12	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
13	980501	PML11 VALVE MOUNTING BRACKET	---
	9805012	PML12 VALVE MOUNTING BRACKET	---
	9805013	PML13 VALVE MOUNTING BRACKET	---
	9805014	PML14 VALVE MOUNTING BRACKET	---

SEE PAGE-AFTER-NEXT FOR INDIVIDUAL ELECTRONIC VALVE ASSEMBLIES

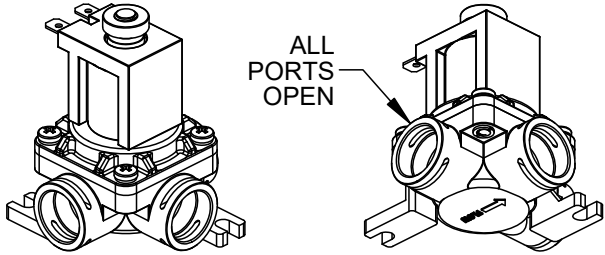
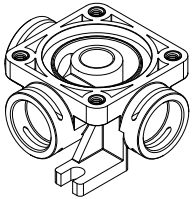
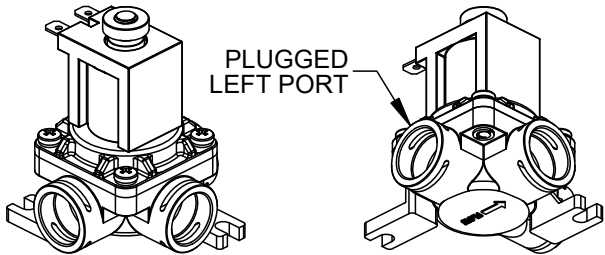
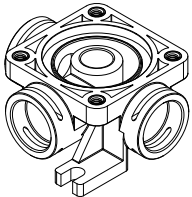
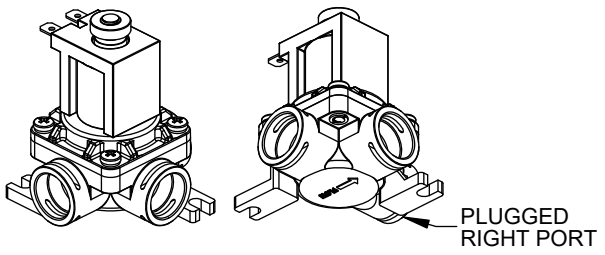
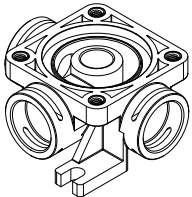
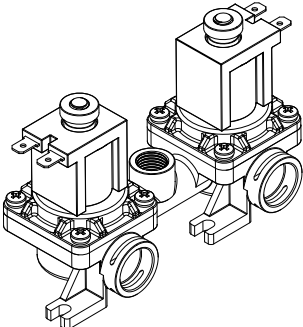
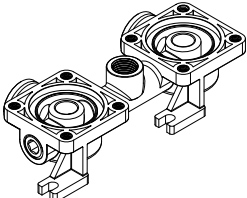
E1L2 DUAL TEMPERATURE ELECTRONIC VALVES



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980409	DUAL TEMP, WILLOUGHBY SOLENOID PARTS ASSEMBLY (E1L2)	6
2	980197	PLASTIC VALVE COUPLING	1
3	980140	SPRING CLIP	1
4	980408	E1L VALVE ASSEMBLY	6
5	321010	CONNECTOR, 3/8" TUBE x 1/4" MPT	1
6	980183	CHECKSTOP ASSEMBLY	11
7	980506	(OPTIONAL) 6" STAINLESS STEEL FLEX HOSE	1
7	980520	(OPTIONAL) 20" STAINLESS STEEL FLEX HOSE	1
8	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
9	980196	PLASTIC VALVE 'T'	1
10	980164	'O'-RING, #015	1
11	980502	PML21 VALVE MOUNTING BRACKET	---
	9805022	PML22 VALVE MOUNTING BRACKET	---
	9805023	PML23 VALVE MOUNTING BRACKET	---
	9805024	PML24 VALVE MOUNTING BRACKET	---
12	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
13	600523	FLEXIBLE TUBING 3/8" (10mm) O.D. 20 FT. TOTAL	1 (SOLD PER FOOT)
14	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
14	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1

SEE NEXT PAGE FOR INDIVIDUAL ELECTRONIC VALVE ASSEMBLIES

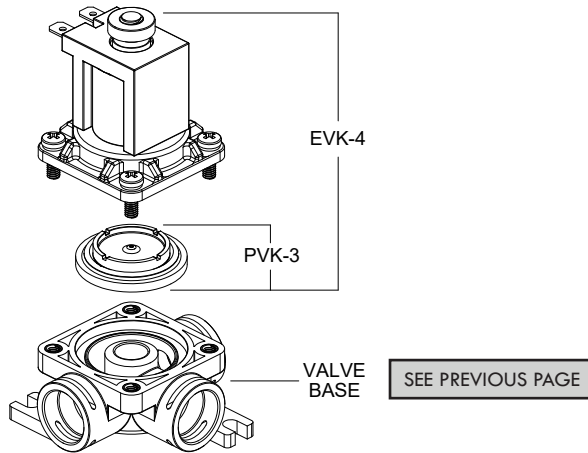
E1L INDIVIDUAL ELECTRONIC VALVE ASSEMBLIES / BASES

	PART NUMBER	VALVE ASSEMBLY	BASE ONLY P/N
	<p>P/N: 980408 E1L, ALL PORTS OPEN</p>		<p>P/N: 980420</p> 
	<p>P/N: 980408PL E1L, PLUGGED LEFT PORT</p>		<p>P/N: 980420L</p> 
	<p>P/N: 980408PR E1L, PLUGGED RIGHT PORT</p>		<p>P/N: 980420R</p> 
	<p>P/N: 980409 E1L2, DUAL TEMPERATURE</p>		<p>P/N: 980415</p> 

SEE THE NEXT PAGE FOR **E1L** VALVE ASSEMBLY COMPONENTS

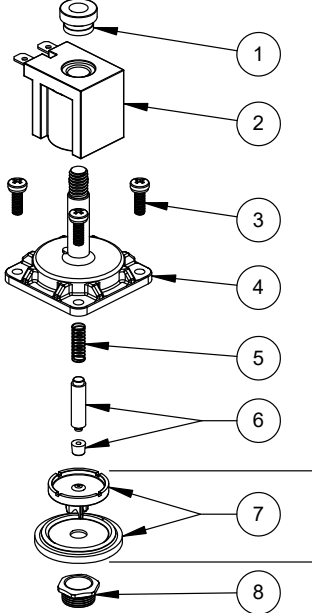
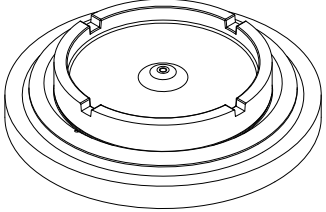
E1L VALVE ASSEMBLY COMPONENTS & KITS (EVKs/PVKs)

***COMMON TO ALL E1L VALVES**

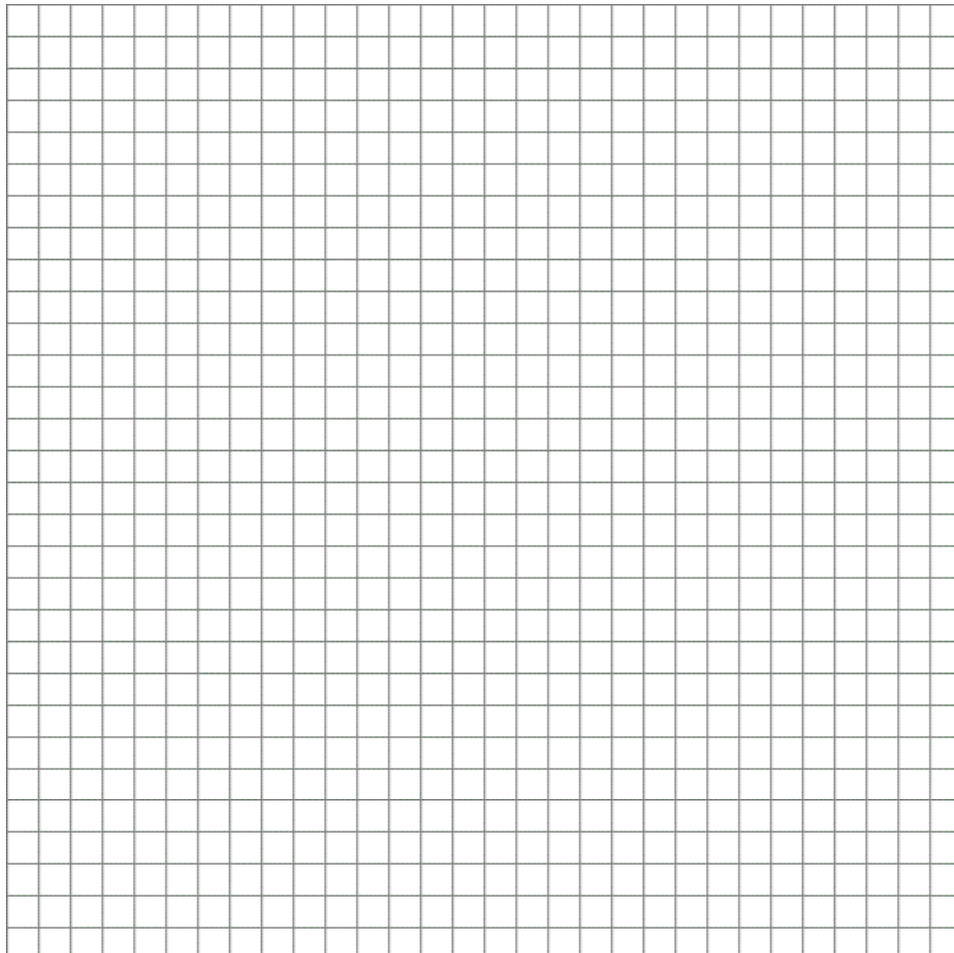


NOTES:

- PARTS LISTED IN THE **EVK-4** COMPONENT KIT ARE AVAILABLE INDIVIDUALLY
- **PVK-3** KIT PARTS ARE AVAILABLE IN KIT FORM ONLY

	PART NUMBER	VALVE ASSEMBLY																																				
	<p>P/N: EVK-4</p> <p>E1L COMPLETE REBUILD KIT</p>	 <table border="1" data-bbox="841 1050 1474 1480"> <thead> <tr> <th>ITEM #</th> <th>PART #</th> <th>DESCRIPTION</th> <th>QTY.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>980534</td> <td>NYLON NUT, 5/16-18</td> <td>1</td> </tr> <tr> <td>2</td> <td>980532</td> <td>COIL, 24V AC</td> <td>1</td> </tr> <tr> <td>3</td> <td>980170A</td> <td>#8-32 x 1/2 " SCREW W/SEMS SPLIT L/W</td> <td>4</td> </tr> <tr> <td>4</td> <td>980530</td> <td>ARMATURE CAP, 24V VALVE</td> <td>1</td> </tr> <tr> <td>5</td> <td>980533</td> <td>SPRING, 5/8 24v VALVE</td> <td>1</td> </tr> <tr> <td>6</td> <td>980565</td> <td>ARMATURE BUMPER ASSEMBLY, EL VALVE</td> <td>1</td> </tr> <tr> <td>7</td> <td>980305</td> <td>WATER SIDE DIAPHRAGM/ADAPTOR ASSY.</td> <td>1</td> </tr> <tr> <td>8</td> <td>380897</td> <td>VALVE SEAT, w/O-RING</td> <td>1</td> </tr> </tbody> </table>	ITEM #	PART #	DESCRIPTION	QTY.	1	980534	NYLON NUT, 5/16-18	1	2	980532	COIL, 24V AC	1	3	980170A	#8-32 x 1/2 " SCREW W/SEMS SPLIT L/W	4	4	980530	ARMATURE CAP, 24V VALVE	1	5	980533	SPRING, 5/8 24v VALVE	1	6	980565	ARMATURE BUMPER ASSEMBLY, EL VALVE	1	7	980305	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1	8	380897	VALVE SEAT, w/O-RING	1
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7	980305	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1																																			
8	380897	VALVE SEAT, w/O-RING	1																																			
	<p>P/N: PVK-3</p> <p>WATER-SIDE DIAPHRAGM</p>	 <div data-bbox="1015 1717 1469 1864" style="border: 1px solid black; padding: 5px;"> <p>NOTE: PVK-3 IS INCLUDED IN EVK-4</p> </div>																																				

NOTES:



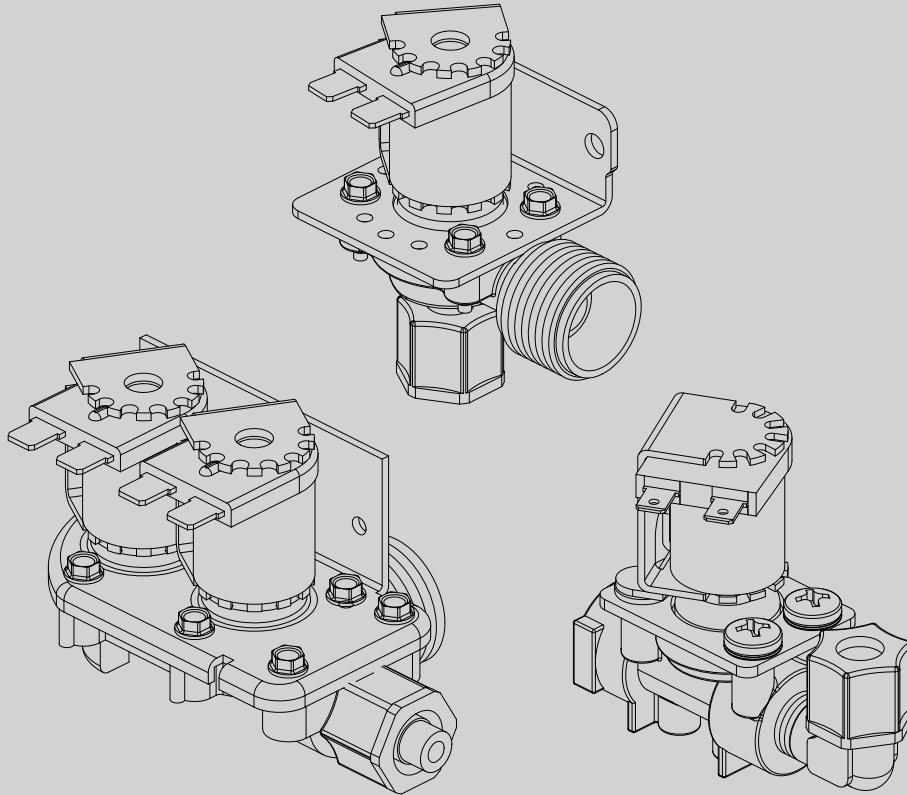
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

8



ELECTRONIC VALVE PARTS

THESE ITEMS:

EL1 SINGLE TEMP. ELECTRONIC VALVE PARTS _____

EL2 DUAL TEMP. ELECTRONIC VALVE PARTS _____

WASHFOUNTAIN ELECTRONIC VALVE PARTS _____

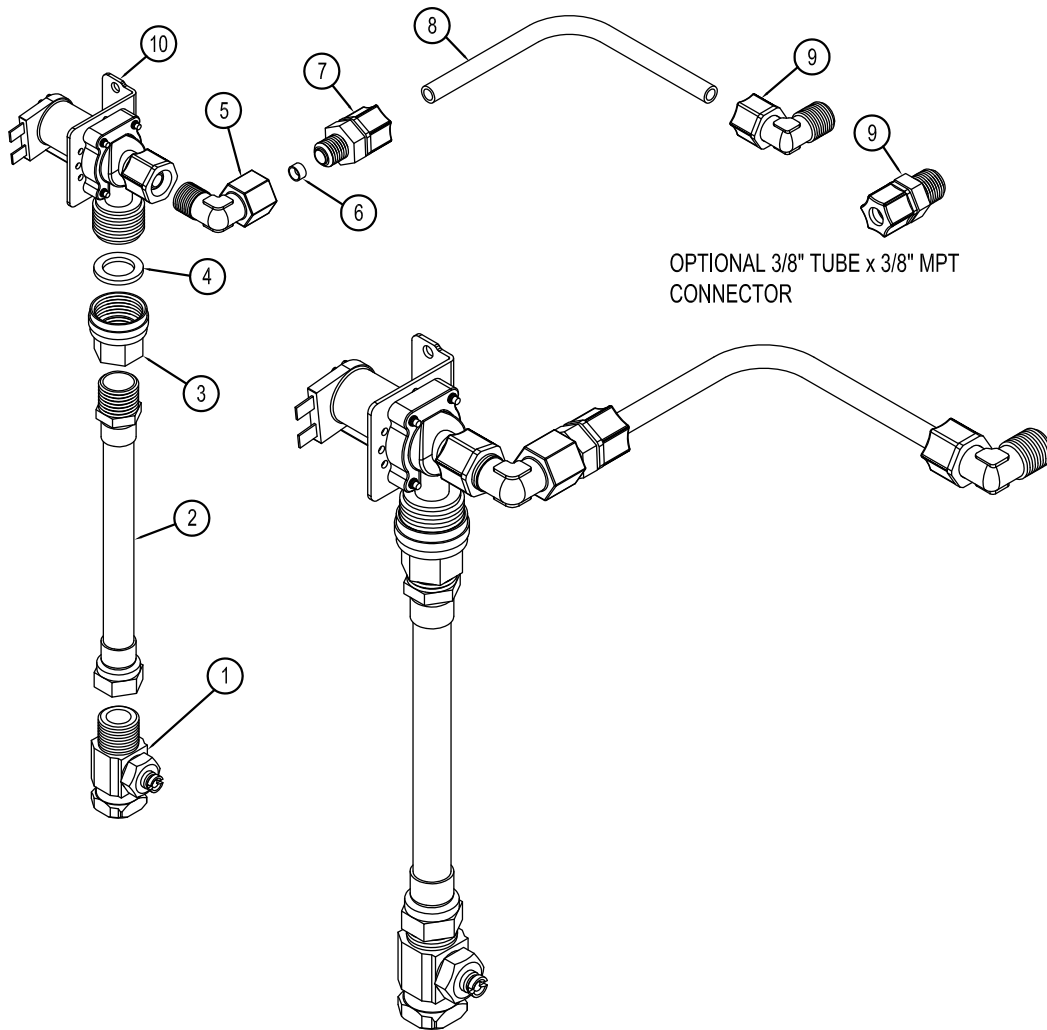
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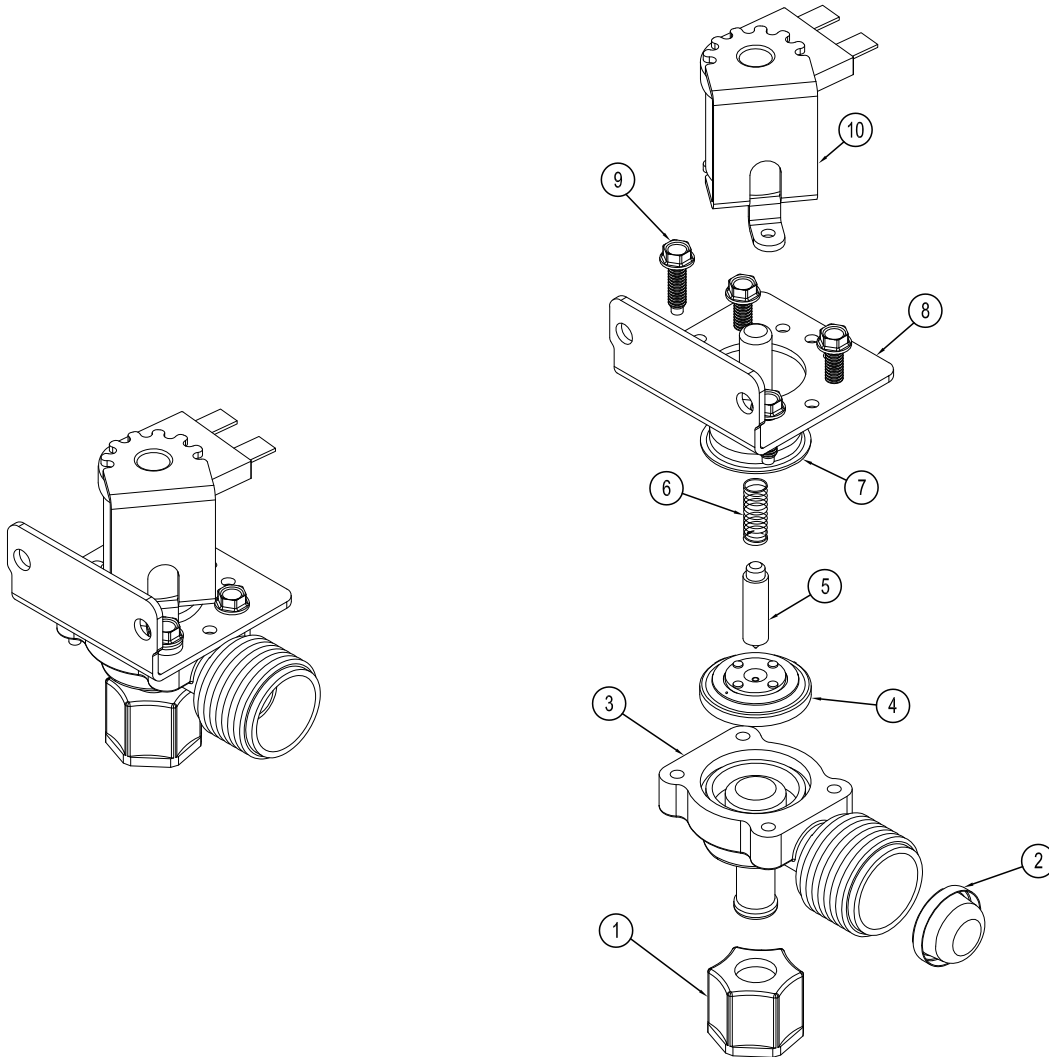
84

EL1 SINGLE TEMPERATURE ELECTRONIC VALVE ASSEMBLY



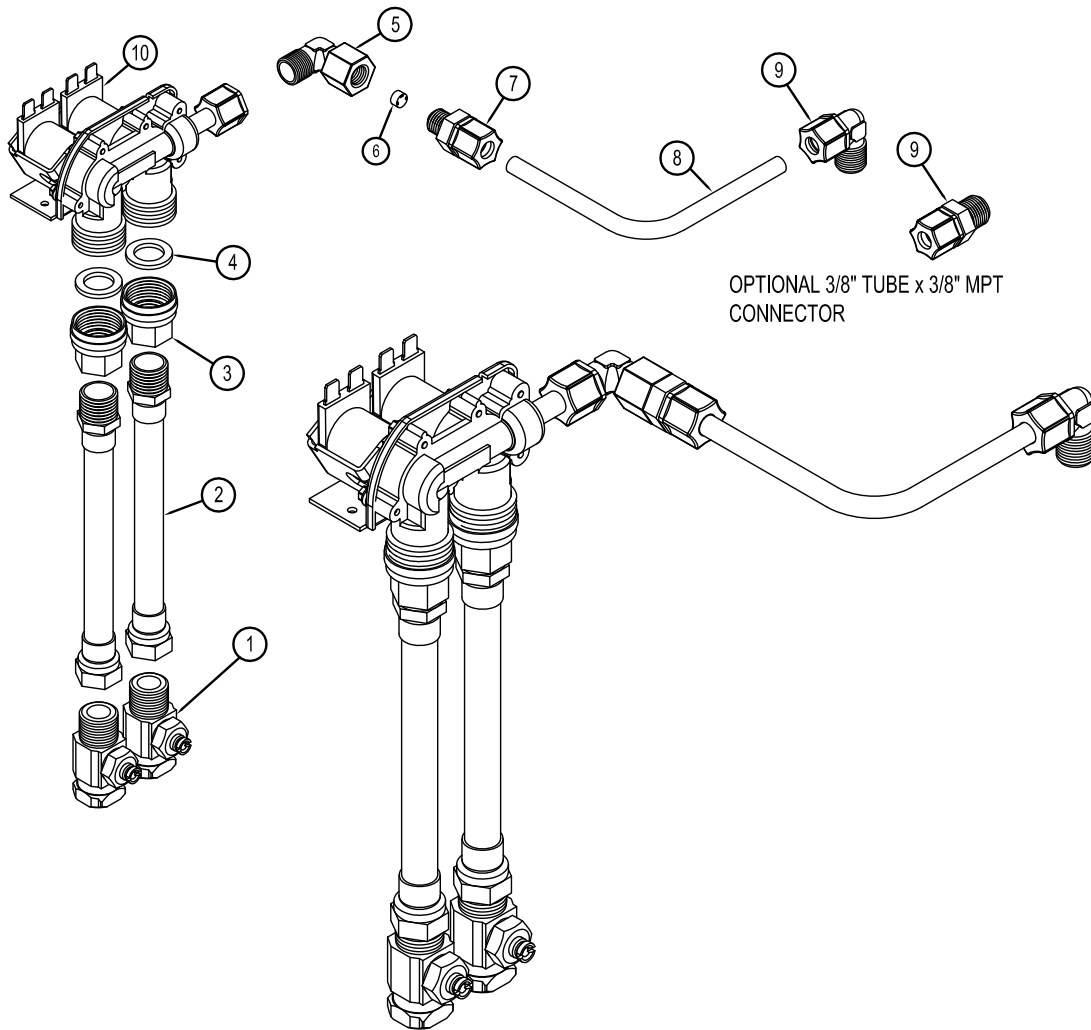
ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	380259LF	STOP, INTEGRAL 1/2" MPT x 1/2" FPT	1
2	320511SS	FLEXHOSE 1/2" MIP - 1/2" FIP 3/8" OD	1
3	600375	SWIVEL, 3/4" FGH x 1/2" FPT	---
4	600310	WASHER, GARDEN HOSE, 3/4"	---
5	320614	ELBOW, 3/8" TUBE x 1/4" FPT	1
6	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
7	321010	3/8" TUBE x 1/4" MPT CONNECTOR	1
8	600523	FLEXIBLE TUBING 3/8" OD x 1/4" ID	1 (SOLD PER FOOT)
9	320577	(OPTIONAL) 3/8" TUBE x 3/8" MPT ELBOW	1
	320566	(OPTIONAL) 3/8" TUBE x 3/8" MPT CONNECTOR	1
10	600956N98	SOLENOID VALVE, PLASTIC, 1 TEMP. 24V (EL1)	1

SEE NEXT PAGE FOR INDIVIDUAL EL1 SOLENOID VALVE

EL1 SINGLE TEMPERATURE SOLENOID VALVE - HORTON**COMPLETE EL1 SOLENOID VALVE - P/N: 600956N98**

ITEM #	PART NUMBER	DESCRIPTION	QTY:
1	320559	FERRULE NUT 3/8" TUBE	1
2	500031	SCREEN	1
3	N/A	BODY, SOLENOID VALVE	1
4	DI7438-2N	DIAPHRAGM	1
5	500032	ARMATURE	1
6	500030	SPRING	1
7	500033	ARMATURE GUIDE	1
8	N/A	BRACKET, MOUNTING	1
9	N/A	SCREW	4
10	500034	24 VAC COIL ASSEMBLY	1

EL2 DUAL TEMPERATURE ELECTRONIC VALVE ASSEMBLY

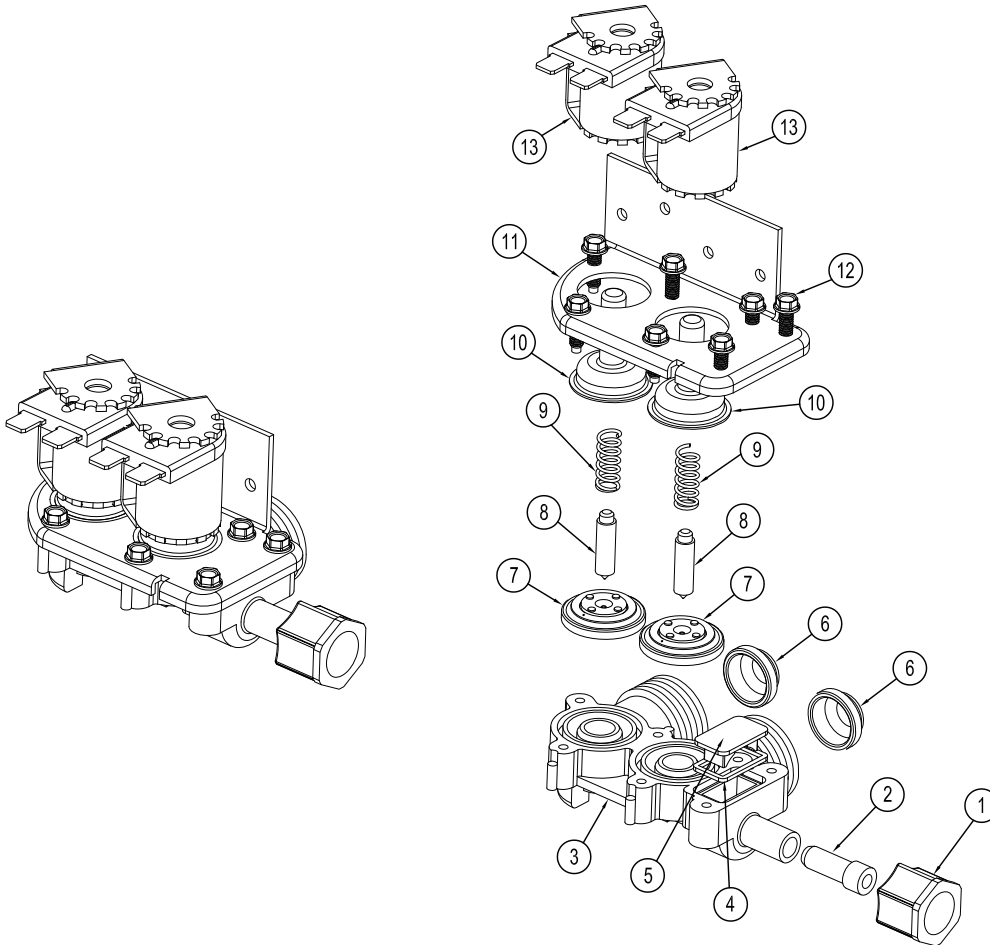


ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	380259LF	STOP, INTEGRAL 1/2" MPT x 1/2" FPT	1
2	320511SS	FLEXHOSE 1/2" MIP - 1/2" FIP 3/8" OD	1
3	600375	SWIVEL, 3/4" FGH x 1/2" FPT	---
4	600310	WASHER, GARDEN HOSE, 3/4"	---
5	320614	ELBOW, 3/8" TUBE x 1/4" FPT	1
6	P/N VARIES	FLOW CONTROL INSERT (VARIES, OPTIONAL ON SOME VALVES)	11
7	321010	3/8" TUBE x 1/4" MPT CONNECTOR	1
8	600523	FLEXIBLE TUBING 3/8" OD x 1/4" ID	1 (SOLD PER FOOT)
9	320577	(OPTIONAL) 3/8" TUBE x 3/8" MPT ELBOW	1
	320566	(OPTIONAL) 3/8" TUBE x 3/8" MPT CONNECTOR	1
10	600951N98	SOLENOID VALVE, PLASTIC, 2 TEMP. 24V (EL2)	1

SEE NEXT PAGE FOR INDIVIDUAL EL2 SOLENOID VALVE

EL2 DUAL TEMPERATURE SOLENOID VALVE - HORTON

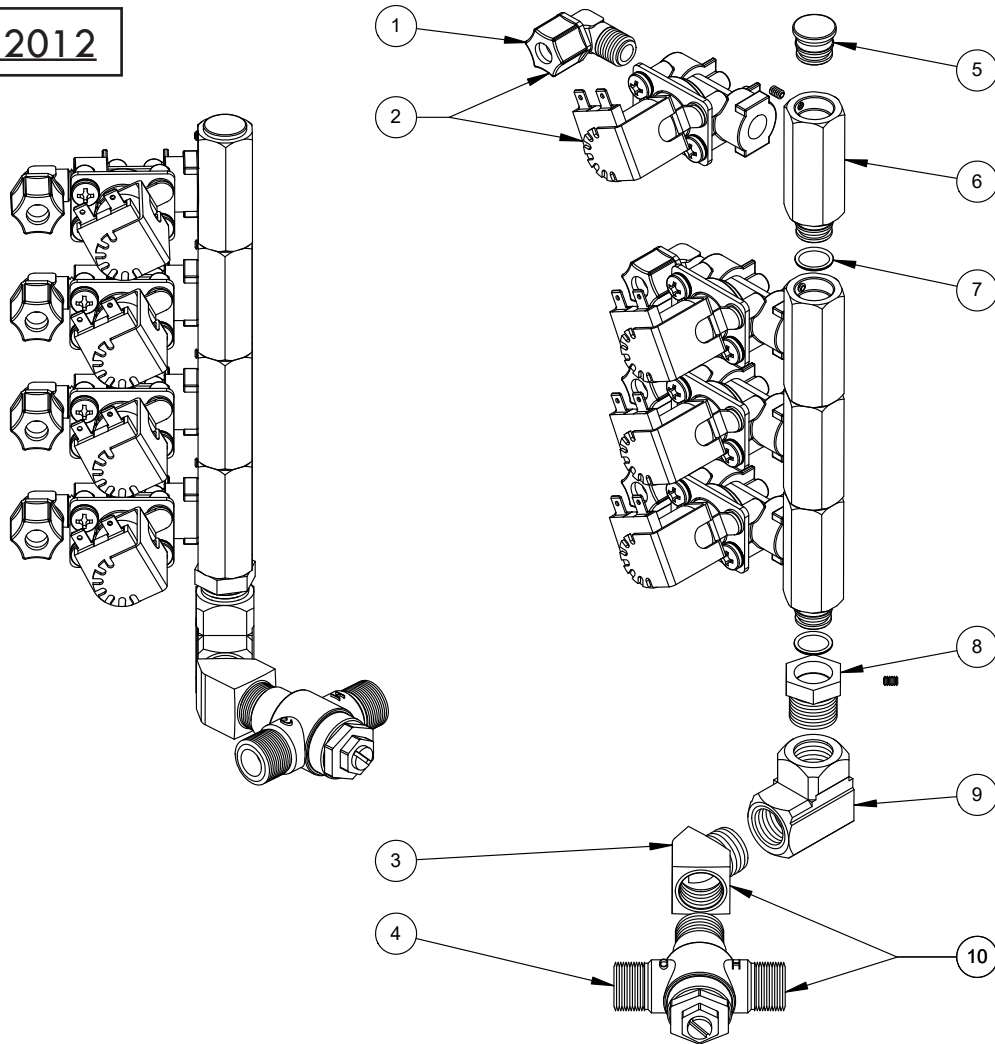
COMPLETE EL2 SOLENOID VALVE - P/N: 600951N98



ITEM #	PART NUMBER	DESCRIPTION	QTY:
1	320559	FERRULE NUT 3/8" TUBE	1
2	500007	OUTLET EXTENSION	1
3	600325	2-BODY	1
4	500005	GASKET	1
5	500015	FLOW RESTRICTOR PLUG	1
6	500031	SCREEN	2
7	DI7438-2N	DIAPHRAGM	2
8	500032	ARMATURE	2
9	500030	SPRING	2
10	500033	ARMATURE GUIDE	2
11	N/A	2-BRACKET	1
12	N/A	SCREW	7
13	500034	24 VAC COIL ASSEMBLY	2

WASHFOUNTAIN ELECTRONIC VALVE ASSEMBLY (BRASS)

PRE JULY 2012

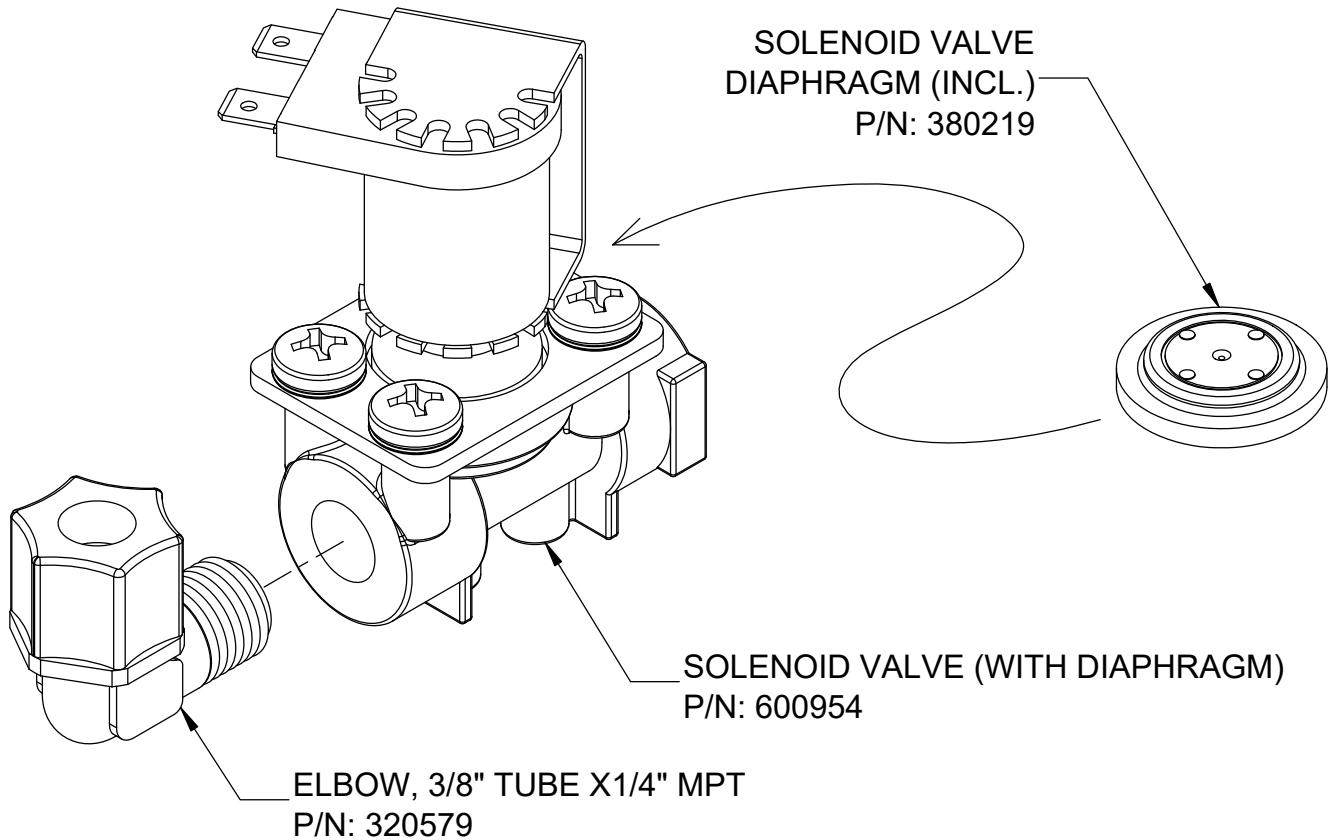


ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	320579	3/8" TUBE x 1/4" MPT ELBOW	1
2	380186RK	WASHFOUNTAIN VALVE, DEMA SOLENOID	8
3	320581LF	ELBOW FITTING, 45°, 1/2" STREET	1
4	700480ELF	POWERS HYDROGUARD TMV (LFE480) INLINE	1
5	380998	MALE COUPLER PLUG	---
6	N/A	BRASS MANIFOLD COUPLER FITTING (NO LONGER AVAILABLE)	---
7	600130	O-RING, #015	1
8	380992	COUPLER ADAPTER FITTING	---
9	320600LF	ELBOW FITTING, 90° 1/2" FPT X 1/2" FPT	1
10	700480-KIT	THERMOSTATIC MIXING VALVE ASSM. (LFE480)	1

SEE NEXT PAGE FOR INDIVIDUAL WASHFOUNTAIN SOLENOID VALVE

WASHFOUNTAIN SOLENOID VALVE - DEMA

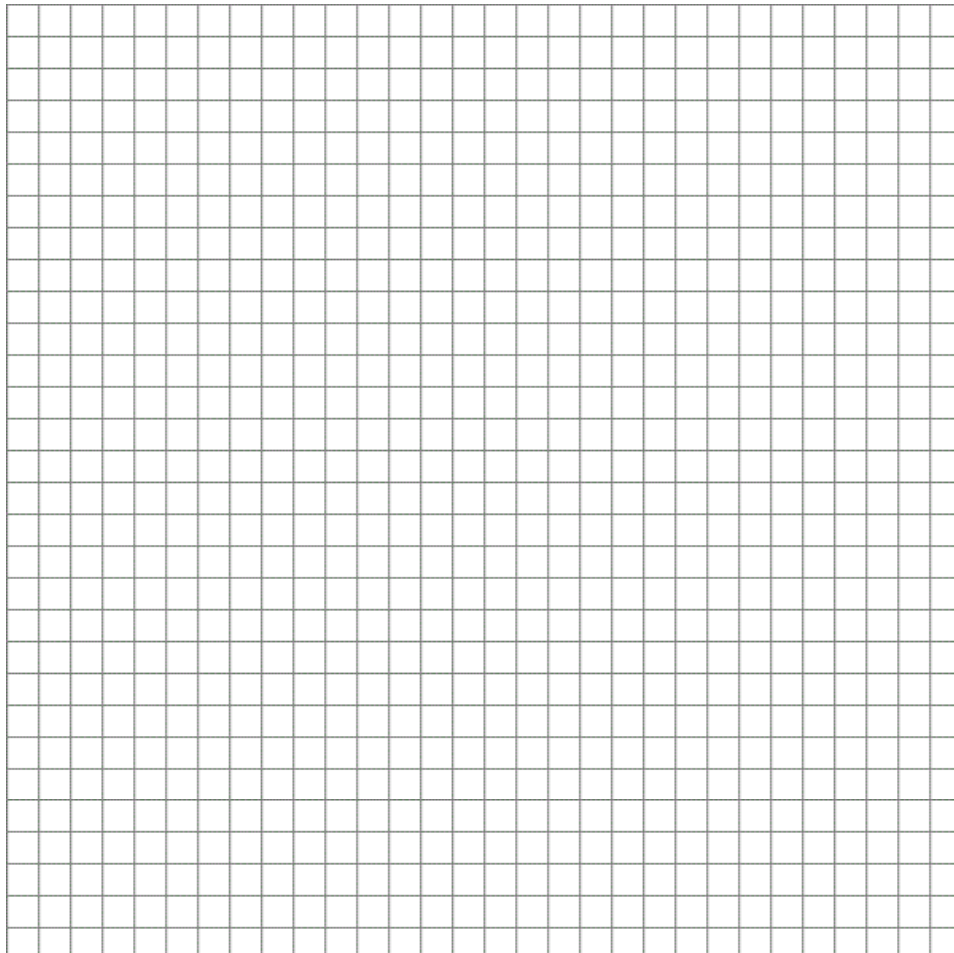
COMPLETE WASHFOUNTAIN SOLENOID VALVE - P/N: 380186RK



P/N: 380186RK INCLUDES P/N: 600954 & 320579

SOLENOID DIAPHRAGM CAN ALSO BE ORDERED SEPARATELY. USE P/N: 380219

NOTES:



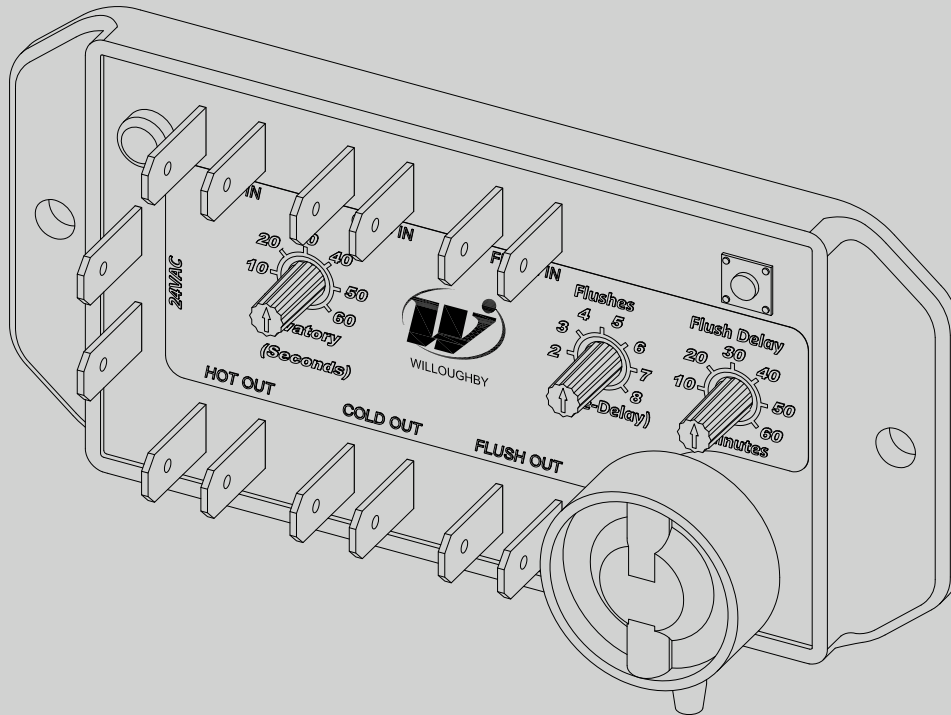
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

9



ELECTRONIC WATER MANAGEMENT

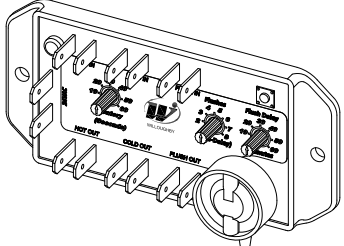
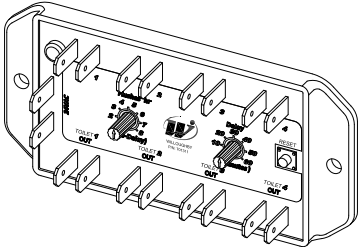
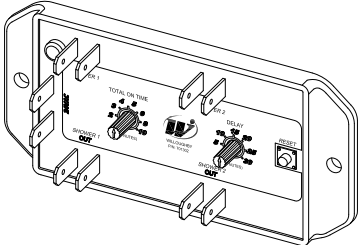
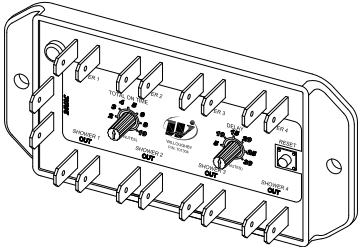
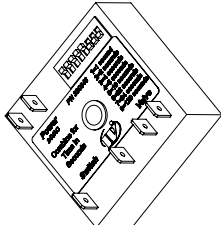
THESE ITEMS:

- WUCC- COMBI CONTROLLER _____
- WUFC- FLUSH CONTROLLER _____
- WUSC- SHOWER CONTROLLERS _____
- PNEUTRONIC VALVE CONTROLLER _____
- CVC2- WMSII VALVE CONTROLLER _____
- WMSII- NETWORKED WATER MANAGEMENT _____

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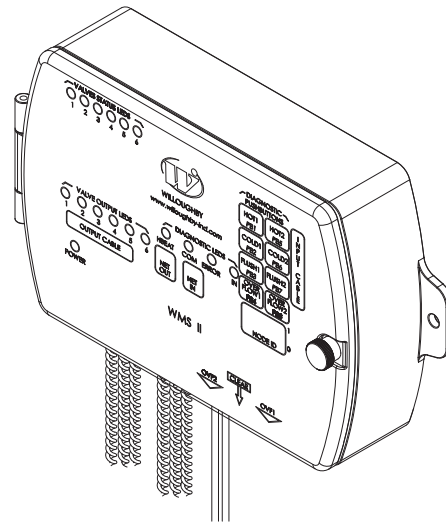
STAND-ALONE ELECTRONIC WATER USAGE CONTROLLERS

	MODEL & P/N		DESCRIPTION & FEATURES
	WUCC-3010 (P/N: WUCC-KIT) COMBI CONTROLLER		<ul style="list-style-type: none"> • ABLE TO CONTROL: (2) LAVATORY VALVES (H&C), (1) ELECTRONIC FLUSH VALVE, & TOILET OVERFLOW • WIRING AND TRANSFORMER INCLUDED, SPECIFY TRANSFORMER TYPE NEEDED WHEN ORDERING
	WUFC-4000 (P/N: WUFC-KIT) FLUSH CONTROLLER		<ul style="list-style-type: none"> • ABLE TO CONTROL: (1-4) ELECTRONIC FLUSH VALVES • WIRING AND TRANSFORMER INCLUDED, SPECIFY TRANSFORMER TYPE NEEDED WHEN ORDERING
	WUSC-2200 (P/N: WUSC-2200-KIT) 2-SHOWER CONTROLLER		<ul style="list-style-type: none"> • ABLE TO CONTROL: (1-2) ELECTRONIC SHOWER VALVES • WIRING AND TRANSFORMER INCLUDED, SPECIFY TRANSFORMER TYPE NEEDED WHEN ORDERING
	WUSC-2400 (P/N: WUSC-2400-KIT) 4-SHOWER CONTROLLER		<ul style="list-style-type: none"> • ABLE TO CONTROL: (1-4) ELECTRONIC SHOWER VALVES • WIRING AND TRANSFORMER INCLUDED, SPECIFY TRANSFORMER TYPE NEEDED WHEN ORDERING
	PNEUTRONIC CONTROLLER (P/N: 330043)		<ul style="list-style-type: none"> • <u>FOR REPLACEMENT OF EXISTING WILLOUGHBY PNEUTRONIC CONTROLLER</u> • ABLE TO CONTROL: (1) ELECTRONIC VALVE • WIRING AND TRANSFORMER ARE NOT INCLUDED, SPECIFY IF NEEDED

FOR POWER SUPPLY TRANSFORMERS AND WIRING: SEE SECTION 1
 ELECTRONIC VALVE ASSEMBLIES: SEE SECTION 6
 FOR PUSH BUTTONS: SEE SECTION 12

CVC2

Willoughby WMS II Cell Valve Controller



Recommended Specifications

Electronic water management Cell Valve Controller shall be:
Willoughby Model: **CVC2**

Willoughby WMS II Cell Valve Controllers (CVCs) shall be located in the plumbing chase and shall control the operation of selected electronic lavatory valves, electronic shower valves, and electronic toilet flush valves.

CVCs are modular, factory-wired, and capable of operating in either stand-alone or fully-networked configurations (See WMS II Spec Page for networking details). A fully-networked system of chase-mounted CVCs can be controlled using Willoughby electronic Water Management Software installed on a secure central control room PC workstation.

Each CVC shall be capable of controlling up to six (6) individual low-voltage solenoid valves. Possible configurations include:

- (2) Lavatory/toilet combination units (each combination unit having (2) lavatory valves (hot & cold) and (1) flush valve)
- (3) Individual lavatories (hot and cold)
- (2) Toilets with overflow sensing
- (6) Toilets without overflow sensing
- (6) Single temperature showers
- Any combination totaling not more than (6) individual valves

CVCs shall require 24 Volt AC for operation and shall retain all memory of settings in the event of power interruption. System manufacturer shall supply a hard-wire 120/24 VAC 40VA step down transformer (option TF24H) with each controller. A plug-in transformer is also available (option TF24P). The CVC's electronic circuitry shall be encased in a water-resistant (not waterproof) enclosure; as with all electrical and electronic equipment, avoid contact with water especially once connected to the power supply.

Standard Features

Each valve activation shall be controlled by a vandal-resistant, internally-sealed, stainless steel push button. Each push button shall require less than 5 lbs. of force to activate.

All solenoid valves shall be non-hold-open and all metering times shall be independently adjustable for each valve:

- (1 to 60 sec.) for each lavatory valve
- (1 to 10 sec.) for each flush valve
- (1 sec. to 9 min. 59 sec.) for each shower valve

Metering cycles can be interrupted with a second button push.

Diagnostic push buttons on the CVC will enable maintenance personnel to activate valves and overflow functions from the chase.

CVCs shall also include separate diagnostic lights to indicate:

- Presence of control power in the CVC
- Network communication activity (in networked CVCs)
- Status of all valve outputs
- Presence and type of any lockout condition on valve function

A programmable re-initiate delay feature shall be provided to control amount of fixture use to a preset threshold. Once the fixture use threshold has been reached, function will be locked-out for a preset time period (up to 4 hours).

A parallel pre-initiate delay feature shall also be provided to insert time between switch actuation and the subsequent valve actuation.

Configurable overuse limits shall be provided to control the amount of use of all fixture functions within a programmable time period of up to 24 hours. Overuse control shall be configurable to trigger only notification, latched lock-out of the fixture function, or auto-limit of fixture function to prevent its overuse.



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

1.) Control System:

- CVC2 Cell Valve Controller

2.) Control Station:

- Stand-alone (Standard)
- Networked PC (Additional Cost)
- Laptop PC (Additional Cost)
(Laptop PC recommended for field-adjustment of CVC settings in a non network application)

3.) Toilet Parameter Configuration:

Number of Toilets with Overflow Sensing: _____ (2 max.)

Number of Toilets w/o Overflow Sensing: _____ (6 max.)

