SUBMITTAL

P.O. BOX 595, TROY, NEW YORK 12181
TEL 518 274 0961 - FAX 518 274 0210
WWW.ROSSVALVE.COM

SUBMITTAL

30AWR Single Acting Altitude Valve

Ross Technology Park
75 102st Street, Troy, NY 12181
TEL 518.274.0961 - www.ROSSVALVE.com

SUBMITTAL NOTES

PROJECT:

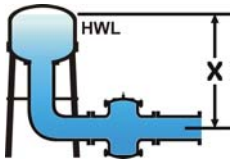
Ross Model 30AWR – Pilot Operated Level Control Valve for Elevated Tank

Size: ” inch

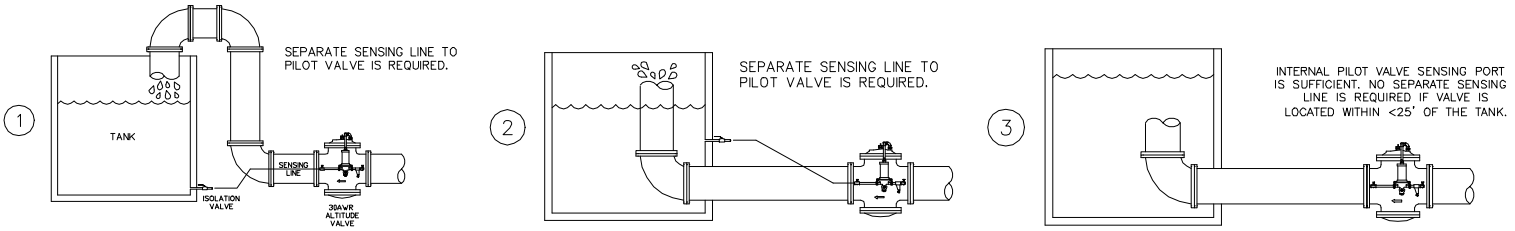
Every Ross Valve shall be hydrostatically tested for body integrity and tight seating at the factory prior to shipment. Field operating conditions are simulated, and the controls are adjusted for proper operation. In order to design and test each valve under operating conditions similar to those in the field, please complete / confirm the following:

- Inlet (supply) pressure _____ psi
- Height from “High Water Level” to valve centerline _____ ft

  (Shown as dimension “X” in the sample schematic to the right)



To properly evaluate the operating data, please designate the piping layout of the installation form the options shown on Drawing 30AWR INSTALL: [ ] No. 1 [ ] No. 2 [ ] No. 3



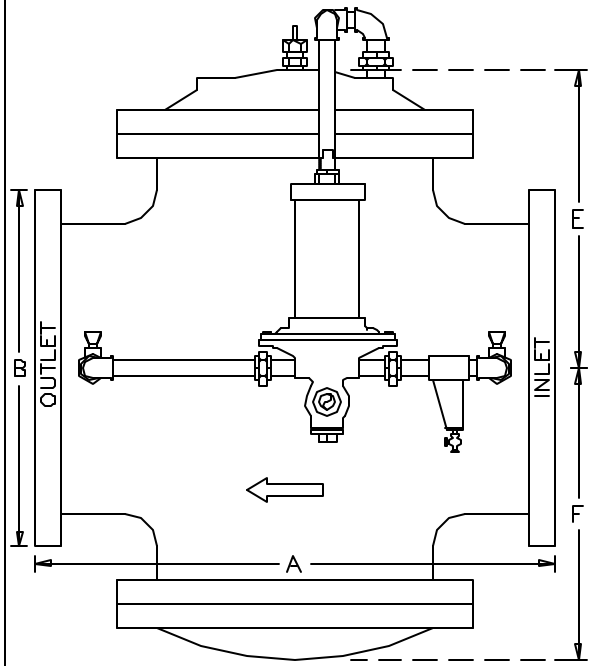
The Ross **Globe** Body Style Valve can be installed in any position. In order to properly design the valve and orient the controls, please confirm the physical layout of the installation. (** Designates standard valve orientation.)

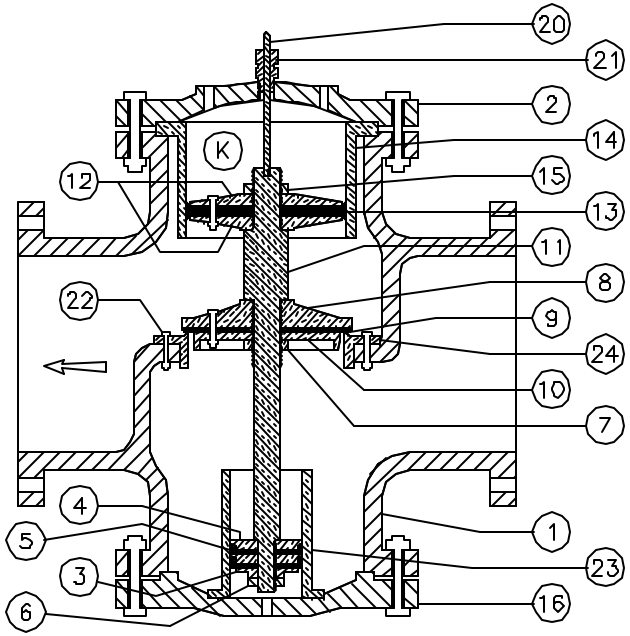
Valve inlet : [ ] Vertical ** or [ ] Horizontal

