

SUBMITTAL



P.O. BOX 595, TROY, NEW YORK 12181
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SUBMITTAL

**20WR Internal Pilot Operated
Pressure Relief Valve**

ROSS TECHNOLOGY PARK
75 102ST STREET, TROY, NY 12181
TEL 518.274.0961 - WWW.ROSSVALVE.COM





SUBMITTAL NOTES

PROJECT: _____

Ross Model 20WR – Internal Pilot Operated Pressure Relief Valve

Size: _____ inch / mm

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:

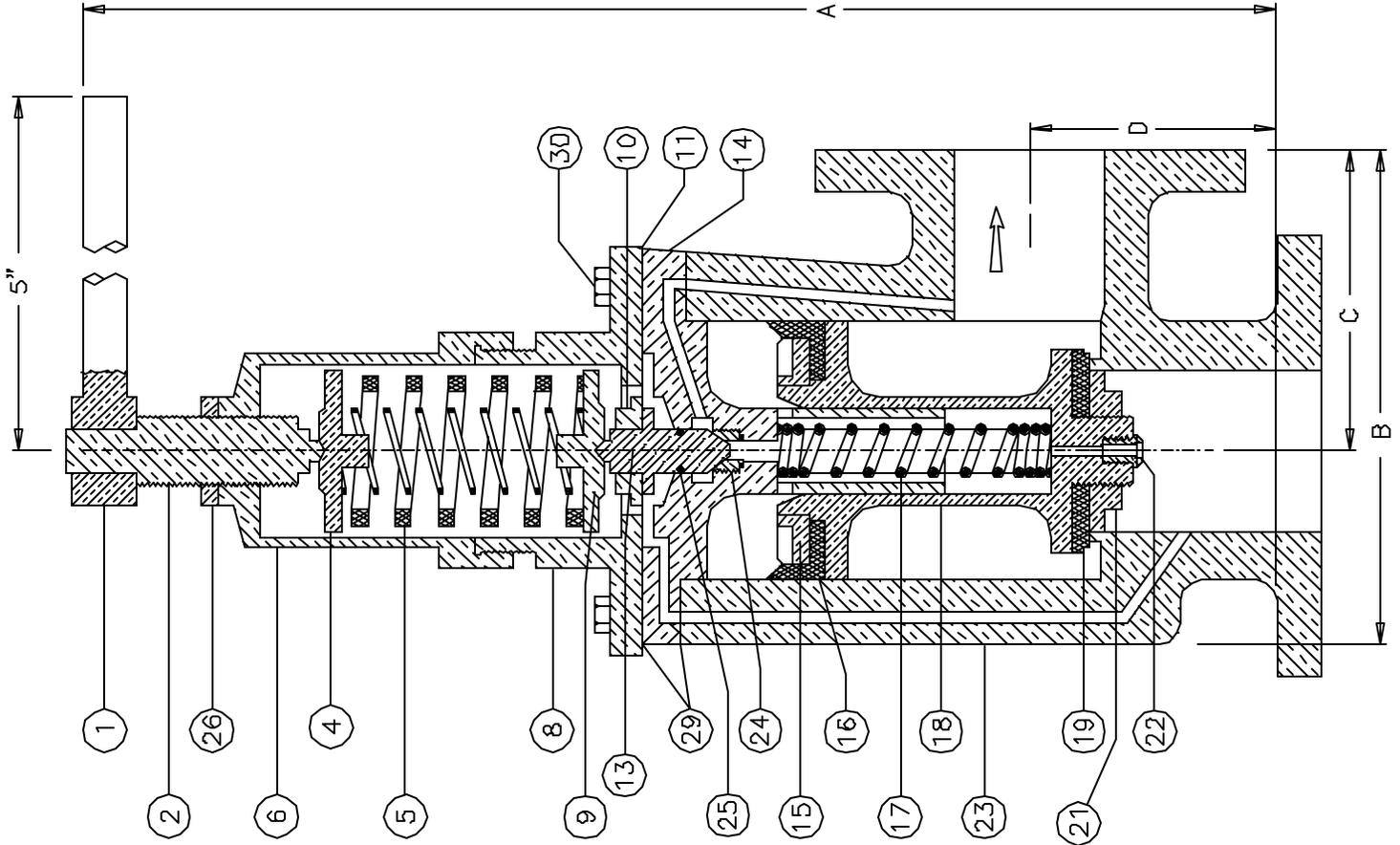
- Inlet (supply) pressure _____ psi
- Initial factory setting (typically 15-20% above normal inlet pressure): _____ psi.
- Valve relieves to Atmosphere / Drain Pump Suction at _____ psi

