

DEMCO Gate Valves

Dependability, in-line repairability, flexible trim options and drop-tight, position shutoff

TECHNOLOGY



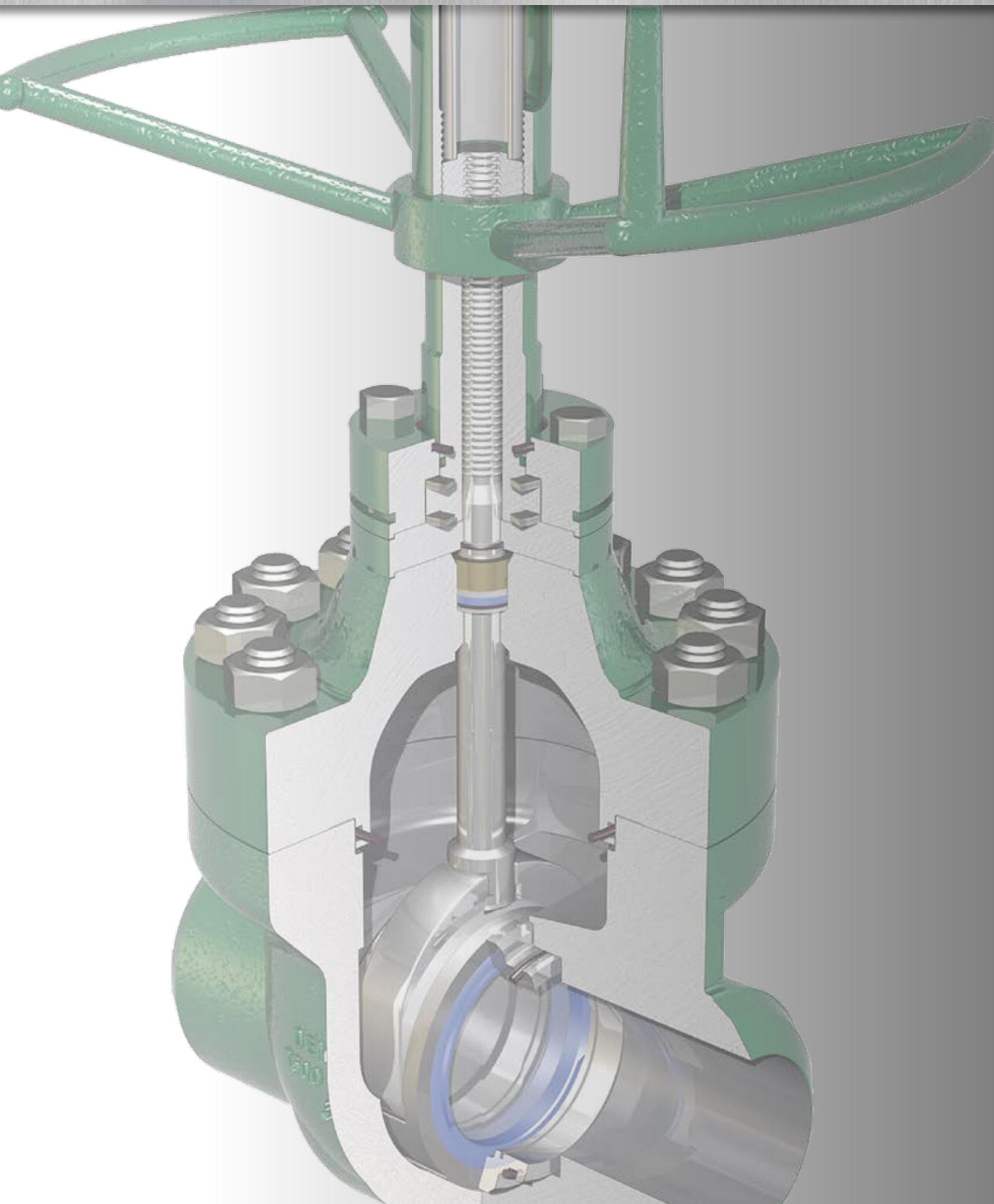


Table of Contents

DEMCO GATE VALVES

Introduction.....	2
Series DM Gate Valves	3
Series DM 1000 to 5000 psi Gate Valves.....	4
Series DM 7500 psi Gate Valves	5
Series DT/DB Gate Valves	7
Enhanced Oil Recovery Accessories	9
Product Specifications	
General Technical Information.....	10
Dimensions and Materials/Parts List	
Series DM 7500 Gate Valves – 7500 psi WP.....	12
Series DM Gate Valves – 2000, 3000, and 5000 psi WP.....	22
Series DM Gate Valves – ASME Class 600	34
Series DM Gate Valves – ASME Classes 900 and 1500	38
Series DT Gate Valves – ASME Classes 600, 900, and 1500.....	42
Services for Valves and Actuation	52
Trademark Information	53

DEMCO Gate Valves



Oklahoma City,
Okla., USA

Cameron is a leading provider of valves, valve automation, and measurement systems to the oil and gas industry. Our products are primarily used to control, direct, and measure the flow of oil and gas as it is moved to refineries, petrochemical plants, and industrial centers for processing.

We provide valve products that are sold through distributor networks worldwide for use in both oil and gas and industrial applications and include such widely recognized brands as DEMCO®, NAVCO®, NEWCO®, NUTRON®, THORNHILL CRAVER®, TECHNO™, TOM WHEATLEY®, WHEATLEY®, and WKM®.

Cameron's DEMCO gate valves are the valves of choice, engineered and proven for drilling and production industries. Designed for dependable, heavy-duty performance in abrasive and corrosive service conditions, DEMCO gate valves are commonly selected for a number of oilfield applications.

SERIES DM GATE VALVES

Cameron's DEMCO Series DM gate valves, the premier gate valve in the oil and gas drilling market, are specifically engineered for the rigorous requirements of oilfield applications. Designed for dependable, heavy-duty performance in abrasive service conditions, DEMCO DM gate valves are commonly selected for a number of oilfield applications, including:

- Drilling standpipe manifold
- Pump manifold block valves
- High-pressure mud mixing lines
- High-pressure drilling system block valves

The DEMCO Series DM gate valves are available in ASME Classes 600, 900, and 1500. They also are available in API working pressures 2000, 3000, and 5000 psig (not API monogrammed).

Features and Benefits

In-Line Field Repairability

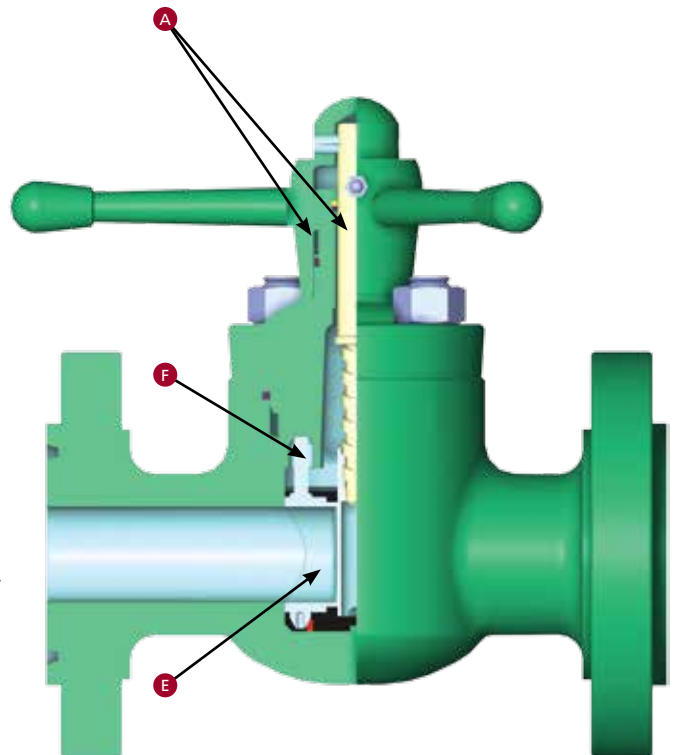
The bonnet is easily removed for internal parts inspection and/or replacement without removing the valve from the line. This design simplicity permits fast and easy service without the need for special tools.

Flexible Trim Offerings

Optional materials for stems, gates, seat inserts and seat elastomers make it easier to trim valves for a wide range of service conditions. Three internal plastic coatings for the body and bonnet are offered to improve resistance to wear and corrosion.

Double Acting Thread Design for Fast Operation

- A. The ASME series double acting thread design contains a threaded stem in the gate working with threads in the bonnet and handle assembly. Stems are polished and include a dependable O-ring and anti-extrusion seal. This unique design is economical and effective. Note: the 4" (100 mm) ASME Class 1500 valve is a double acting, rising stem design, similar to the 4" (100 mm) 3000 psi valve.
- B. The DM 2000, 3000, and 5000 psig working pressure valves contain double acting threads working together in a specially designed stem screw, screw housing, and stem arrangement.
- C. The rising stem design protects the stem threads from the lading.
- D. Larger DM 3000 and 5000 psi gate valves include a sight lens to view the stem for determining gate position.



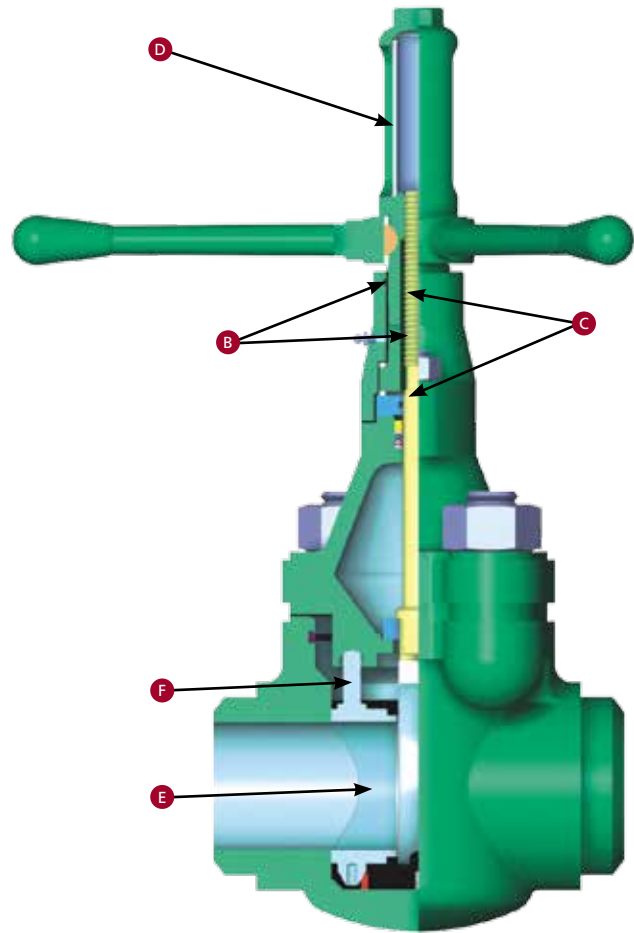
Series DM 3" (80 mm) ASME 900/1500 Gate Valve

SERIES DM 1000 TO 5000 PSI GATE VALVES

Exclusive Seat Design for Drop-Tight Sealing

The DEMCO Series DM gate valve seat uses a unique design to provide a drop-tight shutoff in abrasive and erosive service.

- E.** The seat consists of two identical metal wear rings encapsulated in elastomer to form a cylindrical shape with a gate slot and two round ports. The closed gate bears on the downstream wear ring, while the elastomer provides a drop-tight pressure-responsive seal around the port.
- F.** The cylindrical seat assembly fits into the machined body cavity and is expanded outward toward the valve ports by the bonnet and spread ring in the bottom of the seat. The expansion occurs when the bonnet is tightened onto the body while engaging the seat pin extensions from both wear rings. The spread ring ensures the seat elastomer presses uniformly against the body bore. This design ensures the seat seals tight against the body and around each valve port. This design has proven to be effective even if the gate and seat ring become scored or abraded during service. When it comes time for maintenance, the seat's single-piece design makes it easy to pull out of the body for replacement.



Series DM 4" (100 mm) 5000 WP Gate Valve (Four-Bolt Design Shown)



For proper valve repair, use Cameron's DEMCO replacement parts.

SERIES DM 7500 PSI GATE VALVES

Features and Benefits

In-Line Field Repairability

The bonnet is easily removed for internal parts inspection and/or replacement without removing the valve from the line. This design simplicity permits fast and easy service without the need for special tools.

Heavy-Duty Roller Bearings

Heavy-duty stem roller bearings reduce torque on 4" (100 mm) and larger valves.

Floating Slab Gate Design

A slab gate with a "T" slot stem connection allows the gate to float to the seat, providing a tighter pressure-responsive seal.

A. Unique, abrasion resistant, one-piece seat design

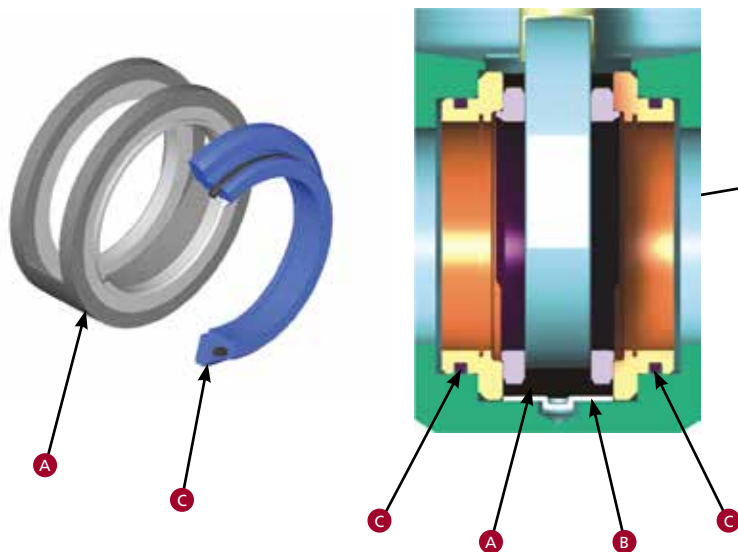
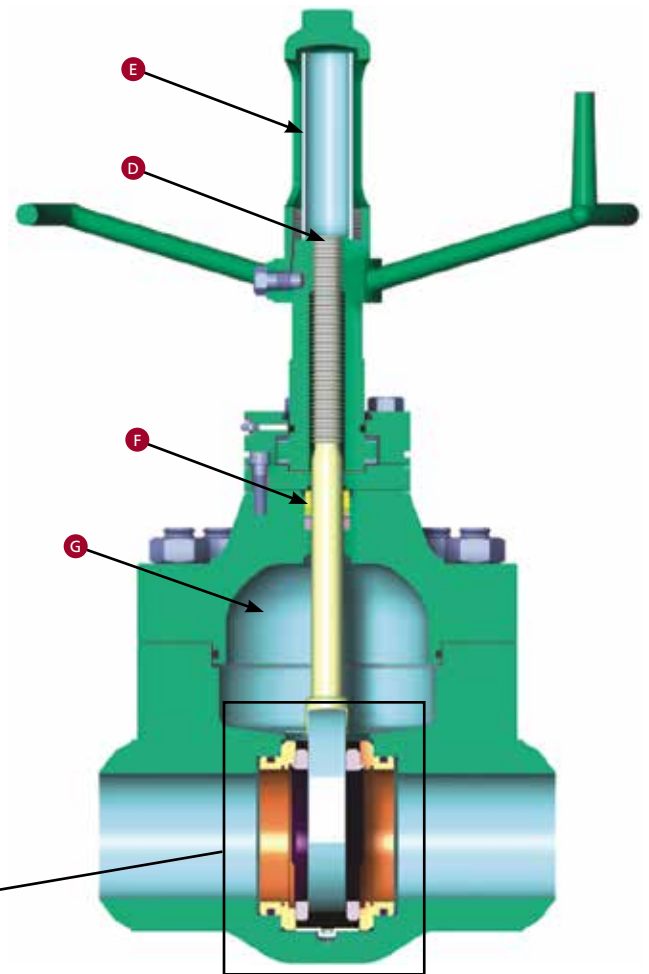
The seat assembly consists of two stainless steel insert/support rings to which a resilient elastomer is permanently bonded. The elastomer provides tight shutoff after long use in abrasive service. The stainless steel rings are corrosion and erosion resistant. The one-piece design makes field replacement easier.

B. Locking seat alignment

The seat assembly is engineered with a metal lock shell that aligns the seat in the bottom of the valve. This design ensures accurate seat alignment with reduced resistance to flow.

C. Body wear rings

Surface hardened alloy body wear rings back up both sides of the seat. These rings extend the service life of the valve by absorbing erosive wear that can cause damage to the body around the seat bore area.



D. Rising stem design

The DEMCO DM 7500 gate valve uses a rising stem design that isolates and protects the threads from the line medium. The rising stem also indicates gate position.

E. Visual position indicator lens

On 3" (80 mm) and larger valves, a clear position indicator lens allows the operator to easily determine whether the valve is open or closed. The indicator lens also helps to protect the stem threads from the elements.

F. Replaceable stem packing

The stem packing can be replaced without removing the bonnet from the valve, 3" to 6" (80 mm to 150 mm), saving time when this maintenance may be required. Note: line and valve pressure must be relieved before performing this maintenance.

G. Flow cleansed design

The body cavity area is designed to allow continuous flushing by the fluid flow. This action prevents the valve from sanding up, even in standpipe installations.

DM Series Pressure Classes and Sizes

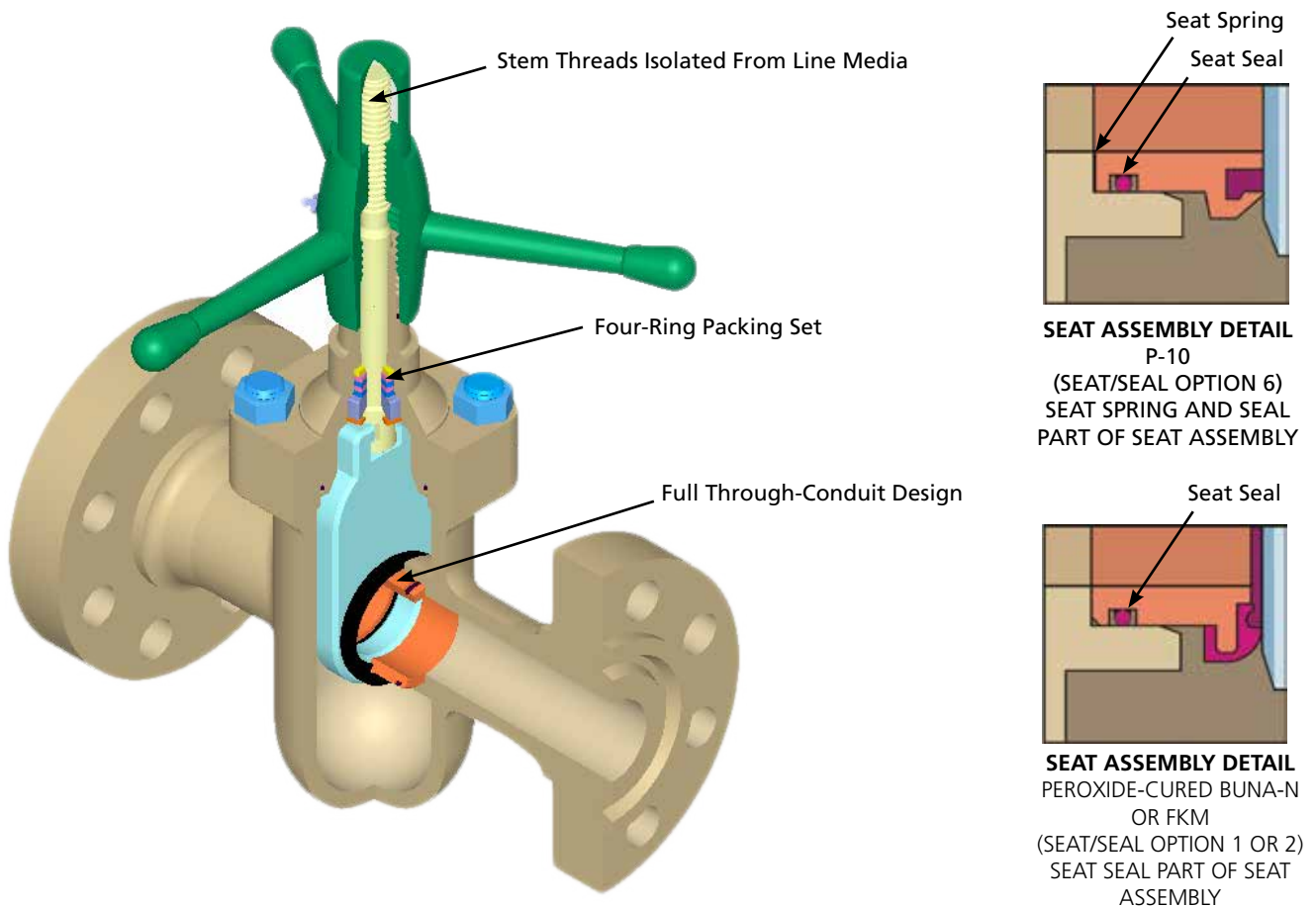
Size	in.	(mm)	600	900	1500	1000	2000	3000	5000	7500
RP	2" x 1-1/2"	(40)	•							•
FP	2	(50)	•	•	•		•	•	•	•
FP	2-1/2	(65)	•	•	•		•	•		
FP	3	(80)	•	•	•		•	•	•	•
FP	4	(100)	•	•	•		•	•	•	•
FP	5	(125)				•		•	•	•
FP	6	(150)	•	•						
RP	2 x 1-1/2	(50 x 40)	•							
RP	2-1/2 x 2	(65 x 50)					•	•	•	
RP	3 x 2	(80 x 50)	•							
RP	4 x 3	(100 x 80)						•	•	•
RP	5 x 4	(125 x 100)						•	•	•
RP	6 x 4	(150 x 100)							•	
RP	6 x 5	(150 x 125)							•	•
RP	8 x 6	(200 x 150)	•							

SERIES DT/DB GATE VALVES

Cameron's DEMCO Series DT/DB gate valves are recognized for their quality design, rugged dependability, and corrosion resistance, particularly for use in waterflood and CO₂ applications.

DEMCO aluminum bronze and stainless steel valves and accessories are designed specifically for the demanding requirements of corrosive CO₂ injection and waterflood applications in the enhanced oil recovery market.

- The handle moves up and down on the bonnet, or the top of the stem is visible during operation, providing visible aid to determine whether the valve is open or closed.



SEE PAGES 36 THROUGH 43 FOR MATERIAL SPECIFICATIONS

Optional Materials:

DT Series:

- SS Body and Bonnet,
FKM or P-10 Seats

DB Series:

- FKM Seat Elastomer
- Peroxide-Cured Buna-N

DT and DB Series Pressure Classes and Sizes

DT Series Threaded and Flanged						
Size	in.	(mm)		ASME Class 600	ASME Class 900	ASME Class 1500
FP	2	(50)		•	•	•
FP	2-1/2	(65)		•	•	•
FP	3	(80)		•	•	•
FP	4	(100)	(Flanged Only)	•	•	•
FP	6	(150)	(Flanged Only)		•	•
DB Series Valves (Consult Cameron for Drawings)						
FP	6	(150)		•	•	•
RP	8 x 6	(200 x 150)		•	•	

Features and Benefits

In-Line Field Repairability

The bonnet is easily removed for internal parts inspection and/or replacement without removing the valve from the line. This design simplicity permits fast and easy service without the need for special tools.

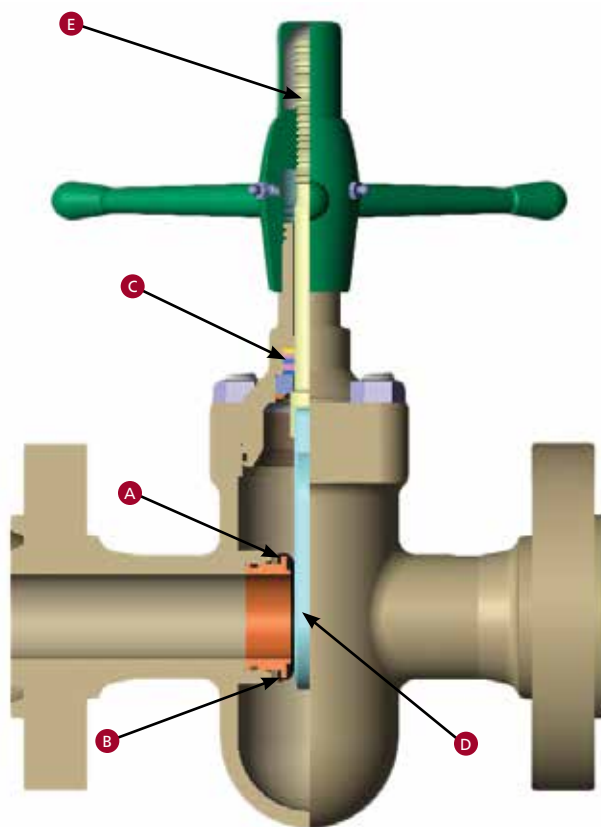
Corrosion-Resistant Materials are Standard

Body and bonnet materials, as well as all internal wetted parts, comply with NACE RP-0475.

Rising Stem Design

The handle moves up and down on the bonnet, or the top of the stem is visible during operation, providing visible aid to determine whether the valve is open or closed.

- A. **Pressure-responsive drop-tight sealing**
Standard seats consist of 316 SS seat rings encapsulated with peroxide-cured Buna-N elastomer to provide reliable, drop-tight sealing for extended service life.
- B. **Superior abrasion resistance**
Buna-N elastomer encapsulated seats also provide an excellent deterrent to abrasion, further enhancing extended service life.
- C. **Four-ring stem packing set**
The DEMCO Series DT stem seal design uses four packing rings, preventing leakage into the stem journal and outside the valve.
- D. **Through-conduit gate design**
Full through-conduit design ensures non-turbulent flow and gate alignment for improved valve performance and longer service life.
- E. **Non-wetted stem thread design**
The DEMCO stem design isolates corrosive lading from contacting stem threads, preventing stem seizure and ensuring long, trouble-free valve performance.



Series DT Gate Valves

For proper valve repair, use Cameron's DEMCO replacement parts.

Series DB Gate Valve

The DEMCO Series DB gate valve is available for the large 6" (150 mm) and 8" (200 mm) pipe sizes in the enhanced oil recovery market. These valves also feature an aluminum bronze body and bonnet as standard. Internal parts are 316 SS. The exclusive seat design of the DEMCO Series DB gate valve is the same proven design found in the DEMCO Series DM gate valve. The seat consists of two identical metal wear rings encapsulated in elastomer to form a cylindrical shape with a gate slot and two round ports. The closed gate bears down on the downstream wear ring, while the elastomer provides a drop-tight pressure-responsive seal around the port. This design provides an effective seal even if the gate and seat ring become scored or abraded during service. The DEMCO Series DB gate valve also is field repairable while the valve is in-line.



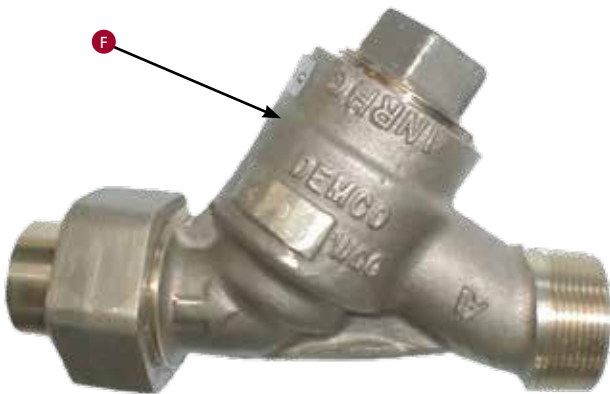
Flow Tees

ENHANCED OIL RECOVERY ACCESSORIES

Accessories

Ball check valves, flow tees, and strainers are available to complete requirements for an entire injection assembly.

- F. Ball Check Valves
- G. Flow Tees
- H. Strainers



Ball Check Valves



Strainers

Product Specifications

SERIES DM, DT, AND DB GATE VALVES

GENERAL TECHNICAL INFORMATION

Valve Size Designations and Weld End Dimensional Information

- All references to pipe size in this catalog are the nominal size.
The actual OD and ID for various nominal sizes and schedules are tabulated below.
Weld end bodies are machined at each end to match the pipe OD and ID.

Nominal Size			ID			
in.	(mm)	OD	Sch 40	Sch 80	Sch 160	XXH
1-1/2	(40)	1.900	1.610	1.500	-	-
2	(50)	2.375	2.067	1.939	1.687	1.503
2-1/2	(65)	2.875	2.469	2.323	2.125	1.771
3	(80)	3.500	3.068	2.900	2.624	2.300
4	(100)	4.500	4.026	3.826	3.438	3.152
5	(125)	5.563	-	4.813	4.313	4.063
6	(150)	6.625	6.065	5.761	5.187	4.897

- Reduced port valve size descriptions are designated by two numbers.
The first number is the nominal size of the end connection.
The second number is the ID of the valve seat (dimension "C" in the tables).

PRESSURE RATINGS

DEMCO gate valves are designed for the maximum working pressures and test pressures tabulated below.

ASME Class 600	ASME Class 900	ASME Class 1500	1000	2000	3000	5000	7500
			WP	WP	WP	WP	WP
1480 WP	2220 WP	3705 WP	1000 WP	2000 WP	3000 WP	5000 WP	7500 WP
2225 Test	3350 Test	5575 Test	2000 Test	4000 Test	6000 Test	7500 Test	11,250 Test

Gate valve rating must be selected to match the piping system in which the valve will be installed. Tabulated below are working pressures at 100° F (38° C) for ASTM A106 Grade B and AISI 4130 60K minimum yield pipe in sizes corresponding to DEMCO gate valves.

Size		ASTM A106 Grade B				4130 60k Min. Yield
in.	(mm)	Sch 40	Sch 80	Sch 160	XXH	XXH
1-1/2	(40)	1340	2430	-	-	-
2	(50)	1210	2220	4300	5970	10,234
2-1/2	(65)	1620	2590	3950	6590	-
3	(80)	1460	2370	3930	5880	10,080
4	(100)	1300	2130	3830	5150	8826
5	(125)	-	1970	3730	4650	7971
6	(150)	1110	1970	3650	4724	8098
8	(200)	1030	1790	-	-	-

Quality, Inspections and Testing

- Cameron's quality system is based on ISO 9000 and API Q1 requirements and is ISO 9001:2008 certified. Cameron's Quality department monitors all phases of valve production, from material receipt to final inspection, including a liaison with third-party inspectors and certifying authorities.

All DEMCO gate valves are hydrostatically tested; stem seal, body and seat are inspected for zero leakage under pressure before being released for shipment. Hydrotest specifications are based upon API 6A latest edition testing requirements; DEMCO Series DM 7500 group 2 and 3 valves undergo additional test cycles, including low-pressure seat tests prior to being released for shipment.

Certifications

- DEMCO DM 5000 Gate Valves 2" to 5" are available with ABS Type approval upon request.
- DEMCO DM 7500 Gate Valves 2" to 5" are available with ABS or DNV Type approval upon request.

Seat Seal Options

- **Buna-N (Nitrile)**

Is excellent for petroleum oil and gases, fuel oils, and alcohols from -10° F to 200° F (-23° C to 93° C).

- **FKM**

Highly resistant to mineral acids and hydrocarbons and resists moderate concentrations of H₂S. Serviceable from -10° F to 400° F (-23° C to 204° C). (Not suitable for steam).

- **HNBR**

Formulated for use with synthetic and oil-based drilling mud service from -20° F to 250° F (-29° C to 121° C).

Coatings – DM Gate Valves Only

- **DEMCO 12 (Internal Coating only)**

A baked-on phenolic epoxy, tougher and more abrasion resistant. Excellent for service in caustics and saltwater up to 200° F (93° C).

- **ENDURO-BOND™ (For Internal and External use)**

An engineered dry powder coating process for metal surfaces that provides a protective barrier against corrosion and abrasive wear. Coating thickness is from 1 to 4 mil; is superior to plastics, epoxies and ceramics; and has a high heat resistance to 800° F (427° C).

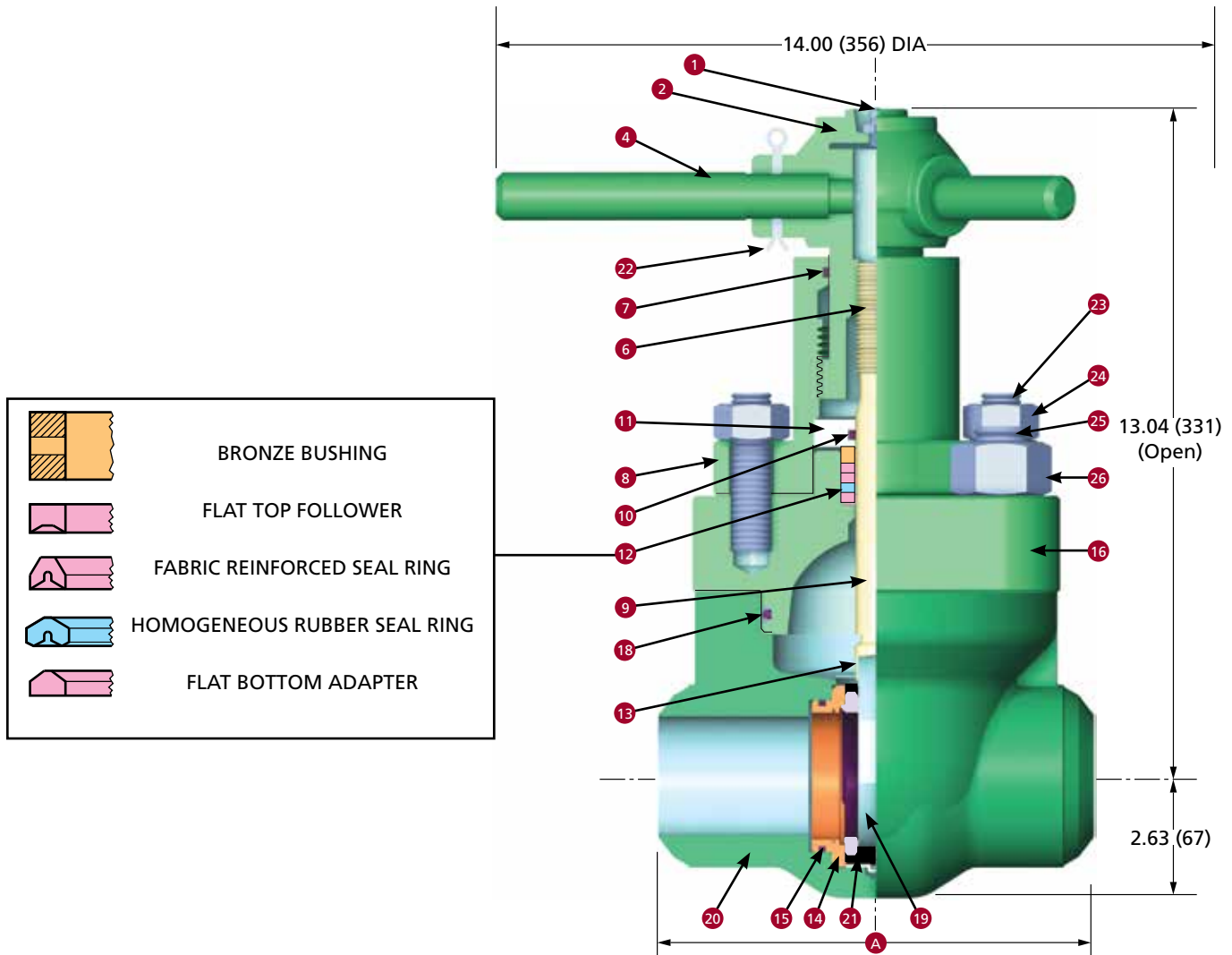
Ordering Information

- Give size, pressure class, and end connection.
- Specify pressure class of flanged ends, raised face (RF), or ring type joint (RTJ).
- For threaded ends, provide type of pipe:
TBG (non-upset tubing) LCSG (long casing thread)
UPTBG (external upset tubing) CSG (short casing thread)
- For weld ends, give schedule of mating pipe.
- For applications in high-pressure gas above 3000 psi or involving concentrations of H₂S or CO₂, consult Cameron for recommendations.

Dimensions and Materials/Parts List

SERIES DM 7500 GATE VALVES – 7500 PSI WP

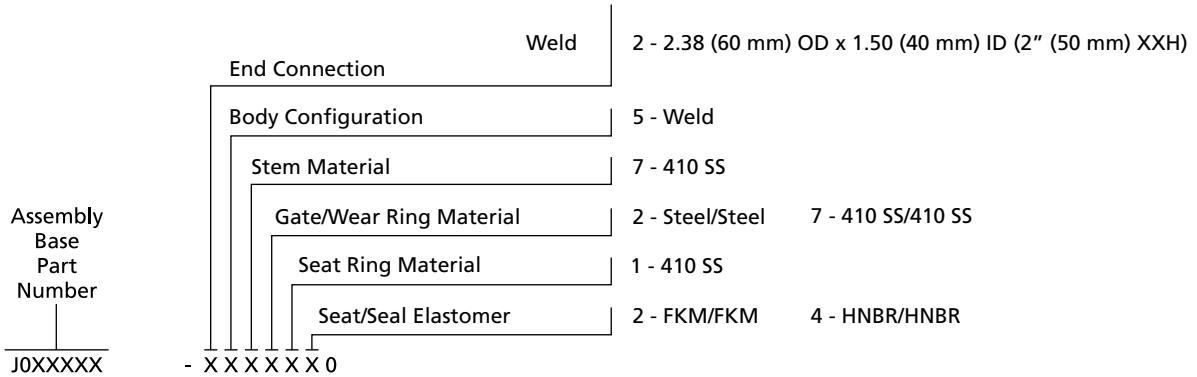
2" (50 mm) XXH with 1-1/2" (40 mm) Bore



Dimensional Data and Weights

Dimension		Valve Size: 2" (50 mm) RP
		7500 WP
A	Weld End	9.00 (229)
Valve Seat ID		1.50 (40)
Number of Handle Turns from Open to Closed		7.00
Weight lb (kg)		
Weld End		76 (34)

ASSEMBLY PART NUMBER



- Group 1** Basic valve. Hydrostatic shell test: 11,250 psi for three minutes. Hydrostatic seat test: 7500 psi for three minutes, each side. Material traceability on body and bonnet.
- Group 2** Same as Group 1, except: Hydrostatic shell test: 11,250 psi for three minutes, drop to 0 psi, then 11,250 psi for 15 minutes. Test is charted. Hydrostatic seat test: 7500 psi for three minutes, drop to 0 psi, 7500 for 15 minutes, drop to 0 psi, then 300 psi for five minutes, each side. Test is charted. Material traceability on body, bonnet, stem, and bolting. Impact tests at or below -50° F (-46° C) on body, bonnet, stem and bolting. Surface NDE on body, bonnet and stem.
- Group 3** Same as Group 2, plus volumetric NDE on body and bonnet.

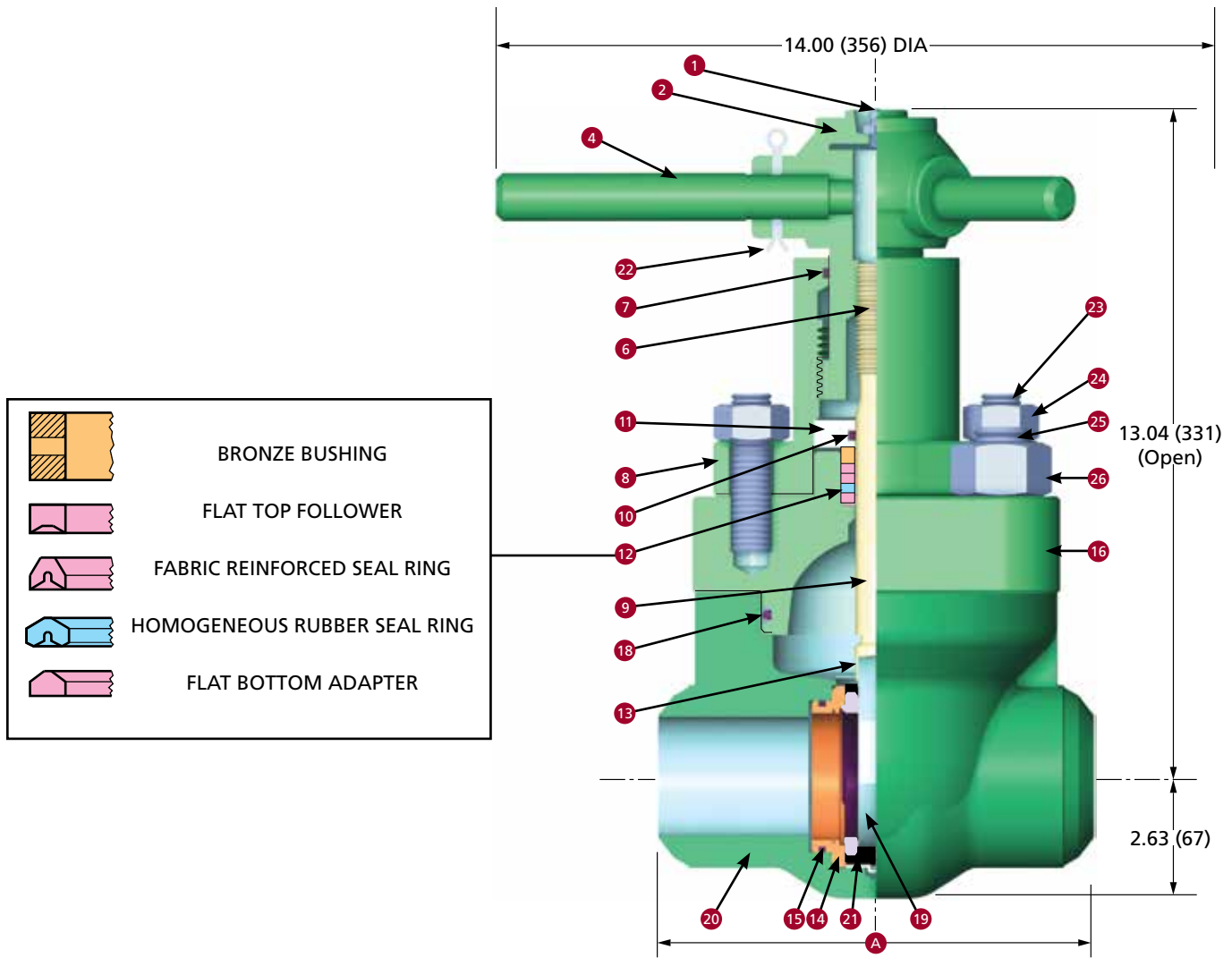
Parts List

Key No.	Qty.	Description	Valve Size: 2" (50 mm) RP			
			Group 1	Group 2	Group 3	
		Assembly Base Number	XXH Weld End: General Service XXH Weld End: NACE Compliant	J025196 J025200	J025197 J025201	J025217 J025218
1	1	Lube Fitting	Steel	005929-18		
2	1	Handle	Ductile Iron ASTM A536 Grade 65-45-12	2139712-01		
4	1	Lock Handle	AISI C-1213	J001891		
■ 6	1	Stem Screw	AISI C-1213	J001913		
■ 7	1	Housing Seal	Buna-N	J005526-224		
8	1	Screw Housing	ASTM A350 Grade LF2 Class 1	J024982		
■ 9	1	Stem	410 SS	2269413-01		
■ 10	1	Secondary Seal	HNBR FKM	2712425-13 J005531-210		
11	1	Packing Retainer	AISI C-1213 17-4 PH SS	J001940 -	- J021432	
■ 12	1	Stem Seal Assembly (With Bronze Bushing – ASTM B505 Alloy 93200)	HNBR FKM	J023231-008 J023231-006		
■● 13	1	Gate Clip	AISI 302 SS	M450480		
■● 14	2	Body Wear Ring	For Steel Gate, AISI 4140 w/QPQ Nitride Coating For SS Gate, AISI 410 Stainless Steel	2269414-01 2269414-02		
■● 15	2	Wear Ring Seal	HNBR FKM	2712425-18 J005521-225		
16	1	Bonnet	ASTM A487 Grade 4 Class D	J024985-030	2140428-01	
■● 18	1	Bonnet Seal	HNBR FKM	2712425-60 J005521-342		
■● 19	1	Gate	Steel AISI 4140 w/QPQ Nitride Coating 410 SS	2269412-01 2269412-02		
20	1	Body Materials	Weld End – ASTM A487 Grade 4 Class D	Consult Cameron Body Part Numbers		
■● 21	1	Seat	Rings: AISI 410 SS; Elastomer: HNBR Rings: AISI 410 SS; Elastomer: FKM	2269403-01 2269403-02		
22	1	Cotter Pin	Steel	J005420-18728		
23	2	Housing Stud		J002066	J021436	
24	2	Housing Stud Nut	Materials	ASTM A193 Grade B7 2709000-08-01	ASTM A193 Grade L7 J053252-034	
25	4	Body Stud	Materials	ASTM A194 Grade 2H J015432	ASTM A194 Grade 7 J021442	
26	4	Body Stud Nut	Materials	ASTM A193 Grade B7 2709000-10-01	ASTM A193 Grade L7 J053252-038	
			Materials	ASTM A194 Grade 2H	ASTM A194 Grade 7	

- Major repair kit J025177-11574 – One each for one year of service.
 - Minor repair kit J025177-01574.
- Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)
Consult Cameron for optional repair kit trim options

SERIES DM 7500 GATE VALVES – 7500 PSI WP

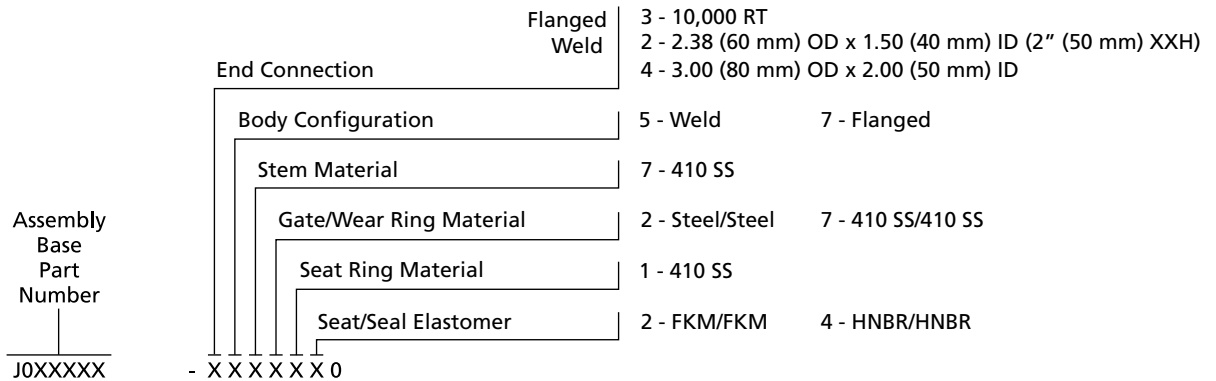
2" (50 mm) Full Port



Dimensional Data and Weights

Dimension		Valve Size: 2" (50 mm) FP 7500 WP
A	Weld End	9.00 (229)
	Flanged End, API Length	20.50 (521)
Valve Seat ID		2.00 (50)
For Flanged Ends		
	API Ring Number	BX-152
	Flange ID	2.06 (52)
	Flange OD	7.88 (200)
	Flange Bolts (Qty., Size: in.)	8 – 3/4
Number of Handle Turns from Open to Closed		8.60
Weight lb (kg)		
	Weld End	76 (34)
	Flanged End	124 (56)

ASSEMBLY PART NUMBER



- Group 1** Basic valve. Hydrostatic shell test: 11,250 psi for three minutes. Hydrostatic seat test: 7500 psi for three minutes, each side. Material traceability on body and bonnet.
- Group 2** Same as Group 1, except: Hydrostatic shell test: 11,250 psi for three minutes, drop to 0 psi, then 11,250 psi for 15 minutes. Test is charted. Hydrostatic seat test: 7500 psi for three minutes, drop to 0 psi, 7500 for 15 minutes, drop to 0 psi, then 300 psi for five minutes, each side. Test is charted. Material traceability on body, bonnet, stem, and bolting. Impact tests at or below -50° F (-46° C) on body, bonnet, stem and bolting. Surface NDE on body, bonnet and stem.
- Group 3** Same as Group 2, plus volumetric NDE on body and bonnet.