- (3) Flushes per (1 Hr.) with (1 Hr.) Lock-out
- Custom: (___) Flushes per (___ Hr.), with (___ Hr.) Lock-out

4.) Lavatory Parameter Configuration:

Number of Lavatories: _____ Single or Dual Temp: _____

- (15 sec.) per Button-push, (5 min.) of Water Flow per (30 min.)
- Custom: (___ sec.) per Button-push,
(___ min.) of Water Flow per (___ min.)
with (___ min.) Lock-out

5.) Shower Parameter Configuration:

Number of Showers: _____ Single or Dual Temp: _____

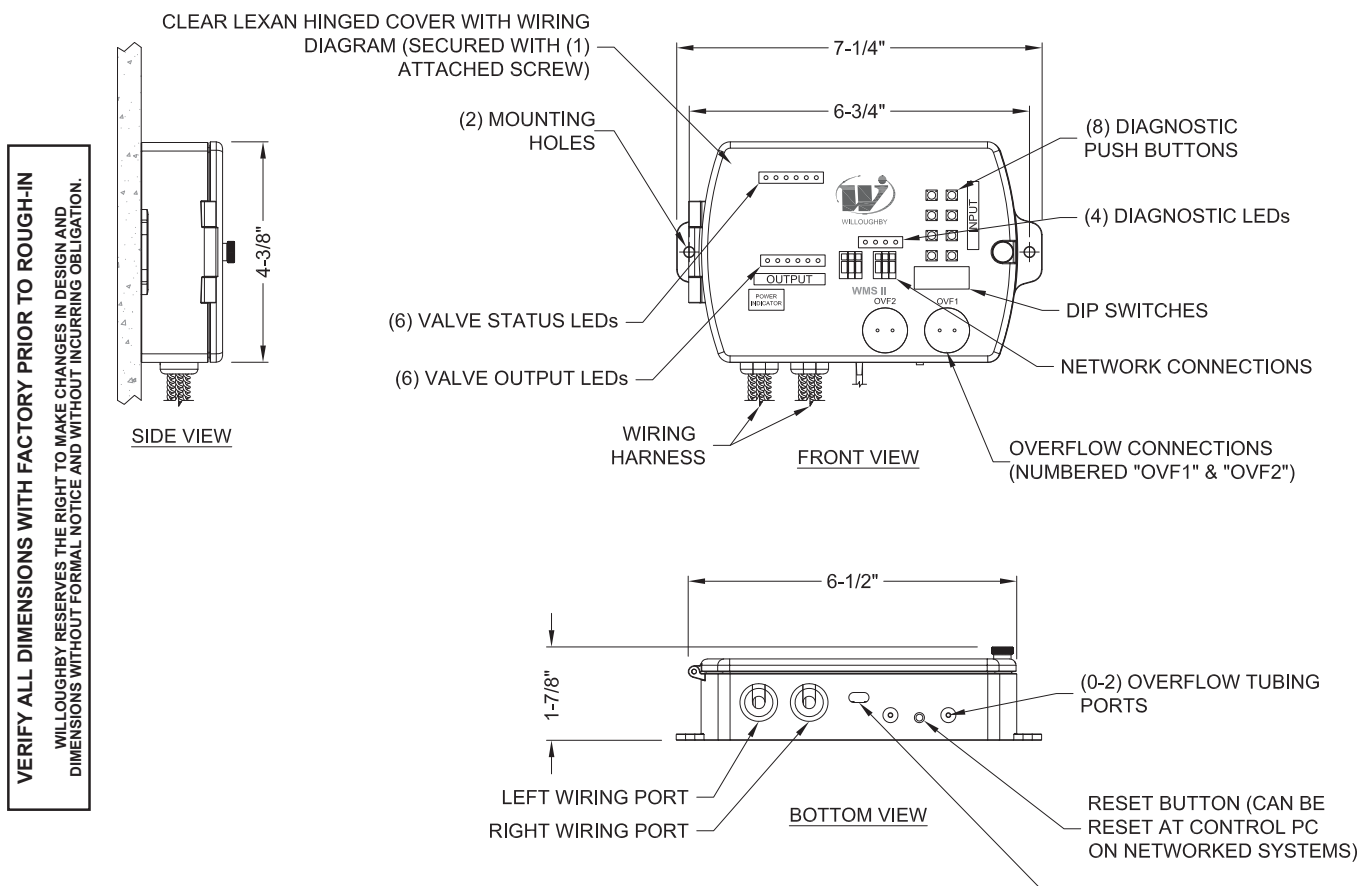
- (2 min.) per Button-push, (8 min.) of Water Flow per (30 min.), with (30 min.) Lock-out
- Custom: (___ min.) per Button-push,
(___ min.) of Water Flow per (___ min.),
with (___ min.) Lock-out

6.) Other Options:

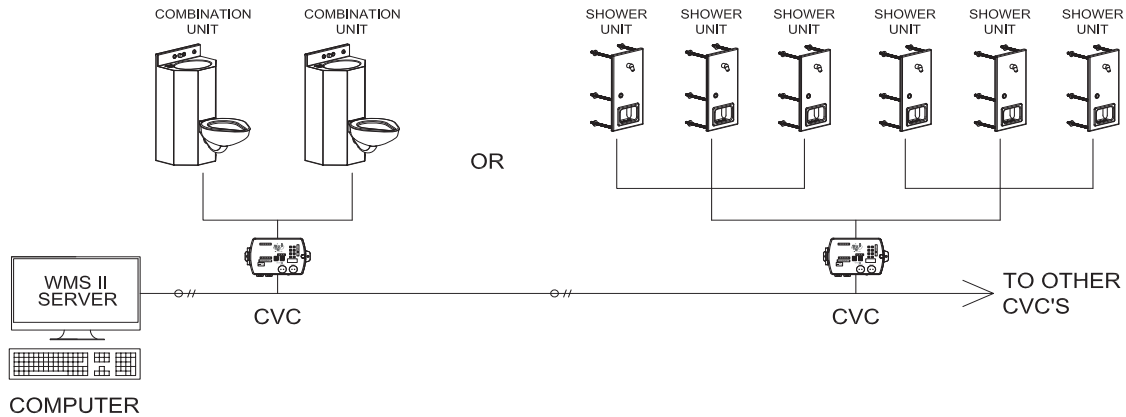
- On-site Start-Up, and Commissioning
(must be scheduled 30 days prior to training and after complete installation and testing of the system)
- On-site Owner Training Session
(must be scheduled 30 days prior to training and after complete installation and testing of the system)
- TF24H Hard-wired Transformer, 110VAC to 24VAC* (Standard)
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- Other _____
- Other _____

* (Req 110V power through ground fault interrupter (GFCI) receptacle / breaker)

Approved For Manufacturing By: _____ Date: _____ Company: _____
Wall Thickness: _____ Wall Type: _____



WMS II Water Management System- Networked



Recommended Specifications

Electronic water management system shall be:
Willoughby Model: **WMS II**

Water management system shall be PC based and running on a Windows 10 or newer operating system. PC shall serve as the operator interface serving multiple individual trunks of networked Cell Valve Controllers.

Individual Cell Valve Controllers (CVC's) shall be located in the plumbing chase and shall control the operation of electronic lavatory valves, electronic shower valves and electronic-hydraulic flush valves. An option shall also be provided to control the operation of a master shut-off valve that provides water to an area of several cells or fixtures.

CVC's shall require 24 volts AC for operation and shall retain all memory of settings in the event of power interruption. System manufacturer shall supply 120/24 VAC step down transformers. Each CVC shall be capable of controlling up to 2 lavatory/toilet combination units (1 hot valve, 1 cold valve and 1 flush valve for each unit), 3 individual lavatories or up to 2 toilets with overflow sensing (6 toilets without overflow sensing) or combinations thereof for a total of 6 individual low voltage solenoid valves. CVC's shall be modular and capable of operating in a fully networked or stand-alone configuration.

A diagnostic light on the CVC indicates the presence of control power in the CVC. A flashing light indicates the computer in the CVC is operational. Another flashing light indicates network communication activity.

Valve output lights on the CVC shall provide the status of all valve outputs. An additional set of lights shall indicate the presence and type of any lockout condition on valve function.

Diagnostic push buttons on the CVC shall also be provided to enable maintenance personnel to activate valves and overflow functions from the plumbing chase.

Valve activation shall come from vandal-resistant stainless steel internally sealed push buttons. Push buttons shall require less than 5 pounds of force to activate. Push button housing shall be isolated from the low voltage wiring.

All solenoid valves shall be non-hold open and all metering times shall be independently adjustable. Metering time for each valve shall be adjustable from 1 to 60 seconds for each lavatory valve, 1 to 10 seconds for each flush valve and 1 second to 9 minutes and 59 seconds for each shower valve. Metering cycles shall be interruptible with a second push of the button. All the settings can either be set for a single fixture or a mass selection of all fixtures of the same type on the PC screen.

A programmable re-initiate delay feature for fixture functions shall be provided to control their amount of use to a preset threshold after which the function will be locked out for a preset period of time of up to four hours. A parallel pre-initiate delay feature shall also be provided to insert time between switch actuation and the subsequent valve actuation.

(CONTINUED ON BACK OF PAGE)



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Willoughby Industries - Security Products



Configurable overuse limits shall be provided to control the amount of use of all fixture functions within a programmable time period of up to 24 hours. Overuse control shall be configurable to trigger only notification, latched lock out of the fixture function, or auto-limit of fixture function to prevent its overuse.

A fully networked system shall consist of CVC's in the plumbing chases and a PC workstation located in a control room which has a PC with a 21" or larger color monitor.

The PC workstation shall display all fixtures and indicate their operations graphically in row and column format. An option to provide a representation of the facility floor plan may also be selected.

The workstation shall be capable of controlling up to 4 networks, each consisting of a maximum 127 nodes and up to 3,000 ft. of network wiring. Twisted 3-pair cable of CAT 3 rating shall be used for all network wiring (provided by others). Stand-alone CVC's not connected to a network shall be programmed via an optional portable device or programmed at the factory.

In the event of a loss of network communications or a loss of power, system timing parameters shall be retained in each CVC to allow fixtures to operate in the same way that they operated prior to the loss of power or the loss of network communications.

Supplied valve and switch cabling from the control board shall each be 8 feet with the option to easily add extensions if necessary for unique control mounting situations.

Note: Willoughby will require an electronic CAD file (DWG or DXF) of the facility floor plan identifying the fixtures to be controlled by the WMSII system.

1.) Control System:

- WMSII

2.) Control Station:

- Desktop PC
 - Touch Screen (LCD) (Standard)
- Laptop PC
- No PC (Stand-alone only)

3.) Other Options:

- Floor Plan Screen Layout (Standard)
- On-site Start-Up, and Commissioning
 - (must be scheduled 30 days prior to training and after complete installation and testing of the system)
- On-site Owner Training Session
 - (must be scheduled 30 days prior to training and after complete installation and testing of the system)

THE NETWORKED SYSTEM SHALL BE CAPABLE OF:

- Enabling or disabling an individual fixture or an entire group of fixtures from the control station.
- Controlling the maximum number of simultaneous flushes (adjustable from 1 to 999) that can occur within a given time period (adjustable from 1 to 60 seconds).

(CONTINUED FROM BELOW):

- Automatically flushing a toilet after an adjustable period of non-use has passed to prevent trap from drying out and creating stagnate water.
- Allowing for remote actuation of fixtures from the control station
- Providing scheduled permit or lockout time periods per day for selected fixtures.
- Providing indication and reset capability of overflow alarms.
- Logging all valve activity chronologically including overuse and overflow occurrences.
- Providing 4 levels of security: view only, operator, supervisor, and administrator (Each level includes the functions of the previous lower level.)
- Providing an elapsed-time lock for a fixture to be dynamically locked for a specific period of time (adjustable from 1 minute - 4 hours)
- Providing an automatic actuation of fixture function at preset intervals (adjustable from 1 minute - 240 hours) (It can be used to remove all control from the fixture user and tie fixture function to regular timed intervals.)

◦ View-only Security Level

- Move between display screens
- Observe fixture activity on screens
- Observe any loss of communications to fixture controllers
- Log into a higher security level

◦ Operator Security Level

- Remote valve actuation
- Fixture lockout/reset
- Clear alarms (overflow and overuse)

◦ Supervisor Security Level

- Set and adjust valve timing
- Set and adjust initiate and re-initiate delays
- Set and adjust permit (lockout) schedules
- Set and adjust overuse limits and responses
- Set alarm display options
- Turn on and set FlushGuard to limit simultaneous flushes
- Access fixture event log (if enabled by administrator)
- Use log files to analyze water-consumption history
- Enable and disable sound effects
- Access system user log file (if enabled by administrator)
- Optional selection of a 24 hour point at which all over-use counts will be reset

◦ Administrator Security Level

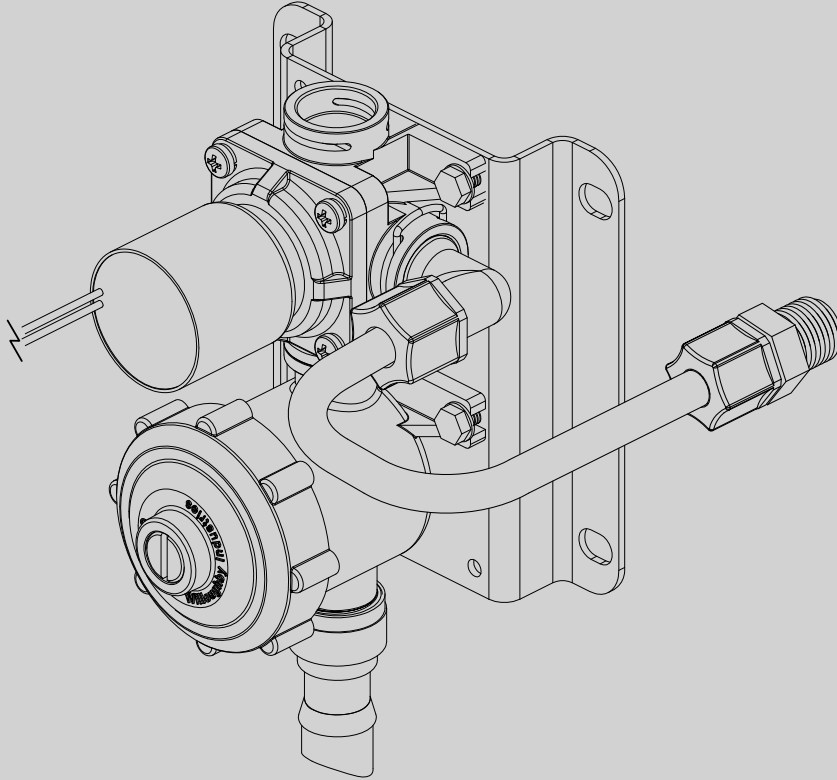
- Create system user accounts with name, password, and security level defined
- Set and adjust network communication settings
- Enable and configure remote client connections to server
- Configure fixture event log files and user activity log files
- Set sound files to be used when sound feature is enabled

PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION 10



BATTERY OPERATED VALVES & PARTS

THESE ITEMS:

EBL BATTERY OPERATED VALVES- OVERVIEW _____
EBL1 COMPLETE (BO) VALVE ASSEMBLIES _____
EBL1 (BO) VALVE COMPONENTS & KITS _____

BEGIN ON PAGE:

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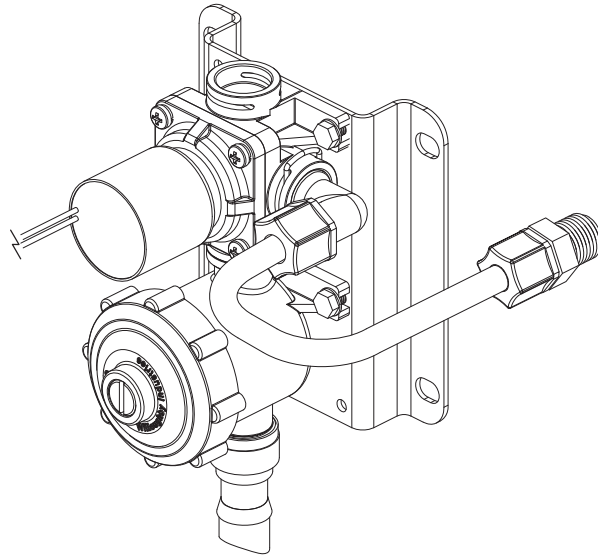
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EBL1

Battery Operated Single Temperature Lead-free Electronic Valve



Recommended Specifications



Battery Operated, Single Temperature, Lead-free, Electronic Valve assembly shall be: Willoughby Model No. **EBL1**
(Select from options list)

The Battery Operated Electronic Valve assembly uses a 9V DC battery pack to power a latching valve coil solenoid controlled by an infrared sensor. The vandal-resistant infrared sensors shall be non-removable from the front of the fixture, each activating an independent valve assembly within 1-2 seconds of detection.

The plastic valve checkstop/strainers shall feature integral mounting points. Replaceable stainless steel strainer and optional 0.5 GPM flow control can be serviced without disturbing the supply line. Assembly shall use flexible tubing to connect to the spray head/filler/bubbler. Water inlet is 1/2" MPT and is reversible for either top or bottom supply. A galvanized mounting plate is provided for mounting within the fixture.

Recommended operating pressure shall be 35-60 psi.
Recommended max operation temperature is 110° Fahrenheit.
Cost-reducing manifolded valves shall consist of multiple valve assemblies served by a common supply line. Each 9V latching valve coil shall require an individual DC battery pack using AA-type batteries for valve operation (supplied by manufacturer).

Valve complies with NSF-61 standard.

Model Number:

- EBL1 Single Temp. Battery Operated

Flow Selection (choose one):

- 0.5 GPM Flow (lavatories)
 1.0 GPM Flow (bottle fillers)
 1.5 GPM Flow (showers)
 2.0 GPM Flow (showers)
 NFC (No Flow Control) (showers, up to MA2)

Control:

- Infrared (IR) Sensor
 Shower Control w/ PZPB, Battery Operated (WUSCB-5300)

Options:

- MA2 (Double Manifold, no flow limitation)
 -MA3 (Triple Manifold, 0.5 GPM flow only)
 -MA4 (Quad Manifold, 0.5 GPM flow only)
 -TMV In-line Thermostatic Mixing Valve

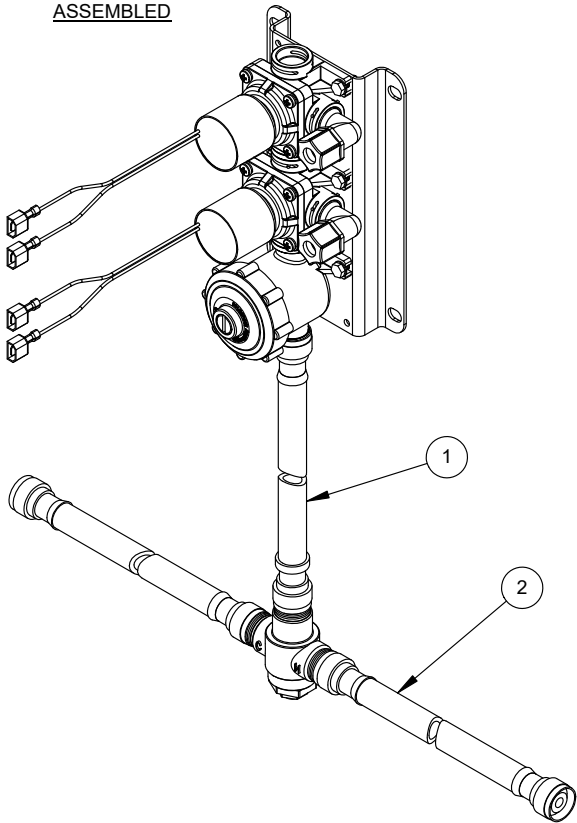


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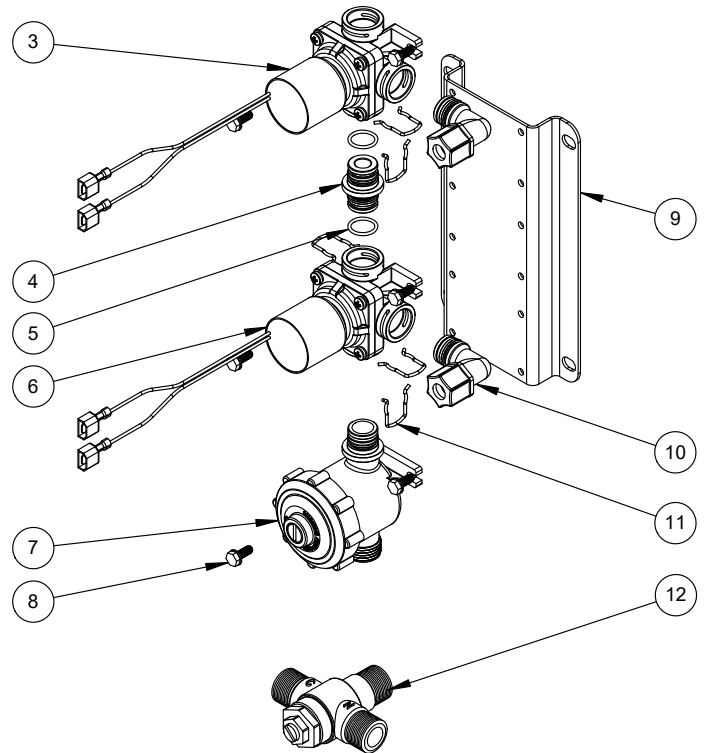
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EBL1 SINGLE TEMPERATURE BATTERY OPERATED VALVES

ASSEMBLED



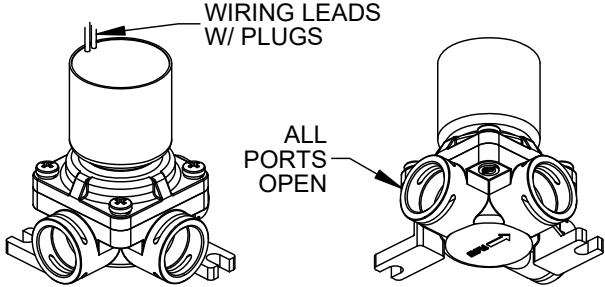
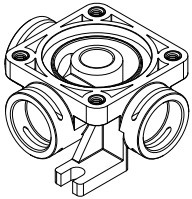
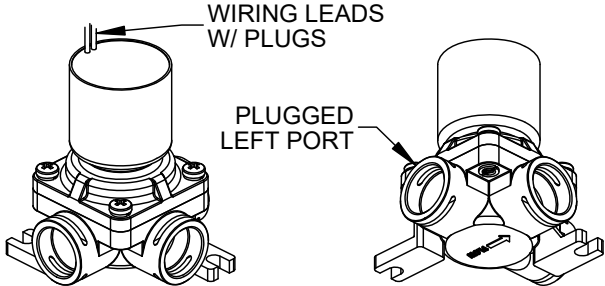
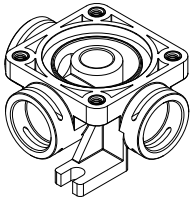
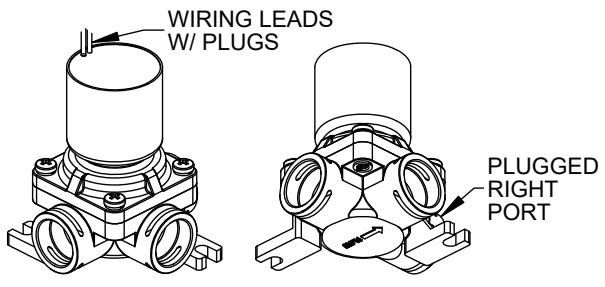
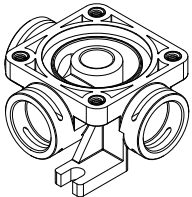
EXPLODED VIEW



ITEM #	PART NUMBER	DESCRIPTION	SEE CATALOG SECTION #:
1	980506	6" STAINLESS STEEL FLEX HOSE	1
2	980520	20" STAINLESS STEEL FLEX HOSE	1
3	980416PR	VALVE ASSY, 9VDC LATCHING, BATT. OPER. RH, PLUGGED PORT	9
4	980197	PLASTIC VALVE COUPLING	1
5	980164	'O'-RING, #015	1
6	980416	VALVE ASSEMBLY, 9VDC LATCHING, BATTERY OPERATED	9
7	980183	CHECKSTOP ASSEMBLY	11
8	800133	#10-16 SELF TAP TYPE B HEX HEAD SCREW	1
9	980501	PML11 VALVE MOUNTING BRACKET	---
	9805012	PML12 VALVE MOUNTING BRACKET	---
	9805013	PML13 VALVE MOUNTING BRACKET	---
	9805014	PML14 VALVE MOUNTING BRACKET	---
10	980600A	VALVE FITTING ASSEMBLY, 3/8" ELBOW	1
11	980140	SPRING CLIP, ROUND	1
12	700480ELF	MIXING VALVE, TMV, LEAD FREE, LF-E480	1
NOT SHOWN	320566	(OPTIONAL) CONNECTOR, 3/8" TUBE x 3/8" MPT	1
	320577	(OPTIONAL) ELBOW, 3/8" TUBE x 3/8" MPT	1

SEE NEXT PAGE FOR INDIVIDUAL (BO) VALVE ASSEMBLIES

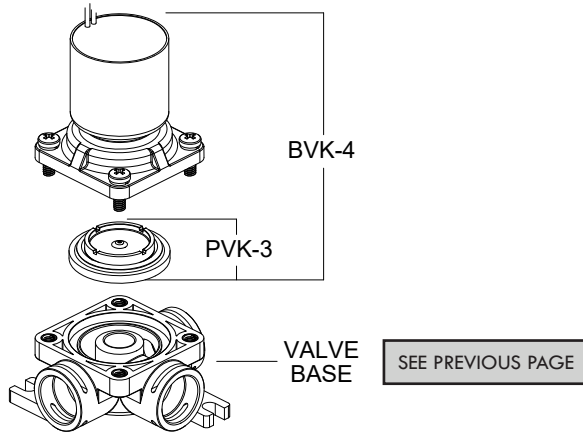
EBL1 INDIVIDUAL (BO) VALVE ASSEMBLIES / BASES

	PART NUMBER	VALVE ASSEMBLY	BASE ONLY P/N
	<p>P/N: 980416 EBL1, ALL PORTS OPEN</p>	 <p>WIRING LEADS W/ PLUGS</p> <p>ALL PORTS OPEN</p>	<p>P/N: 980420</p> 
	<p>P/N: 980416PL EBL1, PLUGGED LEFT PORT</p>	 <p>WIRING LEADS W/ PLUGS</p> <p>PLUGGED LEFT PORT</p>	<p>P/N: 980420L</p> 
	<p>P/N: 980416PR EBL1, PLUGGED RIGHT PORT</p>	 <p>WIRING LEADS W/ PLUGS</p> <p>PLUGGED RIGHT PORT</p>	<p>P/N: 980420R</p> 

SEE THE NEXT PAGE FOR **EBL1** VALVE ASSEMBLY COMPONENTS

EBL1 VALVE ASSEMBLY COMPONENTS & KITS (BVKs/PVKs)

***COMMON TO ALL EBL1 VALVES**

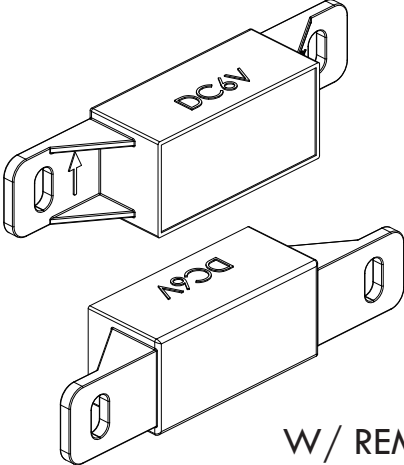
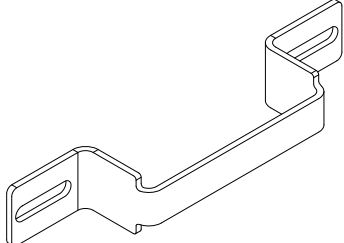
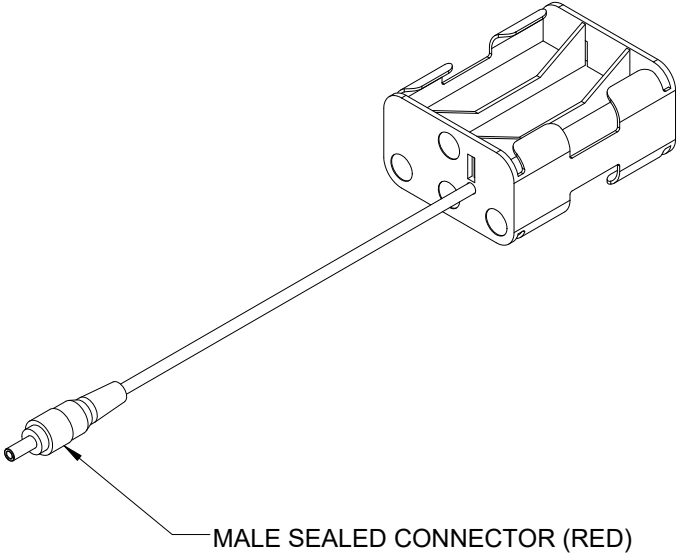


NOTES:

- PARTS LISTED IN **BVK/ PVK** COMPONENT KITS ARE NOT SOLD INDIVIDUALLY
- **BVK-4 & PVK-3** PARTS ARE AVAILABLE IN KIT FORM ONLY

	PART NUMBER	VALVE ASSEMBLY																												
	<p>P/N: BVK-4</p> <p>EBL1 COMPLETE REBUILD KIT</p>	<table border="1" data-bbox="950 1066 1477 1396"> <thead> <tr> <th>ITEM #</th> <th>PART #</th> <th>DESCRIPTION</th> <th>QTY.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>700255</td> <td>COIL ASSEMBLY, 9VDC LATCHING, BATTERY OPERATED</td> <td>1</td> </tr> <tr> <td>2</td> <td>980680</td> <td>WASHER, NYLON, 0.75"ID, 1.00"OD</td> <td>1</td> </tr> <tr> <td>3</td> <td>980164</td> <td>O-RING, #015</td> <td>1</td> </tr> <tr> <td>4</td> <td>980170A</td> <td>#8-32 x 1/2 " SCREW W/SEMS SPLIT L/W</td> <td>4</td> </tr> <tr> <td>5</td> <td>980114</td> <td>COIL ADAPTER, E1L VALVE</td> <td>1</td> </tr> <tr> <td>6</td> <td>980305</td> <td>WATER SIDE DIAPHRAGM/ADAPTOR ASSY.</td> <td>1</td> </tr> </tbody> </table> <p>PVK-3 (ITEM #:6)</p>	ITEM #	PART #	DESCRIPTION	QTY.	1	700255	COIL ASSEMBLY, 9VDC LATCHING, BATTERY OPERATED	1	2	980680	WASHER, NYLON, 0.75"ID, 1.00"OD	1	3	980164	O-RING, #015	1	4	980170A	#8-32 x 1/2 " SCREW W/SEMS SPLIT L/W	4	5	980114	COIL ADAPTER, E1L VALVE	1	6	980305	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1
ITEM #	PART #	DESCRIPTION	QTY.																											
1	700255	COIL ASSEMBLY, 9VDC LATCHING, BATTERY OPERATED	1																											
2	980680	WASHER, NYLON, 0.75"ID, 1.00"OD	1																											
3	980164	O-RING, #015	1																											
4	980170A	#8-32 x 1/2 " SCREW W/SEMS SPLIT L/W	4																											
5	980114	COIL ADAPTER, E1L VALVE	1																											
6	980305	WATER SIDE DIAPHRAGM/ADAPTOR ASSY.	1																											
	<p>P/N: PVK-3</p> <p>WATER-SIDE DIAPHRAGM</p>	<div data-bbox="1011 1717 1471 1864" style="border: 1px solid black; padding: 5px;"> <p>NOTE: PVK-3 IS INCLUDED IN BVK-4</p> </div>																												

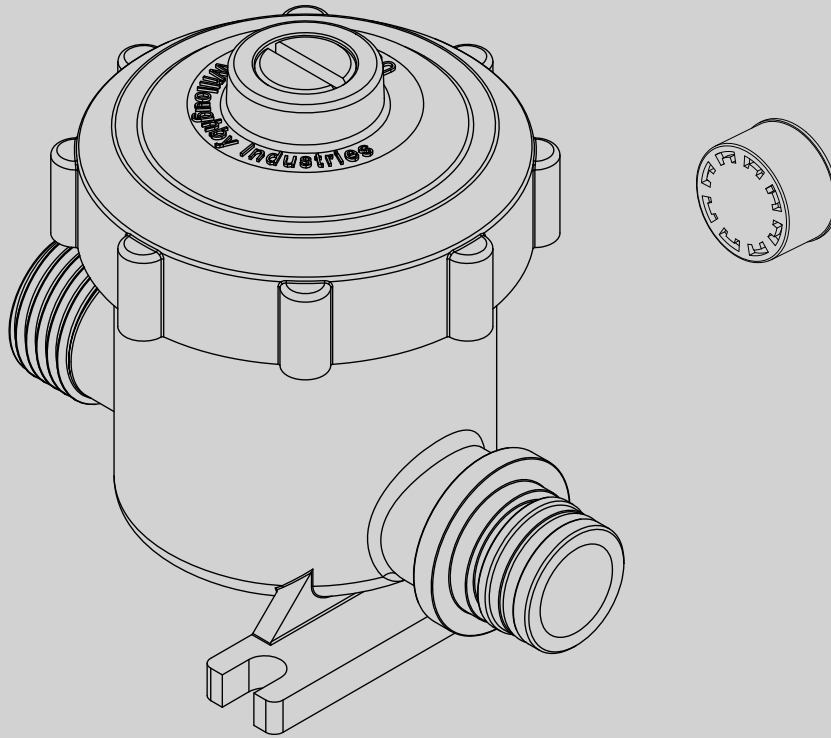
EBL1 BATTERY OPERATED VALVE-SPECIFIC COMPONENTS

	P/N & DESCRIPTION	COMPONENT
	<p>(P/N: 700250) INFRARED ACTUATOR, BATTERY OPERATED VALVE (6V DIRECT CURRENT)</p>	 <p>PRESET 20" SENSOR RANGE (AJUSTABLE 1"-30" W/ REMOTE, P/N: 700155)</p>
	<p>(P/N: S301092) BRACKET, INFRARED SENSOR MOUNTING</p>	
	<p>(P/N: 700252) BATTERY OPERATED VALVE BATTERY PACK (REQUIRES (6) AA BATTERIES)</p>	 <p>MALE SEALED CONNECTOR (RED)</p>
	<p>(P/N: 700254) BATTERY, AA</p>	<p>BATTERY PACK REQUIRES (6) AA BATTERIES</p>

PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION

11

CHECKSTOP ASSEMBLIES & FLOW CONTROL INSERTS

THESE ITEMS:

CHECKSTOP ASSEMBLY & PARTS - LEAD-FREE _____

CHECKSTOP ASSEMBLY & PARTS - BRASS _____

FLOW CONTROL INSERTS & INLINE FLOW ASSEMBLY _____

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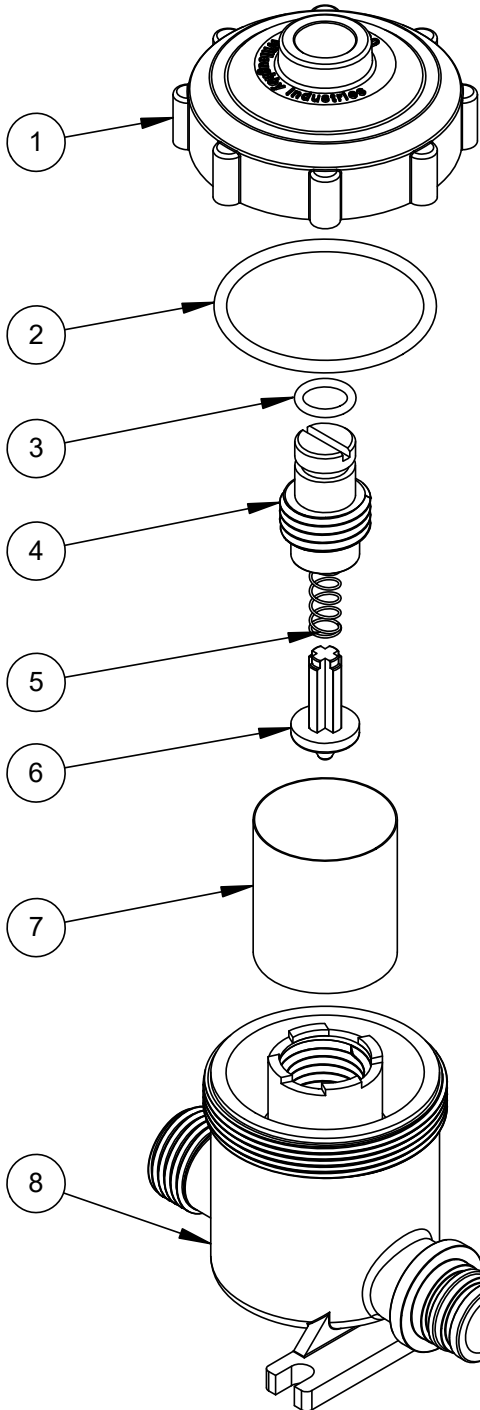
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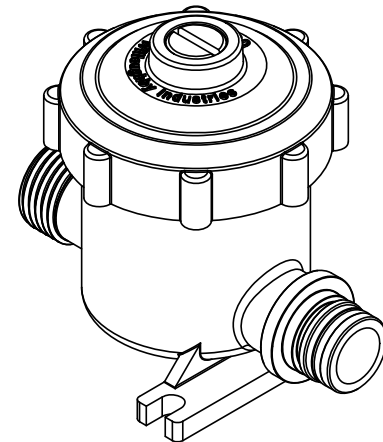
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CHECKSTOP STRAINER ASSEMBLY - LEAD FREE

P/N: 980183 (COMMON TO ALL LEAD-FREE VALVES)

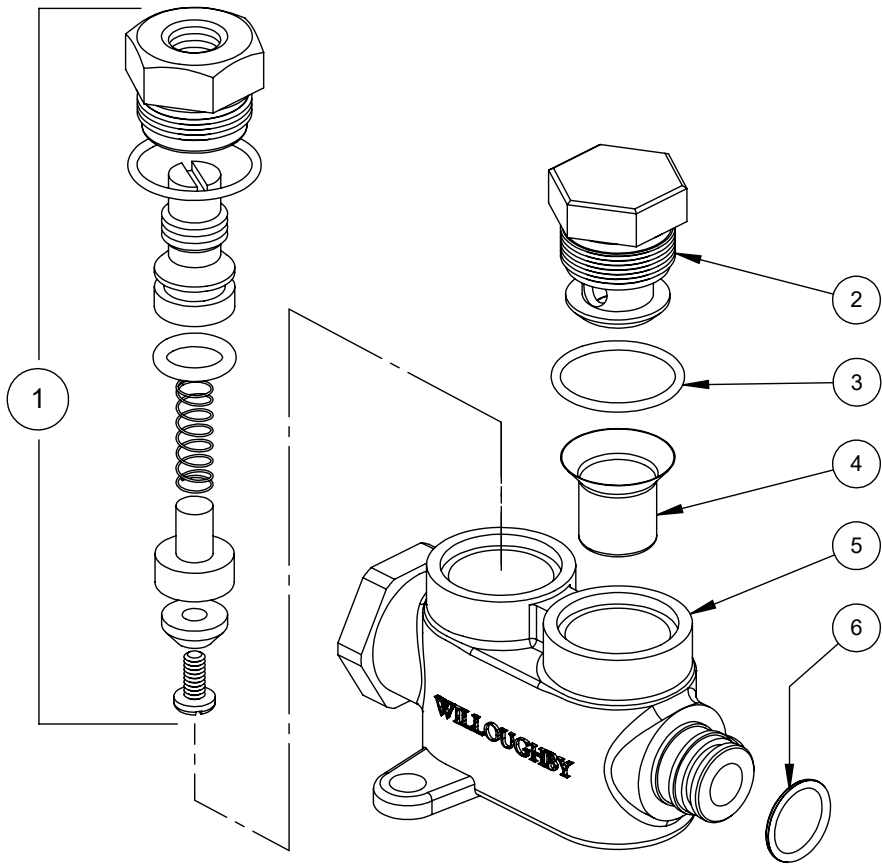


ITEM #	PART #	DESCRIPTION	QTY.
1	980192	STRAINER CAP	1
2	980165	O-RING, #130	1
3	980163	O-RING, #012	1
4	980200	CHECKSTOP SCREW	1
5	980201	SPRING, CHECKSTOP/STRAINER	1
6	980194	STRAINER PLUNGER	1
7	980168	SCREEN, STRAINER	1
8	980580	CHECKSTOP BASE AND FLOW RESTRICTOR ASSY	1
9	980164	O-RING, #015	1

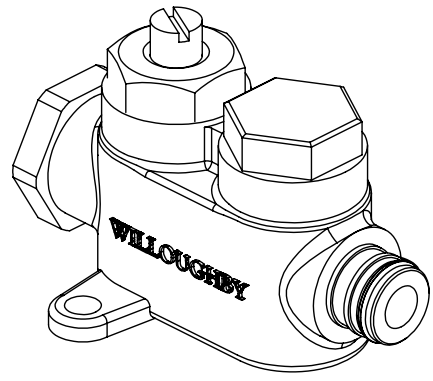


CHECKSTOP STRAINER ASSEMBLY - BRASS BODIED

P/N: 600183 (COMMON TO MOST BRASS VALVES)

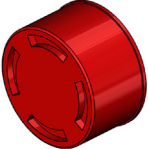



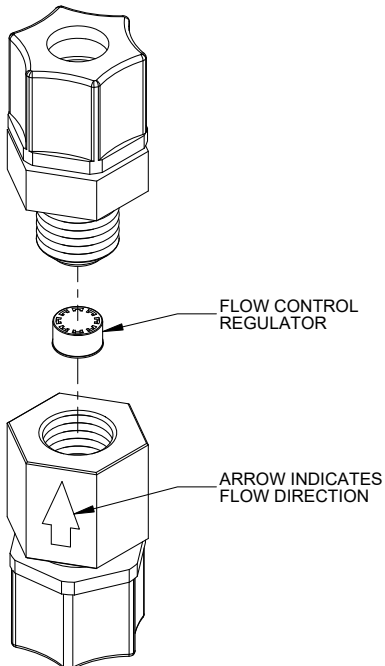


NOTE:
 • PARTS LISTED IN
P/N: 600089
 REPAIR KIT ARE NOT
 SOLD INDIVIDUALLY



ITEM #	P/N	DESCRIPTION
1	600089	REPAIR KIT, CHECKSTOP STRAINER - BRASS
2	600099	STRAINER CAP, CHECKSTOP
3	600768	O-RING, #019
4	600181	STRAINER INSERT
5	600083	CHECKSTOP CASTING - LEAD FREE
6	600130	O-RING, SLIP JOINT, #014

FLOW CONTROL INSERTS & INLINE FLOW ASSEMBLY

	P/N	DESCRIPTION	COMPONENT/ASSEMBLY
	380138	0.5 GPM FLOW CONTROL REGULATOR - MR03, RED	
	380227	1.0 GPM FLOW CONTROL REGULATOR - MR03, BLUE	
	380228	1.5 GPM FLOW CONTROL REGULATOR - MR03, GREEN	
	380230	2.0 GPM FLOW CONTROL REGULATOR - MR03, LILAC	
	380142-05 (0.5 GPM)	<p>INLINE FLOW CONTROL ASSEMBLIES</p> <p>(Ø3/8" TUBING CONNECTIONS, INCLUDES FLOW CONTROL INSERT)</p>	
	380142-10 (1.0 GPM)		
	380142-15 (1.5 GPM)		
	380142-20 (2.0 GPM)		

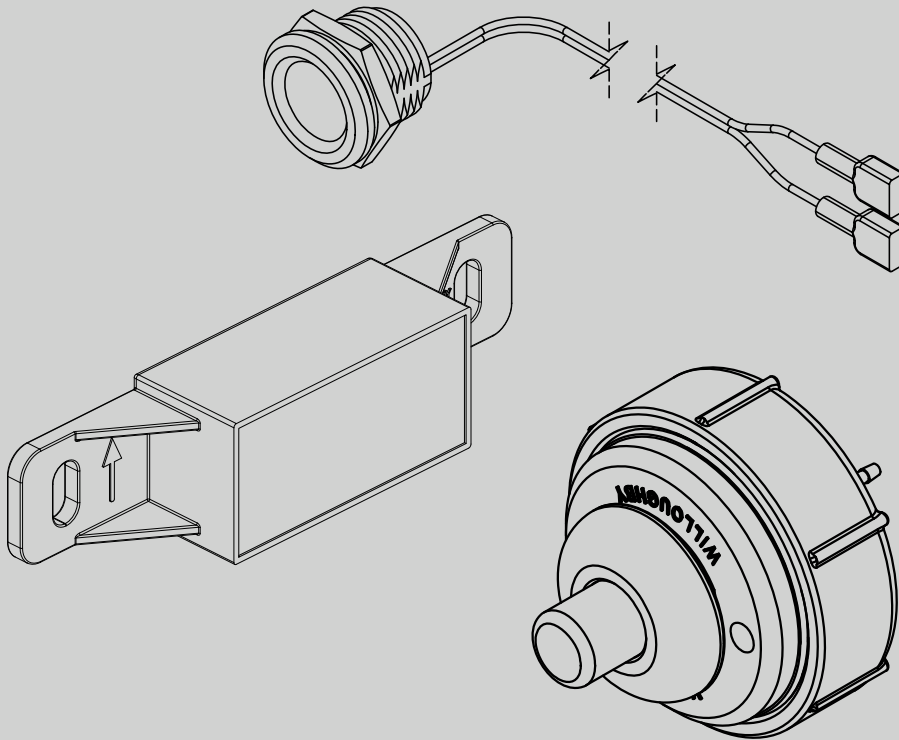
PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION

12



PUSH BUTTONS & INFRARED ACTUATORS

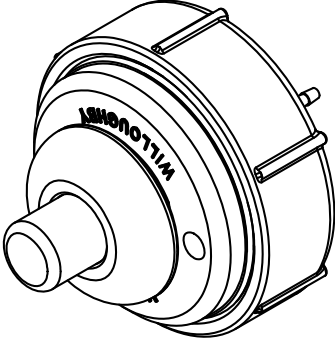
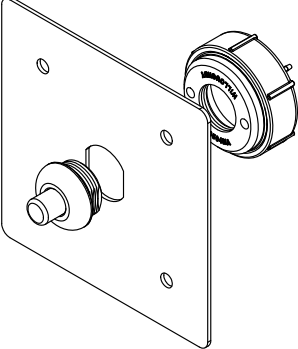
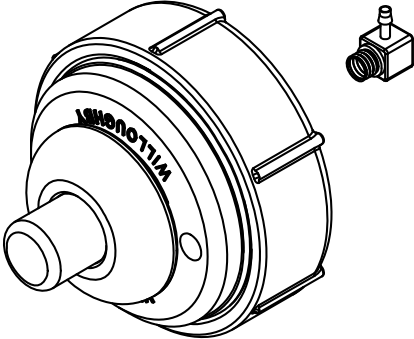
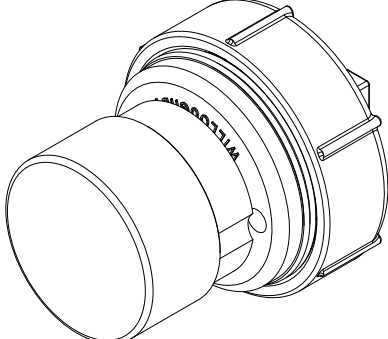
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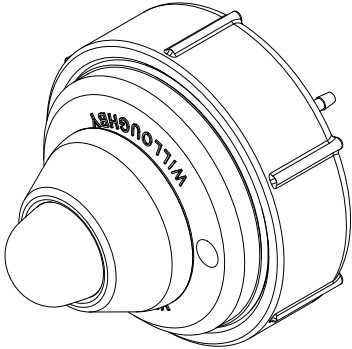
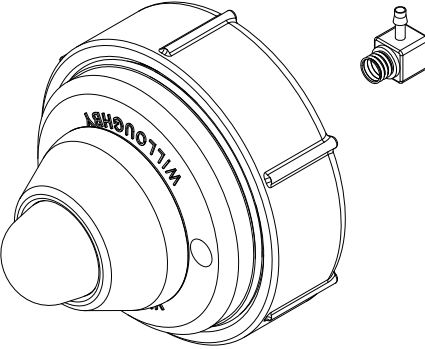
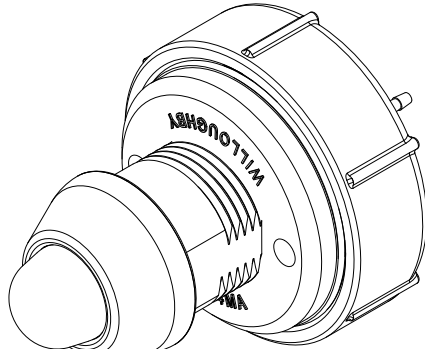
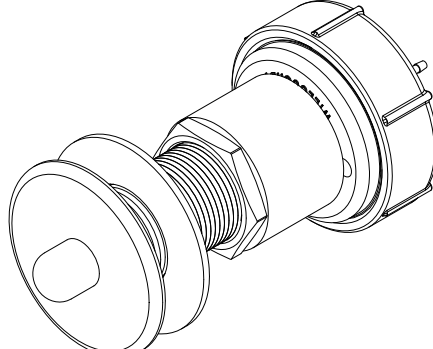
PNEUMATIC PUSH BUTTONS _____
ELECTRONIC PUSH BUTTONS _____
INFRARED ACTUATORS _____
PUSH BUTTON COMPONENTS _____

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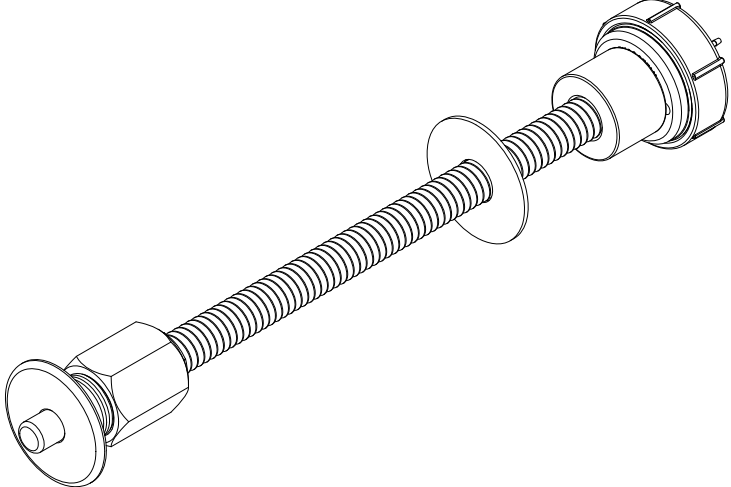
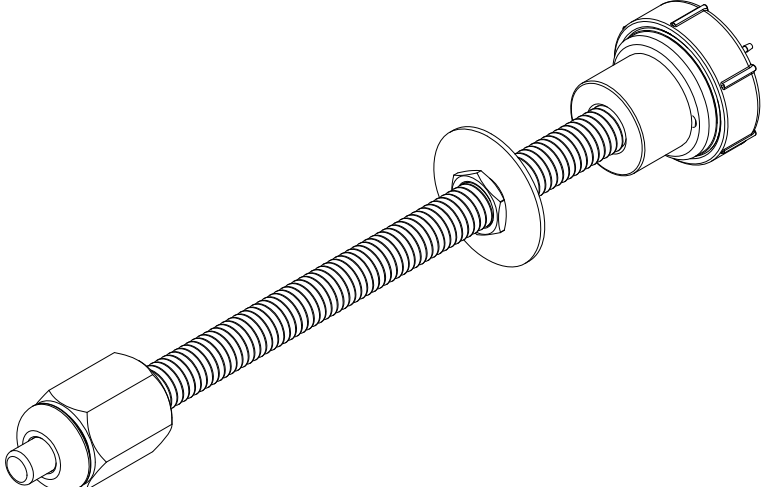
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PNEUMATIC PUSH BUTTONS

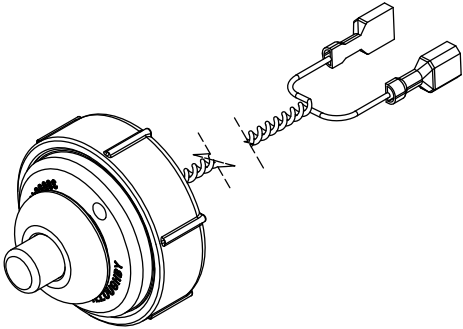
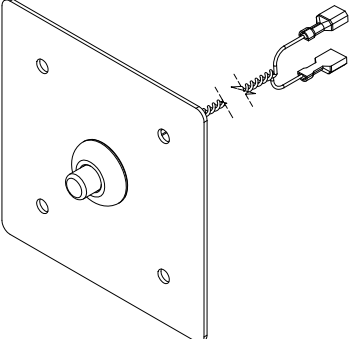
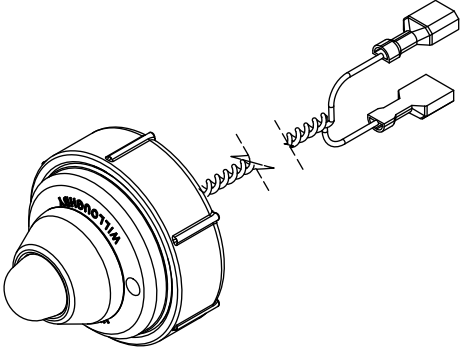
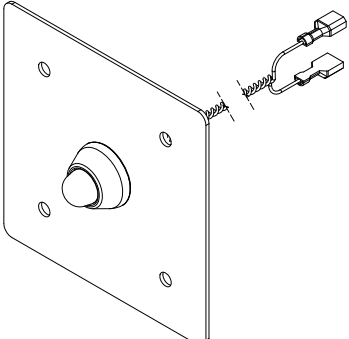
	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600307</p> <p>(PPB) PNEUMATIC, STANDARD</p>	
	<p>P/N: 600307FA</p> <p>(PPB) PNEUMATIC, STANDARD, FRONT ACCESS (W/ PLATE)</p>	
	<p>P/N: 600308</p> <p>(PPB) PNEUMATIC, STANDARD, 90° HOSE-BARB</p>	
	<p>P/N: 600311</p> <p>(PLPB) PNEUMATIC, PALM/ FOOT-OPERATED</p>	

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600306LR</p> <p>(PBH) PNEUMATIC, LIGATURE-RESISTANT</p>	
	<p>P/N: 600305LR</p> <p>(PBH) PNEUMATIC, LIGATURE-RESISTANT, 90° HOSE-BARB</p>	
	<p>P/N: 600318LR</p> <p>(PBH-WBL) PNEUMATIC, LIGATURE-RESISTANT (FOR WBL-2320 LAV.)</p>	
	<p>P/N: 600312</p> <p>PUSH BUTTON, PNEUMATIC, CHINA LAVATORY</p>	

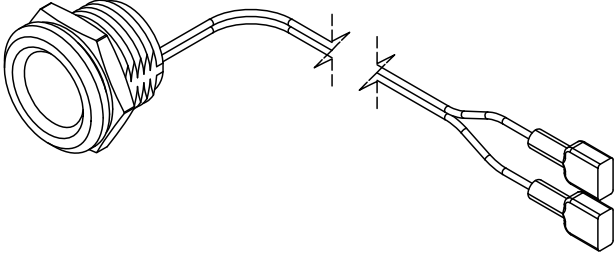
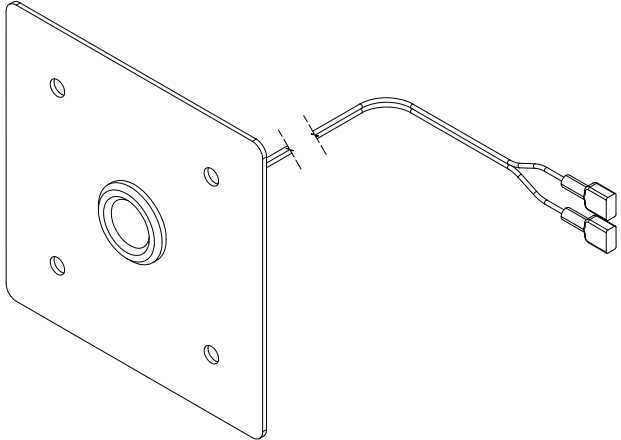
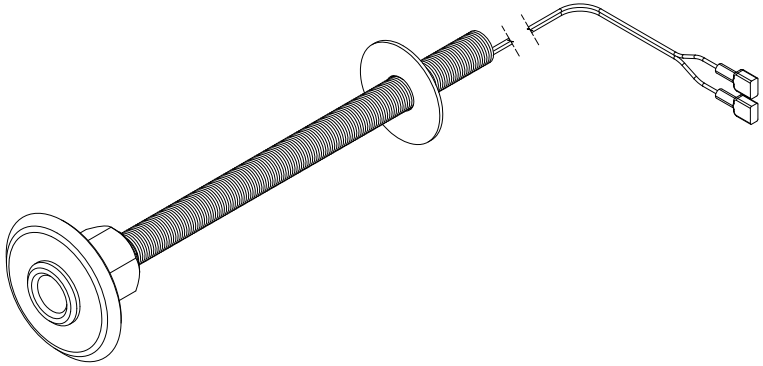
PNEUMATIC PUSH BUTTONS - RECESSED

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600381</p> <p>PUSH BUTTON ASSEMBLY, PNEUMATIC, CHINA LAV., THROUGH-WALL (RECESSED)</p>	
	<p>P/N: 600380</p> <p>PUSH BUTTON ASSEMBLY, PNEUMATIC, STAINLESS STEEL LAV., THROUGH-WALL (RECESSED)</p>	