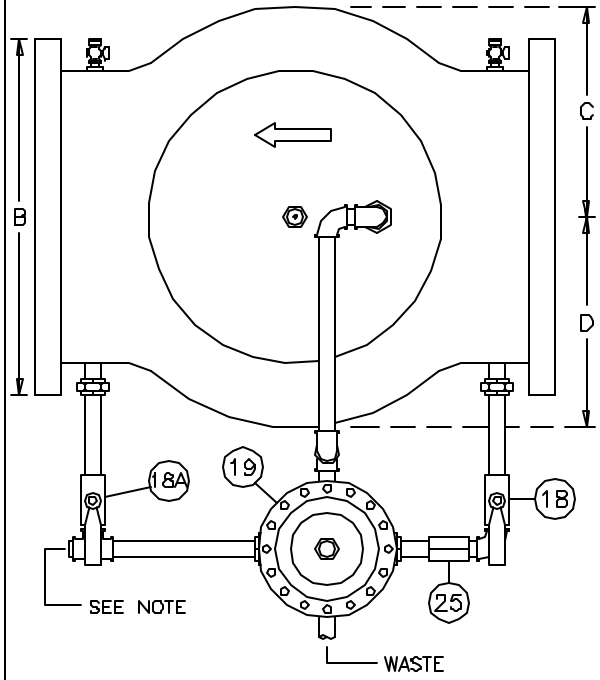
Valve outlet : [ ] Horizontal Left ** or [ ] Horizontal Right
or [ ] Vertical Up or [ ] Vertical Down

The valve shall be furnished with:

- ANSI B16.1 Class 250 Cast Iron Body & Cap, with: [ ] Class 125 flanges [ ] Class 250 flanges
- Internal metal parts - Bronze construction
- Ross Model 30AWR Hydraulic Altitude Pilot Valve (part #19). Initial Factory Setting (valve close set point) psi = ft
- Ross Model 5F2 Strainer (part #25) with Stainless Steel Filter Element and Blow-Off
- Isolation valves: 0.5" Ball Valves, Bronze/Stainless Steel (part #18)
- Position Indicator, Bronze (part #20)
- Red brass pipe fittings and rigid control piping
- Tapped ports with gauge cocks on inlet & outlet
- PAINTING: Ferrous surfaces of valve shall be coated with ANSI/NSF Standard 61 Certified Epoxy (Tnemec Series N140F) - Meets the performance requirements of AWWA D102 Inside System No. 1.
- Operation & Maintenance Manual (shipped with the valve).







VALVE SIZE (IN)	ANSI B16.1 CLASS	SHIPPING WEIGHT (LBS)	DIMENSIONS (INCHES)			
			A	B	C&D	E&F
3	125 250	235 275	14 14-5/8	9 10	4-3/4 4-3/4	7 7
4	125 250	235 275	14 14-5/8	9 10	4-3/4 4-3/4	7 7
6	125 250	375 430	17-3/4 17-3/4	11 12-1/2	6-5/8 6-5/8	9 9
8	125 250	690 750	24 24-13/16	13-1/2 15	8-3/4 8-3/4	12-1/2 12-1/2
10	125 250	920 1000	24-7/8 26-1/4	16 17-1/2	10 10	14-1/4 14-1/4
12	125 250	1375 1475	30 31-1/2	19 20-1/2	12 12	15-1/2 15-1/2
14	125 250	1770 1850	34-1/4 35-3/4	21 23	14 14	18 18
16	125 250	2400 2600	37-7/8 39-1/4	23-1/2 25-1/2	15 15	21-1/2 21-1/2

NOTE:
OPTION – WHEN THE VALVE IS NOT ADJACENT TO THE TANK RISER, REMOVE THE PLUG IN THE "TEE" AND PIPE (BY OTHERS) TO RISER FOR TRUE STATIC HEAD. THIS CHANGE REQUIRES THAT ISOLATION VALVE 18A BE CLOSED.

PART	DESCRIPTION	QTY.	MATERIAL
1	VALVE SHELL	1	CAST IRON
2	TOP CAP	1	CAST IRON
3	BOTTOM STEM GUIDE NUT	1	BRONZE
4	BOTTOM CUP FOLLOWERS (SET OF 2)	1	BRONZE
5	PISTON CUP PACKING	2	LEATHER
6	BOTTOM STEM LOCK NUT	1	BRONZE
7	STEM NUT	1	BRONZE
8	SEAT DISC	1	BRONZE
9	SEAT PACKING	1	POLYURETHANE
10	SEAT PACKING SUPPORT	1	BRONZE
11	STEM	1	BRONZE
12	MAIN CUP PLATES (SET OF 2)	1	BRONZE
13	MAIN CUP PACKING	2	LEATHER
14	MAIN BUSHING	1	BRONZE
15	TOP STEM NUT	1	BRONZE
16	BOTTOM CAP	1	CAST IRON
18	ISOLATION VALVE	2	BRONZE
19	PILOT VALVE – ALTITUDE	1	BRONZE
20	INDICATOR ROD	1	BRONZE
21	INDICATOR STUFFING BOX	1	BRONZE
22	BOLTS & NUTS (SEAT RING)	VARY	BRONZE
23	BOTTOM CAP CYLINDER	1	BRONZE
24	SEAT RING	1	BRONZE
25	STRAINER	1	BRONZE/STAINLESS
	BOLTS & NUTS (TOP & BOTTOM CAP)	VARY	STEEL
	BOLTS & NUTS (CUP PLATES)	VARY	BRONZE
	BOLTS (BOTTOM CAP CYLINDER)	VARY	BRONZE
	INDICATOR ROD PACKING (SET)	1	TEFLON
	COVER & MAIN BUSHING GASKETS	3	COMPOSITION
	STEM GASKETS	3	COMPOSITION