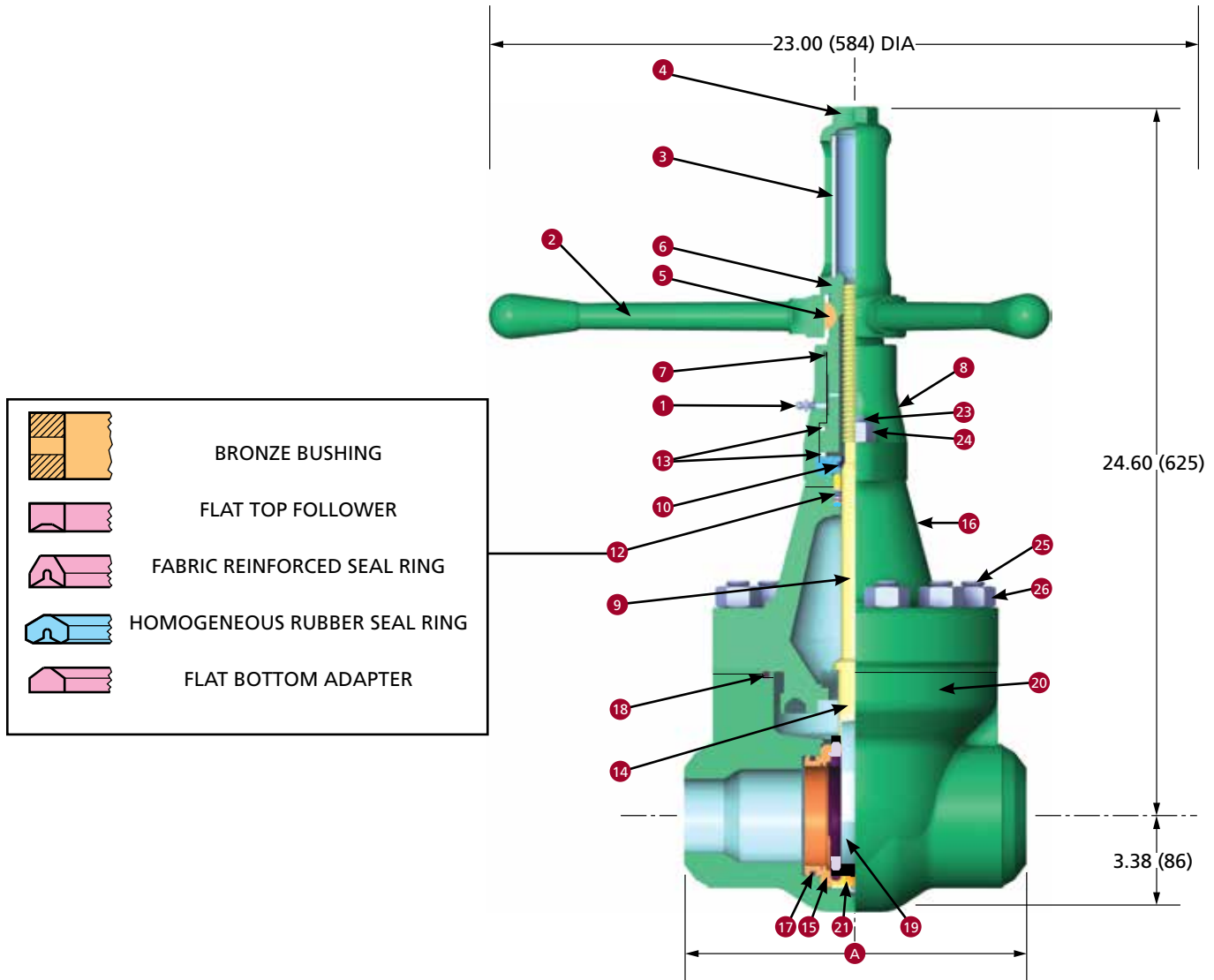
Parts List

Key No.	Qty.	Description	Valve Size: 2" (50 mm) FP			
			Group 1	Group 2	Group 3	
		Assembly Base Number	Weld End: General Service Weld End: NACE Compliant	J024993 J025088	J025077 J025103	J025078 J025104
			Flanged End, API Length: General Service Flanged End, API Length: NACE Compliant	J025130 J025142	J025208 TBA	J025131 J025143
1	1	Lube Fitting	Steel		005929-18	
2	1	Handle	Ductile Iron ASTM A536 Grade 65-45-12		2139712-01	
4	1	Lock Handle	AISI C-1213		J001891	
6	1	Stem Screw	AISI C-1213		J001913	
7	1	Housing Seal	Buna-N		J005526-224	
8	1	Screw Housing	ASTM A350 Grade LF2 Class 1		J024982	
9	1	Stem	410 SS		J024983-107	
10	1	Secondary Seal	HNBR		2712425-13	
			FKM		J005531-210	
11	1	Packing Retainer	AISI C-1213 17-4 PH SS	J001940		J021432
12	1	Stem Seal Assembly (With Bronze Bushing – ASTM B505 Alloy 93200)	HNBR FKM		J023231-008 J023231-006	
13	1	Gate Clip	AISI 302 SS		M450480	
14	2	Body Wear Ring	For Steel Gate, AISI 4140 w/QPQ Nitride Coating For SS Gate, AISI 410 Stainless Steel		M452267 2139647-02	
15	2	Wear Ring Seal	HNBR FKM		2712425-03 J005521-229	
16	1	Bonnet	ASTM A487 Grade 4 Class D	J024985-030	2140428-01	2140341-01
18	1	Bonnet Seal	HNBR FKM		2712425-60 J005521-342	
19	1	Gate	Steel AISI 4140 w/QPQ Nitride Coating 410 SS		2171111-01 2139624-02	
20	1	Body Materials	ASTM A487 Grade 4 Class D		Consult Cameron for Body Part Numbers	
21	1	Seat	410 SS/HNBR Materials 410 SS/FKM Materials		2139742-01 Rings: AISI 410 SS; Elastomer: HNBR 2139741-02 Rings: AISI 410 SS; Elastomer: FKM	
22	1	Cotter Pin	Steel		J005420-18728	
23	2	Housing Stud	Materials	J002066		J021436
24	2	Housing Stud Nut	Materials	ASTM A193 Grade B7 2709000-08-01		ASTM A193 Grade L7 J053252-034
25	4	Body Stud	Materials	ASTM A194 Grade 2H J015432		ASTM A194 Grade 7 J021442
26	4	Body Stud Nut	Materials	ASTM A193 Grade B7 2709000-10-01		ASTM A193 Grade L7 J053252-038
			Materials	ASTM A194 Grade 2H		ASTM A194 Grade 7

- Major repair kit J025177-10274 – One each for one year of service.
 - Minor repair kit J025177-00274.
- Major and minor repair kits listed for trim option JOXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)
Consult Cameron for optional repair kit trim options

SERIES DM 7500 GATE VALVES – 7500 PSI WP

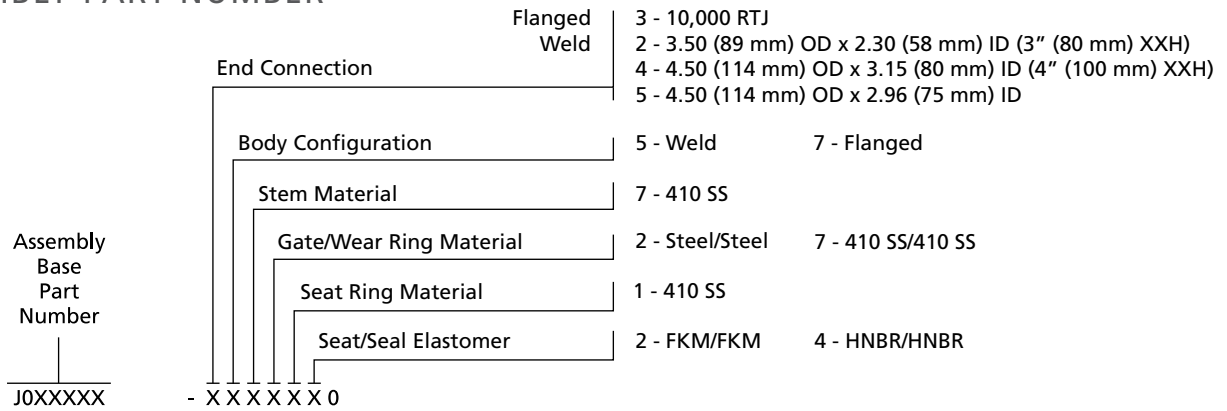
3" (80 mm) Full Port



Dimensional Data and Weights

Dimension		Valve Size: 3" (80 mm) FP 7500 WP
A	Weld End	13.00 (330)
	Flanged End, API Length	24.38 (619)
Valve Seat ID		3.00 (80)
For Flanged Ends		
API Ring Number		BX-154
Flange ID		3.06 (78)
Flange OD		10.62 (270)
Flange Bolts (Qty., Size: in.)		8 – 1
Number of Handle Turns from Open to Closed		16.01
Weight lb (kg)		
Weld End		256 (116)
Flanged End		372 (169)

ASSEMBLY PART NUMBER



- Group 1** Basic valve. Hydrostatic shell test: 11,250 psi for three minutes. Hydrostatic seat test: 7500 psi for three minutes, each side. Material traceability on body and bonnet.
- Group 2** Same as Group 1, except: Hydrostatic shell test: 11,250 psi for three minutes, drop to 0 psi, then 11,250 psi for 15 minutes. Test is charted. Hydrostatic seat test: 7500 psi for three minutes, drop to 0 psi, 7500 for 15 minutes, drop to 0 psi, then 300 psi for five minutes, each side. Test is charted. Material traceability on body, bonnet, stem and bolting. Impact tests at or below -50° F (-46° C) on body, bonnet, stem, and bolting. Surface NDE on body, bonnet and stem.
- Group 3** Same as Group 2, plus volumetric NDE on body and bonnet.

Parts List

Key No.	Qty.	Description	Valve Size: 3" (80 mm) FP			
			Group 1	Group 2	Group 3	
		Base Assembly Number	General Service NACE Compliant	J025051 J025089	J025079 J025105 005929-18	J025080 J025106
1	1	Lube Fitting	Steel		2139481-01	
2	1	Handle	Ductile Iron ASTM A536 Grade 65-45-12		J007459	
3	1	Stem Tube	Clear Acrylic		J007411	
4	1	Stem Cap	Ductile Iron ASTM A536 Grade 65-45-12		J005305-10016	
5	1	Key	Steel		J007416	
■	6	Stem Screw	AISI C-1213		J005526-226	
■	7	Housing Seal	Buna-N		J021448-040	
8	1	Housing	ASTM A350 Grade LF2 Class 1	J007418		ASTM A352 Grade LCC
■	9	Stem	Materials 410 SS	AISI C-1029 Normalized	J024951-107	
■	10	Secondary Seal	HNBR FKM		2712425-01 J005531-214	
11	1	Packing Retainer	Materials	J007413 AISI C-1213		J021434 17-4 PH SS
■	12	Stem Seal Assembly (With Bronze Bushing – SAE 660)	HNBR FKM		J001951-008 J001951-006	
■	13	Bearing	Teflon®/Phenolic		J007426	
●	14	Gate Clip	AISI 302 SS		M450505	
●	15	Body Wear Ring	For Steel Gate Material For SS Gate Material		M452571 AISI 4140 w/QPQ Nitride Coating 2139648-02 AISI 410 Stainless Steel	
16	1	Bonnet	ASTM A487 Grade 4 Class D	J017289-029		2140370-01 2140370-02
●	17	Wear Ring Seal	HNBR FKM		2712783-03 J005521-340	
●	18	Bonnet Seal	HNBR FKM		2712787-07 J005521-361	
●	19	Gate	AISI 4140 w/QPQ Nitride Coating 410 SS		2171112-01 2139628-02	
20	1	Body Materials	ASTM A487 Grade 4 Class D		Consult Cameron for Body Part Numbers 2139744-01	
●	21	Seat	410 SS/HNBR Materials 410 SS/FKM Materials		Rings: AISI 410 SS; Elastomer: HNBR 2139743-02 Rings: AISI 410 SS; Elastomer: FKM	
23	2	Housing Stud	Materials	J002072 ASTM A193 Grade B7 2709000-09-01		J021441 ASTM A193 Grade L7 J053252-036
24	2	Housing Stud Nut	Materials	ASTM A194 Grade 2H J015432		ASTM A194 Grade 7 J021442
25	12	Body Stud	Materials	ASTM A193 Grade B7 2709000-10-01		ASTM A193 Grade L7 J053252-038
26	12	Body Stud Nut	Materials	ASTM A194 Grade 2H		ASTM A194 Grade 7

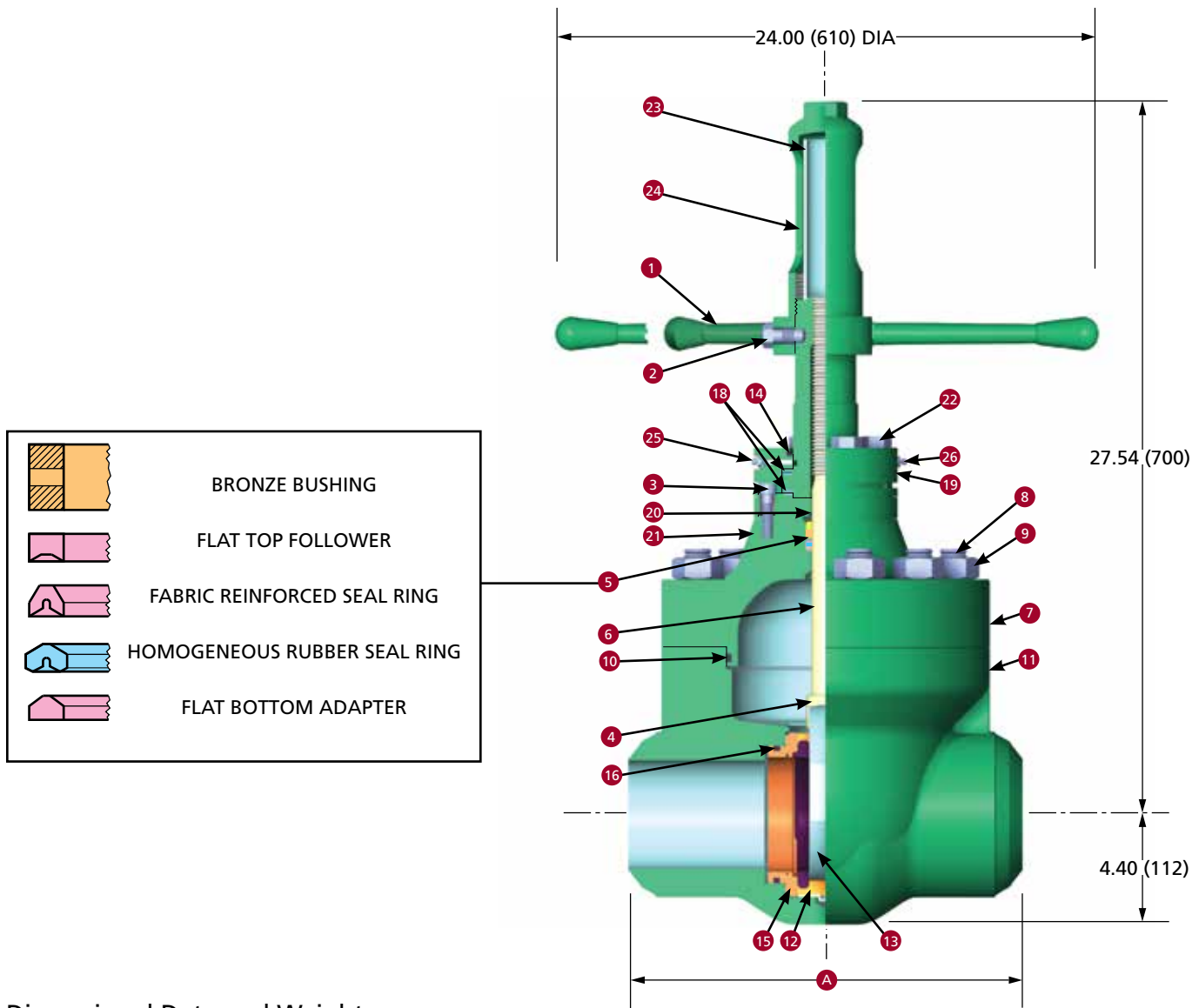
■ Major repair kit J025177-10374 – One each for one year of service.

● Minor repair kit J025177-00374.

Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)
Consult Cameron for optional repair kit trim options

SERIES DM 7500 GATE VALVES – 7500 PSI WP

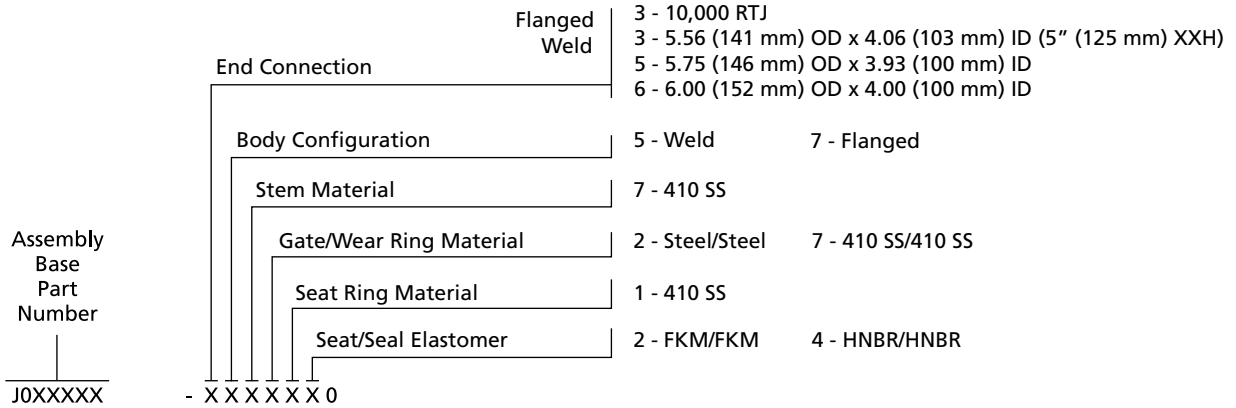
4" (100 mm) Full Port



Dimensional Data and Weights

Dimension		Valve Size: 4" (100 mm) FP 7500 WP
A	Weld End	16.00 (406)
	Flanged End	26.38 (670)
Valve Seat ID		4.00 (100)
For Flanged Ends		
API Ring Number		BX-155
Flange ID		4.06 (103)
Flange OD		12.44 (316)
Flange Bolts (Qty., Size: in.)		8 – 1-1/8
Number of Handle Turns from Open to Closed		21.36
Weight lb (kg)		
Weld End		310 (141)
Flanged End		475 (215)

ASSEMBLY PART NUMBER



- Group 1** Basic valve. Hydrostatic shell test: 11,250 psi for three minutes. Hydrostatic seat test: 7500 psi for three minutes, each side. Material traceability on body and bonnet.
- Group 2** Same as Group 1, except: Hydrostatic shell test: 11,250 psi for three minutes, drop to 0 psi, then 11,250 psi for 15 minutes. Test is charted. Hydrostatic seat test: 7500 psi for three minutes, drop to 0 psi, 7500 for 15 minutes, drop to 0 psi, then 300 psi for five minutes, each side. Test is charted. Material traceability on body, bonnet, stem and bolting. Impact tests at or below -50° F (-46° C) on body, bonnet, stem and bolting. Surface NDE on body, bonnet and stem.
- Group 3** Same as Group 2, plus volumetric NDE on body and bonnet.

Parts List

Key No.	Qty.	Description	Valve Size: 4" (100 mm) FP		
			Group 1	Group 2	Group 3
		Base Assembly Number	General Service J025100	J025101	J025081
			NACE Compliant J025102	J025107	J025081
				2227565-01	J025108
1	1	Handwheel			
2	1	Handwheel Screw			
3	4	Retainer Screw		J014832	
			J005665-32028		J005666-32028
			Alloy Steel		18-8 SS
		Materials			
4	1	Gate Clip		M450505	
5	1	Stem Seal Assembly		J015853-008	
		(With Bronze Bushing – ASTM B271 Alloy C95500)		J015853-006	
6	1	Stem		2140684-01	
7	1	Bonnet	ASTM A487 Grade 4 Class D		
8	10	Body Stud	2172523-01	2172523-02	2172523-03
			2171976-11-01		2171978-11-01
		Materials	ASTM A193 Grade B7		ASTM A193 Grade L7
			2709000-11-01		J053252-140
			ASTM A194 Grade 2H		ASTM A194 Grade 7
10	1	Bonnet Seal		2712426-11	
		Materials		J005521-364	
					Consult Cameron for
					Body Part Numbers
11	1	Body Materials			
					2139746-01
12	1	Seat			
			410 SS/HNBR		
		Materials			
			410 SS/FKM		
					Rings: AISI 410 Stainless Steel; Elastomers: HNBR
					2139745-02
					Rings: AISI 410 Stainless Steel; Elastomers: FKM
13	1	Gate – Steel/QPQ	AISI 4140 w/QPQ Nitride Coating		
			410 SS		
					2171267-01
14	1	Housing Seal			
15	2	Body Wear Ring			
			Buna-N		
			For Steel Gate		
					J005526-228
			Materials		
			For Stainless Steel Gate		
					M452290
					AISI 4140 w/QPQ Nitride Coating
					2139649-02
					AISI 410 Stainless Steel
16	2	Wear Ring Seal			
			HNBR		
			FKM		
					2712787-04
18	1	Stem Screw with Bearings			
					J005521-349
					J0023888
					Stem Screw: AISI C-1018
					Bearings: Hardened Steel Needle Thrust Bearings
19	1	Housing			
			AISI C-1018		
20	1	Secondary Seal			
					J015332
					2726268-01
					J005531-216
21	1	Packing Retainer			
					2172425-02
					AISI 4130
					J015330
					AISI C-1018
22	4	Housing Screw			
			Steel SAE Grade 5		
23	1	Stem Tube			
			Clear Acrylic		
24	1	Stem Cap			
					J012852
25	1	Lube Fitting			
			Steel		
					J015855
26	1	Relief Fitting			
					005929-18
					J051971

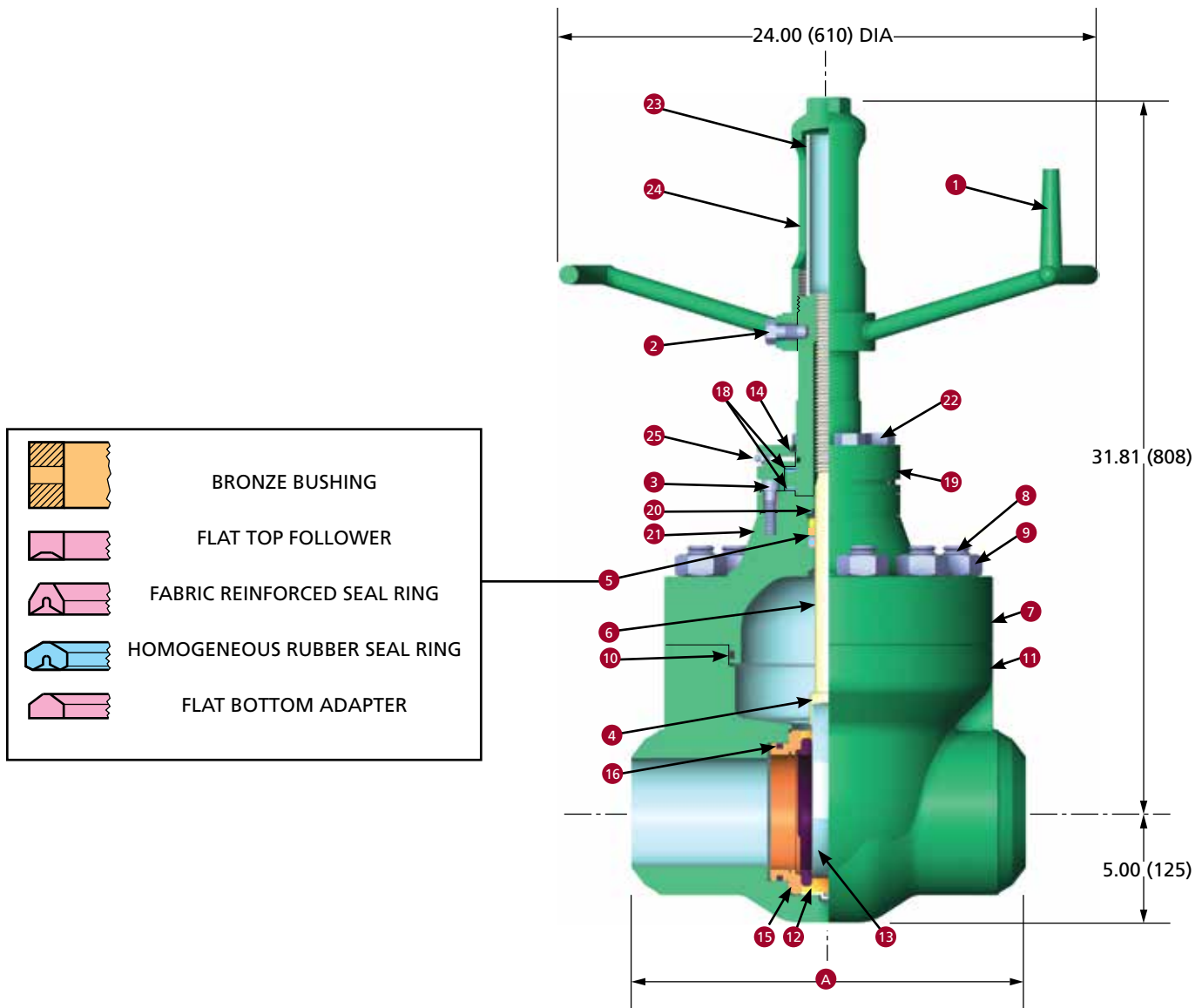
■ Major repair kit J025177-10474 – One each for one year of service.

● Minor repair kit J025177-00474.

Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)

Consult Cameron for optional repair kit trim options

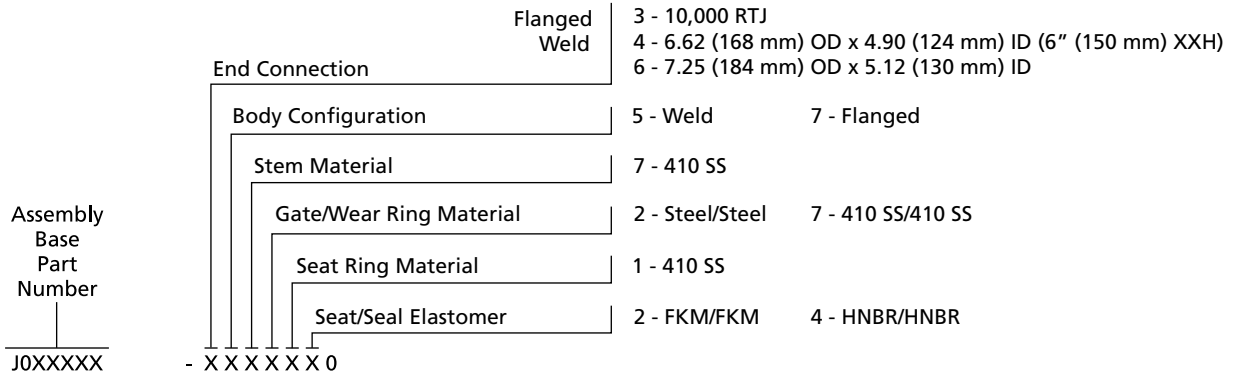
SERIES DM 7500 GATE VALVES – 7500 PSI WP
 5" (125 mm) Full Port



Dimensional Data and Weights

Dimension		Valve Size: 5" (125 mm) FP 7500 WP
A	Weld End	17.88 (454)
	Flanged End	29.00 (737)
Valve Seat ID		5.00 (125)
For Flanged Ends		
API Ring Number		BX-169
Flange ID		5.12 (130)
Flange OD		14.06 (357)
Flange Bolts (Qty., Size: in.)		12 – 1-1/8
Number of Handle Turns from Open to Closed		27.67
Weight lb (kg)		
Weld End		506 (230)
Flanged End		761 (345)

ASSEMBLY PART NUMBER



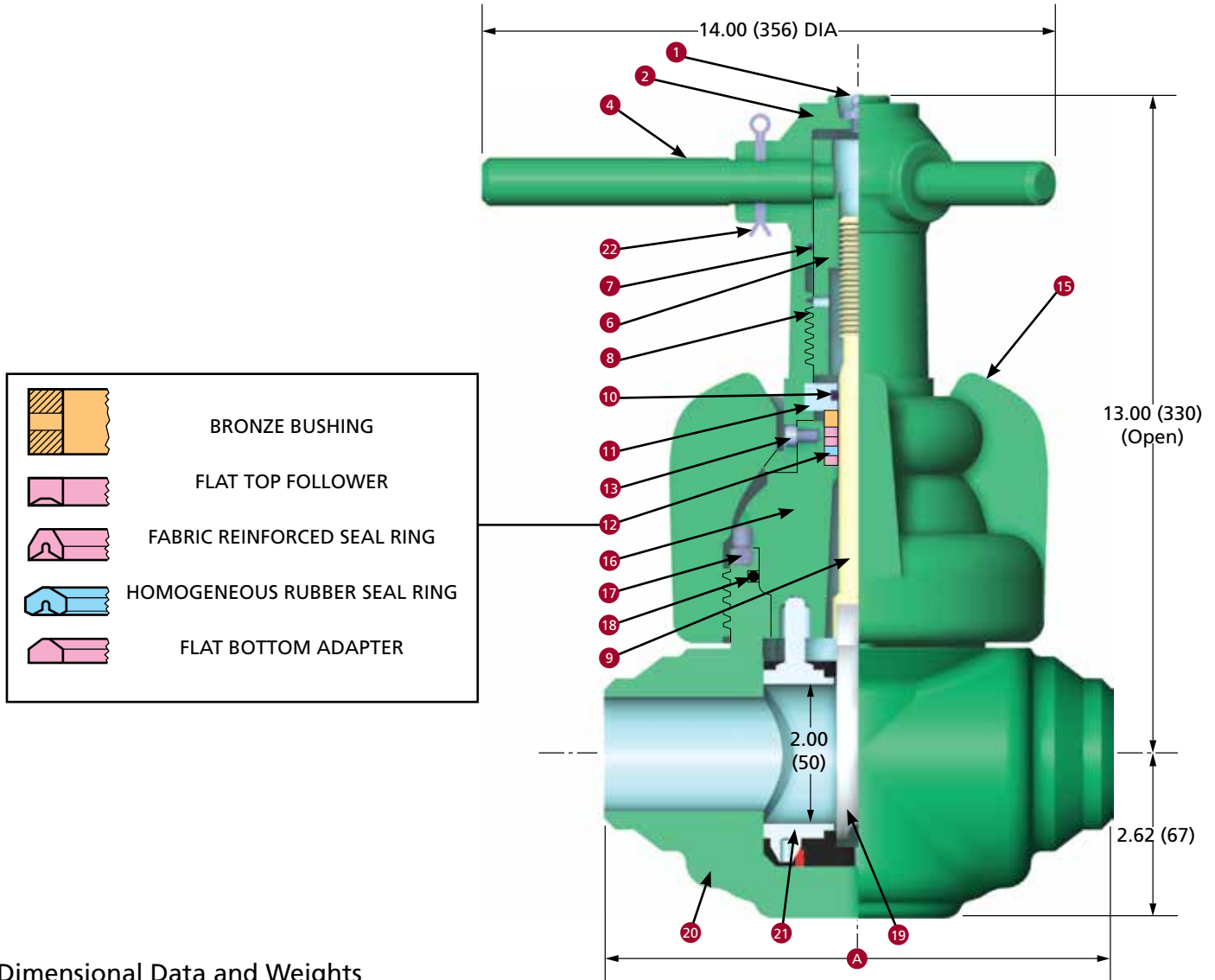
- Group 1** Basic valve. Hydrostatic shell test: 11,250 psi for three minutes. Hydrostatic seat test: 7500 psi for three minutes, each side. Material traceability on body and bonnet.
- Group 2** Same as Group 1, except: Hydrostatic shell test: 11,250 psi for three minutes, drop to 0 psi, then 11,250 psi for 15 minutes. Test is charted. Hydrostatic seat test: 7500 psi for three minutes, drop to 0 psi, 7500 for 15 minutes, drop to 0 psi, then 300 psi for five minutes, each side. Test is charted. Material traceability on body, bonnet, stem and bolting. Impact tests at or below -50° F (-46° C) on body, bonnet, stem and bolting. Surface NDE on body, bonnet and stem.
- Group 3** Same as Group 2, plus volumetric NDE on body and bonnet.

Parts List

Key No.	Qty.	Description	Valve Size: 5" (125 mm) FP		
			Group 1	Group 2	Group 3
		Assembly Base Number	General Service J024994	J025083	J025084
			NACE Compliant J025090	J025109	J025110
1	1	Handwheel	Ductile Iron ASTM A536 Grade 65-45-12	J016986	
2	1	Handwheel Screw	AISI C-1018	J016987	
3	4	Retainer Screw		J005665-32028 Alloy Steel	J005666-32028 18-8 SS
■	4	Gate Clip	Materials AISI 302 SS	M451649	
■	5	Stem Seal Assembly (With Bronze Bushing – ASTM B271 Alloy C95500)	HNBR FKM	J016995-008 J016995-006	
■	6	Stem	410 SS	J024943-107	
7	1	Bonnet	ASTM A487 Grade 4 Class D	J024956-051	J024956-052
8	12	Body Stud		J024956-030	
			Materials ASTM A193 Grade B7	2171976-12-01	2171978-12-02
9	12	Body Stud Nut	Materials ASTM A194 Grade 2H	2709000-12-01	ASTM A193 Grade L7 J053252-142
■	10	Bonnet Seal	Materials HNBR FKM	ASTM A194 Grade 2H	ASTM A194 Grade 7
				2712425-78	
11	1	Body Materials	ASTM A487 Grade 4 Class D	J005521-446	
■	12	Seat	410 SS/HNBR Materials 410 SS/FKM Materials	Consult Cameron for Body Part Numbers	2139748-01 Rings: AISI 410 Stainless Steel; Elastomers: HNBR 2269500-01 Rings: AISI 410 Stainless Steel; Elastomers: FKM
■	13	Gate – Steel/QPQ	AISI 4140 w/QPQ Nitride Coating 410 SS	Materials AISI 4140 w/QPQ Nitride Coating	2171108-01 2139629-02
■	14	Housing Seal	Urethane	2726191-02-95	
■	15	Body Wear Ring	For Steel Gate Materials For Stainless Steel Gate Materials	M452619 AISI 4140 w/QPQ Nitride Coating	
■	16	Wear Ring Seal	HNBR FKM	2139650-02 AISI 410 Stainless Steel	2726268-02 J005521-435
■	18	Stem Screw with Bearings	Materials	J023848	
				Stem Screw: AISI C-1018	
19	1	Housing	AISI C-1018	J018190	Bearings: Hardened Steel Needle Thrust Bearings
■	20	Secondary Seal	HNBR FKM	2712425-12 J005531-218	
21	1	Packing Retainer	Materials	J018191	2171930-01
				AISI C-1018	AISI 4130
22	4	Housing Screw	Steel SAE Grade 5	702500-16-00-40	
23	1	Stem Tube	Clear Acrylic	J018192	
24	1	Stem Cap	Ductile Iron	J018193	
25	1	Lube Fitting	Steel	005929-18	

- Major repair kit J025177-10574 – One each for one year of service.
 - Minor repair kit J025177-00574.
- Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)
Consult Cameron for optional repair kit trim options

SERIES DM GATE VALVES – 2000, 3000, AND 5000 PSI WP
 2" (50 mm) Full Port and 2-1/2" (65 mm) Reduced Port

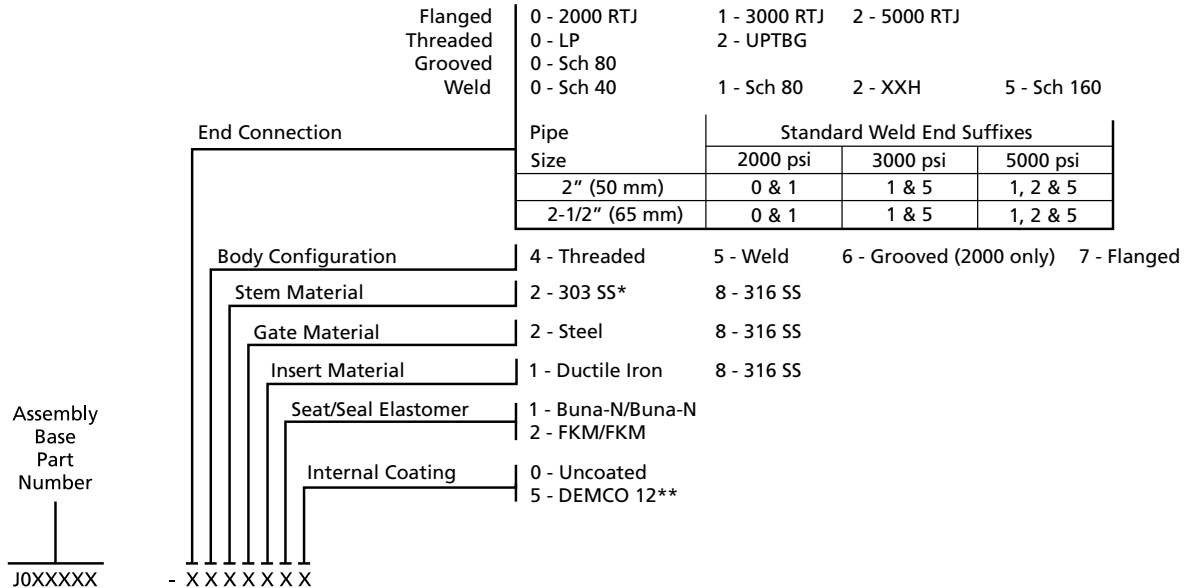


Dimensional Data and Weights

Dimension		Valve Size: 2" (50 mm) FP and 2-1/2" x 2" (65 mm x 50 mm) RP*					
		2000 WP		3000 WP		5000 WP	
A	Threaded, Weld and Grooved	9.00 (229)	9.00 (229)	9.00 (229)	9.00 (229)	9.00 (229)	9.00 (229)
	Flanged – RTJ	11.62 (295)	-	11.62 (295)	-	12.12 (308)	-
	Flange OD	6.50 (165)	-	8.50 (216)	-	8.50 (216)	-
	Flange Bolts (Qty., Size: in.)	8 – 5/8	-	8 – 7/8	-	8 – 7/8	-
	Ring Number (RTJ)	R-23	-	R-24	-	R-24	-
Weight lb (kg)							
	Threaded, Weld and Grooved	56 (25)	56 (25)	58 (26)	58 (26)	58 (26)	58 (26)
	Flanged	70 (32)	-	100 (45)	-	110 (50)	-

* 2-1/2" x 2" (65 mm x 50 mm) RP only available in weld end.

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.

* Available on General Service valves

**Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

Key No.	Qty.	Description	Valve Size: 2" (50 mm) FP and 2-1/2" (65 mm) RP		
			2000 WP General/(NACE)	3000 WP General/(NACE)	5000 WP General/(NACE)
		Assembly Base Part Number	J001026/(TBA)	J001027/(J025092)	J001028/(J024929)
		2" (50 mm) Full Port – Threaded – Weld	J001029/(TBA)	J001030/(J025092)	J001031/(J024929)
		– Grooved	J011920/(TBA)	-	-
		– Flanged	J001023/(TBA)	J001024/(J025092)	J001025/(J024929)
		2-1/2" (65 mm) Reduced Port – Weld	J001115/(TBA)	J001114/(TBA)	J001109/(J025205)
1	1	Lube Fitting	005929-18	005929-18	005929-18
2	1	Handle	2139712-01	2139712-01	2139712-01
4	1	Lock Handle	C-1213	J001891	J001891
6	1	Stem Screw	J001913	J001913	J001913
7	1	Stem Screw Seal	Buna-N	J005526-224	J005526-224
8	1	Screw Housing	C-1018	J001848	J001848
9	1	Stem	303 SS -002, 316 SS -008	J001931-XXX	J001931-XXX
10	1	Secondary Seal	Buna-N	J005526-210	J005526-210
11	1	Retainer	C-1213	J001940	J001940
12	1	Stem Seal Assembly	Buna-N -001, FKM -006	J001949-XXX	J001949-XXX
13	1	Lock Screw	Steel	J005665-22004	J005665-22004
15	1	Coupling	A216 Steel -020, A487 Steel -030	J001445-030	J001445-030
16	1	Bonnet	ASTM A105	J001237-XXX	J001237-XXX
		Coatings		Uncoated-020, DEMCO 12-025	
17	1	Index Pin	Steel	J001981	J001981
18	1	Bonnet Seal	Buna-N	J005526-342	J005526-342
			FKM	J005531-342	J005531-342
19	1	Gate	Materials	J001887-XXX	J001887-XXX
				AISI 1045 Nickel Plated -002, Cast SS ASTM A351 Grade CF8M – 108	
20	1	Body Materials	Threaded, Weld and Grooved – ASTM A105 Normalized		
			2000 Flanged – Fabricated from Weld Body and Commercial Flanges		
			3000 Flanged – ASTM A216 Grade WCB		
			5000 Flanged – ASTM A487 Grade 4A or 2B		
			Coatings (Except Weld End Bodies): DEMCO 12		
				Consult Cameron for Body Part Numbers	
21	1	Seat Assembly	Materials	J001876-0XX	J001876-0XX
				J001876-0XX	J001876-0XX
				Inserts: -01X Ductile Iron ASTM A395 or Steel AISI C1040	
				-08X 316 SS ASTM A351 Grade CF8M Annealed	
				Elastomers: -0X1 Buna-N, -0X2 FKM	
22	1	Pin, Lock Handle	Steel	J005420-18728	J005420-18728

■ Major repair kit J025216-11221 – One each for one year of service.

● Minor repair kit J025216-01221.

