

Dresser-Rand® Gimpel™ Valve

## Trip and Trip Throttle Valve Material and Design Upgrade

[For Temperature Range greater than 901°F (482.7°C) to 1004°F (540°C)]

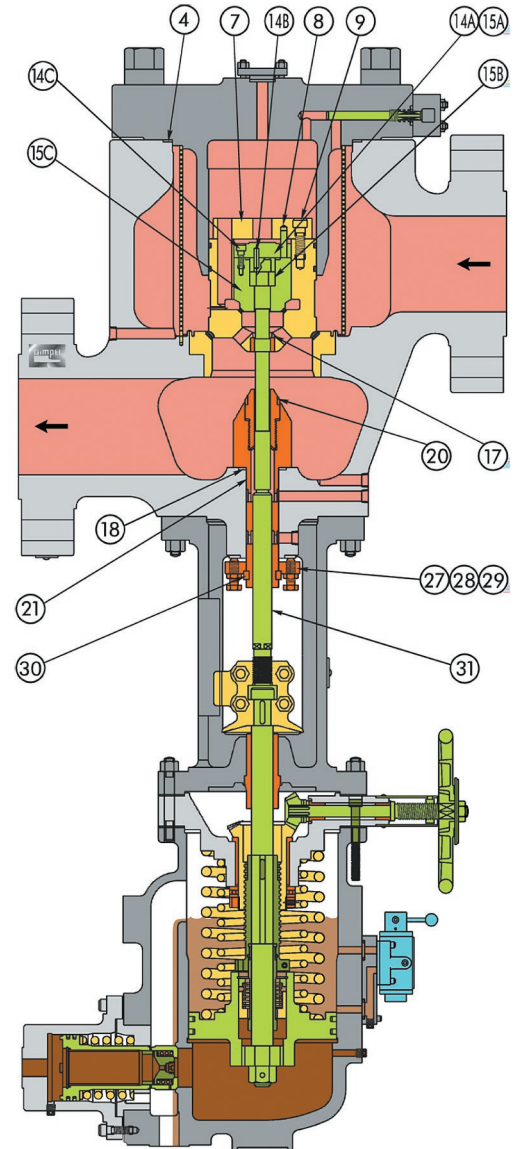
Internal components of trip and trip throttle valves are subject to oxidation, a complicated phenomenon influenced by several factors including oxygen content and impurities present in the steam, steam temperature, and chemical composition of exposed valve components. Over time, oxidation causes iron oxide flakes or “scale” (commonly called “blue blush”) to build up on critical valve components and reduces the operating clearance between the valve stem and steam bushings. In extreme cases the build up may interfere with the operation of the valve during an emergency shut down (ESD).

Since 1999, AISI Type 422-nitrided stainless material has been used to manufacture stems, steam bushings, pilot valves and other related components for all valves designed for an operating steam temperature greater than 901°F (482.7°C) to 1004°F (540°C). This material has 11 to 12.5 percent chromium content (compared to the less than two percent found in our standard material) and features a reduced rate of oxidation at higher steam temperature. In addition, the operating clearances of the valve sliding parts were increased to compensate for oxide build up.

Caution: The replacement parts above differ dimensionally from the original parts and should only be installed as a kit, not mixed with any of the original parts.

The use of AISI type 422-nitrided material, combined with the proper feedwater treatment

PC No.	Description
4	Gasket
7	Disc Flange
8	Pin
9	Cap Screws
14A	Pilot Valve Flange
14B	Pin
14C	Cap Screws
15A	Gasket
15B	Split Ring
15C	Pilot Valve
17	Disc Bushing
18	Gasket
20	Back Seat Bushing
21	Leak Off Bushing
27	Clamp Ring
28-/-29	Cap Screws
30	Split Ring
31	Valve Stem



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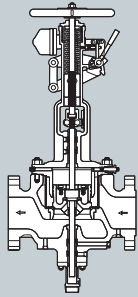
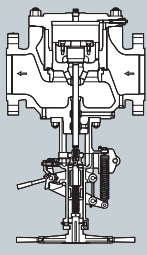
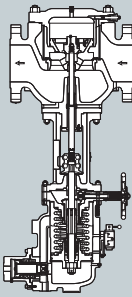
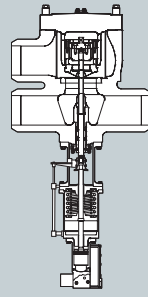
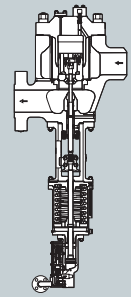
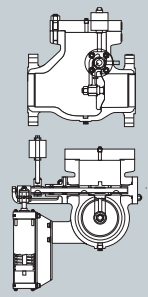
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and the recommended exercise frequency, will help reduce build up on critical internal valve components. Dresser-Rand recommends monitoring and treating boiler feedwater to maintain steam purity levels defined by National Electrical Manufacturers Association (NEMA) specifications SM 23 and SM 24. At a minimum, Dresser-Rand recommends weekly exercise of all trip and trip throttle valves. (Greater frequency may be required if excessive carryover is present in the steam.) Excessive oxygen in the steam, improper feedwater treatment and poor maintenance practices will negate the benefits of AISI Type 422-nitrided material.

Valve components manufactured from AISI Type 422-nitrided material are available as an assembled kit from Dresser-Rand and can be retrofitted for valves manufactured before 1999 and operating at temperatures greater than 901°F (482.7°C) to 1004°F (540°C). The assembled kit can be installed during a short outage window without removing the valve from the line, or during an on-site overhaul of the valve. The latest design improvements and upgrades are included whenever material improvements are made to new valves.

## Gimpel™ Valve Matrix

	Mechanical Latch		Oil (hydraulic) Operated			Swing Disc Non-Return
	<b>TMTTV</b> Top-Mechanism Trip Throttle Valve 	<b>INTTV</b> Inverted-Trip Throttle Valve 	<b>OOTTV</b> Oil-Operated Trip Throttle Valve 	<b>OOPSV</b> Oil-Operated Position Stop Valve 	<b>OOTV</b> Oil-Operated Trip Valve 	<b>SDNRV</b> Extraction/Induction Power Assisted Valve 
<b>Operation</b>	Push-to-Close	Pull-to-Close	Pull-to-Close	Pull-to-Close	Pull-to-Close	Free-Swinging
<b>Size</b> NPS —inches DN —(mm)	2-14 (50-350)	3-20 (80-500)	3-24 (80-600)	6-24 (150-600)	3-24 (80-600)	4-36 (100-900)
<b>Pressure</b> ANSI Class	150-1500	150-1500	150-2500	150-2500	150-2500	150-900
<b>Temperature</b> °F (limit) °C (limit)	950 510	950 510	1004 540	1004 540	1004 540	950 510