ROSS VALVE Mfg. Co., Inc.
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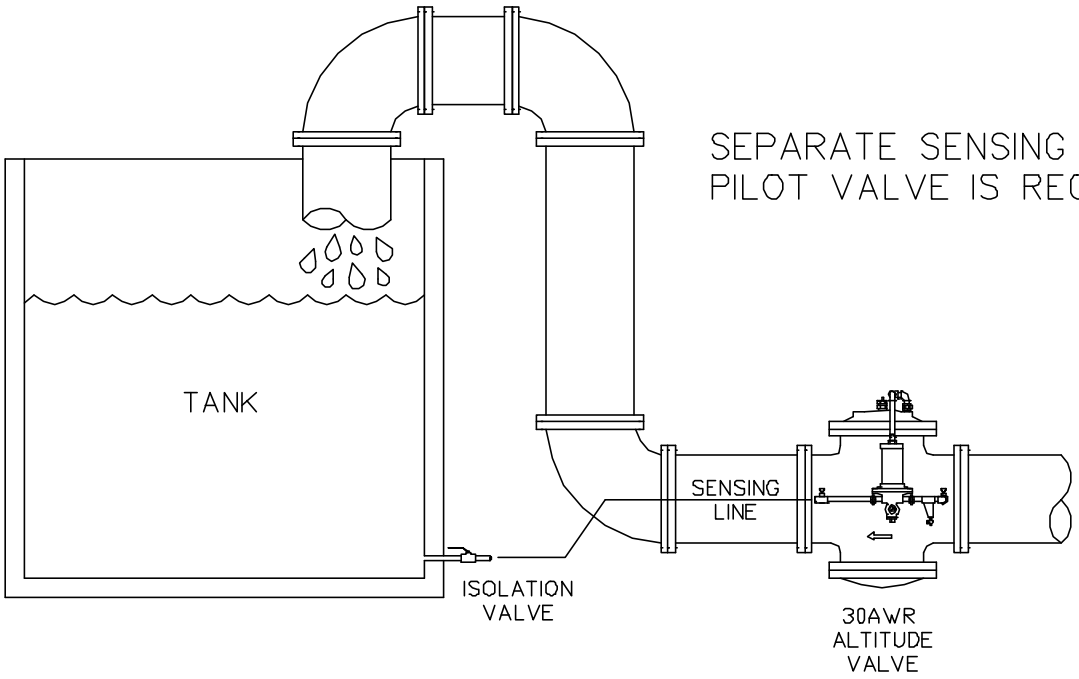
POST OFFICE BOX 595 - TROY, NEW YORK, 12181 - FAX (518) 274 0210
WEBSITE: www.rossvalve.com - E-MAIL: sales@rossvalve.com

DRAWING	30AWRF		DATE 8/29/00
GLOBE BODY	3" – 36"	NO SCALE	FIGURE 29

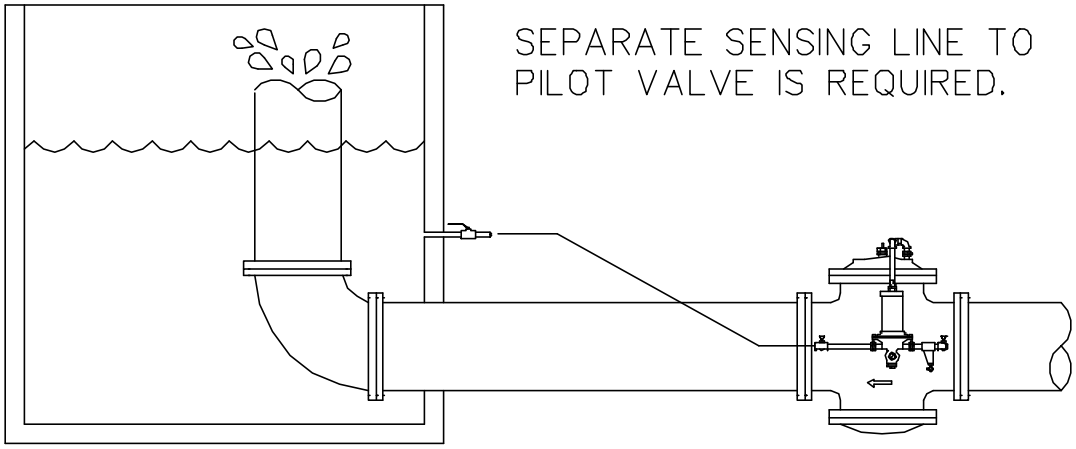
Model 30AWR
SINGLE ACTING NON-THROTTLING
ALTITUDE VALVE

