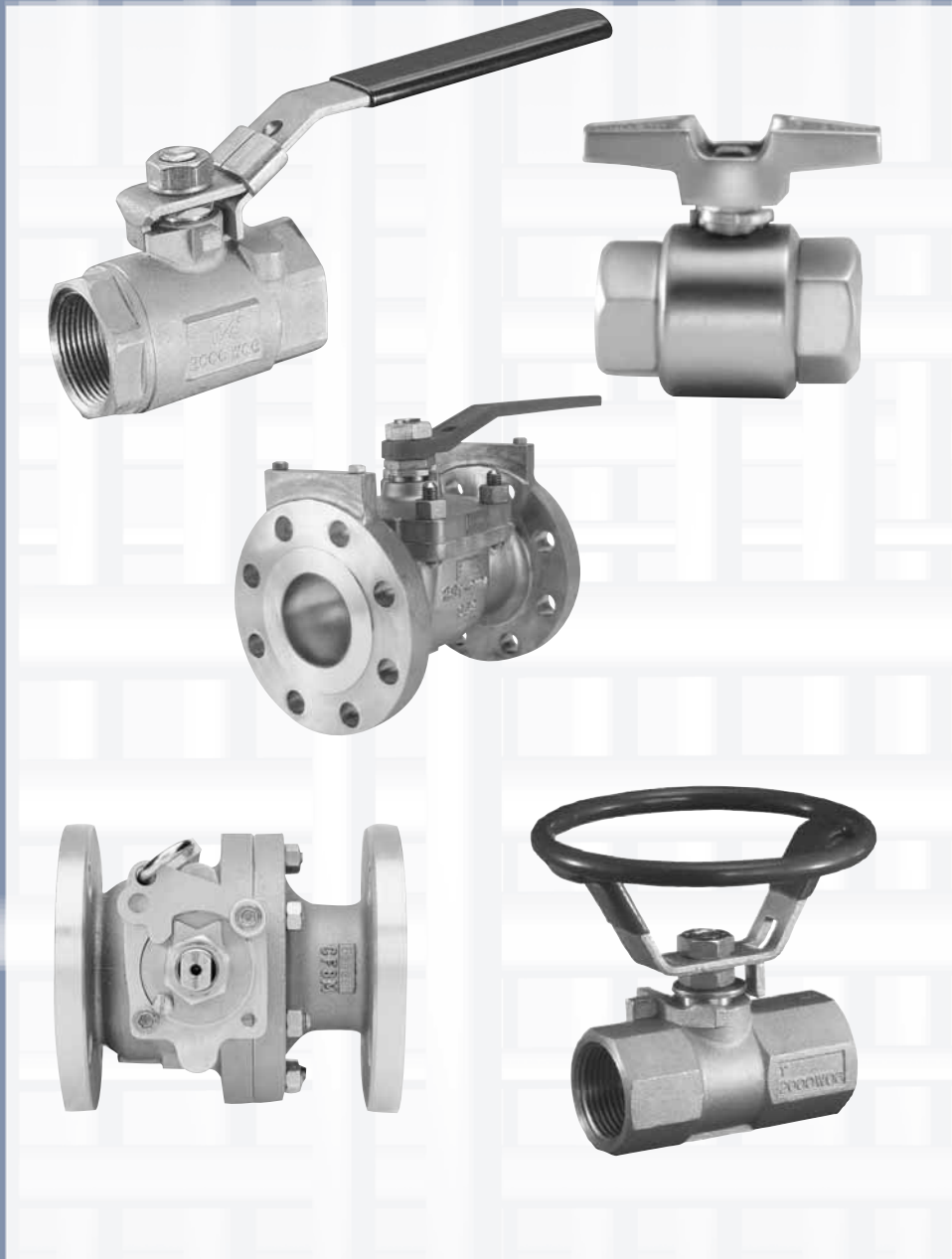




FCD MMABR1004-00
(Part V 505)



McCANNA/MARPAC Quarter Turn Valves for Saturated Steam Service

Wide choice of models, sizes 1/4" through 12"

Proven in performance on saturated steam services up to 720 psig at 800°F

Wide choice of Flowserve McCANNA quarter turn valves for saturated steam service, proven reliability in every model

Select the Flowserve McCANNA quarter turn valves that match your steam service conditions most cost effectively.