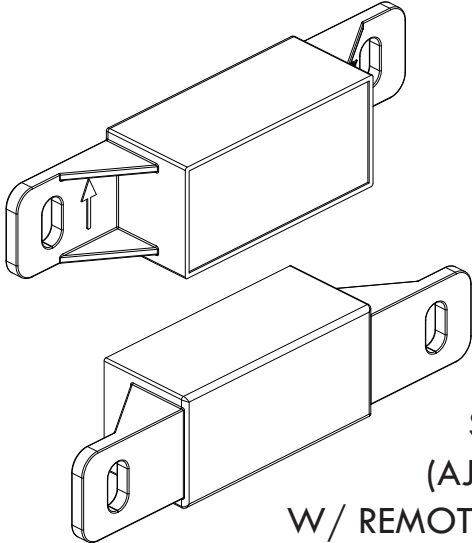
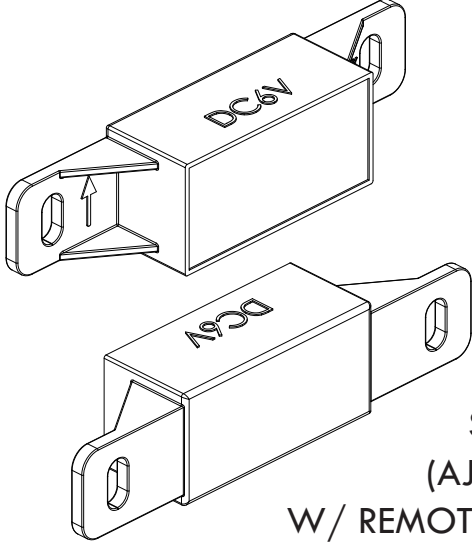
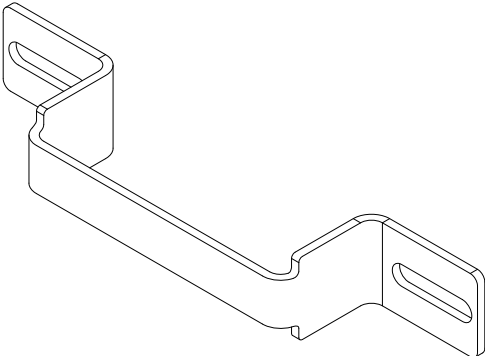
ELECTRONIC PUSH BUTTONS

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600313</p> <p>(EPB) ELECTRONIC, STANDARD</p>	
	<p>P/N: 600313FA</p> <p>(EPB) ELECTRONIC, STANDARD, FRONT ACCESS (W/ PLATE)</p>	
	<p>P/N: 600314LR</p> <p>(EPBH) ELECTRONIC, LIGATURE-RESISTANT</p>	
	<p>P/N: 600314FA</p> <p>(EPBH) ELECTRONIC, LIGATURE-RESISTANT, FRONT ACCESS (W/ PLATE)</p>	

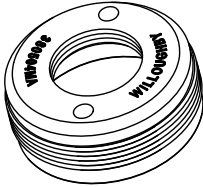
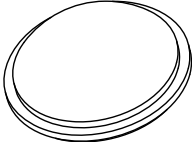
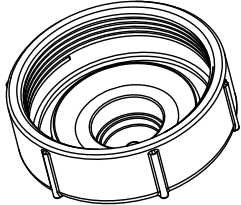
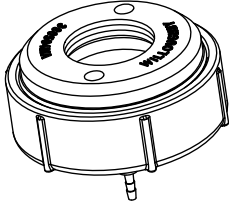
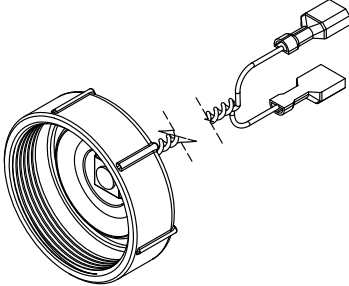
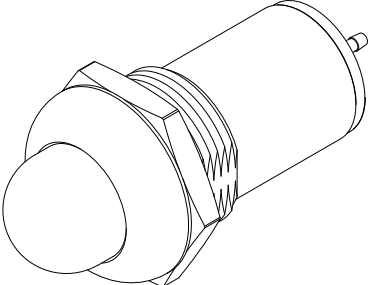
ELECTRONIC PUSH BUTTONS - PIEZO & RECESSED

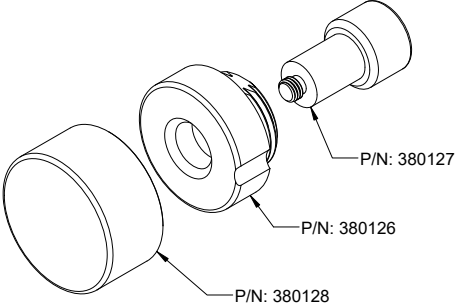
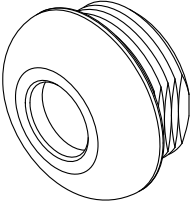
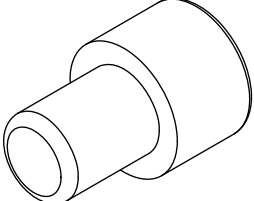
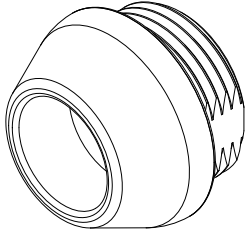
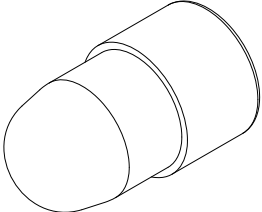
	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 701179C</p> <p>(PZPB) ELECTRONIC, PIEZO</p>	
	<p>P/N: 701179CFA</p> <p>(PZPB) ELECTRONIC, PIEZO, REMOTE FRONT ACCESS (W/ PLATE)</p>	
	<p>P/N: 600324</p> <p>(PZPB) ELECTRONIC, PIEZO, THROUGH-WALL (RECESSED)</p>	

INFRARED ACTUATORS

	P/N & DESCRIPTION	COMPONENT
	<p>P/N: 700154</p> <p>(IR) INFRARED ACTUATOR, RETROFIT KIT, HARD WIRED POWER SUPPLY, 24VAC (ALT. CURRENT)</p>	 <p>PRESET 20" SENSOR RANGE (AJUSTABLE 1"-30" W/ REMOTE, P/N: 700155)</p>
	<p>P/N: 700250</p> <p>(BO) INFRARED ACTUATOR, BATTERY-OPERATED, 6V DIRECT CURRENT</p> <p><u>SEE SECTION 10 FOR FURTHER INFO</u></p>	 <p>PRESET 20" SENSOR RANGE (AJUSTABLE 1"-30" W/ REMOTE, P/N: 700155)</p>
	<p>P/N: S301092</p> <p>INFRARED SENSOR MOUNTING BRACKET</p>	

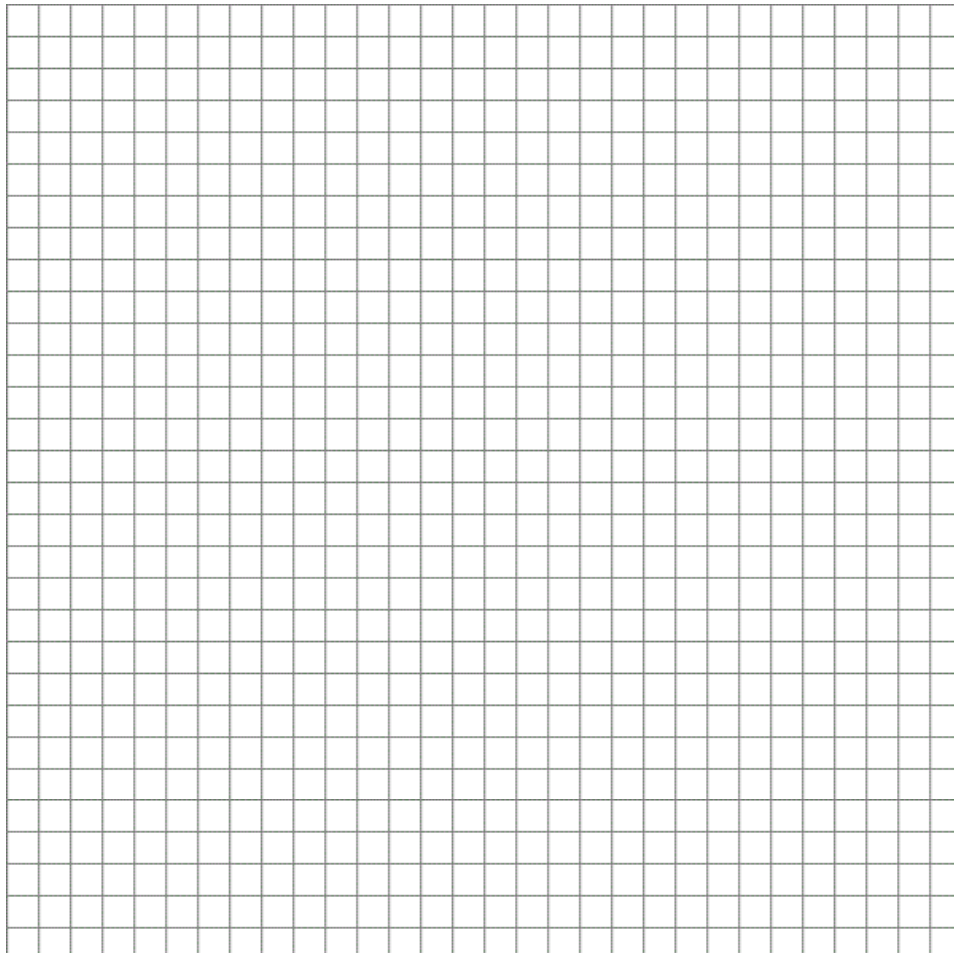
PUSH BUTTON COMPONENTS

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	P/N: 380504MA DIAPHRAGM CAP (ELECTRIC & PNEUMATIC)	
	P/N: 600201 DIAPHRAGM PUMP (ELECTRIC & PNEUMATIC)	
	P/N: 380506MA DIAPHRAGM BODY (ELECTRIC & PNEUMATIC)	
	P/N: 600307RK DIAPHRAGM REPAIR KIT (ELECTRIC & PNEUMATIC)	 <div data-bbox="1068 1100 1507 1268" style="border: 1px solid black; padding: 5px; display: inline-block;"> INCLUDES: 380504MA 600201 380506MA </div>
	P/N: 600320 DIAPHRAGM BODY, ELECTRONIC (INCLUDES SWITCH, LEADS, & CONNECTORS)	
	P/N: 600117 PUSH BUTTON, PUMP (CABINET SHOWER REPL.)	

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600311RK REPAIR KIT, PALM/FOOT-OPERATED PUSH BUTTON</p>	
	<p>P/N: 380124 SLEEVE, STANDARD (ELECTRIC & PNEUMATIC)</p>	
	<p>P/N: 600057 PUSH BUTTON, STANDARD (ELECTRIC & PNEUMATIC)</p>	
	<p>P/N: 380119 SLEEVE, LIGATURE-RESISTANT (ELECTRIC & PNEUMATIC)</p>	
	<p>P/N: 600046 PUSH BUTTON, LIGATURE-RESISTANT (ELECTRIC & PNEUMATIC)</p>	

FOR PLATES, LOCKNUTS, POWER SUPPLY TRANSFORMERS, WIRING, PNEUMATIC TUBING, & OTHER COMPONENTS : SEE SECTION 1

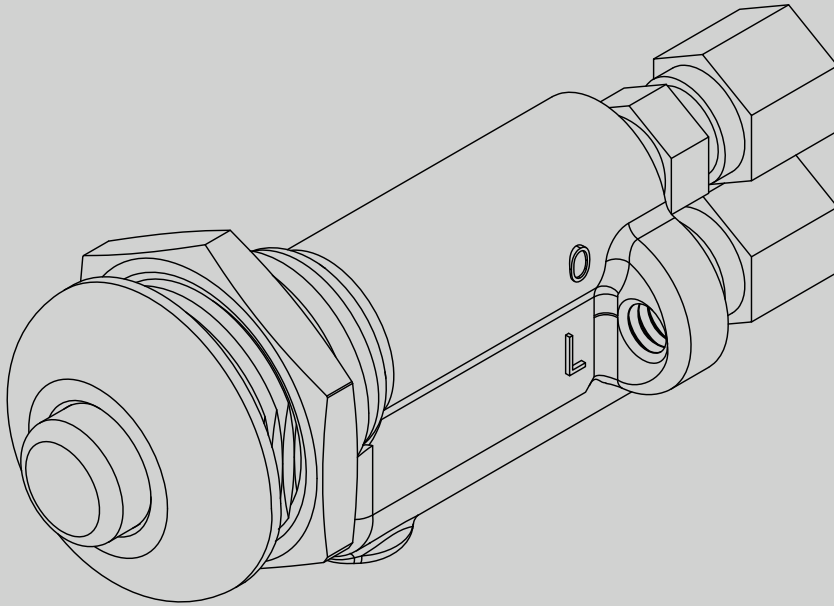
NOTES:



PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION 13

FLUSH VALVE ACTUATORS

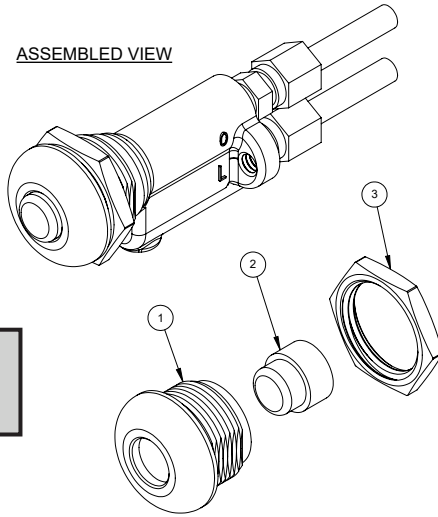
THESE ITEMS:

- WILLOUGHBY FLUSH VALVE ACTUATORS _____
- FLUSH VALVE ACTUATOR ADAPTER KIT _____
- SLOAN FLUSH VALVE ACTUATOR _____
- ELECTRONIC FLUSH VALVE ACTUATOR _____

BEGIN ON PAGE:

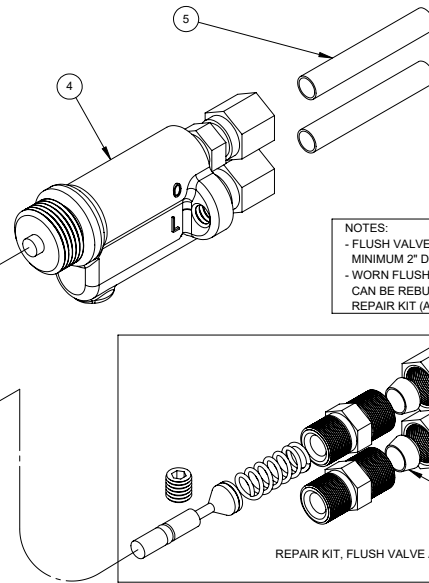
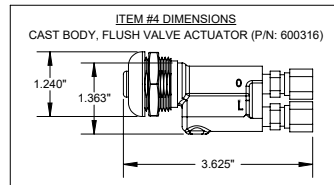
- 114
- 115
- 116
- 117

PANEL MOUNTED FLUSH VALVE ACTUATOR

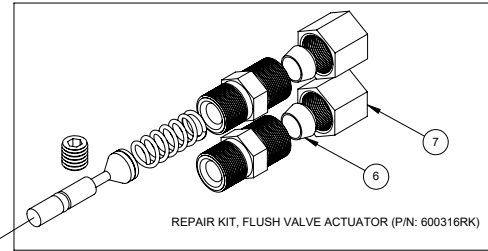


ASSEMBLED VIEW

P/N: 600317PM



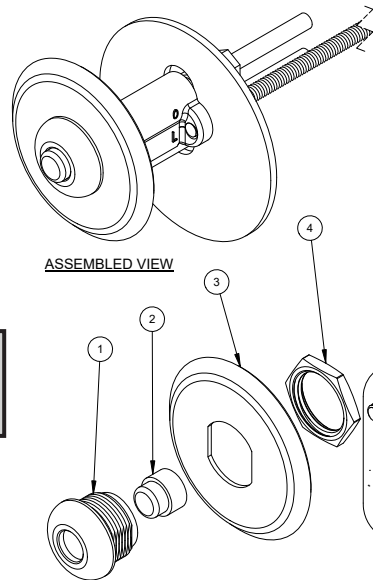
NOTES:
- FLUSH VALVE ACTUATOR REQUIRES MINIMUM 2" DIA. HOLE FOR CLEARANCE
- WORN FLUSH VALVE ACTUATORS CAN BE REBUILT USING P/N: 600316RK REPAIR KIT (AVAILABLE SEPARATELY)



REPAIR KIT, FLUSH VALVE ACTUATOR (P/N: 600316RK)

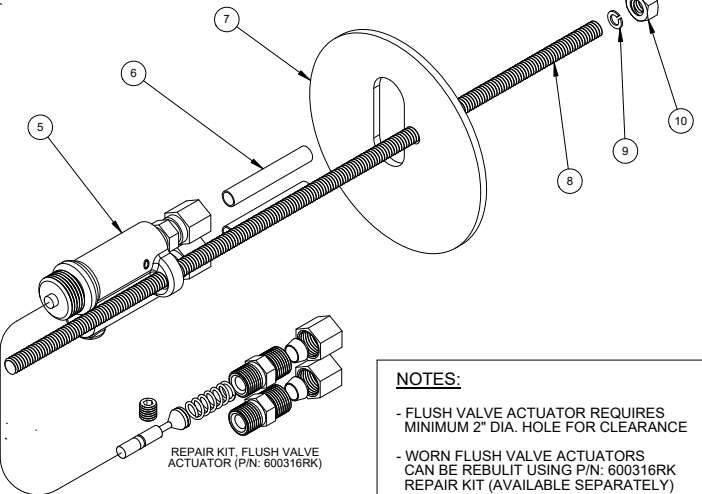
ITEM #	PART #	DESCRIPTION	QTY.
1	380162	SLEEVE	1
2	600063	PUSH BUTTON, FLUSH VALVE ACTUATOR	1
3	600612N	HEXNUT, 3/4"-14 NPSM	1
4	600316	CAST BODY, FLUSH VALVE ACTUATOR	1
5	390010	BLACK PLENUM TUBING, 1/4"OD X .170"ID X 4"	2
6	600316S	1/4" PLASTIC FERREL	2
7	600316N	1/4" BRASS HEX NUT	2

REAR MOUNTED FLUSH VALVE ACTUATOR



ASSEMBLED VIEW

P/N: 600317RM

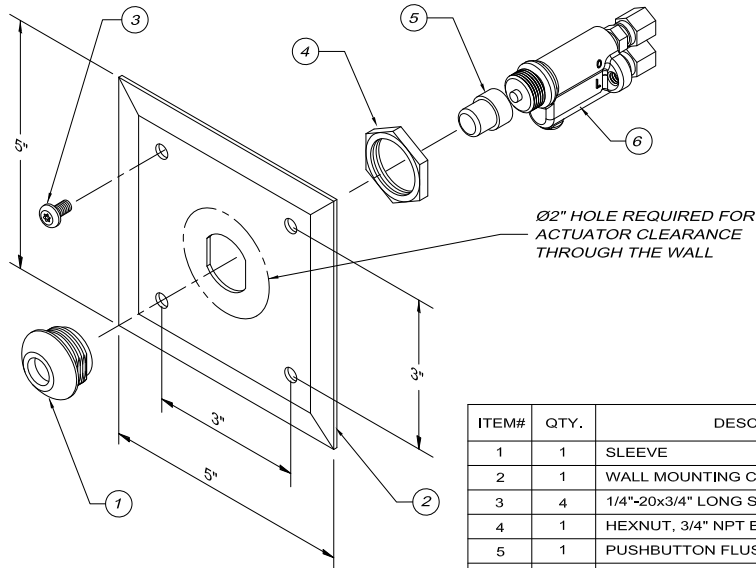


NOTES:
- FLUSH VALVE ACTUATOR REQUIRES MINIMUM 2" DIA. HOLE FOR CLEARANCE
- WORN FLUSH VALVE ACTUATORS CAN BE REBUILT USING P/N: 600316RK REPAIR KIT (AVAILABLE SEPARATELY)

ITEM #	PART #	DESCRIPTION	QTY.
1	380162	SLEEVE	1
2	600063	PUSH BUTTON, FLUSH VALVE ACTUATOR	1
3	600072	STAINLESS STEEL PLATE, 3" DIA.	1
4	600612N	HEXNUT, 3/4"-14 NPSM	1
5	600316	CAST BODY, FLUSH VALVE ACTUATOR	1
6	390010	BLACK PLENUM TUBING, 1/4"OD X .170"ID X 4"	2
7	600066	11 GA. GALV. WASHER, 3-1/2" DIA.	1
8	800118	ALL THREAD ROD, 1/4-20 X 12"	1
9	800111	1/4" LOCK WASHER	1
10	600613N	HEX NUT, 1/4"-20, STAINLESS STEEL	1

FRONT MOUNTED FLUSH VALVE ACTUATOR

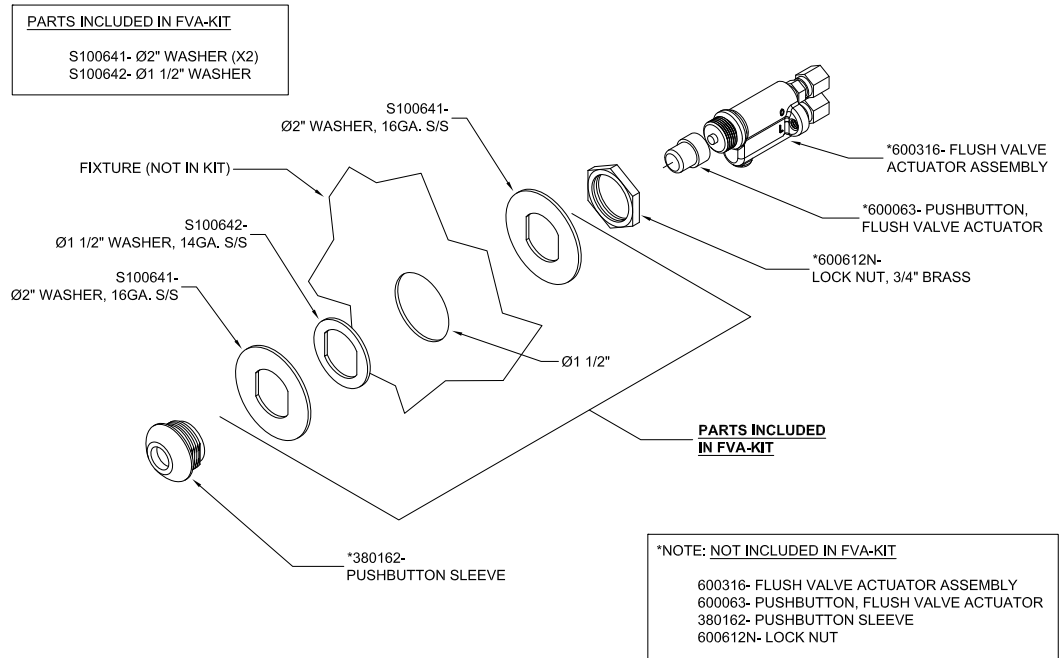
P/N: 600317FA



ITEM#	QTY.	DESCRIPTION	PART #
1	1	SLEEVE	380162
2	1	WALL MOUNTING COVER PLATE	S001872
3	4	1/4"-20x3/4" LONG S/S PIN TORX SCREWS	4502SSN
4	1	HEXNUT, 3/4" NPT BRASS	600612N
5	1	PUSHBUTTON FLUSH VALVE ACTUATOR	600063
6	1	FLUSH VALVE ACTUATOR ASSEMBLY	600316

ADAPTER KIT FLUSH VALVE ACTUATOR

P/N: FVA-KIT



SLOAN HY-72-A FLUSH VALVE ACTUATOR - P/N: 320592

FOR USE WITH WILLOUGHBY PATIENT CARE UNITS (PCU)



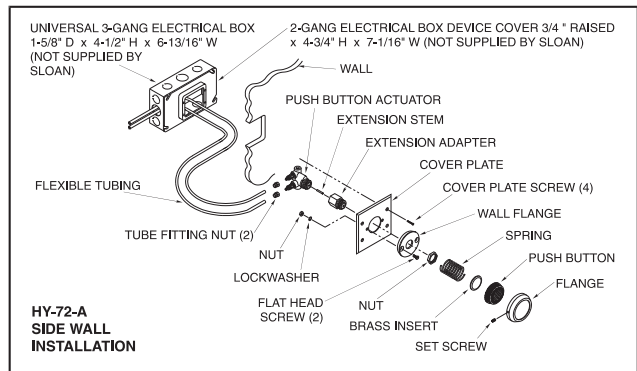
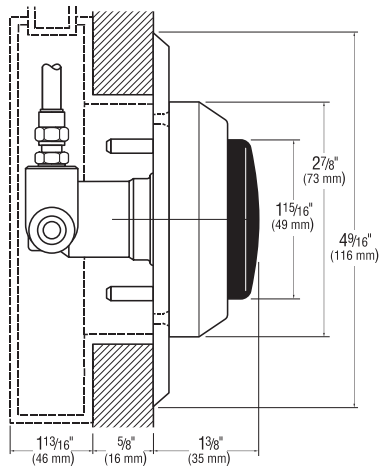
Hydraulic Flushometer **HY-72-A** Push Button Actuator Side Wall (SW Variation)

Description
Side Wall (SW) Push Button Assembly for use with Sloan Series 900 Hydraulic Flushometers. Recommended for installation where access behind the wall is not available. Installation requires electrical box with cover plate (not supplied by Sloan).

- Specifications**
Hydraulically Operated Push Button Assembly that includes the following features:
- ADA Compliant Non-Hold-Open feature type Actuator
 - Large diameter, Spring Loaded Button
 - Mounting fasteners for installation on 2-gang electrical box cover plate
 - Two 84" (2.13 m) long flexible tubing for connection to Sloan Series 900 Hydraulic Flushometer

Installation requires 3-gang Electrical Box (6¹/₁₆" long x 4¹/₂" wide x 1⁵/₈" deep) and 2-gang Cover Plate (3/4" raised max. x 4³/₄" high x 7¹/₁₆" long) - NOT supplied by Sloan.

See Hydraulic Flushometer Specification pages in this section for details on Hydraulically Operated Flushometers.



This space for Architect/Engineer approval

The information contained in this document is subject to change without notice.

SLOAN

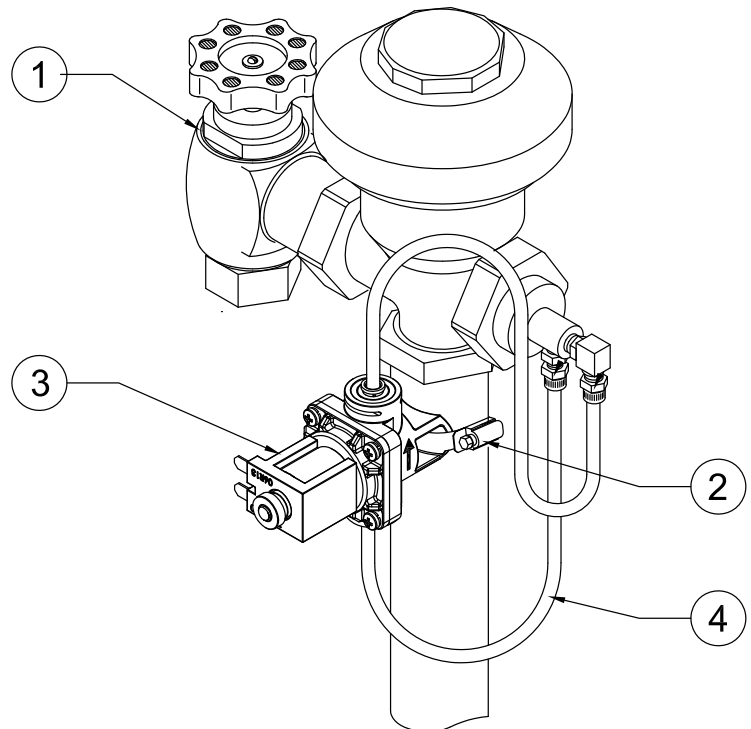
Made in the U.S.A.

SLOAN VALVE COMPANY • 10500 SEYMOUR AVE. • FRANKLIN PARK, IL 60131
PHONE: 1-800 982-5839 • FAX: 1-800 447-8329 • <http://www.sloanvalve.com>

© Copyright 1997 SLOAN VALVE COMPANY Printed in U.S.A.

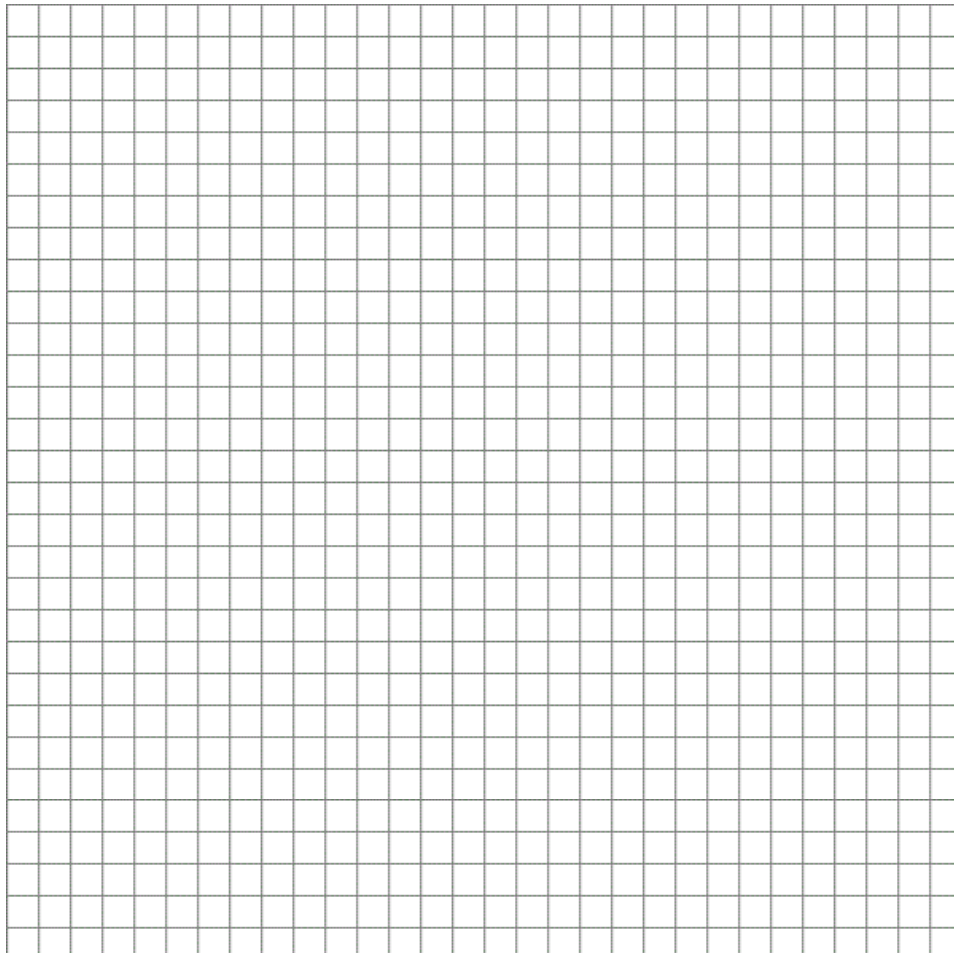
ELECTRONIC FLUSH VALVE ACTUATOR

ITEM#	DESCRIPTION	PART#
1	FLUSHOMETER (SOLD SEPARATE)	N/A
2	HOSE CLAMP, STAINLESS STEEL	980617
3	VALVE ASSEMBLY, 24V EFV	980630
4	1/4" PLENUM TUBING, (2) 12" SECTIONS	390010

P/N: 980635

FOR POWER SUPPLY TRANSFORMERS AND WIRING: SEE SECTION 1
 ELECTRONIC VALVE ASSEMBLIES: SEE SECTION 6
 FOR PUSH BUTTONS: SEE SECTION 12

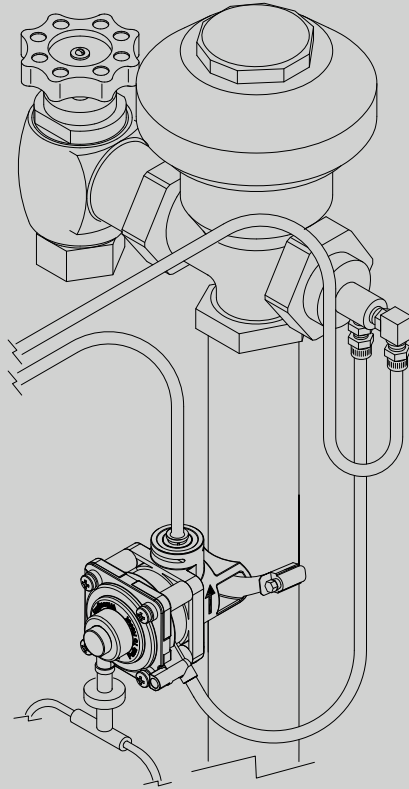
NOTES:



PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION

14

TOILET OVERFLOW PREVENTER (T4) VALVE ASSEMBLIES

THESE ITEMS:

TOILET OVERFLOW PREVENTER (T4) _____

TOILET OVERFLOW PREVENTER - AUTO-RESET (T4A) _____

BEGIN ON PAGE:

120

122

T4 Toilet Overflow Preventer

Recommended Specifications

Toilet overflow preventer shall be: Willoughby Model No. T4

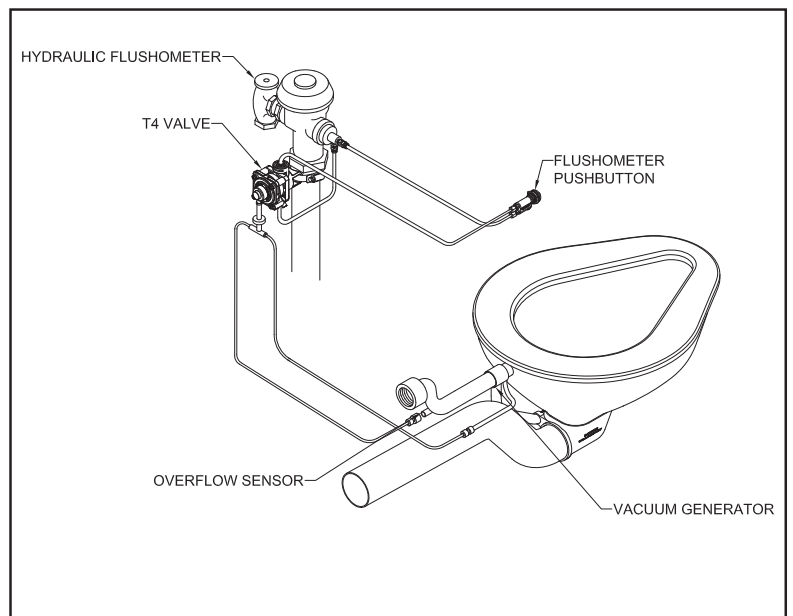
The toilet overflow preventer shall be installed on a Willoughby toilet or combination toilet/lavatory fixture to prevent overflow. The unit shall consist of a vacuum operated disabler, a vacuum generator and an overflow sensor.

The vacuum generator and overflow sensor shall be factory installed in all specially modified fixtures. The disabler valve shall be installed in the control circuit of a hydraulic flushometer. Vacuum connections between the disabler valve and the fixture shall be polyethylene tubing.

After a backup, the unit shall be manually reset by a push button on the disabler valve. The unit shall allow no overflow and require no outside power source.

Applications

The toilet overflow preventer is recommended for facilities with high vandalism (prisons, parks, schools, etc.) and is normally used in conjunction with a back supply toilet or combination unit where an accessible pipe chase is provided.



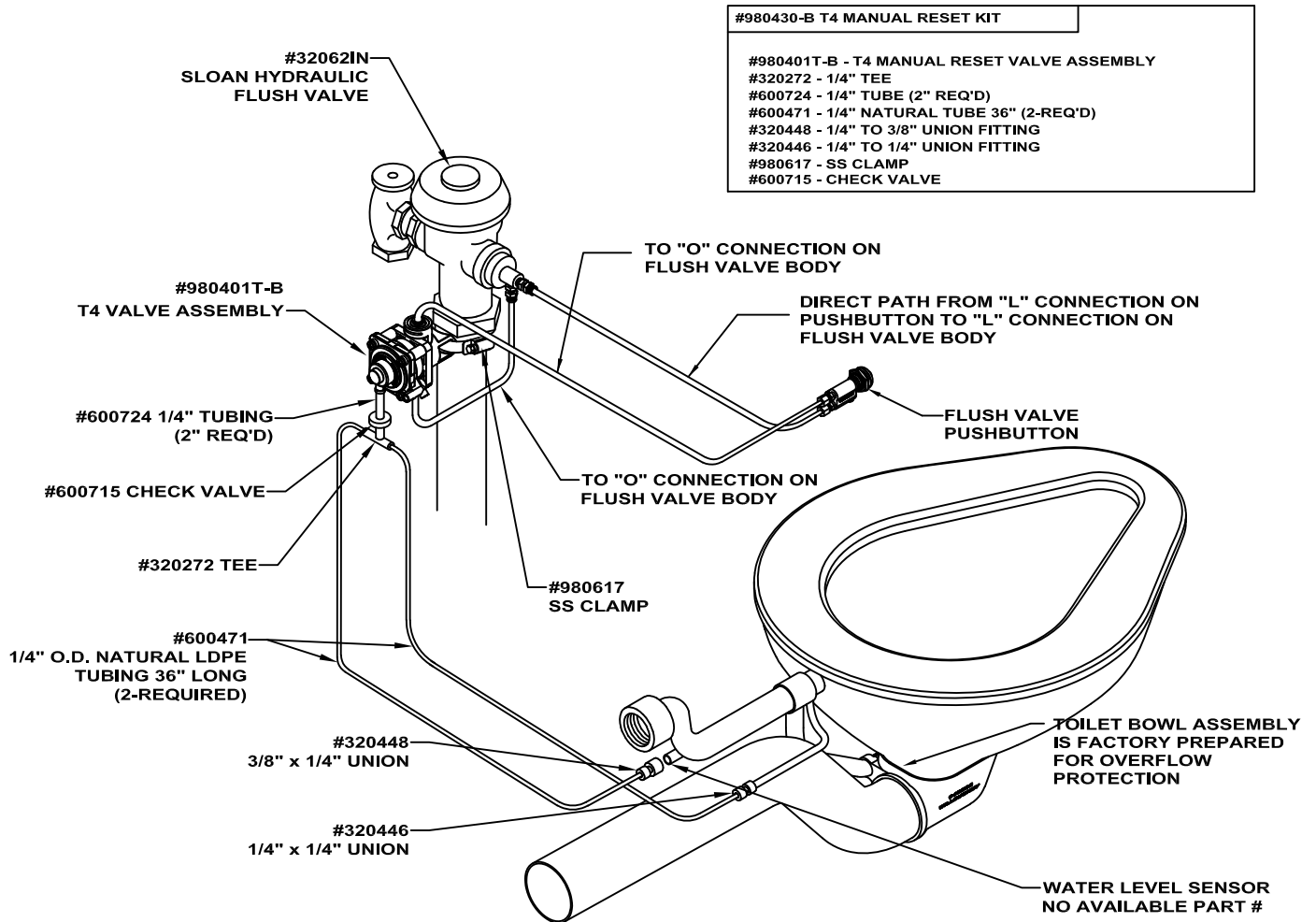
Operation

During each flush cycle, water flowing through the fixture produces a vacuum at the vacuum generator. Normally, this vacuum is drawn unrestricted through the overflow sensor.

Should the water level in the bowl rise due to intentional blocking of the drain or a clog downstream of the fixture, it will cover the opening of the sensor.

When water is drawn into the sensor, the majority of the vacuum will be redirected to the disabler valve. The disabler valve is normally open vacuum operated installed in the control circuit of a hydraulic flushometer. The vacuum closes the disabler valve thereby preventing any additional flushes until the unit is manually reset.

T4 TOILET OVERFLOW PREVENTER



THE WILLOUGHBY "TOP-FOUR" TOILET OVERFLOW PREVENTER IS DESIGNED TO PREVENT A TOILET FROM OVERFLOWING. IT IS RECOMMENDED FOR FACILITIES WITH HIGH VANDALISM (PRISONS, PARKS, SCHOOLS, ETC...) AND IS NORMALLY USED IN CONJUNCTION WITH COMBINATION UNITS AND BACK SUPPLY TOILETS WHERE AN ACCESSIBLE PIPE CHASE IS PROVIDED. UNIT HAS MANUAL RESET BUTTON.

T4A Toilet Overflow Preventer with Auto-Reset

Recommended Specifications

Auto-reset toilet overflow preventer shall be:
Willoughby Model No. **T4A**

The toilet overflow preventer shall be installed on a Willoughby toilet or combination toilet/lavatory fixture to prevent overflow.

The unit shall consist of a vacuum operated disabler, a vacuum generator, an overflow sensor and a float sensor canister. The vacuum generator and overflow sensor shall be factory installed in all specially modified fixtures. The disabler valve shall be installed in the control circuit of a hydraulic flushometer. Vacuum connections between the disabler valve and the fixture shall be polyethylene tubing.

After a backup, the unit shall automatically reset by the lowering of the water in the toilet bowl to normal level. The unit shall allow no overflow and require no outside power source.

Applications

The toilet overflow preventer is recommended for facilities with high vandalism (prisons, parks, schools, etc.), and is normally used in conjunction with a back supply toilet or combination unit where an accessible pipe chase is provided.

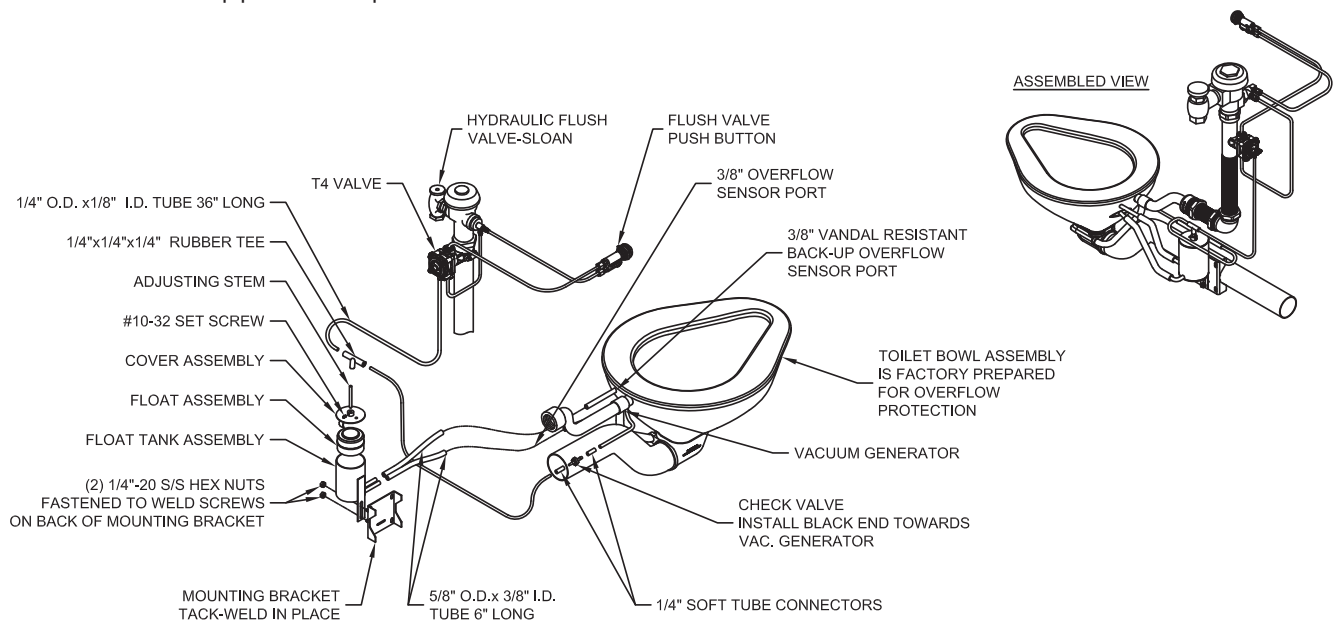
Operation

During each flush cycle, water flowing through the fixture produces a vacuum at the vacuum generator. Normally, this vacuum is drawn unrestricted through the overflow sensor.

Should the water level in the bowl rise due to intentional blockage or down stream obstruction, water covers the overflow sensor port and fills the float canister. The float rises and directs the vacuum to the disabler valve.

The disabler valve is normally open vacuum operated valve installed in the control circuit of a hydraulic flushometer. The vacuum closes the disabler valve thereby preventing any additional flushes until the water level in the toilet bowl returns to normal.

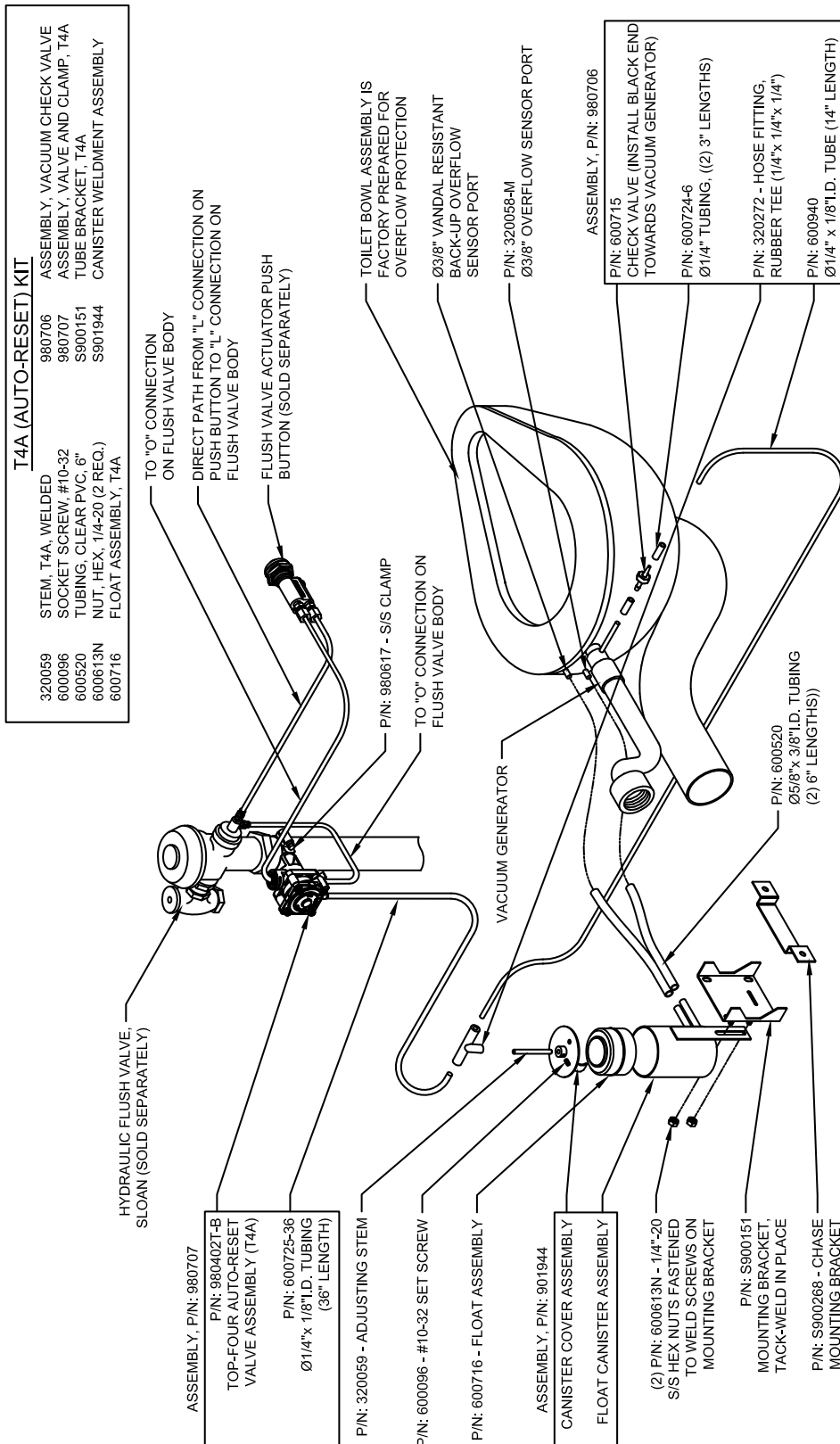
When the water level drops, the float canister drains back to the toilet bowl lowering the float. Once the float lowers to its normal position it permits air to enter the system which opens the disabler valve and allows normal flush operation.



WARNING: Cancer and Reproductive Harm

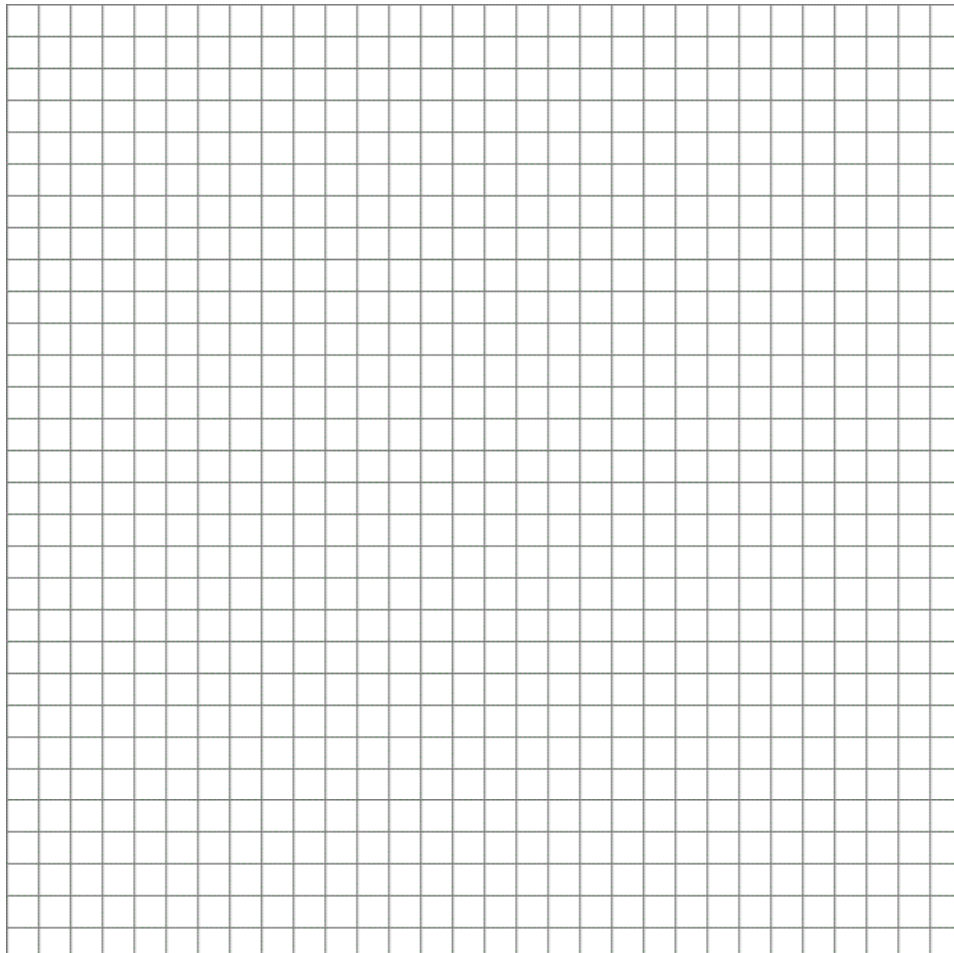
- www.P65Warnings.ca.gov

T4A TOILET OVERFLOW PREVENTER - AUTO-RESET



WILLOUGHBY "TOP-FOUR" TOILET OVERFLOW PREVENTERS ARE DESIGNED TO PREVENT A TOILET FROM OVERFLOWING. IT IS RECOMMENDED FOR FACILITIES WITH HIGH VANDALISM (PRISONS, PARKS, SCHOOLS, ETC...) AND IS NORMALLY USED IN CONJUNCTION WITH COMBINATION UNITS AND BACK SUPPLY TOILETS WHERE AN ACCESSIBLE PIPE CHASE IS PROVIDED. TOP-FOUR-B OVERFLOW PREVENTER UNIT HAS AN AUTOMATIC RESET.

