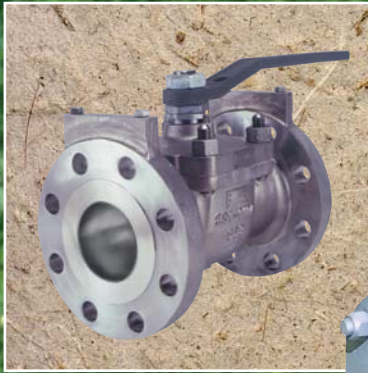




# McCANNA/MARPAC Valves

SA 100-2



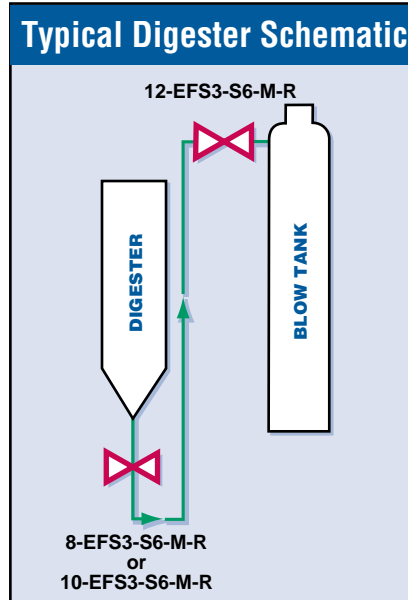
ALL THE RIGHT VALVES IN ALL THE RIGHT PLACES

***A Proven Leader in  
Pulp & Paper Services***  
Featuring the MARPAC® Digester Blow Valve

# McCANNA — Better In The Long Run!

**P**ulp and paper mills demand long, uninterrupted runs and production that goes on as scheduled without costly valve failures. That's what you get from McCANNA soundly engineered valves of proven performance and reliability, from a single source which can meet all your ball valve needs for pulp and paper production. Your benefits start with...

## MARPAC Digester Blow Valves



In typical pulp mills, the “heart” of the operation is the digester. Here wood is cooked in alkaline chemicals under controlled conditions of temperature, pressure and chemical (liquor) concentrations to refine the fiber pulp that later becomes paper. And when this fiber pulp slurry is ready for discharge it must be discharged completely, or the valuable pulp may be ruined and there can be a loss of expensive steam and liquor. MARPAC Digester Blow Valves are up to this challenge, with their consistent, in-line performance at pulping mills worldwide!

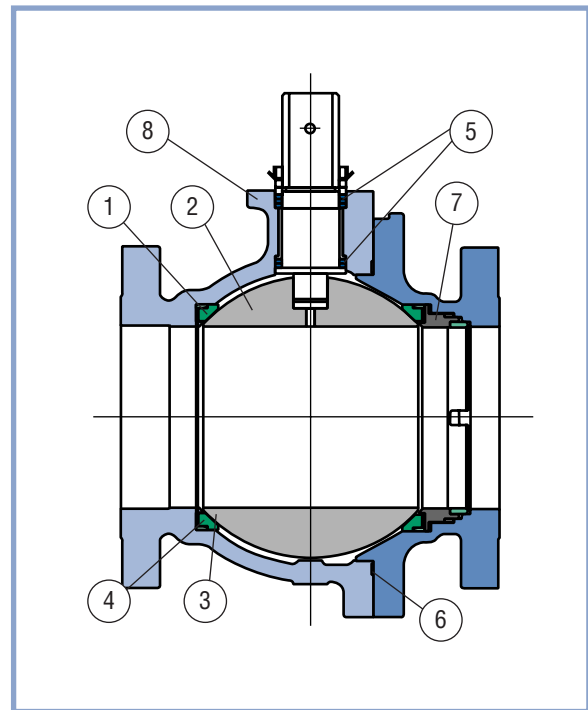
Typically, MARPAC Digester Blow Valves are installed at the bottom of the digesters and near the top of the blow tank, as shown by this illustration on the left.