As you can see from the charts on page 3, the wide choice of Flowserve McCANNA quarter-turn valves for saturated steam service ranges from, economy type McCANNA 400® and 800® models, available off the shelf to handle saturated steam pressures up to 150 psig at temperatures to 366°F all the way up to our McCannaSeal® top entry ball valve, specially prepared for saturated steam service pressures up to 720 psig at 510°F.

Flowserve McCANNA quarter-turn valve modes are available with a wide choice of body, seat and trim materials to resist various degrees of temperatures and pressures as well as the corrosive and erosive conditions in your particular steam service.

Our application engineers draw from more than 50 years of Flowserve specialized experience in matching the correct McCANNA valve model and materials of construction to a specific service. This is a basic reason why McCANNA quarter turn valves work and keep on working in so many different saturated steam services. McCANNA quarter turn valves are proven in performance on all of these saturated steam services and more:

| | | |
|-------------------------------|-------------------------|------------------------------|
| Laundry unites | Kettle lines | Sterilizers |
| Condensate drains | Clean lines | Heating coils in tanks |
| Locomotive end valves | Steam jacketing systems | Brine cookers and heaters |
| Bypass lines | Pressure kettles | Tire presses |
| Metal pickling solution tanks | Steam cleaning machines | Boiler shutoff and blow down |
| Drip legs | Paper machines | Trap lines |



Flowserve McCannaSeal valves in steam application

Quick quarter turn ball valve operation lengthens stem seal life and guards operator safety.

Fast 90° rotation of every Flowserve McCANNA ball valve not only furnishes the immediate on-off control so critical for steam service, but also eliminates the multiple turns of gate valves which can lead to early stem seal wear and costly steam leakage.

In addition, quick quarter-turn operation of a McCANNA ball valve protects personnel from the burning or abrading they risk when manually operating multiple turn valves in a steam-leak environment.

Flowserve McCANNA 800 ball valves, steam services to 150 psig @ 366°F.

Low cost, McCANNA 800 ball valves with threaded ends are available off the shelf. Blowout proof stem design and Fire Seal® seats are standard in all sizes. McCANNA 800 valves sizes 3/4" through 2" are qualified to API-607 fire-safe standards.

Flowserve McCannaFlo® ball valves, steam services up to 250 psig at 406°F.

Standard McCannaFlo with certain body, seat and trim materials handle low pressure saturated steam services to 150 psig at 366°F and when supplied in the thermopac version up to 250 psig at 406°F. McCannaFlo flanged ball valves have a 1/8" hole in the ball stem slot to ensure cavity pressure relief in the open position.

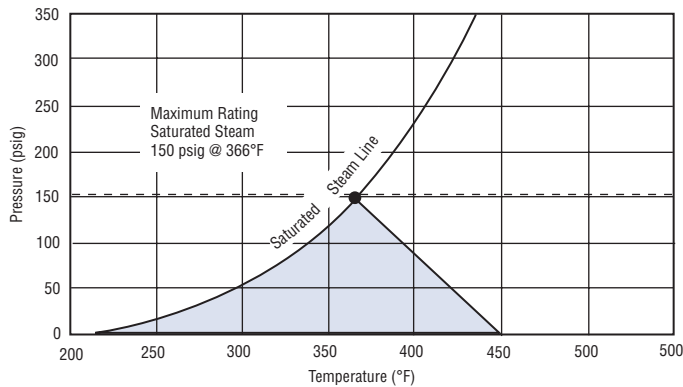
Flowserve McCannaSeal top entry valves, steam services to 720 psig @ 800°F.