1



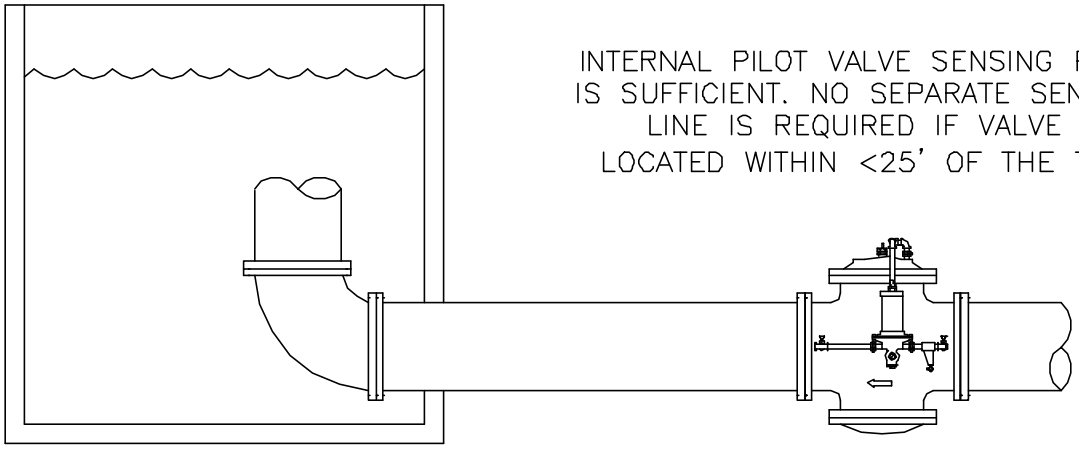
SEPARATE SENSING LINE TO PILOT VALVE IS REQUIRED.

2



SEPARATE SENSING LINE TO PILOT VALVE IS REQUIRED.

3



INTERNAL PILOT VALVE SENSING PORT IS SUFFICIENT. NO SEPARATE SENSING LINE IS REQUIRED IF VALVE IS LOCATED WITHIN <25' OF THE TANK.

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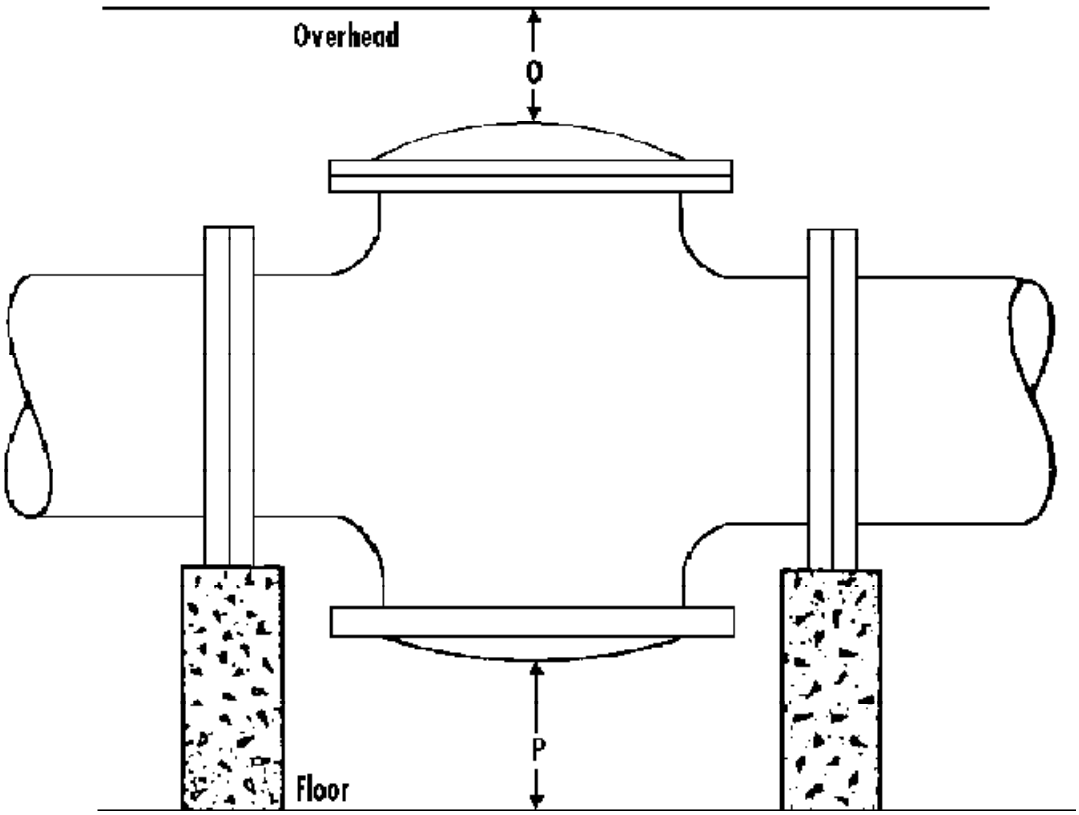
NO SCALE	DRAWING 30AWR INSTALL
DATE 2-3-99	REVISED

MODEL 30AWR ALTITUDE VALVE
INSTALLATION OPTIONS

FILE: SCH30AWR

DIMENSIONS

Globe Body Minimum Clearances — Piston Valve Sizes: 4" - 36"



Size (Inches)	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
O	14	16	18	21	23	28	28	33	33	36	43	46
P	4 ½	5 ½	6 ½	1	1	1	1	1	1	1	1	1