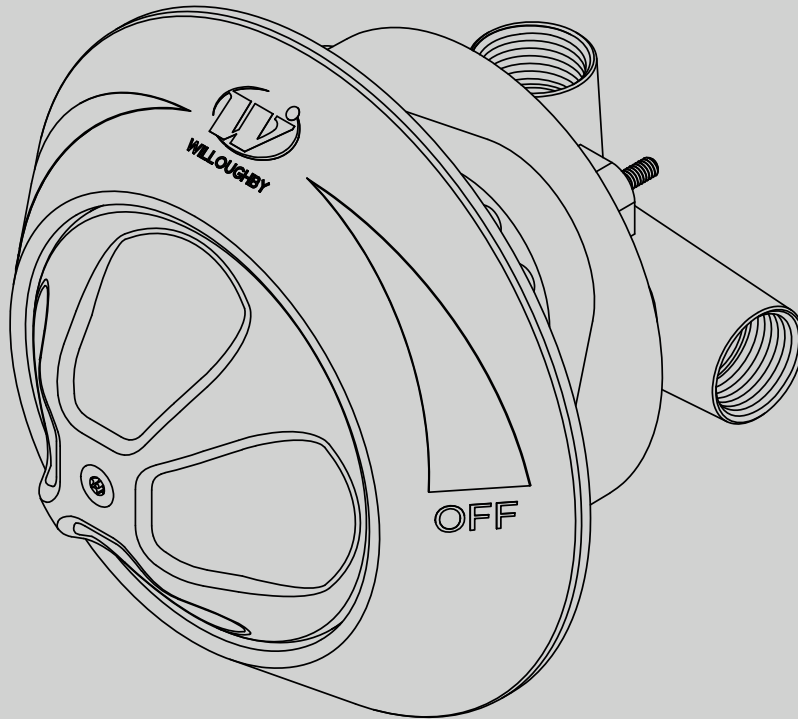
NOTES:



PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION 15

SHOWER MIXING VALVES, DIVERter VALVES, & COMPRESSION VALVES

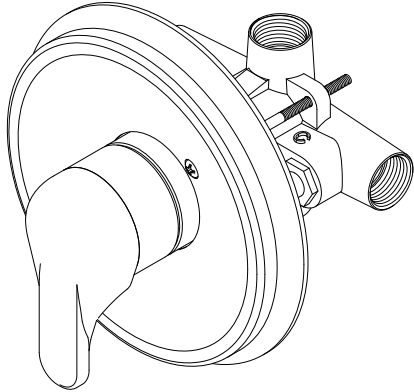
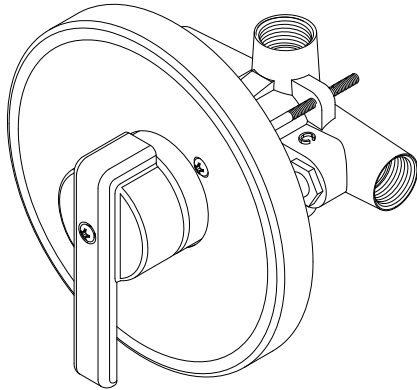
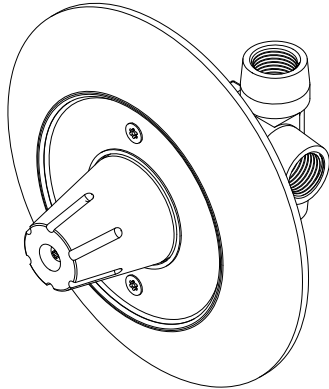
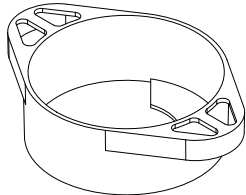
THESE ITEMS:

SHOWER TEMPERATURE/PRESSURE-BALANCING &
PRESSURE-BALANCING MIXING VALVES _____
SHOWER DIVERter VALVES _____
COMPRESSION SHOWER VALVES _____

BEGIN ON PAGE:

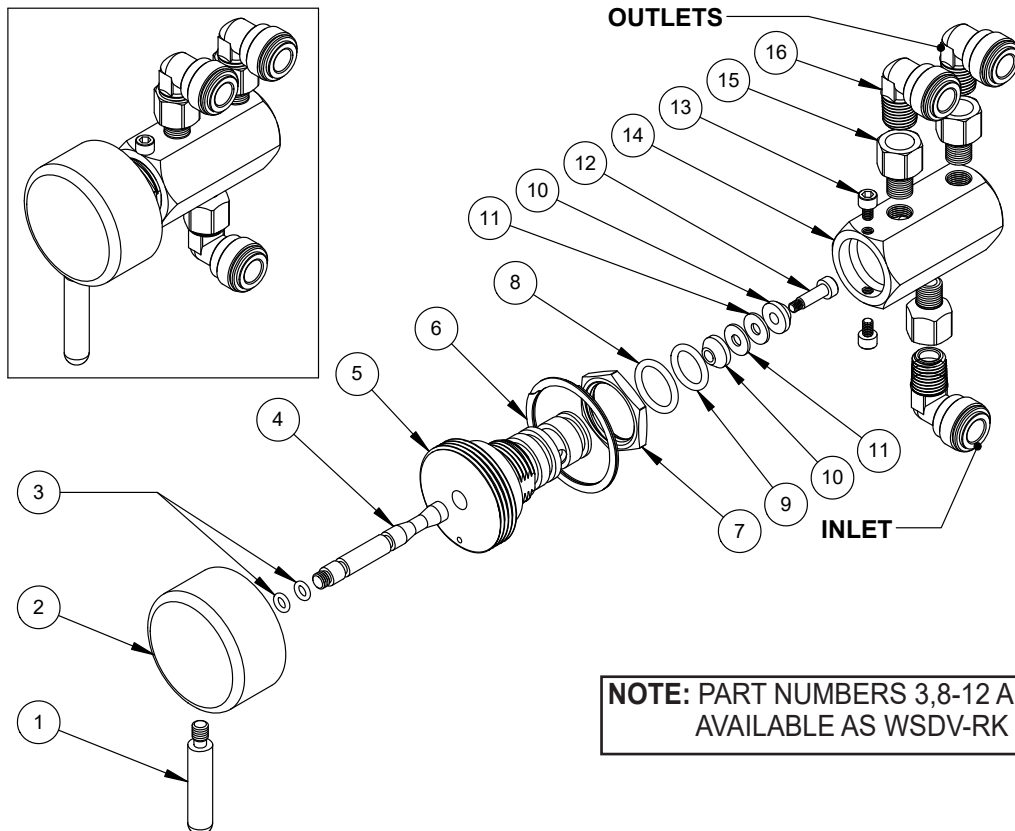
126
128
130

MIXING VALVES ASSEMBLIES

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 700720</p> <p>(TPV) TEMPERATURE/ PRESSURE-BALANCING SHOWER MIXING VALVE</p>	
	<p>P/N: P902G</p> <p>(PBV) PRESSURE-BALANCING SHOWER MIXING VALVE</p>	
	<p>P/N: 700340</p> <p>(PBLR) LIGATURE-RESISTANT PRESSURE-BALANCING SHOWER MIXING VALVE</p>	
	<p>P/N: 900-119</p> <p>THIN-WALL MOUNTING BRACKET, (TPV) (TPLR)</p>	

DIVERTER VALVES WILLOUGHBY STANDARD

(DV) STANDARD SHOWER DIVERTER VALVE - P/N: WSDV

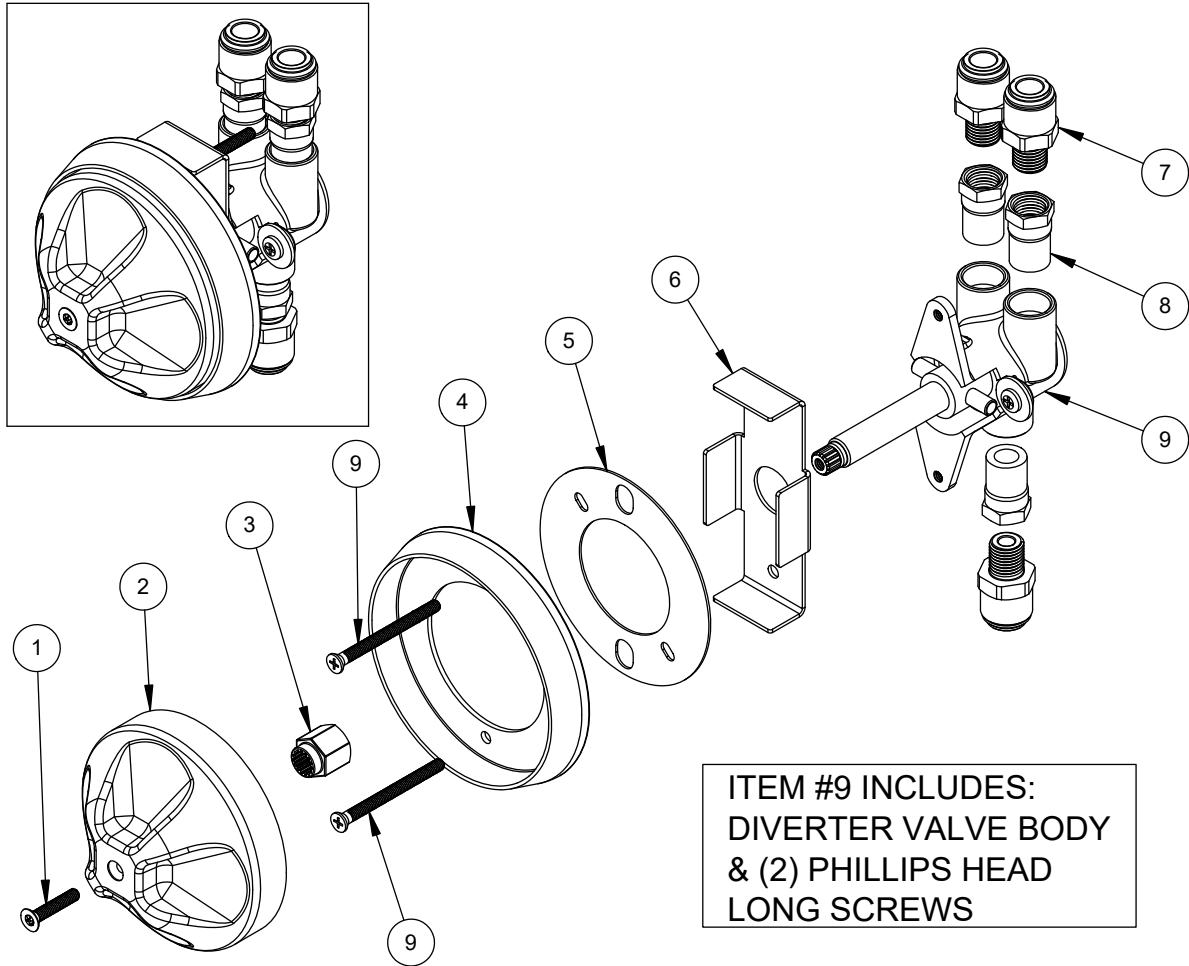


ITEM #	PART #	DESCRIPTION	QTY.
1	200171	HANDLE, DIVERTER VALVE S/S	1
2	200169	KNOB, DIVERTER VALVE S/S	1
3	600115	O-RING (#008), .176ID X .070W, SELF LUBE	2
4	600034	STEM, WMDV MIX / DIVERTER VALVE	1
5	600599	SLEEVE, WMDV MIX / DIVERTER VALVE	1
6	380054	RING, SPIRAL RETAINING S/S, 1-3/4" INTERNAL	1
7	600612N	HEXNUT, 3/4"-14 NPSM	1
8	600114	O-RING (#115)	1
9	600113	O-RING (#113)	1
10	600175	WASHER, FAUCET- TAPERED "00"	2
11	600220	WASHER, TEFLON	2
12	540014	SCREW, SHOULDER SOCKET HEAD, #8-32 THREAD, S/S, 3/16" x 1/2"	1
13	540016	CAP SCREW, SOCKET HEAD, S/S, #8-32 X 5/16"	2
14	600607	VALVE BODY, WMDV MIX / DIVERTER VALVE	1
15	320546	ADAPTER, 1/4" FPT x 1/8" MPT	3
16	320402	ELBOW, 1/4" NPTF MALE X 3/8" TUBE PUSH-TO-CONNECT	3

FOR ELBOWS, TUBING, HOSES, OR OTHER COMPONENTS : SEE SECTION 1

DIVERter VALVES WILLOUGHBY LIGATURE-RESISTANT

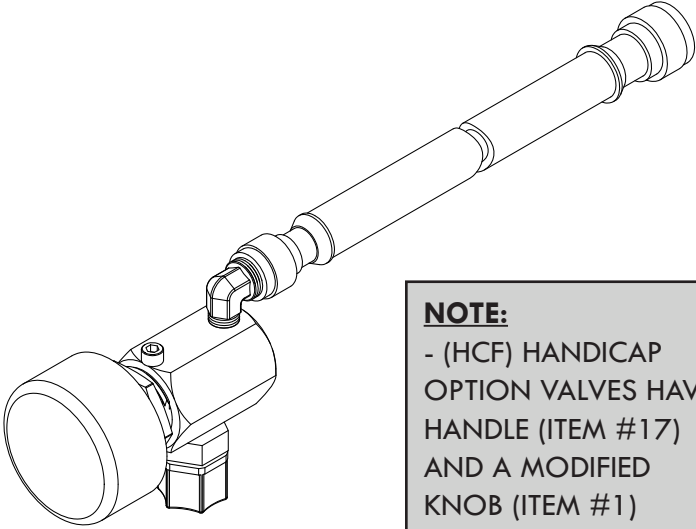
(DVLR) LIGATURE-RESISTANT DIVERter VALVE - P/N: 701505



ITEM #	PART #	DESCRIPTION	QTY.
1	540013	SCREW #10-32 X 1" FH PIN TORX	1
2	701499	SHOWER HANDLE, LIGATURE RESISTANT HANDLE SET, WILLOUGHBY	1
3	701508	INSERT, BRASS, DVLR HANDLE	1
4	701510	ESCUTCHEON, DVLR, LIGATURE RESISTANT DIVERter VALVE	1
5	320016	GASKET, SHOWER HANDLE ESCUTCHEON	1
6	S901959	BRACKET, DVLR, DIVERter VALVE ASSM.	1
7	320429	TUBE FITTING, ADAPTOR, 3/8 TUBE X 1/4 MPT	3
8	701509	FITTING, SWEAT, 1/4-18 NPT X 1/2" TUBE	3
9	701506	DIVERter VALVE, POWERS 3-WAY, DVLR	1

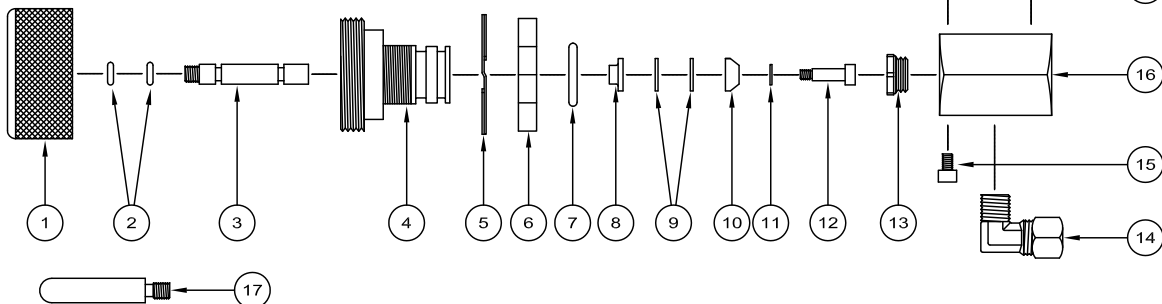
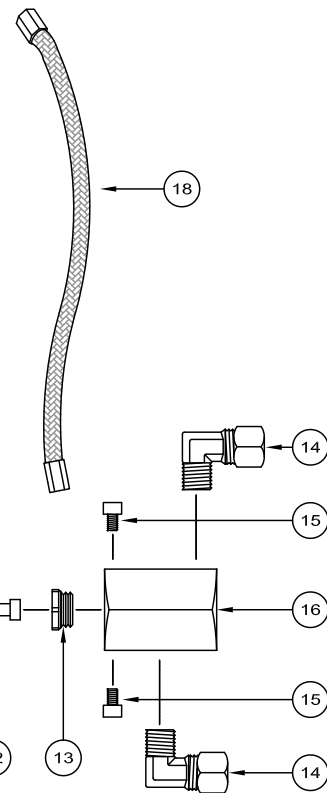
FOR ELBOWS, TUBING, HOSES, OR OTHER COMPONENTS : SEE SECTION 1

COMPRESSION VALVES WILLOUGHBY STANDARD

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	P/N: WCV1F COMPRESSION VALVE, SINGLE TEMP.	
	P/N: WCV2F COMPRESSION VALVE, DUAL TEMP.	
	P/N: WCV1HCF COMPRESSION VALVE, SINGLE TEMP, HANDICAP OPTION	
	P/N: WCV2HCF COMPRESSION VALVE, DUAL TEMP, HANDICAP OPTION	

NOTE:
- (HCF) HANDICAP
OPTION VALVES HAVE
HANDLE (ITEM #17)
AND A MODIFIED
KNOB (ITEM #1)

#	QTY	UM	PART #	DESCRIPTION
1	1	EA	200167	KNOB, SECURITY VALVE, S/S
2	2	EA	600115	O-RING, SIZE #008, 0.176" ID x 0.070" W
3	1	EA	600033	STEM, WCV COMPRESSION VALVE, S/S
4	1	EA	600603	SLEEVE, WCV COMPRESSION VALVE, BRASS
5	1	EA	380054	RING, SPIRAL RETAINING, S/S
6	1	EA	600612N	LOCKNUT, 3/4" NPT, BRASS
7	1	EA	600114	O-RING, SIZE #115, 0.674" ID x 0.103" W
8	1	EA	600610	WASHER SPACER, WCV COMP. VALVE, S/S
9	2	EA	600220	WASHER, 3/16" I.D. x 1/2" O.D., TEFLON
10	1	EA	600175	WASHER, TAPERED FAUCET, RUBBER
11	1	EA	600218	WASHER, 3/16" I.D. x 5/16" O.D., NYLON
12	1	EA	540014	SCREW, 3/16" OD x 1/2" SHOULDER, S/S
13	1	EA	380897	VALVE SEAT, NYLON W/ O-RING
14	2	EA	320601	ELBOW, 3/8" COMP. x 1/8" MPT, BRASS
15	2	EA	540016	CAP SCREW, #8-32 x 5/16" SCKT HD, S/S
16	1	EA	600608	VALVE BODY, WCV COMP. VALVE, BRASS
17	1	EA	200171	HANDLE- DIVERTER VALVE
18	1	EA	320508	FLEX HOSE

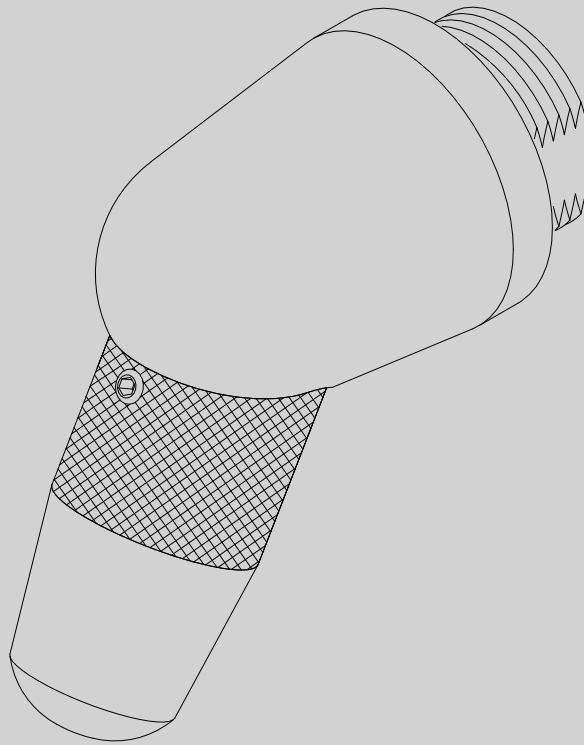


PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION 16



SHOWER HEAD ASSEMBLIES & PARTS

THESE ITEMS:

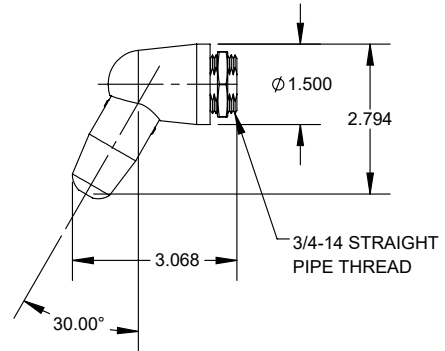
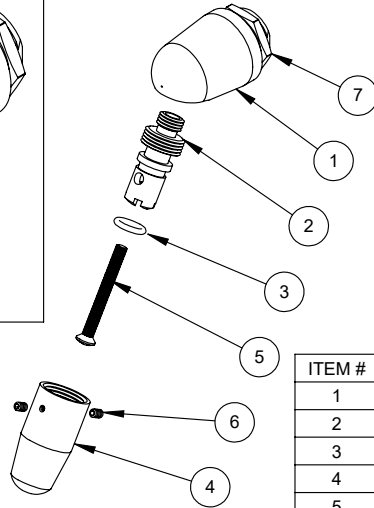
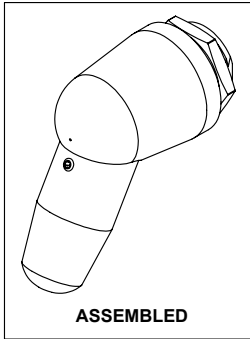
APS	USER ADJUSTABLE SHOWER HEADS _____
NPS	NON-USER ADJUSTABLE SHOWER HEADS _____
CSH	LIGATURE-RESISTANT SHOWER HEADS _____
LBJ	LOCKABLE BALL JOINT SHOWER HEADS _____
UBJ	UNIVERSAL BALL JOINT SHOWER HEADS _____
FX	HAND-HELD FLEXSHOWER HEAD ASSEMBLIES _____

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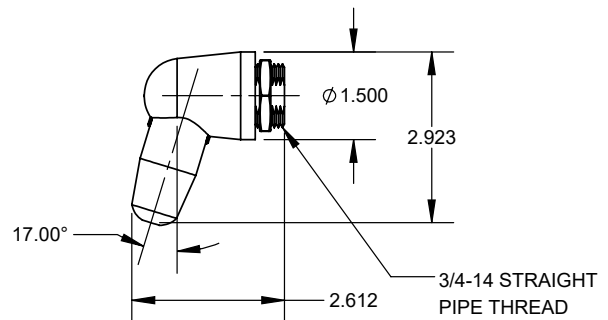
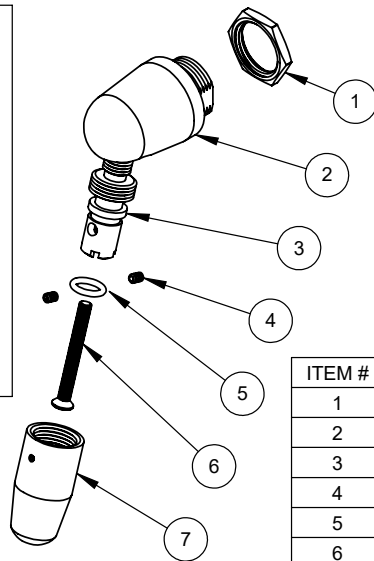
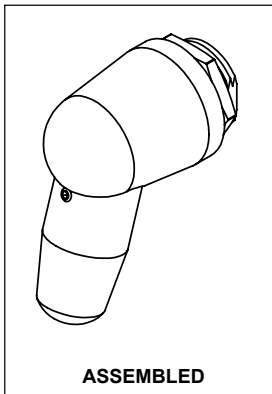
APS USER ADJUSTABLE SHOWER HEADS (WSH-5D)

(APS) 30° SPRAY ANGLE - P/N: 380025



ITEM #	PART #	DESCRIPTION	QTY.
1	380007	WSH-5D SHOWERHEAD BASE 30°	1
2	380018	NOZZLE ORIFICE, WSH-5	1
3	600120	O-RING (#111) #77035-R .424"ID	1
4	380013	SHOWERHEAD CAP, WSH-5	1
5	540012	SCREW, #10-32 X 2", STAINLESS STEEL	1
6	540010	#8-32 SET SCREW	2
7	600612N	HEXNUT, 3/4"-14 NPSM	1

(APS17) 17° SPRAY ANGLE - P/N: 380026

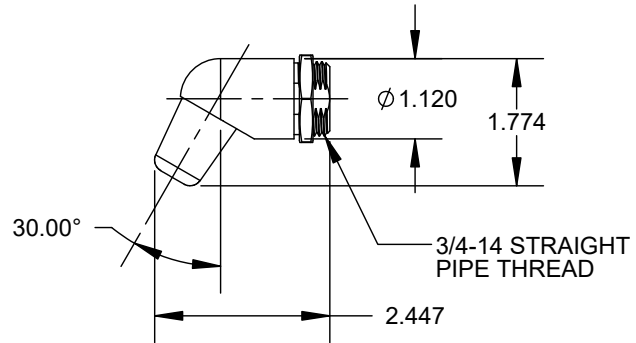
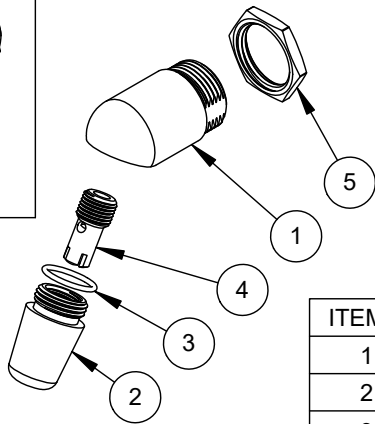
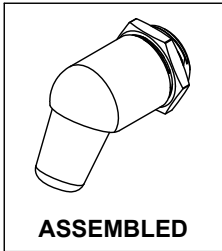


ITEM #	PART #	DESCRIPTION	QTY.
1	380008	WSH-5D SHOWERHEAD BASE 17°	1
2	380018	NOZZLE ORIFICE, WSH-5	1
3	600120	O-RING (#111) #77035-R .424"ID	1
4	380013	SHOWERHEAD CAP, WSH-5	1
5	540012	SCREW, #10-32 X 2", STAINLESS STEEL	1
6	540010	#8-32 SET SCREW	2
7	600612N	HEXNUT, 3/4"-14 NPSM	1

FOR ELBOWS, TUBING, NUTS, PLATES, OR OTHER COMPONENTS : SEE SECTION 1

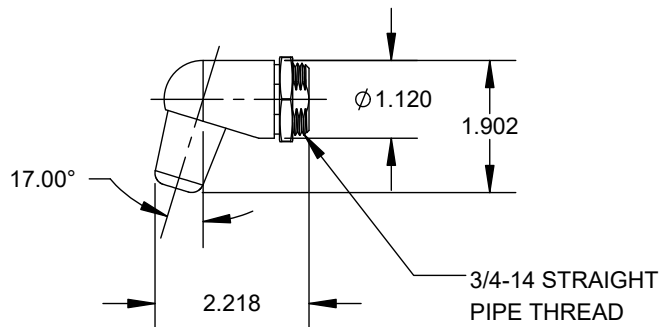
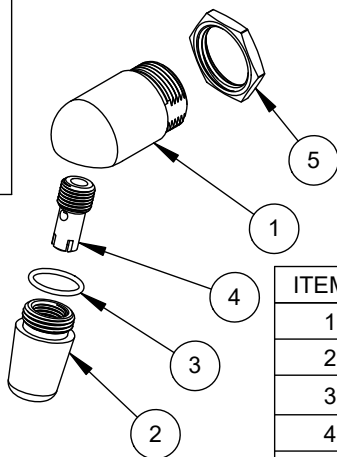
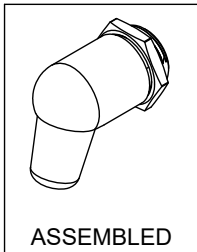
NPS NON-USER ADJUSTABLE SHOWER HEADS (WSH-7)

(NPS) 30° SPRAY ANGLE - P/N: 370098



ITEM #	PART #	DESCRIPTION	QTY.
1	380029	SHOWER HEAD BASE - 30 DEG.	1
2	380032	SHOWERHEAD CAP	1
3	600131	O-RING (#017) EPDM NSF61	1
4	380031	SHOWERHEAD INSERT	1
5	600612N	HEXNUT, 3/4"-14 NPSM	1

(NPS17) 17° SPRAY ANGLE - P/N: 380011



ITEM #	PART #	DESCRIPTION	QTY.
1	380010	SHOWER HEAD BASE - 17 DEGREE	1
2	380032	SHOWERHEAD CAP	1
3	600131	O-RING (#017) EPDM NSF61	1
4	380031	SHOWERHEAD INSERT	1
5	600612N	HEXNUT, 3/4"-14 NPSM	1

FOR ELBOWS, TUBING, NUTS, PLATES, OR OTHER COMPONENTS : SEE SECTION 1

NPS NON-USER ADJUSTABLE SHOWER HEADS (WSH-7)

(CMSH) CEILING MOUNTED - P/N: 370098CM

P/N: S005435 **(SEPARATE)**
 MOUNTING PLATE, 14 GA.
 STAINLESS STEEL, 5" x 5"
 W/ (4) Ø5/16" MOUNTING
 HOLES ON 3" CENTERS

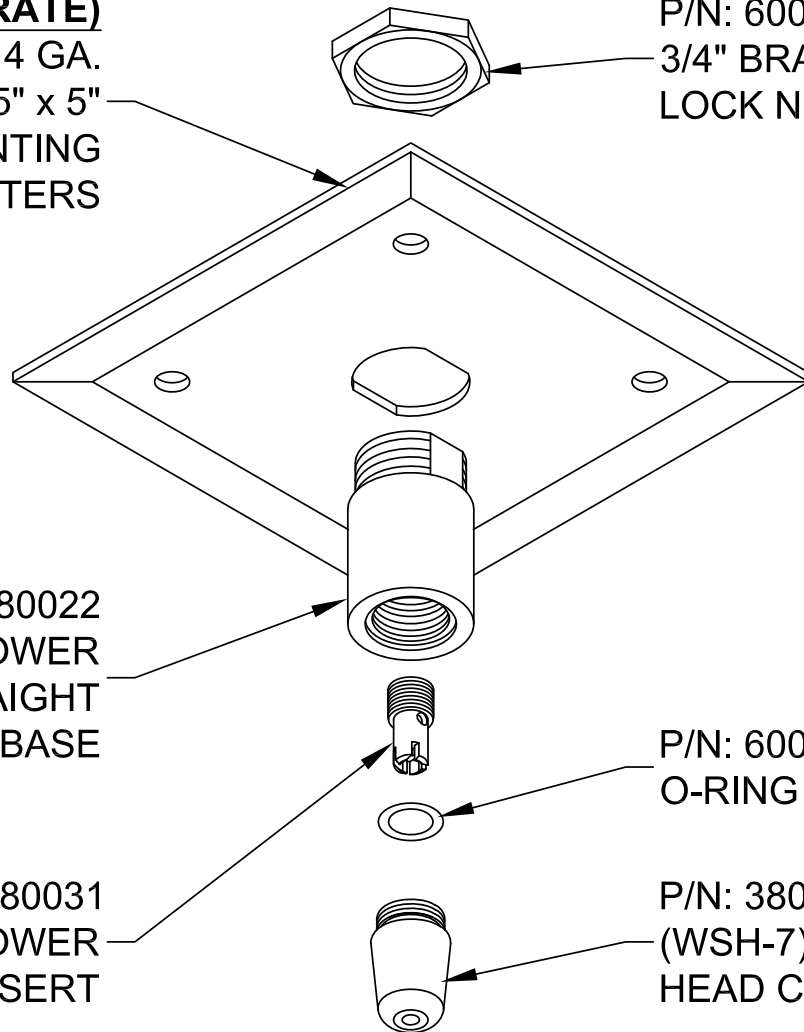
P/N: 600612N
 3/4" BRASS
 LOCK NUT

P/N: 380022
 (WSH-7) SHOWER
 HEAD W/ STRAIGHT
 (NON-ANGLED) BASE

P/N: 600131
 O-RING

P/N: 380031
 (WSH-7) SHOWER
 HEAD INSERT

P/N: 380032
 (WSH-7) SHOWER
 HEAD CAP



FOR ELBOWS, TUBING, NUTS, PLATES, OR OTHER COMPONENTS : SEE SECTION 1

CSH LIGATURE-RESISTANT HEMISPHERICAL SHOWER HEADS

(CSH) 30° SPRAY ANGLE - P/N: 380069A

ITEM #	PART #	DESCRIPTION	QTY.
1	380070	HEMISPHERIC SHOWERHEAD BASE, 30°	1
2	980182	O-RING, 1/16 SQR, 7/16IN ID, BUNA-N	1
3	380072	SHOWER HEAD INSERT	1
4	540013	SCREW #10-32 X 1" FH PIN TORX	1
5	600612N	HEXNUT, 3/4"-14 NPSM	1

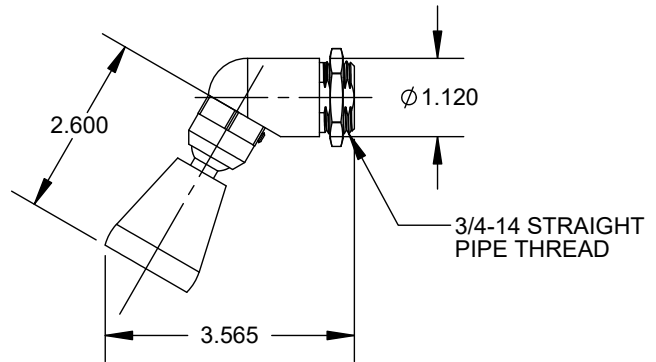
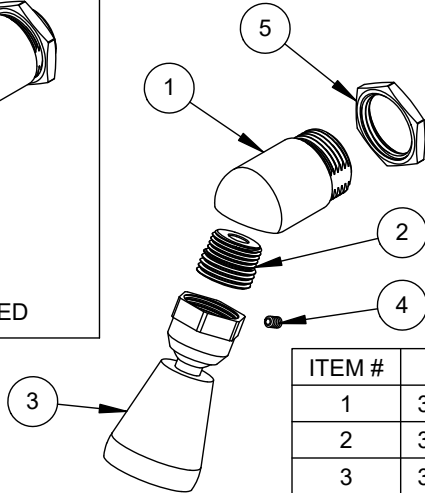
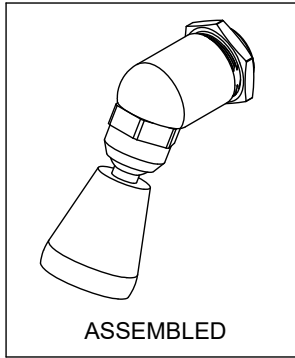
(CSH17) 17° SPRAY ANGLE - P/N: 380024

ITEM #	PART #	DESCRIPTION	QTY.
1	380064	HEMISPHERIC SHOWER HEAD 17	1
2	980182	O-RING, 1/16 SQR, 7/16IN ID, BUNA-N	1
3	380072	SHOWER HEAD INSERT	1
4	540013	SCREW #10-32 X 1" FH PIN TORX	1
5	600612N	HEXNUT, 3/4"-14 NPSM	1

FOR ELBOWS, TUBING, NUTS, PLATES, OR OTHER COMPONENTS : SEE SECTION 1

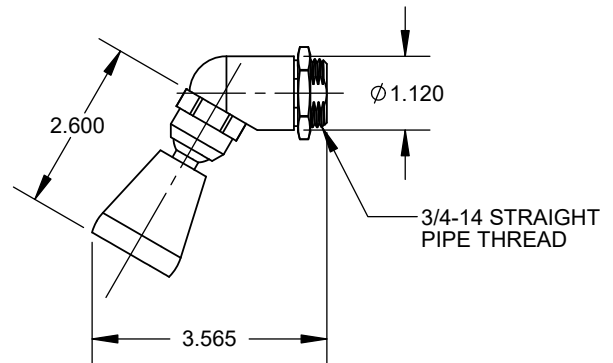
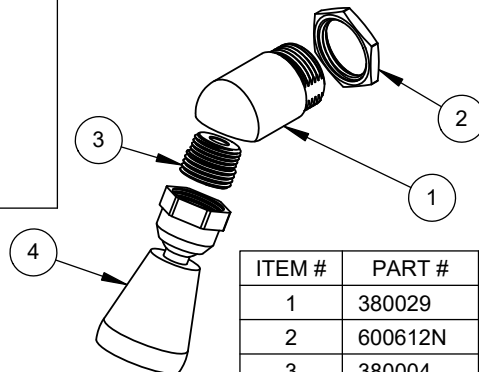
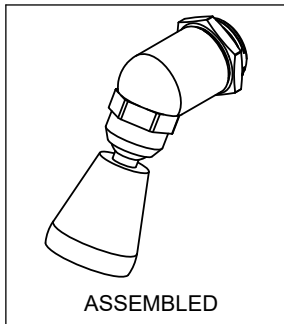
LBJ / UBJ BALL JOINT SHOWER HEADS

(LBJ) LOCKABLE BALL JOINT - P/N: 380028



ITEM #	PART #	DESCRIPTION	QTY.
1	380029	SHOWER HEAD BASE - 30 DEG.	1
2	380004	THREADED SWIVEL ADAPTER	1
3	380020	UNIVERSAL BALL JOINT SHOWERHEAD	1
4	540010	#8-32 SET SCREW	1
5	600612N	HEXNUT, 3/4"-14 NPSM	1

(UBJ) UNIVERSAL BALL JOINT - P/N: 380027

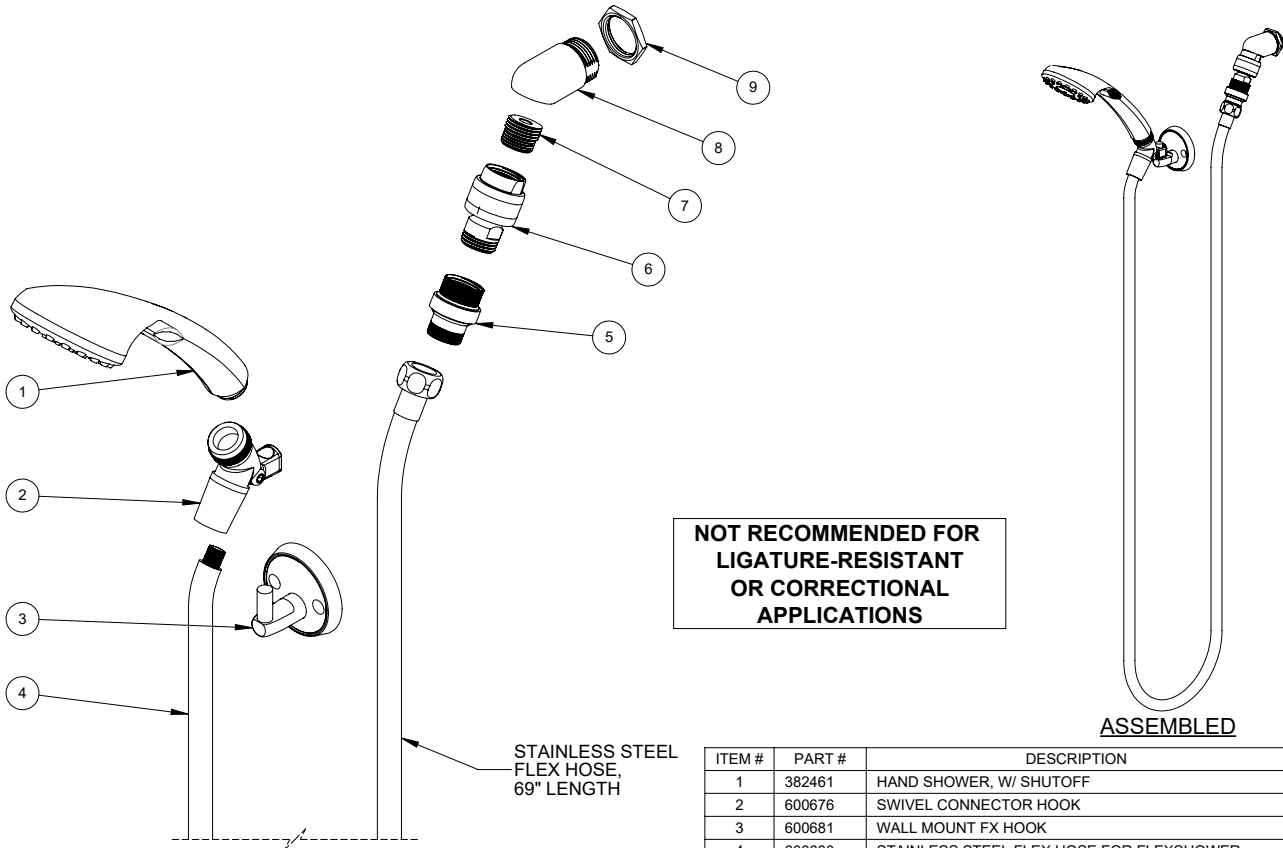


ITEM #	PART #	DESCRIPTION	QTY.
1	380029	SHOWER HEAD BASE - 30 DEG.	1
2	600612N	HEXNUT, 3/4"-14 NPSM	1
3	380004	THREADED SWIVEL ADAPTER	1
4	380020	UNIVERSAL BALL JOINT SHOWERHEAD	1

FOR ELBOWS, TUBING, NUTS, PLATES, OR OTHER COMPONENTS : SEE SECTION 1

FX HAND-HELD FLEXSHOWER HEAD ASSEMBLIES

(FX)-(ADA) WILLOUGHBY FLEXSHOWER ASSEMBLY - P/N: 382461K



ITEM #'S 1, 2, 4, & 5 AVAILABLE AS P/N: 600692
HAND HELD FLEXSHOWER ASSEMBLY

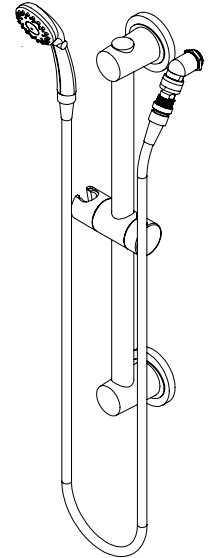
ITEM #	PART #	DESCRIPTION	QTY.
1	382461	HAND SHOWER, W/ SHUTOFF	1
2	600676	SWIVEL CONNECTOR HOOK	1
3	600681	WALL MOUNT FX HOOK	1
4	600680	STAINLESS STEEL FLEX HOSE FOR FLEXSHOWER	1
5	600679	QUICK CONNECTOR	1
6	600675	VACUUM BREAKER- FLEXSHOWER	1
7	380004	THREADED SWIVEL ADAPTER	1
8	380029	SHOWER HEAD BASE - 30 DEG.	1
9	600612N	HEXNUT, 3/4"-14 NPSM	1

SEE NEXT PAGE FOR (FX)-(SLB24) SLIDE BAR OPTION FLEXSHOWER

FX HAND-HELD FLEXSHOWER HEAD ASSEMBLIES

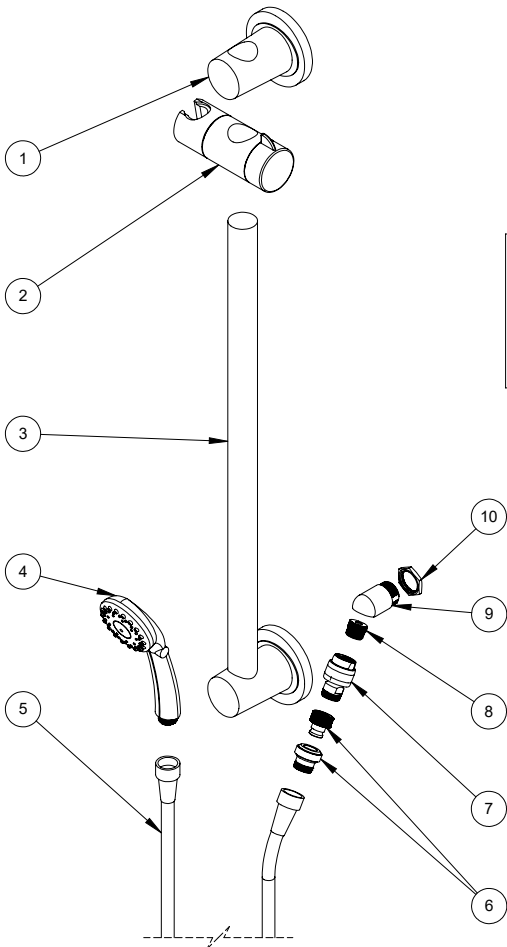
(FX)-(SLB24) SLIDE BAR OPTION FLEXSHOWER - P/N: P201017A

FOR WALL MOUNTED APPLICATIONS



ASSEMBLED VIEW
(NOT TO SCALE)

NOT RECOMMENDED FOR
LIGATURE-RESISTANT
OR CORRECTIONAL
APPLICATIONS



ITEM #	PART #	DESCRIPTION	QTY.
1		SLIDE BAR SHOWER HEAD HOLDER	1
2		22" SLIDE BAR W/ FLEXSHOWER	1
3	600850	SLIDE BAR UPPER HOLDER	1
4		HAND SHOWER W/ SHUTOFF	1
5		FLEX HOSE FOR FLEXSHOWER	1
6	600679	QUICK CONNECTOR	1
7	600675	VACUUM BREAKER- FLEXSHOWER	1
8	380004	THREADED SWIVEL ADAPTER	1
9	380029	SHOWER HEAD BASE - 30 DEG.	1
10	600612N	HEXNUT, 3/4"-14 NPSM	1

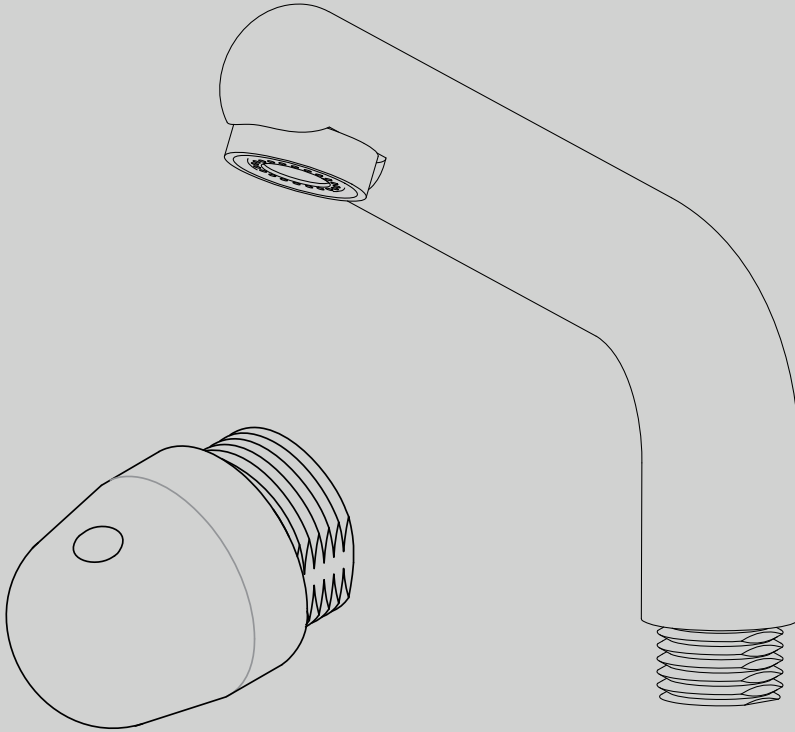
SEE PREVIOUS PAGE FOR **(FX)-(ADA)** WILLOUGHBY FLEXSHOWER

PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION 17



BUBBLERS & SPOUTS

THESE ITEMS:

BUBBLERS/FILLERS VERTICAL MOUNTING _____

BUBBLERS/FILLERS DECK & ANGLED MOUNTING _____

SERVICE SINK SPOUTS _____

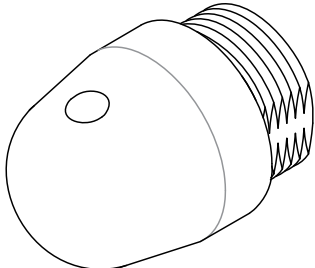
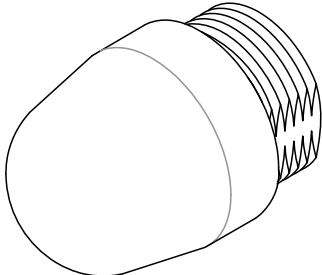
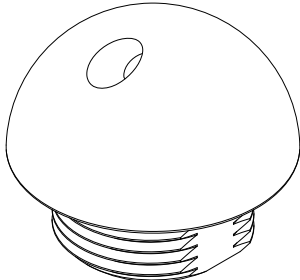
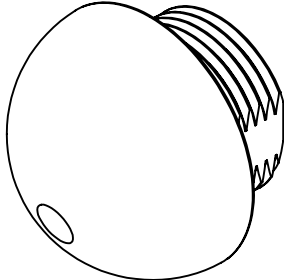
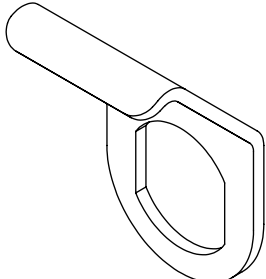
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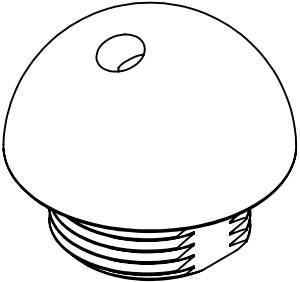
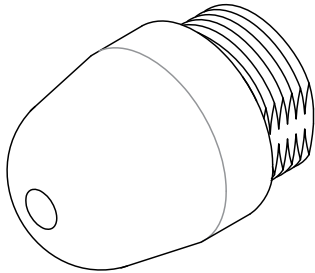
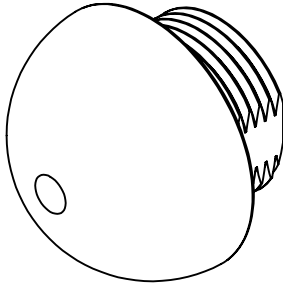
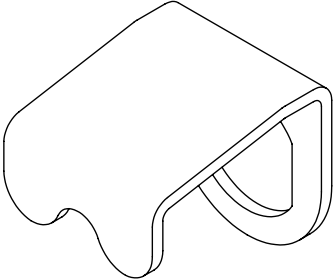
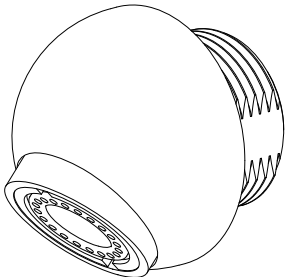
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143

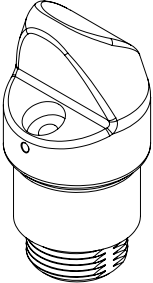
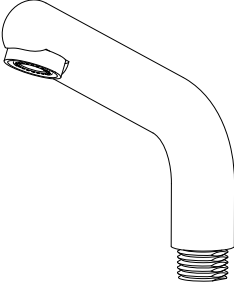
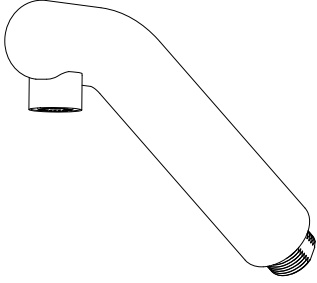
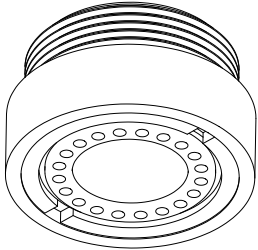
BUBBLERS/FILLERS VERTICAL MOUNTING

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 380045</p> <p>(BP) LAVATORY BUBBLER/ FILLER</p>	
	<p>P/N: 380042</p> <p>(FL) LAVATORY FILLER (HOLE IS ON THE UNDERNEATH SIDE)</p>	
	<p>P/N: 380901</p> <p>(BPH) LIGATURE-RESISTANT LAVATORY BUBBLER/FILLER</p>	
	<p>P/N: 380074</p> <p>(FLH) LIGATURE-RESISTANT LAVATORY FILLER</p>	
	<p>P/N: S301601</p> <p>(BC) CODE BUBBLER MOUTH GUARD (USE W/ P/N: 380045)</p>	

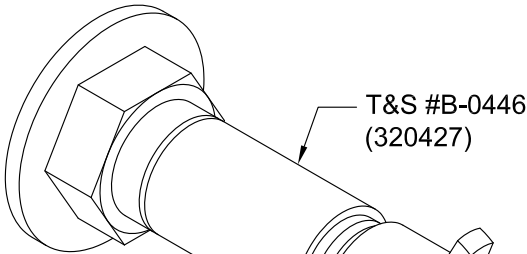
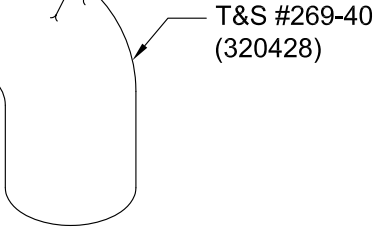
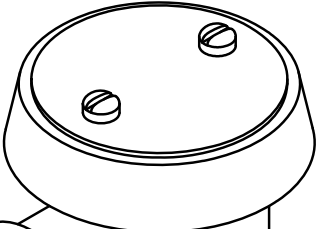
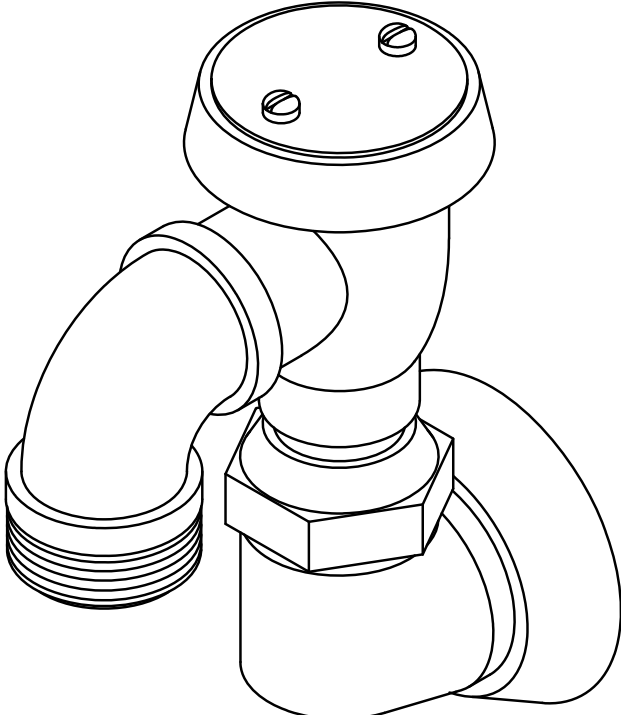
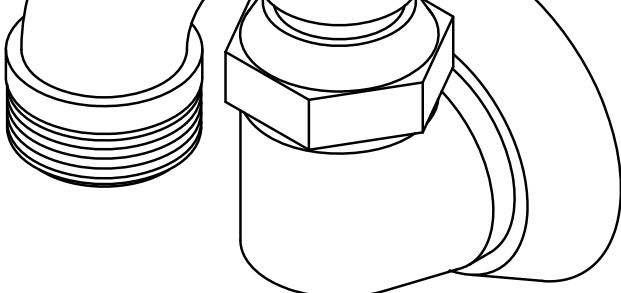
BUBBLERS/FILLERS DECK & ANGLED MOUNTING

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 380074</p> <p>(DMBH/DFBH) LIGATURE-RESISTANT DECK MOUNTED FILLER/DECK MOUNTED DRINKING FOUNTIAN</p>	
	<p>P/N: 380046</p> <p>(SBP) LAVATORY BUBBLER/FILLER, ANGLED MOUNTING</p>	
	<p>P/N: 380902</p> <p>(SBPH) LIGATURE-RESISTANT CENTER HOLE LAVATORY BUBBLER/FILLER</p>	
	<p>P/N: S301602</p> <p>(BC) ANGLED CODE BUBBLER MOUTH GUARD (USE W/ P/N: 380046)</p>	
	<p>P/N: 320157A-ASMB</p> <p>WASHFOUNTAIN SPRAY HEAD</p>	

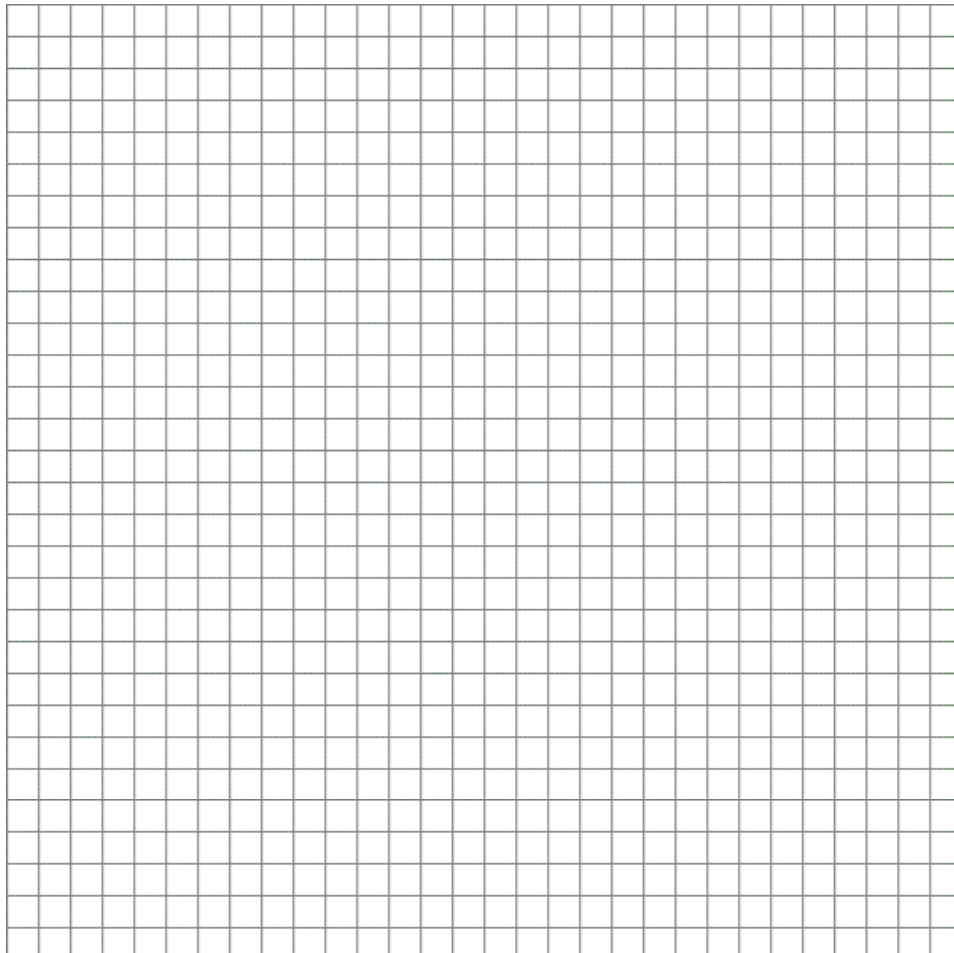
BUBBLERS & SPOUTS DECK MOUNTED

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600585</p> <p>(DB/CDB) COMMERCIAL DECK MOUNTED DRINKING FOUNTAIN BUBBLER</p>	
	<p>P/N: 320424</p> <p>(DMS) DECK MOUNTED SPOUT (INCLUDES P/N: 320157A)</p>	
	<p>P/N: 320426</p> <p>(BMS) ANGLED BACKSPLASH MOUNTED SPOUT (DOES NOT INCLUDE SPRAY HEAD P/N: 320157A)</p>	
	<p>P/N: 320157A</p> <p>SPRAY HEAD, 0.5 GPM</p>	