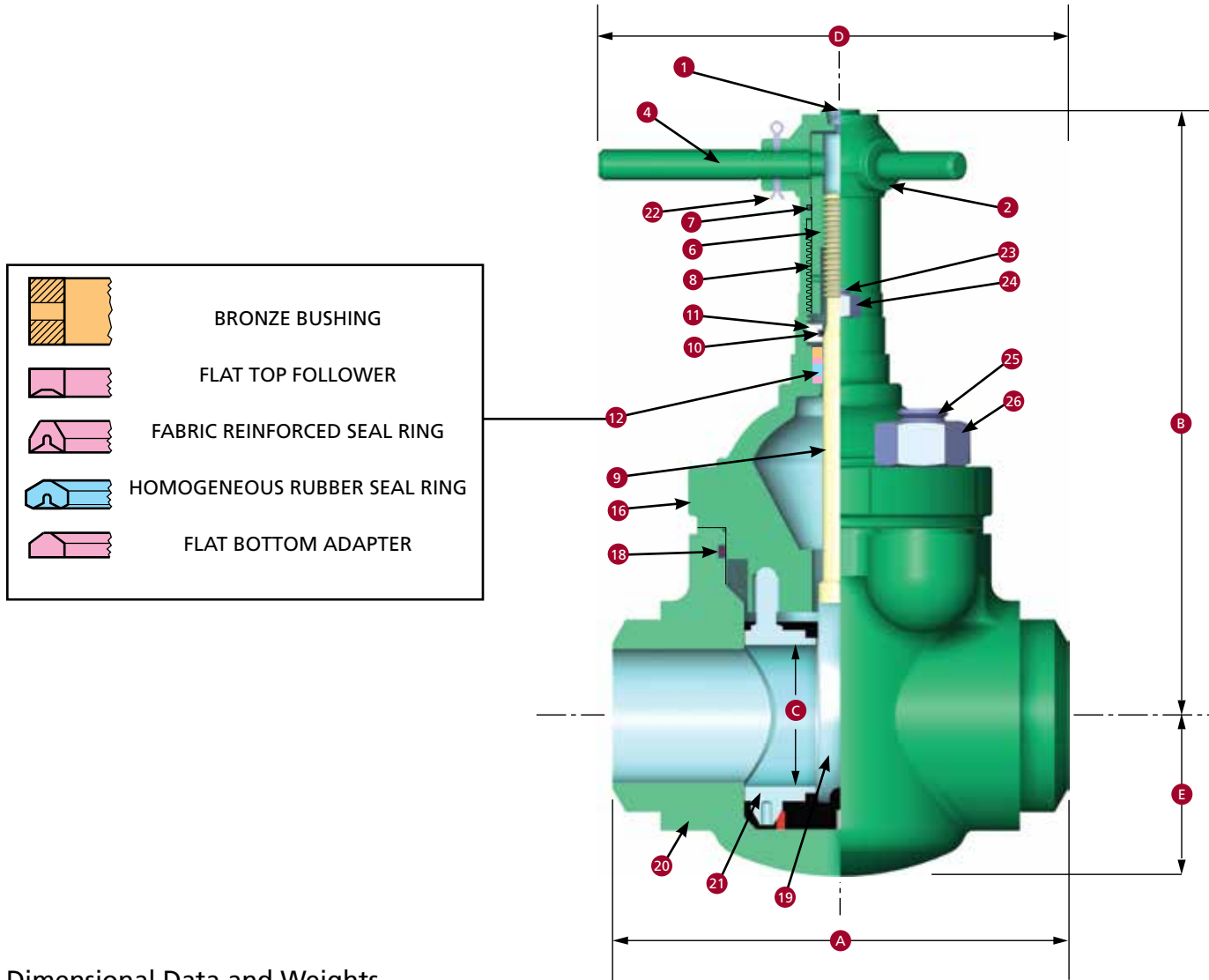
Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)

Consult Cameron for optional repair kit trim options

SERIES DM GATE VALVES – 2000, 3000, AND 5000 PSI WP

2-1/2" (65 mm) and 3" (80 mm) Full Port

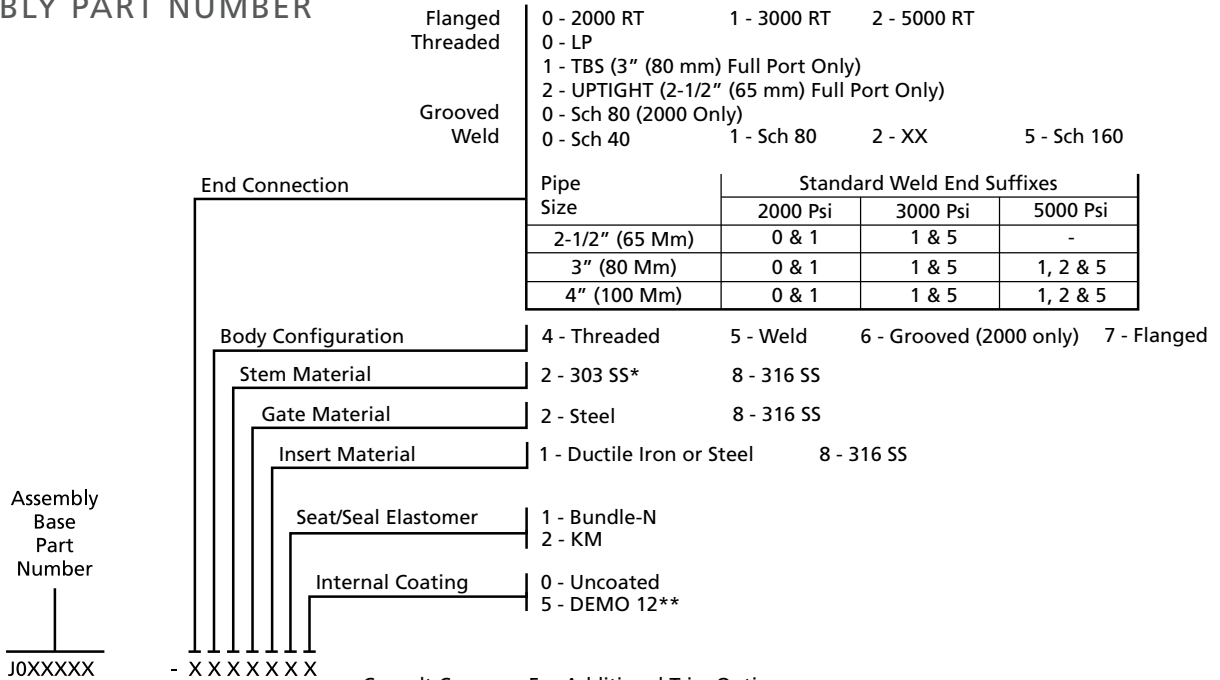
4" (100 mm) Reduced Port



Dimensional Data and Weights

Dimension		Valve Size						
		2000 WP		3000 WP		5000 WP		
		FP 2-1/2" (65 mm)	FP 3" (80 mm)	FP 2-1/2" (65 mm)	FP 3" (80 mm)	RP 4" x 3" (100 x 80 mm)	FP 3" (80 mm)	RP 4" x 3" (100 x 80 mm)
A	Threaded, Weld and Grooved	9.75 (248)	11.00 (279)	9.75 (248)	11.00 (279)	11.00 (279)	11.00 (279)	11.00 (279)
	Flanged – RTJ	16.62 (422)	14.12 (359)	16.62 (422)	14.12 (359)	-	15.62 (397)	-
B	(Open)	17.00 (432)	18.00 (457)	17.00 (432)	18.00 (457)	18.00 (457)	18.00 (457)	18.00 (457)
C	(Seat Bore)	2.50 (65)	3.00 (80)	2.50 (65)	3.00 (80)	3.00 (80)	3.00 (80)	3.00 (80)
D		19.00 (483)	19.00 (483)	19.00 (483)	19.00 (483)	19.00 (483)	19.00 (483)	19.00 (483)
E	Threaded, Weld and Grooved	3.12 (79)	3.50 (89)	3.25 (83)	3.69 (94)	3.69 (94)	3.94 (100)	3.94 (100)
	Flanged – RTJ	3.19 (81)	3.50 (89)	3.19 (81)	3.69 (94)	-	3.94 (100)	-
	Flange OD	7.50 (191)	8.25 (210)	9.62 (244)	9.50 (241)	-	10.50 (267)	-
	Flange Bolts (Qty., Size: in.)	8-3/4	8-3/4	8-1	8-7/8	-	8 – 1-1/8	-
	Ring Number (RTJ)	R-26	R-31	R-27	R-31	-	R-35	-
Weight lb (kg)								
	Threaded, Weld and Grooved	74 (34)	95 (43)	87 (39)	113 (51)	113 (51)	140 (64)	140 (64)
	Flanged	141 (64)	131 (59)	170 (77)	175 (79)	-	241 (109)	-

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.

* Available on General Service valves

**Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

Key No.	Qty.	Description	Valve Size: 2-1/2" (65 mm) FP			Valve Size: 3" (80 mm) FP and 4" (100 mm) RP		
			2000 WP General/(NACE)	3000 WP General/(NACE)	5000 WP General/(NACE)	2000 WP General/(NACE)	3000 WP General/(NACE)	5000 WP General/(NACE)
		Assembly Base Part Number	2-1/2" (65 mm) and 3" (80 mm) Full Port - Threaded			2-1/2" (65 mm) and 3" (80 mm) Full Port - Threaded		
			J001042/(TBA)	-	J001043/(TBV)	J001045/(TBA)	J001046/(J025179)	J001047/(J025119)
			J001051/(TBA)	-	J001052/(TBV)	J001054/(TBA)	J001055/(J025179)	J001056/(J025119)
			J011921/(TBA)	-	-	J011922/(TBA)	-	-
			-	J001033/(TBA)	J001034/(TBV)	J001036/(TBA)	J001037/(TBA)	J001038/(J025119)
			-	-	-	-	J001113/(TBA)	J001110/(J025116)
1	1	Lube Fitting	005929-18	005929-18	005929-18	005929-18	005929-18	005929-18
2	1	Hub Assembly	2139713-01	2139713-01	2139713-01	2139713-01	2139713-01	2139713-01
4	1	Lock Handle	J001892	J001892	J001892	J001892	J001892	J001892
6	1	Stem Screw	J001914-002	J001914-002	J001914-002	J001914-003	J001914-003	J001914-003
7	1	Stem Screw Seal	J005526-226	J005526-226	J005526-226	J005526-226	J005526-226	J005526-226
8	1	Screw Housing	J001852	J001852	J001852	J001852	J001852	J001852
9	1	Stem	J001932-XXX	J001932-XXX	J001932-XXX	J001932-XXX	J001932-XXX	J001932-XXX
10	1	Secondary Seal	J005526-212	J005526-212	J005526-212	J005526-212	J005526-212	J005526-212
11	1	Retainer	J001941	J001941	J001941	J001941	J001941	J001941
12	1	Stem Seal Assembly	J001950-XXX	J001950-XXX	J001950-XXX	J001950-XXX	J001950-XXX	J001950-XXX
16	1	Bonnet	J001970-XXX	J001974-XXX	J001974-XXX	J001971-XXX	J001976-XXX	J001980-XXX
18	1	Bonnet Seal	J005526-427	J005526-427	J005526-427	J005526-431	J005526-433	J005526-433
19	1	Gate	J001868-00X	J001868-00X	J001868-00X	J001886-00X	J001886-00X	J001886-00X
20	1	Body Materials	ASTM A487 Grade 4 Class A or Grade 2 Class B Coatings (Except Weld End Bodies): DEMCO 12					
21	1	Seat Assembly	J001877-0XX	J001877-0XX	J001877-0XX	J001878-0XX	J001878-0XX	J001878-0XX
22	1	Pin, Lock Handle	J005420-18732	J005420-18732	J005420-18732	J005420-18732	J005420-18732	J005420-18732
23	2	Bonnet Stud	J002066	J002066	J002066	J002066	J002066	J002066
24	2	Bonnet Stud Nut	2709000-08-01	2709000-08-01	2709000-08-01	2709000-08-01	2709000-08-01	2709000-08-01
25	4	Body Stud	J002072	J002074	J002074	J002072	J002074	J002076
26	4	Body Stud Nut	2709000-09-01	2709000-10-01	2709000-10-01	2709000-09-01	2709000-10-01	2709000-13-01

Major repair kit J025216-12221 - One each for one year of service.

Minor repair kit J025216-02221.

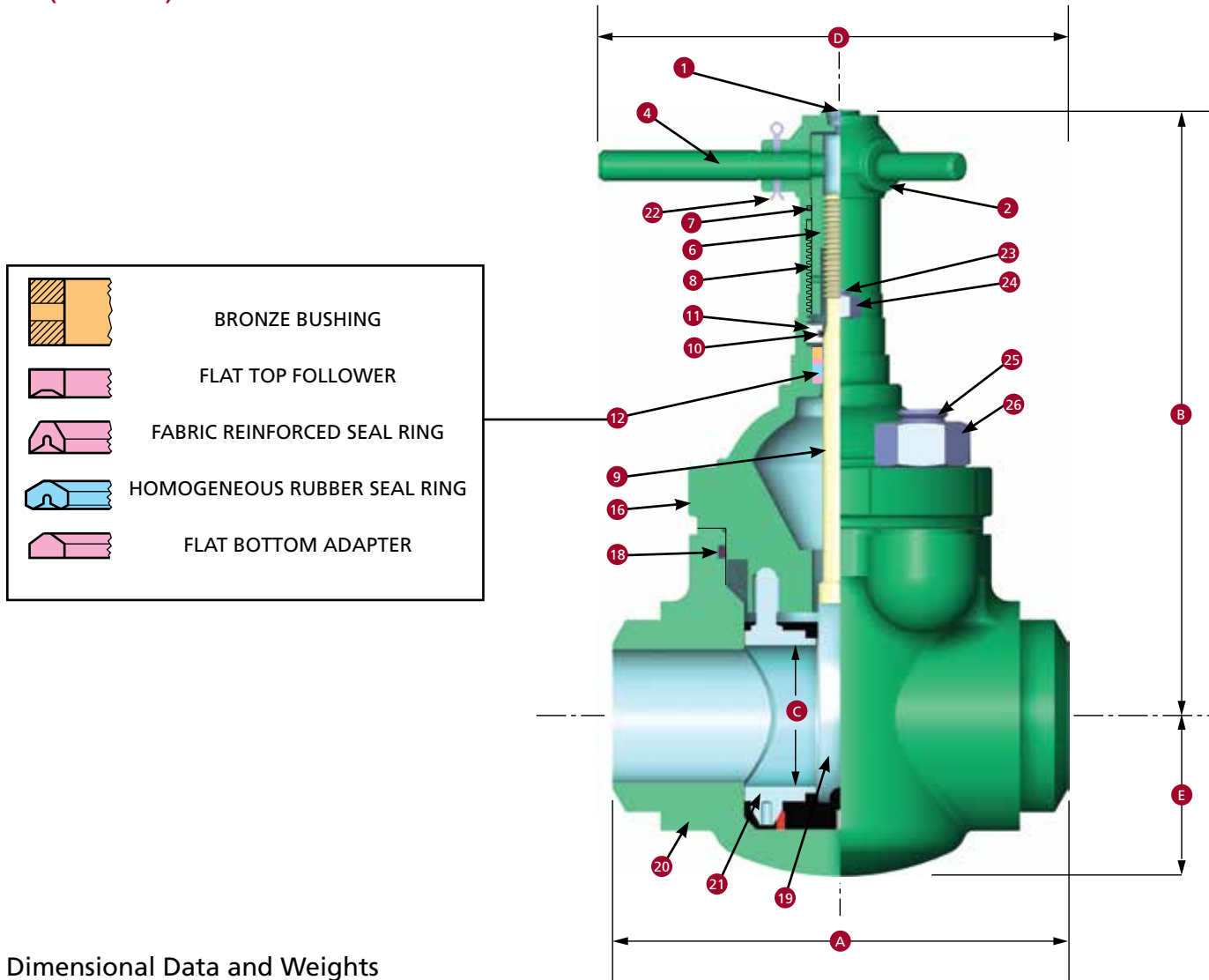
Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)

Consult Cameron for optional repair kit trim options

SERIES DM GATE VALVES – 2000 AND 3000 PSI WP

4" (100 mm) Full Port

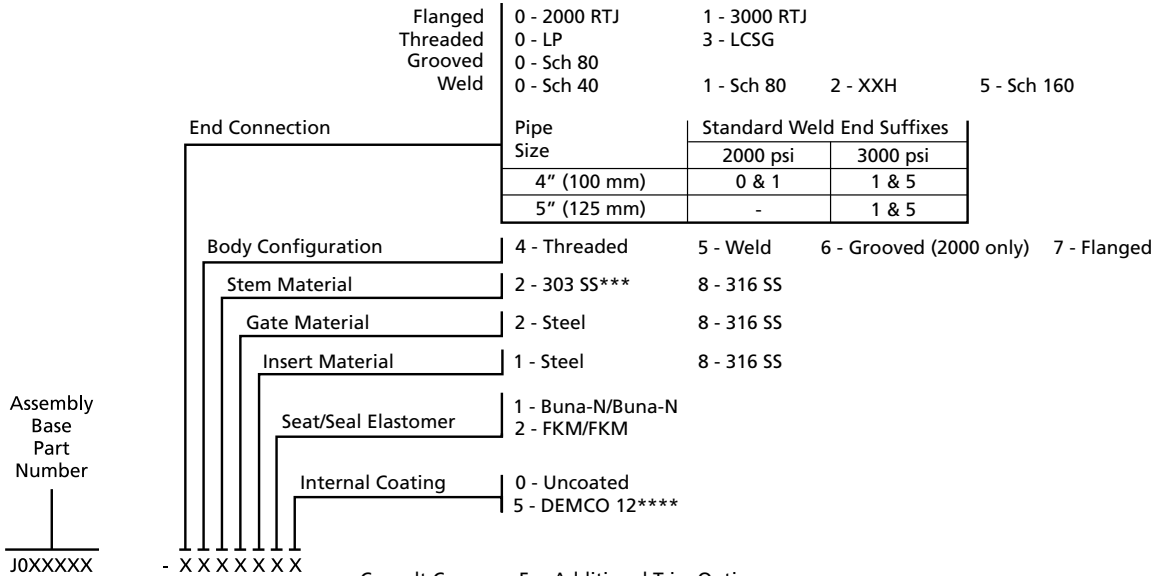
5" (125 mm) Reduced Port



Dimensional Data and Weights

Dimension	Valve Size		
	4" (100 mm) FP 2000 WP	4" (100 mm) FP	5" x 4" (125 mm x 100 mm) RP 3000 WP
A	Threaded, Weld and Grooved 13.00 (330)	13.00 (330)	13.00 (330)
	Flanged – RTJ 16.38 (416)	16.38 (416)	-
B	(Open) 21.25 (540)	21.25 (540)	21.25 (540)
C	(Seat Bore) 4.00 (100)	4.00 (100)	4.00 (100)
D	23.00 (584)	23.00 (584)	23.00 (584)
E	Threaded, Weld and Grooved 4.31 (109)	4.56 (116)	4.56 (116)
	Flanged – RTJ 4.31 (109)	4.56 (116)	-
	Flange OD 10.75 (273)	11.50 (292)	-
	Flange Bolts (Qty., Size: in.) 8 – 7/8	8 – 1-1/8	-
	Ring Number (RTJ) R-37	R-37	-
Weight lb (kg)			
	Threaded, Weld and Grooved 140 (64)	162 (73)	162 (73)
	Flanged 200 (91)	265 (120)	-

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.
 *** Available on General Service valves
 ****Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

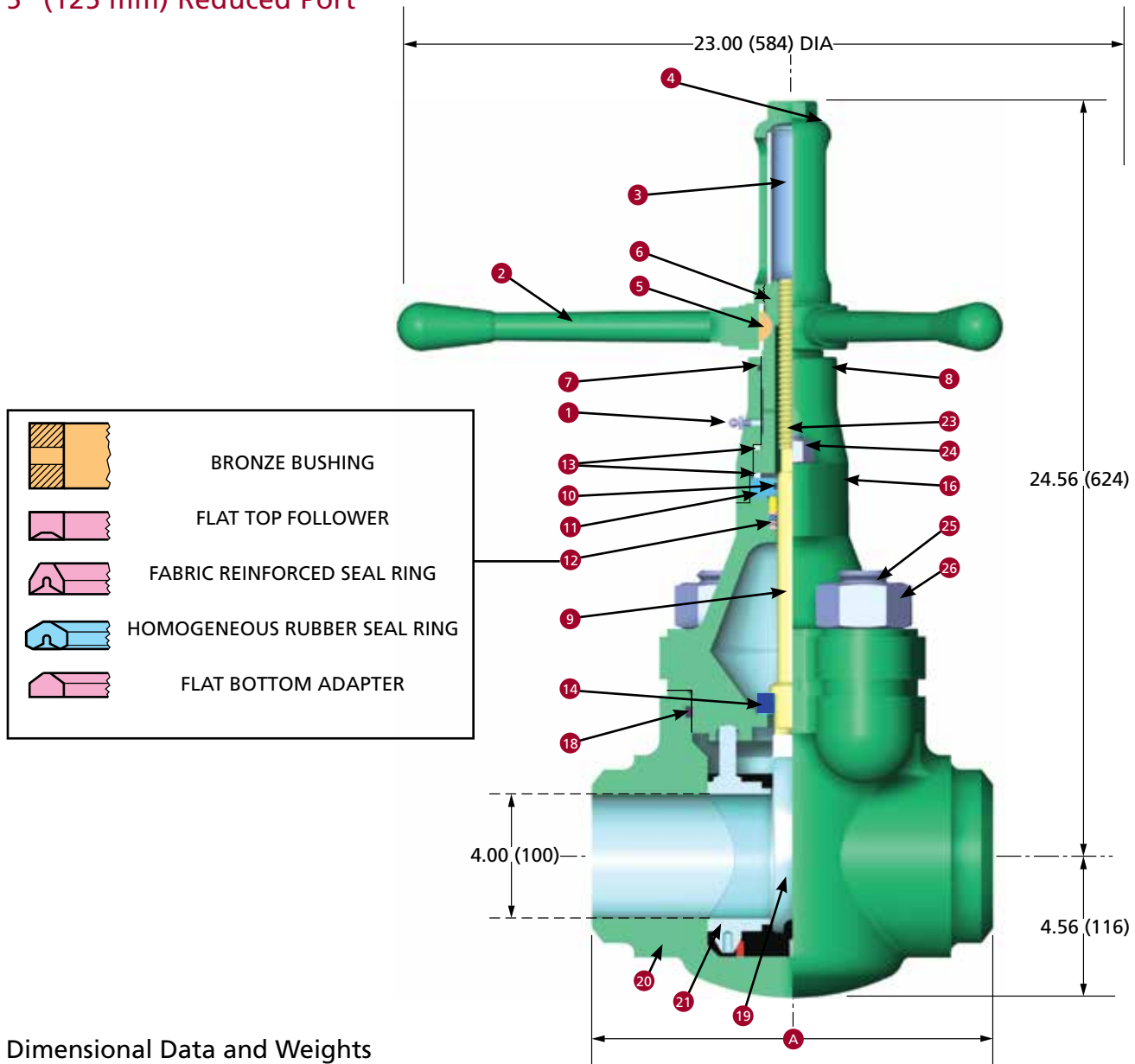
Key No.	Qty.	Description	Valve Size: 4" (100 mm) FP**		
			2000 WP General/(NACE)	3000 WP General/(NACE)	
		Assembly Base Part Number	4" (100 mm) Full Port – Threaded – Weld – Grooved – Flanged	5" (125 mm) Reduced Port – Weld	
			J001048/(TBA) J001057/(TBA) J011923/(TBA) J001039/(TBA)	J001049/(TBA) J001058/(TBA) - J001040/(TBA) J001111/(TBA)	
1	1	Lube Fitting	Steel	005929-18	005929-18
2	1	Hub Assembly	ASTM A536 Ductile Iron	2139714-01	2139714-01
4	1	Lock Handle	C-1213	J001897	J001897
6	1	Stem Screw	C-1213	J001915	J001915
7	1	Stem Screw Seal	Buna-N	J005526-227	J005526-227
8	1	Screw Housing	Carbon Steel	J001958	J001958
9	1	Stem	303 SS -002, 316 SS -008	J001933-XXX	J001933-XXX
10	1	Secondary Seal	Buna-N	J005526-214	J005526-214
11	1	Retainer	C-1213	J001942	J001942
12	1	Stem Seal Assembly	Buna-N -001, FKM -006	J001951-XXX	J001951-XXX
16	1	Bonnet	Cast Steel ASTM A487 4A or 2B	J001972-XXX	J001977-XXX
			Coatings	Uncoated -030, DEMCO 12 -035	
18	1	Bonnet Seal	Buna-N	J005526-438	J005526-439
			FKM	J005531-438	J005531-439
19	1	Gate	Materials	J001926-00X	J001926-00X
			AISI 4140 Nickel Plated -002		
			Cast SS ASTM A351 Grade CF8M Annealed -008		
20	1	Body Materials	ASTM A487 Grade 4 Class A or Grade 2 Class B	Consult Cameron for Body Part Numbers	
			Coatings (Except Weld End Bodies): DEMCO 12		
21	1	Seat Assembly	Materials	J002207-0XX	J002207-0XX
			Inserts: -02X Steel AISI 1040		
			-08X 316 SS ASTM A351 Grade CF8M Annealed		
			Elastomers: -0X1 Buna-N, -0X2 FKM		
22	1	Pin, Lock Handle	Steel	J005420-18732	J005420-18732
23	2	Bonnet Stud	ASTM A193 Grade B7	J002072	J002072
24	2	Bonnet Stud Nut	ASTM A194 Grade 2H	2709000-09-01	2709000-09-01
25	4	Body Stud	ASTM A193 Grade B7	J002074	*J024500
26	4	Body Stud Nut	ASTM A194 Grade 2H	2709000-10-01	*2709000-12-01

■ Major repair kit J025216-13221 – One each for one year of service.
 • Minor repair kit J025216-03221.
 Major and minor repair kits listed for trim option J0XXXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)
 Consult Cameron for optional repair kit trim options
 * Valves made prior to 1994 may use seven pitch stud J002075 and nut J053251-042.
 ** Available as 4-1/16" (103 mm) casing thread 2000 WP-J025020-4422110; 3000 WP-J024968-4422110.

SERIES DM GATE VALVES – 5000 PSI WP – FOUR-BOLT BONNET DESIGN

4" (100 mm) Full Port

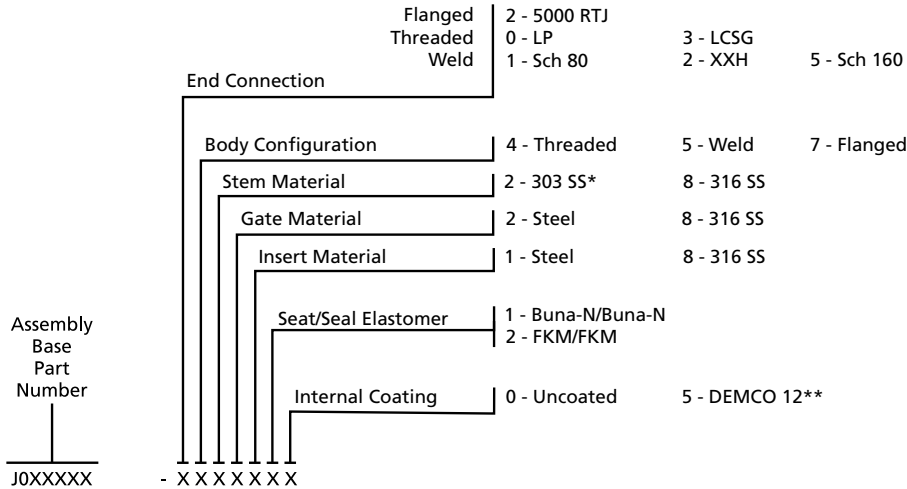
5" (125 mm) Reduced Port



Dimensional Data and Weights

Dimension	Valve Size: 4" (100 mm) FP		Valve Size: 5" x 4" (125 mm x 100 mm)	
	5000 WP		5000 WP	
A	Threaded and Weld	13.00 (330)		13.00 (330)
	Flanged – RTJ	18.00 (457)	-	-
	Flange OD	12.25 (311)	-	-
	Flange Bolts (Qty., Size: in.)	8 – 1-1/4	-	-
	Ring Number (RTJ)	R-39	-	-
Turns to Open		23		23
Weight lb (kg)				
	Threaded and Weld	210 (95)		210 (95)
	Flanged	330 (150)		-

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.
 * Available on General Service valves only
 **Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

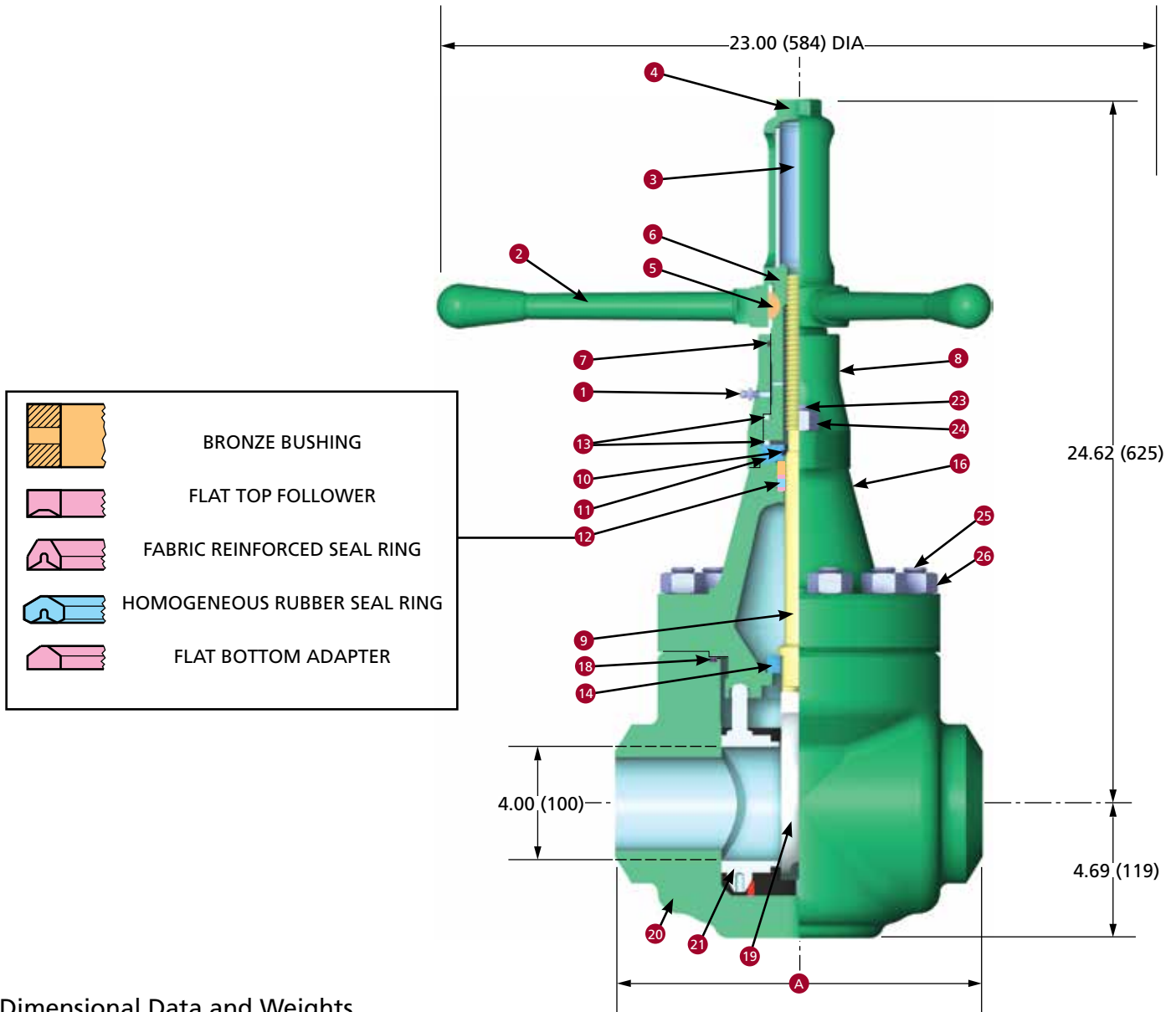
Key No.	Qty.	Description	Valve Size: 4" (100 mm) FP	Valve Size: 5" (125 mm)
			5000 WP General/(NACE)	5000 WP General/(NACE)
		Assembly Base Part Number	4" (100 mm) Full Port J007420/(J025206)	J007420/(J025206)
			5" (125 mm) Reduced Port – Weld -	-
1	1	Lube Fitting	Steel 005929-18	005929-18
2	1	Handle	ASTM A536 Ductile Iron 2139481-01	2139481-01
3	1	Tube	Clear Acrylic J007459	J007459
4	1	Stem Cap	ASTM A536 Ductile Iron J007411	J007411
■	5	Key	Steel J005305-10016	J005305-10016
■	6	Stem Screw	C-1213 J007416	J007416
■	7	Stem Screw Seal	Buna-N J005526-226	J005526-226
8	1	Screw Housing	C-1029 J007418	J007418
■	9	Stem	303 SS -002, 316 SS -008 J007439-XXX	J007439-XXX
■	10	Secondary Seal	Buna-N J005526-214	J005526-214
■	11	Retainer	C-1213 J007413	J007413
■	12	Stem Seal Assembly	Buna-N J001951-001 FKM J001951-006	J001951-001 J001951-006
■	13	Bearing	Teflon/Phenolic J007426	J007426
■	14	Downstop Ring	303 SS J007417	J007417
16	1	Bonnet	ASTM A487 Grade 4 Class C or Grade 2 Class B Coatings J007419-XXX	J007419-XXX
■●	18	Bonnet Seal	Buna-N J005520-439 FKM J005531-439	J005520-439 J005531-439
■●	19	Gate	J001926-00X	J001926-00X
20	1	Body Materials	Materials ASTM A487 Grade 4 Class A or Grade 2 Class B Coatings (Except Weld End Bodies): DEMCO 12	AISI 4140 Nickel Plated -002 ASTM A351 Grade CF8M -008 Consult Cameron for Body Part Numbers
■●	21	Seat Assembly	Materials J002207-0XX	J002207-0XX Inserts: -02X Steel AISI 1040 -08X 316 SS ASTM A351 Grade CF8M Annealed Elastomers: -0X1 Buna-N, -0X2 FKM
23	2	Bonnet Stud	ASTM A193 Grade B7 J002072	J002072
24	2	Bonnet Stud Nut	ASTM A194 Grade 2H 2709000-09-01	2709000-09-01
25	4	Body Stud	ASTM A193 Grade B7 J002077	J002077
26	4	Body Stud Nut	ASTM A194 Grade 2H J001890	J001890

■ Major repair kit J025216-14221 – One each for one year of service.
 ● Minor repair kit J025216-04221.
 Major and minor repair kits listed for trim option J0XXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)
 Consult Cameron for optional repair kit trim options

SERIES DM GATE VALVES – 5000 PSI WP – 12-BOLT BONNET DESIGN

4" (100 mm) Full Port

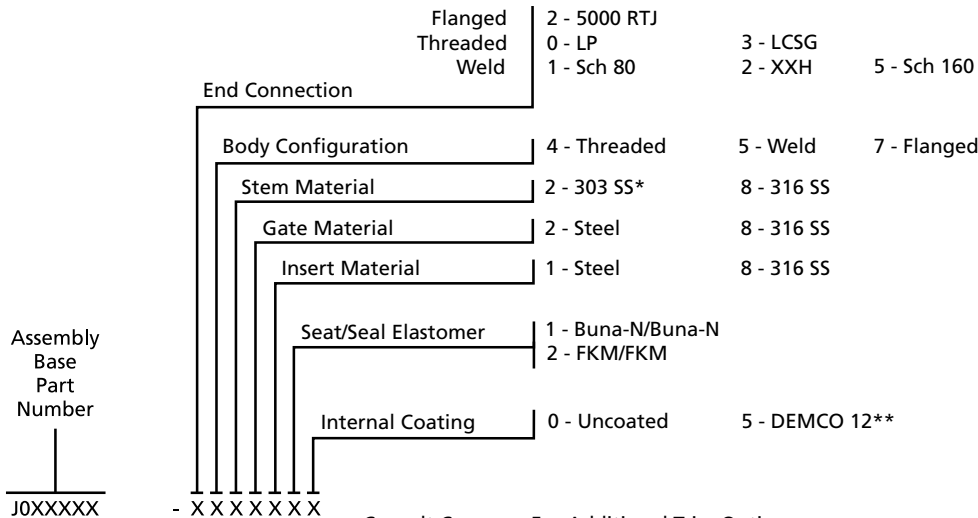
5" (125 mm) and 6" (150 mm) Reduced Port



Dimensional Data and Weights

Dimension	Valve Size: 4" (100 mm) FP		Valve Size: 5" x 4" (125 mm x 100 mm) and 6" x 4" (150 mm x 100 mm) RP	
	5000 WP		5000 WP	
A Threaded and Weld	13.00 (330)	13.00 (330)	13.00 (330)	13.00 (330)
Flanged – RTJ	18.00 (457)	-	-	-
Flange OD	12.25 (311)	-	-	-
Flange Bolts (Qty., Size: in.)	8 – 1-1/4	-	-	-
Ring Number (RTJ)	R-39	-	-	-
Turns to Open	23	23	23	23
Weight lb (kg)				
Threaded and Weld	210 (95)	210 (95)	210 (95)	210 (95)
Flanged	330 (150)	-	-	-

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.

* Available on General Service valves

**Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

Key No.	Qty.	Description	Valve Size: 4" (100 mm) FP		Valve Size: 5" (125 mm) and 6" (150 mm) RP	
			5000 WP General/(NACE)		5000 WP General/(NACE)	
		Assembly Base Number	4" (100 mm) Full Port	J017263/(J025207)	J017263/(J025207)	
			5" (125 mm) Reduced Port – Weld	J017264/(J025122)	J017264/(J025122)	
			6" (150 mm) Reduced Port – Weld	J017265/(J024931)	J017265/(J024931)	
1	1	Lube Fitting	Steel	005929-18	005929-18	
2	1	Handle	ASTM A536 Ductile Iron	2139481-01	2139481-01	
3	1	Tube	Clear Acrylic	J007459	J007459	
4	1	Stem Cap	ASTM A536 Ductile Iron	J007411	J007411	
■	5	Key	Steel	J005305-10016	J005305-10016	
■	6	Stem Screw	C-1213	J007416	J007416	
■	7	Stem Screw Seal	Buna-N	J005526-226	J005526-226	
■	8	Screw Housing	C-1029	J007418	J007418	
■	9	Stem	303 SS -002, 316 SS -008	J007439-XXX	J007439-XXX	
■	10	Secondary Seal	Buna-N	J005526-214	J005526-214	
■	11	Retainer	C-1213	J007413	J007413	
■	12	Stem Seal Assembly	Buna-N	J001951-001	J001951-001	
			FKM	J001951-006	J001951-006	
■	13	Bearing	Teflon/Phenolic	J007426	J007426	
■	14	Downstop Ring	303 SS	J007417	J007417	
■	16	Bonnet	ASTM A487 Grade 4 Class C	J017289-XXX	J017289-XXX	
			Coatings		Uncoated -030, DEMCO 12 -035	
■●	18	Bonnet Seal	Buna-N	J005520-361	J005520-361	
			FKM	J005531-361	J005531-361	
■●	19	Gate		J001926-00X	J001926-00X	
			Materials		AISI 4140 Nickel Plated -002 ASTM A351 Grade CF8M Annealed -008	
20	1	Body Materials			Consult Cameron for Body Part Numbers	
			ASTM A487 Grade 4 Class A Coatings (Except Weld End Bodies): DEMCO 12			
■●	21	Seat Assembly		J002207-0XX	J002207-0XX	
			Materials		Inserts: -02X Steel AISI 1040 -08X 316 SS ASTM A351 Grade CF8M Annealed Elastomers: -0X1 Buna-N, -0X2 FKM	
23	2	Bonnet Stud	ASTM A193 Grade B7	J002072	J002072	
24	2	Bonnet Stud Nut	ASTM A194 Grade 2H	2709000-09-01	2709000-09-01	
25	12	Body Stud	ASTM A193 Grade B7	J015432	J015432	
26	12	Body Stud Nut	ASTM A194 Grade 2H	2709000-10-01	2709000-10-01	

■ Major repair kit J025216-14221 – One each for one year of service.

● Minor repair kit J025216-04221.

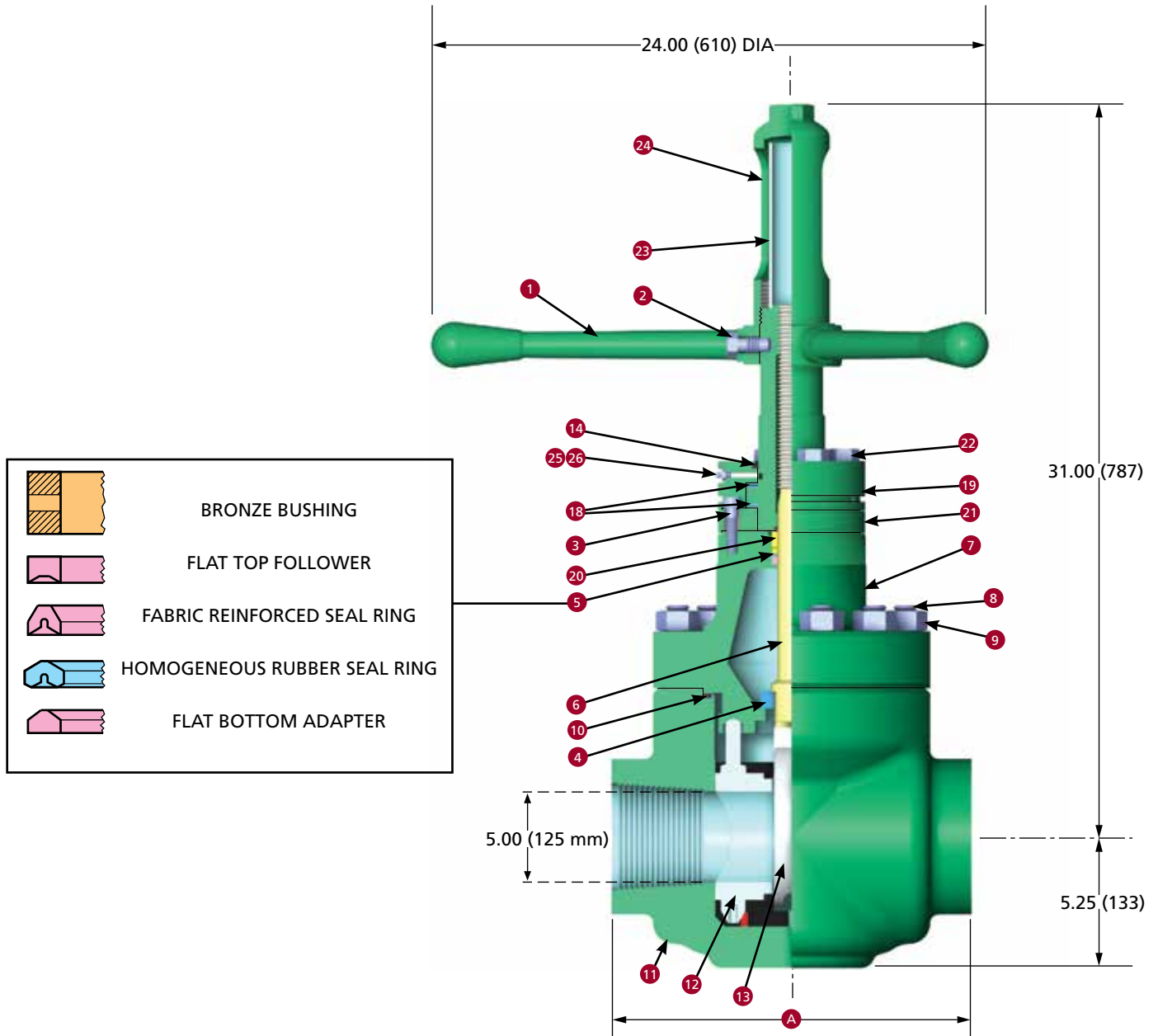
Major and minor repair kits listed for trim option JOXXXXX-XX72140 (410 SS Stem, Steel/QPQ Gate, HNBR Seat/Seals)

Consult Cameron for optional repair kit trim options

SERIES DM GATE VALVES – 3000 AND 5000 PSI WP

5" (125 mm) Full Port

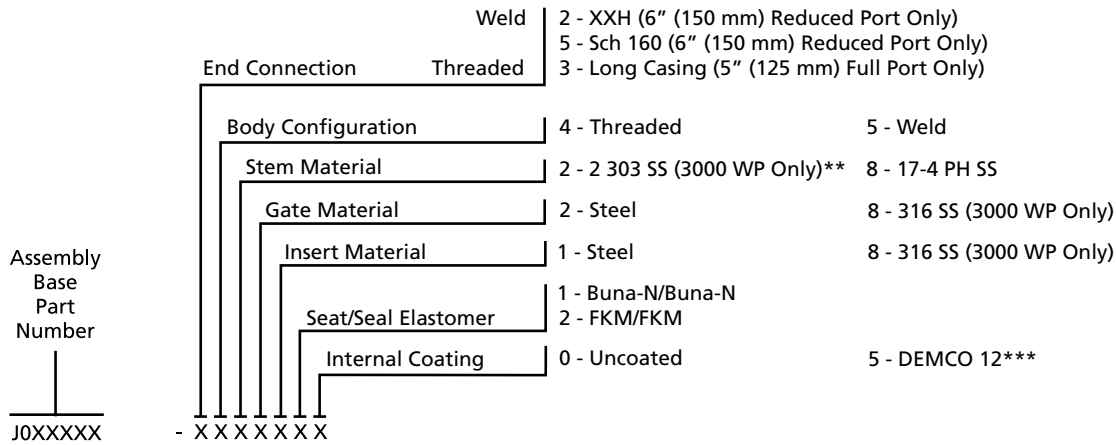
6" (150 mm) x 5" (125 mm) Reduced Port



Dimensional Data and Weights

		Valve Size: 5" (125 mm) FP and 6" x 5" (150 mm x 125 mm) RP
Dimension		3000 and 5000 WP
A	Threaded and Weld	16.00 (406)
Weight lb (kg)		335 (152)

ASSEMBLY PART NUMBER



** Available on General Service valves only

***Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

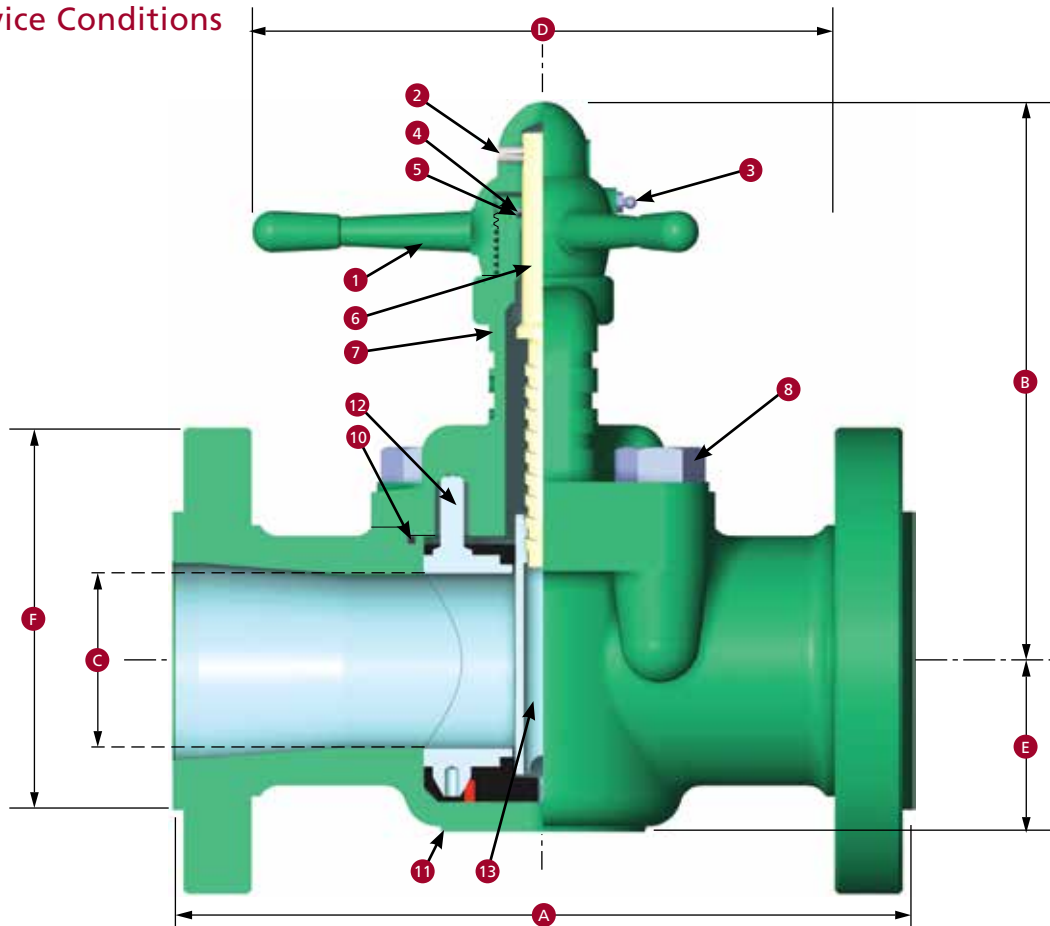
Key No.	Qty.	Description	Valve Size: 5" (125 mm) FP	Valve Size: 6" (150 mm) x 5" (125 mm) RP
			3000 WP General/(NACE)	5000 WP General/(NACE)
		Assembly Base Part Number	J021954/(TBA)	J023925/(TBA)
		Full Port – Threaded		J025086/(TBA)
		Reduced Port – Weld	-	
1	1	Handwheel		2227656-01
		Ductile Iron ASTM A536 Grade 65-45-12		
2	1	Screw – Handwheel		J014832
		Steel AISI C1018		
3	4	Screw – Retainer		J005665-32028
		Alloy Steel		
4	1	Downstop Ring		J021942
		Steel AISI C1018		
* 5	1	Stem Seal Assembly w/Bushing		J015853-00X
		-001 Buna-N, -006 FKM		
6	1	Stem	J021943-00X	J021943-009
		-002 303 SS -009, 17-4 pH SS		
7	1	Bonnet		J021944-03X
		Cast Steel ASTM A487 Grade 4 Class C		
		Coatings		Uncoated -030, DEMCO 12 -035
8	12	Body Stud		J015432
		Steel ASTM A193 Grade B7		
9	12	Body Stud Nut		2709000-10-01
		Steel ASTM A194 Grade 2H		
* 10	1	Bonnet Seal		J005526-367
		Buna-N		J005531-367
		FKM		
11	1	Body Materials		Consult Cameron for Body Part Numbers
		ASTM A487 Grade 4 Class A		
		Coatings (Except Weld End Bodies):		
		DEMCO 12		
* 12	1	Seat Assembly	J021948-011	J021948-019
			J021948-012	-
			J021948-081	-
			J021948-082	-
		Materials		Inserts: -01X Steel AISI 1040, -08X 316 SS (3000 WP Only)
				Elastomers: -0X1 Buna-N, -0X2 FKM, -0X9 90 Duro Buna-N
* 13	1	Gate	J021952-00X	J021952-002
		-002 Steel AISI 4140 Nickel Plated, 008 316 SS (3000 WP Only)		
14	1	Stem Screw Seal		J005526-228
		Buna-N		
18	1	Stem Screw w/Bearings	J023888	-
		Steel AISI C1018, Steel Bearings		J024526
		AL. BRZ. ASTM B148 Alloy 955, Steel Bearings		
19	1	Housing		J015332
		Steel AISI C1018		
20	1	Secondary Seal		J005526-216
		Buna-N		
21	1	Retainer		J015330
		Steel AISI C1018		
22	4	Screw – Housing		J005650-32056
		Steel		
23	1	Tube		J012852
		Clear Acrylic		
24	1	Stem Cap		J015855
		Ductile Iron ASTM A536 Grade 65-45-12		
25	1	Lube Fitting		005929-18
		Steel		
26	1	Relief Fitting		J051971
		Steel		

* Recommended spare parts – One each for one year of service.