The Ross Model 20WR Angle Body Style Valve can be installed in any position

The valve shall be furnished with:

- All bronze construction
- Inlet and outlet connections shall be :
 - FNPT threaded ends Class 125 flanges Class 250 flanges
- PAINTING: Ferrous surfaces of valve shall be coated with ANSI/NSF Standard 61 Certified Epoxy (Themec Series N140F)
 - Meets the performance requirements of AWWA D102 Inside System No. 1.
- Operation & Maintenance Manual (shipped with the valve).
- Other (Code / Description) _____ / _____
 (Please list any additional features that are required. A representative may need to contact you for any relevant operating data.)

The valve will be constructed with materials and options stated on this notes page & cut view drawing & quote only, any changes or adders will be reviewed by Ross Valve Mfg. Co., Inc. with possible additional charges to quoted valve pricing. All information following the cut view drawing is for general information. Any special submittal requirements will be an additional charge to purchaser. The Ross Valve Mfg. Co., Inc. reserves the right to modify valve construction which will result in equal or superior performance to existing designs. These modifications may be made at any time and at the sole discretion of the manufacturer.



* INCLUDED IN STANDARD REPAIR KIT

** OPTION CHROME PLATED

PART	DESCRIPTION	QTY	MATERIAL
1	ADJUSTING HANDLE	OPT.	BRONZE**
2	ADJUSTING SCREW	1	BRONZE**
4	TOP SPRING WASHER	1	BRONZE
5	ADJUSTING SPRING(S)	VARY	STEEL
6	SPRING CHAMBER	1	BRONZE**
8	DIAPHRAGM COVER	1	BRONZE**
9	BOTTOM SPRING WASHER	1	BRONZE
10	DIAPHRAGM NUT	1	BRONZE
11*	DIAPHRAGM	1	BRONZE
13	PILOT STEM	1	STAINLESS
14	DIAPHRAGM PLATE	1	BRONZE
15	CUP FOLLOWER	1	BRONZE
16*	CUP PACKING	1	LEATHER
17	GUIDE SPRING	1	STAINLESS
18	STEM	1	BRONZE
19*	SEAT PACKING	1	POLYURETHANE
21	SEAT FOLLOWER	1	BRONZE
22*	STRAINER/ORIFICE	1	STAINLESS
23	SHELL	1	BRONZE
24	PILOT SEAT	1	STAINLESS
25*	O-RING PACKING	1	BUNA-N
26	LOCK NUT	1	BRONZE**
29*	GASKETS - DIAPHRAGM PLATE	2	COMPOSITION
30	BOLTS - ASSEMBLY	10	BRONZE**