Note

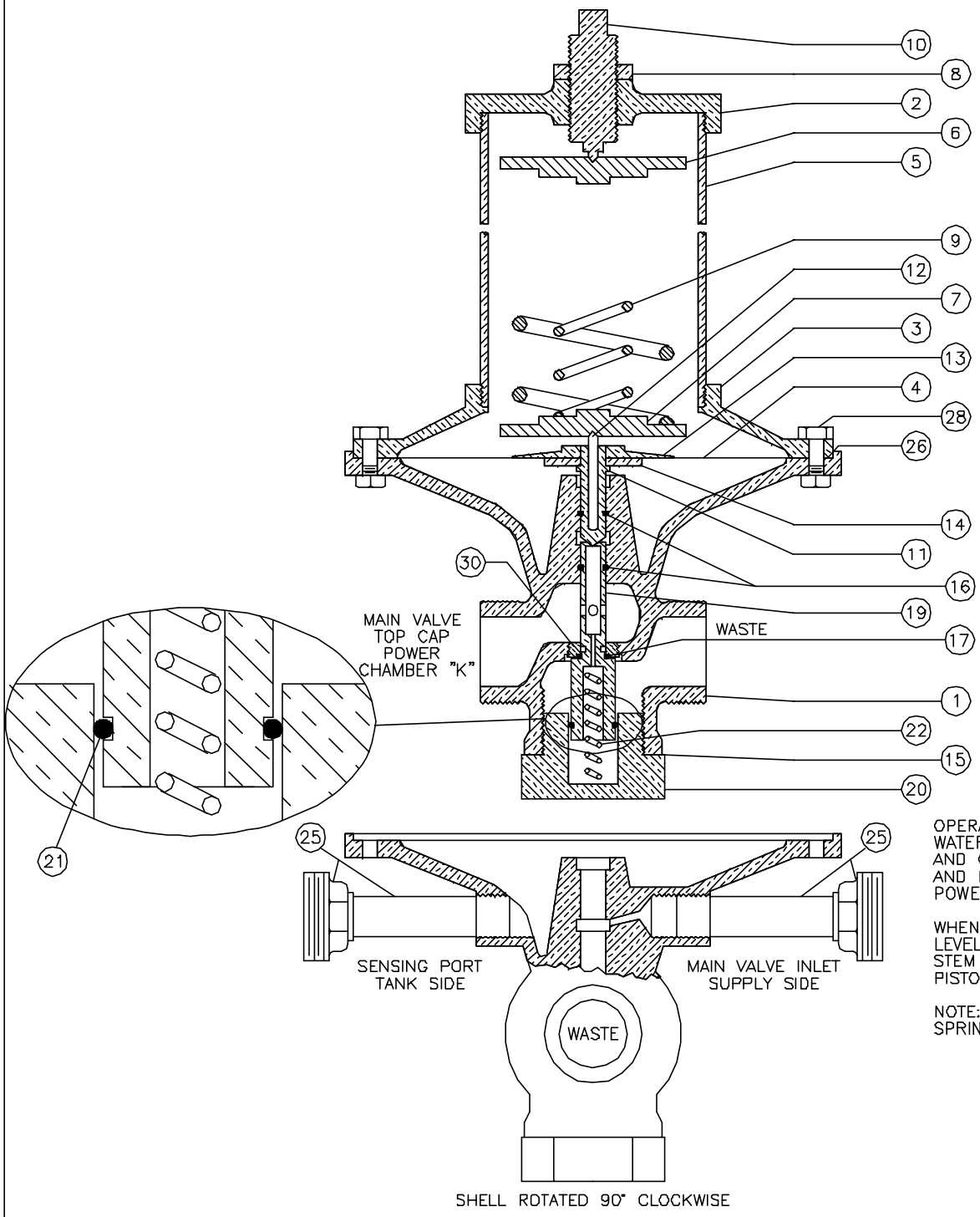
1. Dimension "O" is clearance for removal of the top cap and piston for repacking the main valve. Additional working space for the convenience of the service man should be considered above as well as around the valve.
2. Dimension "P" as listed is the desirable clearance under the valve for removal of the STANDARD bottom cap. This dimension may be reduced to 1 inch for all valves on special applications.

Note

A. **Do not obstruct vent hole located at the center of the bottom cap.**

B. Consideration should be given for installation of valves 14" or larger under manhole in the roof of the valve vault or for additional clearance above the valve since a mechanical hoist will probably be required for removal of the piston. An eye bolt or hook cast in the cover slab over the center of the valve is useful.

C. If clearance under the valve is limited, dimensions "O" and "P" can be modified. Consult the factory concerning special applications.



PART	DESCRIPTION	QTY	MATERIAL
1	SHELL	1	BRONZE
2	SPRING CHAMBER TOP	1	BRONZE
3	DIAPHRAGM COVER	1	BRONZE
4	DIAPHRAGM(S)	VARY	BRONZE/NEOPRENE
5	SPRING CHAMBER	1	BRONZE
6	TOP SPRING WASHER	1	BRONZE/CAST IRON
7	BOTTOM SPRING WASHER	1	BRONZE/CAST IRON
8	LOCK NUT	1	BRONZE
9	SPRING(S)	VARY	STEEL
10	ADJUSTING SCREW	1	BRONZE
11	UPPER STEM	1	STAINLESS
12	CENTERING PIN	1	STAINLESS
13	DIAPHRAGM NUT	1	BRONZE
14	DIAPHRAGM BUTTON	1	BRONZE
15	BOTTOM CAP GASKET	1	COMPOSITION
16	O-RING – STEM PACKINGS	2	BUNA-N 70
17	O-RING – SEAT PACKING	1	BUNA-N 90
19	LOWER STEM	1	DELRIN
20	BOTTOM CAP	1	BRONZE
21	O-RING – LOWER PACKING	1	BUNA-N 70
22	BOTTOM SPRING	1	BRONZE
* 24	DIAPHRAGM EXTENSION	VARY	BRONZE
25	TAILPIECES (ADAPTOR & NIPPLE)	2	BRONZE
26	GASKET – DIAPHRAGM	1	COMPOSITION
28	BOLTS & NUTS – DIAPHRAGM COVER	14	BRONZE
* 29	BOLTS – DIAPHRAGM EXTENSION	VARY	BRONZE
30	SEAT RING	1	STAINLESS