McCannaSeal ball valves top entry design makes in-line servicing quick and easy. Proven reliability and top entry design make McCannaSeal ball valves ideal for steam service, where scheduled maintenance is vital for safety and cost considerations. Entry through the top takes only minutes. Simply remove the bonnet bolting. McCannaSeal valve body stays in the line.

Standard McCannaSeal ball valves with certain body, seat and trim materials handle low-pressure saturated steam services to 150 psig at 366°F. For high-pressure saturated steam service above 150 psig, McCannaSeal ball valves are specially prepared with TFE coated stems.

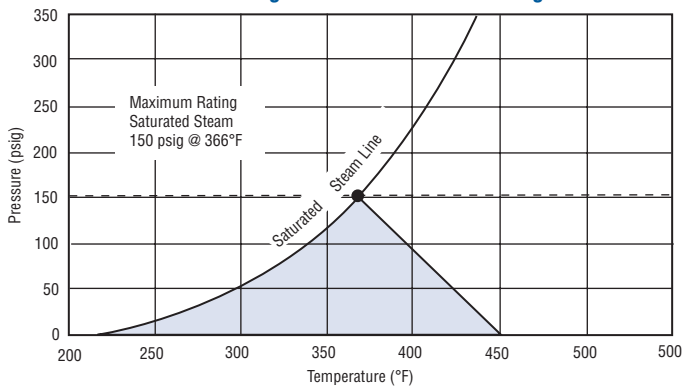
Whether standard or specially prepared for steam service, McCannaSeals stem seals provide superior sealing. At low line pressures, the compression spring in the body cavity provides a leak preventing preload of the lower packing seals and as line pressure increases, these seals are further compressed due to the back seated design. The upper stem seal is adjustable, permitting frequently cycled valves to have long life without excessive stem torque.

McCANNNA F602 & 800 Saturated Steam Ratings - R Seats

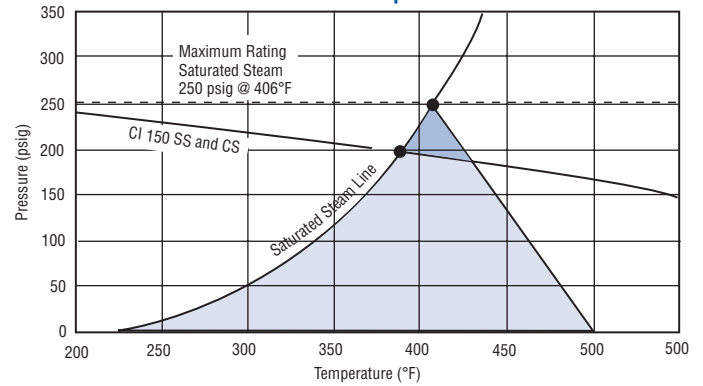


- Superheated Steam Allowable Class 600 only
- Superheated Steam Allowable Class 300, 600
- Superheated Steam Allowable Class 150, 300, 600
- Water/Wet Steam

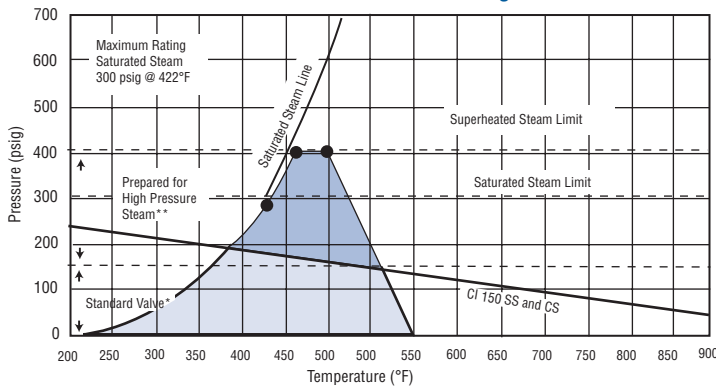
McCannaFlo Flanged Saturated Steam Ratings - R Seats