SERVICE SINK SPOUTS

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 320427</p> <p>(SE) SPOUT FOR SERVICE SINK</p>	
	<p>P/N: 320428</p> <p>(SE) PLAIN END FOR SERVICE SINK</p>	
	<p>P/N: 320422</p> <p>(SHVB) SPOUT W/ VACUUM BREAKER FOR SERVICE SINK, WITHOUT HOSE END</p>	
	<p>P/N: 320422N</p> <p>(SHVB) SPOUT W/ VACUUM BREAKER FOR SERVICE SINK, WITH HOSE END (SHOWN)</p>	
	<p>P/N: 380005</p> <p>SERVICE SINK HOSE END ONLY</p>	

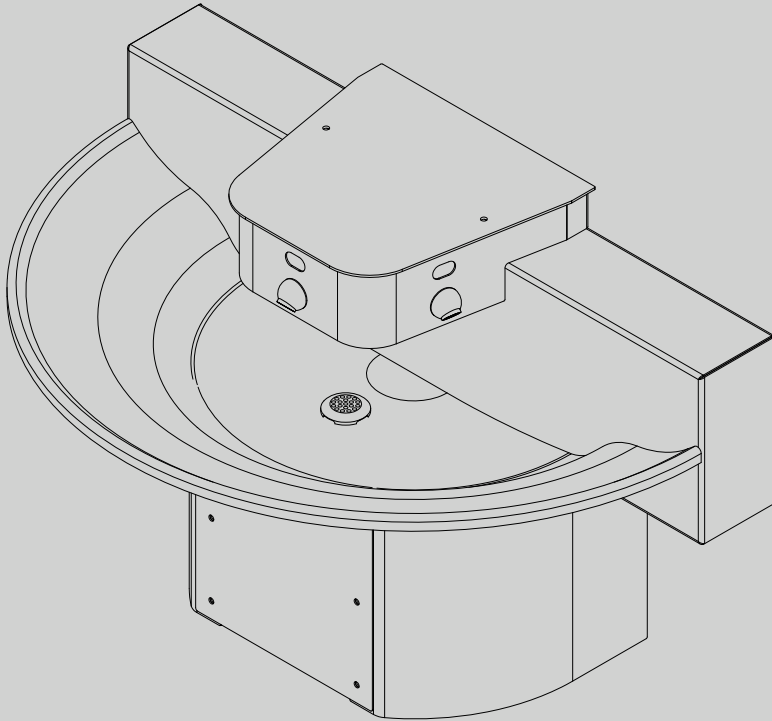
NOTES:



PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION 18

WASHFOUNTAIN & LAVATORY SYSTEM PARTS

THESE ITEMS:

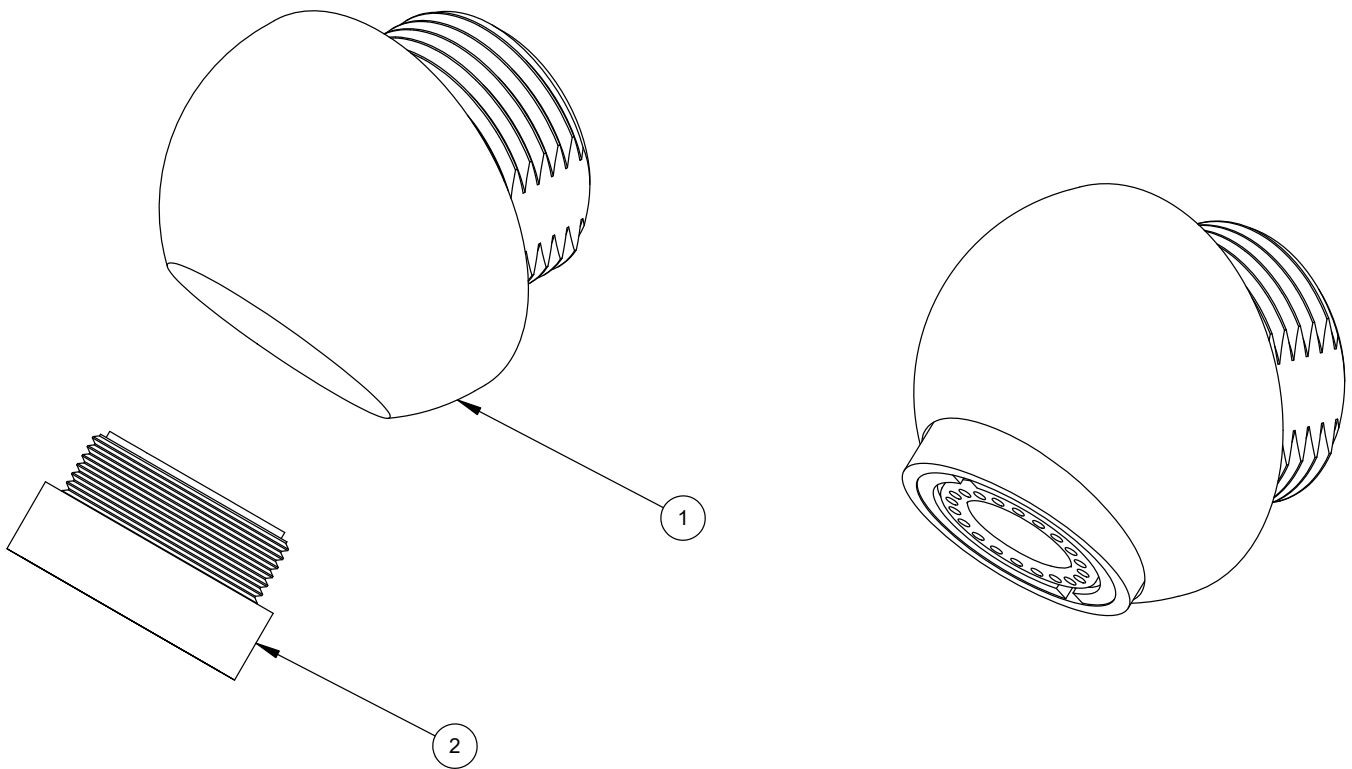
SPRAY HEAD ASSEMBLY _____
WASHFOUNTAIN DRAIN ASSEMBLIES _____
WASHFOUNTAIN-SPECIFIC VALVE ASSEMBLIES _____
LIQUID SOAP DISPENSER COMPONENTS _____

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146
147
148
150

SPRAY HEAD ASSEMBLY 0.5 GPM

WASHFOUNTAIN SPRAY HEAD - P/N: 320157A-ASMB

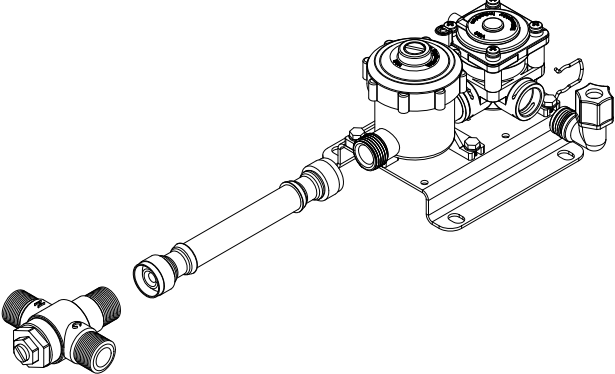
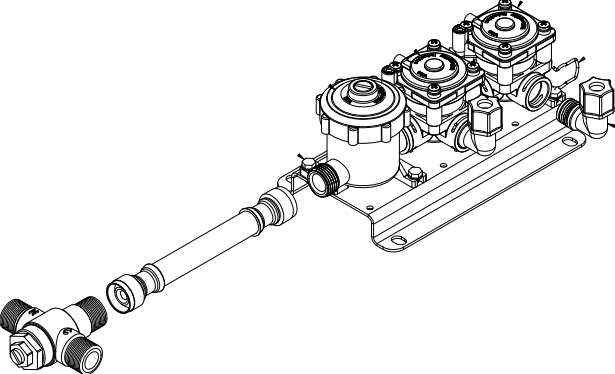
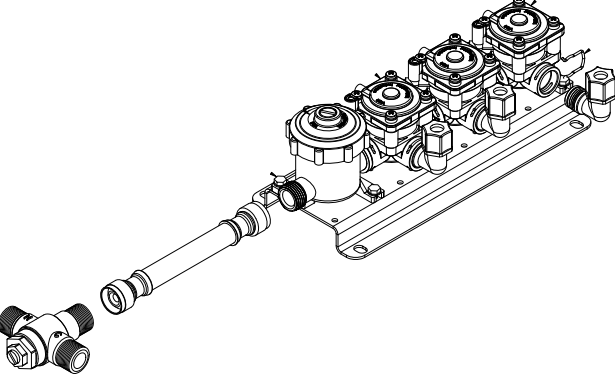


	ITEM #	P/N	DESCRIPTION
	1	800001	SPRAY HEAD BASE, 45 DEG, S/S
	2	320157A	SPRAY HEAD, 0.5 GPM, NON-AERATED

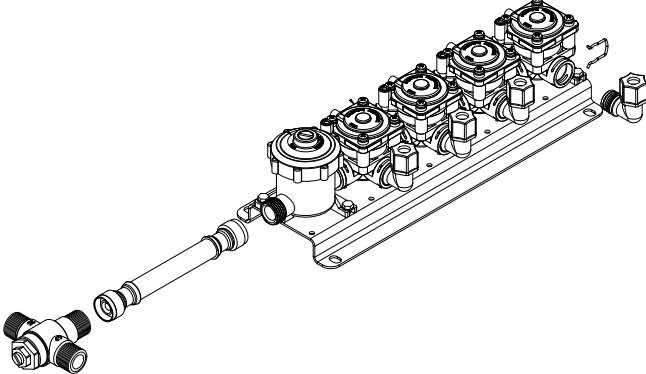
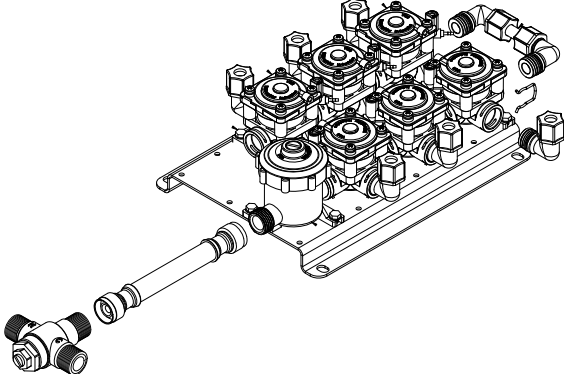
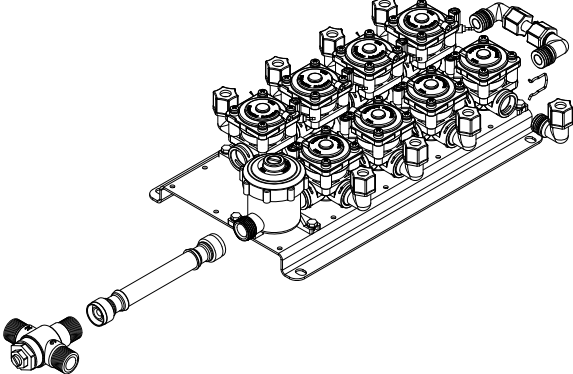
WASHFOUNTAIN DRAIN ASSEMBLIES

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 380283 STAINLESS STEEL DRAIN</p>	
	<p>P/N: 380274 STAINLESS STEEL RUBBER DRAIN WASHER</p>	
	<p>P/N: 380273 STAINLESS STEEL STEEL DRAIN WASHER</p>	
	<p>P/N: 600043 STAINLESS STEEL BRASS LOCKNUT</p>	
	<p>P/N: 380281 SOLID SURFACE WASHFOUNTAIN AND LAV. SYSTEM DRAIN ASSEMBLY</p>	
	<p>P/N: 800083 WAF-2200 WASHFOUNTAIN DRAIN COVER</p>	
	<p>P/N: 800043B WAF-2200 WASHFOUNTAIN DRAIN ASSEMBLY</p>	

WASHFOUNTAIN-SPECIFIC VALVE ASSEMBLIES

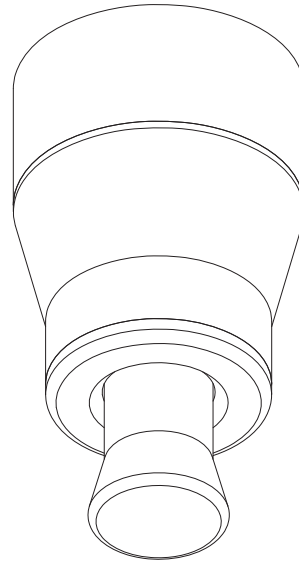
	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	P/N: 803105-1PW 1-VALVE METERING PNEU.	 <p data-bbox="956 810 1287 842">(803105-1PW SHOWN)</p>
	P/N: 803105-1SW 1-VALVE NON-METERING PN.	
	P/N: 803105-1EW 1-VALVE ELECTRONIC	
	P/N: 803105-1BW 1-VALVE BATTERY OP.	
	P/N: 803105-2PW 2-VALVE METERING PNEU.	 <p data-bbox="956 1251 1287 1283">(803105-2PW SHOWN)</p>
	P/N: 803105-2SW 2-VALVE NON-METER. PNEU.	
	P/N: 803105-2EW 2-VALVE ELECTRONIC	
	P/N: 803105-2BW 2-VALVE BATTERY OP.	
	P/N: 803105-3PW 3-VALVE METERING PNEU.	 <p data-bbox="956 1692 1287 1724">(803105-3PW SHOWN)</p>
	P/N: 803105-3SW 3-VALVE NON-METER. PNEU.	
	P/N: 803105-3EW 3-VALVE ELECTRONIC	
	P/N: 803105-3BW 3-VALVE BATTERY OP.	

FOR PNEUMATIC VALVE ASSEMBLY DETAILS: [SEE SECTION 3](#)
 FOR ELECTRONIC VALVE ASSEMBLY DETAILS: [SEE SECTION 7](#)
 FOR PUSH BUTTONS & ACTUATORS: [SEE SECTION 12](#)

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	P/N: 803105-4PW 4-VALVE METERING PNEU.	 <p data-bbox="938 810 1268 842">(803105-4PW SHOWN)</p>
	P/N: 803105-4SW 4-VALVE NON-METERING PN.	
	P/N: 803105-4EW 4-VALVE ELECTRONIC	
	P/N: 803105-4BW 4-VALVE BATTERY OP.	
	P/N: 803105-6PW 6-VALVE METERING PNEU.	 <p data-bbox="938 1251 1268 1283">(803105-6PW SHOWN)</p>
	P/N: 803105-6SW 6-VALVE NON-METER. PNEU.	
	P/N: 803105-6EW 6-VALVE ELECTRONIC	
	P/N: 803105-6BW 6-VALVE BATTERY OP.	
	P/N: 803105-8PW 8-VALVE METERING PNEU.	 <p data-bbox="938 1692 1268 1724">(803105-8PW SHOWN)</p>
	P/N: 803105-8SW 8-VALVE NON-METER. PNEU.	
	P/N: 803105-8EW 8-VALVE ELECTRONIC	
	P/N: 803105-8BW 8-VALVE BATTERY OP.	

FOR PNEUMATIC VALVE ASSEMBLY DETAILS: [SEE SECTION 3](#)
 FOR ELECTRONIC VALVE ASSEMBLY DETAILS: [SEE SECTION 7](#)
 FOR PUSH BUTTONS & ACTUATORS: [SEE SECTION 12](#)

LSD Liquid Soap Dispenser



Recommended Specifications

Liquid soap dispenser system shall be:
Willoughby Model: **LSD**

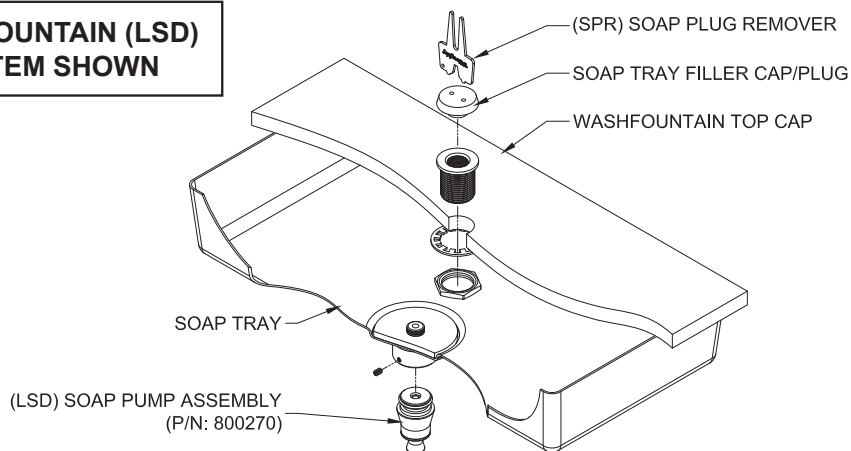
Using a combination gravity-feed/pump system, the Willoughby (LSD) liquid soap dispenser delivers a metered amount of soap from an internal soap tray (liquid soap reservoir) each time the plunger is depressed.

The machined solid stainless steel soap pump assembly (P/N: 800270C) is vandal-resistant and features stainless steel springs, stainless steel metering pin, and leak-less O-rings.

The dispenser system is designed for use with vegetable oil base liquid soap with anhydrous content between 7.5-15%. Soap plug remover (SPR) keys are included with all fixtures, allowing maintenance personnel to easily refill the vandal-resistant soap tray.

The (LSD) liquid soap dispenser system option is available factory-installed on several different washfountain and shower fixtures. (LSD) systems are recommended for general wash-room and shower room use.

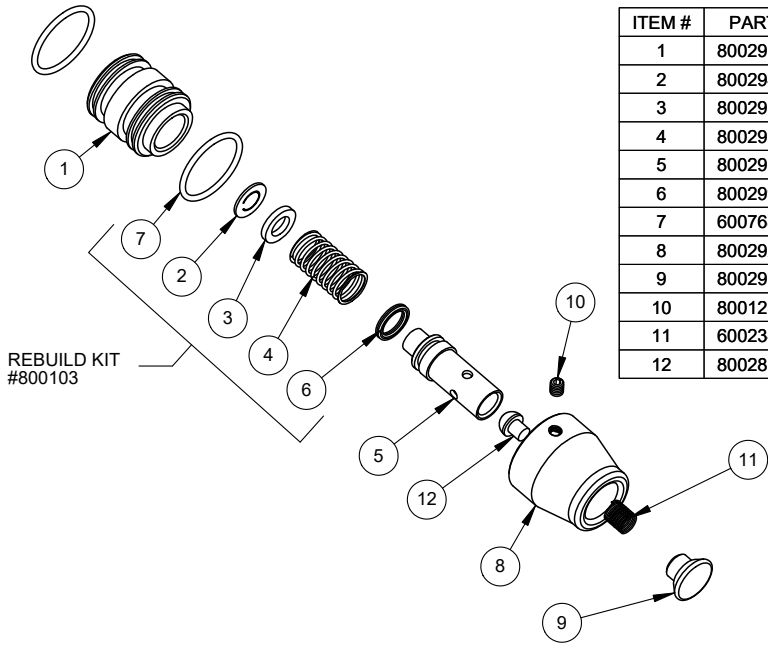
WASHFOUNTAIN (LSD) SYSTEM SHOWN



CONTACT YOUR WILLOUGHBY REPRESENTATIVE FOR SOAP TRAY REPLACEMENT
OR WASHFOUNTAIN TOP CAP REPLACEMENT

LIQUID SOAP DISPENSER ASSEMBLY & COMPONENTS

PUMP ASSEMBLY - P/N: 800270C (REBUILD KIT- P/N: 800103)

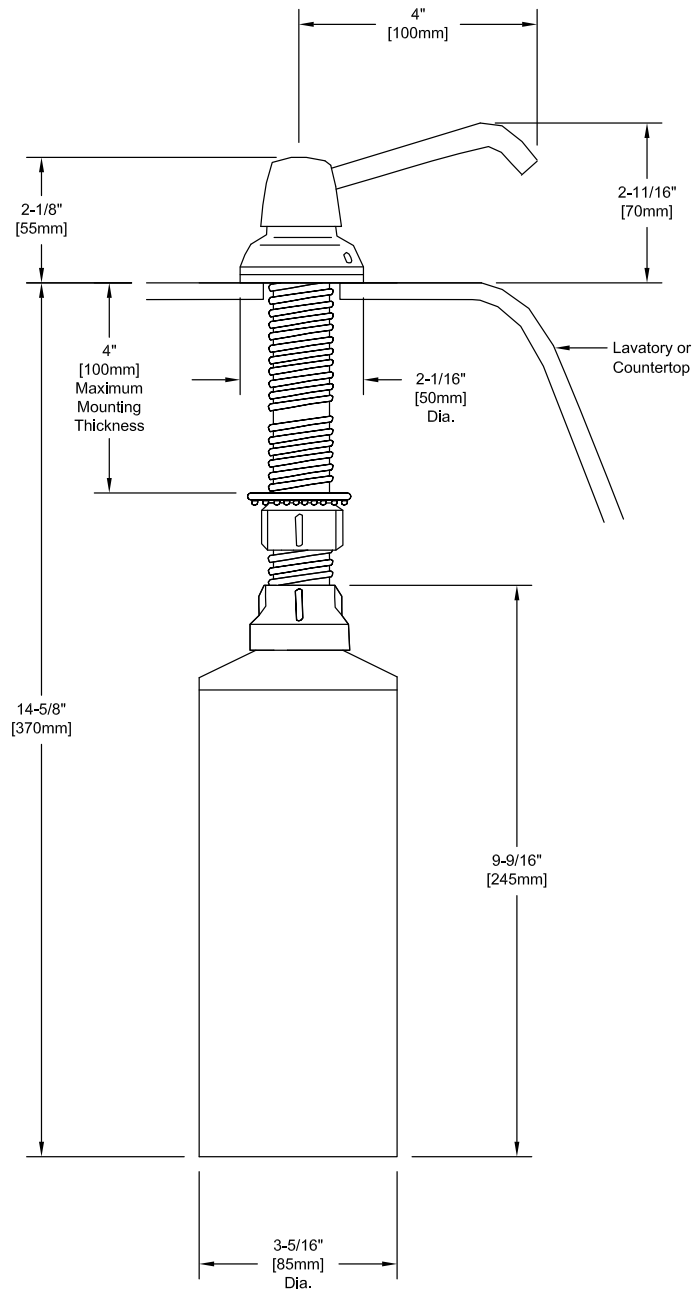


ITEM #	PART #	DESCRIPTION	QTY.
1	800290	SOAP PUMP BASE, GEN II	1
2	800294	RUBBER FLAPPER VALVE, SOAP PUMP	1
3	800295	SOAP PUMP SPRING SEAT	1
4	800298	SOAP PUMP PISTON SPRING	1
5	800291	SOAP PUMP PISTON, GEN II	1
6	800299	O-RING (2-012) PISTON	1
7	600768	O-RING (#019)	2
8	800292	SOAP PUMP BODY, GEN II	1
9	800293	SOAP PUMP PLUNGER, GEN II	1
10	800128	SCREW #8-32 x 3/16" SCKT SET S/S	1
11	600234	SPRING FOR CHECKSTOP	1
12	800289	BUMPER-SOAP PUMP CHECK VALVE	1

NOTE: REBUILD KIT, P/N: 800103
CONTAINS THE FOLLOWING:

- (2) 600768
- (1) 800294
- (1) 800295
- (1) 800298
- (1) 800299

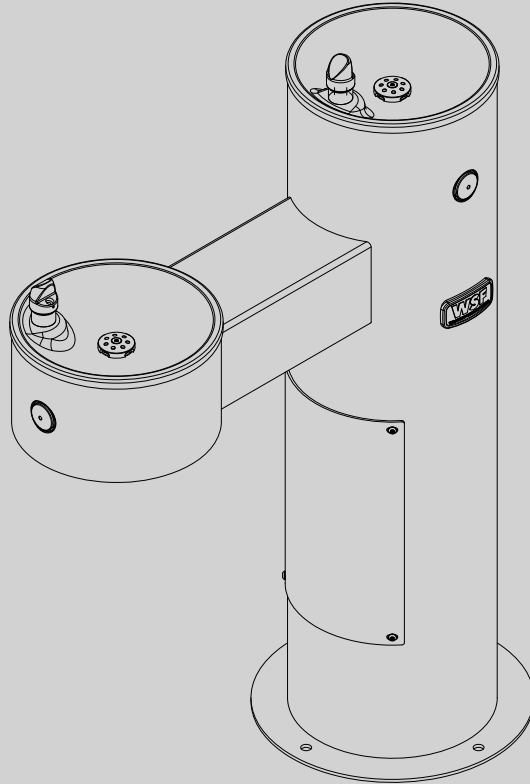
P/N & DESCRIPTION	COMPONENT/ASSEMBLY
P/N: 800269 SOAP TRAY FILLER CAP, S/S	
P/N: 800268VE SOAP TRAY FILLER CAP, S/S	
P/N: SPR SOAP CAP (PLUG) REMOVER TOOL	

LIQUID SOAP DISPENSER DECK MOUNTED**BOBRICK B-822 SOAP DISPENSER - P/N: 800822****SOLD COMPLETE, NO PARTS AVAILABLE FROM WILLOUGHBY**

PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION 19

PARKS & RECREATION FIXTURE PARTS

THESE ITEMS:

ACCESS COVERS & BODY PANELS _____

FOUNTAIN BASINS & DRAIN ASSEMBLIES _____

VALVES, PUSH BUTTONS, & FITTINGS _____

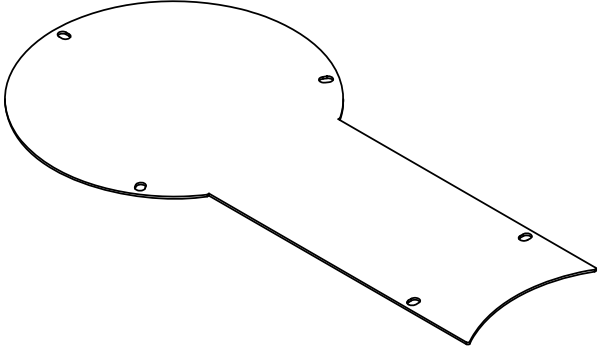
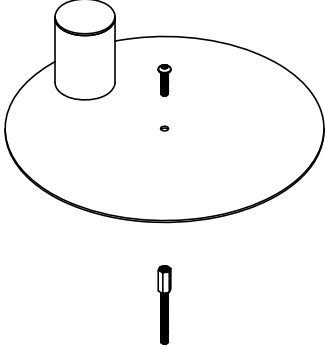
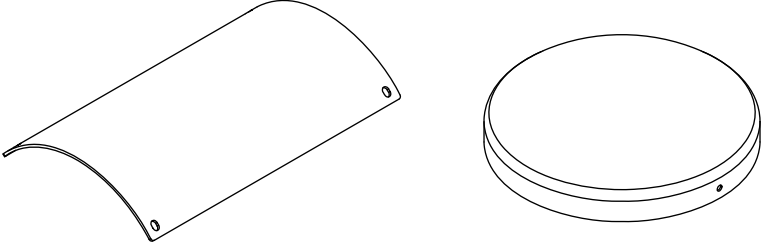
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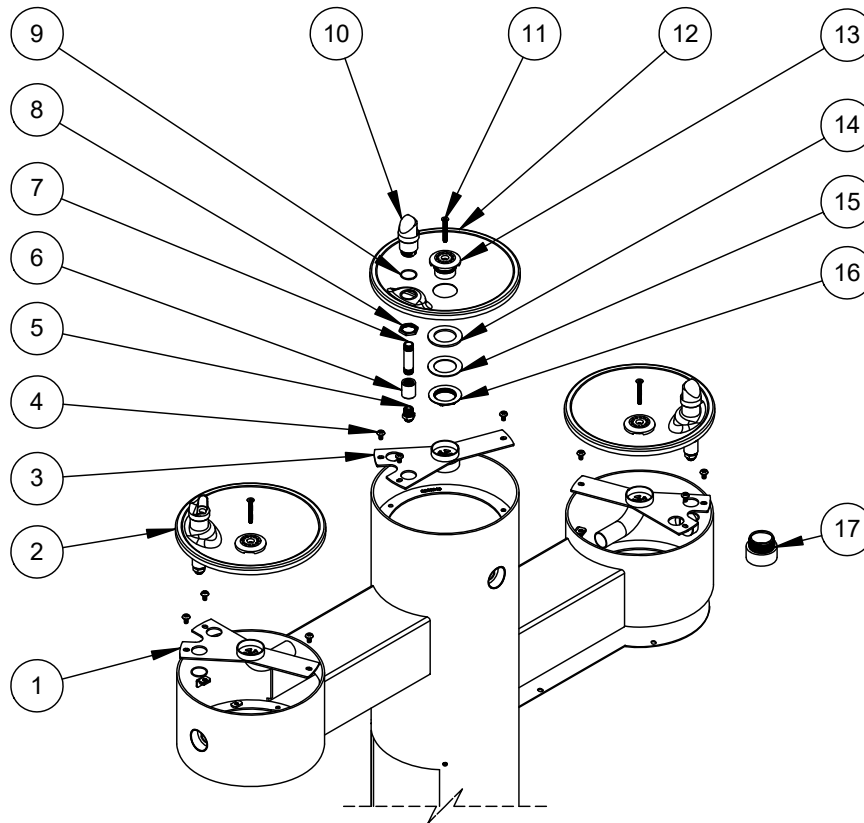
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ACCESS COVERS & BODY PANELS

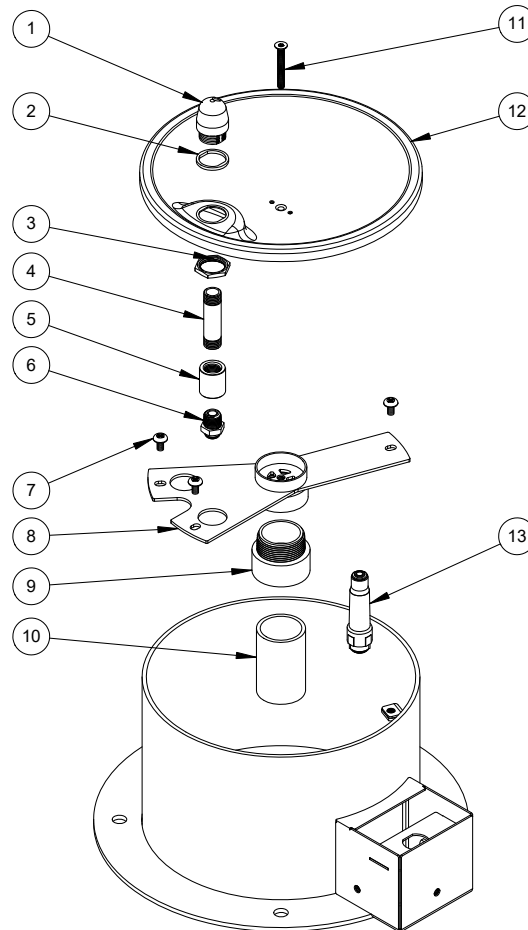
	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: S200075</p> <p>OUTER BOTTOM COVER- OUTDOOR DRINKING FOUNTAIN</p>	
	<p>P/N: S200200</p> <p>(WODF-SCV) OUTDOOR DRINKING FOUNTAIN- SEASONAL VALVE COVER</p>	
	<p>FOR PARKS & REC FIXTURE REPLACEMENT PANELS: PLEASE CONTACT YOUR WILLOUGHBY REPRESENTATIVE</p>	

FOUNTAIN BASIN & DRAIN ASSEMBLIES

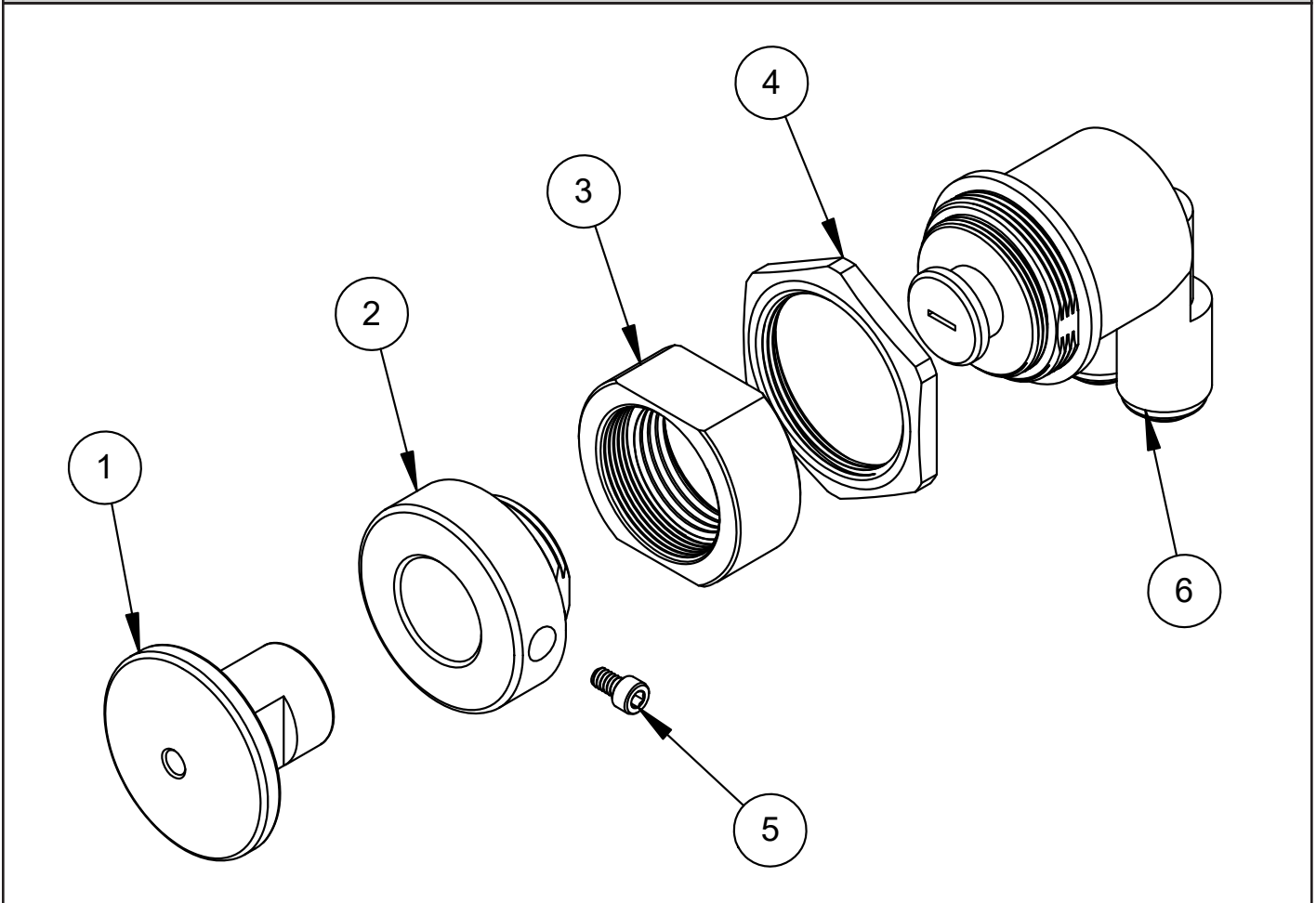
WODF - DRINKING FOUNTAIN BASINS & DRAINS



ITEM #	PART NUMBER	DESCRIPTION	QTY:
1	S200034	RECEPTOR SUPPORT ASSEMBLY w/DRAIN ELBOW	2
2	S200033	ADA BOWL, 40-DEG, 1-3/4" DEPTH	2
3	S200031	RECEPTOR SUPPORT ASSEMBLY	1
4	800144	1/4-20 X 1/2" PHILLIPS TRUSS HEAD SCREW	9
5	320437	ADAPTER, 3/8" NPTF MALE X 1/4" TUBE PUSH-TO-CONNECT	3
6	320091	COUPLING, 3/8" FPT STAINLESS STEEL	3
7	320469	NIPPLE, 3/8" NPT X 2.5" LONG	3
8	600612N	HEXNUT, 3/4"-14 NPSM	3
9	600116	O-RING, #023, BUNA N-70	3
10	600601HE	(CDB) DECK MOUNTED DRINKING FOUNTAIN BUBBLER	3
11	4509SSN	1/4"-20 x 2" FH SECURITY SCREW	3
12	S200032	STANDARD BOWL, STRAIGHT DOUBLE-D - 1-3/4" DEPTH	1
13	380284	DRAIN, 1-1/2" TUBE, MACHINED, S/S	3
14	380274	GASKET, 1-1/2" DRAIN	3
15	380273	DRAIN WASHER, 1-5/8"	3
16	600043	NUT, 1 5/8"-12 THD FOR 1-1/2" DRAIN	3
17	320284	PVC THREADED ADAPTER, 1-1/2"	1

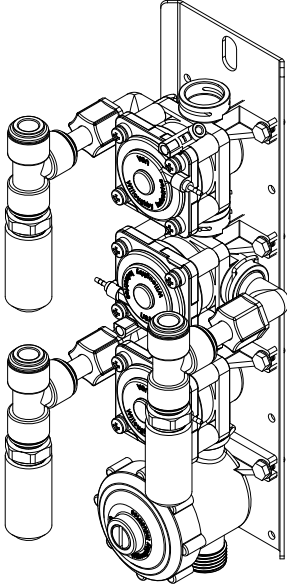
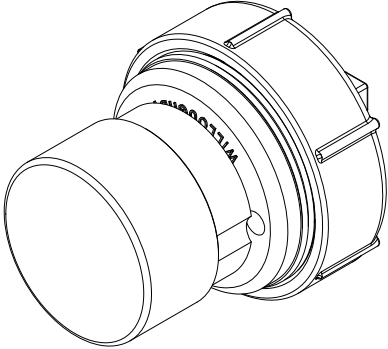
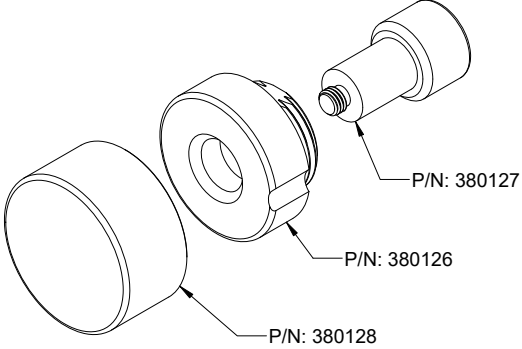
FOUNTAIN BASIN & DRAIN ASSEMBLIES (CONT.)**WODF-1-PET - PET DRINKING FOUNTAIN BASIN & DRAIN**

ITEM #	PART NUMBER	DESCRIPTION	QTY:
1	380056	(PBB) 30 DEG. PET BOWL BUBBLER	1
2	S200290	SPACER, BUBBLER MOUNTING	1
3	600612N	HEXNUT, 3/4"-14 NPSM	2
4	320469	NIPPLE, 3/8" NPT X 2.5" LONG	1
5	320091	COUPLING, 3/8" FPT STAINLESS STEEL	1
6	320437	ADAPTER, 3/8" NPTF MALE X 1/4" TUBE PUSH-TO-CONNECT	1
7	800144	1/4-20 X 1/2" PHILLIPS TRUSS HEAD SCREW	3
8	S200031	RECEPTOR SUPPORT ASSEMBLY	1
9	320284	PVC THREADED ADAPTER, 1-1/2"	1
10	320280	PVC PIPE, 1-1/2" SCHED. 40 X 2-15/16" LONG	1
11	4509SSN	1/4"-20 x 2" FH SECURITY SCREW	1
12	S200237	PET BOWL - 1-3/4" DEPTH	1
13	980632	STRAINER, IN-LINE, 1/4 TO 3/8 PRESS LOCK	1

ADJUSTABLE PUSH BUTTON VALVE ASSEMBLY**VALVE ASSEMBLY, ADJUSTABLE - P/N: 600315**

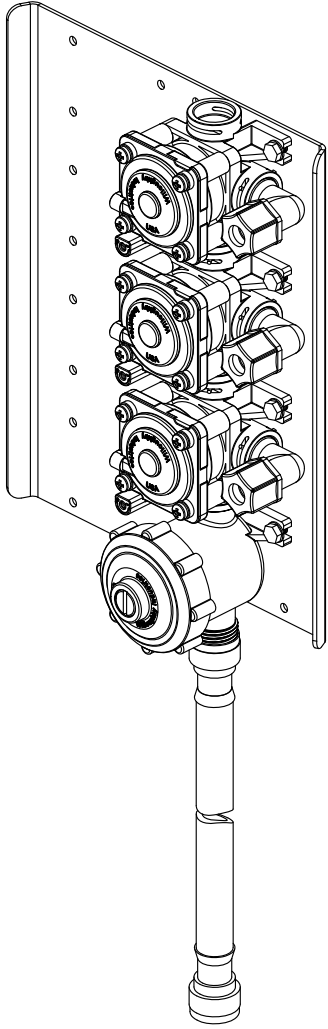
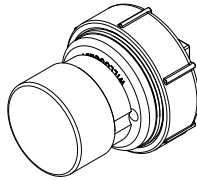
	ITEM #	P/N	DESCRIPTION
	1	380110	PUSH PIN, ADJUSTABLE PUSH BUTTON VALVE
	2	380111	SLEEVE, ADJUSTABLE PUSH BUTTON VALVE
	3	380062	SLEEVE, ADAPTER TO ELKAY PLASTIC SELF-CLOSING VALVE
	4	600286	NUT, CARTRIDGE MOUNTING
	5	800157	6-32 x 1/4" SH CAP SCREW
	6	600285	SELF-CLOSING CARTRIDGE, 1.0 GPM

FREEZE RESISTANT VALVE ASSEMBLIES & PUSH BUTTON

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 980615-1</p> <p>FRV-1 ASSEMBLY</p>	
	<p>P/N: 980615-2</p> <p>FRV-2 ASSEMBLY</p>	
	<p>P/N: 980615-3</p> <p>FRV-3 ASSEMBLY (SHOWN)</p>	
	<p>P/N: 600311</p> <p>(PLPB) PNEUMATIC, PALM PUSH BUTTON</p>	
	<p>P/N: 600311RK</p> <p>REPAIR KIT, PNEUMATIC PALM PUSH BUTTON</p>	

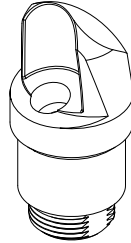
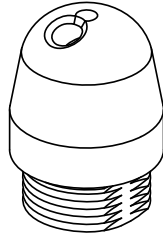
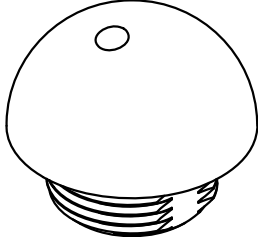
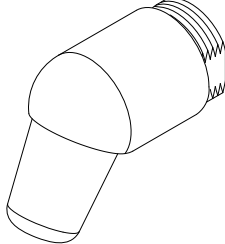
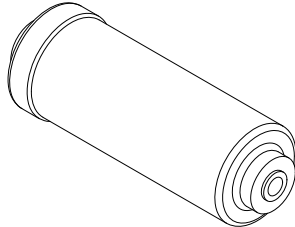
FOR PNEUMATIC VALVE ASSEMBLY DETAILS: SEE SECTION 3

OUTDOOR SHOWER VALVE ASSEMBLIES

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 803110-1</p> <p>WODS 1-VALVE ASSEMBLY</p>	 <p>(803110-3: 3-VALVE ASSEMBLY SHOWN)</p>
	<p>P/N: 803110-2</p> <p>WODS 2-VALVE ASSEMBLY</p>	
	<p>P/N: 803110-3</p> <p>WODS 3-VALVE ASSEMBLY</p>	
	<p>P/N: 803110-4</p> <p>WODS 4-VALVE ASSEMBLY</p>	
	<p>P/N: 803110-5</p> <p>WODS 5-VALVE ASSEMBLY</p>	
	<p>P/N: 803110-6</p> <p>WODS 6-VALVE ASSEMBLY</p>	
	<p>(PLPB) PNEUMATIC, PALM PUSH BUTTON</p>	 <p><u>SEE PREVIOUS PAGE</u></p>

FOR PNEUMATIC VALVE ASSEMBLY DETAILS: SEE SECTION 3

PLUMBING FITTINGS AND ACCESSORIES

	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	<p>P/N: 600601HE</p> <p>(CDB) COMMERCIAL DECK MOUNTED DRINKING FOUNTAIN BUBBLER</p>	
	<p>P/N: 380056</p> <p>(PBB) 30 DEG. PET BOWL BUBBLER</p>	
	<p>P/N: 380063</p> <p>HEMISPHERIC BOTTLE FILLER BUBBLER</p>	
	<p>P/N: 370098</p> <p>(NPS) 30° SPRAY ANGLE SHOWER HEAD (SEE SECTION 16)</p>	
	<p>P/N: 980440</p> <p>CHARCOAL FILTER, 3/8" TUBING CONNECTIONS</p>	

FOR PLATES, LOCKNUTS, TUBING, & OTHER COMPONENTS : SEE SECTION 1

FOR PUSH BUTTON & ACTUATOR DETAILS: SEE SECTION 12

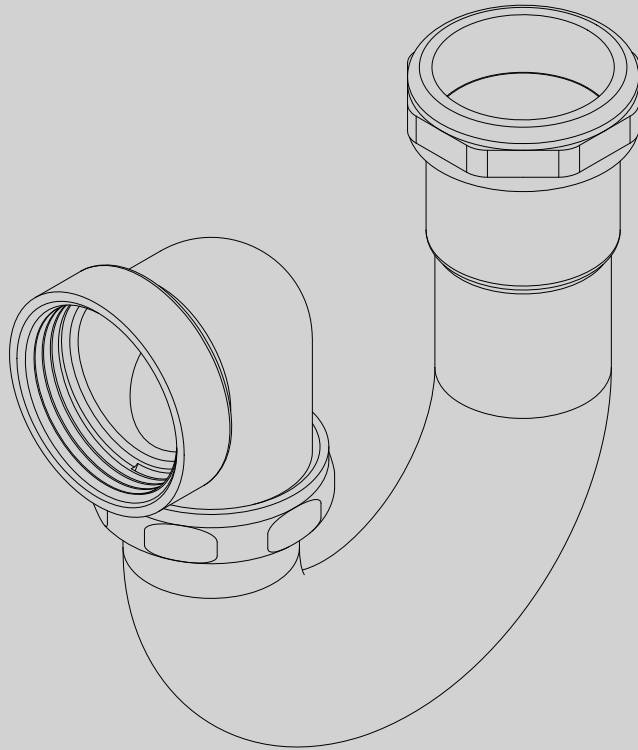
FOR BUBBLER & SHOWER HEAD DETAILS: SEE SECTIONS 16 & 17

PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION 20



DRAIN FITTINGS & WASTE FITTINGS

THESE ITEMS:

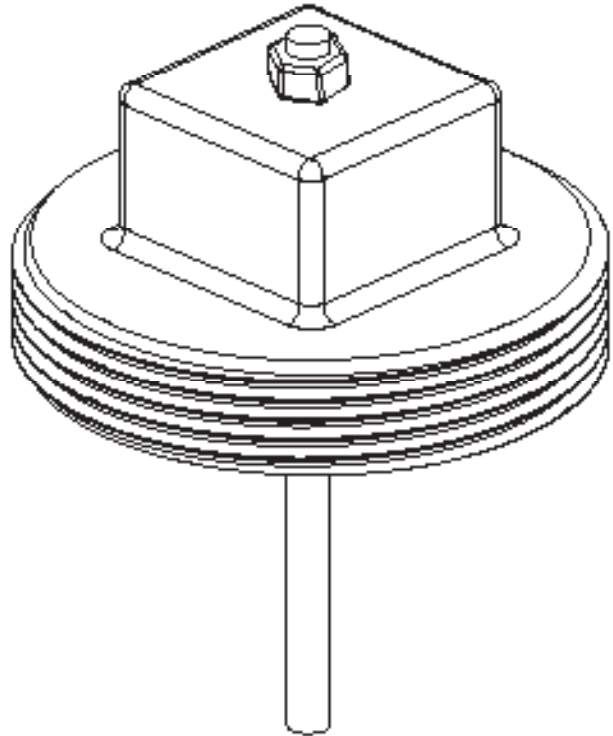
CLEAN-OUT PLUGS / CLEAN-OUT HOOKS _____
TWC NO-HUB TOILET WASTE COUPLINGS _____
"TW"-PREFIX TOILET WASTE OPTION ASSEMBLIES _____
REMOVABLE P-TRAP FITTINGS _____
(FVT) FLUSH VALVE CONNECTIONS _____

BEGIN ON PAGE:

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165
166
168
169

PC Series Pinned Clean-out Plug

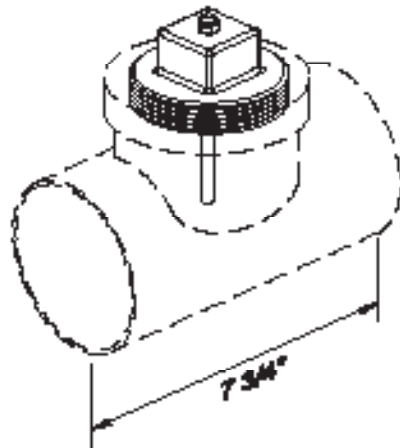
✓	PLUG TYPE	MODEL NUMBER
	3" PVC	PC3
	3" BRASS	PC3B
	4" PVC	PC4
	4" BRASS	PC4B



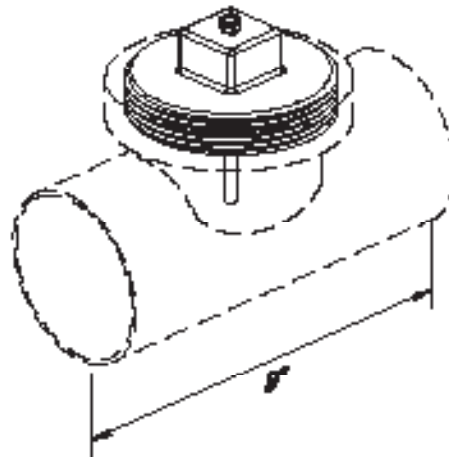
Pinned clean-out plug shall be:
Willoughby Model No. PC _____

This option requires the use of a clean-out tee (SOLD SEPARATELY). The PVC or brass plug has a permanent stainless steel pin which extends downward to catch large objects passing through the waste piping.