* NOT SHOWN

OPERATION: WHEN HIGH WATER IN TANK, RESERVOIR OR BASIN IS REACHED, WATER LEVEL PRESSURE IS COMMUNICATED TO UNDERSIDE OF PILOT DIAPHRAGM AND OVERCOMES LOADING ON SPRING(S). THIS OPENS THE SEAT BETWEEN UPPER AND LOWER STEMS TO INTRODUCE WATER FROM SUPPLY SIDE OF MAIN VALVE TO POWER CHAMBER "K" ABOVE PISTON OF MAIN ALTITUDE VALVE FOR CLOSURE.

WHEN WATER LEVEL IN TANK RECEDES, SPRING LOADING OVERCOMES WATER LEVEL PRESSURE UNDER DIAPHRAGM. THIS OPENS THE LOWER SEAT ON LOWER STEM OF PILOT TO PERMIT FLOW FROM MAIN VALVE POWER CHAMBER "K" ABOVE PISTON TO WASTE, THUS OPENING THE MAIN VALVE.

NOTE: DIAPHRAGM ASSEMBLY AND SPRING CHAMBER ASSEMBLY, INCLUDING SPRING(S), VARIES DEPENDING UPON OPERATING PRESSURE RANGE.

ROSS VALVE Mfg. Co, Inc.
6 OAKWOOD AVENUE – P.O. BOX 595 – TROY, NEW YORK, 12181 – TEL. (518) 274 0961

NO SCALE	DRAWING 30AWR PILOT (.09)
DATE 2-28-61 3104C	REVISED 07-06-05 TJS

MODEL 30AWR PILOT VALVE (.09)
SINGLE ACTING ALTITUDE
WITH STAINLESS STEEL SEAT INSERT

FILE: P30AWR09

NEEDLE VALVE

Sizes: One size fits all piston valves
Primarily Controlled By: Manually adjusted
Located: On external control circuit of the main valve
Purpose: To limit flow in and out of the operating chamber
Standard Shipped Adjustment:
Coarse Needle: 5/6 to 2 turns off the seat
Fine Needle: Based on individual specifications

Option

Two separate needle valves on one main valve - Provide independent control of opening and closing speeds.

Basic Application

Limit maximum flow through external piping.

Adjustment

To adjust needle valve, which can be done without shutting down the main valve,
1. Remove the hex cap.
2. With a screw driver:
   a. turn the needle counter clockwise to raise it.
   b. turn the needle clockwise to lower it.

Recommendation

It is advisable to occasionally remove the cap and lock and change the position of the needle momentarily to insure against gradual plugging.

Note

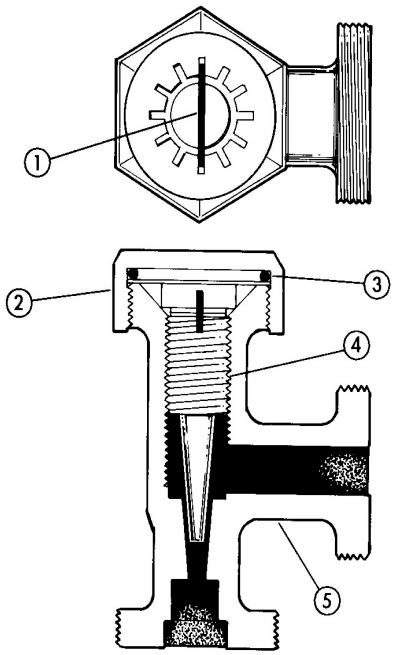
Once the optimum position is determined, no further adjustment of the needle should be required. The hex cap can be removed under pressure and the needle valve adjusted with a screw driver.

ROSS ADVANTAGE

The needle valve's sturdy construction and simple design insure reliable control of flow.

Design

Within the shell there is a stationary "needle shaped" stem which:
1. Extends into a narrowed opening (seat) which is part of the water flow route.
2. For about half its length consistently increases its width from a very narrow bottom tip.



PARTS
1 Lock
2 Cap
3 Cap Gasket
4 Needle
5 Body

Operation

The simple construction reliably limits maximum flow through the external piping, depending on the adjustable stem position.
1. When the stem is adjusted to a raised position,
   a. More water can pass through the needle valve.
   b. Water enters (leaves) the operating chamber more quickly.
   c. The operating chamber fills up (empties out) more quickly.
   d. The main valve piston moves up and down more quickly.
2. When the stem is adjusted to a lowered position,
   a. Less water can pass through the needle valve.
   b. Water enters (leaves) the operating chamber more slowly.
   c. The operating chamber fills up (empties out) more slowly.
   d. The main valve piston moves up and down more slowly.

(Factory Accelerated) Pota-Pox™ Plus SERIES N140F

PRODUCT PROFILE

GENERIC DESCRIPTION
Polyamidoamine Epoxy

COMMON USAGE
Innovative potable water coating which offers high-build edge protection and allows for application at a wide range of temperatures (down to 35°F or 2°C). For use on the interior and exterior of steel or concrete tanks, reservoirs, pipes, valves, pumps and equipment in potable water service.