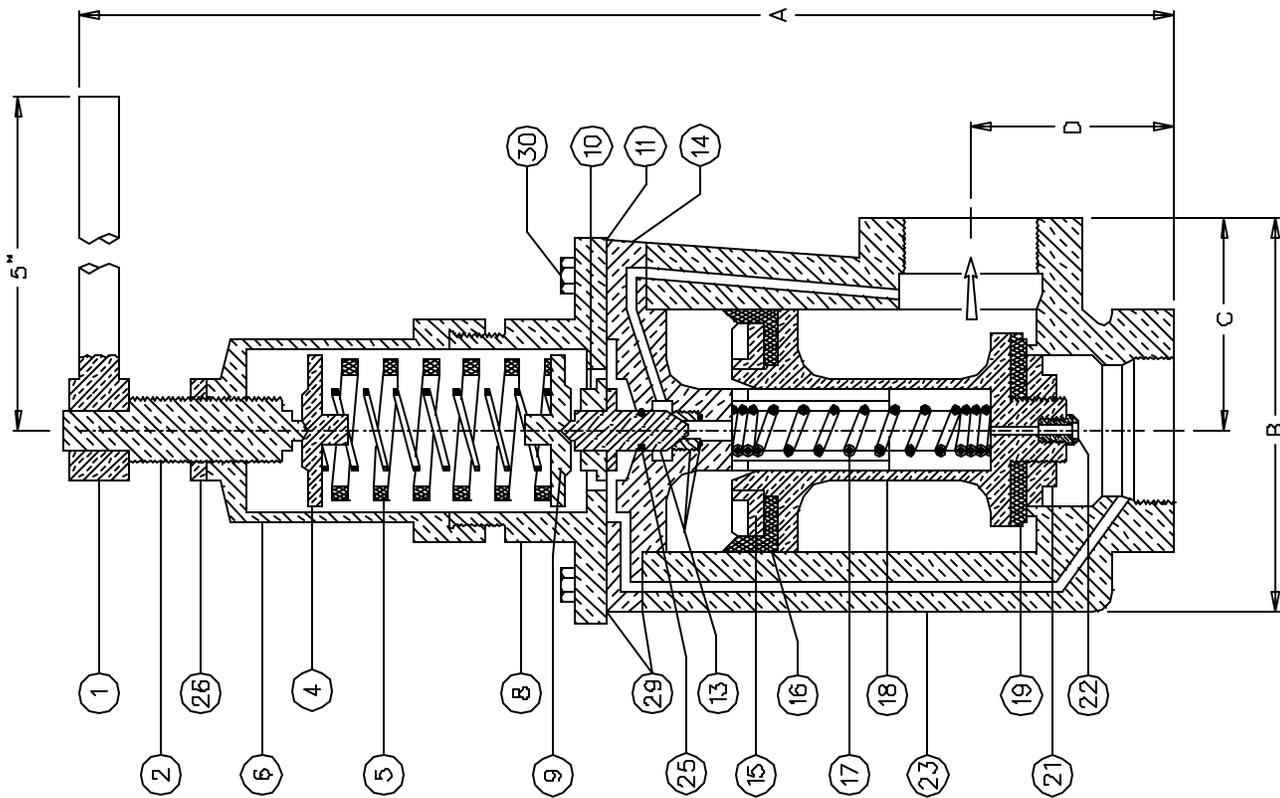
SIZE	ANSI B16.1	WEIGHT (LBS.)	DIMENSIONS (INCHES)			
			A	B	C	D
1-1/2	125	43	17	7-3/16	4-3/16	3-3/4
	250	53	17	7-3/16	4-7/16	4-1/16
2	125	43	17	7-1/4	4-1/4	3-13/16
	250	53	17	7-3/4	4-1/2	4-1/8
2-1/2	125	54	17	8-3/4	5-3/16	4-5/16
	250	64	17	9-1/4	5-1/2	4-5/8
3	125	52	17	8-13/16	5-1/16	4-1/2
	250	62	17	9-5/8	5-1/2	4-7/8

ROSS VALVE Mfg. Co., Inc.
 8 OAKWOOD AVENUE - P.O. BOX 959 - TROY, NEW YORK, 12181 - TEL. (518) 274 0951

NO. SCALE: DRAWING: 20WR-F-SS
 DATE: 4-6-51 3401-AA REVISED: 6-14-02 TJS

MODEL 20WR-F ANGLE BODY
 SURGE RELIEF VALVE WITH
 INTERNAL STAINLESS STEEL PILOT SET & FLANGES,

FILE: 20WR-F-STEEL



DIAPHRAGM PLATE #14 ALIGN THROUGH HOLE IN PLATE WITH INTERNAL WASTE PORT ON OUTLET SIDE OF SHELL.
 GASKET PLACEMENT
 - PLACE (1) #29 GASKET ON TOP OF #14 DIAPHRAGM PLATE (BELOW #11 DIAPHRAGM) - ALL BOLT HOLES SHOULD BE OPEN, WHILE THE PORT HOLE SHOULD BE COVERED.
 - PLACE (1) #29 GASKET BELOW #14 DIAPHRAGM PLATE - ALL BOLT HOLES AND PORT HOLES SHOULD BE OPEN.