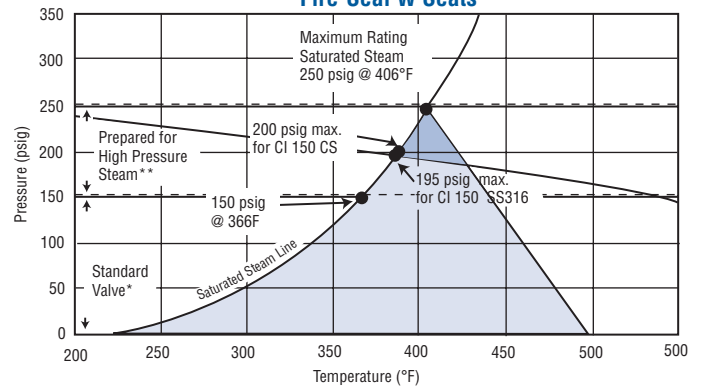
McCannaFlo Flanged Saturated Steam Ratings Thermopac Seats



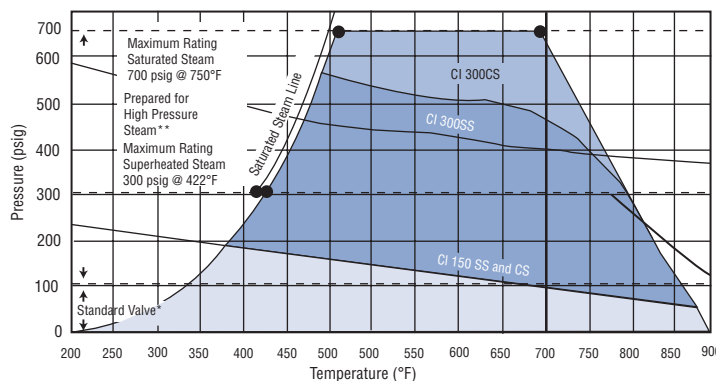
McCannaSeal Saturated Steam Ratings - J Seats



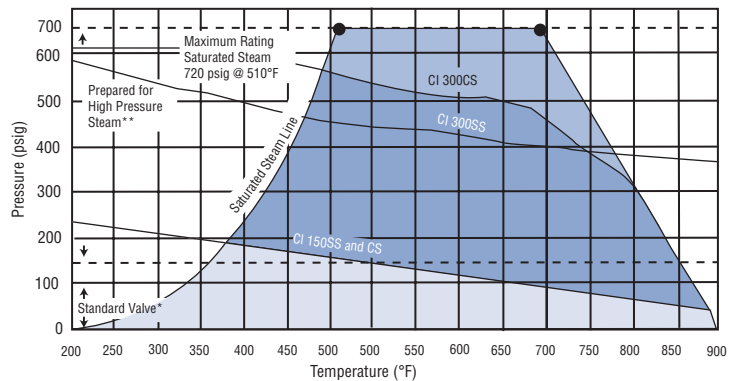
McCannaSeal Saturated Steam Ratings Fire-Seal W Seats



McCannaSeal Saturated Steam Ratings - G Seats



McCannaSeal Saturated Steam Ratings - M (Stellite) Seats



* Refer to Low Pressure Steam Service table on back cover.
 ** Refer to High Pressure Steam Service table on back cover.

Valve Selection Guide for Saturated Steam Service

Low Pressure Steam Service (Standard, off the shelf valves)

| Valve Type | McCanna 800® McCannaFlo F602 | McCannaFlo Flanged | McCannaSeal® |
|---------------------------------|--|---|--|
| Valve Sizes | 1/4", 3/8", 1/2", 3/4", 1" 1-1/4", 1-1/2", 2" | 1/2", 3/4", 1", 1-1/2", 2", 3", 4", 6", 8", 10", 12" | 1/2", 3/4", 1", 1-1/2", 2", 3", 4", 6", 8", 10" |
| Maximum Steam Service | 150 psig @ 366°F | 150 psig @ 366°F | 150 psig @ 366°F |
| Body Materials | Carbon Steel SS 316 Bronze (F602 only) | Carbon Steel SS316 | Bronze Carbon Steel SS 316 |
| Seat Materials & Design | R-Reinforced TFE Fire-Seal | R-Reinforced TFE Fire-Seal | W-HiLoad TFE Fire-Seal |
| Trim Materials (Ball & Stem) | SS316 Bronze (F602 only) | SS316 | Bronze SS316 |