COLORS
F1211 Fast Cure Red, F1255 Fast Cure Beige, 11WH Fast Cure White, 15BL Fast Cure Tank White, 39BL Fast Cure Delft Blue, 35GR Fast Cure Black.
Note: Epoxies chalk with extended exposure to sunlight. Lack of ventilation, incomplete mixing, miscatalyzation or the use of heaters that emit carbon dioxide and carbon monoxide during application and initial stages of curing may cause yellowing to occur.

SPECIAL QUALIFICATIONS
Certified by **NSF International** in accordance with **ANSI/NSF Std. 61.** Ambient air cured Series N140F is qualified for use on tanks and reservoirs of 1,000 gallons (3,785L) capacity or greater, pipes ten (10) inches (25 cm) in diameter or greater and valves two (2) inches (5 cm) in diameter or greater. Conforms to **AWWA D 102 Inside Systems No. 1 and No. 2.** Contact your Tnemec representative for systems and additional information.

PERFORMANCE CRITERIA
Extensive test data available. Contact your Tnemec representative for specific test results.

Certified to ANSI/NSF 61

COATING SYSTEM

PRIMERS
Self-priming, 20, FC20, 91-H_20

TOPCOATS
Interior: Series N140F
Exterior: Series 27, 66, N69, 73, N140, 161, 175, 180, 700, 1074, 1075. Refer to COLORS on applicable topcoat data sheets for additional information. **Note:** When topcoating with Series 700, an intermediate coat of Series 73 or 1075 is required. **Note:** The following maximum recoat time applies when using Endura-Shield topcoats: Series 73, 175, 1074 or 1075, sixty (60) days. If this time limit is exceeded, Series N140F must be uniformly scarified or recoated with itself prior to applying Endura-Shield. When topcoating with Series 180, the N140F maximum recoat time is 90 days.

SURFACE PREPARATION

STEEL
Immersion Service: SSPC-SP10/NACE 2 Near-White Blast Cleaning
Non-Immersion Service: SSPC-SP6/NACE 3 Commercial Blast Cleaning

PRIMED STEEL
Immersion Service: Scarify the Series N140F, 20 or FC20 prime coat surface by abrasive-blasting with fine abrasive before topcoating if it has been exterior exposed for 60 days or longer and N140F is the specified topcoat.

CAST/DUCTILE IRON
Contact Tnemec Technical Services.

CONCRETE
Allow new concrete to cure 28 days. For optimum results and/or immersion service, abrasive blast referencing SSPC-SP13/NACE 6 Surface Preparation of Concrete and Tnemec's Surface Preparation and Application Guide. Fill all holes, pits, voids and cracks with 63-1500 Filler and Surfacer.

ALL SURFACES
Must be clean, dry and free of oil, grease and other contaminants.

TECHNICAL DATA

VOLUME SOLIDS*
68.0 ± 2.0% (mixed)

RECOMMENDED DFT
3.0 to 8.0 mils (75 to 205 microns) per coat. **Note: Number of coats and thickness requirements will vary with substrate, application method and exposure. Contact your Tnemec representative.**

CURING TIME AT 5 MILS DFT

Temperature	To Handle	To Recoat	Immersion
75°F (24°C)	4 hours	5 hours	7 days
65°F (18°C)	7-8 hours	9-11 hours	8 days
55°F (13°C)	12-14 hours	16-20 hours	9-10 days
45°F (7°C)	18-22 hours	28-32 hours	12-13 days
35°F (2°C)	28-32 hours	46-50 hours	16-18 days

Curing time varies with surface temperature, air movement, humidity and film thickness.
Note: For valve applications allow 14 days cure at 75°F (24°C) prior to immersion. For pipe applications allow 30 days cure at 75°F (24°C) prior to immersion.

VOLATILE ORGANIC COMPOUNDS*

Unthinned	Thinned 10%
2.29 lbs/gallon (274 grams/litre)	2.71 lbs/gallon (324 grams/litre)

THEORETICAL COVERAGE*
1,094 mil sq ft/gal (26.8 m^2/L at 25 microns). See APPLICATION for coverage rates.

NUMBER OF COMPONENTS
Two: Part A and Part B

PACKAGING
5 gallon (18.9L) pails and 1 gallon (3.79L) cans — Order in multiples of 2.

NET WEIGHT PER GALLON*
13.45 ± 0.25 lbs (6.10 ± .11 kg) (mixed)

STORAGE TEMPERATURE
Minimum 20°F (-7°C) Maximum 110°F (43°C)
For optimum application properties, material temperature should be above 60°F (16°C) prior to application.

TEMPERATURE RESISTANCE
(Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)

TECHNICAL DATA continued

SHELF LIFE: 24 months at recommended storage temperature.

