

# INTTV

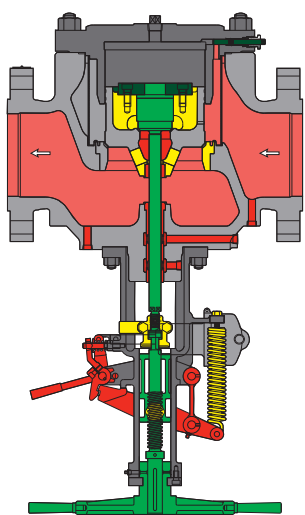
## Gimpel® Inverted Latch-Type Trip Throttle Valve

Dresser-Rand acquired the Gimpel valve business in April, 2007. Gimpel products include a line of trip, trip throttle, and non-return valves to protect steam turbines and related equipment in industrial and marine applications.

Dresser-Rand Gimpel® Inverted Latch-Type Trip Throttle Valve (INTTV) is suited for single-valve, single-stage and single-valve, multi-stage steam turbines driving chillers, fans, generators, and pumps in correctional facilities, food processing plants, hospitals, pulp and paper plants, chemical and petrochemical plants, refineries, and universities.

The primary function of the INTTV is to protect the steam turbine during an emergency by quickly closing (tripping) off the flow of steam into the turbine. Examples of emergencies include overspeed, low lube oil pressure, high rotor vibrations, and high bearing temperature. The valve is designed so that after tripping it will not reopen until oil pressure is re-established.

The throttling capability of the valve can be used to slow-roll the turbine during start-up until minimum governor speed is reached. The Gimpel INTTV design incorporates more than 60 years of experience with proven technology. The valve can be installed with the stem in a horizontal or vertical position (a vertical stem installation requires the valve body to be located above the operating section).

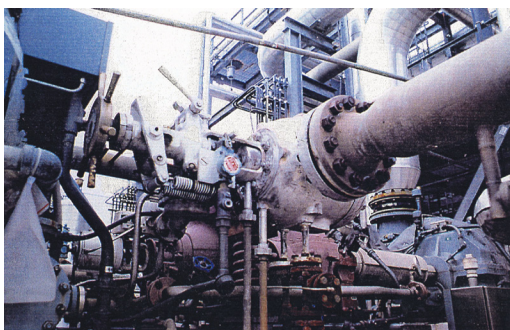


### Standard Features

- Pull-to-close operation during tripping
- Tripping in 0.5 seconds (or less)
- ANSI nominal pipe sizes 2 to 20 and pressure classes 150 to 900
- Steam temperature to 950°F (510°C)
- Poppet design with pilot valve capable of opening against full differential steam pressure
- Raised-face (RF) flange and ring-type joint inlet and outlet connections
- RF flange valve body drain connections
- Oil trip cylinder
- Cast alloy valve body with bolted cover available in straight-through, corner body, and top inlet flow arrangements
- Nitralloy-nitrided valve stem/pilot valve and steam bushings for designs up to 900°F (482.2°C)
- AISI Type 422 stainless steel-nitrided valve stem/pilot valve and steam bushings for designs above 900°F (482.2°C)
- Chrome moly steel valve seat and main disc – contact surface overlaid with stellite
- NPT valve stem leakoff connections
- Handwheel provides throttling during start-up and exercising during normal operation
- Standard local hand trip lever
- Factory hydrostatic tests for body strength, porosity, and seat leakage
- Factory operational test without steam
- Final surface inspection before shipment
- Hydraulic trip cylinders

### Optional Features

- Weather housing (protective cover) for harsh environment installations
- Ring-type joint (RTJ) inlet and outlet connections
- RF flange valve stem leak-off connections
- Pneumatic trip cylinder and trip solenoid
- Lever- and proximity-type limit switches to indicate valve open and closed position
- Temporary start-up screen
- Blowdown kits
- Electric (Limitorque) valve actuator for remote valve operation



For more information on **Gimpel valves** please contact the following location:

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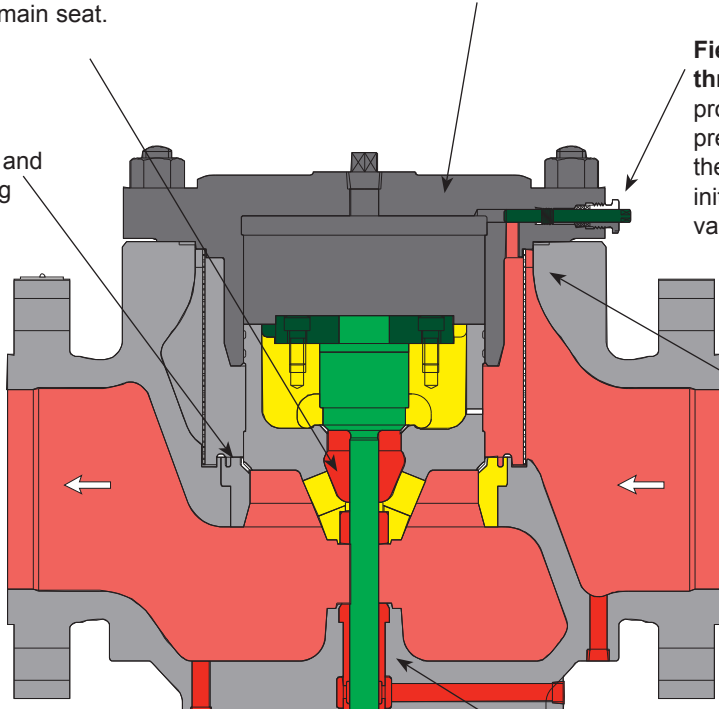
**INTTV Features**

**One-piece stem and pilot valve** is bottom guided. The pilot valve provides controlled throttling and reduced thrust during the initial opening of the main seat.

**Cover** provides easy access to valve internals and seat inspection without removal (neither from line nor of actuator).

**Stellited seats** reduce erosion and enhance sealing longevity.

**Field adjustable throttling screw** provides steam pressure balance above the main seat during initial throttling of the valve.

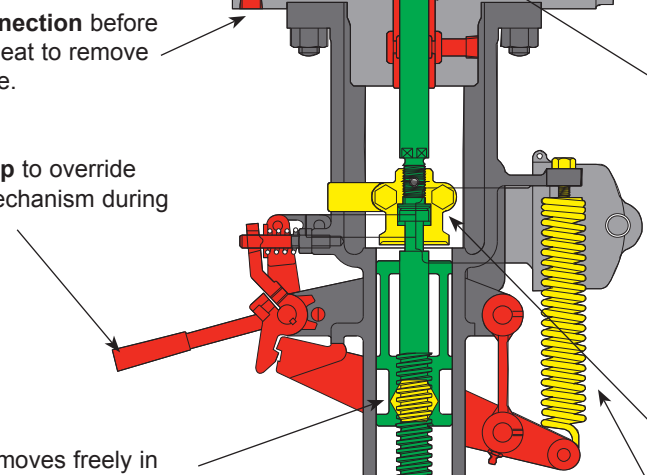


**Drilled strainer** is an integral, replaceable steam strainer that protects seating surfaces from debris while protecting the turbine.

**Drain connection** before and after seat to remove condensate.

**Stems and bushings** are precision ground and honed for smooth, low-friction operation and provide design clearances for minimal stem leakage at the (low- and high-pressure leak-off connections provided).

**Manual trip** to override tripping mechanism during start up.



**Slide nut** moves freely in machined bore of yoke during trip; when the valve is reset, slide nut is fixed and stem moves (screws) up or down (throttling).

**Non-rotating coupling** takes thrust during opening and resetting of the valve.

**Handwheel** provides throttling operation during turbine start-up, manual closing, and resetting after trip; motor operator available for remote operation.

**Trip Springs** pulls "inverted" disk closed in 0.5 second or less.

**Corrosion resistant** materials of construction for outdoor use as well as copperless materials available.