PC3



PC4



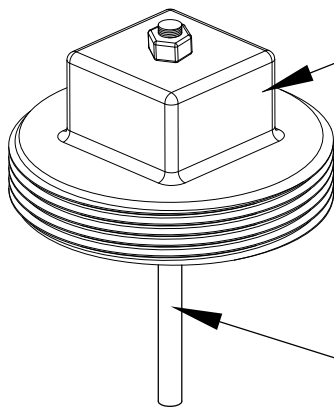
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CLEAN-OUT PLUGS

3" CLEAN-OUT PLUGS (REF. P991014A)

(3" RAISED SQUARE HEAD PLUG W/ STAINLESS STEEL PIN ATTACHED AS SHOWN)

✓	PLUG	STYLE	PART NO.
	3" PVC	W/PIN	PC3
	3" BRASS	W/PIN	PCB3
	3" PVC	LESS PIN	320308
	3" BRASS	LESS PIN	320303



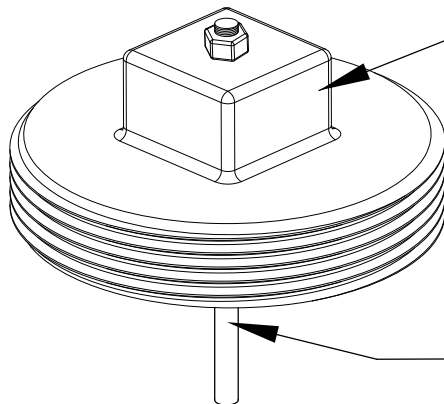
SQUARE HEAD CLEAN-OUT PLUG (P/N: 320308 SHOWN)

4" STAINLESS STEEL PIN (P/N: 113809 SHOWN)

4" CLEAN-OUT PLUGS (REF. P991019A)

(4" RAISED SQUARE HEAD PLUG W/ STAINLESS STEEL PIN ATTACHED AS SHOWN)

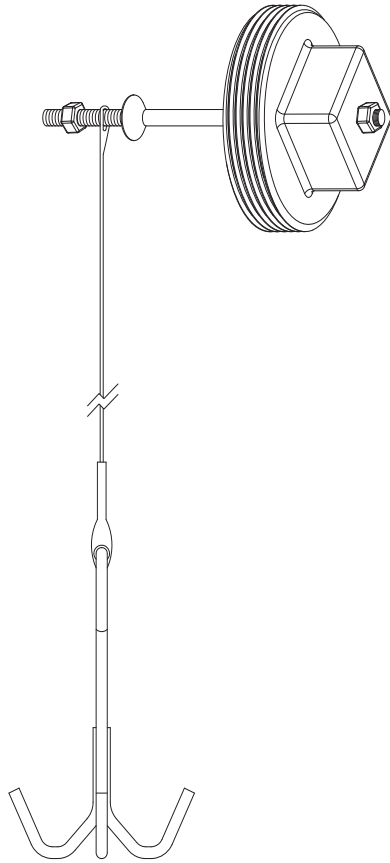
✓	PLUG	STYLE	PART NO.
	4" PVC	W/PIN	PC4
	4" BRASS	W/PIN	PCB4
	4" PVC	LESS PIN	320309
	4" BRASS	LESS PIN	320304



SQUARE HEAD CLEAN-OUT PLUG (P/N: 320309 SHOWN)

5" STAINLESS STEEL PIN (P/N: 113808 SHOWN)

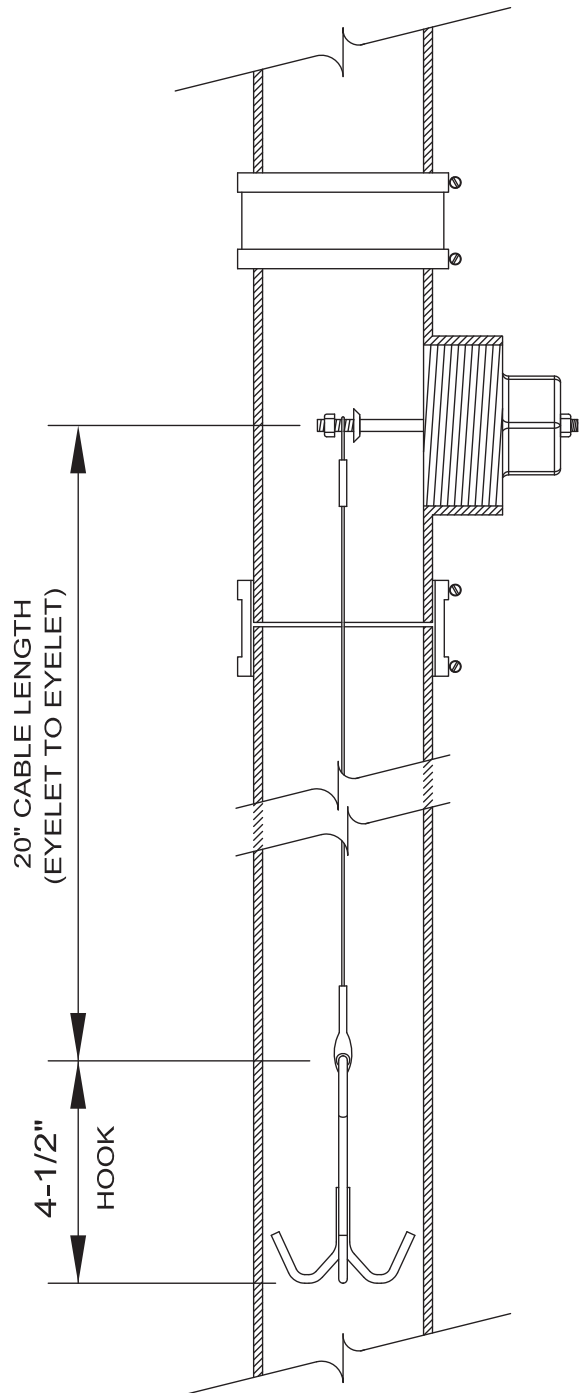
COH Series Clean-out Hook



✓	PLUG TYPE	MODEL NUMBER
	4" PVC	COH4
	4" BRASS	COHB4

Clean-out hook shall be:
Willoughby Model No. **COH** _____


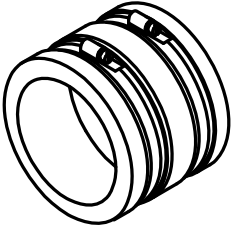
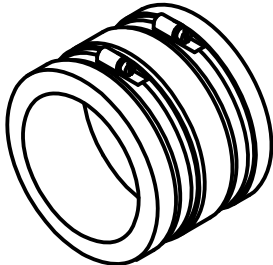
This option requires the use of a vertically mounted clean-out tee (SOLD SEPARATELY). The PVC or brass plug has a permanent stainless steel pin with stainless steel cable and stainless steel 3-pronged hook which extends downward to catch large objects passing through the waste piping. Clean-out hook requires accessible chase to service



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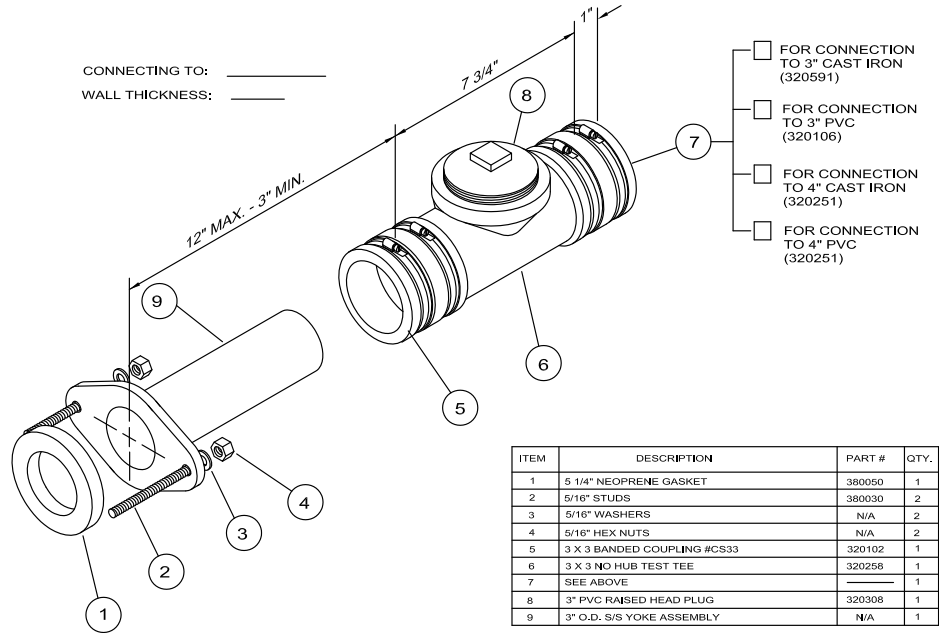
- www.P65Warnings.ca.gov

TWC NO-HUB TOILET WASTE COUPLINGS

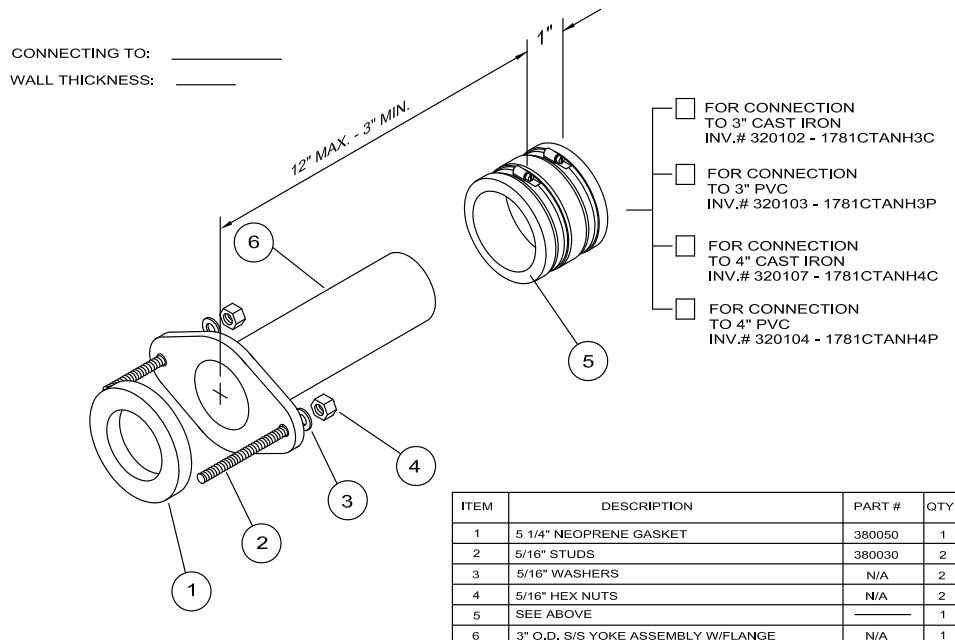
	P/N & DESCRIPTION	COMPONENT/ASSEMBLY
	P/N: 320114 Ø2-1/8" TO Ø3" CAST IRON	FOR: 1.28 GPF (Ø2-1/8" O.D.)
	P/N: 320115 Ø2-1/8" TO Ø4" CAST IRON	
	P/N: 320116 Ø2-1/8" TO Ø3" PVC	
	P/N: 320117 Ø2-1/8" TO Ø4" PVC	
	P/N: 320108 Ø2-1/2" TO Ø3" CAST IRON	
	P/N: 320109 Ø2-1/2" TO Ø4" CAST IRON	
	P/N: 320112 Ø2-1/2" TO Ø3" PVC	
	P/N: 320113 Ø2-1/2" TO Ø4" PVC	
	P/N: 320102 Ø3" TO Ø3" CAST IRON	
	P/N: 320107 Ø3" TO Ø4" CAST IRON	
	P/N: 320103 Ø3" TO Ø3" PVC	
	P/N: 320104 Ø3" TO Ø4" PVC	

"TW"-PREFIX TOILET WASTE OPTION ASSEMBLIES

(TW1) NO-HUB WASTE WITH CLEAN-OUT - P/N: 1780CTANH__



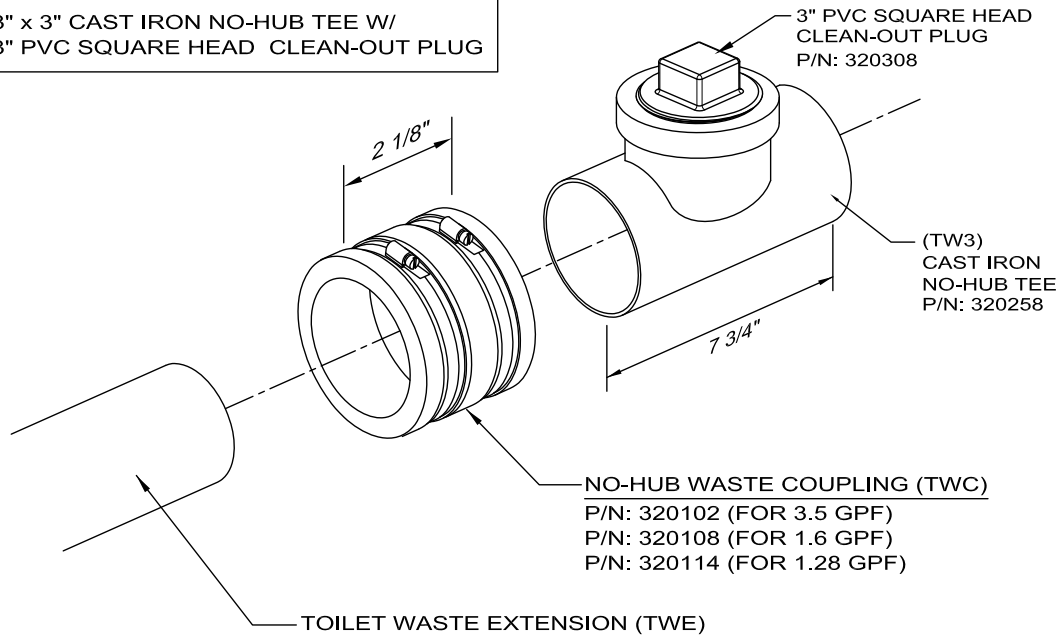
(TW2) NO-HUB WASTE WITHOUT CLEAN-OUT - P/N: 1781CTANH__



"TW"-PREFIX TOILET WASTE OPTION ASSEMBLIES

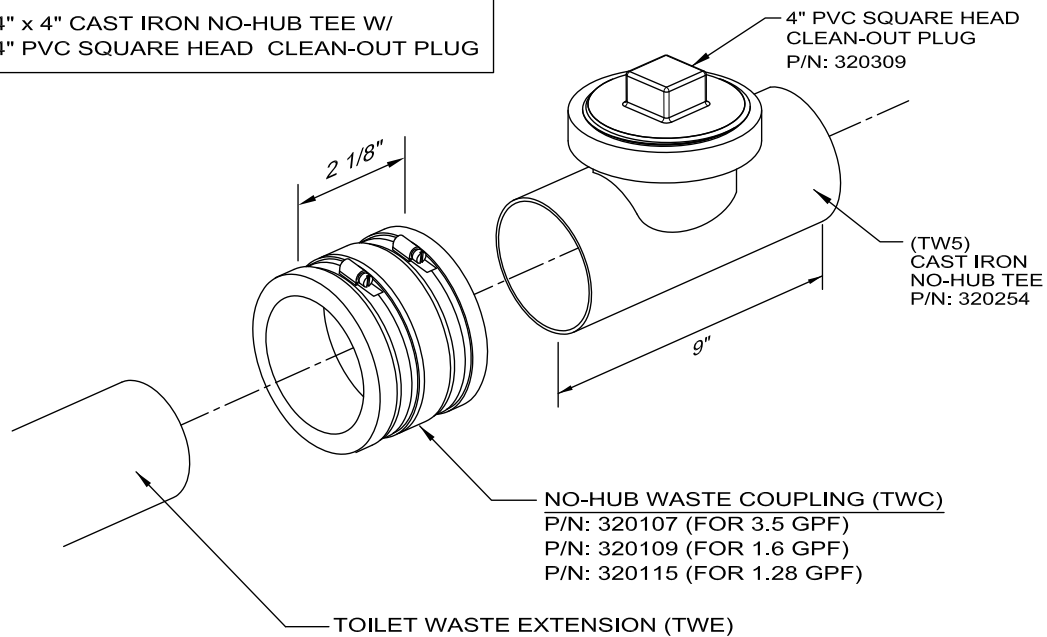
(TW3) 3" WASTE WITH CLEAN-OUT/PLUG - P/N: 1782CTA__

3" x 3" CAST IRON NO-HUB TEE W/
3" PVC SQUARE HEAD CLEAN-OUT PLUG



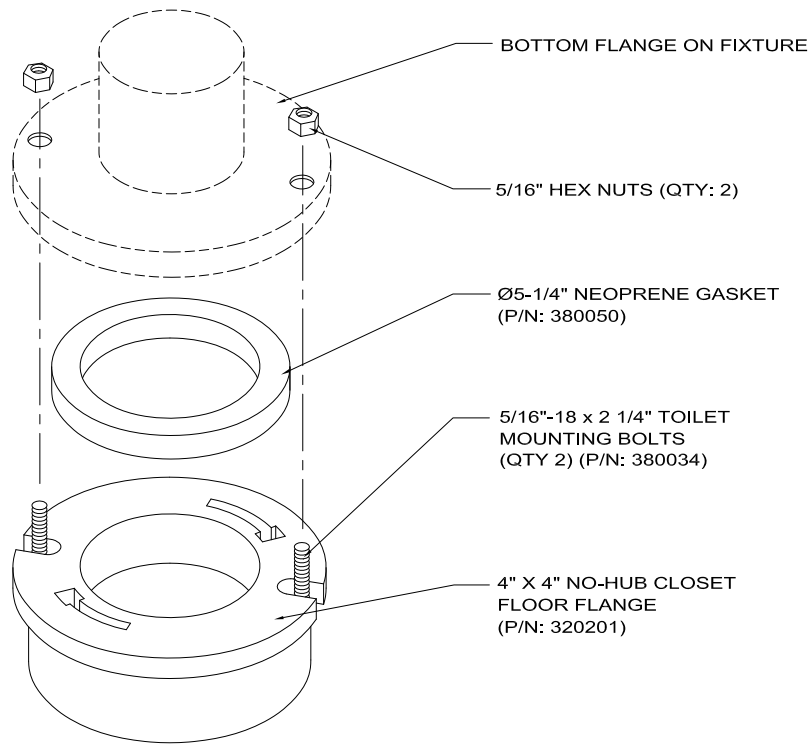
(TW5) 4" WASTE WITH CLEAN-OUT/PLUG - P/N: 1783CTA__

4" x 4" CAST IRON NO-HUB TEE W/
4" PVC SQUARE HEAD CLEAN-OUT PLUG



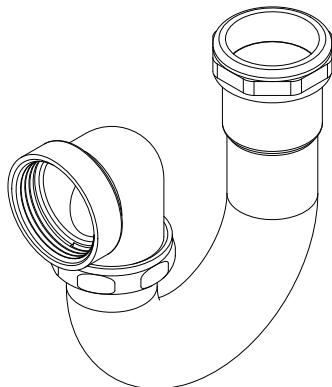
"TW"-PREFIX TOILET WASTE OPTION ASSEMBLIES

(TW4) FLOOR OUTLET WASTE CONNECTION - P/N: 1785CTA

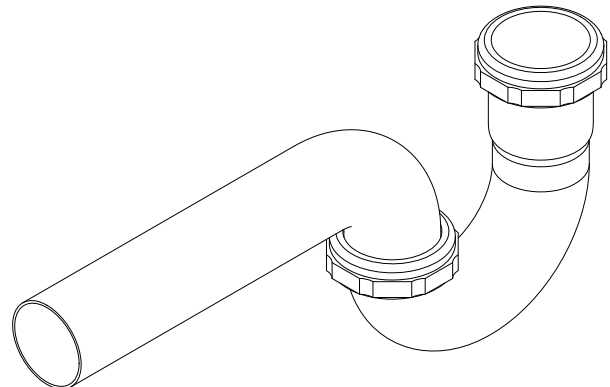


REMOVABLE P-TRAP LAVATORY WASTE FITTINGS

(RPT) REMOVABLE P-TRAP - P/N: 380286

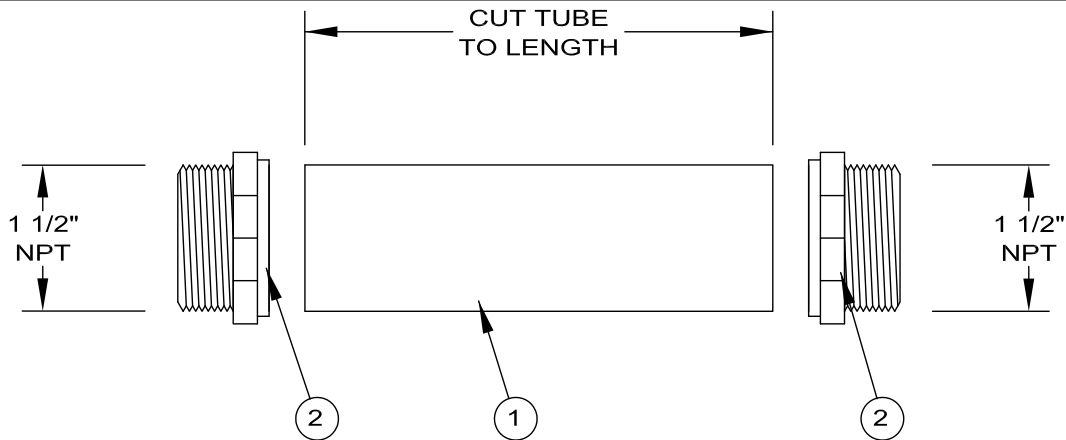


(TT) CHROME REMOVABLE P-TRAP - P/N: 380287



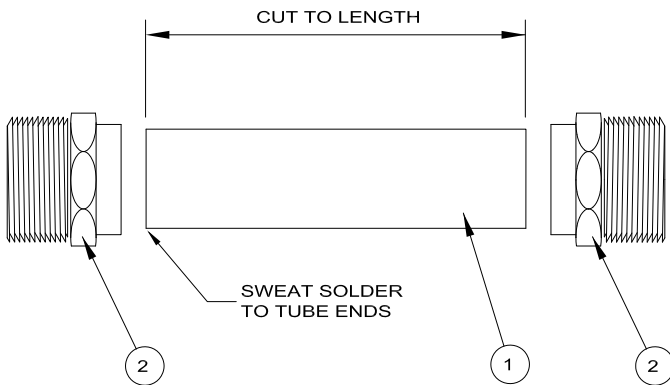
(FVT) FLUSH VALVE CONNECTIONS THROUGH-WALL

(FVT) FLUSH VALVE CONNECTION, 1-1/2" NPT - P/N: 2895CTA



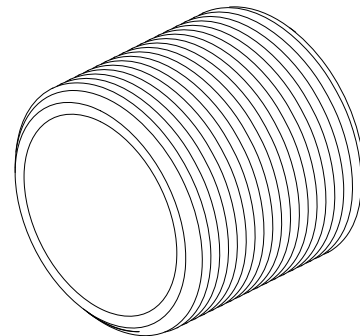
ITEM	DESCRIPTION	PART #	QTY.
1	Ø1-1/2" COPPER TUBE, CUT TO LENGTH	115170	1
2	1-1/2" SLEEVE	380147	2

(FVT) FLUSH VALVE CONNECTION, 3/4" MIP (URINAL) - P/N: 2897CTA

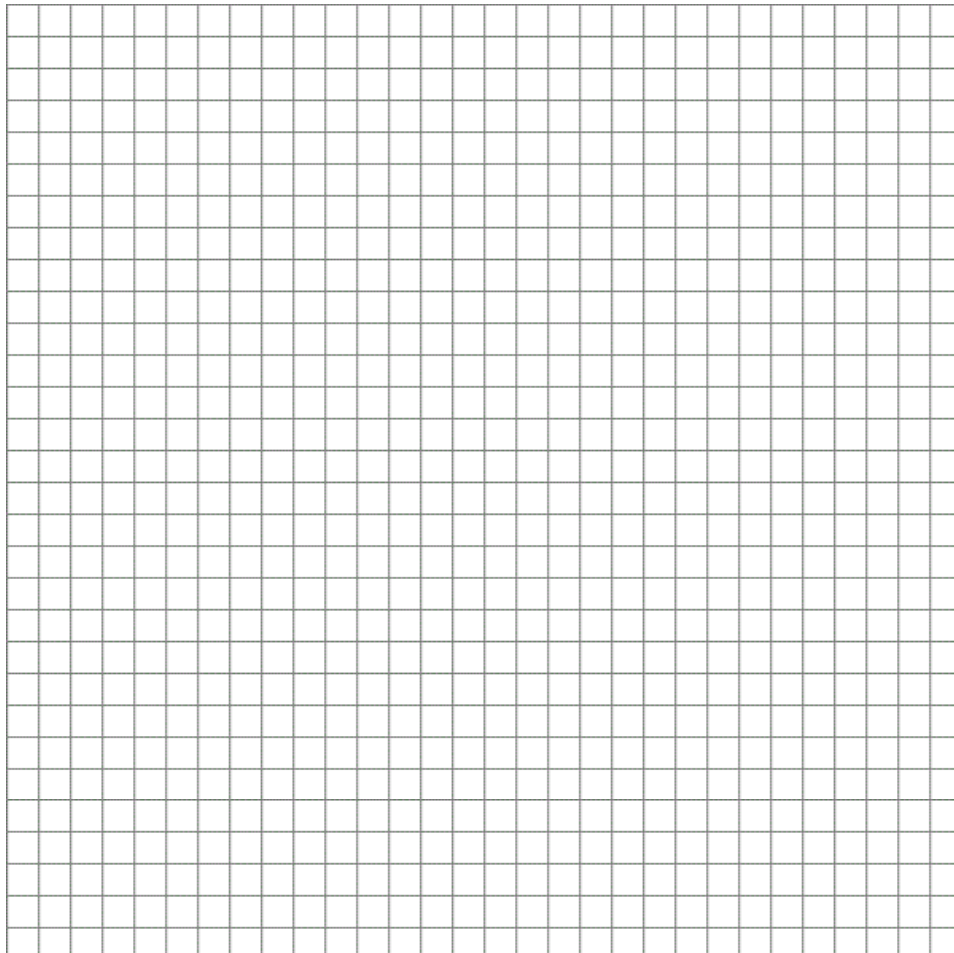


ITEM	DESCRIPTION	PART #	QTY.
1	3/4" COPPER TUBE	115190	1
2	3/4" M.I.P. ADAPTOR	320244	2

(FVT) 1-1/2" NPT CLOSE (FOR STEEL WALL) - P/N: 320488



NOTES:

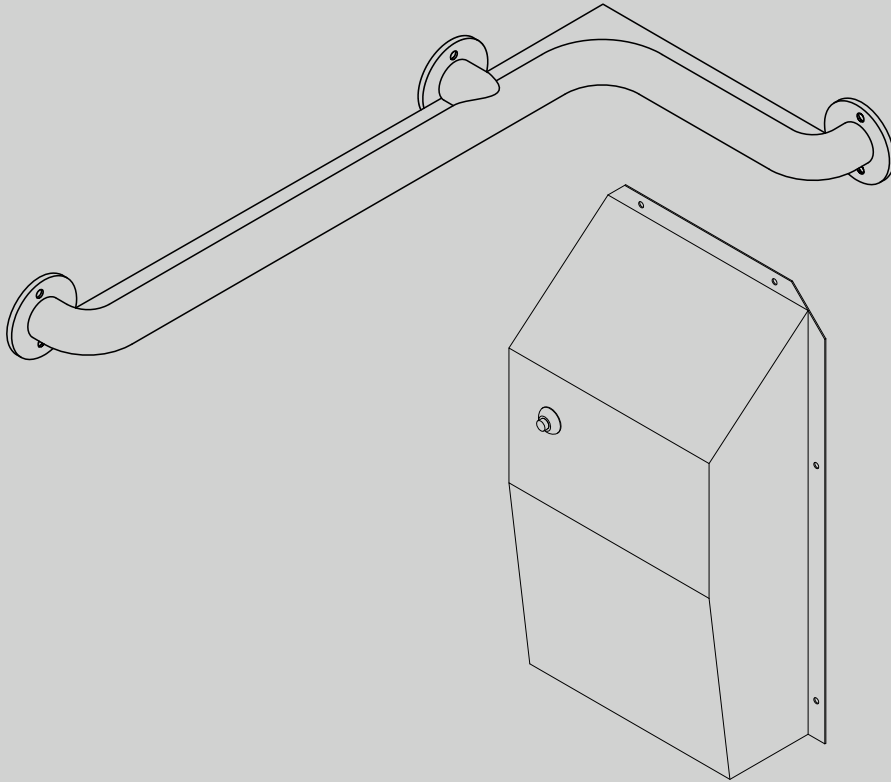


PARTS AND ACCESSORIES CATALOG



WILLOUGHBY

SECTION 21



SECURITY ACCESSORIES

THESE ITEMS:

TISSUE HOLDERS, SOAP DISHES, MIRRORS _____
TOWEL HOOKS, SHELVES _____
GRAB BARS _____
FOLDING SHOWER SEATS _____
FLUSH VALVE COVERS _____

BEGIN ON PAGE:

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RTH1 Rear Mounted Tissue Holder

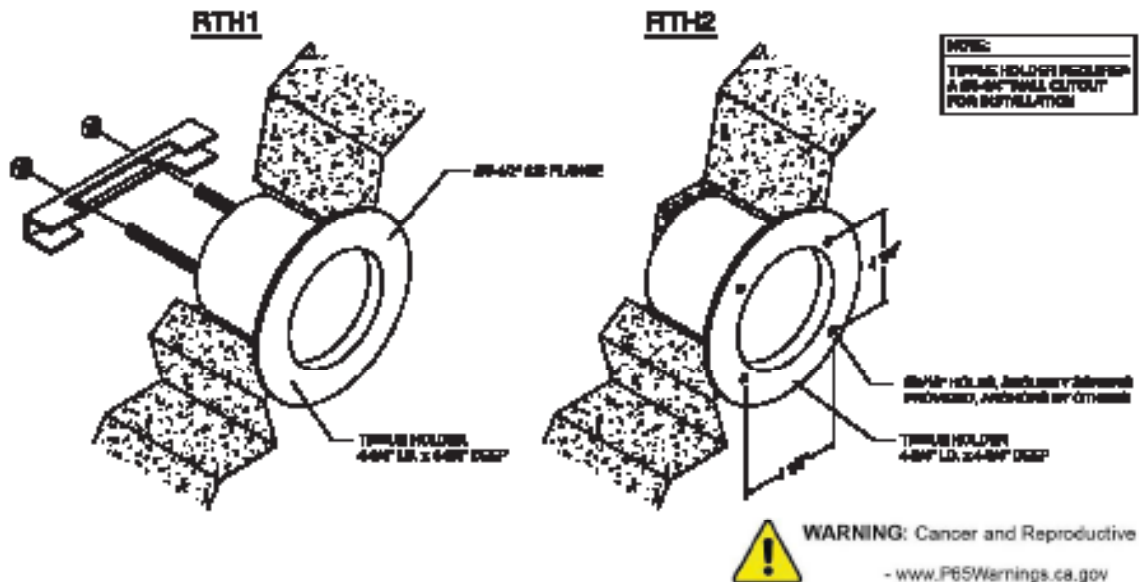
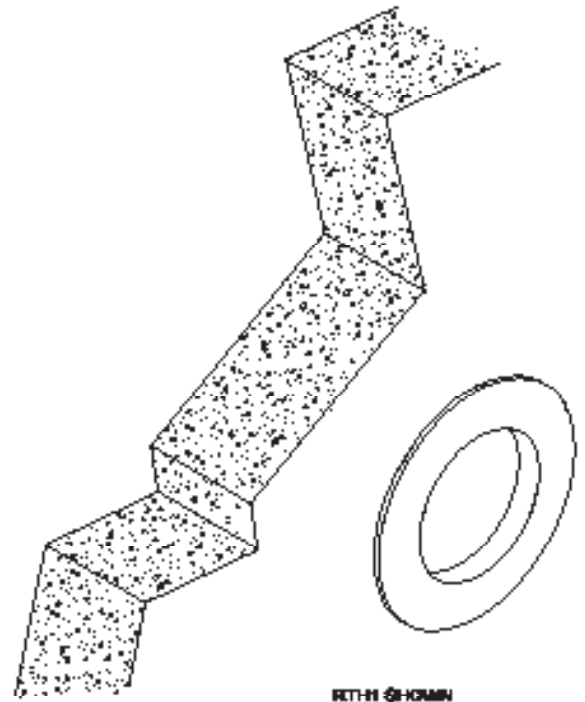
RTH1 recessed toilet tissue holder shall be die-formed of 14 GA, Type 304 stainless steel with an 18 GA, Type 304 #3 satin finish exposed flange. Flange edge to be turned back providing a tight fit to wall. Holder shall accommodate a standard roll of tissue, measuring 4-3/4" in diameter and 4-3/4" deep, providing no free area for the concealment of contraband.

Mounting hardware supplied with the tissue holder.

RTH2 Front Mounted Tissue Holder

RTH2 recessed toilet tissue holder shall be die-formed of 14 GA, Type 304 stainless steel with an 18 GA, Type 304 #3 satin finish exposed flange. Flange edge to be turned back providing a tight fit to wall. Holder shall accommodate a standard roll of tissue, measuring 4-3/4" in diameter and 4-3/4" deep, providing no free area for the concealment of contraband. Mounting shall be from the front.

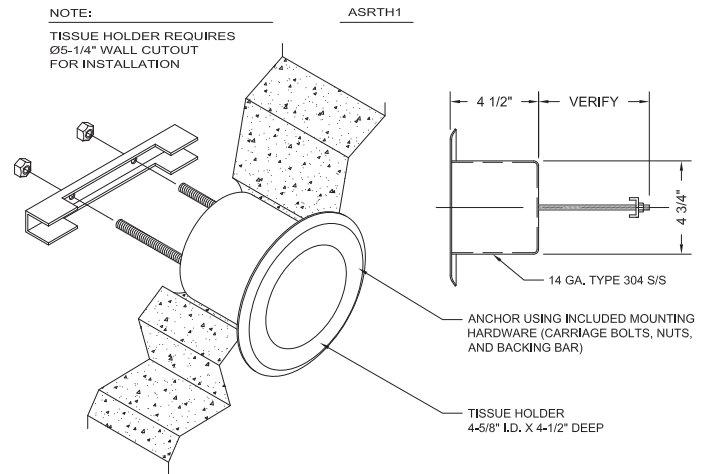
Stainless steel security screws provided, wall anchors by others.



ASRTH Series Ligature-Resistant Tissue Holder

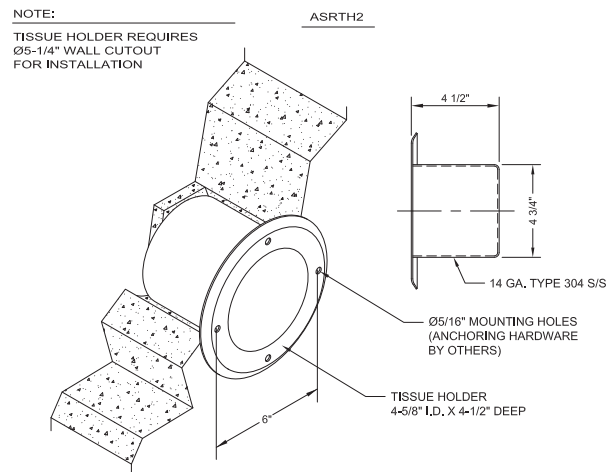
ASRTH1 Rear Mounted Ligature-Resistant Tissue Holder

ASRTH1 recessed toilet tissue holder shall be die-formed of 14 GA, Type 304 stainless steel with an 16 GA, Type 304 #3 satin finish exposed flange. Flange edge to be turned back providing a tight fit to wall. Holder shall accommodate a standard roll of tissue, measuring 4-5/8" in diameter and 4-1/2" deep. Interior shall be seamless and ligature-resistant, providing no free area for the concealment of contraband and no interior exposed flange edge. Mounting shall be from the rear using S/S mounting hardware provided (verify wall thickness).



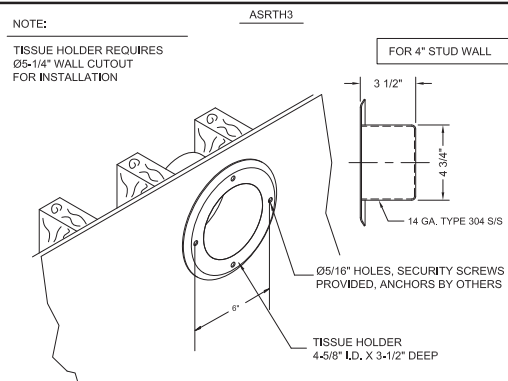
ASRTH2 Front Mounted Ligature-Resistant Tissue Holder

ASRTH2 recessed toilet tissue holder shall be die-formed of 14 GA, Type 304 stainless steel with an 16 GA, Type 304 #3 satin finish exposed flange. Flange edge to be turned back providing a tight fit to wall. Holder shall accommodate a standard roll of tissue, measuring 4-5/8" in diameter and 4-1/2" deep. Interior shall be seamless and ligature-resistant, providing no free area for the concealment of contraband and no interior exposed flange edge. Mounting shall be from the front. Stainless steel security screws provided, wall anchors by others.



ASRTH3 Front Mounted Ligature-Resistant Tissue Holder (For 4" Stud Wall)

ASRTH3 recessed toilet tissue holder shall be die-formed of 14 GA, Type 304 stainless steel with a 16 GA, Type 304 #3 satin finish exposed flange. Flange edge to be turned back providing a tight fit to wall. Holder shall accommodate a standard roll of tissue, measuring 4-3/4" in diameter and 3-1/2" deep. Interior shall be seamless and ligature-resistant, providing no free area for the concealment of contraband and no interior exposed flange edge. Mounting shall be from the front. Stainless steel security screws provided, wall anchors by others.



LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with,



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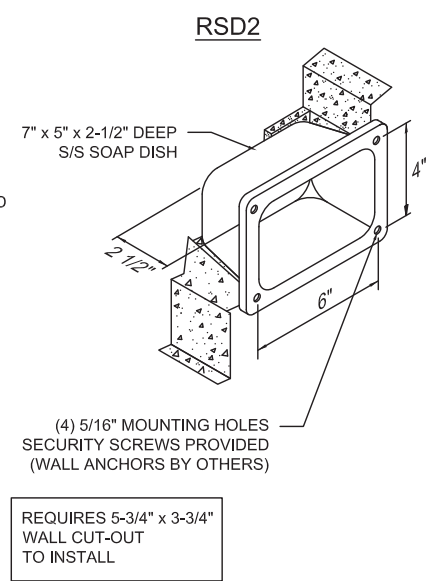
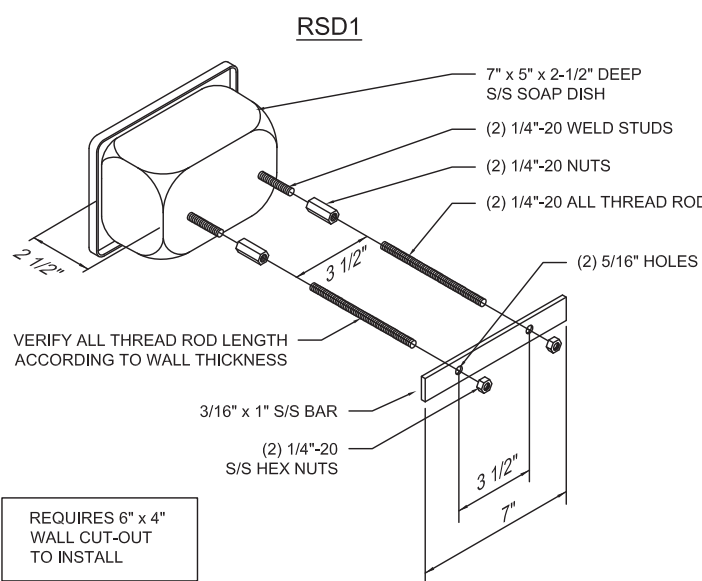
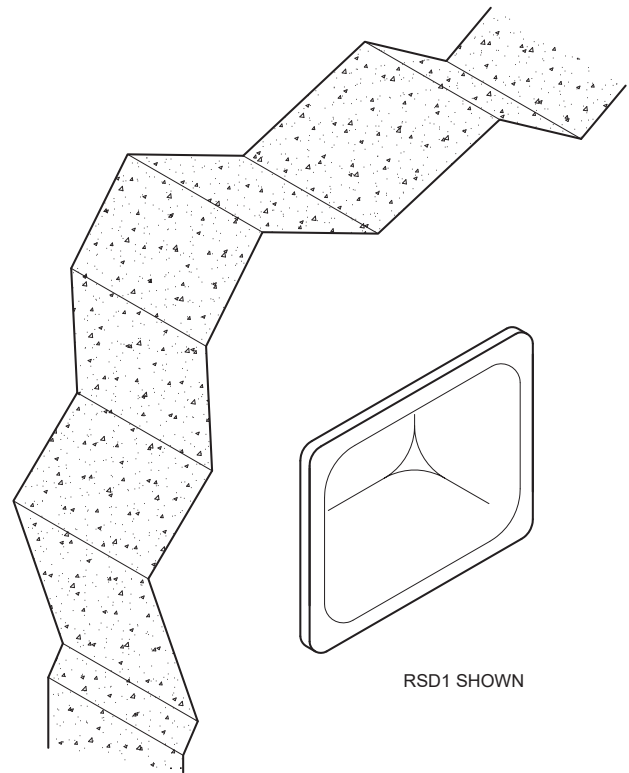
RSD1 Rear Mounted Recessed Soap Dish

RSD1 recessed soap dish shall be 16 GA, Type 304 stainless steel. Unit is one piece construction, tamper-resistant with all exposed surfaces polished to a #3 satin finish. Wide radius corners assure cleanliness.

RSD2 Front Mounted Recessed Soap Dish

RSD2 recessed soap dish shall be 16 GA, Type 304 stainless steel. Unit is one piece construction, tamper-resistant with all exposed surfaces polished to a #3 satin finish. Wide radius corners assure cleanliness. Mounting shall be from the front.

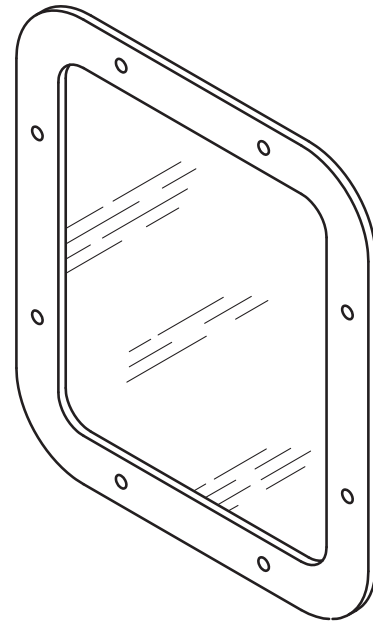
Stainless steel security screws provided, wall anchors by others.



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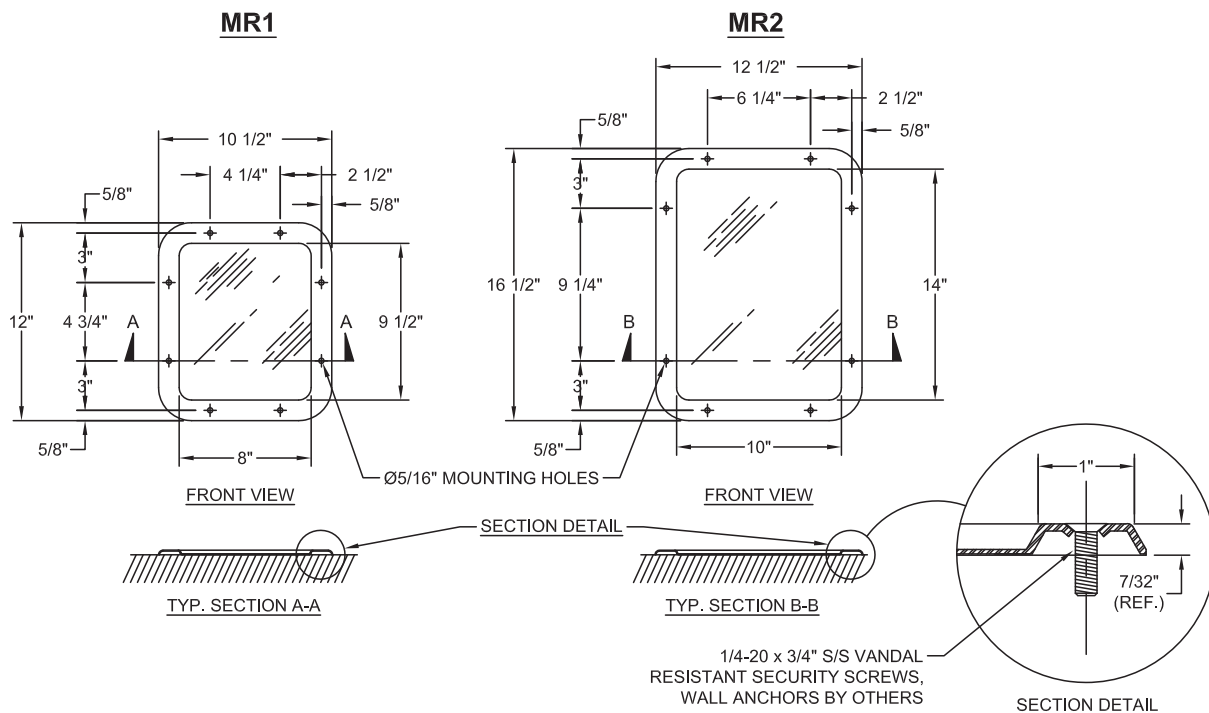
MR Series Front Access Security Mirror

✓	MODEL NUMBER	HEIGHT	WIDTH
	MR1	12"	10 1/2"
	MR2	16 1/2"	12 1/2"
	EM1 (OPTIONAL)	MOUNTING FRAME FOR MR1	
	EM2 (OPTIONAL)	MOUNTING FRAME FOR MR2	



MR ___ mirror with integral frame shall be die formed 16 GA, Type 304 series stainless steel, polished to a #8 non-directional mirror finish. Anchoring shall be by standard 8-point mounting. Vandal-resistant security screws provided with the mirror. Wall anchors provided by others.

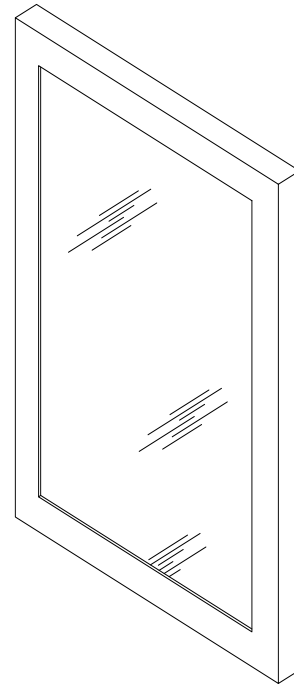
Optional in-wall embedded mounting plate is available. For optional embedded mounting plate, specify EM1 or EM2 to correspond with above mirror size.



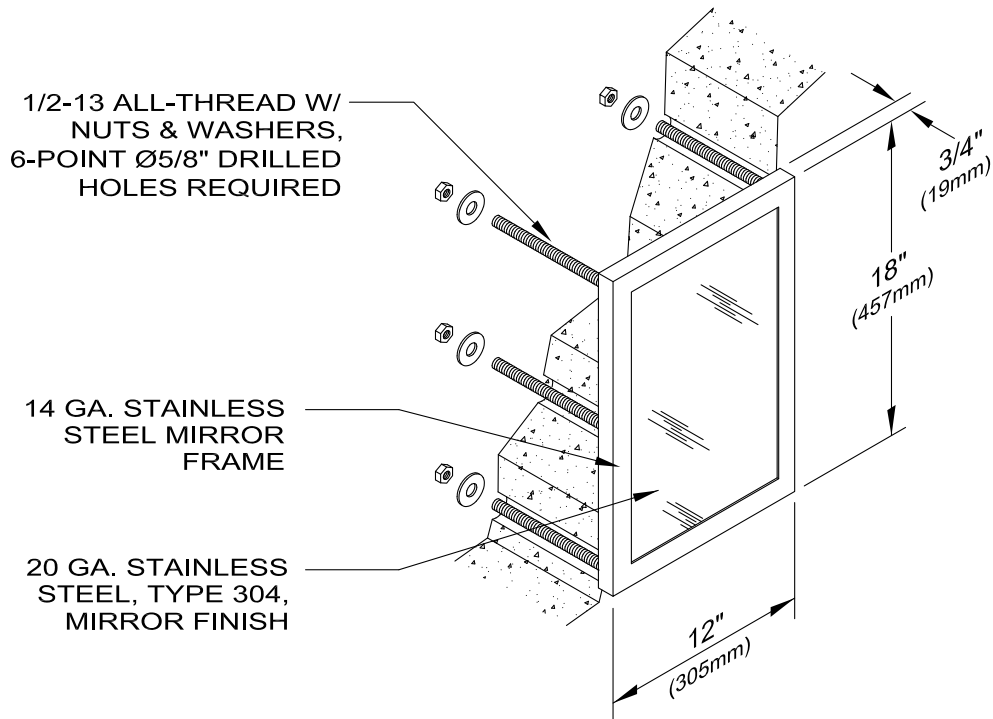
WARNING: Cancer and Reproductive Harm

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FMR1 Framed Security Mirror Rear Mounted



FMR1 framed security mirror to be 16 GA, Type 304 stainless steel, polished to a #8 non-directional mirror finish. Mirror shall be reinforced with 1/2" fiberboard backing. Anchoring shall be by a 6-point system: threaded rods, nuts and washers furnished for walls up to 8" thick. Unit requires chase for installation.



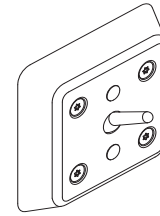
WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

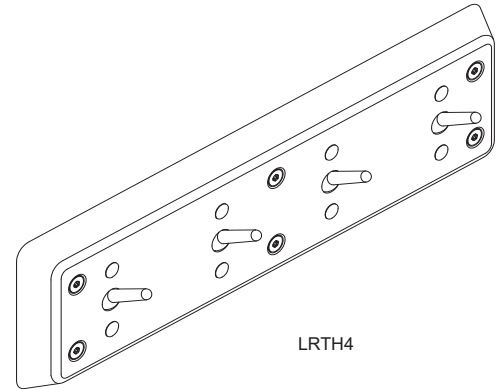


LRTH Series Ligature-resistant Release Towel Hook

✓	MODEL NUMBER	NUMBER OF HOOKS
	LRTH1	1
	LRTH4	4



LRTH1



LRTH4

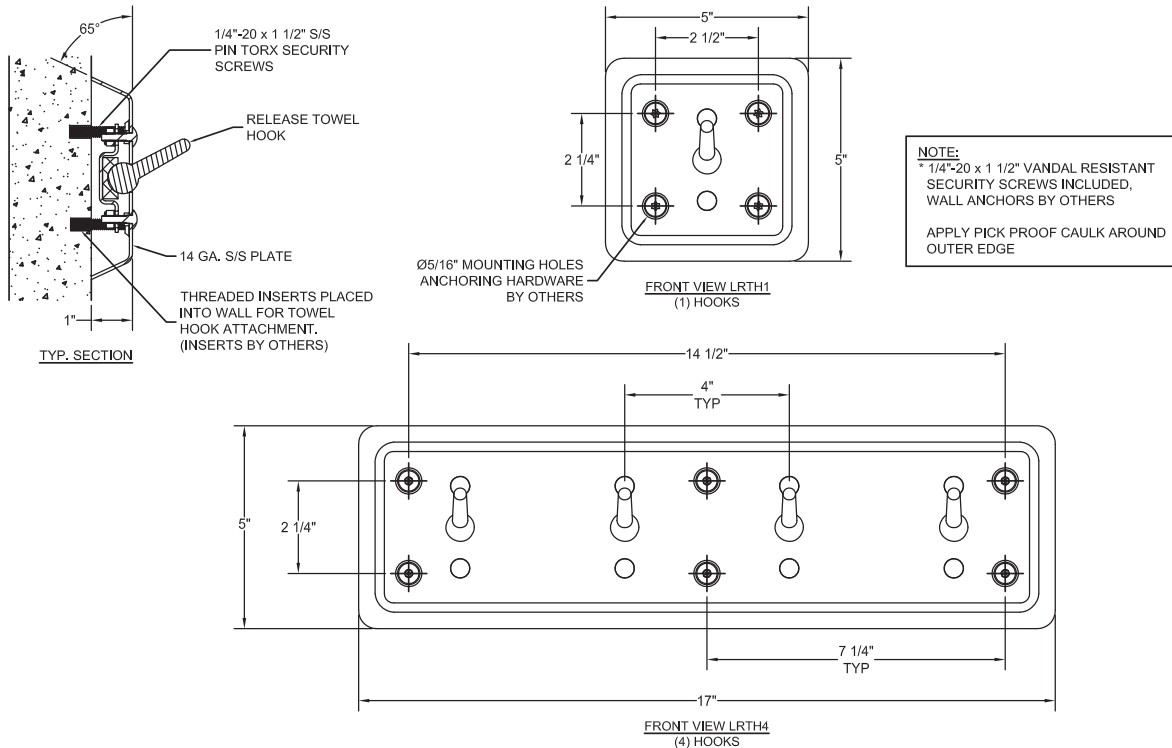
LRTH _____ ligature-resistant release towel hook assembly shall be fabricated from Type 304 stainless steel. Exposed stainless steel surfaces shall be polished to a #4 satin finish. Pressure activated release towel hook(s) will support light clothing and towel loads. However, excessive hook loads will cause downward hook release.

Towel hook assembly shall have ligature-resistant sloped sides in addition to the pressure activated release towel hook(s).

Wall anchors by others.

LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.

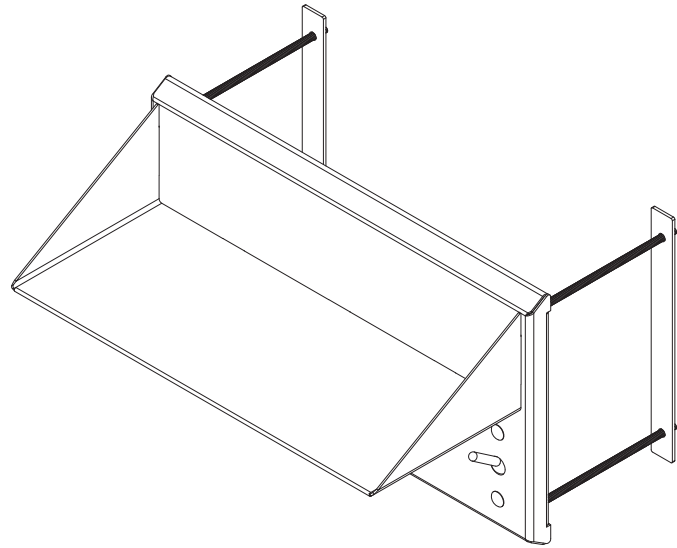


WARNING: Cancer and Reproductive Harm

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LRTH4S Ligature-Resistant Release Towel Hook w/ Integral Shelf Rear Mounted

✓	MODEL NUMBER	NUMBER OF HOOKS
	LRTH4S	4



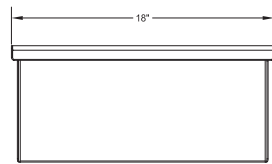
LRTH4S release towel hook assembly with integral shelf shall be fabricated from Type 304 stainless steel. Exposed stainless steel surfaces shall have a glass-blast finish.

Pressure activated release towel hook(s) will support light clothing and towel loads, however, excessive hook loads will cause downward hook release.

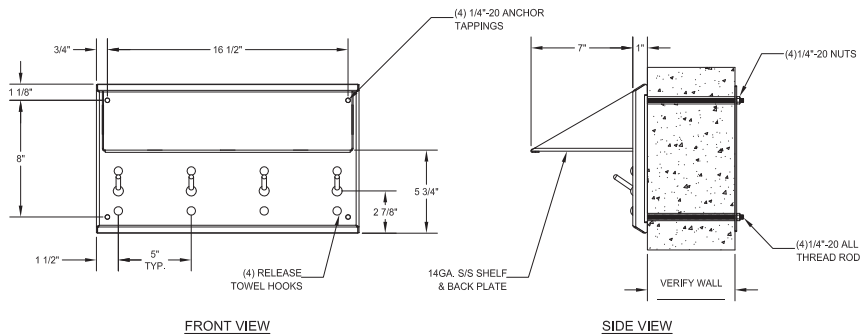
LRTH4S hook assembly supplied with all thread rod, nuts and washers.

LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.



PLAN VIEW



FRONT VIEW

SIDE VIEW



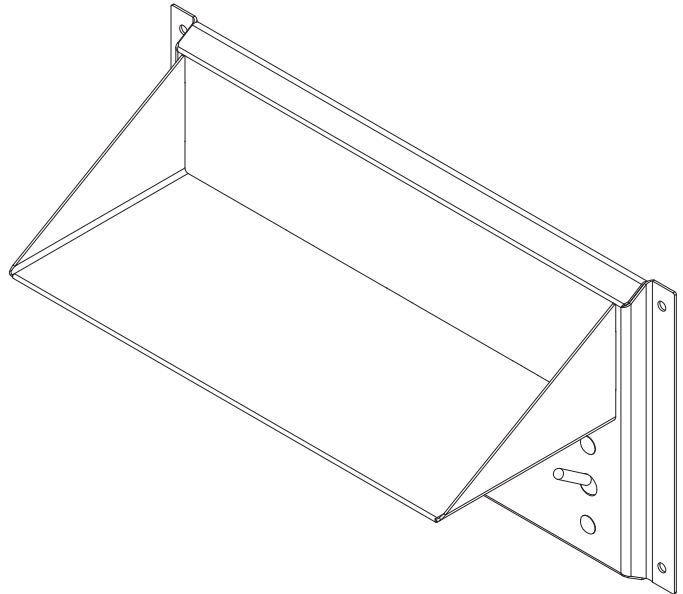
WARNING: Cancer and Reproductive Harm

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LRTH4S-FA Ligature-Resistant Release Towel Hook w/ Integral Shelf Front Mounted

✓	MODEL NUMBER	NUMBER OF HOOKS
	LRTH4S-FA	4



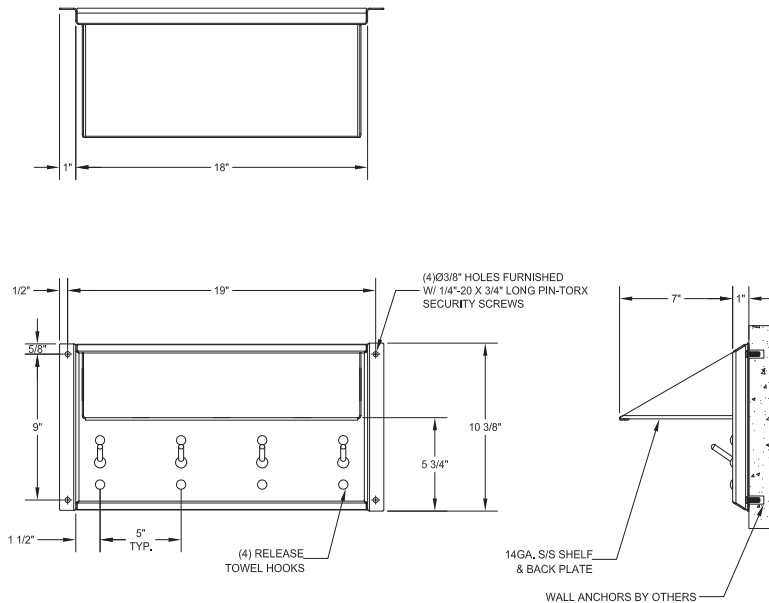
LRTH4S-FA release towel hook assembly with integral shelf shall be fabricated from Type 304 stainless steel. Exposed stainless steel surfaces shall have a glass-blast finish.