SERIES DM GATE VALVES – ASME CLASS 600

2" (50 mm) Full Port

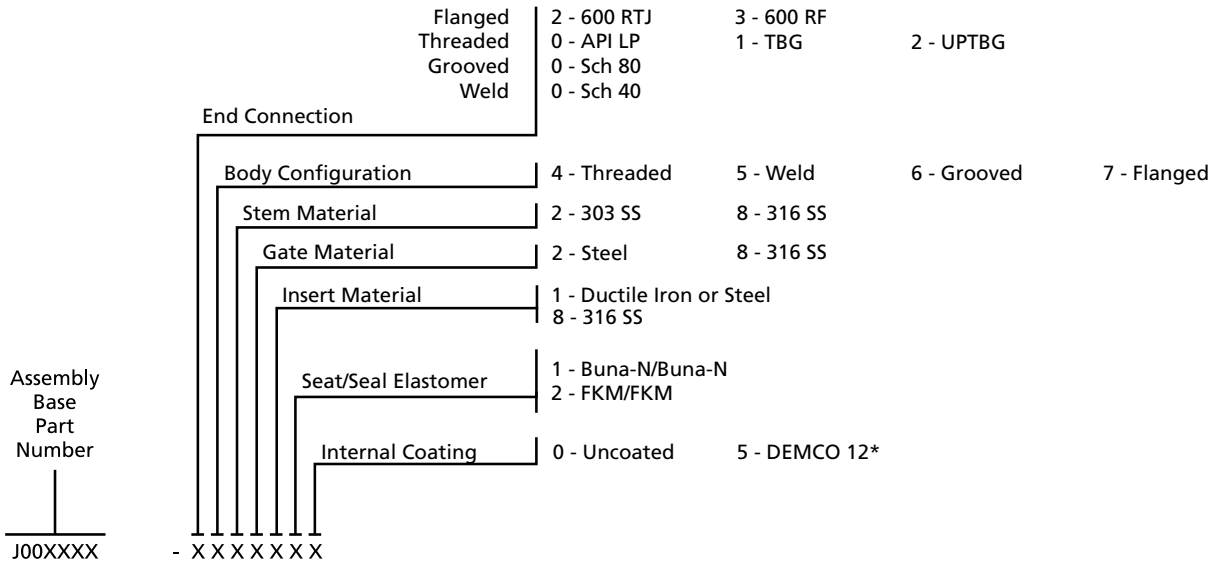
2" (50 mm) Reduced Port for
General Service Conditions



Dimensional Data and Weights

Dimension	Valve Size: 2" x 1-1/2" (50 mm x 40 mm) RP	Valve Size: 2" (50 mm) FP
	ASME Class 600	ASME Class 600
A Full Port – Threaded, Weld and Grooved	7.75 (197)	8.88 (226)
Reduced Port – Threaded	-	7.75 (197)
Flanged – RF	-	11.50 (292)
Flanged – RTJ	-	11.62 (295)
B (Open) – Full Port	7.75 (197)	8.75 (222)
(Open) – Reduced Port	-	7.75 (197)
C (Seat Bore) – Full Port	1.62 (41)	2.00 (50)
(Seat Bore) – Reduced Port	-	1.62 (41)
D Full Port	9.50 (241)	11.00 (279)
Reduced Port	-	9.50 (241)
E Full Port	2.00 (50)	2.19 (56)
Reduced Port	-	2.00 (50)
F Flange OD	-	6.50 (165)
Flange Bolts (Qty., Size: in.)	-	8 – 5/8
Ring Number (RTJ)	-	R-23
Weight lb (kg)		
Full Port – Threaded, Weld and Grooved	20 (9)	26 (12)
Reduced Port – Threaded	-	20 (9)
Full Port – Flanged	-	44 (20)
Reduced Port – Flanged	-	40 (18)

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.
 *Internal coating only, weld end bodies are not available with internal or external coatings

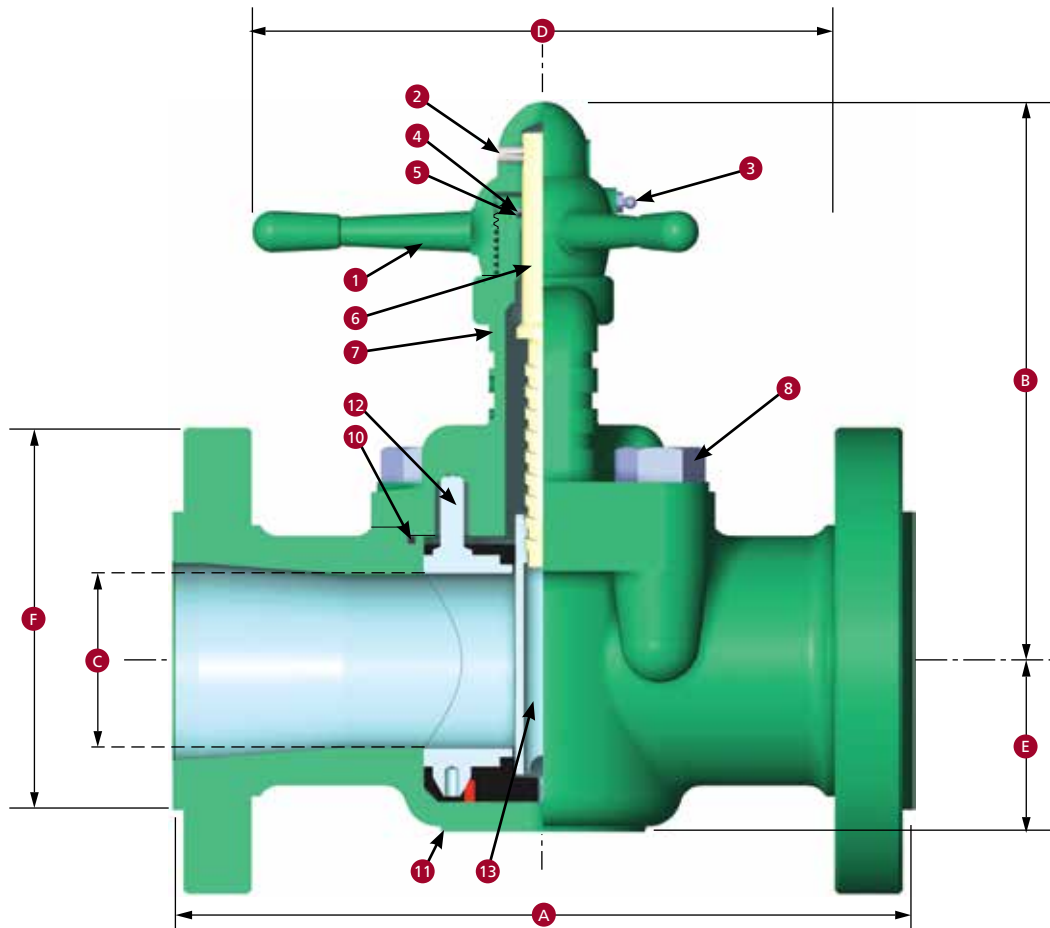
Parts List

Key No.	Qty.	Description	Valve Size: 2" x 1-1/2" RP (50 mm x 40 mm) RP		
			ASME Class 600	Valve Size: 2" FP (50 mm) FP ASME Class 600	
		Assembly Base Part Number	Full Port – Threaded	J003938	J001072
			– Weld	-	J001092
			– Grooved	-	J001082
			– Flanged	-	J001062
1	1	Handle	Ductile Iron ASTM A536 Grade 65-45-12	J004375	J001276
2	1	Stem Pin	Spring Steel	J005445-25020	J005445-37528
3	1	Lube Fitting	Steel	005929-18	005929-18
4	1	Backup Ring	Chrome Leather	J005532-115	J005532-211
5	1	Stem Seal	Buna-N	J005526-115	J005526-211
			FKM	J005531-115	J005531-211
6	1	Stem	303 SS -002, 316 SS -008	J004376-XXX	J001279-XXX
7	1	Bonnet	Ductile Iron ASTM A395	-	-
			Steel ASTM A216 Grade WCB	J004330-02X	J001277-02X
			Coatings		Uncoated -0X0 DEMCO 12 -0X5
8	4	Body Screw	SAE Grade 5	J005651-32024	J005651-32024
10	1	Bonnet Seal	Buna-N	J005526-234	J005526-239
			FKM	J005531-234	J005531-239
11	1	Body Materials	2" (50 mm) Full Class 400 Threaded, Grooved and Flanged: Ductile Iron ASTM A395 2" (50 mm) Full Class 600 Threaded, Weld and Grooved: Forged Steel AISI C1029 Normalized All Others: Steel, ASTM A216 Grade WCB Coatings (Except Weld End Bodies): DEMCO 12	Consult Cameron for Body Part Numbers	
12	1	Seat	Materials	J004081-0XX Inserts: -01X Ductile Iron ASTM A395 or Steel AISI 1040 -08X Stainless Steel ASTM A351 Grade CF8M Annealed Elastomers: -0X1 Buna-N, -0X2 FKM	J001876-0XX
13	1	Gate	Materials: -002 Steel, Nickel Plated -008 Stainless Steel	J004393-00X AISI C1144 AISI 316 Annealed	J001275-00X AISI C1045 ASTM A351 CF8M Annealed

SERIES DM GATE VALVES – ASME CLASS 600

2-1/2" (65 mm) through 6" (150 mm) Full Port

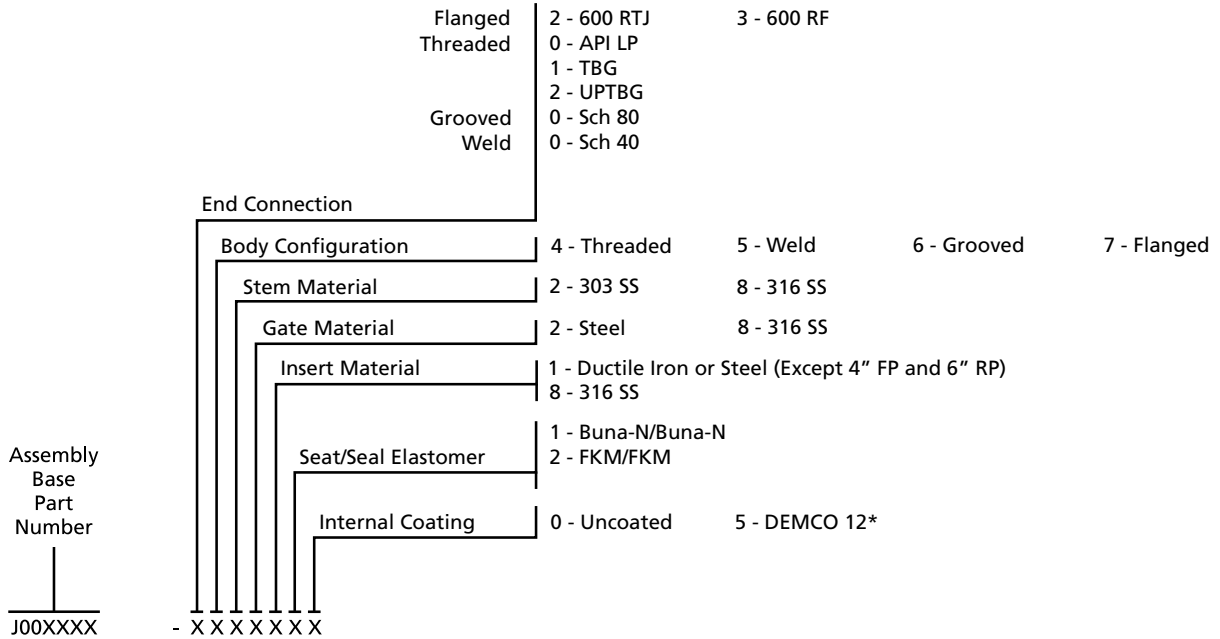
8" (200 mm) Reduced Port for General Service Conditions



Dimensional Data and Weights

Dimension	2-1/2" (65 mm) FP	3" (80 mm) FP	4" (100 mm) FP	6" (150 mm) FP	8" x 6" (200 x 150 mm) RP
	ASME Class 600	ASME Class 600	ASME Class 600	ASME Class 600	ASME Class 600
A Threaded, Weld and Grooved	10.00 (254)	10.25 (260)	11.88 (302)	15.50 (394)	-
Flanged – RF	13.00 (330)	14.00 (356)	17.00 (432)	22.00 (559)	26.00 (660)
Flanged – RTJ	13.12 (333)	14.12 (359)	17.12 (435)	22.12 (562)	26.12 (663)
B (Open) – Full Port	10.62 (270)	11.38 (289)	13.88 (353)	19.25 (489)	-
(Open) – Reduced Port	-	-	-	-	19.25 (489)
C (Seat Bore) – Full Port	2.50 (65)	3.00 (80)	4.00 (100)	6.00 (150)	-
(Seat Bore) – Reduced Port	-	-	-	-	6.00 (150)
D Full Port	12.62 (321)	12.62 (321)	14.25 (362)	24.00 (610)	-
Reduced Port	-	-	-	-	24.00 (610)
E Full Port	2.75 (70)	3.19 (81)	3.94 (100)	5.62 (143)	-
Reduced Port	-	-	-	-	5.62 (143)
F Flange OD	7.50 (191)	8.25 (210)	10.75 (273)	14.00 (356)	16.50 (419)
Flange Bolts (Qty., Size: in.)	8 – 3/4	8 – 3/4	8 – 7/8	12 – 1	12 – 1-1/8
Ring Number (RTJ)	R-26	R-31	R-37	R-45	R-49
Weight lb (kg)					
FP – Threaded, Weld and Grooved	48 (22) 50 (23)	58 (26) 60 (27)	98 (44)	310 (141)	-
FP – Flanged	70 (32) 74 (34)	90 (41) 96 (44)	176 (80)	428 (194)	-
RP – Flanged	-	-	-	-	590 (268)

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.

*Internal coating only, weld end bodies are not available with internal or external coatings

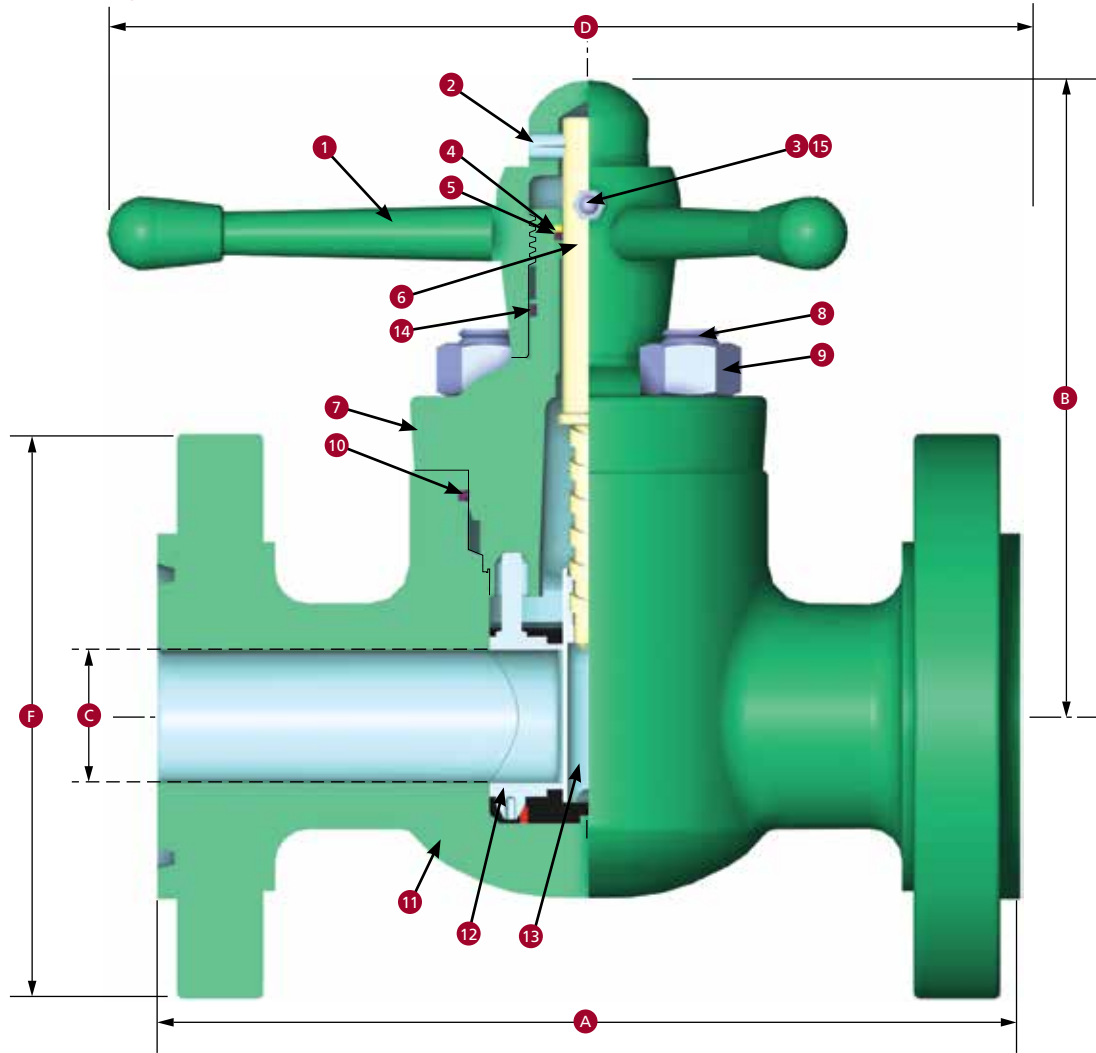
Parts List

Key No.	Qty.	Description	Valve Size	Valve Size	Valve Size	Valve Size	
			2-1/2" (65 mm) FP	3" (80 mm) FP	4" (100 mm) FP	6" (150 mm) FP 8" (200) RP	
			ASME Class 600	ASME Class 600	ASME Class 600	ASME Class 600	
		Assembly Base Part Number	Full Port – Threaded	J001074	J001076	J001078	J001080
			– Weld	J001094	J001096	J001098	J001100
			– Grooved	J001084	J001086	J001088	J001090
			– Flanged	J001064	J001066	J001068	J001070
			Reduced Port – Flanged	-	-	-	J003945
1	1	Handle	Ductile Iron ASTM A536 Grade 65-45-12	J001290	J001290	J001849	J001850
2	1	Stem Pin	Spring Steel	J005445-37528	J005445-37528	J005445-37532	J005445-37532
3	1	Lube Fitting	Steel	005929-18	005929-18	005929-18	005929-18
4	1	Backup Ring	Chrome Leather	J005532-212	J005532-212	J005532-214	J005532-214
5	1	Stem Seal	Buna-N	J005526-212	J005526-212	J005526-214	J005526-214
			FKM	J005531-212	J005531-212	J005531-214	J005531-214
6	1	Stem	303 SS -002, 316 SS -008	J001291-XXX	J001291-XXX	J001853-XXX	J001854-XXX
7	1	Bonnet	ASTM A395 Ductile Iron	-	J001856-01X	-	J001858-01X
			ASTM A216 Grade WCB	J001293-02X	-	J001857-01X	-
			Coatings	-	J001856-02X	-	J001857-02X
				-	Uncoated -0X0, DEMCO 12 -0X5	-	J001858-02X
8	4	Body Stud	ASTM A193 Grade B7	J002066	J001861	J001862	J001863
9	4	Body Stud Nut	ASTM A194 Grade 2H	2709000-08-01	2709000-09-01	2709000-10-01	2709000-14-01
10	1	Bonnet Seal	Buna-N	J005526-245	J005526-249	J005526-258	J005526-446
			FKM	J005531-245	J005531-249	J005531-258	J005531-446
11	1	Body Materials	Class 400 3" (80 mm) Full Port through 6" (150 mm) Full Port Threaded, Grooved and Flanged: Ductile Iron ASTM A395 All Others: Steel, ASTM A216 Grade WCB Coatings (Except Weld End Bodies): DEMCO 12	Consult Cameron For Body Part Numbers			
12	1	Seat	Materials	J001877-0XX	J001878-0XX	J002207-0XX	J001880-0XX
				Inserts: -01X Ductile Iron ASTM A395 or Steel AISI 1040 2-1/2", 3", 6" -02X Steel AISI 1040 4" -08X Stainless Steel ASTM A351 Grade CF8M Annealed Elastomers: -0X1 Buna-N, -0X2 FKM			
13	1	Gate	Materials	J001881-00X	J001882-00X	J001883-00X	J001884-00X
				-002 Steel AISI 1045, Nickel Plated, -008 316 SS Annealed			

SERIES DM GATE VALVES – ASME CLASSES 900 AND 1500

2" (50 mm) through 6" (150 mm) Full Port

2" (50 mm) through 3" (80 mm) Full Port

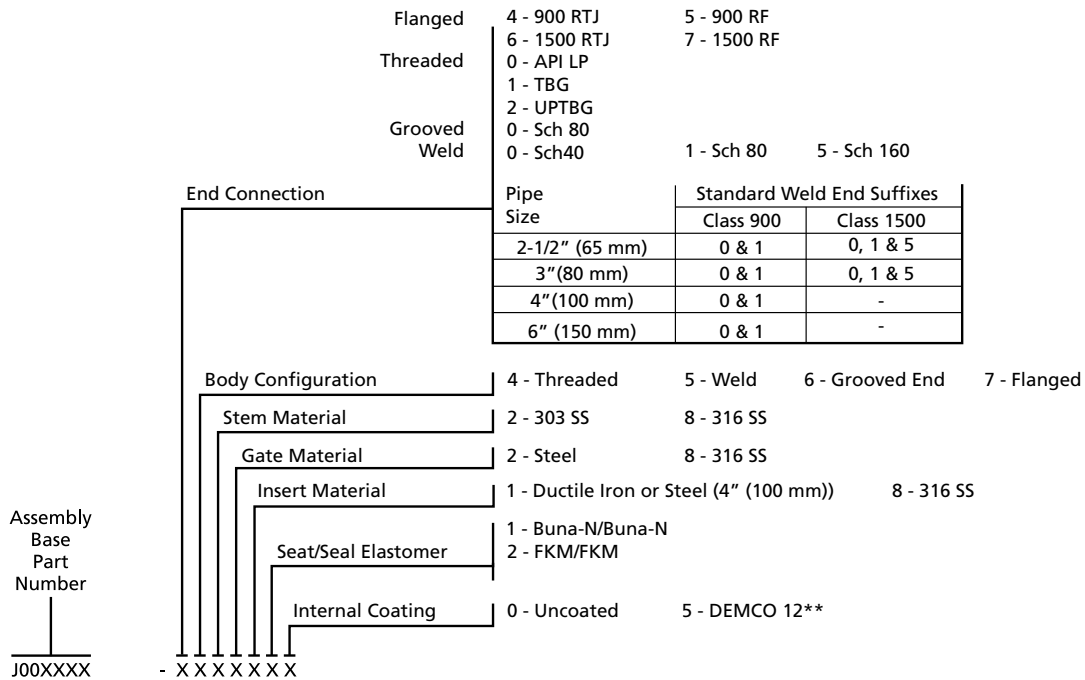


Dimensional Data and Weights

Dimension	Valve Size					
	2" (50 mm) FP	2-1/2" (65 mm) FP	3" (80 mm) FP		4" (100 mm) FP	6" (150 mm) FP
	ASME Class 1500	ASME Classes 900 and 1500	ASME Class 900	ASME Class 1500	ASME Class 900	ASME Class 900
A	Threaded, Weld and Grooved N/A*	9.75 (248)	11.00 (279)	11.00 (279)	13.00 (330)	20.00 (508)
	Flanged – RF	16.50 (419)	15.00 (381)	18.50 (470)	18.00 (457)	24.00 (610)
	Flanged – RTJ	16.62 (422)	15.12 (384)	18.62 (473)	18.12 (460)	24.12 (613)
B	Open	22.88 (581)	12.75 (324)	12.75 (324)	15.00 (381)	19.25 (489)
C	Seat Bore	2.50 (65)	3.00 (80)	3.00 (80)	4.00 (100)	6.00 (150)
D		19.00 (483)	19.00 (483)	19.00 (483)	23.00 (584)	24.00 (610)
F	Flange OD	9.62 (244)	9.50 (241)	10.50 (267)	11.50 (292)	15.00 (381)
	Flange Bolts (Qty., Size: in.)	8 – 7/8	8 – 7/8	8 – 1-1/8	8 – 1-1/8	12 – 1-1/8
	Ring Number (RTJ)	R-27	R-31	R-35	R-37	R-45
Weight lb (kg)						
	Threaded, Weld and Grooved N/A*	87 (39)	95 (43)	113 (51)	140 (64)	325 (147)
	Flanged	170 (77)	160 (73)	205 (93)	230 (104)	540 (245)

* Refer to 2000, 3000, and 5000 threaded, weld, and grooved end on pages 22 and 23.

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.
 **Internal coating only, weld end bodies are not available with internal or external coatings

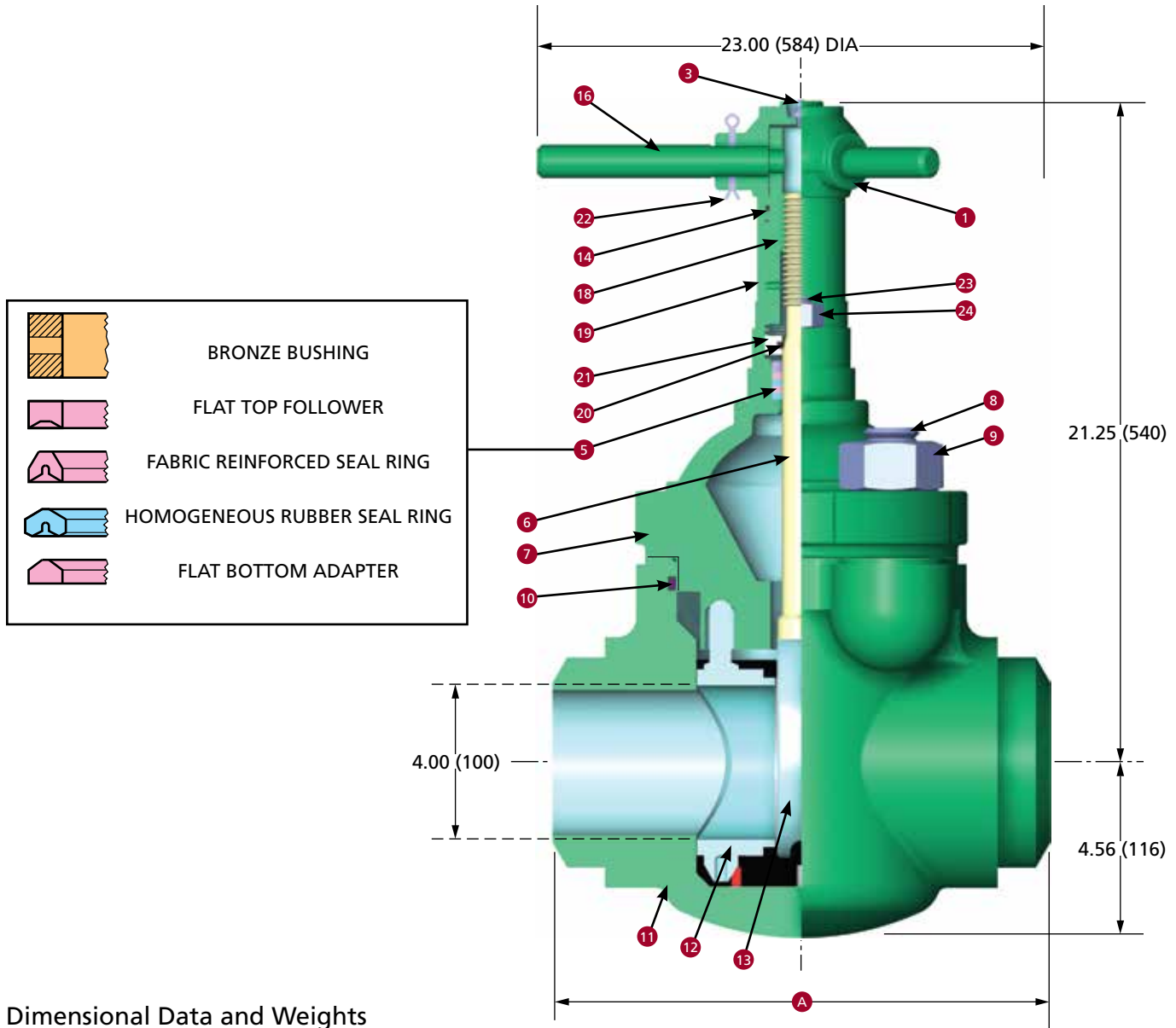
Parts List

Key No.	Qty.	Description	Valve Size							
			2" (50 mm) FP		2-1/2" (65 mm) FP		3" (80 mm) FP		4" (100 mm) JFP	6" (150 mm) FP
			ASME Class 900	ASME Class 1500	ASME Class 900	ASME Class 1500	ASME Class 900	ASME Class 1500	ASME Class 900	ASME Class 900
		Assembly Base Part Number	J003947	J003948	J003951	J003952	J003953	J003957	J003955	J003999
1	1	Handle Ductile Iron ASTM A536 Grade 65-45-12	J023661		J0018195		J0018195		J023663	J001850
2	1	Stem Pin Spring Steel	J005445-37528		J005445-37528		J005445-37528		J005445-37532	
3	1	Lube Fitting Steel	005929-18		005929-18		005929-18		005929-18	
4	1	Backup Ring Chrome Leather	J005532-211		J005532-212		J005532-212		J005532-214	
* 5	1	Stem Seal Buna-N	J005526-211		J005526-212		J005526-212		J005526-214	
		FKM	J005531-211		J005531-212		J005531-212		J005531-214	
6	1	Stem 303 SS -002, 316 SS -008	J004395-XXX		J004396-XXX		J004396-XXX		J004397-00X	J001854-00X
7	1	Bonnet ASTM A487 Grade 4 Class A Coatings	J004320-03X		J004322-03X		J004324-03X	J004326-03X	J004328-03X	J001780-03X
							Uncoated -030, DEMCO 12 -035			
8	4	Body Stud	J002072		J002074		J002072	J002074	J002074	J002077
9	4	Body Stud Nut ASTM A194 Grade 2H	2709000-09-01		2709000-10-01		2709000-09-01		2709000-10-01	J001890
* 10	1	Bonnet Seal Buna-N	J005526-342		J005526-427		J005526-431	J005526-433	J005526-438	J005526-446
		FKM	J005531-342		J005531-427		J005531-431	J005531-433	J005531-438	J005531-446
11	1	Body Materials ASTM A487 Grade 4 Class A or Grade 2 Class B	Consult Cameron for Body Part Numbers							
* 12	1	Seat Assembly Materials	J001876-0XX		J001877-0XX		J001878-0XX		J002207-0XX	J001880-0XX
			Inserts: -01X Ductile Iron ASTM A395 or Steel AISI 1040 -08X 316 SS ASTM A351 Grade CF8M Annealed Elastomers: -0X1 Buna-N, -0X2 FKM							
* 13	1	Gate Materials	J001275-XXX		J001881-XXX		J001882-00X		J001883-00X	J001884-00X
			-002 Nickel Plated Steel AISI 4145 -008 316 SS Wrought Type - 2" (50 mm) Only ASTM A351 CF8M - Others							
14	1	Screw Seal Buna-N	J005526-222		J005526-234		J005526-224		J005526-226	-
15	1	Relief Fitting Steel	J005197		J005197		J005197		J005197	-

* Recommended spare parts – one each for one year of service.

SERIES DM GATE VALVES – ASME CLASS 1500

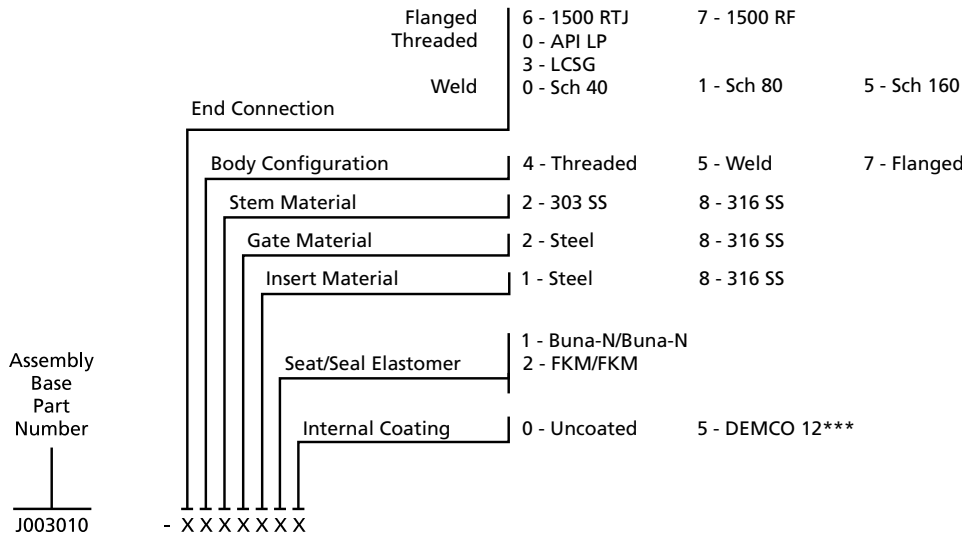
4" (100 mm) Full Port for General Service Conditions



Dimensional Data and Weights

		Valve Size: 4" (100 mm) FP	
		ASME Class 1500	
Dimension	A	Threaded and Weld	13.00 (330)
		Flanged – RF	21.50 (546)
		Flanged – RTJ	21.62 (549)
		Flange OD	12.25 (311)
		Flange Bolts (Qty., Size: in.)	8 – 1-1/4
		Ring Number (RTJ)	R-39
Weight lb (kg)			
	Threaded and Weld		162 (73)
	Flanged		320 (145)

ASSEMBLY PART NUMBER



Consult Cameron For Additional Trim Options.

***Internal coating only, weld end bodies are not available with internal or external coatings

Parts List

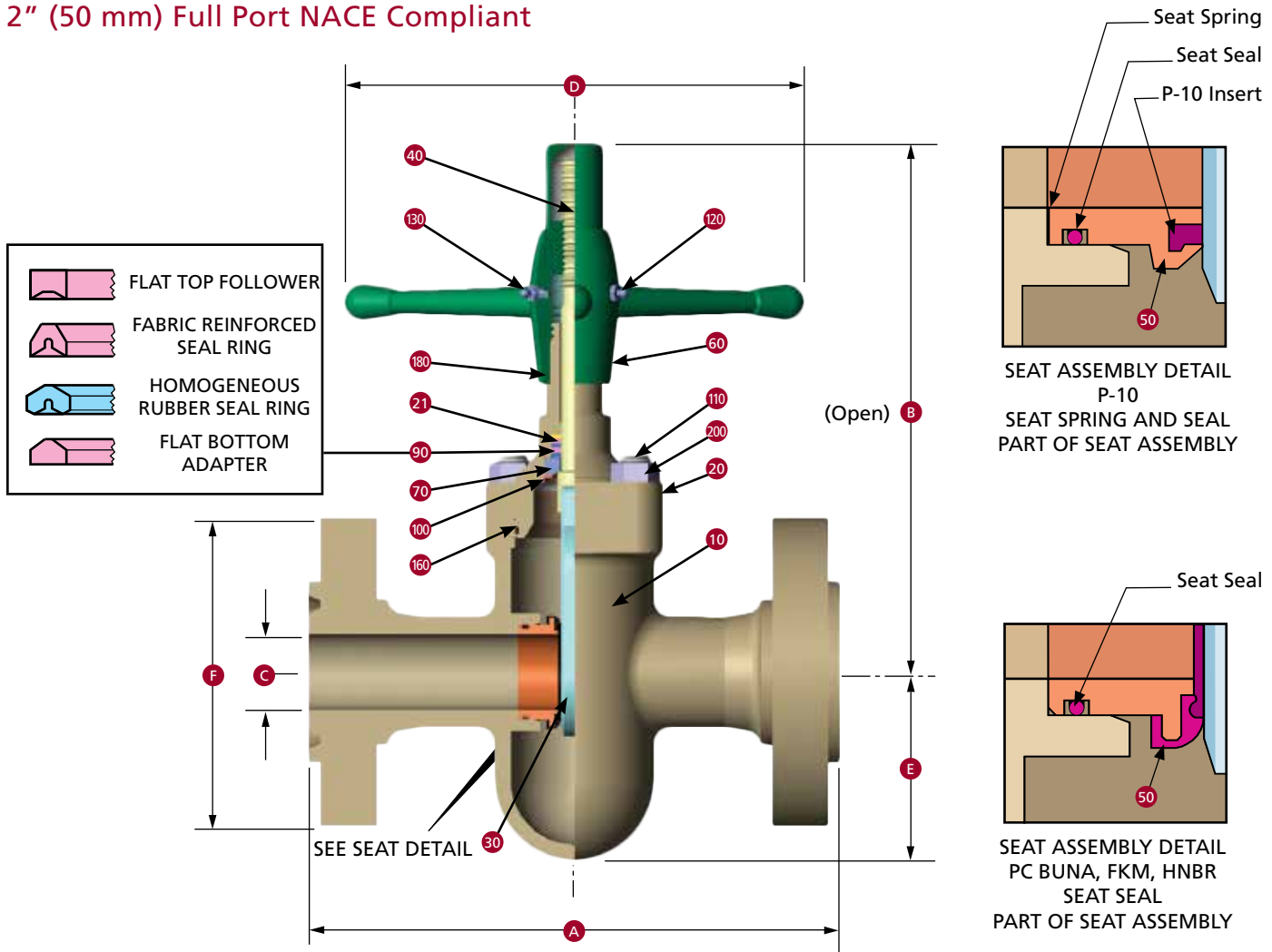
Key No.	Qty.	Description	Valve Size: 4" (100 mm) FP	
			ASME Class: 1500	
		Assembly Base Part Number		J003010
1	1	Handle Assembly	Ductile Iron ASTM A536 Grade 65-45-12	2139714-01
3	1	Lube Fitting	Steel	005929-18
* 5	1	Stem Seal Assembly	Buna-N	J001951-001
			FKM	J001951-006
6	1	Stem	303 SS -002, 316 SS -008	J001933-XXX
7	1	Bonnet	ASTM A487 Grade 4 Class A or Class B	J001977-XXX
			Coatings	Uncoated -030, DEMCO 12 -035
8	4	Body Stud	ASTM A193 Grade B7	**J0024500
9	4	Body Stud Nut	ASTM A194 Grade 2H	**2709000-12-01
* 10	1	Bonnet Seal	Buna-N	J005526-439
			FKM	J005531-439
11	1	Body Materials	ASTM A487 Grade 4 Class A or Grade 2 Class B	Consult Cameron for Body Part Numbers
* 12	1	Seat	Materials	J002207-0XX Inserts: -02X Steel AISI 1040 -08X 316 SS ASTM A351 Grade CF8M Annealed Elastomers: -0X1 Buna-N, -0X2 FKM
* 13	1	Gate	Materials	J001926-XXX -002 AISI 4140 Nickel Plated -008 ASTM A351 Grade CF8M
14	1	Screw Seal	Buna-N	J005526-227
16	1	Lock Handle	AISI C1213	J001897
18	1	Stem Screw	AISI C1213	J001915
19	1	Screw Housing	AISI 1029	J001958
* 20	1	Secondary Seal	Buna-N	J005526-214
21	1	Retainer	AISI C1213	J001942
22	1	Pin, Lock Handle	Steel	J005420-18732
23	2	Bonnet Stud	ASTM A193 Grade B7	J002072
24	2	Body Stud Nut	ASTM A194 Grade 2H	2709000-09-01

* Recommended spare parts – one each for one year of service.