1. Seats of Solid Stellite<sup>†</sup> combat the effect of erosion and corrosion so typical in digester applications.
2. Solid, full-port, perfect circle balls of 316SS are hard chrome plated for wear resistance. (High Velocity Oxygen Fueled (HVOF) hardcoatings over 316SS ball and seats are optional).
3. Lapping of ball and seats as matched set ensures the continuous contact required for tight shutoff, smooth operation and long service life.
4. Machined recesses for the seats provide extra erosion protection and prevent debris buildup behind the seats.
5. Stem Design incorporates dual stem seals. Conical-shaped RTFE packing rings completely fill the packing cavity to ensure tight sealing at low compressive force.
6. Radially split 2-piece body has a bolted joint, offset from the stem centerline for a more effective, continuous joint seal. The body seal is completely enclosed by the joint to control seal deformation, ensure leak-free operation and prevent blow-out.
7. A Unique Compression Ring achieves minimum seal leakage and operating torque, thus eliminating the need for shims or springs. This pre-set ring is locked in at assembly and never needs adjusting except when rebuilding. All MARPAC Digester Blow Valves have standard bidirectional seat capability.

8. Heavy-duty Integrated Actuator Mounting Pad withstands the high torques, overhung actuator loads and vibrations normally associated with digester blow service.

**NOTE:** Also available is a regular port version of the digester blow valve, rated to ANSI Class 300 with Class 150 face-to-face dimensions.

<sup>†</sup> Registered Trademark of Stoodly Deloro Stellite, Inc.



# Digester Blow Valve Technical Data

**Design Standards:**

ANSI B16.34 (Design, Materials, Testing)  
 ANSI B16.5 (Flange Dimensions)  
 ANSI B16.10 (Face-to-Face Dimensions)

**Sizes/Pressure Classes:**

Model EFS3:  
 ANSI Class 300,  
 Sizes 8 through 12 inch, short pattern

Model RP4:  
 ANSI Class 300, Class 150 Face-to-Face,  
 Sizes 8 and 10 inch

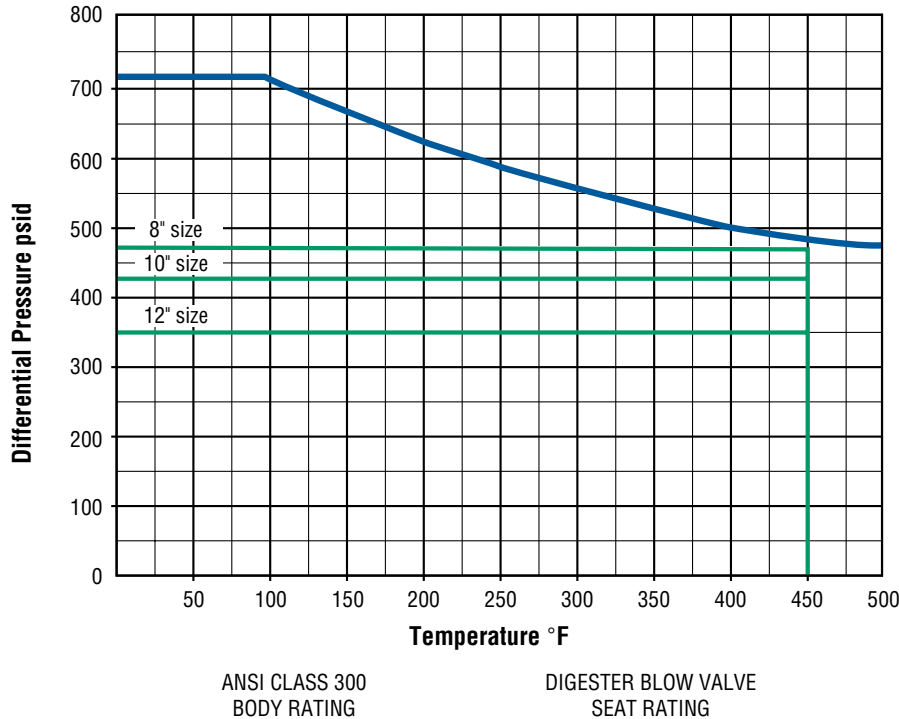
**Note:** ANSI Class 150 Valves available on application.