Note: • End connections: threaded, flanged, or weld end, * Threaded ends only

High-Pressure Steam Service (Specify: Prepare for high-pressure steam service)

| Valve Type | McCanna 800® McCannaFlo F602 | McCannaSeal® | McCannaSeal® | McCannaSeal® |
|---------------------------------|--|--|--|--|
| Valve Sizes | 1/2", 3/4", 1", 1-1/2", 2", 4", 6", 8", 10", 12" | 1/2", 3/4", 1", 1-1/2", 2", 4", 6", 8", 10" | 1/2", 3/4", 1", 1-1/2", 2", 4", 6", 8", 10" | 1/2", 3/4", 1", 1-1/2", 2", 4", 6", 8", 10" |
| Maximum Steam Service | 250 psig @ 406°F | 250 psig @ 406°F | 700 psig @ 750°F † | 720 psig @ 800°F ■ |
| Body Materials ▲ | Carbon Steel SS 316 | Carbon Steel SS316 | Carbon Steel SS 316 | Carbon Steel SS 316 |
| Seat Materials & Design | 2-Carbon/Fiberglass Reinforced TFE (Thermopac) | W-HiLoad TFE Fire-Seal | J-PEEK G-Carbon Graphite | M-Metal |
| Trim Materials (Ball & Stem) | SS316 | SS316 | SS316 | SS316 |

Note:

• End connections: threaded, flanged, or weld end

▲ Body material limits

Carbon steel - 200 psig @ 388°F, ANSI Class 150
SS 316 - 195 psig @ 386°F, ANSI Class 150

† Maximum saturated steam for J&G seats - 300 psig @ 422°F

† Maximum superheated steam for J seat - 425 psig @ 500°F

† Maximum superheated steam for G seat - 700 psig @ 750°F

■ Maximum saturated steam for M seat - 720 psig @ 510°F

| Provision | McCannaFlo | | McCanna 800 | McCannaSeal |
|-------------------------------|------------|---------|----------------|-------------|
| | F602 | Flanged | | |
| Extended Stems | Yes | Yes | Yes | Yes |
| Extended Bonnets | N/A | N/A | N/A | Yes |
| Extended Handles | N/A | N/A | Yes | Yes |
| Actuator Heat Shields | Yes | Yes | N/A | Yes |
| Extended Actuator Brackets | Yes | N/A | N/A | Yes |

For thermal fluid service McCannaSeal valves have provisions to be insulated with no contact between the insulation and the moving stem. Longer packing if results as the critical rings operate at a lower temperature. An accessible packing nut provides for visual leak detection and easy adjustment.

For actuator selection refer to Actuator Selection Guides of appropriate brochure for torque ratings.

Note: The right is reserved to change or modify product design or construction without prior notice and without incurring any obligation to make such changes and modification on products previously or subsequently sold.

Flowserve Corporation has established industry leadership in the design and manufacture of its products. When properly selected, this Flowserve product is designed to perform its intended function safely during its useful life. However, the purchaser or user of Flowserve products should be aware that Flowserve products might be used in numerous applications under a wide variety of industrial service conditions. Although Flowserve can (and often does) provide general guidelines, it cannot provide specific data and warnings for all possible applications. The purchaser/user must therefore assume the ultimate responsibility for the proper sizing and selection, installation, operation, and maintenance of Flowserve products. The purchaser/user should read and understand the Installation Operation Maintenance (IOM) instructions included with the product, and train its employees and contractors in the safe use of Flowserve products in connection with the specific application.

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For more information about Flowserve Corporation, visit www.flowserve.com or call USA 1 800 225 6989.

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