FLASH POINT - SETA: Part A: 82°F (28°C) Part B: 80°F (27°C)

HEALTH & SAFETY: Paint products contain chemical ingredients which are considered hazardous. Read container label warning and Material Safety Data Sheet for important health and safety information prior to the use of this product. **Keep out of the reach of children.**

APPLICATION

COVERAGE RATES*

	Primer			Intermediate / Topcoat		
	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)	Dry Mils (Microns)	Wet Mils (Microns)	Sq Ft/Gal (m^2/Gal)
Suggested (1)	4.0 (100)	6.0 (150)	273 (25.4)	5.0 (125)	7.5 (190)	218 (20.3)
Minimum	3.0 (75)	4.5 (115)	364 (33.9)	4.0 (100)	6.0 (150)	273 (25.4)
Maximum	5.0 (125)	7.5 (190)	218 (20.3)	6.0 (150)	9.0 (230)	182 (17.0)

(1) Note: Roller or brush application requires two or more coats to obtain recommended film thickness. Series N140F can be spray applied to an optional high-build film thickness range of 6.0 to 8.0 dry mils (150 to 205 dry microns) or 8.5 to 11.5 wet mils (215 to 290 wet microns). Allow for overspray and surface irregularities. Film thickness is rounded to the nearest 0.5 mil or 5 microns. Application of coating below minimum or above maximum recommended dry film thicknesses may adversely affect coating performance.

MIXING

1. Start with equal amounts of both Parts A & B.
2. Using a power mixer, separately stir Parts A & B.
3. Add Part A to Part B under agitation, stir until thoroughly mixed.
4. Both components should be above 50°F (10°C) prior to mixing. For application to surfaces between 35°F to 50°F (2°C to 10°C), allow mixed material to stand thirty (30) minutes and restir before using. For optimum application properties, blended components should be above 40°F (4°C).

POT LIFE: 4 hours at 35°F (2°C) 2 hours at 77°F (25°C) 1 hour at 100°F (38°C)

THINNING: Use No. 4 Thinner. For air spray, thin up to 10% or ¾ pint (380 mL) per gallon. For airless spray, roller or brush, thin up to 5% or ¼ pint (190 mL) per gallon. **Caution:** Series N140F NSF certification is based on thinning with No. 4 Thinner. Use of any other thinner voids ANSI/NSF Std. 61 certification.

SURFACE TEMPERATURE: Minimum 35°F (2°C) Maximum 135°F (57°C)
The surface should be dry and at least 5°F (3°C) above the dew point. Coating won't cure below minimum surface temperature.

APPLICATION EQUIPMENT

Air Spray

Gun	Fluid Tip	Air Cap	Air Hose ID	Mat'l Hose ID	Atomizing Pressure	Pot Pressure
DeVilbiss MBC or JGA	E	765 or 78	5/16" or 3/8" (7.9 or 9.5 mm)	3/8" or 1/2" (9.5 or 12.7 mm)	75-100 psi (5.2-6.9 bar)	10-20 psi (0.7-1.4 bar)

Low temperatures or longer hoses require higher pot pressure.

Airless Spray

Tip Orifice	Atomizing Pressure	Mat'l Hose ID	Manifold Filter
0.015"-0.019" (380-485 microns)	1800-3000 psi (124-207 bar)	1/4" or 3/8" (6.4 or 9.5 mm)	60 mesh (250 microns)

Use appropriate tip/atomizing pressure for equipment, applicator technique and weather conditions.
Note: Application over inorganic zinc-rich primers: Apply a wet mist coat and allow tiny bubbles to form. When bubbles disappear in 1 to 2 minutes, apply a full wet coat at specified mil thickness.
Roller: Roller application optional when environmental restrictions do not allow spraying. Use 3/8" or 1/2" (9.5 mm or 12.7 mm) synthetic nap covers.
Brush: Recommended for small areas only. Use high quality natural or synthetic bristle brushes.

CLEANUP: Flush and clean all equipment immediately after use with the recommended thinner or MEK.

*Values may vary with color.

Ross Valve Support Services

PROVIDES PERSONAL SERVICE IN EVERY PHASE OF DEVELOPMENT, INSTALLATION AND MAINTENANCE.

We are always available to provide answers to any questions. No sale is ever “final”

DEDICATED SUPPORT LINES

Sales engineers available Monday through Friday 7am to 5:00pm EST
Phone to help with any questions — (518) 274-0961
Fax machine – (518) 274-0210
After Hours Support – (518) 279-4373
E-Mail – sales@rossvalve.com

TRAINING

Factory Training — Ross Valve believes that our customers should know as much as possible about our products. That is why we periodically host Customer Training seminars at our Ross Technology Park in Troy, NY. Here, our customers learn the workings of the valves, how to correctly maintain them, and how they are manufactured.

In addition, Ross representatives are often in the field giving product seminars for your convenience.

FIELD SERVICE

When a repair, upgrade, or modification is required for an existing Ross Valve, Factory Authorized Ross Service Technicians offer the best service available, including:

Technical assistance for start-up or continuing training.

Fully inventoried service vehicles to allow replacement of necessary parts.

Confined Space/OSHA trained with latest equipment

On-site / hands-on training for your staff.

Ability to return older valves to “like-new” condition.

YEARLY CONTRACTS AVAILIBLE

WARRANTY

All valves and materials are guaranteed free from defects for 1 year from the date shipped.

Ross Valves are economically rebuilt. Every internal part is replaceable through the top of the valve, without removing it from the line. All seals and internal packings are replaceable, which contributes to the valve’s longevity.

Ross Valve stocks a wide variety of repair parts which can be received by the customer as early as the next day. In-house computer links track packages to ensure timely delivery.

Detailed historical record keeping gives us a full report of all maintenance or upgrades that have been made on each valve. This allows us to evaluate performance in the past and maximize performance in the future.

Automatic Control Valves & Pre-Packaged Vaults for Water & Wastewater
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