**Flow Capacities (Cv)**

Size	EFS3	RP4
8	10,300	2052
10	17,200	2531
12	25,900	—

Cv- Valve capacity in GPM at 1 psi pressure drop (water at 60°F)

## Suggested Maximum Pressure/Temperature Seat Ratings



**Note:** Ratings are pressure differentials. Valve body will withstand full ANSI Class 300 pressure

## Automation Recommendations

Flowserve recommends the following Bettis pneumatic actuators for Digester Blow service. Also listed in the table below are McCANNA gear actuators for manual valve service. Pneumatic actuator selection is based on 60 psig minimum air supply. Torques listed are minimum sizing torques for actuator selection.

**Recommended Actuators / Operating Torque Requirements (in-lb)**

Size (IN)	Valve Model	Torque Requirements		Pneumatic Double Acting	Pneumatic Spring Return	Worm Gear
		Break	Ending			
8	EFS3	32500	21780	R314DA	R418SR60	G5012
	RP4	26000	—	R314DA	R416SR60	G3018
10	EFS3	65000	43550	R416DA	R518SR60	G1612
	RP4	32500	—	R316DA	R418SR50	G5018
12	EFS3	82000	54940	R418DA	R520SR60	G1612

# Dimensions & Materials of Construction

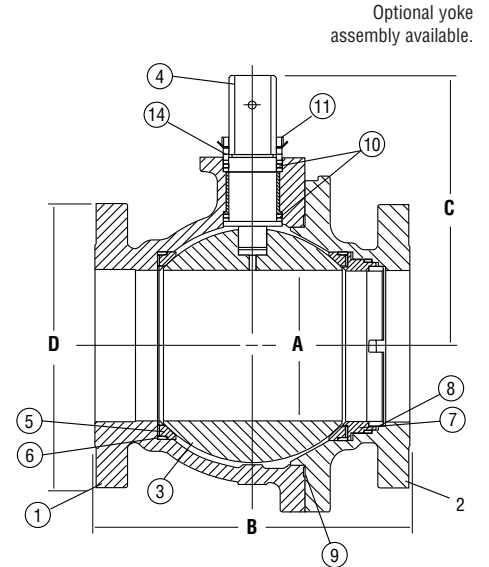
## Models EFS3: Full Port, Class 300 Digester Valves

### Parts and Materials

Item No.	Description	Material
1	Body	Cast 316SS to ASTM-A351, GR. CF8M
2	Body End	Cast 316SS to ASTM-A351, GR. CF8M
3	Ball	316SS, Hard Chrome Plated*
4	Stem	17-4PH
5	Seat	Stellite*
6	Seat Seal	RTFE
7	Compression Ring	316SS Chrome Plated

Item No.	Description	Material
8	Seat Seal	TFE
9	Body Seal	RTFE
10	Stem Seal Set	RTFE
11	Adjusting Nut	316SS
12 Not Shown	Body Stud	Alloy Steel ASTM-A193, GR. B7 (Manganese Phosphate Coated)
13 Not Shown	Body Stud Nut	Steel, ASTM-A194, GR. 2H Zinc Plated
14	Gland Ring	316SS

\* Optional HVOF Coating available.



### Dimensions

Size (in.)	A	B	C	D
8	8.00	16.50	16.27	15.00
10	10.00	18.00	18.70	17.50
12	12.00	19.75	20.95	20.5

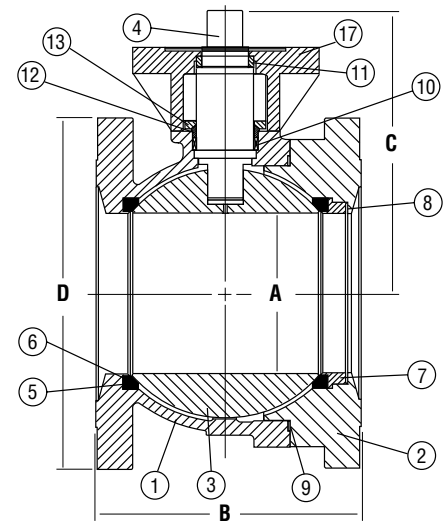
## MODEL RP4: Regular Port, Class 300 (Class 150 Face-to-Face) Digester Valves