** Valves made prior to 1994 may use 7 pitch stud J002075 and nut J053251-042.

SERIES DT GATE VALVES – ASME CLASSES 600, 900, AND 1500

2" (50 mm) Full Port NACE Compliant



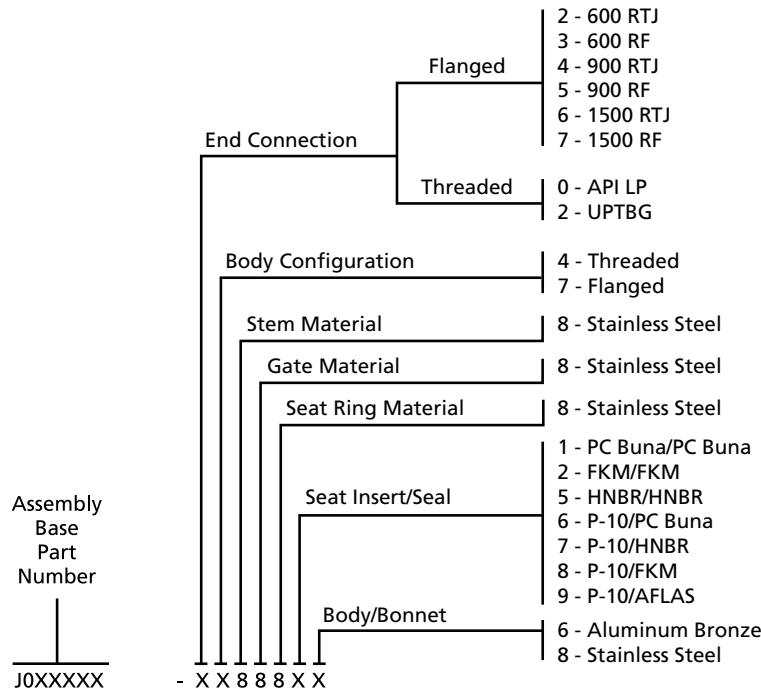
Dimensional Data and Weights

Dimension	Valve Size: 2" (50 mm) FP		
	ASME Class 600	ASME Class 900	ASME Class 1500
A	Threaded Flanged – RF Flanged – RTJ	- 8.50 (216) 14.50 (368)	8.50 (216) 14.50 (368) 14.62 (371)
B	(Open)	15.54 (395)	15.54 (395)
C	(Seat Bore)	2.06 (52)	2.06 (52)
D		14.50 (368)	14.50 (368)
E		5.00 (127)	5.25 (133)
F	Flange OD Flange Bolts (Qty., Size: in.) Ring Number (RTJ)	6.50 (165) 8 – 5/8 R-23	8.50 (216) 8 – 7/8 R-24
Weight lb (kg)			
	Threaded	-	44 (20)
	Flanged	48 (22)	82 (37)

Working Pressure (psi)

End Connection	Material	ASME Class 600	ASME Class 900	ASME Class 1500
Threaded	Bronze	-	2220	3705
	Stainless Steel	-	2220	3705
Flanged	Bronze	1480	2220	3705
	Stainless Steel	1440	2160	3600

ASSEMBLY PART NUMBER

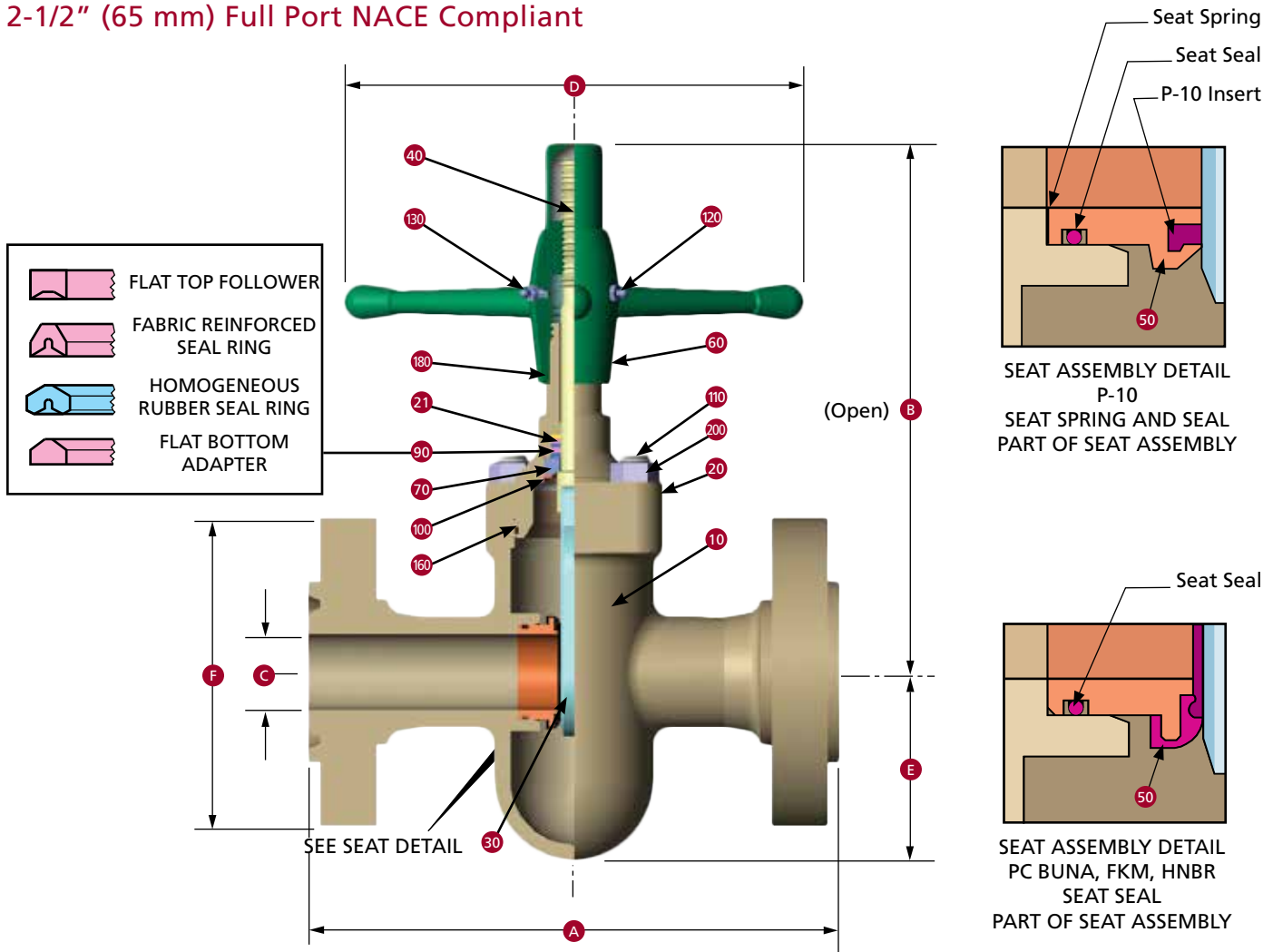


Parts List

Key No.	Qty.	Description	Valve Size: 2" (50 mm) FP		Material Specification (See Note 1)
			ASME Class 600	ASME Class 900/1500	
10	1	Assembly Base Part Number Body	J024997	J024998/J024999	Aluminum Bronze ASTM B148 Alloy 955 Stainless Steel CF8M
20	1	Bonnet	2060241-11 2060241-12	J024323-060 J024660-080	Aluminum Bronze ASTM B148 Alloy 955 Stainless Steel CF8M
21	1	Stem Bushing (f/SS Bonnet)		J024661-060	Bronze ASTM B505 Alloy 93200
30	1	Gate	1, 2, 5 6, 7, 8, 9	J024558-008 J024559-008	Stainless Steel CF8M
40	1	Stem		J024089-008	316 SS
50	2	Seat Assembly (See Note 2)	1 2 5 6 7 8 9	2061588-01 2061589-01 2227057-01 2061590-01 2227058-01 Consult Cameron for Assembly Part Numbers Consult Cameron for Assembly Part Numbers	Ring: CF8M; Elastomer: Buna-N Ring: CF8M; Elastomer: FKM Ring: CF8M; Elastomer: HNBR Ring: CF8M; Insert: PEEK; Seal: Buna-N Spring: INCONEL® X-750 Ring: CF8M; Insert: PEEK; Seal: HNBR Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: HNBR Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: AFLAS Spring: INCONEL X-750
60	1	Handle		2139937-01	Ductile Iron ASTM A536 Grade 65-45-12
70	1	Stem Packing Retainer		J024324-008	316 SS
90	1	Stem Seal Assembly		J024882-601	Teflon/Elgiloy
100	1	Retainer Snap Ring		J090066-162	PH 15-7 Mo
110	4	Stud	219066-07-02-21	219066-08-02-61	ASTM A193 B7M/Zinc-Plated
120	1	Lube Fitting		005929-18	Steel
130	1	Vent Fitting		2726258-01	Steel
160	1	Bonnet Seal (See Note 2)	1, 6 2, 8 5, 7 9	J005520-234 J005521-234 2712425-37 2788035-08 J005526-219	Buna-N FKM HNBR AFLAS Buna-N
180	1	Handle Seal		J005526-219	Buna-N
200	4	Nut	2709000-07-11	2709000-08-11	ASTM A194 2HM/Zinc-Plated

Notes: 1. CF8M is ASTM A351 Grade CF8M annealed. 316 SS is AISI Type 316 SS annealed.
2. These parts are keyed to the assembly part number. "Seat insert/seal" code numbers indicated.

SERIES DT GATE VALVES – ASME CLASSES 600, 900, AND 1500
 2-1/2" (65 mm) Full Port NACE Compliant



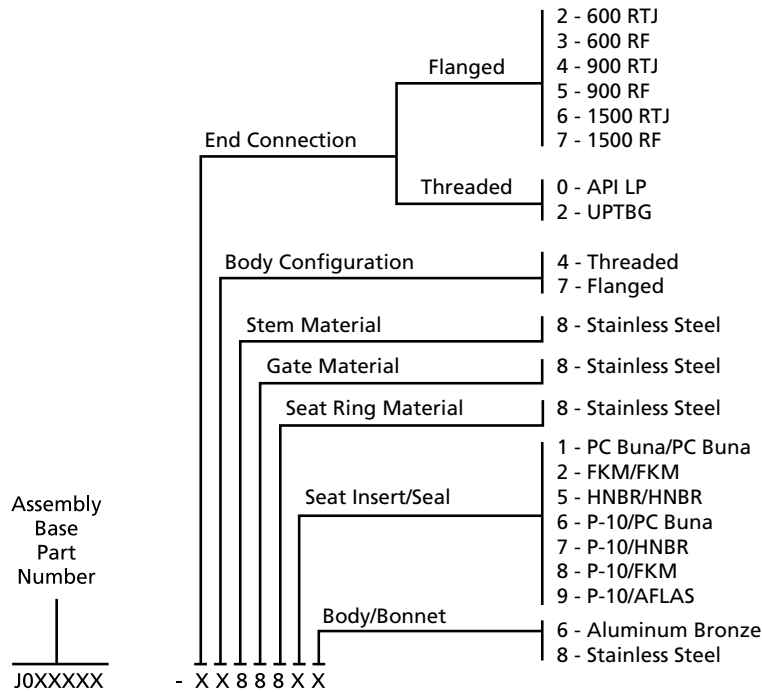
Dimensional Data and Weights

Dimension	Valve Size: 2-1/2" (65 mm) FP		
	ASME Class 600	ASME Class 900	ASME Class 1500
A	Threaded -	8.75 (222)	8.75 (222)
	Flanged – RF	16.50 (419)	16.50 (419)
	Flanged – RTJ	13.12 (333)	16.62 (422)
B	(Open) - Bronze	18.18 (462)	18.18 (462)
	- Stainless Steel	18.18 (462)	19.42 (493)
C	(Seat Bore)	2.56 (65)	2.56 (65)
D		14.75 (375)	14.75 (375)
E		6.12 (155)	6.38 (162)
F	Flange OD	7.50 (191)	9.62 (244)
	Flange Bolts (Qty., Size: in.)	8 – 3/4	8 – 1
	Ring Number (RTJ)	R-26	R-27
Weight lb (kg)			
	Threaded	-	57 (26)
	Flanged	77 (35)	110 (50)

Working Pressure (psi)

End Connection	Material	ASME Class 600	ASME Class 900	ASME Class 1500
Threaded	Bronze	-	2220	3705
	Stainless Steel	-	2220	3705
Flanged	Bronze	1480	2220	3705
	Stainless Steel	1440	2160	3600

ASSEMBLY PART NUMBER



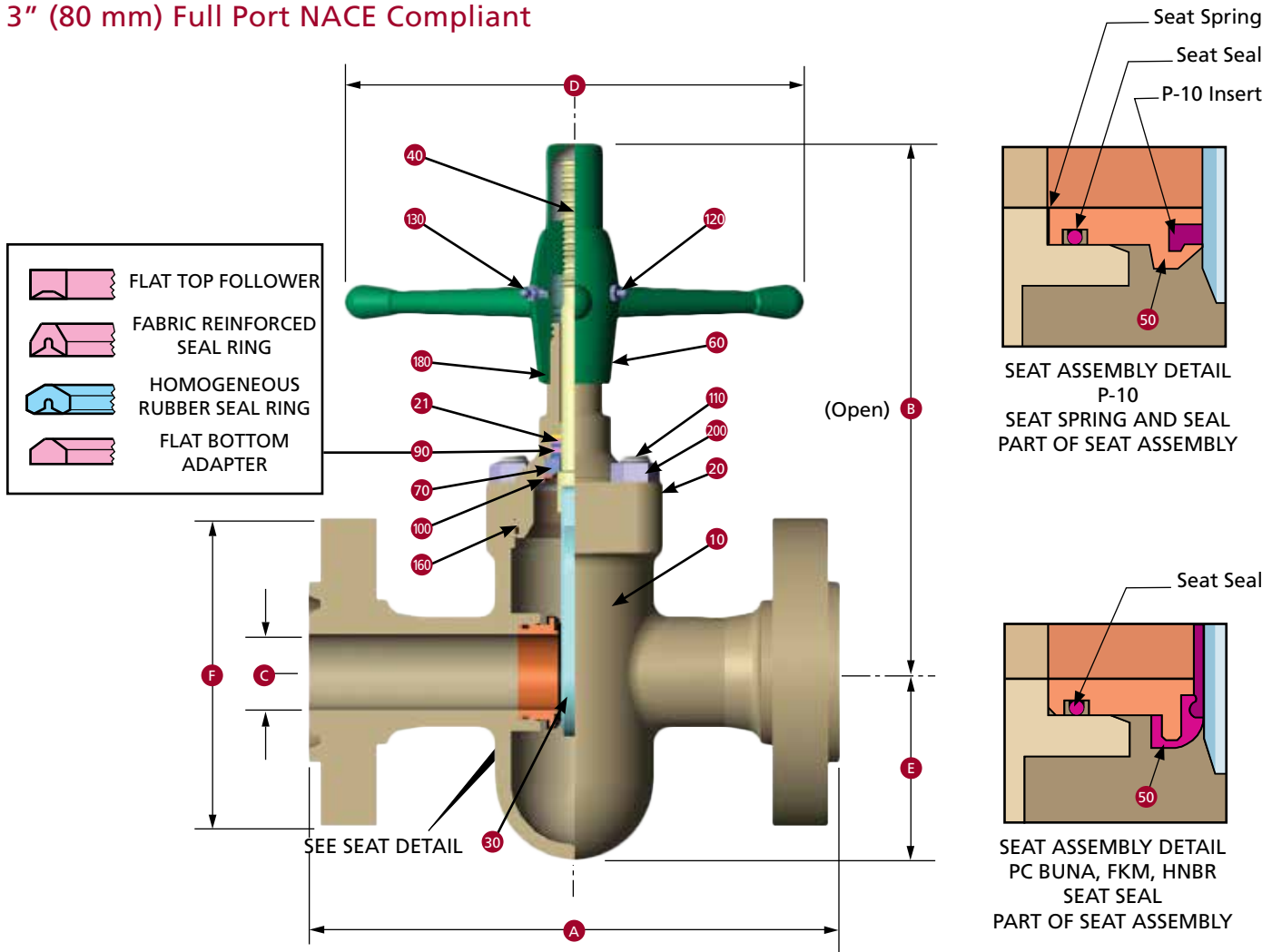
Parts List

Key No.	Qty.	Description	Valve Size: 2-1/2" (65 mm) FP		Material Specification (See Note 1)
			ASME Class 600	ASME Class 900/ 1500	
		Assembly Base Part Number	J025000	J025001/J025002	
10	1	Body	Consult Cameron for Body Part Numbers		Aluminum Bronze ASTM B148 Alloy 955 Stainless Steel CF8M
20	1	Bonnet	Aluminum Bronze Stainless Steel	2139015-11 2139020-11 2139015-12 2061920-01	Aluminum Bronze ASTM B148 Alloy 955 Stainless Steel CF8M
21	1	Stem Bushing (f/SS Bonnet)		J024676-060	Bronze ASTM B150 Alloy C63000
30	1	Gate (See Note 2)	1, 2, 5 6, 7, 8, 9	2060265-01 2060266-01	Stainless Steel CF8M
40	1	Stem	f/ Aluminum Bronze Valve f/ Stainless Steel Valve	2060256-02 2061921-01	316 SS
50	2	Seat Assembly (See Note 2)	1 2 5 6 7 8 9	2061588-02 2061589-02 Consult Cameron for Seat Assembly Part Numbers 2061590-02 Consult Cameron for Seat Assembly Part Numbers Consult Cameron for Seat Assembly Part Numbers Consult Cameron for Seat Assembly Part Numbers	Ring: CF8M; Elastomer: Buna-N, Peroxide-Cured Ring: CF8M; Elastomer: FKM Ring: CF8M; Elastomer: HNBR Ring: CF8M; Insert: PEEK; Seal: Buna-N Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: HNBR Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: FKM Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: AFLAS Spring: INCONEL X-750
60	1	Handle		2227862-01	Ductile Iron ASTM A536 Grade 65-45-12
70	1	Stem Packing Retainer		2060259-08	316 SS
90	1	Stem Seal Assembly		J024882-603	Teflon/Elgiloy
100	1	Retainer Snap Ring		J090066-162	PH 15-7 Mo
110	4	Stud	219066-07-02-21	219066-09-03-21	ASTM A193 B7M/Zinc-Plated
120	1	Lube Fitting		005929-18	Steel
130	1	Vent Fitting		2726258-01	Steel
160	1	Bonnet Seal (See Note 2)	1, 6 2, 8 5, 7 9	J005520-239 J005521-239 2712425-08 2788035-08 J005526-221	Buna-N FKM HNBR AFLAS Buna-N
180	1	Handle Seal		J005526-221	Buna-N
200	4	Nut	2709000-07-11	2709000-09-11	ASTM A194 2HM/Zinc-Plated

Notes: 1. CF8M is ASTM A351 Grade CF8M annealed. 316 SS is AISI Type 316 SS annealed.
2. These parts are keyed to the assembly part number. "Seat insert/seal" code numbers indicated.

SERIES DT GATE VALVES – ASME CLASSES 600, 900, AND 1500

3" (80 mm) Full Port NACE Compliant



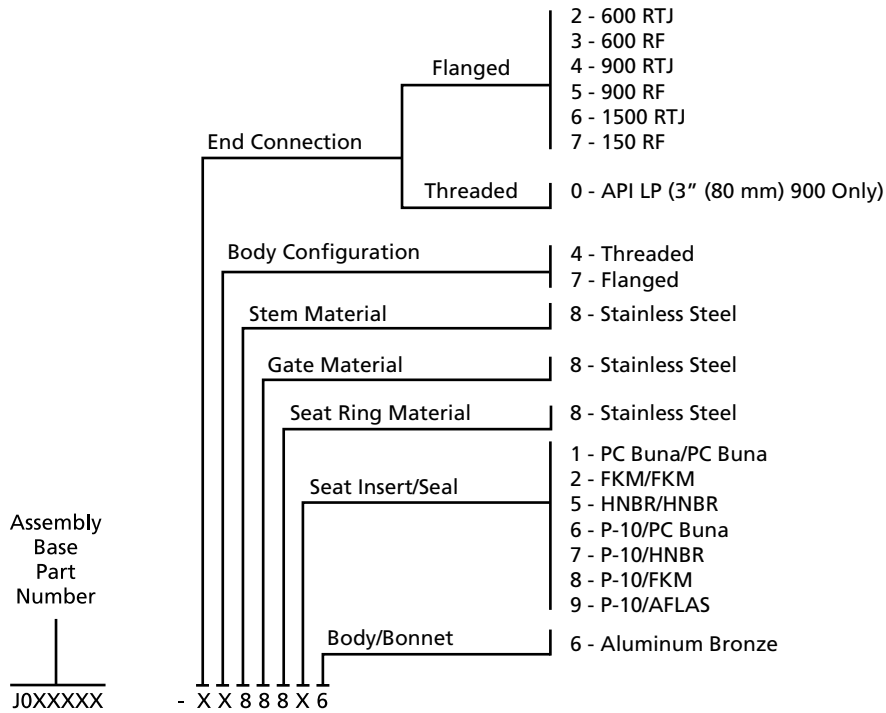
Dimensional Data and Weights

Dimension	Valve Size: 3" (80 mm) FP		
	ASME Class 600	ASME Class 900	ASME Class 1500
A	Threaded -	9.69 (246)	-
	Flanged – RF	15.00 (381)	18.50 (470)
	Flanged – RTJ	14.12 (359)	18.62 (373)
B	(Open)	19.50 (495)	20.31 (516)
C	(Seat Bore)	3.12 (79)	3.12 (79)
D		14.75 (375)	18.00 (457)
E		6.81 (173)	7.15 (182)
F	Flange OD	8.25 (210)	9.50 (241)
	Flange Bolts (Qty., Size: in.)	8 – 3/4	8 – 7/8
	Ring Number (RTJ)	R-31	R-31
Weight lb (kg)			
	Threaded	-	75 (34)
	Flanged	100 (45)	125 (57)
			185 (84)

Working Pressure (psi)

End Connection	Material	ASME Class 600	ASME Class 900	ASME Class 1500
Threaded	Bronze	-	2220	-
Flanged	Bronze	1480	2220	3705

ASSEMBLY PART NUMBER



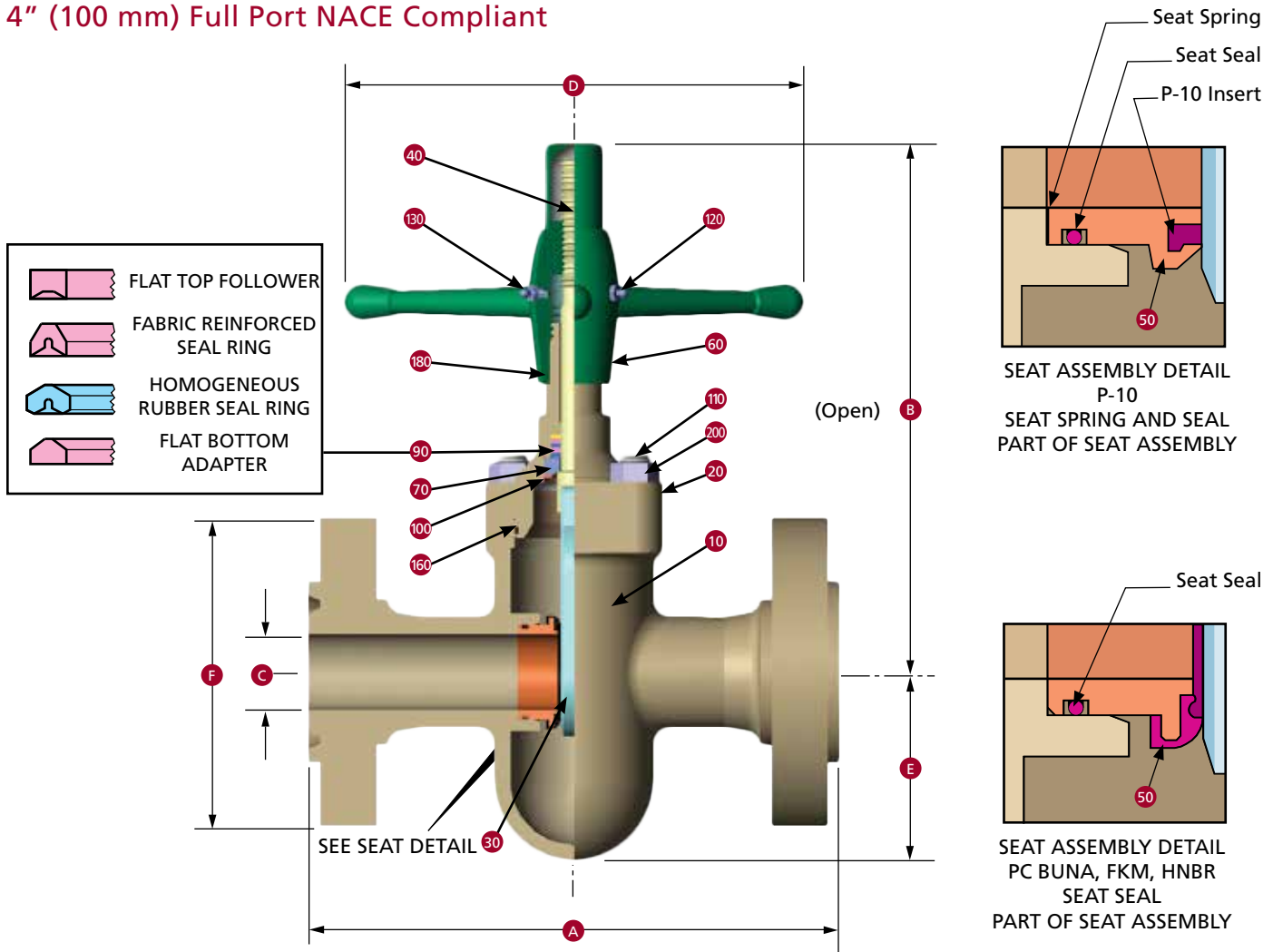
Parts List

Key No.	Qty.	Description	Valve Size: 3" (80 mm) FP			Material Specification (See Note 1)
			ASME Class 600	ASME Class 900	ASME Class 1500	
		Assembly Base Part Number	J025003	J025004	J025005	
10	1	Body	Consult Cameron for Body Part Numbers			Aluminum Bronze ASTM B148 Alloy 955
20	1	Bonnet	J024624-006		J024642-006	Aluminum Bronze ASTM B148 Alloy 955
30	1	Gate (See Note 2)		J024621-008 J024623-008		Stainless Steel CF8M
40	1	Stem		J024620-008	J024820-008	316 SS
50	2	Seat Assembly (See Note 2)		2061588-03 2061589-03		Ring: CF8M; Elastomer: Buna-N Ring: CF8M; Elastomer: FKM
				Consult Cameron for Seat Assembly Part Numbers		Ring: CF8M; Elastomer: HBNR
				2061590-03		Ring: CF8M; Insert: PEEK; Seal: Buna-N Spring: INCONEL X-750
				Consult Cameron for Seat Assembly Part Numbers		Ring: CF8M; Insert: PEEK; Seal: HPNR Spring: INCONEL X-750
				Consult Cameron for Seat Assembly Part Numbers		Ring: CF8M; Insert: PEEK; Seal: FKM Spring: INCONEL X-750
				Consult Cameron for Seat Assembly Part Numbers		Ring: CF8M; Insert: PEEK; Seal: AFLAS Spring: INCONEL X-750
60	1	Handle	2139931-01		2139932-01	Ductile Iron ASTM A536 Grade 65-45-12
70	1	Stem Packing Retainer		2060259-08		316 SS
90	1	Stem Seal Assembly		J024882-603		Filled PTFE/Elgiloy
100	1	Retainer Snap Ring		J090066-162		PH 15-7 Mo
110	4	Stud	219066-09-03-21		219066-10-03-61	ATM A193 B7M/Zinc-Plated
120	1	Lube Fitting		005929-18		Steel
130	1	Relief Fitting		2726258-01		Steel
160	1	Bonnet Seal (See Note 2)		J005520-244 J005521-244		Buna-N FKM
				Consult Cameron for Bonnet Seal Part Numbers		HBNR
				2788035-07		AFLAS
180	1	Handle Seal		J005526-221		Buna-N
200	4	Nut	2709000-09-11		2709000-10-11	ASTM A194 2HM/Zinc-Plated

Notes: 1. CF8M is ASTM A351 Grade CF8M annealed. 316 SS is AISI Type 316 SS annealed.
2. These parts are keyed to the assembly part number. "Seat insert/seal" code numbers indicated.

SERIES DT GATE VALVES – ASME CLASSES 600, 900, AND 1500

4" (100 mm) Full Port NACE Compliant



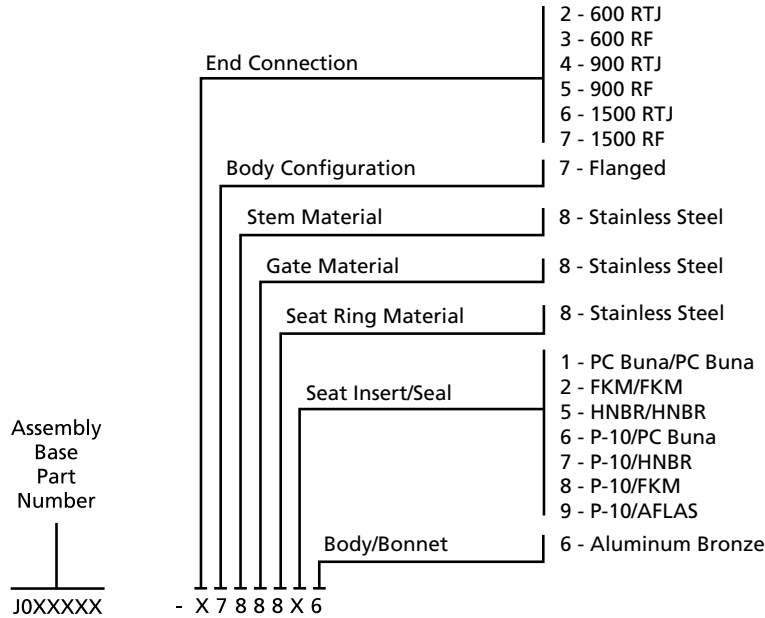
Dimensional Data and Weights

Dimension	Valve Size: 4" (100 mm) FP		
	ASME Class 600	ASME Class 900	ASME Class 1500
A	17.00 (432)	18.00 (457)	21.50 (546)
Flanged – RF	17.12 (435)	18.12 (460)	21.62 (549)
Flanged – RTJ	24.08 (612)	24.08 (612)	24.38 (619)
B	4.06 (103)	4.06 (103)	4.06 (103)
(Open)	23.00 (584)	23.00 (584)	23.00 (584)
C	9.00 (229)	9.12 (232)	9.41 (239)
(Seat Bore)	10.75 (273)	11.50 (292)	12.25 (311)
D	8 – 7/8	8 – 1-1/8	8 – 1-1/4
E	R-37	R-37	R-39
F			
Flange OD			
Flange Bolts (Qty., Size: in.)			
Ring Number (RTJ)			
Weight lb (kg)			
Flanged	170 (77)	215 (98)	295 (134)

Working Pressure (psi)

End Connection	Material	ASME Class 600	ASME Class 900	ASME Class 1500
Flanged	Bronze	1480	2220	3705

ASSEMBLY PART NUMBER



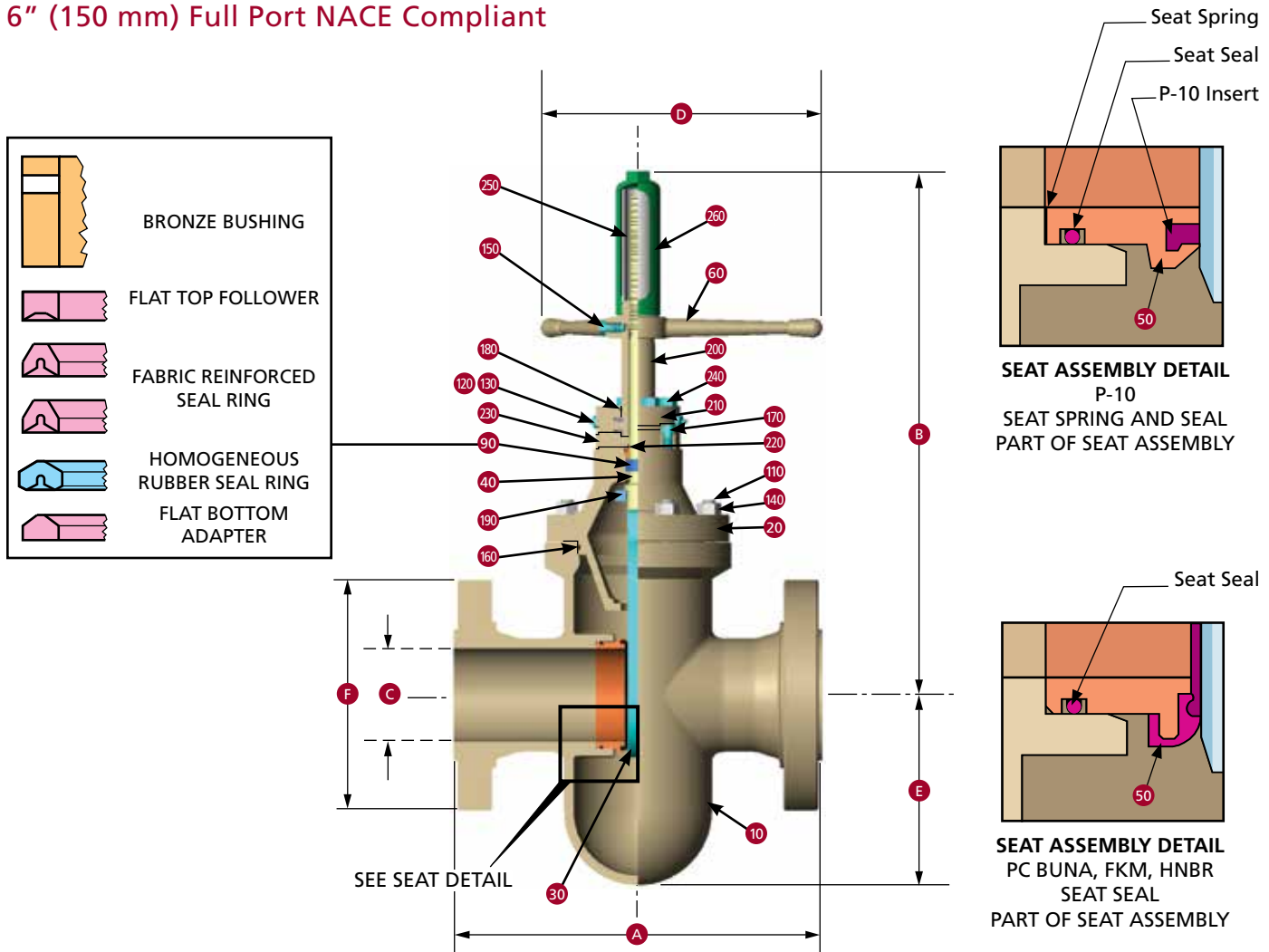
Parts List

Key No.	Qty.	Description	Valve Size: 4" (100 mm) FP			Material Specification (See Note 1)
			ASME Class 600	ASME Class 900	ASME Class 1500	
		Assembly Base Part Number	J025006	J025007	J025008	
10	1	Body - 4"	Consult Cameron for Body Part Numbers			Aluminum Bronze ASTM B148 Alloy 955
20	1	Bonnet	J024711-006	J024712-006	J024713-006	Aluminum Bronze ASTM B148 Alloy 955
30	1	Gate (See Note 2)	J024719-008 6, 7, 8, 9	J024721-008 J024720-008	J024722-008	Stainless Steel CF8M
40	1	Stem	J024717-008	J024718-008	J024718-008	316 SS - 600 and 900 Only; XM-19 1500 Only
50	2	Seat Assembly (See Note 2)	1 2 5 6 7 8 9	2061588-04 2061589-04 Consult Cameron for Seat Assembly Part Numbers 2061590-04 Consult Cameron for Seat Assembly Part Numbers Consult Cameron for Seat Assembly Part Numbers Consult Cameron for Seat Assembly Part Numbers		Ring: CF8M; Elastomer: Buna-N Ring: CF8M; Elastomer: FKM Ring: CF8M; Elastomer: HNBR Ring: CF8M; Insert: PEEK; Seal: Buna-N Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: HNBR Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: FKM Spring: INCONEL X-750 Ring: CF8M; Insert: PEEK; Seal: AFLAS Spring: INCONEL X-750
60	1	Handle		2139933-01		Ductile Iron ASTM A536 Grade 65-45-12
70	1	Stem Packing Retainer		J024716-008		316 SS
90	1	Stem Seal Assembly		J024882-604		Teflon/Elgiloy
100	1	Retainer Snap Ring		J090066-175		PH 15-7 Mo
110	4	Stud	219066-08-02-61	219066-09-03-21	219066-11-04-21	ASTM A193 B7M/Zinc-Plated
120	1	Lube Fitting		005929-18		Steel
130	1	Relief Fitting		2726258-01		Steel
160	1	Bonnet Seal (See Note 2)	1, 6 2, 8 5, 7 9	J005520-254 J005521-254 Consult Cameron for Bonnet Seal Part Numbers 2788035-10		Buna-N FKM HNBR AFLAS
180	1	Handle Seal		J005526-223		Buna-N
200	4	Nut	2709000-08-11	2709000-09-11	2709000-11-11	ASTM A194 2HM/Zinc-Plated

Notes: 1. CF8M is ASTM A351 Grade CF8M annealed. 316 SS is AISI Type 316 SS annealed.
2. These parts are keyed to the assembly part number. "Seat insert/seal" code numbers indicated.

SERIES DT GATE VALVES – ASME CLASS 900

6" (150 mm) Full Port NACE Compliant



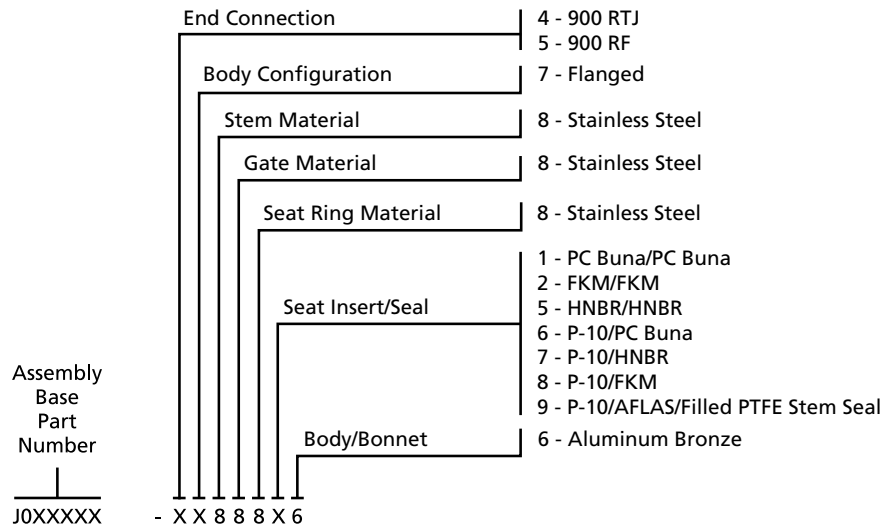
Dimensional Data and Weights

Dimension	Valve Size: 6" (150 mm) FP ASME Class 900
A Flanged – RF	24.00 (610)
Flanged – RTJ	24.12 (613)
B (Open)	33.85 (860)
C (Seat Bore)	6.06 (154)
D	24.00 (610)
E	12.38 (314)
F Flange OD	15.00 (381)
Flange Bolts (Qty., Size: in.)	12 – 1-1/8
Ring Number (RTJ)	R-45
Weight lb (kg)	
Flanged	Consult Cameron

Working Pressure (psi)

End Connection	Material	ASME Class 900
Flanged	Bronze	2220

ASSEMBLY PART NUMBER



Parts List

Key No.	Qty.	Description	Valve Size: 6" (150 mm) FP		
			ASME Class 900	Material Specification (See Note 1)	
		Assembly Base Part Number	J025150		
10	1	Body	6" (150 mm) RF – AL BRZ RTJ – AL BRZ	2227657-00-56 2227657-00-46	Aluminum Bronze ASTM B148 Alloy 955
20	1	Bonnet	AL BRZ	2227661-06	Aluminum Bronze ASTM B148 Alloy 955
30	1	Gate	1, 2, 5 (See Note 2)	2227658-08 2227964-08	Stainless Steel CF8M
40	1	Stem	6, 7, 8, 9	2227666-08	316 SS
50	2	Seat Assembly (See Note 2)	1 2 5	2061588-06 2061589-06 Consult Cameron for Part Number	Ring: CF8M; Elastomer: Buna-N Ring: CF8M; Elastomer: FKM Ring: CF8M; Elastomer: HNB
			6	2061590-06	Ring: CF8M; Insert: PEEK; Seal: Buna-N Spring: INCONEL X-750
			7	Consult Cameron for Part Number	Ring: CF8M; Insert: PEEK; Seal: HNBR; Spring: INCONEL X-750
			8	Consult Cameron for Part Number	Ring: CF8M; Insert: PEEK; Seal: FKM; Spring: INCONEL X-750
			9	Consult Cameron for Part Number	Ring: CF8M; Insert: PEEK; Seal: AFLAS; Spring: INCONEL X-750
60	1	Handle		2227656-01	Ductile Iron ASTM A536 Grade 65-45-12
90	1	Stem Seal Assembly (See Note 2)	1, 6 2, 8 5, 7 9	J021706-001 J015853-006 J015853-008 Consult Cameron for Part Number	Buna-N FKM HNBR PTFE
110	8	Stud		2119066-09-04-21	ASTM A193 B7M/Zinc-Plated
120	1	Lube Fitting		005929-18	Steel
130	1	Relief Fitting		J051971	Steel
140	8	Nut		2709000-09-11	ASTM A194 2HM/Zinc-Plated
150	1	Screw – Handle		J014832	Steel AISI C1018
160	1	Body Seal (See Note 2)	1, 6 2, 8 5, 7 9	J005520-367 J005521-367 2738507-15 2788035-11	Buna-N FKM HNBR AFLAS
170	4	Screw – Retainer		702589-14-00-16	Alloy Steel
180	1	Stem Screw Seal		J005526-228	Buna-N on 900
190	1	Downstop Ring		J015848	316 SS
200	1	Stem Screw with Bearings		J023888	Stem Screw with Steel AISI C1018 Bearings: Hardened Steel Needle Thrust Bearings
210	1	Housing		J015332	Steel AISI C1018
220	1	Secondary Seal (See Note 2)	1, 6 2, 8 5, 7, 9	J005526-216 J005531-216 2738507-09	Buna-N FKM HNBR
230	1	Retainer		J015330-101	Steel AISI C1018
240	4	Screw – Housing		J056511-32056	ASTM A193 B7M/Zinc-Plated
250	1	Tube		J019160	Clear Acrylic
260	1	Stem Cap		J019161	Ductile Iron ASTM A536 Grade 65-45-12

Notes: 1. CF8M is ASTM A351 Grade CF8M annealed. XM-19 is ASTM A479 Type XM-19 hot rolled.
2. These parts are keyed to the assembly part number. "Seat insert/seal" code numbers indicated.

Services for Valves and Actuation

WE BUILD IT. WE BACK IT.

Startup and Commissioning

Our experts understand that each project is unique. That's why Cameron's services help facilitate commissioning and start-up activities.

- Integrated solutions, onsite or at our global service centers
- Increased equipment and product performance
- The shortest possible trouble-free startup for your critical assets



Spare Parts and Asset Management

Cameron offers the assets and expertise to cover all aspects of valve management.

- Full inventory of quality exact OEM parts and spares
- Complete asset risk and criticality assessments
- Comprehensive inventory of your assets, including a complete recommended spare valves and parts list



Operational Support

Cameron's ability to address valve requirements in the field is a reflection of our commitment to life-of-asset support.

- Innovative asset management solutions
- Trouble-free installation, startup and operations
- Support from commission to operation – extending through all phases of a valve's life cycle
- Extensive inventory of spare valves and parts

Cameron's site management team helps mitigate the risk of project delays by identifying issues in the construction process prior to valve installation to ensure valve integrity.



Trademark Information

DEMCO is a registered trademark of Cameron.

This document contains references to registered trademarks or product designations, which are not owned by Cameron.

Trademark	Owner
ENDURO-BOND	Energy & Environmental Services, Inc.
TEFLON	E.I. DuPont De Nemours & Company

CERTIFICATIONS



American Bureau of Shipping



WARNING: Failure to comply with Cameron operations and maintenance manuals, safety alerts, engineering bulletins and other documentation and failure to use OEM parts can adversely affect performance and can cause serious injury or death and property damage.

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www.c-a-m.com/DEMCO

DEMCO@c-a-m.com



HSE Policy Statement

At Cameron, we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.

DEMCO Butterfly Valves

Quality design and rugged dependability in meeting the rigorous requirements of industrial, oilfield and drilling applications

TECHNOLOGY



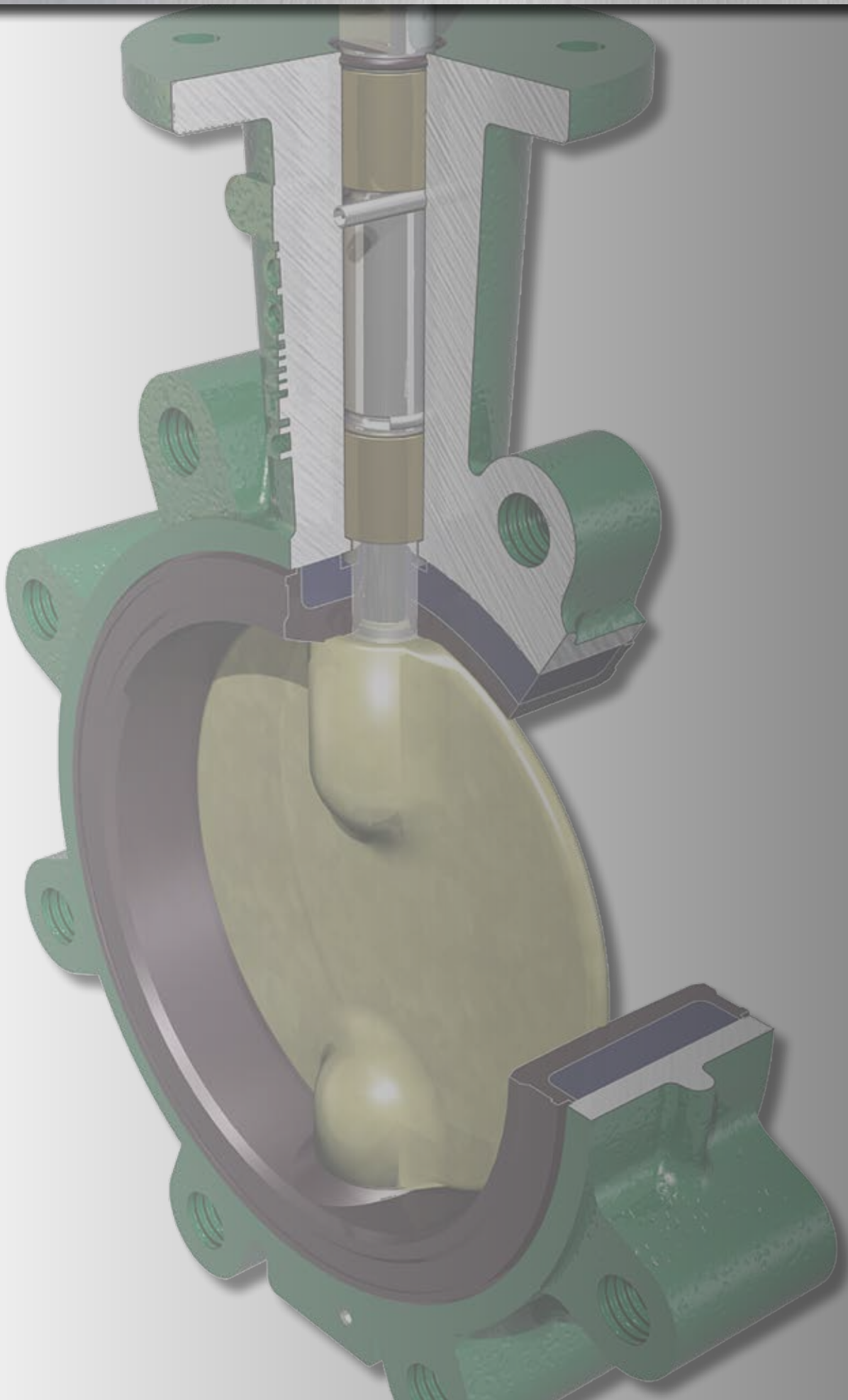


Table of Contents

DEMCO BUTTERFLY VALVES

Introduction.....	2
Features and Benefits	3
Styles and Accessories.....	6
Series NE-C, NE-I, NE-D, NEI-T	9
Series NF-C	10
Base Part Numbers and Weights	12
Marine Series.....	13
Component Parts List.....	14
Dimensional Data (Valves)	16
Handles	22
Worm Gear Operators	23
Stem Extensions.....	25
General Technical Information.....	26
Torque Data	31
Standard Material Data	32
Material Selection Guide.....	33
Services for Valves and Actuation.....	39
Trademark Information	40

DEMCO Butterfly Valves



Oklahoma City,
Okla., USA

Cameron is a leading provider of valves, valve automation, and measurement systems to the oil and gas industry. Our products are primarily used to control, direct and measure the flow of oil and gas as it is moved to refineries, petrochemical plants, and industrial centers for processing.