PART	DESCRIPTION	QTY	MATERIAL
1	ADJUSTING HANDLE	OPT.	BRONZE**
2	ADJUSTING SCREW	1	BRONZE**
4	TOP SPRING WASHER	1	BRONZE
5	ADJUSTING SPRING(S)	VARY	STEEL
6	SPRING CHAMBER	1	BRONZE**
8	DIAPHRAGM COVER	1	BRONZE**
9	BOTTOM SPRING WASHER	1	BRONZE
10	DIAPHRAGM NUT	1	BRONZE
11*	DIAPHRAGM	1	BRONZE
13	PILOT STEM/SEAT/O-RING	1 SET	420SS/BUJA-N
14	DIAPHRAGM PLATE	1	BRONZE
15	CUP FOLLOWER	1	BRONZE
16*	CUP PACKING	1	LEATHER
17	GUIDE SPRING	1	STAINLESS
18	STEM	1	BRONZE
19*	SEAT PACKING	1	POLYURETHANE
21	SEAT FOLLOWER	1	BRONZE
22*	STRAINER/ORIFICE	1	STAINLESS
23	SHELL	1	BRONZE
25*	O-RING PACKING	1	BUJA-N
26	LOCK NUT	1	BRONZE**
29*	GASKETS - DIAPHRAGM PLATE	2	COMPOSITION
30	BOLTS - ASSEMBLY	10	BRONZE**

* INCLUDED IN STANDARD REPAIR KIT
 ** OPTION - CHROME PLATED

SIZE	WEIGHT (LBS.)	DIMENSIONS (INCHES)			
		A	B	C	D
1, 1-1/4, 1-1/2	S.B. 27	14	5-1/8	2-1/2	2-3/4
1-1/2, 2	L.B. 34	16	5-1/2	2-7/8	2-3/4
2-1/2, 3	L.B. 43	17	7-3/4	5-1/4	4-3/8

S.B. - SMALL BODY
 L.B. - LARGE BODY

ROSS VALVE Mfg. Co., Inc.
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NO SCALE DRAWING 20WR-STEL

DATE 4-6-51 3401-AA REVISED 8-25-99 DMB

MODEL 20WR ANGLE BODY
 SURGE RELIEF VALVE WITH NPT
 END CONNECTIONS & STELLITE SEAT INSERT

PLF: 20WR-STEL

(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.



COATING SYSTEM

PRIMERS	Self-priming, 20, FC20, 91-H2O
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 Surfacers.
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 2.29 lbs/gallon (274 grams/litre)	Thinned 10% 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)
TEMPERATURE RESISTANCE	(Dry) Continuous 250°F (121°C) Intermittent 275°F (135°C)	

Published technical data and instructions are subject to change without notice. The online catalog at www.tnemec.com should be referenced for the most current technical data and instructions or you may contact your Tnemec representative for current technical data and instructions.
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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 Mills (Microns)	Wet Mills (Microns)	Sq Ft/Gal (m ² /Gal)	Dry Mills (Microns)	Wet Mills (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.

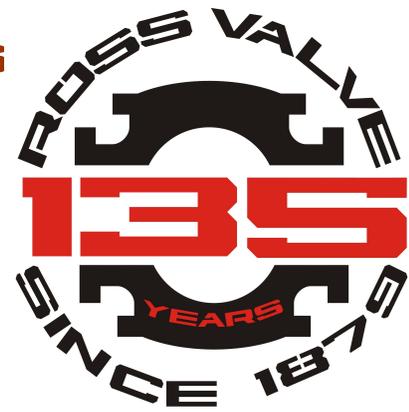
*Values may vary with color.

WARRANTY & LIMITATION OF SELLER'S LIABILITY: Tnemec Company, Inc. warrants only that its coatings represented herein meet the formulation standards of Tnemec Company, Inc. THE WARRANTY DESCRIBED IN THE ABOVE PARAGRAPH SHALL BE IN LIEU OF ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. The buyer's sole and exclusive remedy against Tnemec Company, Inc. shall be for replacement of the product in the event a defective condition of the product should be found to exist and the exclusive remedy shall not have failed its essential purpose as long as Tnemec is willing to provide comparable replacement product to the buyer. NO OTHER REMEDY (INCLUDING, BUT NOT LIMITED TO, INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY, ENVIRONMENTAL INJURIES OR ANY OTHER INCIDENTAL OR CONSEQUENTIAL LOSS) SHALL BE AVAILABLE TO THE BUYER. Technical and application information herein is provided for the purpose of establishing a general profile of the coating and proper coating application procedures. Test performance results were obtained in a controlled environment and Tnemec Company makes no claim that these tests or any other tests, accurately represent all environments. As application, environmental and design factors can vary significantly, due care should be exercised in the selection and use of the coating. **FOR INDUSTRIAL USE ONLY.**

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 AVAILABLE

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.



ROSS VALVE

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

www.rossvalve.com

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