### Parts and Materials

Item No.	Description	Material
1	Body	Cast 316SS to ASTM-A351, GR. CF8M
2	Body End	Cast 316SS to ASTM-A351, zGR. CF8M
3	Ball	316SS, Hard Chrome Plated*
4	Stem	17-4PH SS to ASTM A-564, Type 630
5	Seat	Stellite*
6	Seat Seal	PTFE
7	Compression Ring	316SS Chrome Plated
8	Compression Ring Seal	PTFE
9	Body Seal	PTFE
10	Stem Seal Set	PTFE (Chevron)

Item No.	Description	Material
11	Yoke Bushing	416SS
12	Packing Retainer	316SS
13	Gland Ring	416SS
14 Not Shown	Body End Cap Screw	ASTM-A574 Zinc Plated
15 Not Shown	Gland Stud	ASTM-A193 GR. B7, (M.P. Coated)
16 Not Shown	Gland Stud Nut	ASTM-A194 GR. 2H, (M.P. Coated)
17	Yoke	Ductile Iron ASTM A536, GR 60/40/18
18 Not Shown	Yoke Mounting Cap Screw	ASTM-A449, GR5

\* Optional HVOF Coating available.



### Dimensions

Size (in.)	A	B	C	D
8	6.00	11.50	13.20	15.00
10	7.44	13.00	14.06	17.50

## Ordering Information

Size (in.)	Model	Body Material	Seat/Seal	Trim
8	EFS3 - ANSI Class 300 Short Pattern Full Port	SS - 316 Stainless ASTM A351 (CF8M)	MT - Stellite seat TFE seal Others upon request	60 - 17-4 PH SS stem chrome plated ball
10	RP4 - ANSI Class 300 w/Class 150 Face to Face Dimensions Regular Port	Others upon request		
12				

# McCANNA & MARPAC by McCANNA

**T**ypes of valves used in the processes are determined by processing conditions. Rely on Flowserve for specific recommendations after review of your application.

### Severe Service Capability

Pulp and paper mill processes categorized as hazardous, corrosive or abrasive include those using chlorine dioxide, gaseous or liquid chlorine, sulfur dioxide, concentrated hydrogen peroxide and liquid sulfur. Flowserve can provide unique valve configurations choosing from as many as eight different metals for valve bodies for example to safely and economically handle these and other hazardous industrial substances. McCANNA titanium ball valves, for example, have proven themselves practical and economical in controlling flow of dioxide, wet chlorine and some hypochlorite mixtures. The higher initial cost of titanium is justified many times over by the longer service life and reduced maintenance costs for these valves while the reduced hazards to personnel is a benefit that simply cannot be measured!



### MARPAC-McCANNA E-Series Class 150 & 300 Flanged Valves

MARPAC-McCANNA regular and full port E-Series flanged ball valves provide simple, compact, economical solutions to the majority of flow control applications. These end-entry valves offer important advantages, including quick-turn operation, minimum pressure drop, two-way flow, plus preloaded seats for positive, leak-tight closure. Metal Seated versions available, contact Flowserve.

#### Typical Mill Applications Include:

- Blowdown
- Hot water
- Steam
- Lime Mud
- Liquor
- Sample
- Gas-off
- Diversion
- Washer
- Dilution
- Thickener
- Turpentine

Refer to Brochure V-510



### MARPAC by McCANNA E790 Double Union End Valves

The MARPAC E790 Ball valves employ rugged double union ends which eliminate the space, labor and material required to install a pipe union and nipples in the piping run.

In-line maintenance effectiveness is maximized by the seat retainer design. With this design, a rebuilt body center section can be field bench tested to verify seat integrity in both directions.

MARPAC's dual stem seal is a basic but important innovation that delivers better seal life and requires fewer adjustments in service.