We provide valve products that are sold through distributor networks worldwide for use in both oil and gas and industrial applications and include such widely recognized brands as DEMCO®, NAVCO®, NEWCO®, NUTRON®, THORNHILL CRAVER®, TECHNO™, TOM WHEATLEY®, WHEATLEY®, and WKM®.

Cameron's DEMCO butterfly valves are the valves of choice, engineered and proven for drilling and production industries. Designed for dependable, heavy-duty performance in abrasive and corrosive service conditions, DEMCO butterfly valves are commonly selected for a number of oilfield applications.

FEATURES AND BENEFITS

As one of the most durable resilient-seated butterfly valves in the industry, Cameron's DEMCO butterfly valve excels in a variety of applications.

Cast in both wafer and tapped lug patterns in a variety of material choices, DEMCO butterfly valves feature a one-piece body for reduced weight and increased strength.

The unique stem hole design in the disc ensures the dry stem journal, and the hard-backed seat allows ease of installation, reliable operation and in-field repairability without special tools. DEMCO butterfly valves are available in sizes 2" to 36" (50 mm to 900 mm).

Engineered for long-term, reduced-maintenance performance, DEMCO butterfly valves are commonly selected for a variety of applications in the following industries:

- Chemical and petrochemical
- Agriculture
- Oil and gas drilling and production
- Food and beverage
- Water and waste water
- Cooling towers (HVAC)
- Power
- Mining and materials
- Dry bulk handling
- Marine and government

Bi-Directional Sealing

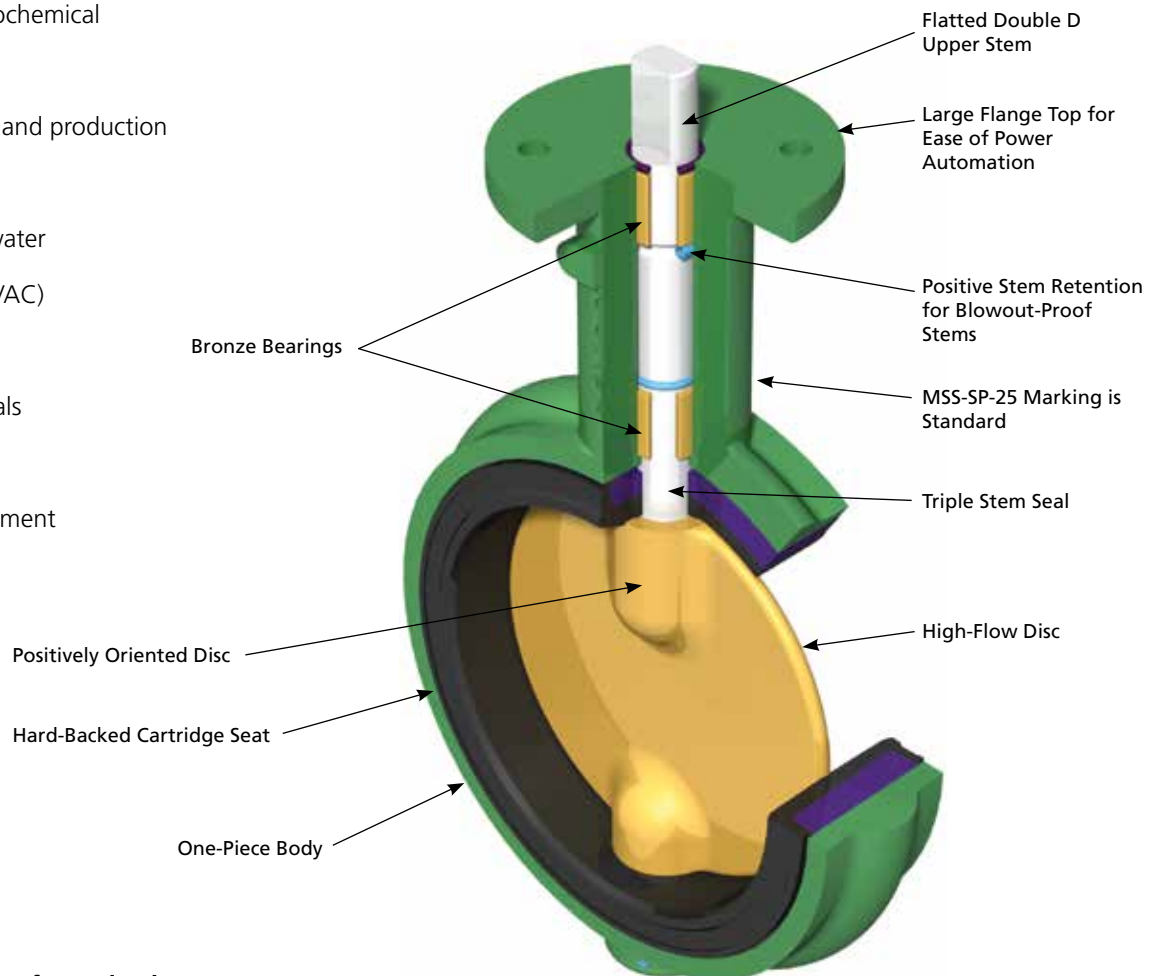
Cameron's DEMCO butterfly valve provides bi-directional sealing at full-rated pressure with identical flow from either direction.

Integral Flange Seal

An integral flange seal molded into the edge of the seat accommodates ASME weld neck, slip-on, threaded, socket and stub end type C flanges.

ASME Class 150 Rating

With a body rating of ASME Class 150 (285 psi non-shock), the wafer body diameters are designed to self-center in the ASME Class 150 flange pattern.

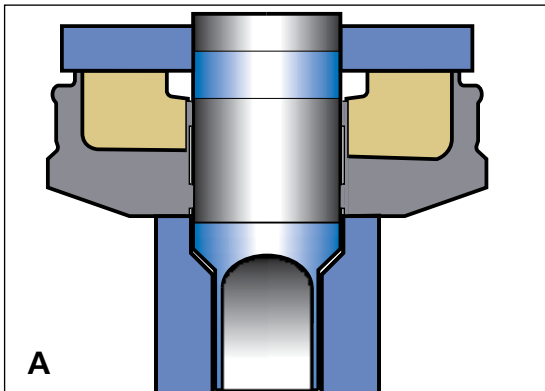


Wafer Style Shown

FEATURES AND BENEFITS (CONT.)

Multiple Pressure Ratings

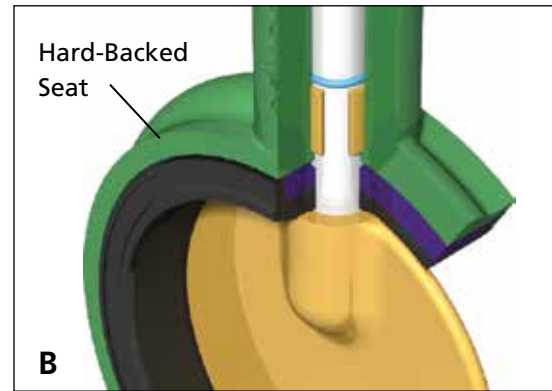
Three drop-tight pressure ratings are offered for 2" to 12" (50 mm to 300 mm) sizes. The standard shut-off pressure rating is 200 psi, but 285 and 50 psi shut-off ratings are also available. A throttling 0 psi-rated valve is available where drop-tight closure is not required and minimal torque is desired. Both the 50 psi and throttling ratings allow for smaller actuators, which can significantly reduce overall installation cost in automated applications. The 14" to 36" (350 mm to 900 mm) size valves are available in 150 and 50 psi drop-tight shut-off ratings, as well as throttling.



A. Dry Stem Journal Reduces Potential for Leakage

The DEMCO valve's disc is uniquely designed with a continuous annular-raised band around the stem hole and disc edge, which presses into the seat flat at every angular position.

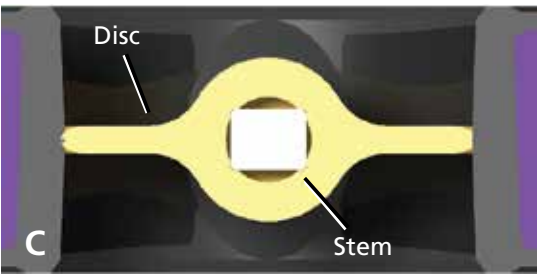
The resilient seat presses back with a higher force than the line pressure, preventing leakage to the stem. In addition, two O-ring ribs are provided in the seat stem bore, creating a triple stem seal. In competitive stem seal designs with boot seats, a seal is accomplished by an interference squeezing on the stem or an O-ring in the stem journal. The potential for leakage behind the seat is high for this competitive design. As the disc wipes the seat, elongation of the stem seal area allows leakage to collect behind the seat. This condition is reduced by the DEMCO valve's dry stem journal and hard-backed seat.



B. Hard-Backed Cartridge Seat

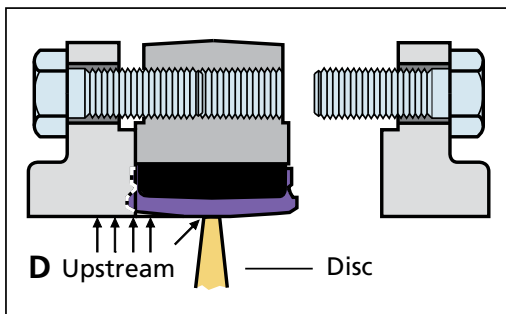
The DEMCO valve's cartridge seat is constructed by permanently bonding a resilient elastomer to a rigid backing ring. In addition to superior sealing integrity, this design:

- Makes valve installation easier because no special precautions are required for disc position. This is especially advantageous when installing valves with fail-closed actuators.
- Reduces high torque and premature failure caused by elastomer distortion, as found in other non-rigid seat designs.
- Simplifies seat replacement because the seat is slip-fitted into the body with no need for special tools.



C. Positively Oriented Disc

The rectangular drive ensures the proper orientation of the stem disc connection. In 2" to 24" (50 mm to 600 mm) size valves, the disc is permitted to float on the stem to center in the valve seat. This design enhances drop-tight sealing and prolongs service life.



D. End-of-Line Service

Lug body valves may be used in end-of-line service with downstream piping removed. Only weld-neck or socket flanges can be used for this service. Since upstream pressure is excluded between the flange and the seat face by the DEMCO flange seal design, there is no effective force to slide the seat downstream. DEMCO 2" to 12" (50 mm to 300 mm) lug butterfly valves are suitable for liquid service up to 200 psi with downstream piping removed at 150 psi for 14" to 36" (350 mm to 900 mm) valves.

Lug body valves are recommended for isolation of pumps, control devices or other system components, which may need to be removed for repair or replacement. Lug valves also are suitable for installation at points from which piping expansion may proceed. Such valves normally are blanked with blind flanges to protect the exposed seats until new piping is attached.

SPECIFICATIONS

Sizes

2" to 36" (50 mm to 900 mm)

Body Type and Style Designations

Long-Neck NE-C and NF-C: 2" to 36" (50 mm to 900 mm) wafer/lug, 36" (900 mm)

Short-Neck NE-I and NE-I Sanitary: 2" to 12" (50 mm to 300 mm) wafer/lug

NE-IT Teflon: 2" to 10" (50 mm to 250 mm) wafer/lug

NE-D: 2" to 12" (50 mm to 300 mm) wafer

Marine: 2" to 24" (50 mm to 600 mm) wafer/lug

Pressure Rating

2" to 12" (50 mm to 300 mm):
0 (throttling); 50, 200 and 285 psi

NEI-T: 2" to 10" (50 mm to 250 mm): 150 psi
14" to 36" (350 mm to 900 mm): 0, 50 and 150 psi

Operating Temperatures

-30° F to 300° F (-34° C to 204° C), depending on seat material selection and application (see page 32)

Standard Material Options

Bodies: Iron, steel, stainless steel and bronze

Discs: Nickel-plated ductile iron, bronze and stainless steel

Stems: 416 and 316 stainless steel

Seats: Buna-N, EPDM, FKM and Neoprene

*Many more options available (consult Cameron or see pages 9, 10 and 11 on how to order).

STYLES AND ACCESSORIES

The DEMCO butterfly valve comes in a variety of styles to suit a range of applications. In addition, a variety of quality accessories are available to further enhance its suitability to the application.

Series NE-C

Sizes 2" to 12" (50 mm to 300 mm) are available in both wafer and lug styles. This series is a general purpose valve with a neck length designed to provide full clearance for the valve top over 2" of insulation on ASME Class 150 pipe flanges.



Series NE-I

Sizes 2" to 12" (50 mm to 300 mm) are suited for a range of applications in many industries, including food and beverage utilities and process flowlines. This short neck design is offered in a variety of body materials. The valves are designed for installation between ASME Class 125 and 150 flanges.



Series NE-D

The valves in this series can be made in sizes 2" to 12" (50 mm to 300 mm). The Series NE-D valve is a short-neck valve with body notches to fit popular, lightweight flange patterns, making it ideal for both the bulk material handling and the transportation industries. Valves also will center in ASME Class 125 and 150 flanges.



Series NF-C

Sizes 14" to 36" (350 mm to 900 mm) are available in both wafer and lug styles. The wafer body has two drilled locator lugs at the top and bottom for ASME Class 150 flanges. Bronze bearings are installed on both stems for reduced operating torque.



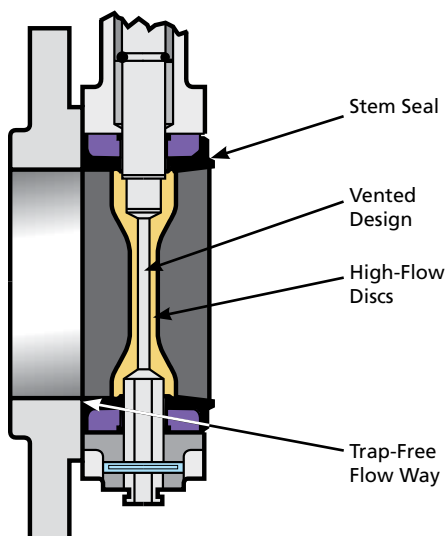
Series NE-I Sanitary

This series comes in sizes 2" to 12" (50 mm to 300 mm). It is similar to the Series NE-I valve, but is exclusively designed to meet the rigorous requirements of sanitary service in the food and beverage industry. The body is available in bronze, stainless steel, aluminum or electroless nickel-coated ductile iron.

FDA-approved materials are used for all wetted parts. Handle parts are bronze and stainless steel, permitting caustic washdown.

Other benefits:

- The DEMCO dry journal stem seal system ensures sanitary butterfly valve construction.
- Drilled passageways, a design originated by the DEMCO brand, vent the entire interior of the disc. No closed chamber is provided for the culture of undesirable organisms.
- Discs are produced from smooth and non-porous investment castings. Stem bosses are reduced for increased flow.
- The mating flange contacts and compresses the projecting inner surface of the resilient seat to form a smooth and uninterrupted flow way. This positive seal between the innermost contact of the seat and flange ensures aseptic conditions after a piping flush.



Sanitary Features

Series NEI-T Teflon

Because of the inert, aseptic, non-stick character of Teflon®, the DEMCO NEI-T Teflon-lined butterfly valve is ideal for clean lines in food and beverage plants. The Teflon seat consists of a virgin Teflon liner overlaid and bonded to an elastomer EPDM cushion, which provides resilience for sealing. The Teflon liner extends over the seat faces, completely covering and sealing the resilient material from contact with line fluids.

Marine

DEMCO marine butterfly valves are available in the NE-C lug, NE-I lug and wafer, and NE-D wafer styles, and conform to:

- Title 46 of the Code of Federal Regulations
- Part 56 of the US Coast Guard's Marine Engineering Regulations
- The American Bureau of Shipping Standard, including tagging per MSS-SP-25 and testing per MSS-SP-67

STYLES AND ACCESSORIES (CONT.)

A. Actuators

Consult Cameron or visit www.c-a-m.com/valveautomation for actuation options.



A. DEMCO NE-C Wafer

B. Handles and Stem Extensions

There are three basic handle designs that are compatible with any 2" to 12" (50 mm to 300 mm) valve: ten-position locking, two-position locking and memory stop. Memory-stop handles provide throttling, which is infinitely adjustable and can be set by a lock nut with a memory-stop setting (adjustable open stop). Handles are available in basic trim, corrosion-resistant trim and sanitary trim. Stem extensions are fabricated from carbon steel parts and contained in a tubular housing. Gaskets and O-rings seal the stem extension at the top and bottom. These extensions are fabricated to specified lengths.

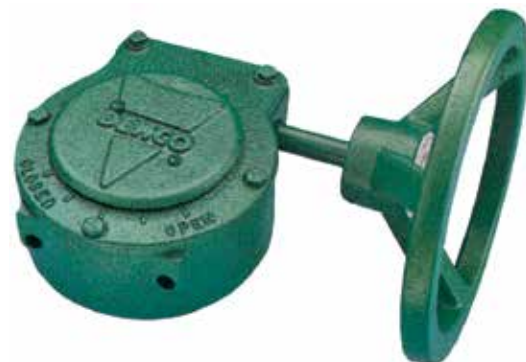


B. Stem Extension with Handle on Series NE-I Butterfly Valve

C. Gear Operators

DEMCO weatherproof gear operators are offered with a choice of handwheel, chainwheel or square nuts. The worm gear has either self-locking set screws to control open and closed positioning or an optional adjustable memory-stop for balance return to a preset open position after closing.

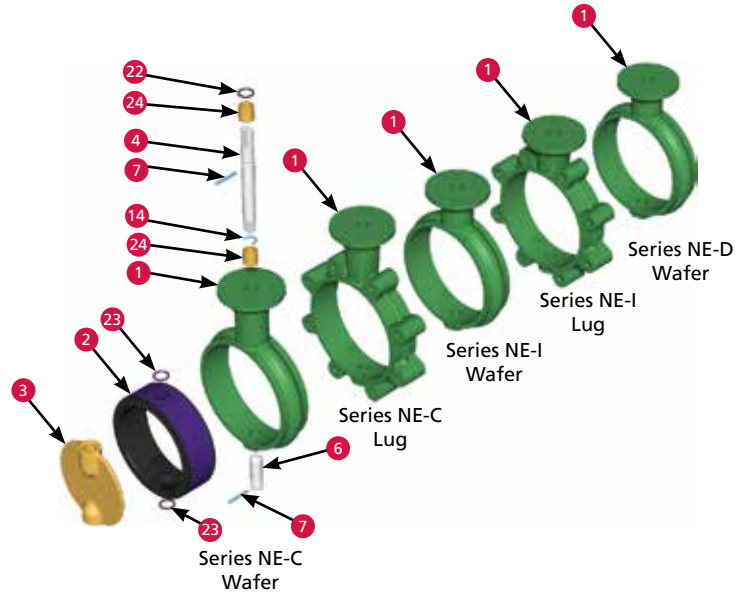
C. Gear-Operated



SERIES NE-C, NE-I, NE-D, NEI-T

2" to 12" (50 mm to 300 mm)

Key No.	Qty.	Description	Material
1	1	Body	*
2	1	Seat	*
3	1	Disc	*
4	1	Upper Stem	*
6	1	Lower Stem	*
7	2	Spring Pin	Stainless Steel
14	1	Retainer	Stainless Steel
22	1	Top O-ring	Buna-N
23	•	Stem O-ring	Buna-N
24	2	Bearing	Bronze



- * See How to Order for material choices/styles. Complete material specs on page 32.
- Four required for throttling valves only.

HOW TO ORDER

XXXXX Base Part Number	X Body Configuration	X Body Material*	X Stem Material	X Disc Material	XX Seat Elastomer	X Actuation																																																																																																																																																																															
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(Example: 6" (150 mm) NE-C, 200 psi, Wafer, Standard Trim with Handle – 22124-1215311)

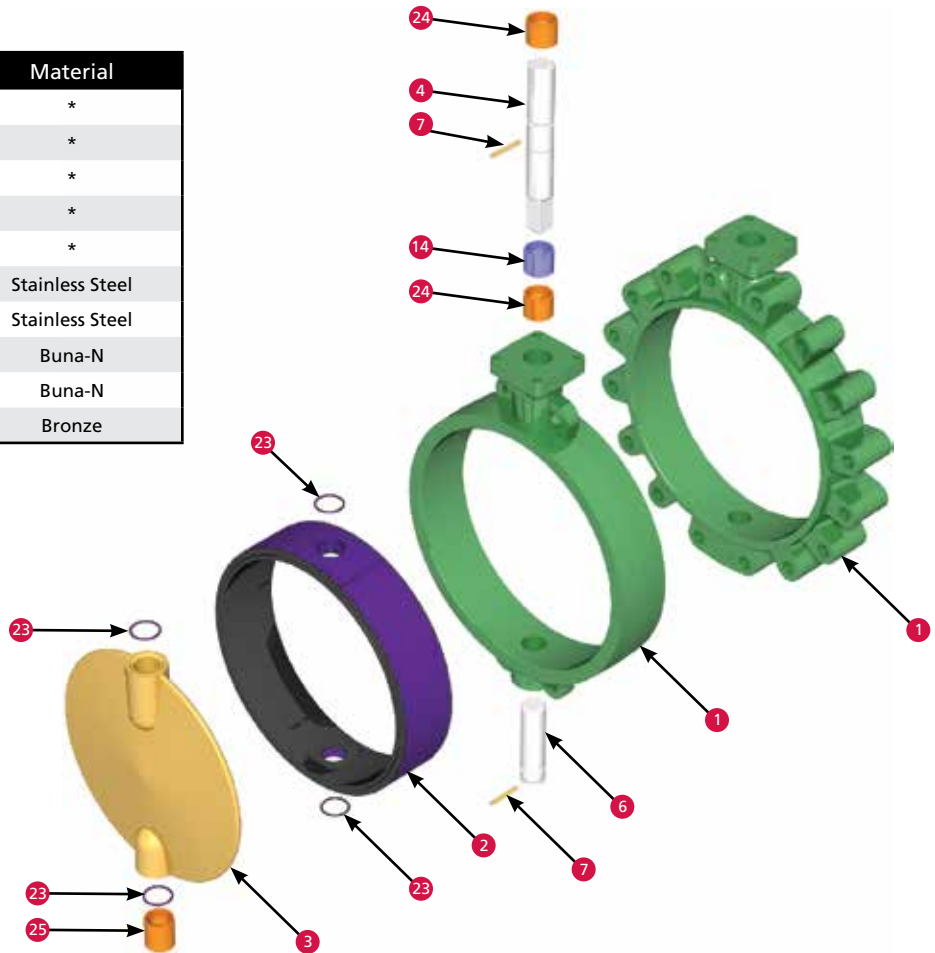
- * Standard coating is green enamel; other coatings are available on request.
- ** 17-4 PH SS for 8" to 12" (200 mm to 300 mm) upper stem only.
- *** Except 17-4 PH upper 8" and 10" (200 mm and 250 mm).
- 1 200 psi only.
- 2 Except 285 psi.
- 3 Polished – ground to #4 dairy finish; tumbled – vibratory finish to remove as cast surface; unpolished – as cast surface.
- 4 When these options are used with NE-I sanitary butterfly valves, handles will be bronze with stainless steel (SS) parts and fasteners.
- 5 Gear operator recommended for 8" to 12" (200 mm to 300 mm) sizes in all series.
- 6 See material trademark note on page 40.
- 7 Other seat options available (consult Cameron).

SERIES NF-C

14" to 24" (350 mm to 600 mm)

Key No.	Qty.	Description	Material
1	1	Body	*
2	1	Seat	*
3	1	Disc	*
4	1	Upper Stem	*
6	1	Lower Stem	*
7	2	Spring Pin	Stainless Steel
14	1	Retainer (Spacer) +	Stainless Steel
22	1	Top O-ring	Buna-N
23	•	Stem O-ring	Buna-N
24	2	Bearing	Bronze

- * See How to Order for material choices/styles. Complete material specs are on page 32.
- Four required for throttling valves only.
- + 14" to 20" (350 mm to 500 mm) spacer.



HOW TO ORDER

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Bronze	4																																																												
Nickel-Plated Iron	5																																																												
PVF-Coated	6																																																												
Ductile Iron ¹	6																																																												
Buna-N	31																																																												
Black Neoprene	32																																																												
Hypalon ⁶	33																																																												
FKM	34																																																												
EPDM	35																																																												
None	9																																																												
Gear Operators																																																													
Handwheel	A																																																												
Chainwheel	C																																																												
Square Nut	D																																																												
Bare Shaft	E																																																												

Based on valve series and shut-off pressure. See page 12.

(Example: 18" (450 mm) NF-C, 150 psi Lug, SS Trim, Buna-N Seat, WGO – 23822-512231A)

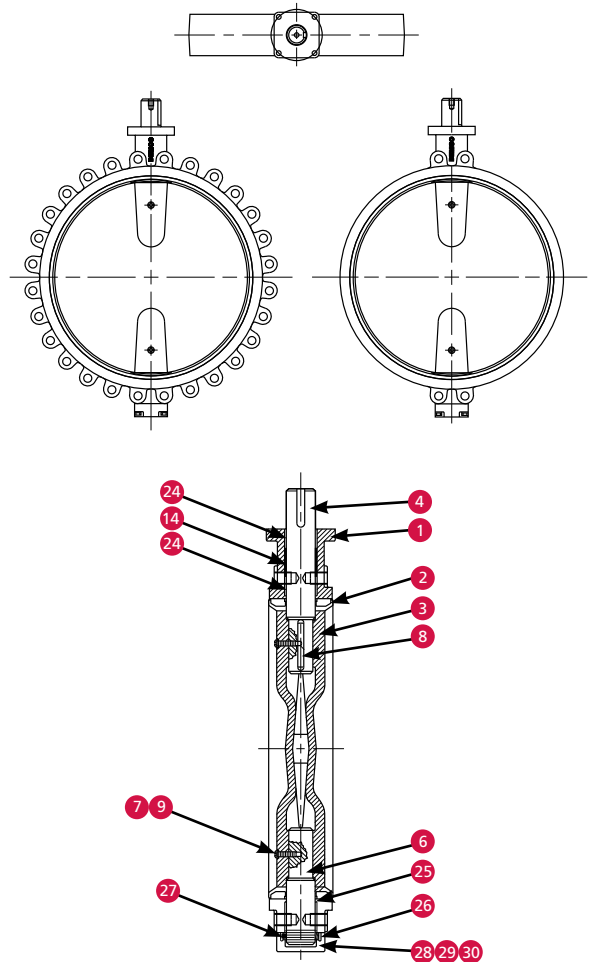
- * Standard coating is green enamel; other coatings are available on request.
- 1 150 psi only.
- 2 See material trademark note on page 40.

SERIES NF-C

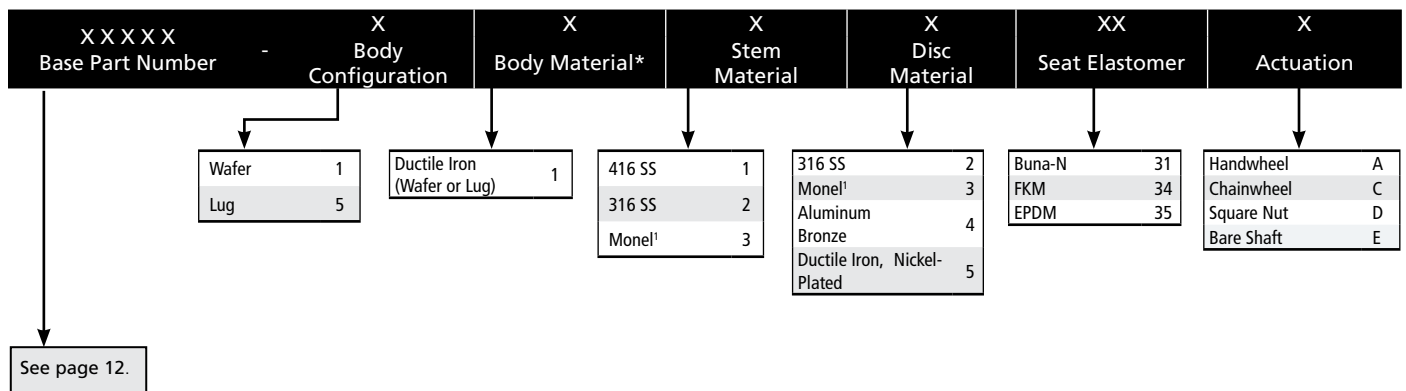
30" and 36" (750 mm and 900 mm)

Key No.	Qty.	Description	Material
1	1	Body	*
2	1	Seat – Hard-Backed	*
3	1	Disc	*
4	1	Upper Stem	*
6	1	Lower Stem	*
7	2	Disc Screw	18-8 SS
8	1	Key	Stainless Steel
9	2	O-ring	Buna-N
14	1	Spacer	Steel
24	2	Upper Bearing	Bronze
25	1	Lower Bearing	Bronze
26	1	Thrust Collar	Bronze
27	1	Set Screw	18-8 SS
28	1	Cap	Ductile Iron
29	4	Screw	Carbon Steel
30	4	Lockwasher	Carbon Steel

* See How to Order for material choices/styles. Complete material specs on page 32.



HOW TO ORDER



(Example: 36" (900 mm), 150 psi, Bronze Disc, EPDM Seat with Gear Op. – 24357-111435A)

* Standard coating is green enamel; other coatings are available on request.
 1 See material trademark note on page 40.

BASE PART NUMBERS AND WEIGHTS

Series NE-C, 2" to 12" (50 mm to 300 mm)*

Description	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)
200 psi		22119	22120	22121	22122	22123	22124	22125	22126	22127
285 psi		22225	22226	22227	22228	22229	22230	22231	22232	22233
50 psi		22234	22235	22236	22237	22238	22239	22240	22241	22242
Throttling		22243	22244	22245	22246	22247	22248	22249	22250	22251
Weight (lb – bare stem)	Wafer	5.8	7.0	7.7	11.4	14.7	17.6	28.5	47.9	71.0
	Lug	8.0	9.9	10.7	17.0	24.5	28.5	43.5	65.9	98.5

Series NE-I, 2" to 12" (50 mm to 300 mm)*

Description	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)
200 psi		22128	22129	22130	22131	22132	22133	22134	22135	22136
285 psi		22252	22253	22254	22255	22256	22257	22258	22259	22260
50 psi		22261	22262	22263	22264	22265	22266	22267	22268	22269
Throttling		22270	22271	22272	22273	22274	22275	22276	22277	22278
Weight (lb – bare stem)	Iron, Steel, SS	4.9	6.4	6.9	10.2	13.7	16.4	28.4	44.8	66.8
	Bronze	4.7	6.2	6.7	9.9	13.4	16.0	28.0	44.3	66.3
Wafer	Aluminum	2.8	3.4	4.1	5.9	8.7	10.8	18.2	30.4	47.2
(lb – bare stem)	Bronze	6.8	8.7	9.5	15.7	23.1	27.0	42.0	64.4	96.8
Lug	Steel, SS	7.0	8.9	9.7	16.0	23.5	27.5	42.5	64.9	97.5

Series NE-I, Sanitary 2" to 12" (50 mm to 300 mm)*

Description	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	
200 psi		23150	23151	23152	23153	23154	23155	23156	23157	
Weight		See chart above: NE-I, 2" to 12" (50 mm to 300 mm)								

Series NE-D, 2" to 12" (50 mm to 300 mm)*

Description	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)
200 psi		22181	22129	25093	22183	22184	22185	22134	22186	22136
285 psi		22279	22253	25135	22281	22282	22283	22258	22284	22260
50 psi		22285	22262	25132	22287	22288	22289	22267	22290	22269
Throttling		22291	22271	25136	22293	22294	22295	22276	22296	22278
Weight (lb – bare stem) Wafer		4.9	6.4	6.9	10.2	13.7	16.4	28.4	44.8	66.8

Series NEI-T, 2" to 10" (50 mm to 250 mm)*

Description	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	6 (150)	8 (200)	10 (250)
150 psi		24680	24681	24682	24683	24684	24685	24686
Weight (lb – bare stem)	Iron, Steel, SS	4.9	6.4	6.9	10.2	16.4	28.4	44.8
	Bronze	4.7	6.2	6.7	9.9	16.0	28.0	44.3
Wafer**	Aluminum	2.8	3.4	4.1	5.9	10.8	18.2	30.4
(lb – bare stem)	Bronze	6.8	8.7	9.5	15.7	27.0	42.0	64.4
Lug**	Steel, SS	7.0	8.9	9.7	16.0	27.5	42.5	64.9

* Gear operator recommended for 8" to 12" (200 mm to 300 mm) sizes.

** See NE-C chart above for weights of long-neck wafer and lug valves.

Series NF-C, 14" to 24" (350 mm to 600 mm)

Description	in. (mm)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)
150 psi		23820	23821	23822	23823	23824
50 psi		24440	24441	24442	24443	24444
Throttling		24445	24446	24447	24448	24449
Weight (lb – bare stem)	Wafer	102	166	214	257	401
	Lug	116	203	239	332	535

Series NF-C, 30" to 36" (750 mm to 900 mm)

Description	in. (mm)	30 (750)	36 (900)
150 psi		24141	24357
50 psi		24924	25061
Weight	Wafer	935	1500
	Lug	1050	2020

Marine valves: consult Cameron for data sheets B-255, B-256 and B-258.

MARINE SERIES

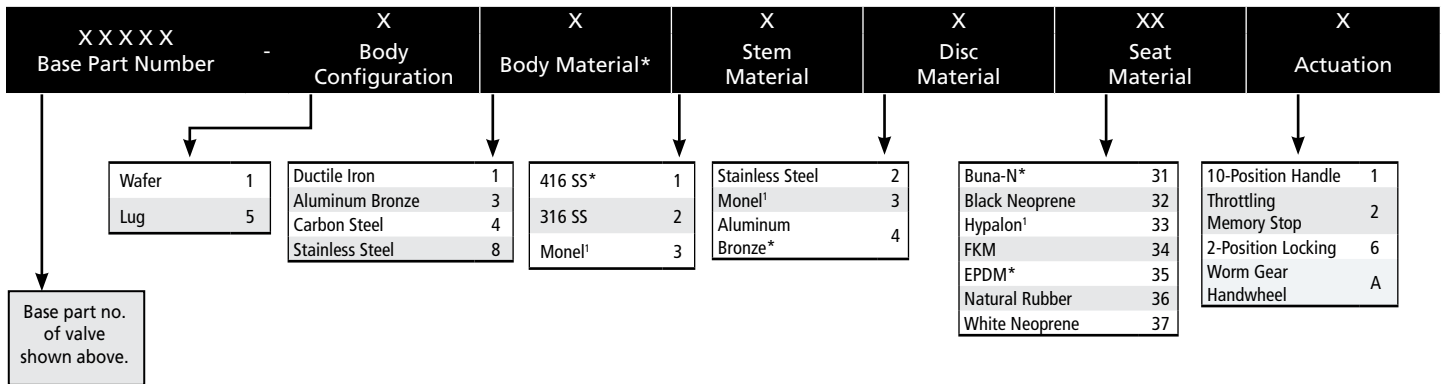
DEMCO marine butterfly valves meet all the requirements of US Coast Guard's Marine Engineering Regulations as outlined in Title 46 of the Code of Federal Regulations, Part 56 and The American Bureau of Shipping Standard, including tagging per MSS-SP-25 and testing per MSS-SP-67. All valves are shell tested at 1-1/2 times rated working pressure and seat tested at rated working pressure.

Marine Series, 2" to 36" (50 mm to 900 mm)

Description	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)
200 psi		22923	22924	22925	22926	22927	22928	22929	22930	22931
50 psi		22932	22933	22934	22935	22936	22937	22938	22939	22940
285 psi		22914	22915	22916	22917	22918	22919	22920	22921	22922
Weight (lb – bare stem) NE-C Long-Neck Body										
Wafer	Gray Iron	5.8	7.0	7.7	11.4	14.7	17.6	28.5	47.9	71.0
Lug	Ductile Iron	8.0	9.9	10.7	17.0	24.5	28.5	43.5	65.9	98.5
NE-I Short-Neck Body										
Wafer	Iron, Steel, SS	4.9	6.4	6.9	10.2	13.7	16.4	28.4	44.8	66.8
	Bronze	4.7	6.2	6.7	9.9	13.4	16.0	28.0	44.3	66.3
Lug	Bronze	6.8	8.7	9.5	15.7	23.1	27.0	42.0	64.4	96.8
	SS, Steel	7.0	8.9	9.7	16.0	23.5	27.5	42.5	64.9	97.5

Description	in. (mm)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)	36 (900)
150 psi		24611	24612	24613	24614	24615	2227182	2227183
50 psi		24653	24654	24655	24656	24657	2227184	2227185
Weight (lb – bare stem) NF-C Long-Neck Body								
Lug	Ductile Iron	116	203	239	332	535	1050	2020
	Bronze	113	199	235	325	525	N/A	N/A

HOW TO ORDER



(Example: 6" (150 mm) 200 psi Wafer, Standard Trim with 10-Position Handle – 22928-1114311)

* Standard base trim options.

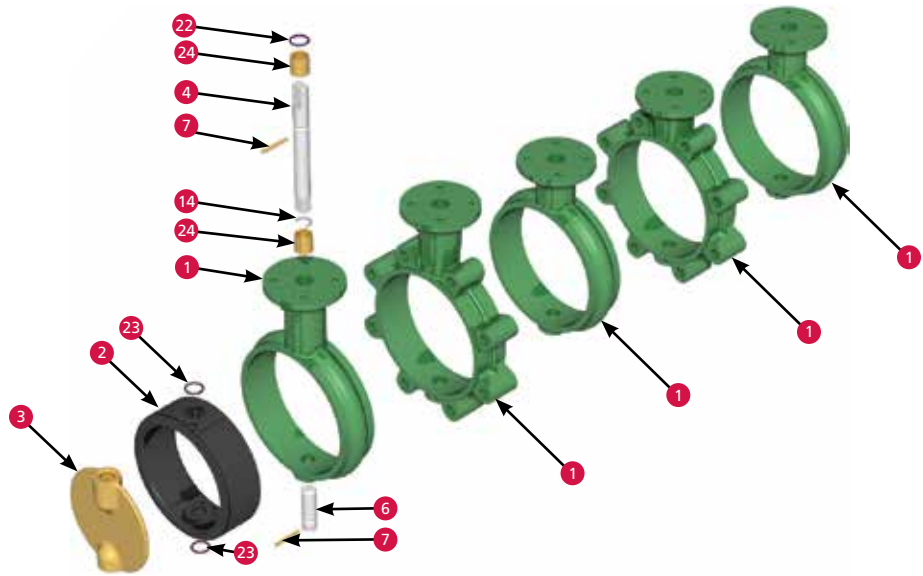
** Wafer 2" to 12" (50 mm to 300 mm) only.

Lug 2" to 36" (50 mm to 900 mm).

Note: 30" and 36" (750 mm to 900 mm) available with ductile iron lug body only.

1 See material trademark note on page 40.

COMPONENT PARTS LIST: SERIES NE-C, NE-I, NE-D

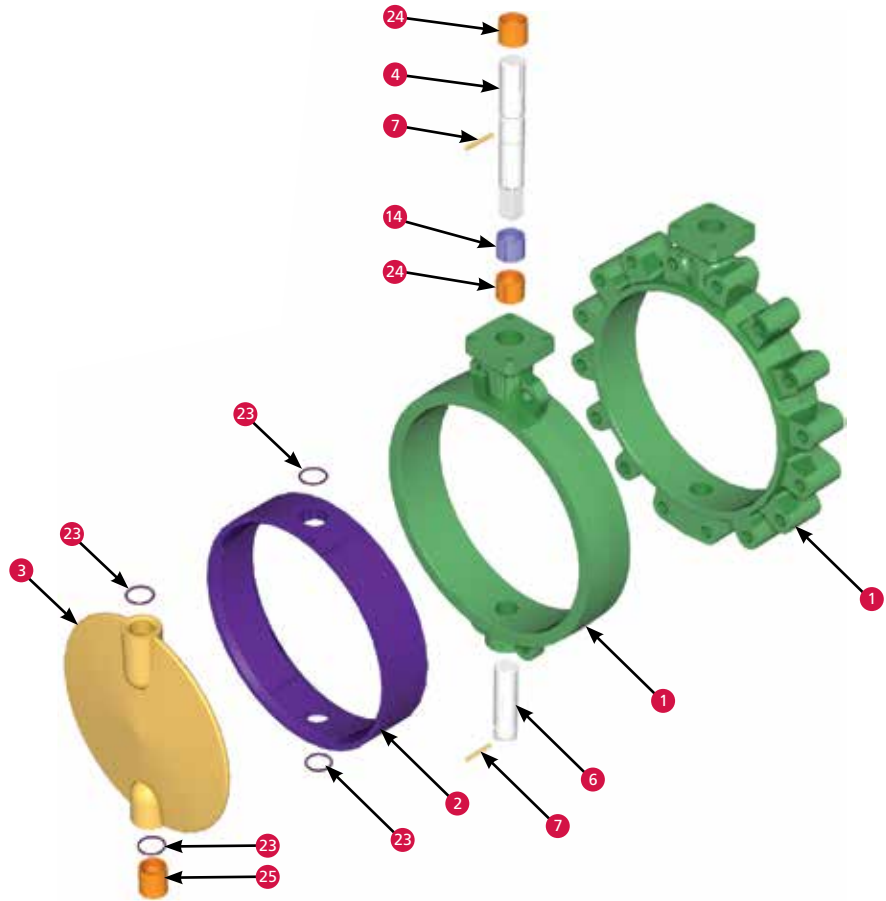


Parts List for Series NE-C, NE-I and NE-D (Consult a Cameron representative for replacement parts for Series NE, NE-S and NE-N.)