Pressure activated release towel hook(s) will support light clothing and towel loads, however, excessive hook loads will cause downward hook release.

LRTH4S-FA hook assembly supplied with vandal-resistant stainless steel security screws. Wall anchors by others.

LIGATURE-RESISTANT DISCLAIMER

This product is designed to minimize ligature points. While every effort has been made to reduce the possibility of ligature points, this product does not eliminate all risks. Ligature-Resistant products by Willoughby Industries are to be used in conjunction with, not as a replacement for, trained professionals.



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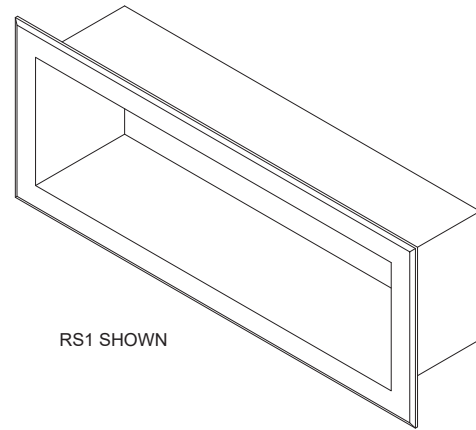
- www.P65Warnings.ca.gov



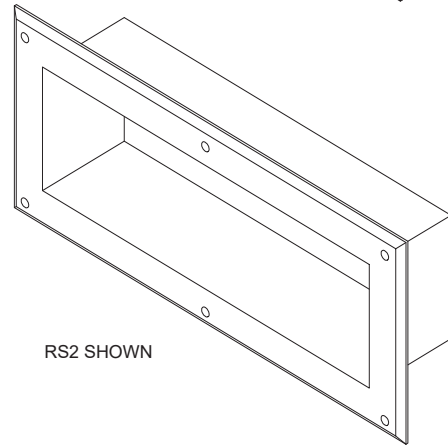
visit our website at www.willoughby-ind.com

RS Series Recessed Shelf

✓	MODEL NUMBER	MOUNTING CONFIGURATION
	RS1	REAR MOUNTED
	RS2	FRONT MOUNTED



RS1 SHOWN

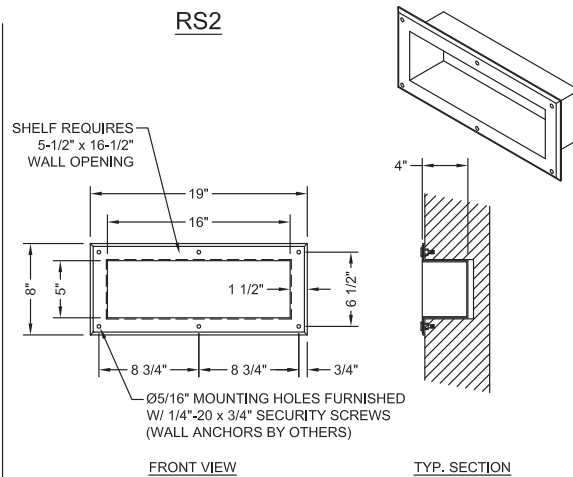
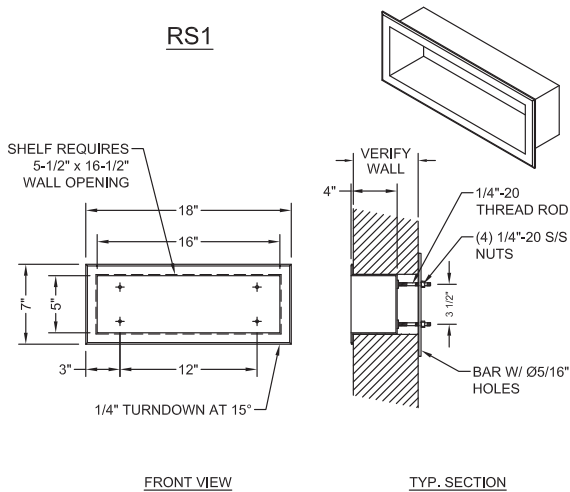


RS2 SHOWN

RS ___ recessed shelf shall be fabricated entirely of 16 GA, Type 304 stainless steel. Exposed flange surfaces are polished to a #3 satin finish. Shelf is available in both rear mounting (RM) or flange mounting (FM) configuration.

Shelf assembly (RS1) supplied with anchoring hardware.

Shelf assembly (RS2) supplied with vandal-resistant security screws, wall anchors by others.

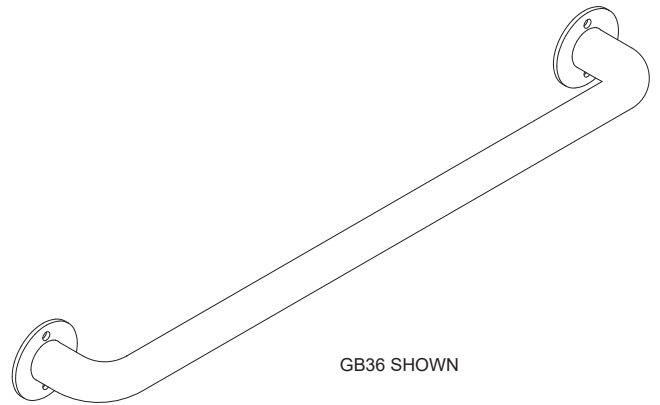


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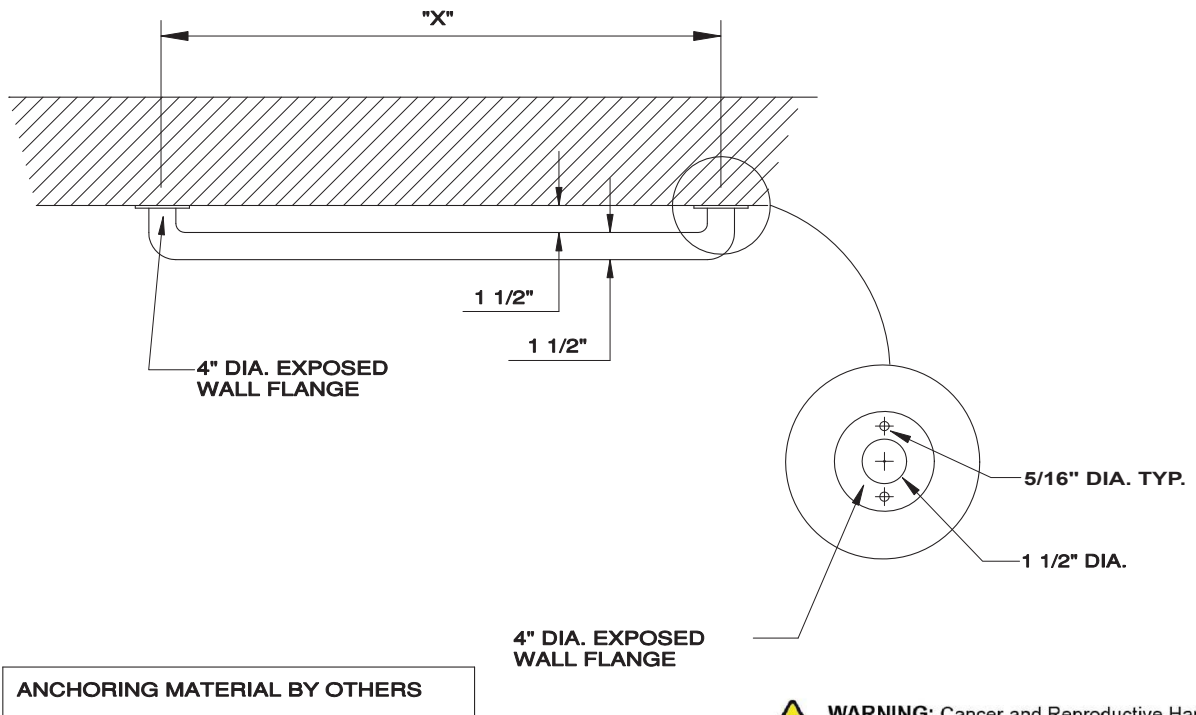
GB Series Grab Bars

✓	MODEL NUMBER	GRAB BAR LENGTH ("X")
	GB18	18"
	GB24	24"
	GB30	30"
	GB36	36"
	GB42	42"
	GB48	48"
	GB3318	33" X 18"



GB ____ grab bars shall be fabricated from Type 304 stainless steel. Exposed stainless steel surfaces shall be polished to a #3 satin finish. Standard flange configuration is exposed. Grab bar fasteners and wall anchors by others.

Various configurations are available.



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ASGB Series Ligature-resistant Grab Bars

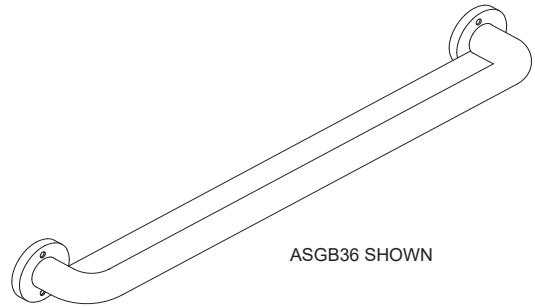
✓	MODEL NUMBER	GRAB BAR LENGTH ("X")
	ASGB18	18"
	ASGB18V	18" (Vertical grab bar w/ no weep holes.)
	ASGB24	24"
	ASGB24V	24" (Vertical grab bar w/ no weep holes.)
	ASGB30	30"
	ASGB36	36"
	ASGB42	42"
	ASGB48	48"
	ASGB3318	33" X 18"

ASGB _____ Ligature-resistant grab bars shall be fabricated from Type 304 stainless steel. Exposed stainless steel surfaces shall be polished to a #3 satin finish. Grab bar shall have 11 gauge stainless steel plate welded to bottom to give fixture a ligature-resistant design. Standard flange configuration is exposed. Grab bar fasteners and wall anchors by others.

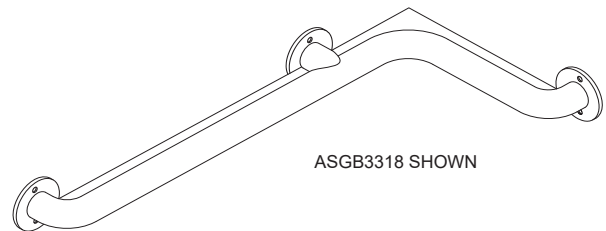
Various configurations are available.

LIGATURE-RESISTANT DISCLAIMER

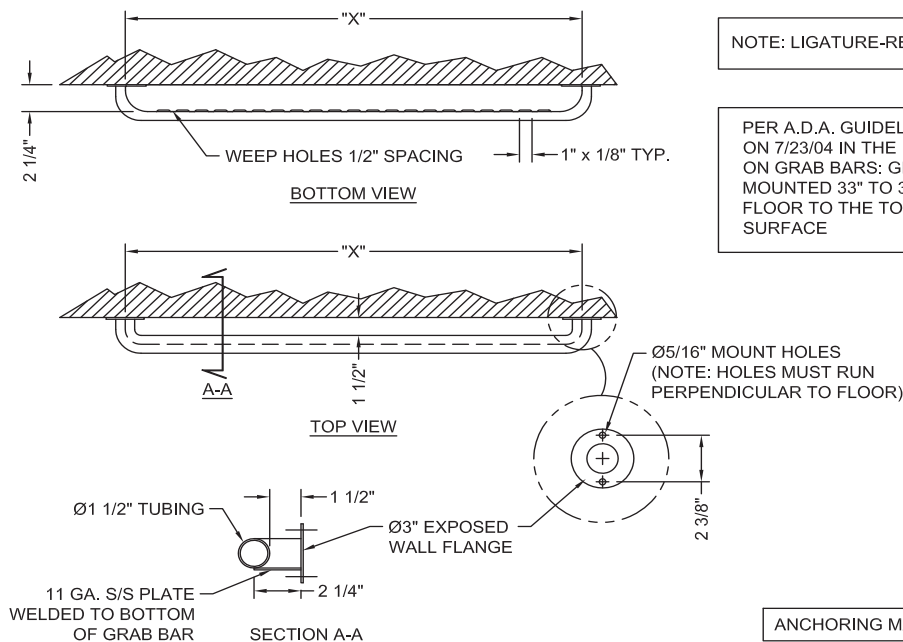
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ASGB36 SHOWN

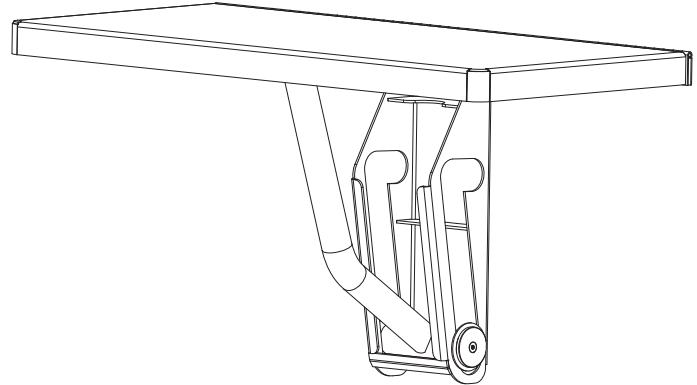


ASGB3318 SHOWN



FSS Series Folding Shower Seat

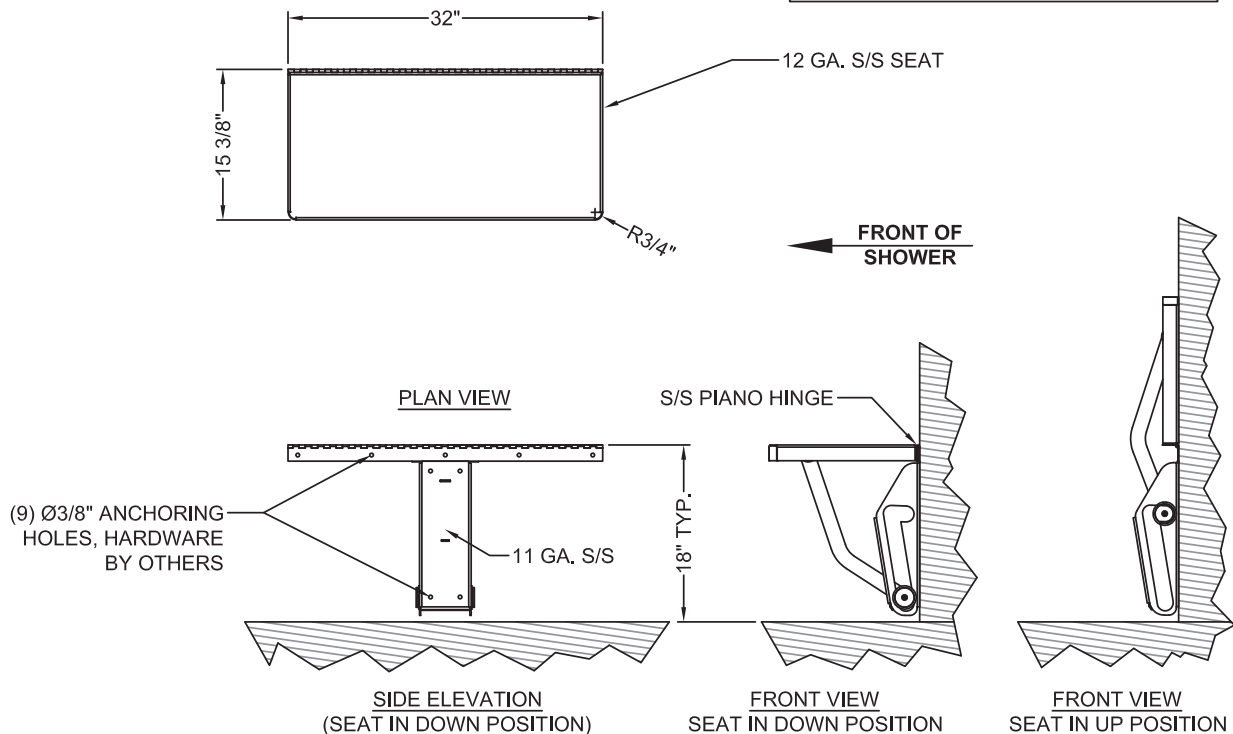
FSS folding shower seat shall be fabricated from Type 304 stainless steel. Seating surface and flanges polished to a #3 satin finish. Folding shower seat provides sturdy seating for users of handicapped shower facilities and can be easily folded up when not in use.



Wall anchors and fasteners by others.

 IN COMPLIANCE WITH A.D.A. 2010

NOTE: FOLDING SEAT MUST MOUNT 1" OUT FROM BACK WALL TO AVOID GRAB BAR INTERFERENCE



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ASFVC

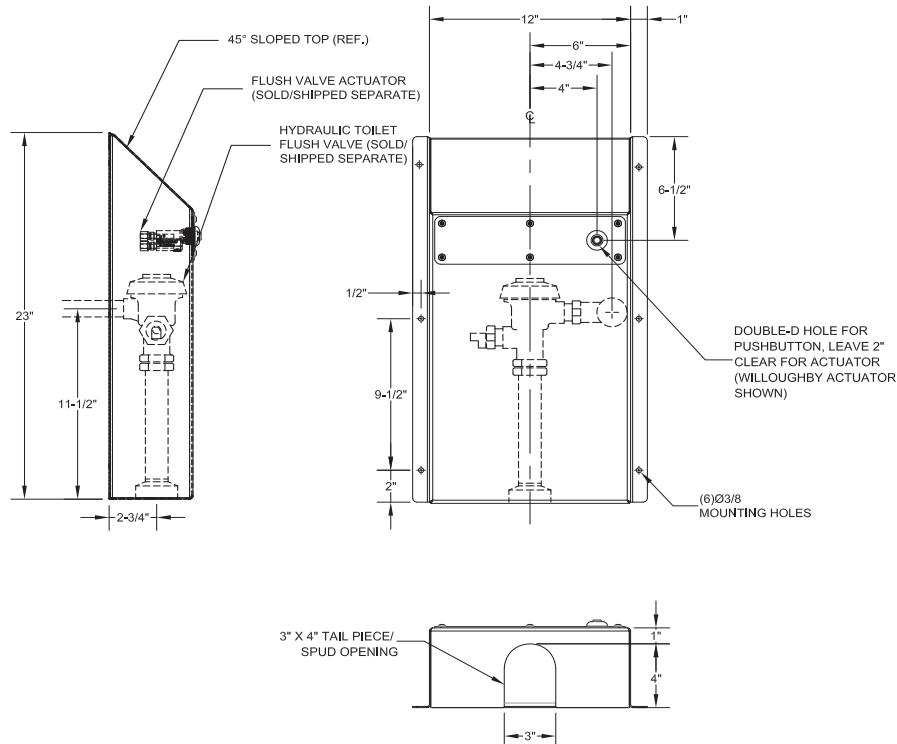
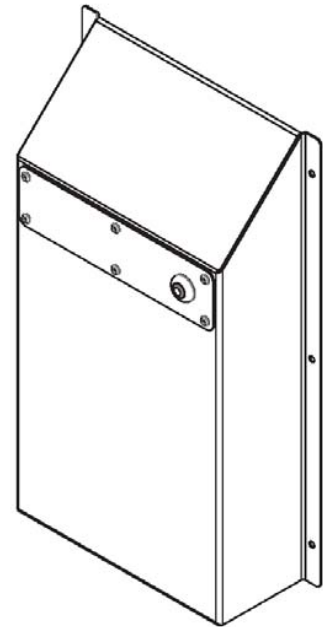
Ligature-resistant Flush Valve Cover

Stainless steel ligature-resistant flush valve cover shall be:
Willoughby Option No. **ASFVC**

Flush valve cover shall be fabricated from 14 GA, Type 304 stainless steel with exposed stainless steel surfaces polished to a #4 satin finish. Flush valve cover is supplied with $\varnothing 5/16"$ mounting holes, anchoring hardware is provided by others. Flush valve cover shall have a ligature-resistant sloped top, radiused vertical corners and a single access cover with a single push button hole for right or left hand toilet.

Options:

- DC Decorator Color (Fixture exterior only- White)
- For use with Willoughby push button actuator (double 'D' hole required)
- For use with Sloan push button actuator ($\varnothing 1-1/2"$ hole required)
- For use with another push button actuator (specify hole size: _____)



LIGATURE-RESISTANT DISCLAIMER

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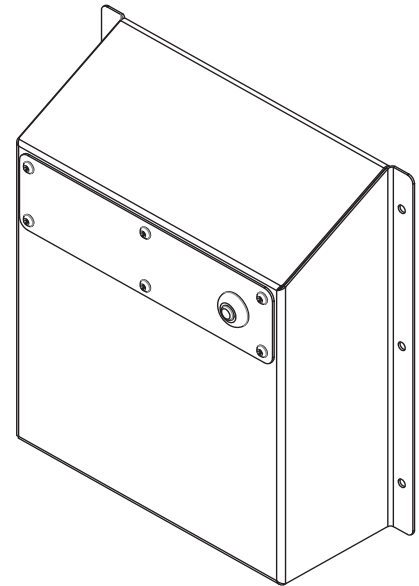
ASFVC-ADA Ligature-resistant ADA Compliant Flush Valve Cover

Stainless steel ligature-resistant ADA compliant flush valve cover shall be: Willoughby Option No. **ASFVC-ADA**

Flush valve cover shall be fabricated from 14 GA, Type 304 stainless steel with exposed stainless steel surfaces polished to a #4 satin finish. Flush valve cover is supplied with Ø5/16" mounting holes, anchoring hardware is provided by others. Flush valve cover shall have a ligature-resistant sloped top, radiused vertical corners, single access cover with a single push button hole for right or left hand toilet.

Options:

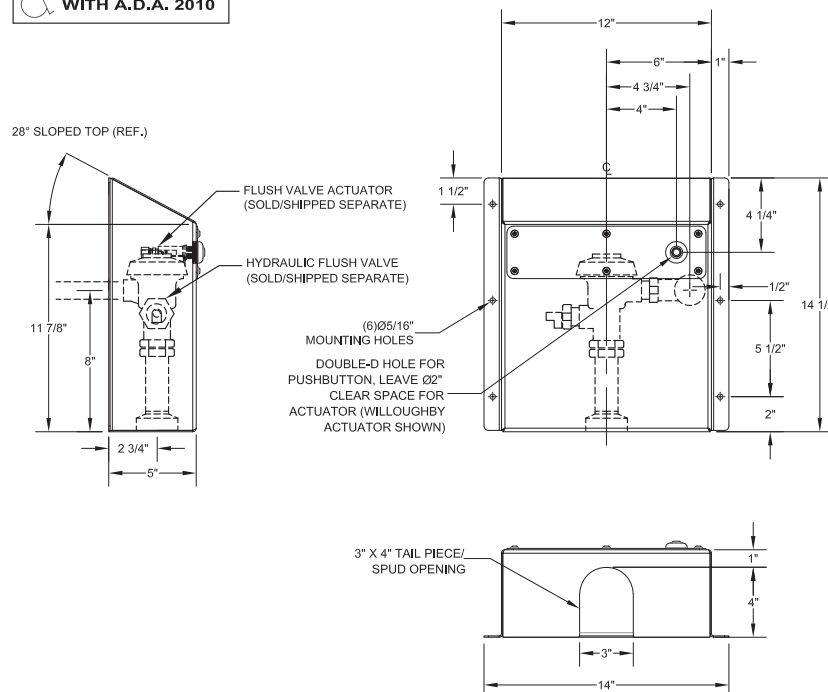
- DC Decorator Color (Fixture exterior only- White)
- For use with Willoughby push button actuator (double 'D' hole required)
- For use with Sloan push button actuator (Ø1-1/2" hole required)
- For use with another push button actuator (specify hole size: _____)



SHOWN WITH WILLOUGHBY 600317PM PUSH BUTTON



FOR SLOAN HYDRAULIC FLUSH VALVE



LIGATURE-RESISTANT DISCLAIMER

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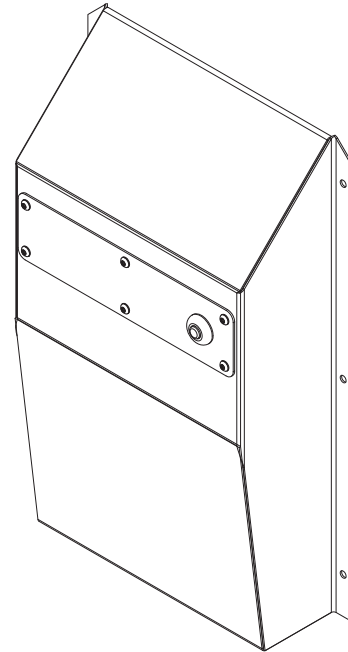
- www.P65Warnings.ca.gov

ASUFVC

Ligature-resistant Urinal Flush Valve Cover

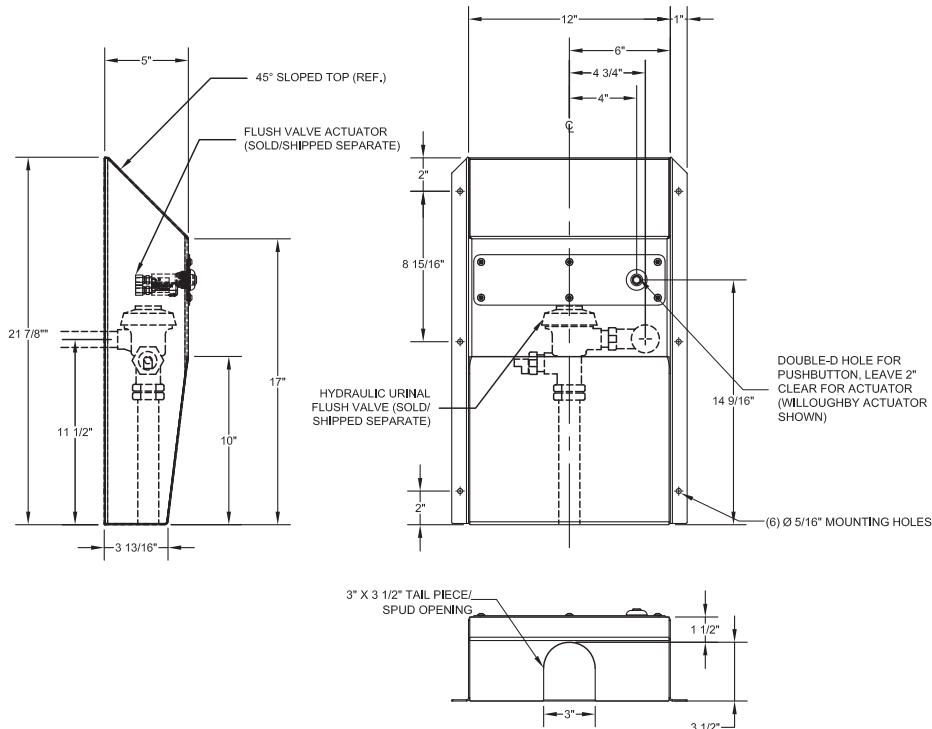
Stainless steel ligature-resistant urinal flush valve cover shall be:
Willoughby Option No. **ASUFVC**

Urinal flush valve cover shall be fabricated from 14 GA, Type 304 stainless steel with exposed stainless steel surfaces polished to a #4 satin finish. Flush valve cover is supplied with $\varnothing 5/16"$ mounting holes, anchoring hardware is provided by others. Flush valve cover shall have ligature-resistant sloped top and bottom and a single access cover with a single push button hole for right or left hand valve.



Options:

- DC Decorator Color (Fixture exterior only- White)
- For use with Willoughby push button actuator (double 'D' hole required)
- For use with Sloan push button actuator ($\varnothing 1-1/2"$ hole required)
- For use with another push button actuator (specify hole size: _____)



LIGATURE-RESISTANT DISCLAIMER

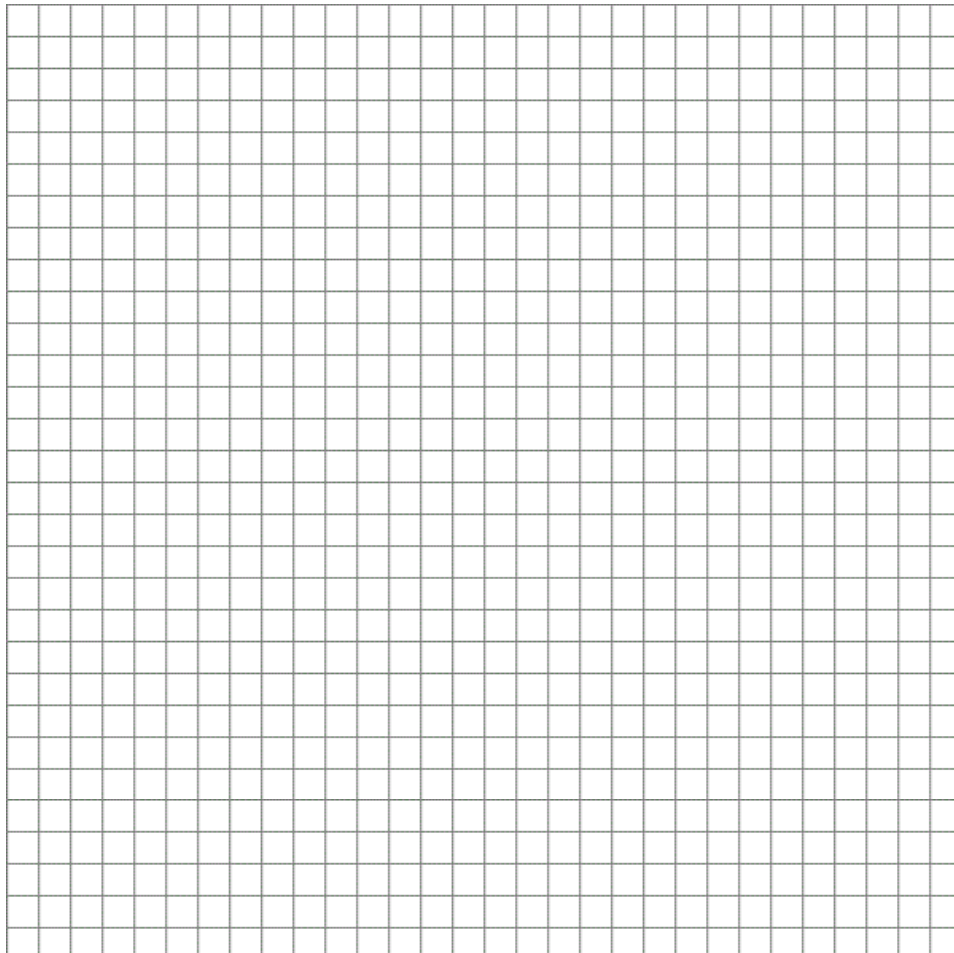
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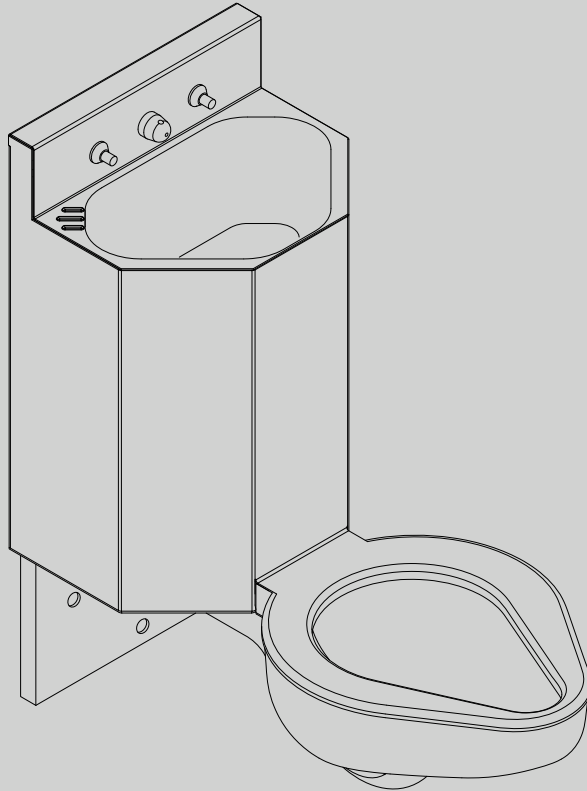
NOTES:



PARTS AND ACCESSORIES CATALOG



WILLOUGHBY



SECTION 22

REPLACEMENT PLUMBING FIXTURES

THESE ITEMS:

REPLACEMENT TOILETS _____

REPLACEMENT LAVATORIES _____

REPLACEMENT COMBIS _____

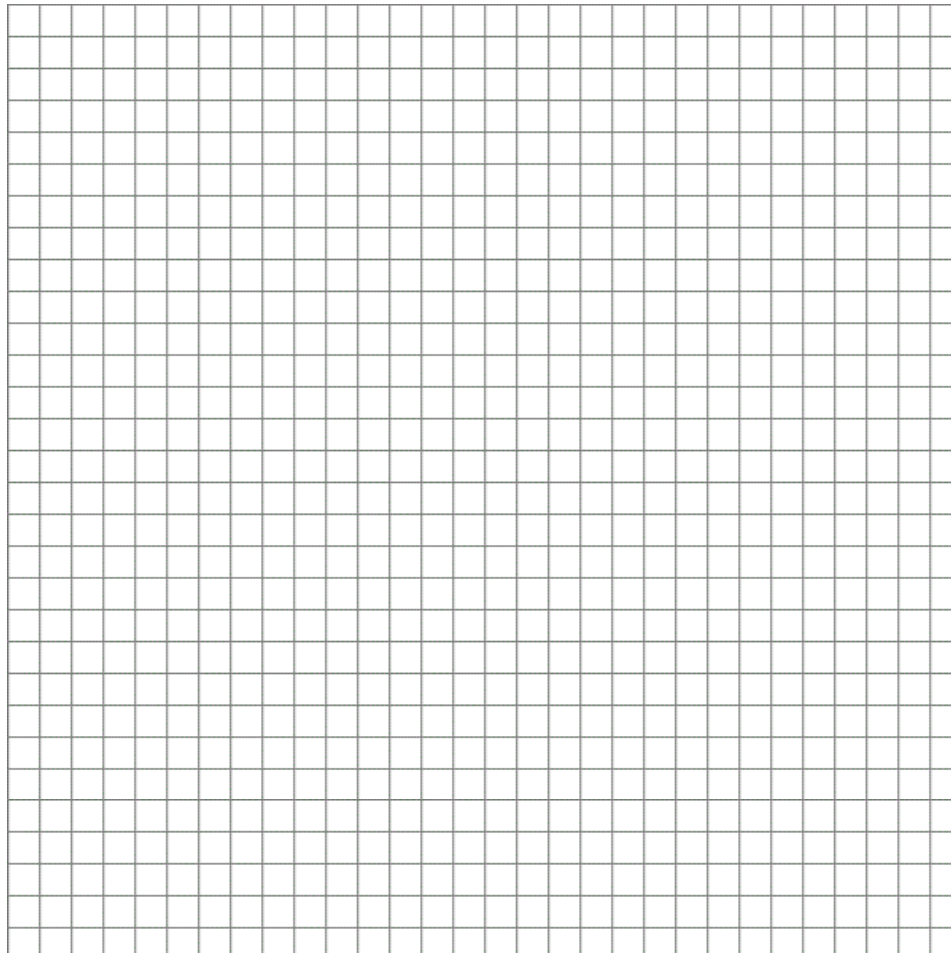
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190

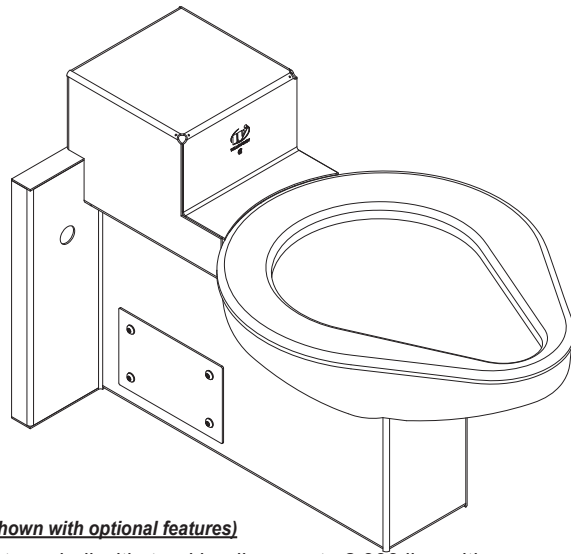
198

202

NOTES:



ETW-1490-CM-RPF Replacement Carrier Mounted (3-bolt) Wall Outlet Blowout Series Toilet



Recommended Specifications

(Unit may be shown with optional features)

Replacement, Carrier Mounted (3-bolt), Wall Outlet, Blowout Series Toilet shall be: Willoughby Model No. **ETW-1490-CM-RPF**

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be an all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball.

Toilet shall be blowout type which requires 35 psi minimum flushing pressure. Model shall meet the requirements of ASME A112.19.3/CSA B45.4.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Anchoring shall be by standard 3-bolt blowout carrier (carrier and fasteners by others). Back spud unit shall require chase area for installation and maintenance.

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

On back to back fixture installations, do not use standard cross type waste fittings: cross flow may result due to blowout jet action. Use sanitary or offset type waste fittings.

✓	MANUFACTURER	MODEL #	V	W	X	Y	Z
	AMERICAN STANDARD	2509.057	3-1/2"	11-1/4"	11-3/4"	15 1/4"	5"
		2510.048	3-1/2"	11-1/4"	11-3/4"	15 1/4"	N/A
		2511.012	3-1/2"	11-1/4"	11-3/4"	15 1/4"	5"
		2512.010	3-1/2"	11-1/4"	11-3/4"	15 1/4"	N/A
		2513.018	3-1/2"	11-1/4"	11-3/4"	15 1/4"	5"
		2515.013	3-1/2"	11-1/4"	11-3/4"	15 1/4"	5"
		3-460	3-1/2"	11-1/4"	12-1/4"	15 3/4"	N/A
	CRANE	3-462	3-1/2"	11-1/4"	12-1/4"	15 3/4"	4-3/4"
		3-462E	3-1/2"	11-1/4"	12-1/4"	15 3/4"	4-3/4"
		3-464	3-1/2"	11-1/4"	12-1/4"	15 3/4"	4-3/4"
		3-464E	3-1/2"	11-1/4"	12-1/4"	15 3/4"	4-3/4"
	ELJER	111-0355	3-1/2"	11-1/4"	11-1/2"	15"	N/A
		111-0365	3-1/2"	11-1/4"	11-1/2"	15"	5"
		111-0377	3-1/2"	11-1/4"	11-1/2"	15"	5"
		K-4450-ET	3-1/2"	11-1/4"	11"	14-1/2"	N/A
	KOHLER	K-4460-ER	3-1/2"	11-1/4"	11"	14-1/2"	5 1/2"
		K-4475-ER	3-1/2"	11-1/4"	11"	14-1/2"	5 1/2"
		K-4450-C	4"	11-3/4"	11"	15"	N/A
		K-4460-C	4"	11-3/4"	11"	15"	5 1/2"
		K-4475-C	4"	11-3/4"	11"	15"	5 1/2"
	SUPER SECUR	A-300	3-1/2"	11-1/4"	11-1/4"	14-3/4"	5-1/4"



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MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- ETW-1490-CM-RPF Replacement, Carrier Mounted (3-bolt), Wall Outlet, Blowout Series Toilet

[Other Options CONTINUED:]

2.) Inlet Location:

- BS Back Spud
- TS Top Spud

3.) Toilet Waste:

- GWC Gasketed Waste Connection (Standard)

4.) Flush Valve:

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- EFVP Electronic Flush Valve w/ (PZPB) Ligature-resistant Piezo Push Button (Pick Control)**
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- NFV Flush Valve Provided by Others

5.) Other Options:

- T4 Manual Reset Toilet Overflow Preventer, Requires: (FV) Hydraulic Flush Valve and Accessible Chase
- ET4 Electronic Toilet Overflow Preventer*, Requires (EFVP), Accessible Chase, & (WUCC-3010) or (WMSII) control
- FVT Flush Valve Thru Wall Connection (Back Spud Only)
- ASFVC Flush Valve Cover (Ligature-resistant, Top Spud Only)**
- ASFVCADA Ligature-resistant ADA Flush Valve Cover (Top Spud Only)**
- APFM Flush Valve Access Panel Front Mounted (Allows access to concealed in-wall flush valve. If BS & HC options are selected, the APFMD will be required.)
- APFMD Flush Valve Access Dual Panel Front Mounted (Allows access to concealed in-wall flush valve from fixture side)

- HS Hinged White Plastic Seat (No Cover, not recommended for Maximum Security/Ligature-resistant use)
- DC Decorator Color (Fixture exterior only - White)
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- HPS High Polish Seat
- TSC Toilet Shipping Cover
- RTH1 Wall Mounted Recessed Tissue Holder (Rear Mounted, Requires Accessible Chase)
- RTH2 Wall Mounted Recessed Tissue Holder (Front Mounted, 4-1/2" Depth)
- RFVB Remote Flush Valve with Box
- REFVB Remote Electronic Flush Valve with Box*
- Other _____
- Other _____

6.) Electronic Controls* (Must Use Electronic Flush Valve):

- WUFC-4000 Pneutronic WMSII
- WUCC-3010 (Select WUCC-3010 Control if pairing a Toilet with a Lavatory or if the Toilet is selected with an (ET4) overflow option)

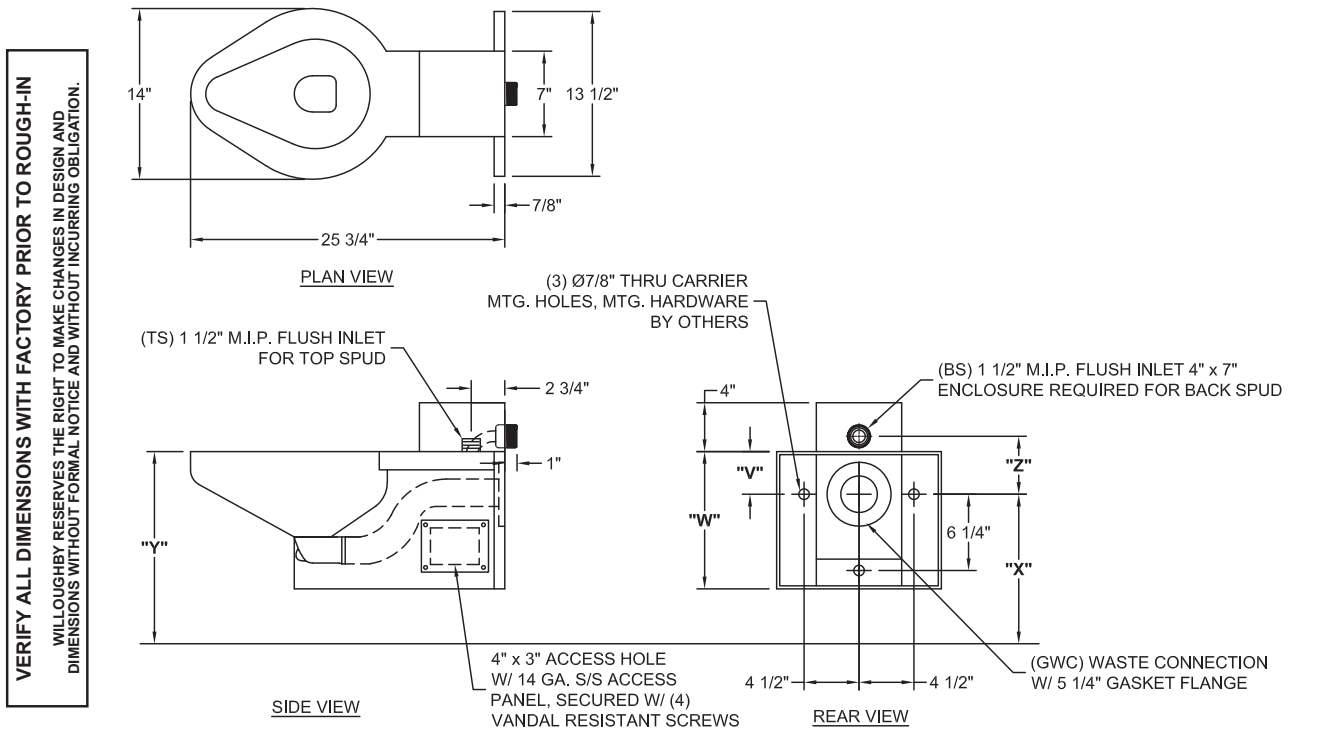
*(Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

****LIGATURE-RESISTANT DISCLAIMER**

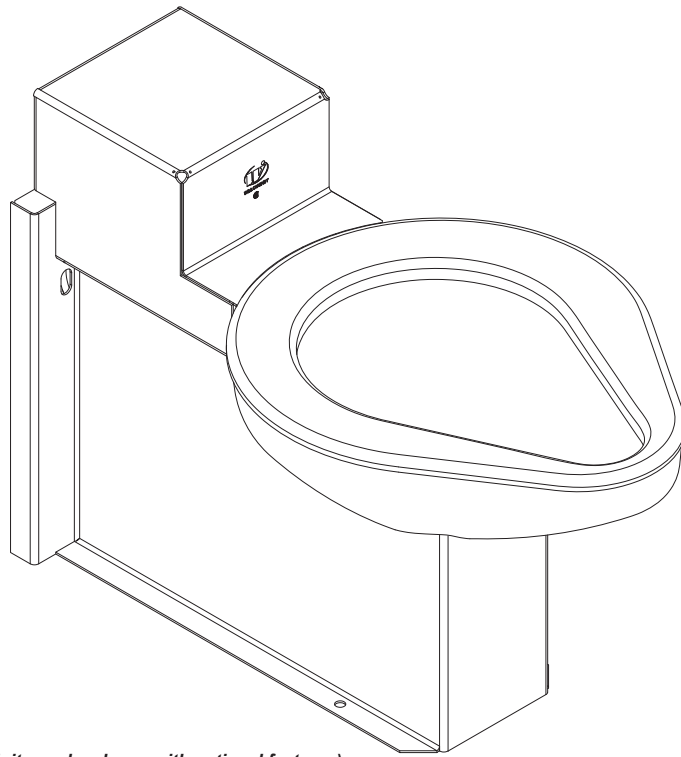
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[CONTINUED IN NEXT COLUMN:]

Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____



ETW-1490-FM-RPF Replacement Floor Mounted Wall Outlet Blowout Series Toilet



Recommended Specifications

(Unit may be shown with optional features)

Replacement, Floor Mounted, Wall Outlet, Blowout Series Toilet shall be: Willoughby Model No. **ETW-1490-FM-RPF**

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be an all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball. Toilet shall be blowout type which requires 35 psi minimum flushing pressure.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Anchoring shall be through the front and through the floor (anchoring hardware provided by others). Back spud unit shall require chase area for installation and maintenance.

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

On back to back fixture installations, do not use standard cross type waste fittings: cross flow may result due to blowout jet action. Use sanitary or offset type waste fittings.

✓	MANUFACTURER	MODEL #	A	B	C	D
	KOHLER	4480ER	11"	5-1/2"	9"	6-1/2"
	AMERICAN STANDARD	2516.037	10-1/4"	6"	10"	6-3/4"
	SUPER SECUR	A-100	10-1/4"	6-1/4"	10"	6-3/4"
	ELJER	111-0580	10"	6"	10"	6-3/4"
	CRANE	3-487	11"	5-1/2"	S	S

S = SPECIFY



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MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- ETW-1490-FM-RPF Replacement, Floor Mounted, Wall Outlet, Blowout Series Toilet

2.) Inlet Location:

- BS Back Spud
- TS Top Spud

3.) Toilet Waste:

- GWC Gasketed Waste Connection (Standard)

4.) Flush Valve:

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- EFVP Electronic Flush Valve w/ (PZPB) Ligature-resistant Piezo Push Button (Pick Control)**
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- NFV Flush Valve Provided by Others

5.) Other Options:

- T4 Manual Reset Toilet Overflow Preventer, Requires: (FV) Hydraulic Flush Valve and Accessible Chase
- ET4 Electronic Toilet Overflow Preventer*, Requires (EFVP), Accessible Chase, & (WUCC-3010) or (WMSII) control
- FVT Flush Valve Thru Wall Connection (Back Spud Only)**
- ASFVC Flush Valve Cover (Ligature-resistant, Top Spud Only)**
- ASFVCADA Ligature-resistant ADA Flush Valve Cover (Top Spud Only)**
- APFM Flush Valve Access Panel Front Mounted (Allows access to concealed in-wall flush valve. If BS & HC options are selected, the APFMD will be required.)
- APFMD Flush Valve Access Dual Panel Front Mounted (Allows access to concealed in-wall flush valve from fixture side)

[Other Options CONTINUED:]

- HS Hinged White Plastic Seat (No Cover, not recommended for Maximum Security/Ligature-resistant use)
- DC Decorator Color (Fixture exterior only - White)
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- HPS High Polish Seat
- TSC Toilet Shipping Cover
- RTH1 Wall Mounted Recessed Tissue Holder (Rear Mounted, Requires Accessible Chase)
- RTH2 Wall Mounted Recessed Tissue Holder (Front Mounted, 4-1/2" Depth)
- RFVB Remote Flush Valve with Box
- REFVB Remote Electronic Flush Valve with Box*
- Other _____
- Other _____

6.) Electronic Controls* (Must Use Electronic Flush Valve):

- WUFC-4000 Pneutronic WMSII
- WUCC-3010 (Select WUCC-3010 Control if pairing a Toilet with a Lavatory or if the Toilet is selected with an (ET4) overflow option)

*(Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

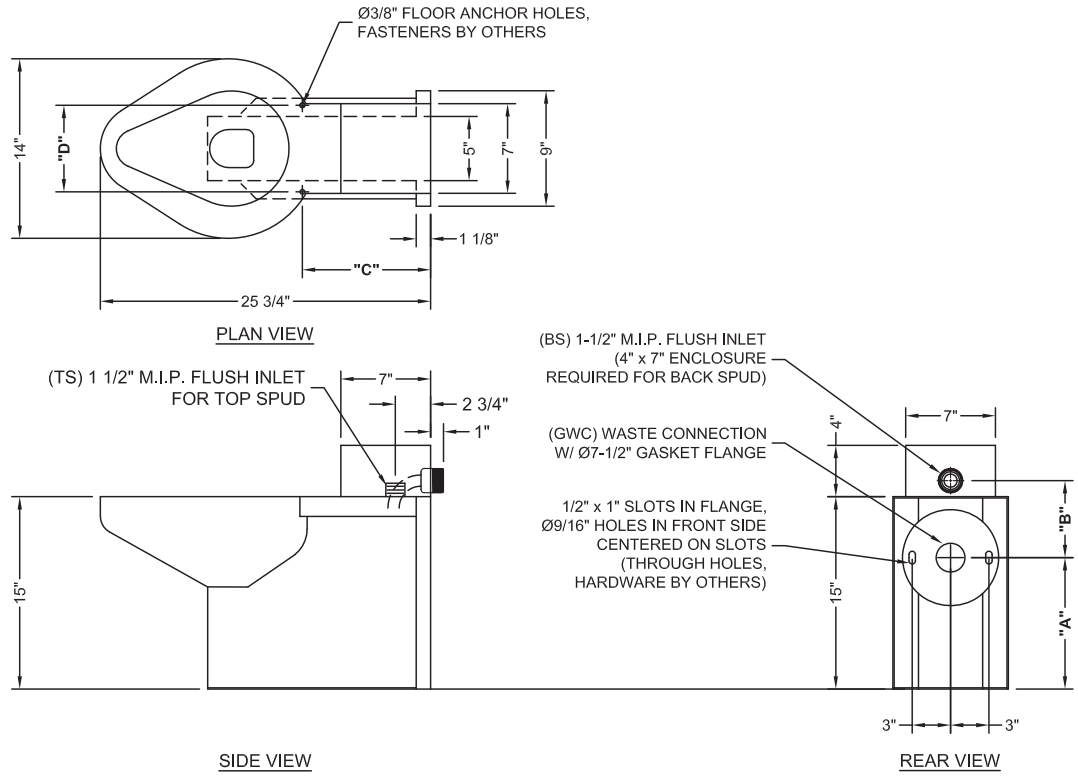
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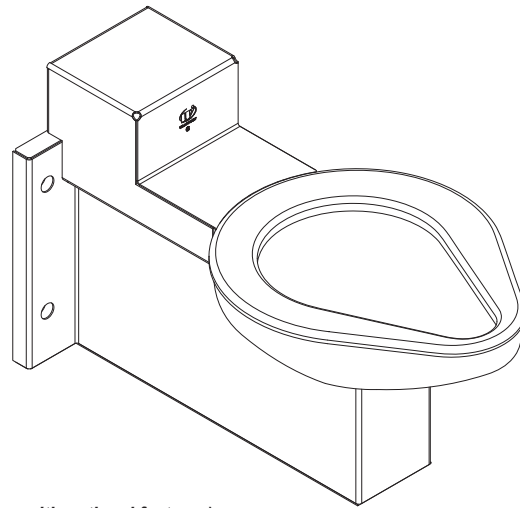
[CONTINUED IN NEXT COLUMN:]

Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

VERIFY ALL DIMENSIONS WITH FACTORY PRIOR TO ROUGH-IN
 WILLOUGHBY RESERVES THE RIGHT TO MAKE CHANGES IN DESIGN AND DIMENSIONS WITHOUT FORMAL NOTICE AND WITHOUT INCURRING OBLIGATION.



ETWS-1490-CM-RPF Replacement Carrier Mounted (4-bolt) Wall Outlet Siphon Jet Series Toilet



Recommended Specifications

(Unit may be shown with optional features)

Replacement, Carrier Mounted (4-bolt), Wall Outlet, Siphon Jet Series Toilet shall be: Willoughby Model No. **ETWS-1490-CM-RPF**

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be an all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball. Toilet shall be siphon jet type which requires 35 psi minimum flushing pressure.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Anchoring shall be by standard 4 bolt siphon jet carrier (carrier and fasteners by others).

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

On back to back fixture installations, do not use standard cross type waste fittings: cross flow may result due to blowout jet action. Use sanitary or offset type waste fittings.