#### Typical Mill Applications Include:

- Digester Sampling
- Sprayer System
- Glue
- Clay Slurry
- Drain Valves
- Steam
- Exhaust Valves
- Black Liquor Recovery
- Hydraulic

Refer to Brochure T1001

# Valves for Pulp and Paper Applications



### MARPAC by McCANNA E325 & E525 3-Piece Bolted Body Valves

MARPAC three-piece design has a true swing out body no body, lips or body rings to interfere with in-line maintenance. Offered in regular port (E325) for economy and full port (E525) for minimum pressure drop, MARPAC Tri-Pac ball valves offer both high standards and quality in a rugged design.

Large, enclosed body maintain body seal through temperature fluctuations. Fully enclosed bolt thread configuration protects against corrosion.

*Mill Applications Include:*

- Clean Liquor
- Dry Liquor
- Clay Slurry
- Steam
- Chlorine

Refer to Brochure R0400



### McCannaseal Top Entry Valves The Original Top Entry Ball Valve

Development of the top-entry design probably is the most significant advancement ever in ball valve technology, providing more practical benefits for users than any other innovation. Now scheduled maintenance or emergency entry are possible in minutes just by removing the bonnet. All working parts are accessible for fast, easy in-line service, while the valve body stays fixed in the line.

A wide range of body & trim materials, including carbon, stainless, titanium, nickel, Monel\*, Hastelloy\*, "B" and "C", Alloy 20 and other plus all important seal material choices.

Typical Mill Applications Include:

- Pulp Stock
- Chlorine
- Caustic Liquor
- Hypochlorite Bleach
- Hydrogen Peroxide
- Spent Acid
- Sodium Chlorate
- Sulfuric Acid
- Clay Slurry
- Chlorine Dioxide
- White Water
- Alum
- Dye
- Color Lakes
- Size
- Rosin

Refer to Brochure RFP-100



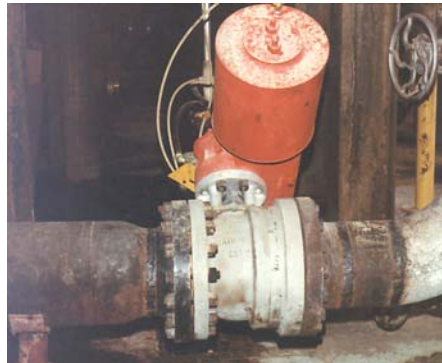
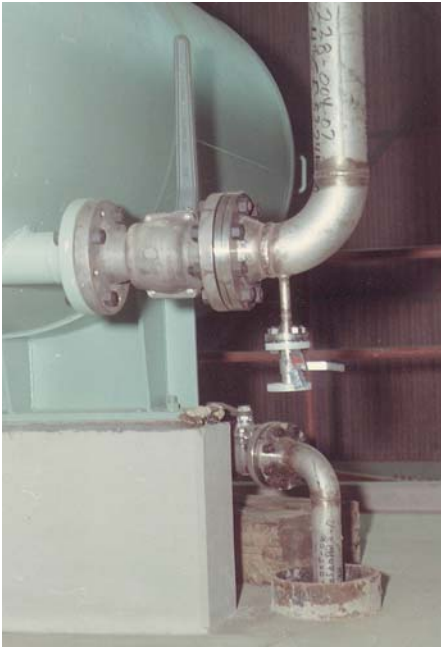
### McCannaflo F602 Threaded End Valves

McCANNA three-piece design with double-sided, back-seated stem has a straight line flow for minimum turbulence. Pre-stressed seats assure leak tight operation. Materials available to match any type of metallic pipes.

Mill Applications Include:

- Drain Valves
- Sampling
- Water
- Dry Liquor

Refer to Brochure V562



### Automation for McCANNA Valves

Upon review of your specification for ball valves and your operation system, Flowserve will be able to provide the proper actuators to meet your requirements.

Complete valve-actuator packages tailor-made to system requirements are available,

thus giving the mill a single source of responsibility for proper valve-actuator operation. These packages are fully performance tested before shipment to ensure quick, trouble-free installation, start-up and operation.

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 MaCannaSeal® is a registered trademark of Flowserve.  
 MaCannaFlo® is a registered trademark of Flowserve.

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