Key No.	Description	2" (50 mm)	2-1/2" (65 mm)	3" (80 mm)	4" (100 mm)	5" (125 mm)	6" (150 mm)	8" (200 mm)	10" (250 mm)	12" (300 mm)		
1	Body	NE-C Wafer	22137-012	22138-012	22139-012	22140-012	22141-012	22142-012	22143-012	22144-012	22145-012	
		Options	ASTM A48 Gray Iron -012									
		NE-C Lug	21986-051	21987-051	21988-051	21989-051	21990-051	21991-051	21992-051	21993-051	21994-051	21994-051
		Options	ASTM A395 Ductile Iron -051									
		NE-I Wafer	22681-01x	22682-01x	22683-01x	22684-01x	22685-01x	22686-01x	22687-01x	22688-01x	22689-01x	22689-01x
		Options	ASTM A395 Ductile Iron -011, ASTM B148 Aluminum Bronze -013, ASTM A216 WCB Steel -014, ASTM B179 Aluminum -015, DI/ENC -016, ASTM A351 SS -018									
		NE-I Lug	22695-05x	22696-05x	22697-05x	22698-05x	22699-05x	22700-05x	22701-05x	22702-05x	22703-05x	22703-05x
		Options	ASTM B148 Aluminum Bronze -053, ASTM A216 WCB Steel -054, ASTM A351 SS -058									
		NE-D Wafer	22187-021	22682-011	20594-021	22189-021	22190-021	22191-021	22687-011	22192-021	22689-011	22689-011
		Options	ASTM A395 Ductile Iron -0x1									
2	Seat		1786-xxx	1788-xxx	1790-xxx ⁶	1792-xxx	1794-xxx	1002-xxx	1798-xxx	1815-xxx	1817-xxx	
		Options	Buna-N -031, Black Neoprene -032, Hypalon ⁷ -033, FKM -034, EPDM ¹ -135, Natural Rubber -036, White Neoprene -037, Peroxide-Cured Buna-N -231, Fluorosteam -244, ETM-30230 -331									
3	Disc	200 psi	22045-0xx	22046-0xx	22047-0xx	22048-0xx	22049-0xx	22050-0xx	22051-0xx	22052-0xx	22053-0xx	
		285 psi	22196-0xx	22197-0xx	22198-0xx	22199-0xx	22200-0xx	22201-0xx	22202-0xx	22203-0xx	22204-0xx	
		50 psi	22205-0xx	22206-0xx	22207-0xx	22208-0xx	22209-0xx	22210-0xx	22211-0xx	22212-0xx	22213-0xx	
		Throttling	22214-0xx	22215-0xx	22216-0xx	22217-0xx	22218-0xx	22219-0xx	22220-0xx	22221-0xx	22222-0xx	
		Options	316 SS -002, Monel -003, Nickel-Plated Ductile Iron -005, Alloy 20 ² -007, Hastelloy C ⁷ -008, Aluminum Bronze ³ -014									
		PVF-Coated, 200 psi	22714-001	22715-001	22716-001	22717-001	22718-001	22719-001	22720-001	22721-001	22722-001	22722-001
		Options	316 SS -002, Monel -003, Nickel-Plated Ductile Iron -005, Alloy 20 ² -007, Hastelloy C ⁷ -008, Aluminum Bronze ³ -014									
4	Upper Stem	NE-C	22066-00x	22067-00x	22068-00x	22068-00x	22069-00x	22070-00x	22071-00x	22072-00x	22072-00x	
		NE-I	22073-00x	22074-00x	22075-00x	22075-00x	22076-00x	22077-00x	22078-00x	22079-00x	22079-00x	
		NE-D	22073-00x	22074-00x	22193-00x	22194-00x	22195-00x	22077-00x	22078-00x	22079-00x	22079-00x	
	Upper Stem -Utility Top	NE-C	22334-00x	22335-00x	22336-00x	22336-00x	22337-00x	22338-00x	22339-00x	22340-00x	22340-00x	
		NE-I	22341-00x	22342-00x	22343-00x	22343-00x	22344-00x	22345-00x	22346-00x	22347-00x	22347-00x	
6	Lower Stem		22080-00x	22081-00x	22082-00x	22082-00x	22083-00x	22084-00x	22085-00x	22086-00x		
		Stem Material Options	416 SS -001, 316 SS ⁴ -002, Monel ⁷ -003									
7	Spring Pin (2)	302 SS	5448-18720			5448-18724			5448-25028			
14	Retainer	Stainless Steel	22117		13704		13705		13706		13707	
22	Top O-ring	Buna-N	5526-114		5526-115		5526-117		5526-119		5526-125	
23	Stem O-ring ⁵	Buna-N	5526-113		5526-115		5526-116		5526-212		5526-214	
24	Bearing (2)	Bronze	22526-001		22118-001		13112-001		13115-001		13116-001	

- 1 EPDM seat options: Standard – Peroxide-Cured -135, Food Grade -035 Peroxide-Cured, Sulfur-Cured -235.
- 2 Alloy 20 not available for 285 psi.
- 3 8" to 12" (200 mm to 300 mm), 285 psi Aluminum Bronze, use -024.
- 4 8" to 12" (200 mm to 300 mm), Upper Stem 17-4 PH SS (part number suffix -012), Lower Stem 316 SS.
- 5 Four required for throttling (0 psi) valves only.
- 6 3" (80 mm) NE-D seat part number 25095-xxx.
- 7 See material trademark note on page 40

COMPONENT PARTS LIST: SERIES NF-C



Part List for Series NF-C, (Consult a Cameron representative for replacement parts for Series NF.)

Key No.	Qty.	Description		14" (350 mm)	16" (400 mm)	18" (450 mm)	20" (500 mm)	24" (600 mm)	Material
1	1	Body	Lug	23827-051	23911-051	23901-051	23891-051	23875-051	Ductile Iron (Lug) -051
			Wafer	23825-012	23907-012	23899-012	23881-012	23873-012	Cast Iron (Wafer) -012
2	1	Seat		23829-03x	23913-03x	23903-03x	23893-03x	7103-03x	Buna-N -031 Blk. Neoprene -032 Hypalon ⁴ -033, FKM -034 EPDM ³ -X35
3	1	Disc	150 psi	23830-0xx	23915-0xx	23905-0xx	23895-0xx	23877-0xx	316 SS -002 Monel ⁴ -003
			50 psi	24450-0xx	24451-0xx	24452-0xx	24453-0xx	24454-0xx	Aluminum Bronze -014
			Throttling	24455-0xx	24456-0xx	24457-0xx	24458-0xx	24459-0xx	Nickel-Plated Iron -005
			PVF-Coated	24460-001	24461-001	24462-001	24463-001	24464-001	PVF-Coated Iron -001
4	1	Upper Stem		23833-00x	23917-00x	23897-00x	23897-00x	23879-00x	416 SS -001, 316 SS -002
6	1	Lower Stem		23834-00x	23918-00x	23898-00x	23898-00x	23880-00x	Monel ⁴ -003
7	2	Spring Pin		5446-25040	5446-25040	5446-25048	5446-25048	5446-25064	Stainless Steel
14	1	Retainer (Spacer) ²		5502-137	5502-150	5502-175	5502-175	24470	Steel
23	Note 1	Disc O-ring		5526-220	5526-223	5526-328	5526-328	5526-331	Buna-N
24			Upper Bearing	5086-044	5086-050	5086-048	5086-048	5086-046	Bronze
25	1	Lower Bearing		5086-045	5086-051	5086-049	5086-049	5086-047	Bronze

1 Four required for throttling valves only.

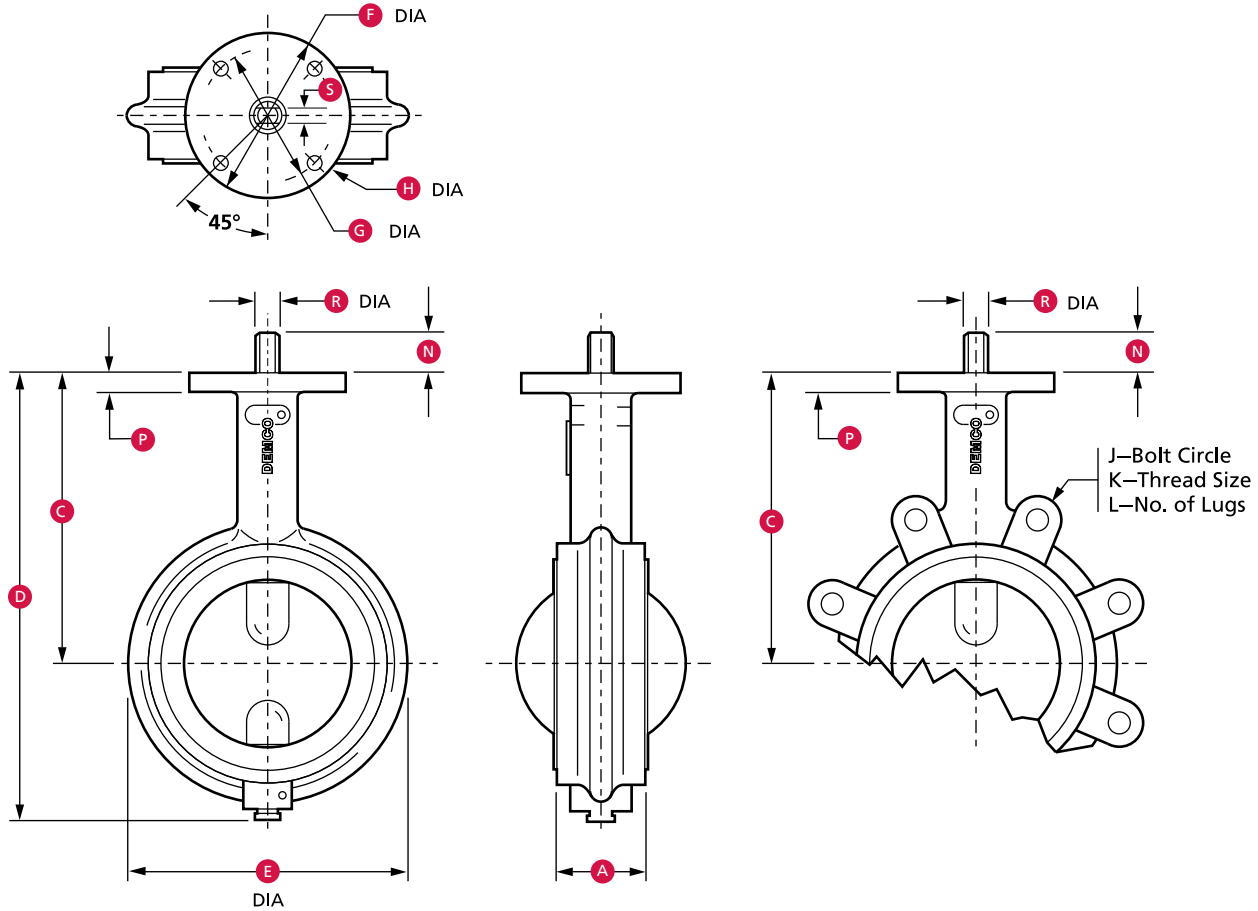
2 14" to 20" (350 mm to 500 mm) retainer, 24" (600 mm) spacer.

3 EPDM seat options: Standard – Peroxide-Cured -135, Food Grade -035 Peroxide-Cured, Sulfur-Cured -235.

4 See material trademark note on page 40.

SERIES NE-C DIMENSIONAL DATA

2" to 12" (50 mm to 300 mm)



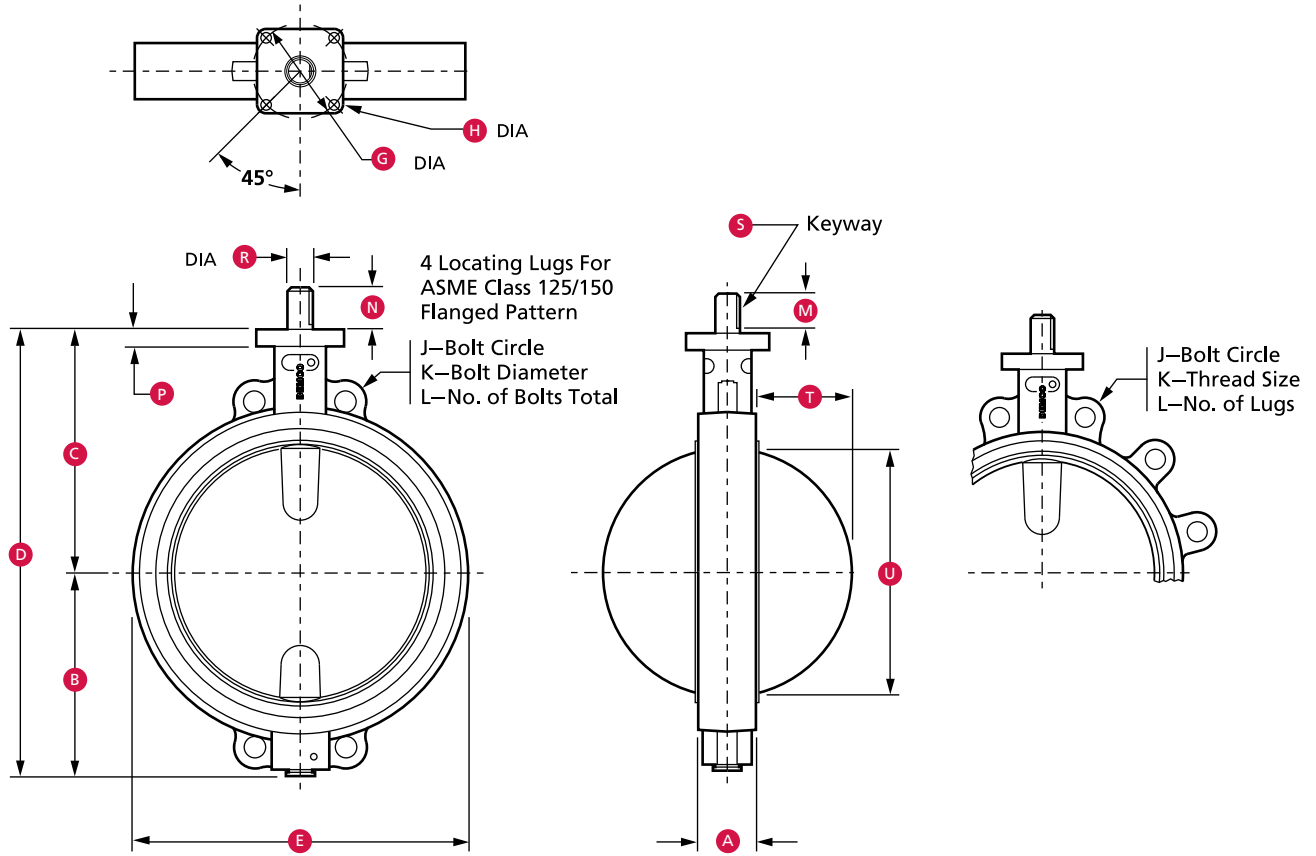
Dimensional Data

Size in.	A	C	D	E	F	G	H	J	K	L	N	P	R	S
2	1.74	5.62	8.44	4.12	4.00	3.25	0.408	4.75	5/8 - 11	4	1.00	0.44	0.625	0.375
2-1/2	1.86	6.12	9.19	4.88	4.00	3.25	0.408	5.50	5/8 - 11	4	1.00	0.44	0.625	0.375
3	1.86	6.38	9.69	5.38	4.00	3.25	0.408	6.00	5/8 - 11	4	1.00	0.44	0.625	0.375
4	2.11	7.12	11.00	6.88	4.00	3.25	0.408	7.50	5/8 - 11	8	1.00	0.44	0.625	0.375
5	2.24	7.75	12.12	7.75	4.00	3.25	0.408	8.50	3/4 - 10	8	1.25	0.44	0.838	0.500
6	2.24	8.25	13.25	8.75	4.00	3.25	0.408	9.50	3/4 - 10	8	1.25	0.44	0.838	0.500
8	2.54	9.44	15.56	11.00	6.00	5.00	0.533	11.75	3/4 - 10	8	1.38	0.56	0.838	0.500
10	2.74	11.25	18.69	13.38	6.00	5.00	0.533	14.25	7/8 - 9	12	1.38	0.56	0.963	0.625
12	3.24	12.19	21.69	16.12	6.00	5.00	0.533	17.00	7/8 - 9	12	1.38	0.56	1.338	0.750
Size mm														
50	44	143	214	105	102	83	10.36	121	5/8 - 11	4	25	11.2	15.88	9.53
65	47	155	233	124	102	83	10.36	140	5/8 - 11	4	25	11.2	15.88	9.53
80	47	162	246	137	102	83	10.36	152	5/8 - 11	4	25	11.2	15.88	9.53
100	54	181	279	175	102	83	10.36	191	5/8 - 11	8	25	11.2	15.88	9.53
125	57	197	308	197	102	83	10.36	216	3/4 - 10	8	32	11.2	21.29	12.70
150	57	210	337	222	102	83	10.36	241	3/4 - 10	8	32	11.2	21.29	12.70
200	65	240	395	279	152	127	13.54	298	3/4 - 10	8	35	14.2	21.29	12.70
250	70	286	475	340	152	127	13.54	362	7/8 - 9	12	35	14.2	24.46	15.88
300	82	310	551	409	152	127	13.54	432	7/8 - 9	12	35	14.2	33.99	19.05

Note: For general dimensions, see page 28.

SERIES NF-C DIMENSIONAL DATA

14" to 24" (350 mm to 600 mm)



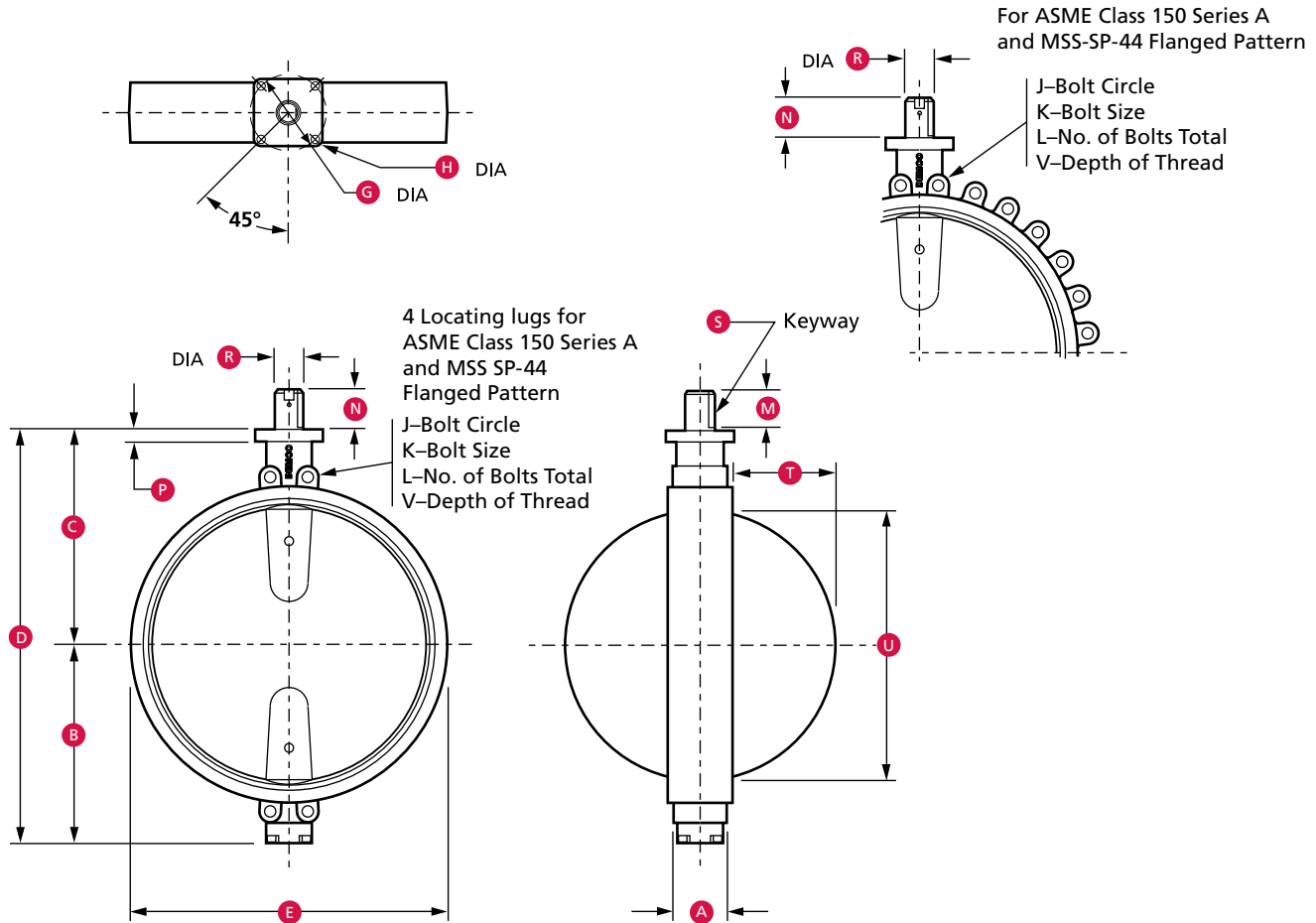
Dimensional Data

Size in.	A	B	C	D	E	G	H	J	K	L	M	N	P	R	S	T	U
14	3.00	10.63	12.75	23.4	16.20 17.3*	5.00	0.56	18.75	1 - 8 1*	12	2.00	2.25	0.88	1.375	5/16 x 5/32	5.12	12.89
16	4.00	11.66	13.75	25.4	18.16 19.2*	5.00	0.56	21.25	1 - 8 1*	16	2.00	2.25	0.88	1.625	3/8 x 3/16	5.65	14.76
18	4.50	12.96	14.75	27.7	20.35 21.4*	6.50	0.81	22.75	1-1/8 - 7 1-1/8*	16	2.50	2.75	1.00	1.875	1/2 x 3/16	6.37	16.63
20	5.00	13.97	15.75	29.7	22.63 23.6*	6.50	0.81	25.00	1-1/8 - 7 1-1/8*	20	2.50	2.75	1.00	1.875	1/2 x 3/16	7.12	18.58
24	6.00	16.19	19.00	35.2	27.31 28.3*	6.50	0.81	29.50	1-1/4 - 7 1-1/4*	20	2.50	3.00	1.00	1.875	1/2 x 3/16	8.67	22.56
Size mm																	
350	76	270	324	594	411 439*	127	14.2	476	1 - 8 1*	12	51	57	22.4	34.93	7.94 x 3.97	130	327
400	102	296	349	645	461 488*	127	14.2	540	1 - 8 1*	16	51	57	22.4	41.28	9.53 x 4.76	144	375
450	114	329	375	704	517 544*	165	20.6	578	1-1/8 - 7 1-1/8*	16	64	57	25.4	47.63	12.70 x 4.76	162	422
500	127	355	400	754	575 599*	165	20.6	635	1-1/8 - 7 1-1/8*	20	64	57	25.4	47.63	12.70 x 4.76	181	472
600	152	411	483	894	694 719*	165	20.6	749	1-1/4 - 7 1-1/4*	20	64	76	25.4	47.63	12.70 x 4.76	220	573

* Wafer valve dimension is the bottom figure. Lug valve dimension is the top figure.
Note: For general dimensions, see page 28.

SERIES NF-C DIMENSIONAL DATA

30" to 36" (750 mm to 900 mm)



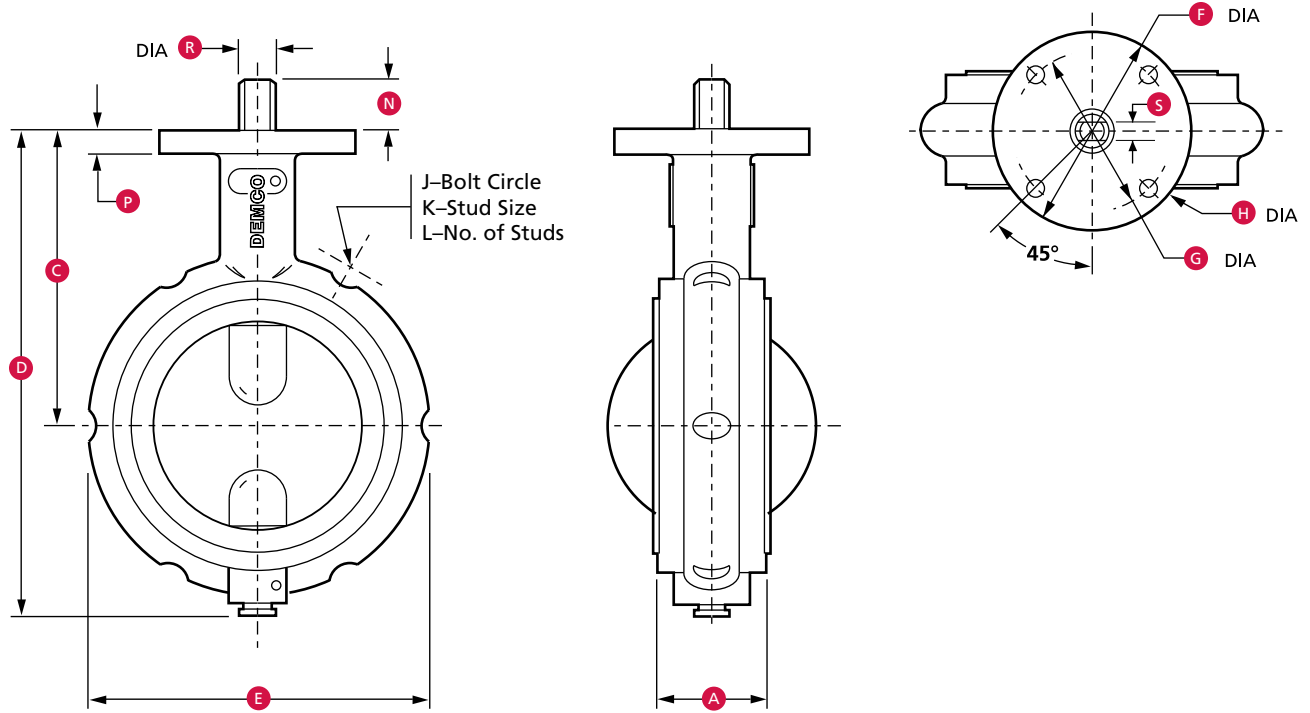
Dimensional Data

Size in.	A	B	C	D	E	G	H	J	K	L	M	N	P	R	S	T	U	V
30	6.50	21.2	23.0	44.2	34.1	8.00	0.69	36.00	1-1/4 - 7UNC	28	3.4	3.7	1.2	3.000	3/4 x 3/8	11.45	28.55	1.750
36	7.88	25.0	27.8	52.8	40.5	10.25	0.81	42.75	1-1/2 - 6UNC	32	4.0	4.4	1.5	3.625	7/8 x 7/16	13.86	34.71	1.750
Size mm																		
750	165	538	584	1123	866	203	17.53	914	1-1/4 - 7UNC	28	86	94	30.5	76.2	19.05 x 9.53	291	725	44.45
900	200	635	706	1342	1029	260	20.57	1086	1-1/2 - 6UNC	32	102	112	38.1	92.1	22.23 x 11.11	352	882	44.45

Note: For general dimensions, see page 28.

SERIES NE-D DIMENSIONAL DATA

2" to 12" (50 mm to 300 mm)

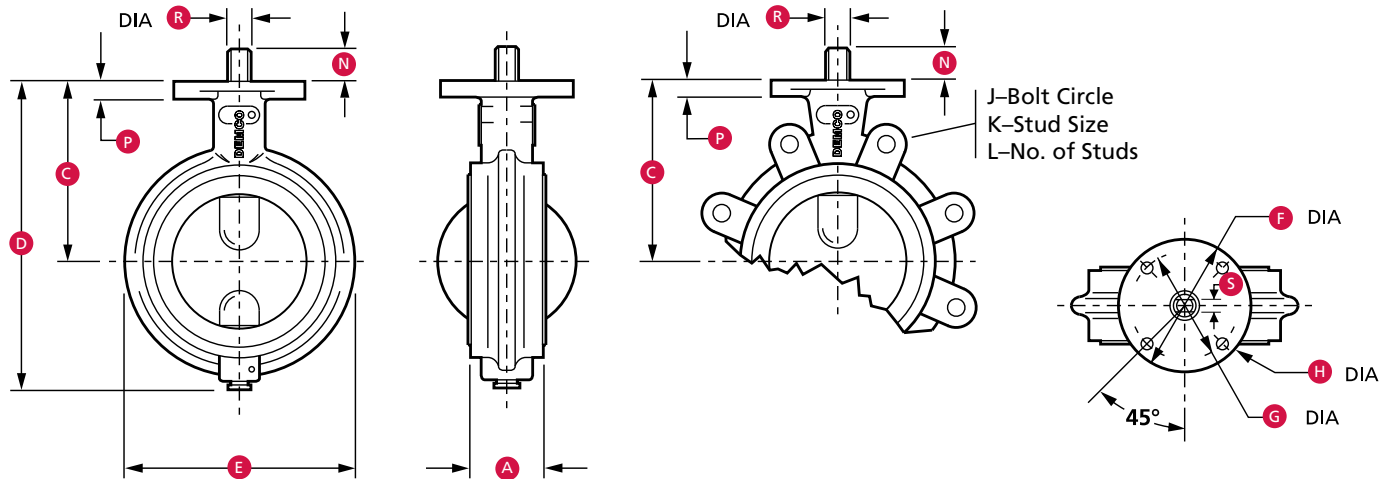


Dimensional Data

Size in.	A	C	D	E	F	G	H	J	K	L	N	P	R	S
2	1.74	3.94	6.75	4.12	4.00	3.25	0.408	4.27	3/8	4	1.00	0.44	0.625	0.375
2-1/2	1.86	4.44	7.50	4.88	4.00	3.25	0.408	5.31	3/8	4	1.00	0.44	0.625	0.375
3	1.86	4.88	8.19	5.38	4.00	3.25	0.408	4.91	3/8	6	1.00	0.44	0.625	0.375
4	2.11	6.00	9.88	6.88	4.00	3.25	0.408	7.03	1/2	6	1.00	0.44	0.625	0.375
5	2.24	6.00	10.38	7.75	4.00	3.25	0.408	7.56	1/2	6	1.25	0.44	0.838	0.500
6	2.24	6.50	11.50	8.75	4.00	3.25	0.408	9.16	1/2	8	1.25	0.44	0.838	0.500
8	2.54	8.06	14.19	11.00	6.00	5.00	0.533	11.72	5/8	8	1.38	0.56	0.838	0.500
10	2.74	9.97	17.41	13.38	6.00	5.00	0.533	13.72	5/8	8	1.38	0.56	0.963	0.625
12	3.24	10.91	20.41	16.12	6.00	5.00	0.533	16.62	1/2	12	1.38	0.56	1.338	0.750
Size mm														
50	44	100	171	105	102	83	10.36	108	10	4	25	11.2	15.88	9.53
65	47	113	191	124	102	83	10.36	135	10	4	25	11.2	15.88	9.53
80	47	124	208	137	102	83	10.36	125	10	6	25	11.2	15.88	9.53
100	54	152	251	175	102	83	10.36	179	15	6	25	11.2	15.88	9.53
125	57	152	264	197	102	83	10.36	192	15	6	32	11.2	21.29	12.70
150	57	165	292	222	102	83	10.36	233	15	8	32	11.2	21.29	12.70
200	65	205	360	279	152	127	13.54	298	16	8	35	14.2	21.29	12.70
250	70	253	442	340	152	127	13.54	348	16	8	35	14.2	24.46	15.88
300	82	277	518	409	152	127	13.54	422	15	12	35	14.2	33.99	19.05

Note: For general dimensions, see page 28.

SERIES NE-I, NE-I SANITARY
 2" to 12" (50 mm to 300 mm)



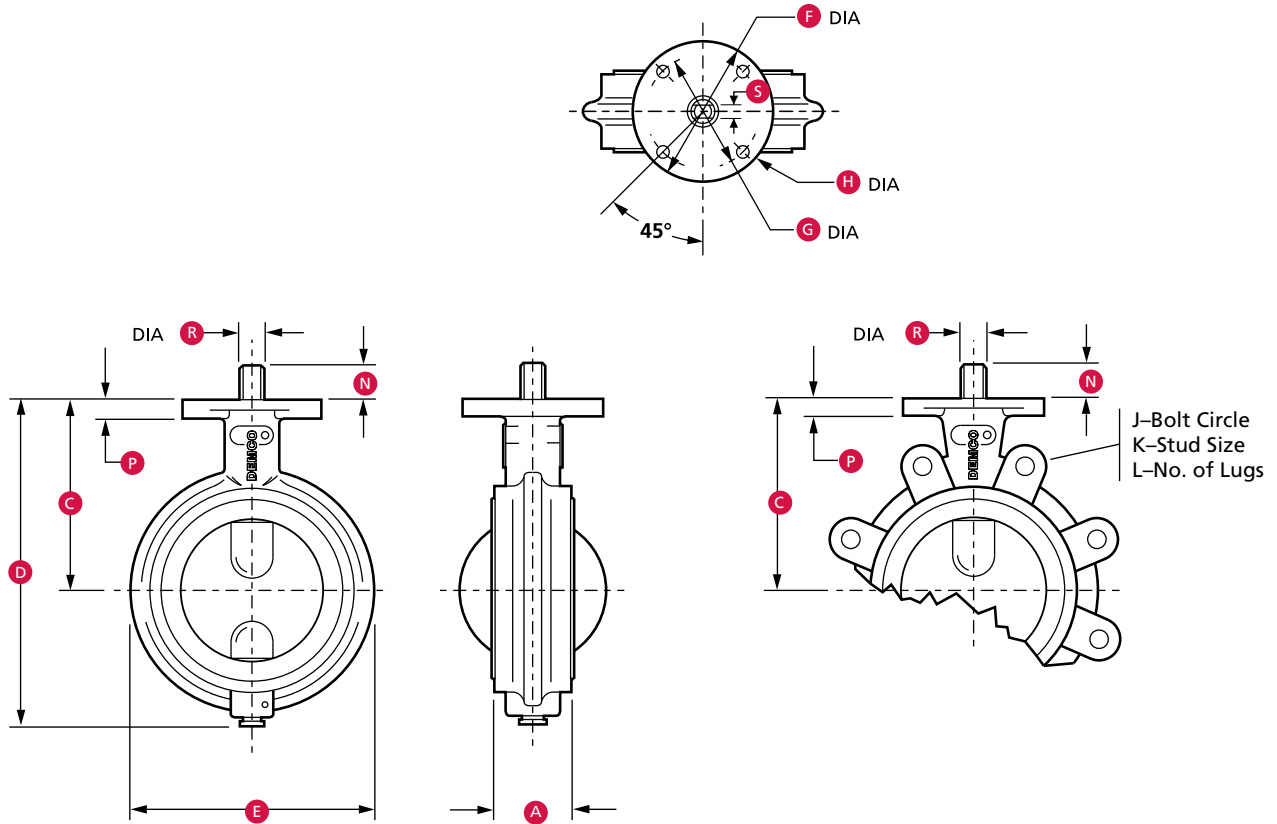
Dimensional Data

Size in.	A	C	D	E	F	G	H	J	K	L	N	P	R	S
2	1.74	3.94	6.75	4.12	4.00	3.25	0.408	4.75	5/8 - 11	4	1.00	0.44	0.625	0.375
2-1/2	1.86	4.44	7.50	4.88	4.00	3.25	0.408	5.50	5/8 - 11	4	1.00	0.44	0.625	0.375
3	1.86	4.69	8.00	5.38	4.00	3.25	0.408	6.00	5/8 - 11	4	1.00	0.44	0.625	0.375
4	2.11	5.44	9.31	6.88	4.00	3.25	0.408	7.50	5/8 - 11	8	1.00	0.44	0.625	0.375
5*	2.24	6.38	10.75	7.75	4.00	3.25	0.408	8.50	3/4 - 10	8	1.25	0.44	0.838	0.500
6	2.24	6.88	11.88	8.75	4.00	3.25	0.408	9.50	3/4 - 10	8	1.25	0.44	0.838	0.500
8	2.54	8.06	14.19	11.00	6.00	5.00	0.533	11.75	3/4 - 10	8	1.38	0.56	0.838	0.500
10	2.74	9.97	17.41	13.38	6.00	5.00	0.533	14.25	7/8 - 9	12	1.38	0.56	0.963	0.625
12	3.24	10.91	20.41	16.12	6.00	5.00	0.533	17.00	7/8 - 9	12	1.38	0.56	1.338	0.750
Size mm														
50	44	100	171	105	102	83	10.36	121	5/8 - 11	4	25	11.2	15.88	9.53
65	47	113	191	124	102	83	10.36	140	5/8 - 11	4	25	11.2	15.88	9.53
80	47	119	203	137	102	83	10.36	152	5/8 - 11	4	25	11.2	15.88	9.53
100	54	138	236	175	102	83	10.36	191	5/8 - 11	8	25	11.2	15.88	9.53
125*	57	162	273	197	102	83	10.36	216	3/4 - 10	8	32	11.2	21.29	12.70
150	57	175	302	222	102	83	10.36	241	3/4 - 10	8	32	11.2	21.29	12.70
200	65	205	360	279	152	127	13.54	298	3/4 - 10	8	35	14.2	21.29	12.70
250	70	253	442	340	152	127	13.54	362	7/8 - 9	12	35	14.2	24.46	15.88
300	82	277	518	409	152	127	13.54	432	7/8 - 9	12	35	14.2	33.99	19.05

* NE-I sanitary 5" (125 mm) not available.
 Note: For general dimensions, see page 28.

SERIES NEI-T

2" to 10" (50 mm to 250 mm)



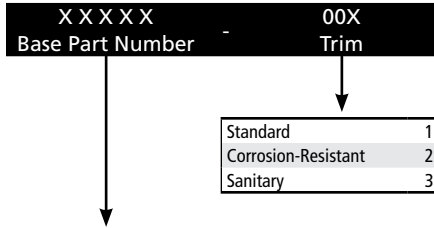
Dimensional Data

Size in.	A	C	D	E	F	G	H	J	K	L	N	P	R	S
2	1.74	3.94	6.75	4.12	4.00	3.25	0.408	4.75	5/8 - 11	4	1.00	0.44	0.625	0.375
2-1/2	1.86	4.44	7.50	4.88	4.00	3.25	0.408	5.50	5/8 - 11	4	1.00	0.44	0.625	0.375
3	1.86	4.69	8.00	5.38	4.00	3.25	0.408	6.00	5/8 - 11	4	1.00	0.44	0.625	0.375
4	2.11	5.44	9.31	6.88	4.00	3.25	0.408	7.50	5/8 - 11	8	1.00	0.44	0.625	0.375
6	2.24	6.88	11.88	8.75	4.00	3.25	0.408	9.50	3/4 - 10	8	1.25	0.44	0.838	0.500
8	2.54	8.06	14.19	11.00	6.00	5.00	0.533	11.75	3/4 - 10	8	1.38	0.56	0.838	0.500
10	2.74	9.97	17.41	13.38	6.00	5.00	0.533	14.25	7/8 - 9	12	1.38	0.56	0.963	0.625
Size mm														
50	44	100	171	105	102	83	10.36	121	5/8 - 11	4	25	11.2	15.88	9.53
65	47	113	191	124	102	83	10.36	140	5/8 - 11	4	25	11.2	15.88	9.53
80	47	119	203	137	102	83	10.36	152	5/8 - 11	4	25	11.2	15.88	9.53
100	54	138	236	175	102	83	10.36	191	5/8 - 11	8	25	11.2	15.88	9.53
150	57	175	302	222	102	83	10.36	241	3/4 - 10	8	32	11.2	21.29	12.70
200	65	205	360	279	152	127	13.54	298	3/4 - 10	8	35	14.2	21.29	12.70
250	70	253	442	340	152	127	13.54	362	7/8 - 10	12	35	14.2	24.46	15.88

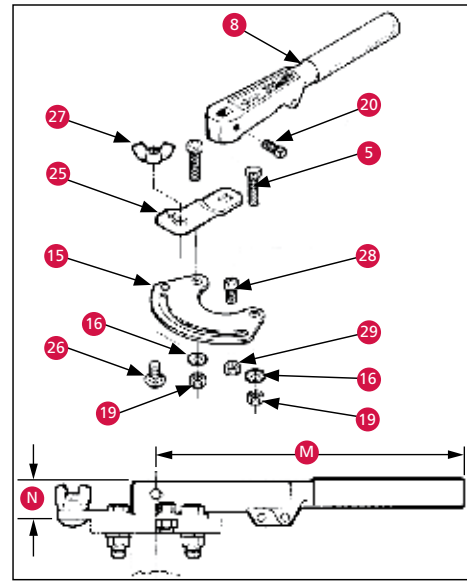
Note: For general dimensions, see page 28.

HANDLES

HOW TO ORDER (XXXXX - 00X)

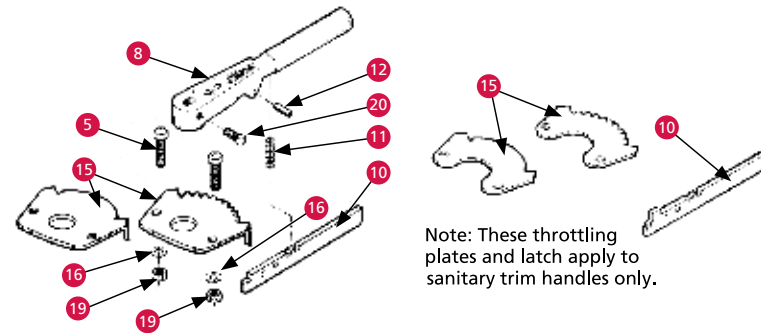
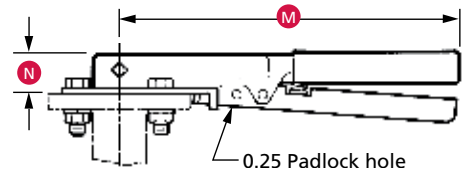


Description	in. (mm)	2 to 4 (50 to 100)	5 to 6 (125 to 150)	8 (200)	10 (250)	12 (300)
10-Position, Standard, CR		24227	24228	24229	24230	24231
2-Position, Standard, CR		24232	24233	24234	24235	24236
10-Position, Sanitary		22319	22320	22321	22322	22323
2-Position, Sanitary		22324	22325	22326	22327	22328
Throttling, Standard, CR		24252	24253	24254	24255	24256
Throttling, Sanitary		22329	22330	22331	22332	22333
Square Nut, Standard		23356	23357	23358	23359	22360
Weight (lb)		2.3	2.9	6.5	6.5	6.5



Infinite Throttling with Memory Stop Handle

Dimension	in. (mm)	2 to 4 (50 to 100)	5 to 6 (125 to 150)	8 to 12 (200 to 300)
M		9.50 (241)	11.00 (279)	15.00 (381)
N		0.85 (21.6)	1.07 (27.2)	1.13 (28.7)



Note: These throttling plates and latch apply to sanitary trim handles only.

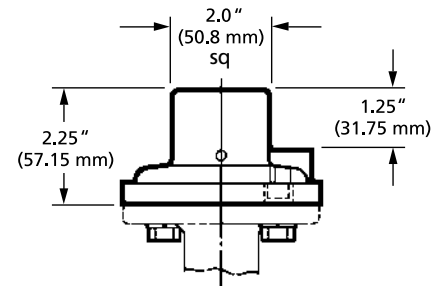
2-Position/10-Position Locking Handles

Key No.	Description	Material		
		Standard	Corrosion-Resistant	Sanitary
5	Screw	Steel	Stainless Steel	Stainless Steel
8	Handle	Ductile Iron	Ductile Iron	Bronze
10	Latch	Zinc-Plated Steel	Stainless Steel	Stainless Steel
11	Spring	Spring Steel	Stainless Steel	Stainless Steel
12	Spring Pin	Spring Steel	Stainless Steel	Stainless Steel
15	Throttle Plate	Zinc-Plated Steel	Stainless Steel	Stainless Steel
16	Lockwasher	Steel	Stainless Steel	Stainless Steel
19	Nut	Steel	Stainless Steel	Stainless Steel
20	Set Screw	Steel	Stainless Steel	Stainless Steel
25*	Throttling Tab	Zinc-Plated Steel	Stainless Steel	Stainless Steel
26*	Carriage Bolt	Steel	Stainless Steel	Stainless Steel
27*	Wing Nut	Steel	Stainless Steel	Stainless Steel
28*	Screw	Steel	Stainless Steel	Stainless Steel
29*	Nut	Steel	Stainless Steel	Stainless Steel

* For throttling, memory stop handle only.

2-Position/10-Position Locking Handles

Dimension	in. (mm)	2 to 4 (50 to 100)	5 to 6 (125 to 150)	8 to 12 (200 to 300)
M		9.50 (241)	11.00 (279)	15.00 (381)
N		0.87 (22.1)	1.07 (27.2)	1.13 (28.7)



Square Nut Handle

Description	Material
Square Nut Hub	Ductile Iron
Throttle Plate	Steel
Screw	Steel
Set Screw	Steel
Lock Washer	Spring Steel

WORM GEAR OPERATORS

Manual worm gear operators are self-locking in all positions. Adjustment screws stop travel at open and closed positions. Position indicator is standard on all models. Gearing is permanently lubricated.

Gray iron weatherproof case and cover enclose a ductile iron gear and hardened steel worm supported by bronze bearings. Standard external coating is green enamel. White epoxy, coal tar epoxy and inorganic zinc primer are available upon special request.