✓	MANUFACTURER	MODEL #	X	Y	Z	
	AMERICAN STANDARD	2093.100	4-1/8"	14-1/2"	N/A	
		2254.127	5-1/4"	15"	11"	
		2256.194	5-1/4"	15"	—	
		2257.103	5-1/4"	15"	—	
		2258.125	5-1/4"	15"	11"	
		2294.011	5-1/4"	16-1/8"	N/A	
		2296.019	5-1/4"	16-1/8"	N/A	
		2324.100	—	—	—	
		2477.016	5-1/4"	14-3/4"	—	
		2478.014	5-1/4"	14-3/4"	11"	
		2500.015	5-1/4"	14-3/4"	11"	
		2502.011	5-1/4"	14-3/4"	—	
		ELJER	111-1405	5-1/4"	14-3/4"	—
			111-1405E	5-1/4"	15"	—
			111-1413E	5-1/4"	15"	—
	111-1425		5-1/4"	14-3/4"	7-3/4"	
	111-1425E		5-1/4"	15"	7-3/4"	
	111-1455		5-1/4"	14-3/4"	—	
	111-1475		5-1/4"	14-3/4"	7-3/4"	
	111-1505		5-1/4"	15"	—	
	111-1513		5-1/4"	15"	—	
	111-2105		5-1/4"	15"	—	
	111-2110		5-1/4"	15"	7-3/4"	
	111-2113		5-1/4"	15"	—	
	111-2118		5-1/4"	15"	7-3/4"	
	111-2405E	5-1/4"	15"	—		
	111-2425E	5-1/4"	15"	11-3/4"		
	CRANE	3-217	4"	16-1/2"	—	
		3-446	5-1/2"	14-3/4"	—	
		3-446E	5-1/2"	15-1/2"	—	
		3-449	5-1/2"	14-3/4"	9"	
		3-449E	5-1/2"	15-1/2"	—	
		3-445	5-1/2"	17"	—	
		3H-445	5-1/2"	17"	—	
		3H-722E	5-1/2"	15-3/8"	—	
	KOHLER	K-4430-ET	5"	14-3/4"	—	
		K-4432-ER	5"	15"	10"	
		K-4330	5"	15"	—	



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- ETWS-1490-CM-RPF Replacement, Carrier Mounted (4-bolt), Wall Outlet, Siphon Jet Series Toilet

2.) Inlet Location:

- BS Back Spud
- TS Top Spud

3.) Toilet Waste:

- GWC Gasketed Waste Connection (Standard)

4.) Flush Valve:

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- EFVP Electronic Flush Valve w/ (PZPB) Ligature-resistant Piezo Push Button (Pick Control)**
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- NFV Flush Valve Provided by Others

5.) Other Options:

- T4 Manual Reset Toilet Overflow Preventer, Requires: (FV) Hydraulic Flush Valve and Accessible Chase
- T4A Auto Reset Toilet Overflow Preventer, Requires: (FV) Hydraulic Flush Valve and Accessible Chase
- ET4 Electronic Toilet Overflow Preventer*, Requires (EFVP), Accessible Chase, & (WUCC-3010) or (WMSII) control
- FVT Flush Valve Thru Wall Connection (Back Spud Only)
- ASFVC Flush Valve Cover (Ligature-resistant, Top Spud Only)**
- ASFVCADA Ligature-resistant ADA Flush Valve Cover (Top Spud Only)**

[CONTINUED IN NEXT COLUMN:]

[Other Options CONTINUED:]

- APFM Flush Valve Access Panel Front Mounted (Allows access to concealed in-wall flush valve. If BS & HC options are selected, the APFMD will be required.)
- APFMD Flush Valve Access Dual Panel Front Mounted (Allows access to concealed in-wall flush valve from fixture side)
- HS Hinged White Plastic Seat (No Cover, not recommended for Maximum Security/Ligature-resistant use)
- DC Decorator Color (Fixture exterior only - White)
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- HPS High Polish Seat
- TSC Toilet Shipping Cover
- RTH1 Wall Mounted Recessed Tissue Holder (Rear Mounted, Requires Accessible Chase)
- RTH2 Wall Mounted Recessed Tissue Holder (Front Mounted, 4-1/2" Depth)
- RFVB Remote Flush Valve with Box
- REFVB Remote Electronic Flush Valve with Box*
- Other _____
- Other _____

6.) Electronic Controls* (Must Use Electronic Flush Valve):

- WUFC-4000 Pneutronic WMSII
- WUCC-3010 (Select WUCC-3010 Control if pairing a Toilet with a Lavatory or if the Toilet is selected with an (ET4) overflow option)

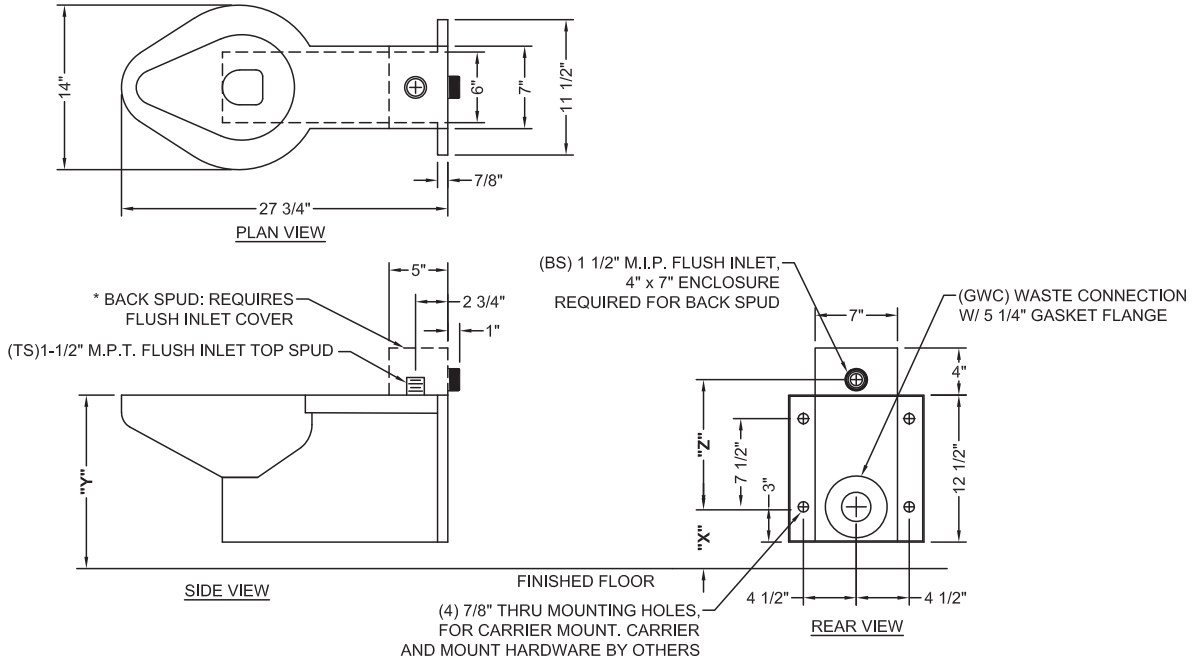
* (Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

****LIGATURE-RESISTANT DISCLAIMER**

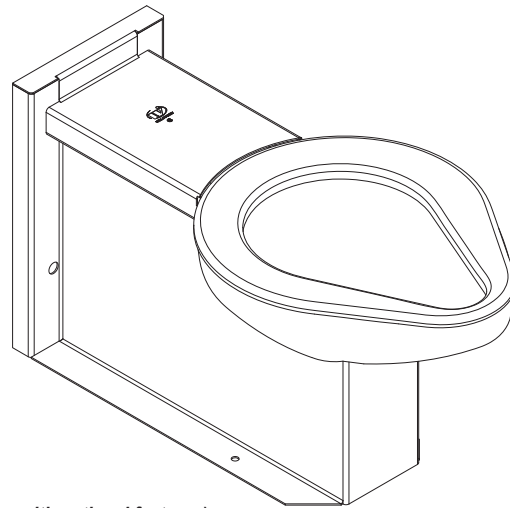
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Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

VERIFY ALL DIMENSIONS WITH FACTORY PRIOR TO ROUGH-IN
 WILLOUGHBY RESERVES THE RIGHT TO MAKE CHANGES IN DESIGN AND DIMENSIONS WITHOUT FORMAL NOTICE AND WITHOUT INCURRING OBLIGATION.



ETWS-1490-FM-RPF Replacement Floor Mounted Wall Outlet Siphon Jet Series Toilet



Recommended Specifications

(Unit may be shown with optional features)

Replacement, Floor Mounted, Wall Outlet, Siphon Jet Series Toilet shall be: Willoughby Model No. **ETWS-1490-FM-RPF**

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be an all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball. Toilet shall be siphon jet type which requires 35 psi minimum flushing pressure.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Anchoring shall be through the front and through the floor (anchoring hardware provided by others). Back spud unit shall require chase area for installation and maintenance.

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

On back to back fixture installations, do not use standard cross type waste fittings: cross flow may result due to siphon jet action. Use sanitary or offset type waste fittings.

MANUFACTURER	MODEL #	A	B	C	D
KOHLER	K4398	4-1/2"	13-1/8"	14"	6-1/2"
	K4486-ET	4-1/2"	—	14"	6-1/2"
	K4498-ER	4-1/2"	13"	14"	6-1/2"
CRANE	3-480	4-1/2"	—	11-3/4"	8"
	3-480E	4-1/2"	—	—	—
	3-481	4-1/2"	13"	11-3/4"	8"
	3-481E	4-1/2"	13"	—	—
	3-484E	4-1/2"	13"	—	—
AMERICAN STANDARD	2529.014	4-1/4"	—	10-3/8"	5-1/2"
	2530.012	4-1/4"	13-1/8"	10-3/8"	5-1/2"
	2320.100	4"	N/A	12-3/4"	6"
	2529.016	4-1/4"	—	10-1/2"	5-1/2"
	2530.016	4-1/4"	13-1/8"	10-1/2"	5-1/2"
	2531.016	4-1/4"	13-1/8"	10-1/2"	5-1/2"
ELJER	111-0505	4-1/2"	—	—	TOE CLAMPS
	111-0505E	4-1/2"	—	—	TOE CLAMPS
	111-0515	4-1/2"	13"	—	TOE CLAMPS
	111-0515E	4-1/2"	—	—	TOE CLAMPS
SUPER SECUR	A-104	4-1/4"	14-1/2"	18"	6-3/4"



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov



MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- ETWS-1490-FM-RPF Replacement, Floor Mounted, Wall Outlet, Siphon Jet Series Toilet

2.) Inlet Location:

- BS Back Spud
- TS Top Spud

3.) Toilet Waste:

- GWC Gasketed Waste Connection (Standard)

4.) Flush Valve:

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- EFVP Electronic Flush Valve w/ (PZPB) Ligature-resistant Piezo Push Button (Pick Control)**
 - 1.28 GPF HET (4.8 Lpf) 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- NFV Flush Valve Provided by Others

5.) Other Options:

- T4 Manual Reset Toilet Overflow Preventer, Requires: (FV) Hydraulic Flush Valve and Accessible Chase
- T4A Auto Reset Toilet Overflow Preventer, Requires: (FV) Hydraulic Flush Valve and Accessible Chase
- ET4 Electronic Toilet Overflow Preventer*, Requires (EFVP), Accessible Chase, & (WUCC-3010) or (WMSII) control
- FVT Flush Valve Thru Wall Connection (Back Spud Only)
- ASFVC Flush Valve Cover (Ligature-resistant, Top Spud Only)**
- ASFVCADA Ligature-resistant ADA Flush Valve Cover (Top Spud Only)**

[Other Options CONTINUED:]

- AP Flush Valve Access Panel (Allows access to chase-mounted flush valve from fixture side)
- HS Hinged White Plastic Seat (No Cover, not recommended for Maximum Security/Ligature-resistant use)
- DC Decorator Color (Fixture exterior only - White)
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- HPS High Polish Seat
- TSC Toilet Shipping Cover
- RTH1 Wall Mounted Recessed Tissue Holder (Rear Mounted, Requires Accessible Chase)
- RTH2 Wall Mounted Recessed Tissue Holder (Front Mounted, 4-1/2" Depth)
- RFVB Remote Flush Valve with Box
- REFVB Remote Electronic Flush Valve with Box*
- Other _____
- Other _____

6.) Electronic Controls* (Must Use Electronic Flush Valve):

- WUFC-4000 Pneumatic WMSII
- WUCC-3010 (Select WUCC-3010 Control if pairing a Toilet with a Lavatory or if the Toilet is selected with an (ET4) overflow option)

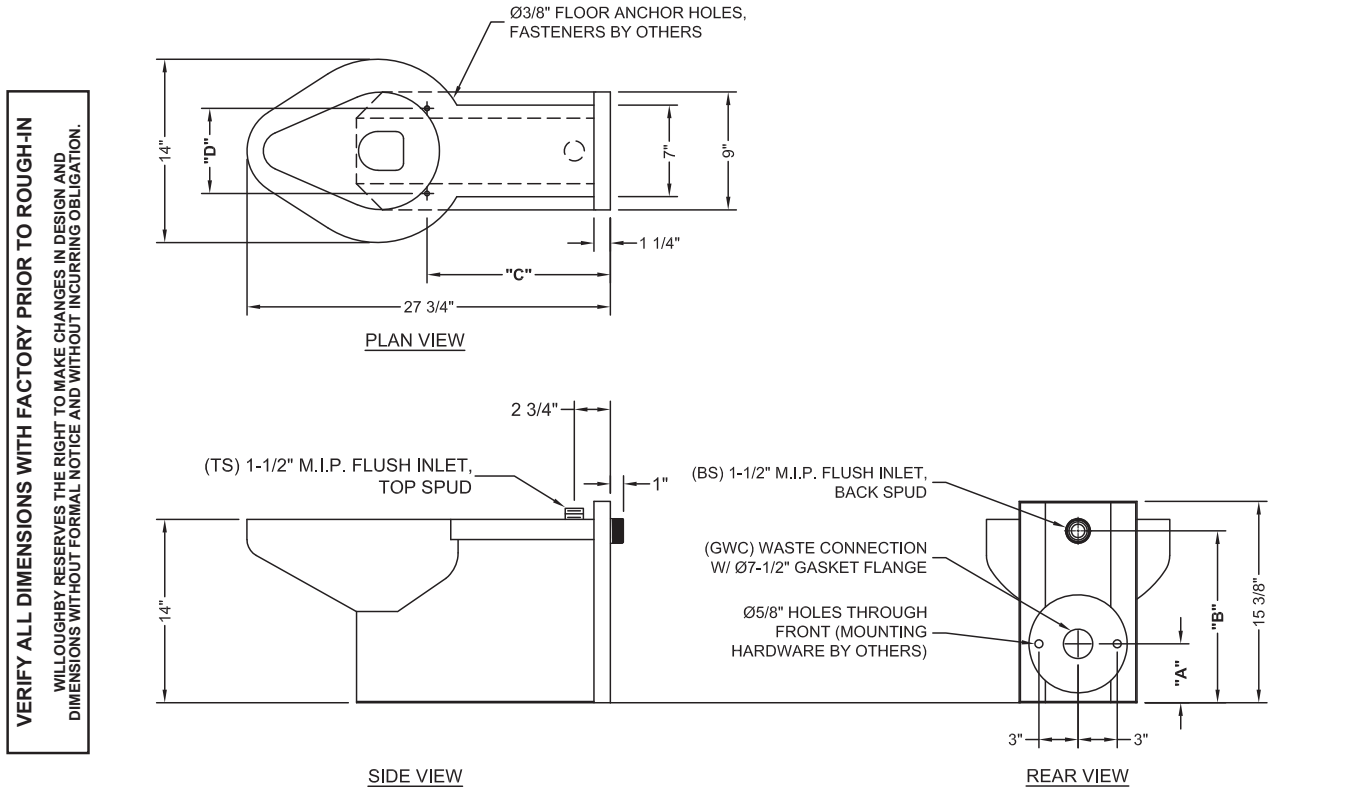
*(Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

****LIGATURE-RESISTANT DISCLAIMER**

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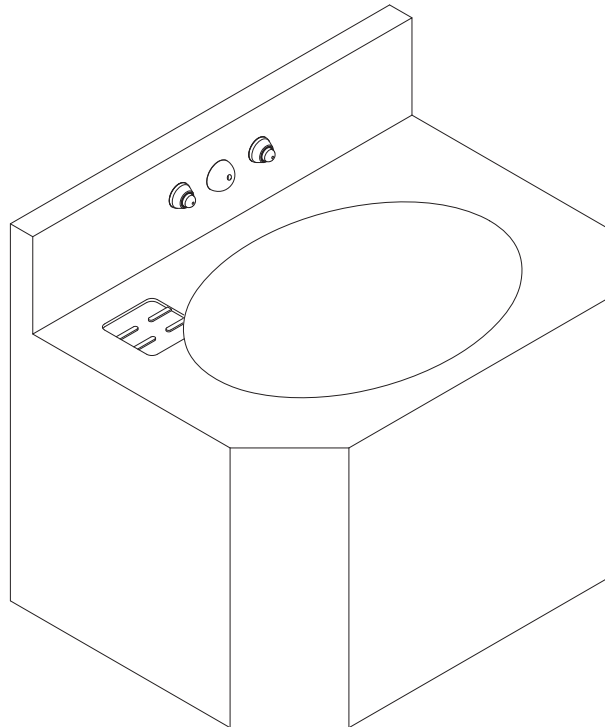
[CONTINUED IN NEXT COLUMN:]

Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____



HS-1013-96-RPF

Stainless Steel Replacement 18" Wide Rear Mounted Lavatory



(Unit may be shown with optional features)

Recommended Specifications

Stainless Steel, Replacement, 18" Wide, Rear Mounted, Lavatory shall be: Willoughby Model No. **HS-1013-96-RPF**

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard lavatory shall include:

- Oval-shaped bowl, 13" x 9-1/2" x 6" deep
- Stainless steel penal bubbler/filler
- Fast drain with air vent
- Elbow waste (1-1/2" F.I.P.)
- Self-draining soap dish

Cabinet interior shall be sound deadened with fire-resistant material.

Anchoring shall be by standard 4-point system: threaded rods, nuts and washers shall be furnished for walls up to 8" thick. Unit shall require chase area for installation and maintenance.



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- HS-1013-96-RPF Stainless Steel, Replacement, 18" Wide, Rear Mounted, Lavatory

2.) Bubblers or Spout Selection:

- BC Code Bubbler/Filler
- BPH Ligature-resistant Bubbler/Filler**
- FLH Ligature-resistant Lavatory Filler**

3.) Lavatory Valve Selection:

- NV No Valve (Select Hole Punching if needed)
- PSL1 Single Temp. Pneumatic Non-metering
- PSL2 Dual Temp. Pneumatic Non-metering
- PML1 Single Temp. Pneumatic Metering
- PML2 Dual Temp. Pneumatic Metering
- E1L1 Single Temp. Electronic (pick control)*
- E1L2 Dual Temp. Electronic (pick control)*

Valve Manifold Options:

Pneumatic or Electronic Only:

- MA2 MA3 MA4

4.) Lavatory Valve Actuation:

- PBH Ligature-resistant Push Buttons**
- PZPB Ligature-resistant Piezo Piezo Push Buttons**

5.) Electronic Controls* (Must Use Electronic Push Button):

- WUCC-3010 Pneutronic WMSII
- (The WUCC-3010 Control can be used to pair a Sink with a Toilet)

6.) Push Button Hole Punching:

If Less-Lavatory Valve, please specify push button hole sizes and locations on fixture backsplash:
 SP: _____

7.) Lavatory Waste:

- EB Elbow Waste (1-1/2" F.I.P.) (Standard)
- SLOW Slow Drain

8.) Options:

- MT Wall Template
- TB1 Single Toothbrush Holder
 - Right Left
- TB2 Dual Toothbrush Holder
 - Right Left
- TH1 Single Towel Hook
 - Right Left
- TH2 Dual Towel Hook
 - Right Left
- ISH Integral Shelf
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- Other: _____
- Other: _____

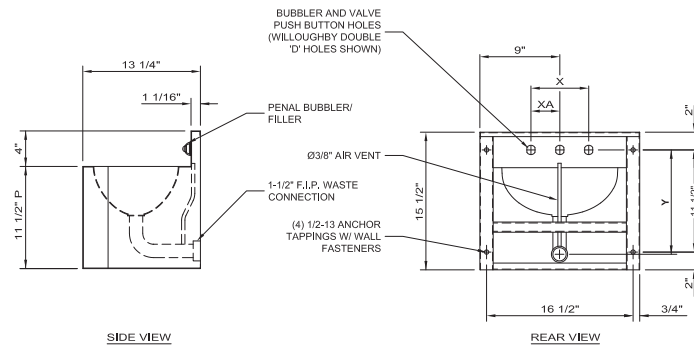
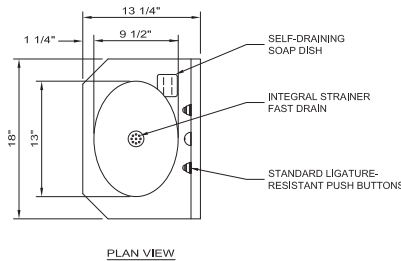
*(Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

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Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

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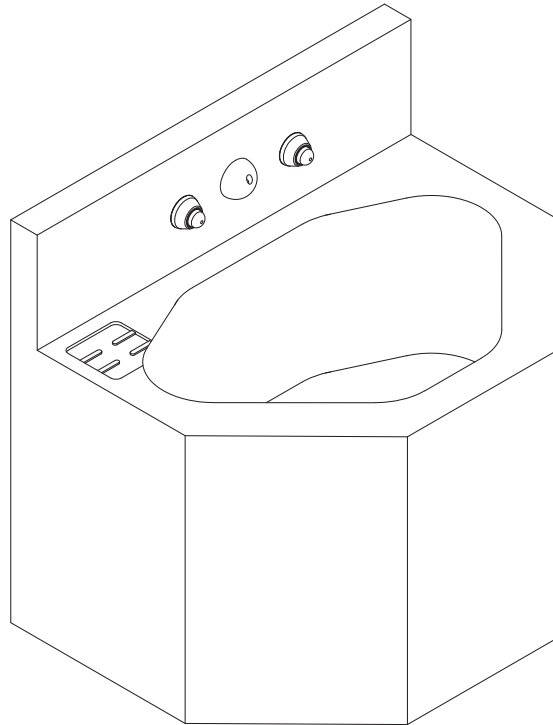


SPECIFY X, XA, Y, & HOLE Ø DIMENSIONS AS NEEDED FOR PUSH BUTTON HOLE PUNCHING

visit our website at www.willoughby-ind.com

HS-1013-46-15-RPF

Stainless Steel Replacement 15" Wide Rear Mounted Lavatory



(Unit may be shown with optional features)

Recommended Specifications

Stainless Steel, Replacement, 15" Wide, Rear Mounted, Lavatory shall be: Willoughby Model No. **HS-1013-46-15-RPF**

Fixture shall be fabricated from 14 GA., Type 304 stainless steel. The construction shall be all welded, with exposed surfaces polished to a #3 satin finish.

Standard lavatory shall include:

- Multi-sided bowl, 12-3/4" x 8-1/4" x 5" deep
- Stainless steel penal bubbler/filler
- Fast drain with air vent
- Elbow waste (1-1/2" F.I.P.)
- Self-draining soap dish

Cabinet interior shall be sound deadened with fire-resistant material.

Anchoring shall be by standard 4-point system: threaded rods, nuts and washers shall be furnished for walls up to 8" thick. Unit shall require chase area for installation and maintenance.



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- HS-1013-46-15-RPF Stainless Steel, Replacement, 15" Wide, Rear Mounted, Lavatory

2.) Bubblers or Spout Selection:

- BC Code Bubbler/Filler
- BPH Ligature-resistant Bubbler/Filler**
- FLH Ligature-resistant Lavatory Filler**

3.) Lavatory Valve Selection:

- NV No Valve (Select Hole Punching if needed)
- PSL1 Single Temp. Pneumatic Non-metering
- PSL2 Dual Temp. Pneumatic Non-metering
- PML1 Single Temp. Pneumatic Metering
- PML2 Dual Temp. Pneumatic Metering
- E1L1 Single Temp. Electronic (pick control)*
- E1L2 Dual Temp. Electronic (pick control)*

Valve Manifold Options:

Pneumatic or Electronic Only:

- MA2 MA3 MA4

4.) Lavatory Valve Actuation:

- PBH Ligature-resistant Push Buttons**
- PZPB Ligature-resistant Piezo Piezo Push Buttons**

5.) Electronic Controls* (Must Use Electronic Push Button):

- WUCC-3010 Pneumatic WMSII
- (The WUCC-3010 Control can be used to pair a Sink with a Toilet)

6.) Push Button Hole Punching:

If Less-Lavatory Valve, please specify push button hole sizes and locations on fixture backsplash:
 SP: _____

7.) Lavatory Waste:

- EB Elbow Waste (1-1/2" F.I.P.) (Standard)
- SLOW Slow Drain

8.) Options:

- MT Wall Template
- TB1 Single Toothbrush Holder
 - Right Left
- TB2 Dual Toothbrush Holder
 - Right Left
- TH1 Single Towel Hook
 - Right Left
- TH2 Dual Towel Hook
 - Right Left
- ISH Integral Shelf
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- Other: _____
- Other: _____

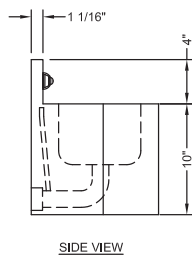
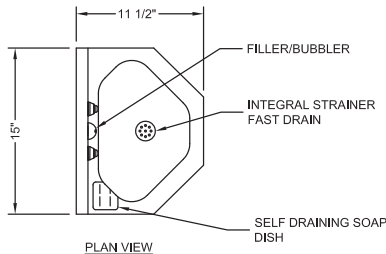
*(Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

****LIGATURE-RESISTANT DISCLAIMER**

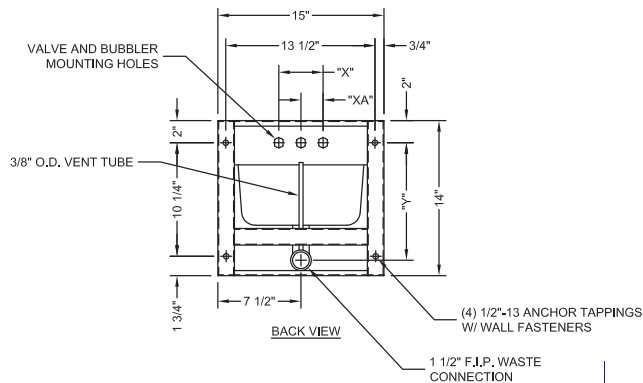
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Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

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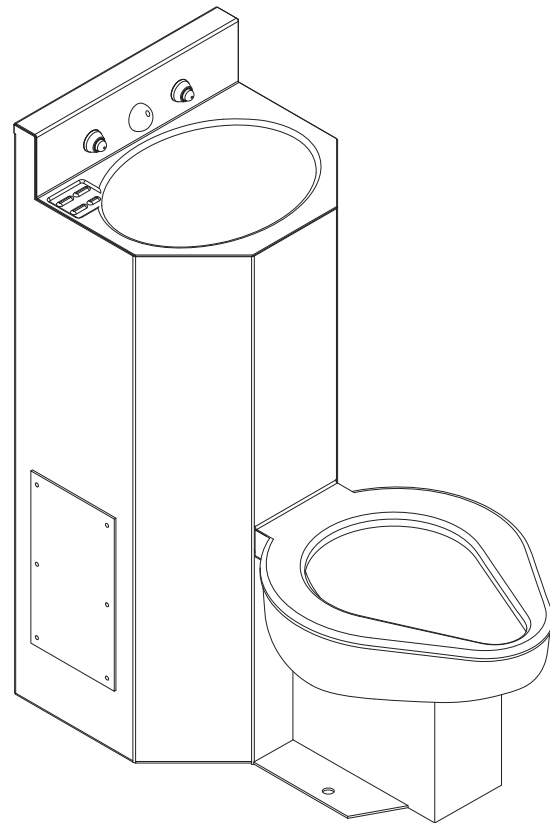
SPECIFY X, XA, Y, & HOLE Ø DIMENSIONS AS NEEDED FOR PUSH BUTTON HOLE PUNCHING



visit our website at www.willoughby-ind.com

ECF-1546-150-RPF

Floor Mounted Floor Outlet Replacement Combination Lavatory/Toilet For Super Secur A-150



(Unit may be shown with optional features)

Recommended Specifications

Floor Mounted, Floor Outlet, Replacement Combination lavatory/toilet (for Super Secur A-150) shall be: Willoughby Model No. **ECF-1546-150-RPF** (Designed to replace the discontinued **Super Secur A-150**)

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball. Toilet shall be blowout type which requires 35 psi minimum flushing pressure.

Standard lavatory shall include: oval shaped bowl, 13" x 9-1/2" x 6" deep, stainless steel penal filler/bubbler, fast drain with air vent, combined waste w/ cleanout** and self-draining soap dish.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Cabinet interior shall be sound deadened with fire-resistant material.

Anchoring hardware by others. Unit shall require chase area for installation and maintenance.

On back to back fixture installations, do not use standard cross type waste fitting: cross flow may result due to blowout jet action. Use sanitary or offset type waste fittings.

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

**** Check applicable plumbing code for acceptability.**



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov



MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- ECF-1546-150-RPF Floor Mounted, Floor Outlet, Replacement Combination Lavatory/Toilet for Super Secur A-150

2.) Toilet Orientation:

- C Centered

3.) Fixture Mounting:

- ON On-Floor

4.) Bubblers Selection:

- BPH Ligature-resistant Bubbler/Filler (Standard)**
- BC Code Bubbler/Filler (w/ Mouth Guard)
- FLH Ligature-resistant Lav. Filler**

5.) Lavatory Valve Selection:

- NV No Valve
- PSL1 Single Temp. Pneumatic Non-metering
- PSL2 Dual Temp. Pneumatic Non-metering
- PML1 Single Temp. Pneumatic Metering
- PML2 Dual Temp. Pneumatic Metering
- E1L1 Single Temp. Electronic (Pick Control)*
- E1L2 Dual Temp. Electronic (Pick Control)*

Valve Manifold Options:

Pneumatic or Electronic Only:

- MA2 MA3 MA4

6.) Lavatory Valve Actuation:

- PBH Ligature-resistant Push Buttons**
- PZPB Ligature-resistant Piezo Push Buttons**

7.) Electronic Controls*

(Must Use Electronic Lavatory & Flush Valves):

- WUCC-3010 Pneutronic WMSII

8.) Lavatory Waste:

- OV Lavatory Overflow
- CW1 Combined Waste w/o Clean-out
- CW2 Combined Waste w/ Clean-out (Standard)
- SLOW Slow Drain

9.) Toilet Waste:

- GWC Gasketed Waste Connection (Standard)

10.) Flush Valve GPF'S (Must Specify):

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.28 GPF HET (4.8 Lpf)
 - 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- EFVP Electronic Flush Valve w/ (PZPB) Ligature-resistant Piezo Push Button (Pick Control)**
 - 1.28 GPF HET (4.8 Lpf)
 - 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- NFV Flush Valve Provided by Others

11.) Options

- T4 Manual Reset Toilet Overflow Preventer, Req. (FV) Flush Valve and Accessible Chase
- T4A Auto Reset Toilet Overflow Preventer, Req. (FV) Flush Valve and Accessible Chase
- ET4 Electronic Toilet Overflow Preventer, Requires (EFVP) & (WUCC-3010) or (WMSII)*
- TFE Toilet Flush Extension (Specify if more than 1-7/8")
- FVT Flush Valve Connection
- TB1 Single Toothbrush Holder
 - L R
- RTH Recessed Tissue Holder
 - L LF C RF R

[Other Options CONTINUED:]

- HS Hinged White Plastic Seat (No Cover, not recommended for Maximum Security/Ligature-resistant use)
- TB2 Dual Toothbrush Holder
 - L R
- TH1 Single Towel Hook
 - L LF C RF R
- TH2 Dual Towel Hook
 - L LF C RF R
- DC Decorator Color (Fixture exterior only - White)
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- HPS High Polish Seat
- VG Vent Grille, 6-1/2"x 9-1/2" (13-3/4 in² free area)
 - L LF RF R
- TG 12 Gauge Cabinet
- TSC Toilet Shipping Cover
- Other _____
- Other _____

*(Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

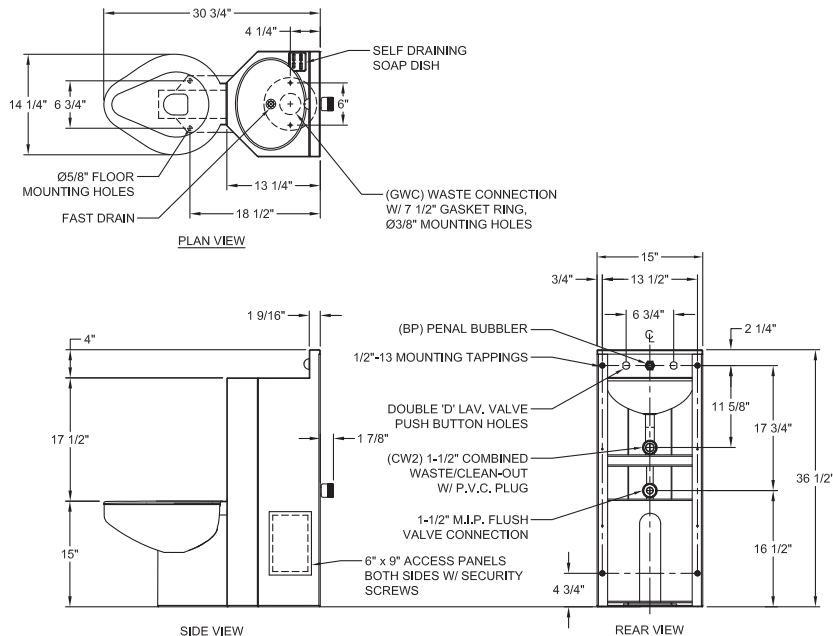
**LIGATURE-RESISTANT DISCLAIMER

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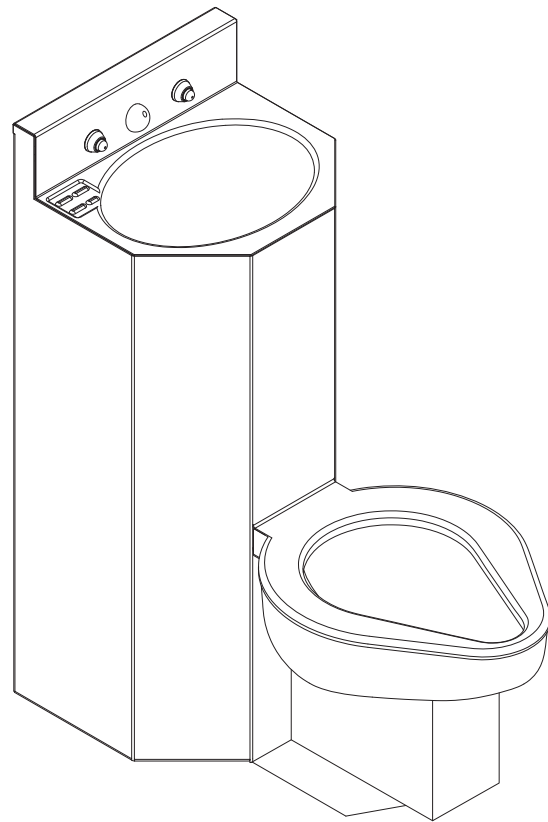
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Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

VERIFY ALL DIMENSIONS WITH FACTORY PRIOR TO ROUGH-IN
 WILLOUGHBY RESERVES THE RIGHT TO MAKE CHANGES IN DESIGN AND DIMENSIONS WITHOUT FORMAL NOTICE AND WITHOUT INCURRING OBLIGATION.



ECW-1546-150-RPF Floor Mounted Wall Outlet Replacement Combination Lavatory/Toilet For Super Secur A-150



(Unit may be shown with optional features)

Recommended Specifications

Floor Mounted, Wall Outlet, Replacement Combination lavatory/toilet (for Super Secur A-150) shall be: Willoughby Model No. **ECW-1546-150-RPF** (Designed to replace the discontinued **Super Secur A-150**)

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball. Toilet shall be blowout type which requires 35 psi minimum flushing pressure.

Standard lavatory shall include: oval shaped bowl, 13" x 9-1/2" x 6" deep, stainless steel penal filler/bubbler, fast drain with air vent, combined waste w/ cleanout** and self-draining soap dish.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Cabinet interior shall be sound deadened with fire-resistant material.

Anchoring hardware by others. Unit shall require chase area for installation and maintenance.

On back to back fixture installations, do not use standard cross type waste fitting: cross flow may result due to blowout jet action. Use sanitary or offset type waste fittings.

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

**** Check applicable plumbing code for acceptability.**



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- ECW-1546-150-RPF Floor Mounted, Wall Outlet, Replacement Combination Lavatory/Toilet for Super Secur A-150

2.) Toilet Orientation:

- C Centered

3.) Fixture Mounting:

- ON On-Floor

4.) Bubbler Selection:

- BPH Ligature-resistant Bubbler/Filler (Standard)**
- BC Code Bubbler/Filler (w/ Mouth Guard)
- FLH Ligature-resistant Lav. Filler**

5.) Lavatory Valve Selection:

- NV No Valve
- PSL1 Single Temp. Pneumatic Non-metering
- PSL2 Dual Temp. Pneumatic Non-metering
- PML1 Single Temp. Pneumatic Metering
- PML2 Dual Temp. Pneumatic Metering
- E1L1 Single Temp. Electronic (Pick Control)*
- E1L2 Dual Temp. Electronic (Pick Control)*

Valve Manifold Options:

- Pneumatic or Electronic Only:*
- MA2 MA3 MA4

6.) Lavatory Valve Actuation:

- PBH Ligature-resistant Push Buttons**
- PZPB Ligature-resistant Piezo Piezo Push Buttons*/**

7.) Electronic Controls*

- (Must Use Electronic Lavatory & Flush Valves):**
- WUCC-3010 Pneumatic WMSII

8.) Lavatory Waste:

- OV Lavatory Overflow
- CW1 Combined Waste w/o Clean-out
- CW2 Combined Waste w/ Clean-out (Standard)
- SLOW Slow Drain

9.) Toilet Waste:

- PC3 Pinned Clean-Out Plug PVC-3"
- PCB3 Pinned Clean-Out Plug Brass-3"
- PC4 Pinned Clean-Out Plug PVC-4"
- PCB4 Pinned Clean-Out Plug Brass-4"
- GWC Gasketed Waste Connection (Standard)

10.) Flush Valve GPF'S (Must Specify):

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.28 GPF HET (4.8 Lpf)
 - 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- EFVP Electronic Flush Valve w/ (PZPB) Ligature-resistant Piezo Push Button (Pick Control)*/**
 - 1.28 GPF HET (4.8 Lpf)
 - 1.6 GPF ULF (6.0 Lpf)
 - 3.5 GPF (13.2 Lpf)
- NFV Flush Valve Provided by Others

11.) Options

- T4 Manual Reset Toilet Overflow Preventer, Req. (FV)
- T4A Auto Reset Toilet Overflow Preventer, Req. (FV)
- ET4 Electronic Toilet Overflow Preventer, Requires (EFVP) & (WUCC-3010) or (WMSII)*
- TFE Toilet Flush Extension (Specify if more than 1-7/8")
- FVT Flush Valve Connection
- HS Hinged White Plastic Seat (No Cover, not recommended for Maximum Security/Ligature-resistant use)

[Other Options CONTINUED:]

- RTH__ Recessed Tissue Holder
 - L LF C RF R
- TB1__ Single Toothbrush Holder
 - L R
- TB2__ Dual Toothbrush Holder
 - L R
- TH1__ Single Towel Hook
 - L LF C RF R
- TH2__ Dual Towel Hook
 - L LF C RF R
- DC Decorator Color (Fixture exterior only - White)
- TF24H Hard-wired Transformer, 110VAC to 24VAC*
- TF24P Plug-in Transformer, 110VAC to 24VAC*
- HPS High Polish Seat
- VG Vent Grille, 6-1/2" x 9-1/2" (13-3/4 in² free area)
 - L LF RF R
- TG 12 Gauge Cabinet
- TSC Toilet Shipping Cover
- Other _____
- Other _____

* (Req. 110V power through ground fault interrupter (GFCI) receptacle / breaker)

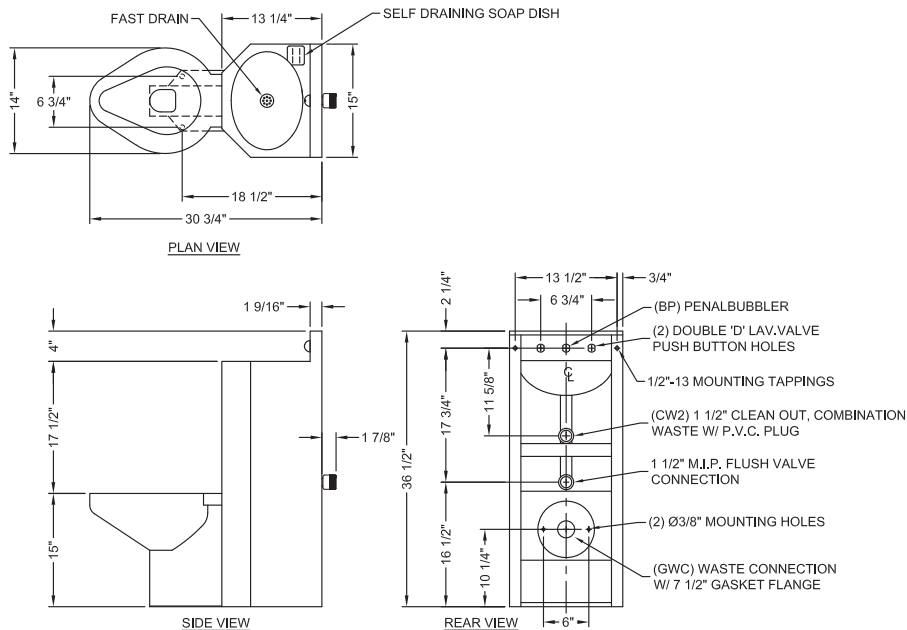
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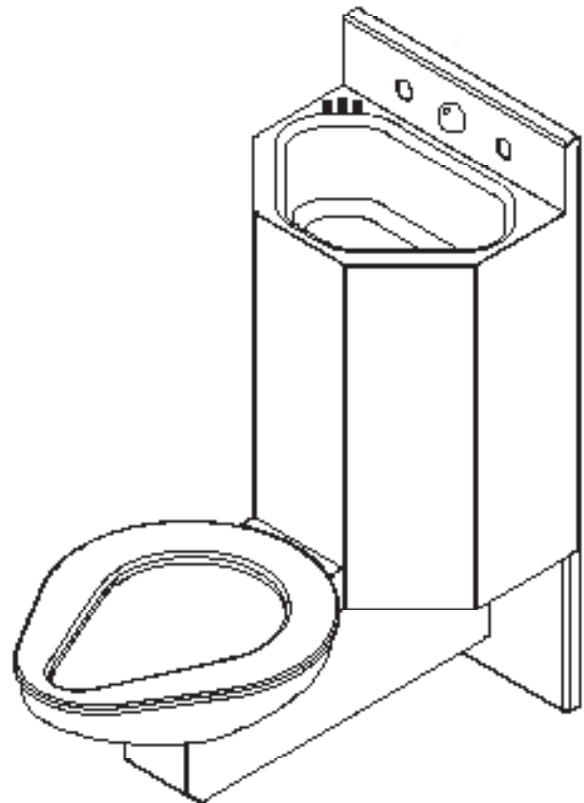
Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____

VERIFY ALL DIMENSIONS WITH FACTORY PRIOR TO ROUGH-IN
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ECW-1546-350-RPF

Wall Mounted Wall Outlet Replacement Combination Lavatory/Toilet For Super Secur A-350



(Unit may be shown with optional fixtures.)

Recommended Specifications

Wall Mounted, Wall Outlet, Replacement Combination lavatory/toilet (for Super Secur A-350) shall be: Willoughby Model No. ECW-1546-350-RPF (Designed to replace the discontinued Super Secur A-350)

Fixture shall be fabricated from 14 GA, Type 304 stainless steel. The construction shall be all welded, with exposed stainless surfaces polished to a #3 satin finish.

Standard toilet shall include: elongated toilet bowl with contoured seat, integral crevice-free self-draining flushing rim with positive afterfill and fully enclosed 2-3/8" O.D. trap which shall maintain a minimum 2" seal and pass a 2" ball. Toilet shall be blowout type which requires 35 psi minimum flushing pressure.

Standard lavatory shall include: multi-sided shaped bowl, 12-3/4" x 8-3/4" x 5" deep, stainless steel pencil filler/bubbles, fast drain with air vent, combined waste w/ cleanout™ and self-draining soap dish.

Fixture shall withstand loadings up to 2,000 lbs. with no measurable deflection and loadings up to 5,000 lbs. with no permanent damage.

Cabinet interior shall be sound deadened with fire-resistant material.

Anchoring hardware by others. Unit shall require chase area for installation and maintenance.

On back-to-back fixture installations, do not use standard cross type waste fitting: cross flow may result due to blowout jet action. Use sanitary or offset type waste fittings.

Note: Unit will pass a 2" ball.

Note: Fixture should only be used with a listed high-efficiency flushometer to ensure the complete system meets the requirements of WaterSense.

⚠ Check applicable plumbing code for acceptability.



WARNING: Cancer and Reproductive Harm

- www.P65Warnings.ca.gov

MODEL NUMBER AND OPTIONS:

1.) Base Model Number:

- BCAF-1848-300-RFP Wall Mounted, Wall Outlet, Replacement Combination Lavatory/Toilet for Paper Series A-300

2.) Toilet Orientation:

- C Corridor

3.) Fixture Mounting:

- OP On-Floor

4.) Sillbiter Selection:

- SPH Ligature-resistant Sillbiter/Filler (Standard)SM
- BC Code Sillbiter/Filler (w/ Block Guard)
- FLH Ligature-resistant Lex FibreSM

5.) Lavatory Valve Selection:

- NV No Valve
- PBL1 Single Temp. Pneumatic Non-sterilizing
- PBL2 Dual Temp. Pneumatic Non-sterilizing
- PBL1 Single Temp. Pneumatic Sterilizing
- PBL2 Dual Temp. Pneumatic Sterilizing
- EPL1 Single Temp. Electronic (Pilot Control)SM
- EPL2 Dual Temp. Electronic (Pilot Control)SM

Valve Mounting Options:

- Pneumatic or Electronic Only:
- MA2 MMS MAM

6.) Lavatory Valve Actuation:

- FBH Ligature-resistant Push ButtonSM
- FCB Ligature-resistant Floor Push ButtonSM

7.) Electronic Controls:

- (Must Use Electronic Lavatory & Flush Valve):
- WACC-3018 Presetrols Wash

8.) Lavatory Waste:

- OY Lavatory Overflow
- CWI Combined Waste w/ Clean-out
- CAG Combined Waste w/ Clean-out (Standard)
- BLOW Blow Drain

9.) Toilet Waste:

- PGB Pressed Clean-Out Plug PVC-3"
- PGB2 Pressed Clean-Out Plug Brass-3"
- PGB Pressed Clean-Out Plug PVC-4"
- PGB4 Pressed Clean-Out Plug Brass-4"
- BWC Sewered Waste Connection (Standard)

10.) Flush Valve:

- FV Hydraulic Flush Valve (Includes Actuator)
 - 1.25 GPP HET (5.8 Lp)
 - 1.8 GPP ULF (8.8 Lp)
 - 3.8 GPP (15.2 Lp)
- EPVP Electronic Flush Valve w/ (EPFB) Ligature-resistant Floor Push Button (Pilot Control)SM
 - 1.25 GPP HET (5.8 Lp)
 - 1.8 GPP ULF (8.8 Lp)
 - 3.8 GPP (15.2 Lp)
- FVV Flush Valve Provided by Others

11.) Options:

- T4 Manual Reset Toilet Overflow Preventer, Plug (FV)
- T4A Auto Reset Toilet Overflow Preventer, Plug (FV)
- ET4 Electronic Toilet Overflow Preventer, Plug (EPVP) & (WACC-3018) or (WVWV)
- TPE Toilet Flush Extension (Specify if more than 1-TSP)
- PVT Flush Valve Conversion
- H8 Hinged White Plastic Seat (No Comp, not recommended for maximum security/ligature-resistant use)

Other Options CONTINUED

- RTH Reversed Tissue Holder
 - L LP C RP R
- TB Single Toothbrush Holder
 - L R
- TB2 Dual Toothbrush Holder
 - L R
- TH Single Towel Hook
 - L LP C RP R
- TH2 Dual Towel Hook
 - L LP C RP R
- CC Descender Cover (Flange exterior only - 1/8" dia)
- TFCM Hard-wired Transformer, 110VAC to 240VAC
- TFCP Plug-in Transformer, 110VAC to 240VAC
- HPS High Polish Seat
- VS Vent-Orbit, 0-1/2" x 0-1/2" (1/8-3/16" Pipe end)
 - L LP RP R
- TS 12 Gauge Cabinet
- TBC Toilet Blowing Cover
- Other _____
- Other _____

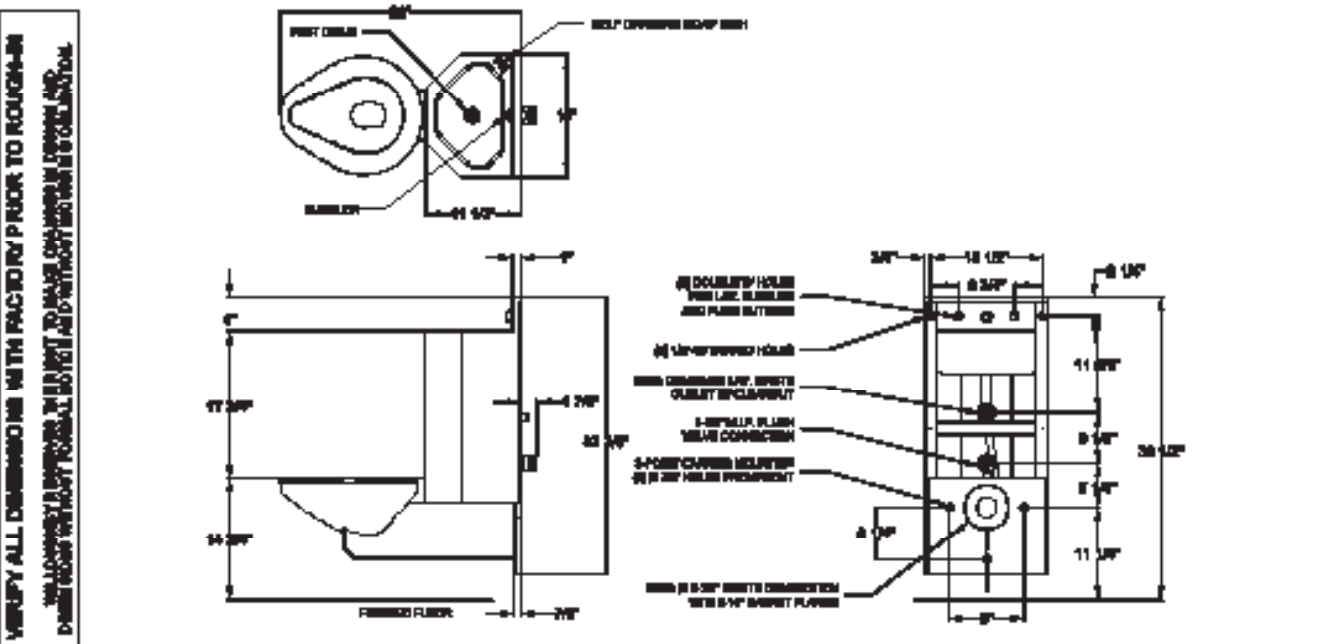
*Plug 110V power through ground fault interrupter (GFI) receptacle / breaker

LIQUATURE-RESISTANT DISCLAIMER:

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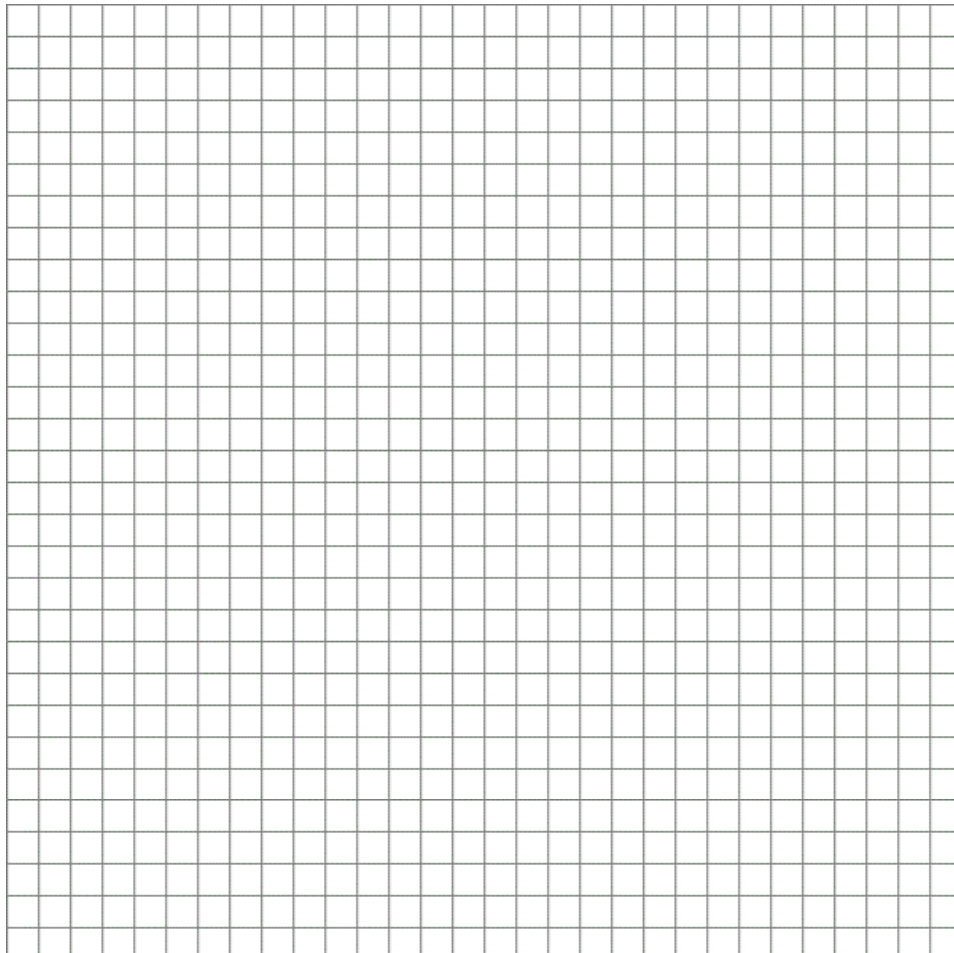
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Approved For Manufacturing By: _____ Date: _____ Company: _____
 Wall Thickness: _____ Wall Type: _____



VERIFY ALL DIMENSIONS WITH FACED TOY PRIOR TO ROUGH-IN
 WALL MOUNTED FIXTURES WITH HINT TO MAKE DIMENSIONS CORRECT AND
 DOUBLE CHECK WITH FACED TOY PRIOR TO ROUGH-IN

NOTES:





WILLOUGHBY

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Thank you for considering products manufactured by Willoughby Industries!

Since our opening in 1947, Willoughby's sole focus has been to provide the finest products in the industry. While our company shifted from sheet metal production to the manufacture of commercial plumbing products decades ago, our focus has never wavered.

Willoughby builds all of our products in Indianapolis, Indiana, USA, and—except for a few components—we fabricate all aspects of our products in-house before shipping them across the world. Thanks to the commitment of our craftspeople to the research, design, and production of stainless steel and solid surface plumbing products, we manufacture products of the highest quality.

As you consider the selection and use of commercial plumbing fixtures and accessories for your next project, Willoughby respectfully asks for your business. Being a third-generation family-owned business, you can COUNT ON US to meet and exceed your expectations!



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