HOW TO ORDER

2" to 12" (50 mm to 300 mm)

XXXXX Base Part Number	X Case Material	X Gear Material	X Actuation	X Valve Size	X Configuration
	Gray Iron 2	Ductile Iron 1	Crank 1 Handwheel 3 Chainwheel 5 Square Nut 6 None 9	2" to 4" (50 mm to 100 mm) 1 5" and 6" (125 mm and 150 mm) 5 8" (200 mm) 7 10" (250 mm) 8 12" (300 mm) 9	Standard 2

Description	2" to 4" (50 mm to 100 mm)	5" to 6" (125 mm to 150 mm)	8" (200 mm)	10" (250 mm)	12" (300 mm)
Operator Base No.	22622	22622	22623	22623	22623
Additional Information					
Chain Suffix = Length in ft*	4462-XXX	4462-XXX	4462-XXX	4462-XXX	4462-XXX
Weight lb (kg) with Handwheel	7.8 (3.5)	7.8 (3.5)	17.2 (7.8)	17.2 (7.8)	18.6 (8.4)

14" to 36" (350 mm to 900 mm)

XXXXX Base Part Number	X Gear Operator Assembly Part Number
	Gear Operator Less Actuation 09 Gear Operator with Handwheel 03 Gear Operator with Chainwheel 05 Gear Operator with Square Nut 06

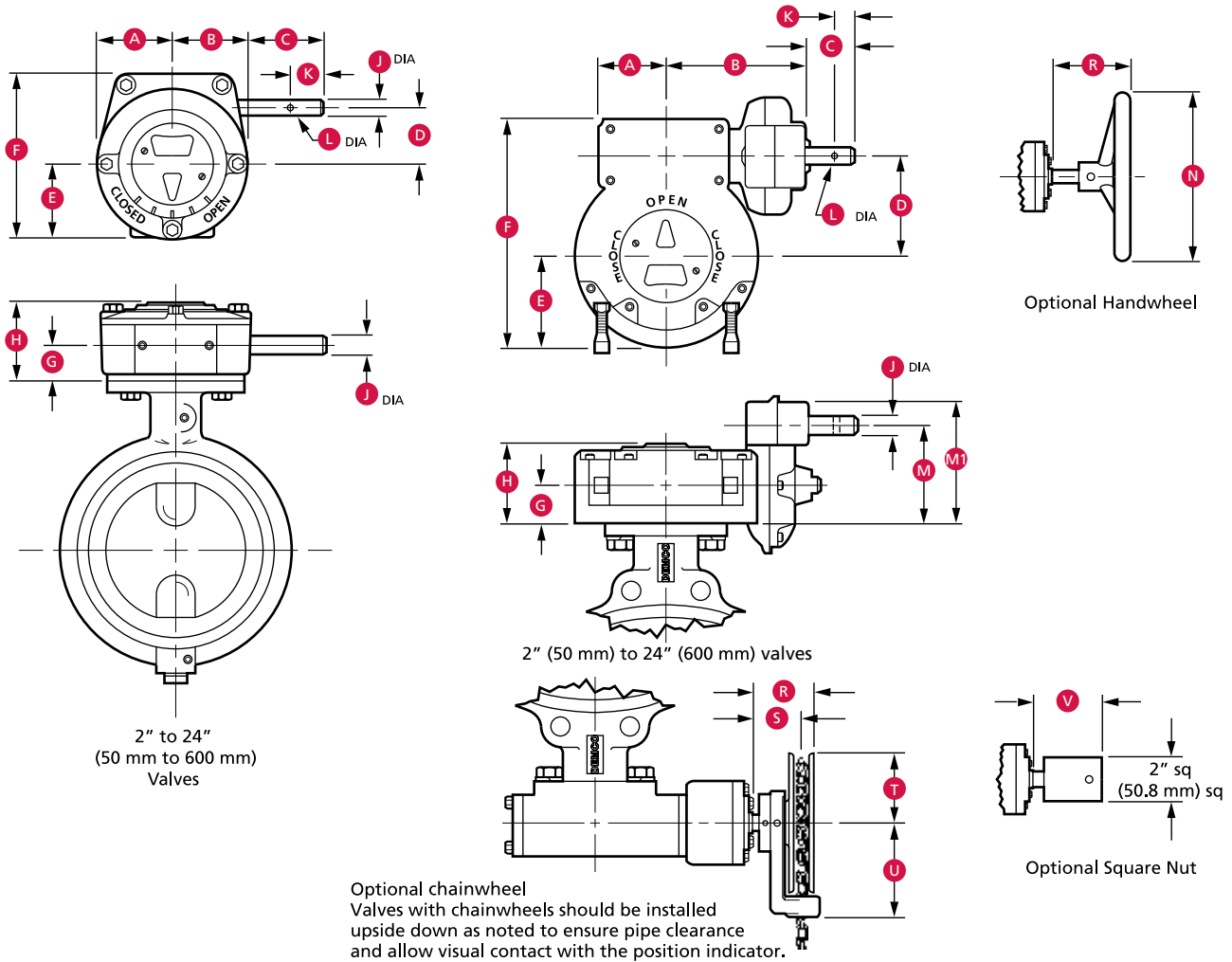
Description	14" (350 mm)	16" (400 mm)	18" to 20" (450 mm to 500 mm)	24" (600 mm)	30" (750 mm)	36" (900 mm)
Operator Base No.	2060229	2060230	2060231	2060232	2060332	2060334
Additional Information						
Chain Suffix = Length in ft*	4462-XXX	4463-XXX	4463-XXX	19932-XXX	4463-XXX	19932-XXX
Weight (lb (kg) with handwheel)	19.0 (8.6)	22.0 (10.0)	33.0 (15.0)	43.0 (19.5)	107.0 (48.5)	137.0 (62.1)

Valve Size	in.	(mm)	Gear Ratio	Turns/90 Degree Rotation	Maximum Input Torque
	2 to 6	(50 to 150)	30:1	7-1/2	46 ft-lb
	8 to 12	(200 to 300)	48:1	12	65 ft-lb
	14 to 16	(350 to 400)	48:1	12	65 ft-lb
	18 to 20	(450 to 500)	57:1	14-1/4	98 ft-lb
	24	(600)	60:1	15	164 ft-lb
	30	(750)	316:1	79	104 ft-lb
	36	(900)	240:1	60	174 ft-lb

(Example: 6" (150 mm) with Handwheel – 22622-21352)

* Chain length (xxx) = 000 to 999 ft (chain ordered separately).

WORM GEAR OPERATORS (CONT.)



Dimensional Data

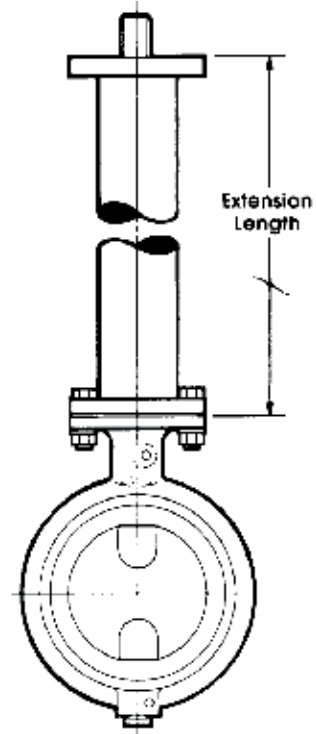
Size in.	A	B	C	D	E	F	G	H	J	K	L	M	M1	N	P	R	S	T	U	V
2 to 6	1.80	1.80	3.80	1.64	1.59	4.97	0.90	2.30	0.623	1.00	0.19	-	-	4.80	6	4.80	4.10	3.50	4.80	4.60
8 to 10	2.88	2.88	3.38	2.50	2.88	6.50	1.38	3.00	0.623	1.00	0.19	-	-	4.32	6	4.32	3.72	3.50	4.80	4.12
12	2.88	2.88	3.38	2.50	2.88	6.50	1.38	3.00	0.623	1.00	0.19	-	-	5.02	8	4.32	3.72	3.50	4.80	4.12
14	2.88	2.88	5.12	2.50	2.88	6.50	1.38	3.00	0.623	1.25	0.19	-	-	6.56	12	5.88	5.25	5.81	5.75	5.69
16	2.88	2.88	5.88	2.50	2.88	6.50	1.38	3.00	0.623	1.25	0.25	-	-	11.00	18	7.69	6.38	9.12	8.69	6.75
18 to 20	3.12	3.12	7.12	3.00	3.12	7.69	1.50	3.25	1.000	1.25	0.25	-	-	11.25	18	8.94	7.63	9.12	8.69	8.00
24	3.44	3.44	5.28	3.63	3.25	8.38	1.63	3.56	1.000	1.25	0.38	-	-	10.91	24	7.59	5.91	11.00	12.25	6.16
30	4.56	8.88	4.52	4.63	4.63	11.08	2.00	4.44	1.000	1.25	0.39	6.00	7.38	8.65	18	7.59	6.28	9.12	8.69	5.41
36	5.88	9.12	4.56	6.25	5.88	14.50	2.31	5.00	1.000	1.25	0.39	6.36	8.00	10.19	24	8.13	6.44	11.00	12.25	5.44
Size mm																				
50 to 150	46	46	97	42	40	126	23	58	16	25	4.8	-	-	122	152	122	104	89	122	117
200 to 250	73	73	86	64	73	165	35	76	16	25	4.8	-	-	110	152	110	94	89	122	105
300	73	73	86	64	73	165	35	76	16	25	4.8	-	-	128	203	110	94	89	122	105
350	73	73	130	64	73	165	35	76	16	32	4.8	-	-	167	305	149	133	148	146	145
400	73	73	149	64	73	165	35	76	16	32	6.4	-	-	279	457	195	162	232	221	171
450 to 500	79	79	181	76	79	195	38	83	25	32	6.4	-	-	286	457	227	194	232	221	203
600	87	87	134	92	83	213	41	90	25	32	9.7	-	-	277	610	193	150	279	311	156
750	116	226	115	118	118	281	51	113	25	32	9.9	152	187	220	457	193	160	232	221	137
900	149	232	116	159	149	368	59	127	25	32	9.9	162	203	259	610	207	164	279	311	138

* DT-1 gear operator dimensions became standard gear operator mid-year 2000 (for old style DT-3, consult Cameron).

STEM EXTENSIONS

Fabricated from carbon steel, stem extensions are contained in a tubular housing. Lengths from 3" to 16 ft are fabricated to order. Torsional deflection of lengths greater than 16 ft require special design consideration and are available by special order only.

STEM EXTENSIONS



HOW TO ORDER

2" to 12" (50 mm to 300 mm)

XXXXX	XXX
Base Part Number	Length in. (mm)

14" to 24" (350 mm to 600 mm)

XXXXX	XXX00
Base Part Number	Length in. (mm)

Description	in. (mm)	2 to 4 (50 to 500)	5 to 6 (125 to 150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 to 20 (450 to 500)	24 (600)
Carbon Steel		23318	23319	23320	23321	23322	24529	24530	24531	24532

* Note: Consult Cameron for 30" (750 mm) and 36" (900 mm) valve stem extensions.

GENERAL TECHNICAL INFORMATION

Pressure Rating

Three drop-tight pressure ratings are offered for DEMCO butterfly valves. Normally, 200-psi shutoff is used in butterfly applications. However, 285-psi shutoff is optionally available for higher pressure applications. For smaller actuator sizing, 50-psi valves offer reduced torque.

For reduced torque, throttling valves, which do not provide drop-tight closure, are available.

Vacuum Rating

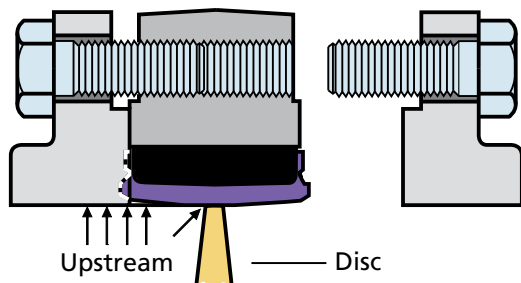
DEMCO butterfly valves will seal against 10 microns of vacuum (29.9 inHg). For reduced torque and extended seat life, 50-psi discs are recommended for the dry service conditions found in many vacuum applications.

End-of-Line Service

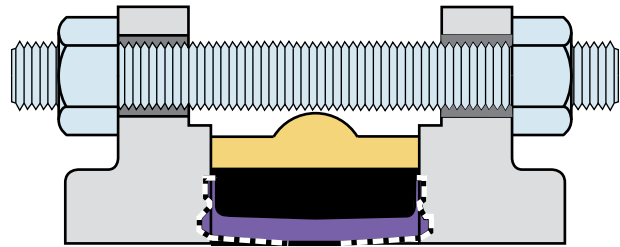
Lug body valves can be used in end-of-line service, with downstream piping removed. Only weld neck or socket flanges can be used for this service. Since upstream pressure is excluded between the flange and the seat face by the exclusive DEMCO flange seal, there is no effective force to slide the seat downstream. DEMCO lug butterfly valves are recommended for liquid service up to 200 psi with downstream piping removed.

Lug body valves are recommended for the isolation of pumps, control devices or other system components that may need to be removed for repair or replacement.

Lug valves also are suitable for installation at points from which piping expansions may proceed. Such valves normally are blanked with blind flanges to protect the exposed seats until new piping is attached.



Lug Valve Connection with Downstream Flange Removed



Wafer Valve Connection

Marking

Each valve is positively identified by marking and tagging per MSS-SP-25.

Actuation

Positive latch handles, worm gear operators and automatic actuators are available and interchangeable on the DEMCO valve.

The DEMCO top flange is dimensionally compatible with other competitive butterfly valves. With the optional "utility top" stem, the DEMCO valve interchanges directly with competitive valves, allowing valve replacement without the need for new actuation.

Installation and Maintenance

DEMCO butterfly valves are bi-directional, with identical flow way from either face. To install, simply close the valve, insert between flanges and make up with studs or capscrews. No regular maintenance or lubrication is ever required. Disassembly for inspection or replacement of parts is simple.

Open the valve, remove handle or actuator, remove tangential pins, pull out the stems, and push the disc and seat out of the body. Reassemble in reverse order, with a small amount of general purpose non-hydrocarbon based lubricant on the outside of stems, seat and disc flats.

Steel or cast iron flanges of either raised or flat-faced type are suitable for use with DEMCO butterfly valves. Plastic flanges are subject to damage at installation by over-tightening the bolting and may deflect or cup, resulting in flange leaks. Refer proposed plastic flange installations to Cameron's DEMCO brand quotations department for review and recommendation.

Throttling discs with no seat interference do not provide a stem seal. Stem O-rings are provided for this application. Flange gaskets assist the O-rings in 2" to 12" (50 mm to 300 mm) valves, and must be used only with throttling discs.

This nomograph gives corresponding values for the parameters of flow rate, valve size, disc angle and pressure drop of DEMCO butterfly valves in 1.0 specific gravity water service at 68° F (20° C).

The lower right-hand corner of the graph with the heavy line border represents line velocities below 15 ft/sec and normally is used for valve sizing in liquid applications.

Butterfly valves are economical throttling devices. Reliable throttling can be attained at disc openings from 25 to 70 degrees.

Sample Computation for Water

Water, with specific gravity of 1.0 and flow rate of 1200 gal/min, to 6" (160 mm) butterfly valve.

Required: Pressure drop at full and 75-degree disc openings. Project horizontally from 1200 gal/min to 6" (150 mm) valve curve. Project vertically upward to fully open valve curve, then horizontally to read 0.35 psi pressure drop. Continue upward projection to intersect 75-degree opening curve, then horizontally to read 0.8 psi pressure drop.

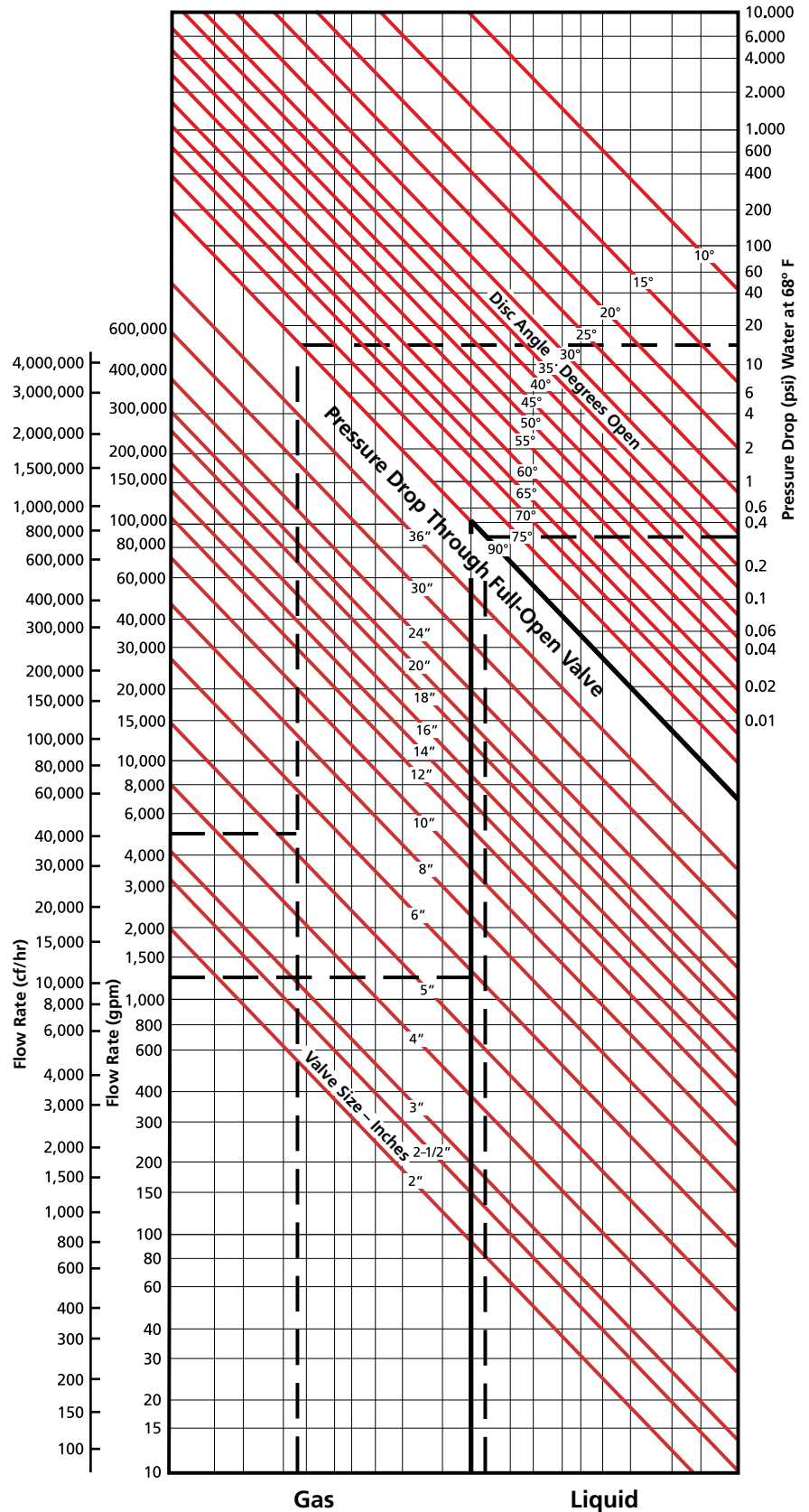
Sample Computation for Air

Air, with density of 0.217 lb/cf, flow rate of 40,000 cf/hr, to 5" (125 mm) butterfly valve.

Required: Pressure drop through fully open valve. Disregarding change in gas condition by pressure drop across valve, proceed from 40,000 cf/hr, as in liquid computation, to read 15 psi pressure drop. Convert pressure drop from water to air by multiplying this value times the ratio of air-to-water densities:

$$15 \text{ psi} \times \frac{0.217}{62.4} = 0.052 \text{ psi}$$

To determine pressure drop for any fluid, multiply value obtained from the nomograph by the quotient of the fluid density, in lb/cf, divided by 62.4.



GENERAL TECHNICAL INFORMATION (CONT.)

General Dimensions 2" to 20" (50 mm to 500 mm)

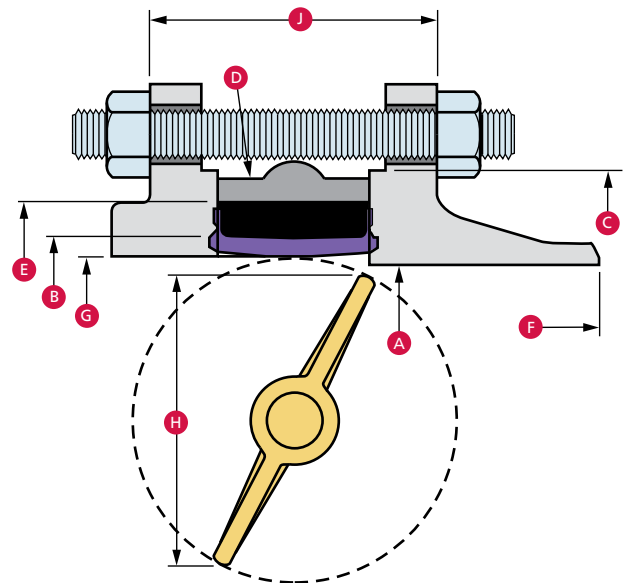
Dimensions	Valve Size in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)
A – Schedule 40 Flange ID*	(Except Slip-On)	2.07 (53)	2.47 (63)	3.07 (78)	4.03 (102)	5.05 (128)	6.07 (154)	7.98 (203)	10.02 (255)	12.00 (305)	13.25 (337)	15.25 (387)	17.25 (438)	19.25 (489)
	(Slip-On)	2.44 (62)	2.94 (75)	3.57 (91)	4.57 (116)	5.66 (144)	6.72 (171)	8.72 (221)	10.88 (276)	12.88 (327)	14.14 (359)	16.16 (410)	18.18 (462)	20.20 (513)
B – Seal Diameter		2.65 (67)	3.15 (80)	3.78 (96)	4.78 (121)	5.84 (148)	7.03 (179)	8.96 (228)	11.09 (282)	13.09 (332)	14.14 (359)	16.16 (410)	18.18 (462)	20.20 (513)
C – Raised Face Diameter		3.62 (92)	4.12 (105)	5.00 (127)	6.18 (157)	7.31 (186)	8.50 (216)	10.62 (270)	12.75 (324)	15.00 (381)	16.25 (413)	18.50 (470)	21.00 (533)	23.00 (584)
D – Valve Body Diameter		4.12 (105)	4.87 (124)	5.37 (136)	6.87 (174)	7.75 (197)	8.75 (222)	11.00 (279)	13.37 (340)	16.12 (409)	17.20 (437)	19.27 (489)	21.43 (544)	23.60 (599)
E – Seat OD		3.12 (79)	3.62 (92)	4.25 (108)	5.25 (133)	6.31 (160)	7.46 (189)	9.43 (240)	11.56 (294)	13.56 (344)	15.14 (385)	17.04 (433)	19.06 (484)	21.08 (535)
F – End-to-End	Threaded ASME Socket and Slip-On	3-3/4	4-1/8	4-1/4	4-3/4	5-1/8	5-3/8	6-1/16	6-5/8	7-5/8	7-1/2	9	9-13/16	10-11/16
	Weld End ASME Grooved	6-3/4	7-3/8	7-3/8	8-1/8	9-1/4	9-1/4	10-9/16	10-3/4	12-1/4	13	14	15-7/16	16-5/16
G – Seat ID		2-1/4	2-13/16	3-5/16	4-3/16	5-1/16	6-1/16	7-15/16	10	11-15/16	13-5/32	15-7/32	17-5/32	19-5/32
H – Disc Chord**	Resilient Seated Valves	1.467 (37)	2.144 (54)	2.743 (70)	3.601 (91)	4.582 (116)	5.624 (142.8)	7.428 (189)	9.382 (238)	11.35 (288)	12.86 (327)	14.72 (374)	16.61 (422)	18.53 (471)
J – Outside-to-Outside	ASME 150	3.25 (83)	3.62 (92)	3.75 (95)	4.00 (102)	4.12 (105)	4.25 (108)	4.81 (122)	5.12 (130)	5.75 (146)	5.75 (146)	6.87 (174)	7.56 (192)	8.31 (211)
Throughput Area	Resilient Seated – sq in.	2.33	3.92	5.93	10.01	14.98	22.09	39.43	61.52	89.54	111.2	150.5	186.1	
	% Schedule 40 Pipe	70%	82%	80%	79%	73%	76%	79%	78%	80%	82%	85%	83%	87%
Number of Studs		4	4	4	8	8	8	8	12	12	12	16	16	20
Number of Capscrews		8	8	8	16	16	16	16	24	24	24	32	32	40
Size of Studs or Capscrews – Threads per in.		5/8 - 11	5/8 - 11	5/8 - 11	5/8 - 11	3/4 - 10	3/4 - 10	3/4 - 10	7/8 - 9	7/8 - 9	1 - 8	1 - 8	1-1/8 - 7	1-1/8 - 7
Length of Studs (in.)		5	5-1/2	5-1/2	5-3/4	6-1/2	6-1/2	7	7-1/2	8-1/4	8-1/4	10	10-1/2	11-3/4
Length of Capscrews (in.)		1-1/2	1-1/2	1-3/4	1-3/4	2	2-1/4	2-1/4	2-1/2	2-1/2	3-1/4	3-1/2	4	-

* DEMCO butterfly valves are designed to seal without flange gaskets against flange faces with IDs between slip-on flange bore and schedule 40 weld neck flange bore.

** 2" to 12" (50 mm to 300 mm) disc will open into schedule 80 pipe ID.

General Dimensions 24" to 36" (600 mm to 900 mm)

Dimensions	Valve Size in. (mm)	24 (600)	30 (750)	36 (900)
A – Standard Flange ID	(Except Slip-On)	23.25 (591)	29.25 (743)	35.25 (895)
B – Seal Diameter		24.25 (616)	30.00 (762)	35.94 (913)
C – Raised Face Diameter		27.25 (692)	-	-
D – Valve Body Diameter		28.23 (717)	34.05 (865)	40.49 (1028)
E – Seat OD		25.49 (647)	31.47 (799)	37.63 (956)
F – End-to-End Weld End	ASME	18.00 (457)	16.75 (425)	18.63 (473)
G – Seat ID		23-1/4	29-5/16	35-5/16
H – Disc Chord		22.57 (573)	28.67 (728)	34.70 (881)
J – Outside-to-Outside	ASME	9.75 (248)	10.75 (273)	12.63 (321)
Number of Studs		20	*	**
Number of Capscrews		40	56	64
Size of Capscrews – Threads per in.		1-1/4 - 7	1-1/4 - 7	1-1/2 - 6
Length of Studs (in.)		12-1/2	*	**
Length of Capscrews (in.)		4	5	***
Throughput Area	sq in. % std. pipe	352.4 88%	546 81%	800 82%



* 24 studs: 1-1/4" - 7" x 15-1/2"; Eight capscrews: 1-1/4" - 7" x 5"

** 28 studs: 1-1/2" - 6" x 18-1/2"; Eight capscrews: 1-1/2" - 6" x 5-1/2"

*** 56 screws: 1-1/2" - 6" x 6"; Eight screws: 1-1/2" - 6" x 5-1/2"

• Dimensions are for ASME Class 150 Series A flanges or MSS-SP-44 flanges. Consult Cameron for ASME Class 125 flanges.

Flow Coefficients (C_v)

Degree Open	Valve Size in. (mm)															
	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)	36 (900)
90°	145	225	325	590	1125	1950	3250	5000	7500	10,000	13,600	18,000	22,600	30,000	47,000	70,000
80°	115	175	260	510	1000	1650	2725	4300	6050	8100	11,500	14,300	18,000	25,000	38,000	60,000
75°	95	135	215	410	830	1350	2200	3600	5000	6700	9500	12,100	15,000	21,000	31,500	48,000
70°	70	105	160	305	625	1030	1750	2750	4050	5100	7100	9200	11,500	16,500	25,500	39,500
60°	53	83	125	235	490	800	1300	2150	3100	4100	5100	7100	8700	11,750	18,000	28,000
50°	27	42	63	120	250	410	700	1150	1600	2200	2650	3700	4600	6100	9700	15,000
40°	17	26	38	73	155	250	420	670	1000	1300	1700	2300	2800	3800	6000	9200
30°	9	15	22	42	88	145	250	390	550	750	900	1250	1600	2200	3500	5300
25°	6	10	15	28	60	98	170	260	380	500	650	900	1125	1500	2300	3500

C_v values, given above, may be employed in the formula:

$$Q = C_v \times \sqrt{\frac{\Delta P \times 62.4}{D}}$$

Where:

Q = gal/min of flow through the valve

ΔP = psi pressure drop across the valve

D = density of fluids in lb/cu ft

Pressure drop is computed by rearranging the formula to the following:

$$\Delta P = \frac{Q^2 \times D}{C_v^2 \times 62.4}$$

Sample Computations

What is the flow rate of water at ambient temperature through a 4" (100 mm) butterfly valve that is 70 degrees open when the pressure drop across the valve is 0.5 psi? (Density of water at 68° F is 62.4 lb/cu ft.)

$$\begin{aligned} Q &= C_v \times \sqrt{\frac{\Delta P \times 62.4}{D}} \\ &= 305 \times \sqrt{\frac{0.5 \times 62.4}{D}} \\ &= 305 \times 0.707 \\ Q &= 215.6 \text{ gal/min} \end{aligned}$$

What is the pressure drop across an 8" (200 mm) butterfly valve that is fully open, flowing 2000 gal/min of solvent with a density of 55 lb/cu ft?

$$\begin{aligned} \Delta P &= \frac{Q^2 \times D}{C_v^2 \times 62.4} \\ &= \frac{(2000)^2 \times 55}{(3250)^2 \times 62.4} \\ \Delta P &= 0.33 \text{ psi} \end{aligned}$$

Water Hammer

Water hammer is a series of shocks in a piping system caused by rapidly stopping the flow of fluid in that system.

Although it is difficult to measure pressure spikes caused by water hammer shock with ordinary equipment, maximum obtainable pressures caused by instantaneous valve closure can be approximated by the following formula:

Pressure (max.) = interrupted velocity (fps) x 58 psi/ft/sec

In other words, pressure increases 58 psi for each ft/sec of interrupted pipeline velocity.

A pipe carrying fluid at a velocity of 15 ft/sec velocity will have an instantaneous pressure increase of 870 psi under rapid closure conditions.

The effects of water hammer are seen in a butterfly valve as bent disc and stems, a broken body or both.

Water hammer can be reduced or eliminated by slowing valve closure time in accordance with the following formula:

$$\text{time seconds} = \frac{0.14Q}{S(P)}$$

Where:

Q = flow in gal/min

S = upstream pipe size in sq ft

P = pressure rating of the valve in psi

Generally, a closing time of six to eight seconds is sufficient to eliminate water hammer.

GENERAL TECHNICAL INFORMATION (CONT.)

Cavitation Data

Liquid flow is accelerated as it passes through a valve in such a manner that pressure is decreased below the vapor pressure and bubbles form. Immediately downstream of the valve, velocity decreases while pressure increases and the bubbles collapse, causing possible mechanical damage to the valve and piping. This is called cavitation. Cavitation often can be identified by the noise of the collapsing bubbles, which sounds like gravel flowing in the pipe.

Generally, butterfly valves operate with high-flow capacities and at low-pressure differentials and are not particularly susceptible to cavitation.

When butterfly valves are used as control valves, one can ensure that cavitation will not occur by applying the following simplified formula:

$$\Delta P_{\max} = K_c (P_1 - P_v)$$

Where:

ΔP_{\max} = differential pressure across the valve

K_c = cavitation constant
(approximately 0.35 for butterfly valves)

P_1 = inlet pressure (psia)

P_v = vapor pressure of the flowing liquid (psia)

Example:

What is the maximum pressure drop possible through a butterfly valve at 100 psig inlet pressure with water at 68° F (0.339 psia vapor pressure)?

$$\Delta P_{\max} = K_c (P_1 - P_v)$$

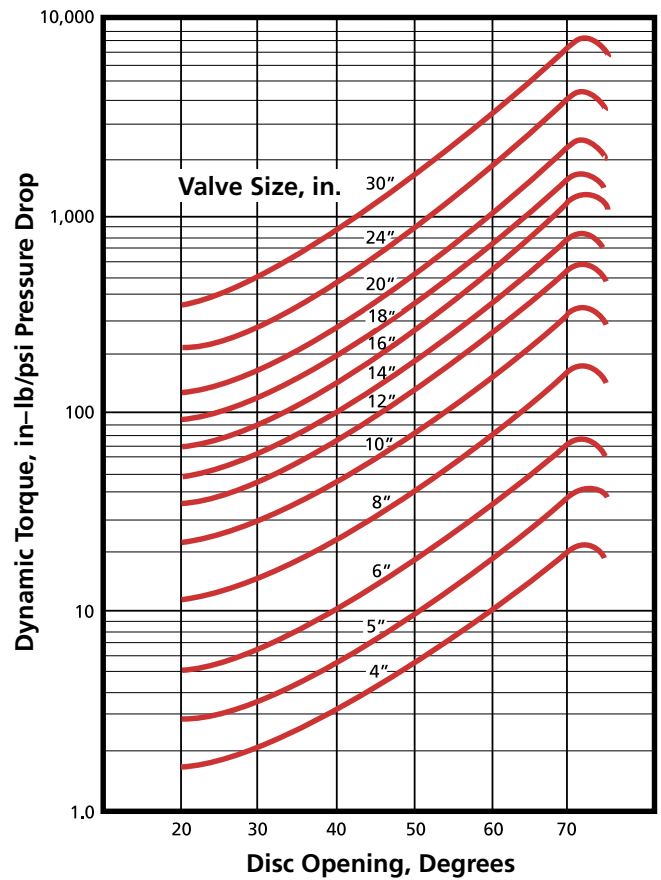
Under the above conditions, it is possible to take a 40.03-psi pressure drop across the valve before cavitation will begin.

TORQUE DATA

The torque (turning effort) required to operate a given butterfly valve is determined by two factors: friction of the disc and the seat. The interference and dynamic forces of flow through the valve tend to open or close the valve. The actuator torque output must meet or exceed the maximum torque requirement of the valve. Normal wet opening torque requirements due to interference are tabulated below. Dry service will increase opening torque significantly. Consult Cameron for dry service torque requirements.

The disc of a butterfly valve, in partially opened condition, is subject to lift forces from passage of fluid over its surfaces. This effect is analogous to an airplane wing and results in an unbalanced turning force on the disc. The dynamic torque is proportional to the pressure drop through the valve and may become significant in some applications.

Dynamic torque typically is at a maximum when the disk opening is about 70 degrees. Under high differential pressure conditions, such torque may exceed the design strength of stems, connections or actuators. The curves at right may be used to calculate dynamic torque for DEMCO butterfly valves and should be consulted in any case where high differential pressure may occur during valve operation.



Butterfly Valve Torques (Except Series NEI-T)** – Normal Wet Opening – in-lb

Valve Size	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)	36 (900)
285 psi Shutoff		225	326	510	765	1190	1530	2550	4125	7000	-	-	-	-	-	-	-
200 psi Shutoff		132	192	300	450	700	900	1500	2650	4500	-	-	-	-	-	-	-
150 psi Shutoff		-	-	-	-	-	-	-	-	-	7740	10,280	12,600	15,600	30,000	50,000	67,500
50 psi Shutoff		108	108	192	264	450	550	1000	1800	3000	4500	6500	8400	10,800	20,000	30,000	50,000
Throttling*		72	72	90	108	144	180	350	700	1160	1660	2800	3400	5000	8400	-	-

Butterfly Valve Torques (Except Series NEI-T)** – Three-Way Assemblies – in-lb

Valve Size	in. (mm)	2 (50)	2-1/2 (65)	3 (80)	4 (100)	5 (125)	6 (150)	8 (200)	10 (250)	12 (300)	14 (350)	16 (400)	18 (450)	20 (500)	24 (600)	30 (750)	36 (900)
285 psi Shutoff		338	489	765	1148	1785	2295	3825	6188	10,500	-	-	-	-	-	-	-
200 psi Shutoff		198	288	450	675	1050	1350	2250	3975	6750	-	-	-	-	-	-	-
150 psi Shutoff		-	-	-	-	-	-	-	-	-	11,610	15,420	18,900	23,400	45,000	-	-
50 psi Shutoff		162	162	288	396	675	825	1500	2700	4500	6750	9750	12,600	16,200	30,000	-	-
Throttling*		144	144	180	216	288	360	700	1400	2320	3320	5600	6800	10,000	16,800	-	-

* When line velocity exceeds 15 ft/sec, dynamic torque exceeds opening torque.

** Consult Cameron for the torque requirement of the Series NEI-T butterfly valve.

STANDARD MATERIAL DATA

Bodies

Description		NE-C	NF-C 14" to 24"	NF-C 30" and 36"	NE-I	NE-D	NE-I Sanitary	NEI-T
See page 10 for Assembly Part Number								
Ductile Iron	A395 (60-40-18) * ENC-Coated	Lug	Lug	Wafer/Lug	Wafer Wafer	Wafer	Wafer/Lug	Wafer/Lug
Gray Iron	A48 (Class 20) A126 (Class B)	Wafer	Wafer					Wafer
Bronze	B148 (952)		C/F		Wafer/Lug		Wafer/Lug	Wafer/Lug
Steel	A216 (WCB) *		Lug		Wafer/Lug			Wafer/Lug
Stainless Steel	A351 (CF8M)				Wafer/Lug		Wafer/Lug	Wafer/Lug
Aluminum	B26				Wafer		Wafer	Wafer
Discs								
Ductile Iron/ Nickel-Plated	A536 (65-45-12)	•	•	•	•	•		
Ductile Iron/ PVF-Coated	A536 (65-45-12)	•	•		•	•		
Aluminum	B148 (954)	•			•	•		
Bronze	B148 (955)		•	•				
316 SS	A743 (CF8M)	•	•	•	•	•	•	•
Monel **	A494 (M30C)	•	•		•	•		
Alloy 20, 29 Ni-20 Cr	A743 (CN-7M)	•			•	•		•
Hastelloy C **		•						
61 Ni-17 Mo-17 Cr	A494 (CW-2M)	•			•	•		•
Stems								
416 SS	QQ-S-764-B	•	•	•	•	•		•
316 SS	AMS 5648 B	•	•	•	•	•	•	•
17-4 PH SS	AMS 5643	•	•		•	•	•	•
Monel **	B164 (Class A)	•	•	•	•	•		

* Conforms to USCG Marine requirements, as outlined in 46 C.F.R., part 56.

** See material trademark on page 40. Consult Cameron for special material requirements.

Seats vary. See pages 9, 10 and 11 for seat material description and part number scheme for available options for different valve series.

Buna-N is a general purpose elastomer compounded for maximum hydrocarbon or petroleum resistance. 0° F to 180° F (-18° C to 82° C). Same as Nitrile, Hycar* and NBR.

General Service EPDM is recommended for water service. Resistance to saturated steam up to 275° F (135° C) is superior. EPDM is suitable in alkaline solutions. EPDM is not suitable for oil or hydrocarbons. Peroxide-cured 20° F to 275° F (-6° C to 135° C).

Food Grade EPDM is formulated in compliance with FDA guidelines published in the Code of Federal Regulations, Title 21, paragraph 177.2600. This material is suitable for food service, except milk and edible oils. Peroxide-cured 20° F to 275° F (-6° C to 135° C).

Sulfur-cured -30° F to 225° F (-34° C to 107° C). Same as EPDM and Nordel*.

Black Neoprene complies with FDA guidelines and is principally recommended for food and beverage service. It is resistant to vegetable oils, brine and oxygen. 0° F to 180° F (-18° C to 82° C). Same as Polychloroprene and CPE.

White Neoprene complies with FDA guidelines and offers chemical resistance comparable to black neoprene, but it uses fillers other than carbon black to provide white coloration. Physical properties are not as good as black neoprene, and white neoprene should be used only when black cannot be tolerated. Storage should be under low light conditions to prevent discoloration. 0° F to 180° F (-18° C to 82° C).

Hypalon* is compounded for chemical resistance and is superior in acids and hydrocarbons. 0° F to 180° F (-18° C to 82° C). Same as CP.

FKM is superior at elevated temperatures and in harsh chemical environments. FKM is not suitable for hot water or steam. 20° F to 300° F (-6° C to 149° C). Same as Fluoroelastomer.

Natural Rubber generally is superior to other elastomers in abrasion resistance and is recommended for dry material handling. Use in oils and solvents is not recommended. -30° F to 150° F (-34° C to 65° C).

Fluorosteam seats offer heat and chemical resistance to hydrocarbons and hot water or saturated steam. Maximum temperature capability is dependent on fluid resistance, pressure and flow rates. 20° F to 275° F (-6° C to 135° C).

ETM-30230 is compounded to combine many of the better media properties of Buna-N, EPDM or neoprene for service in hydrocarbons, gasoline, solvents, animal oils and vegetable oils with a temperature range of -30° F to 230° F (-34° C to 110° C). Abrasion resistance is equal to Buna-N. Resistance to H₂S and CO₂ are superior to Buna-N. -30° F to 230° F (-34° C to 110° C).

NEI-T Teflon* SEAT is EPDM elastomer bonded to a virgin TFE covering. This provides an inert, aseptic non-stick surface, which is excellent for sanitary food service applications. 0° F to 50° F (-18° C to 10° C).

Other seat elastomers are available for special applications. Consult Cameron.

* See material trademark note on page 40.

MATERIAL SELECTION GUIDE

The following application is designed for use in determining the available material most likely to give satisfactory service and is not meant to imply any type warranty. However, certain factors such as temperature, concentration and combinations of chemicals may affect the fluid resistance of any material. In questionable applications, testing is always the most positive way to determine suitability. Some materials are available in certain valve sizes and series only.

Rating Interpretation	Stem and Disc								Seat						
	Nickel-Plated Ductile Iron	416 SS	316 SS	Monel *	Aluminum Bronze	Alloy 20	Hastelloy C*	PVF	Buna-N	Neoprene	Hypalon*	FKM	EPDM	Natural Rubber	ETM-30230
Acetaldehyde	U	U	E	E	U	E	E	G	G	F	U	F	E	U	-
Acetic Acid – Crude	U	U	E	F	U	E	E	-	G	E	E	-	-	-	-
Acetic Acid – Pure	U	U	E	F	F	E	E	E	G	E	E	-	-	-	-
Acetic Acid – 10%	U	U	E	F	U	E	E	-	G	E	E	-	-	-	G
Acetic Acid – 80%	U	U	E	F	U	E	E	-	G	E	E	-	-	-	-
Acetic Acid – Anhydrite	U	U	E	F	U	E	E	U	U	E	E	U	F	F	U
Acetone	G	G	E	E	E	E	E	U	U	U	U	U	E	F	U
Acetophenone	U	U	G	E	U	-	-	F	U	-	-	-	E	-	U
Acetylene	G	E	E	E	E	E	U	-	G	F	F	E	-	F	G
Acrylonitrile	G	G	E	E	E	-	-	U	U	F	F	U	U	U	-
Air (Dry)	E	E	E	E	E	-	-	-	E	E	E	E	G	G	-
Alcohol – Amyl	F	G	E	E	E	E	-	E	F	F	G	E	E	G	E
Alcohol – Butyl	F	G	E	E	E	E	E	E	F	G	G	E	F	F	-
Alcohol – Ethyl	U	-	E	E	E	E	E	E	G	G	G	G	G	G	E
Alcohol – Methyl	U	-	E	E	E	E	E	-	F	E	E	F	E	G	-
Alum – Ammonium	U	-	G	-	-	-	-	-	G	G	F	E	G	-	-
Alum – Chrome	U	-	G	-	-	-	-	-	G	G	G	G	-	F	-
Alum-Potassium	U	G	-	-	G	-	-	-	G	G	F	E	G	-	-
Alumina	G	G	G	G	G	E	E	-	E	F	G	G	E	E	-
Aluminum Chloride	U	U	F	G	U	E	-	E	G	G	G	E	E	G	G
Aluminum Fluoride	U	-	G	G	-	E	-	E	G	G	G	E	E	G	G
Aluminum Hydroxide	U	-	G	G	G	-	-	E	G	G	-	G	G	-	-
Aluminum Sulfate	U	G	G	-	U	G	E	-	E	E	E	E	E	E	-
Amines	U	F	E	G	-	E	U	-	U	U	U	U	F	-	-
Ammonia, Anhydrous	F	-	E	E	U	-	E	E	G	G	U	U	G	U	U
Ammonia Solutions	F	G	E	G	U	E	E	-	G	G	U	U	G	U	U
Ammonium Chloride 50% 180° F (82° C)	U	F	G	G	U	E	E	E	E	E	E	E	E	E	G
Ammonium Hydroxide	F	G	E	F	U	E	E	E	U	E	E	G	E	U	F
Ammonium Nitrate 5% 60° F (16° C)	F	G	E	U	U	E	E	E	E	E	G	E	E	G	G
Ammonium Phosphate	U	G	E	G	U	E	E	E	E	E	E	E	E	G	G
Ammonium Sulfate 90% 180° F (82° C)	U	F	G	G	U	G	G	E	E	E	E	E	E	G	-
Amyl Acetate	F	G	E	G	G	E	U	F	U	U	U	U	G	U	U
Amyl Chloride	F	G	E	G	E	E	E	E	U	U	U	-	U	U	-
Aniline 90% 70° F (21° C)	F	G	G	G	U	E	E	F	U	U	U	F	F	U	U
Aniline Dyes	F	G	E	E	F	E	E	-	U	F	F	G	-	-	U
Antimony Chloride	U	-	-	G	-	-	E	-	G	G	G	E	-	-	-
Arsenic Acid	U	G	G	G	U	E	-	E	E	E	E	E	G	G	G
ASTM Oil #1	F	E	E	E	E	E	E	-	E	G	G	E	U	U	-
ASTM Oil #3	F	E	E	E	E	E	E	-	E	U	U	E	U	U	-
ASTM Ref. Fuel A	F	E	E	E	G	E	E	-	E	G	G	E	U	U	E
ASTM Ref. Fuel B	F	E	E	E	G	E	E	-	G	F	F	E	U	U	E
ASTM Ref. Fuel C	F	E	E	E	G	E	E	-	G	F	F	E	U	U	-
Asphalt	E	E	E	E	E	E	E	-	G	-	-	E	U	U	E
Barium Carbonate 60° F (16° C)	U	-	G	G	G	-	E	E	E	E	-	-	E	-	-
Barium Chloride	U	-	G	G	F	-	E	E	E	E	E	E	E	E	E
Barium Hydroxide	F	E	E	G	U	E	-	E	E	E	E	E	E	G	E
Barium Sulfate 60° F (16° C)	U	-	E	G	G	-	-	E	E	E	-	-	E	-	E
Barium Sulfide	F	E	G	F	U	E	-	E	E	E	U	-	-	U	-

* See material trademark note on page 40.

MATERIAL SELECTION GUIDE (CONT.)

Rating Interpretation E – Excellent G – Good F – Fair U – Unsatisfactory	Stem and Disc								Seat							
	Nickel-Plated Ductile Iron	416 SS	316 SS	Monel*	Aluminum Bronze	Alloy 20	Hastelloy C*	PVF	Buna-N	Neoprene	Hypalon*	FKM	EPDM	Natural Rubber	ETM-30230	
Beer (Beverage)	U	E	E	E	U	E	E	E	G	G	E	E	E	G	G	
Beet Sugar Liquors	F	E	E	E	F	E	-	-	E	E	G	E	-	G	-	
Benzaldehyde	F	E	E	G	E	E	-	-	U	U	U	U	E	U	U	
Benzene (Benzol) 70° F (21°)	F	E	E	G	E	E	E	G	U	U	U	G	U	U	U	
Benzoic Acid 5% 70° F (21°)	U	G	E	G	G	E	E	E	U	U	U	E	U	U	-	
Black Sulfate Liquor	F	G	E	-	F	E	-	-	G	G	G	E	G	F	-	
Bleaching Powder – Wet	U	G	G	-	U	E	-	-	G	E	F	-	-	F	-	
Borax (Sodium Borate)	U	F	E	E	U	E	E	E	G	E	E	E	E	G	G	
Boric Acid 5% 200° F (93° C)	U	F	E	G	F	E	E	E	E	E	E	E	E	G	G	
Brine (Acid)	U	-	G	G	G	-	-	E	E	G	G	-	E	U	-	
Brine – Chlorinated	-	-	U	G	G	-	-	-	-	-	-	G	G	-	-	
Bromine – Gas	U	U	U	F	-	U	E	E	U	U	U	E	U	U	-	
Bromine – Water	U	U	U	F	-	U	E	E	U	G	G	E	U	U	-	
Butadiene	F	G	E	E	G	-	E	E	F	-	G	G	-	U	U	
Butane – Butylene	G	E	E	E	E	E	E	E	G	G	G	E	U	U	G	
Butyl Acetate	G	E	E	E	E	E	E	U	U	U	U	U	U	U	U	
Butyric Acid 5% 70° F (21° C)	U	G	E	G	G	E	E	-	U	U	U	G	G	U	-	
Calcium Bisulfite	U	G	E	U	U	G	-	E	E	E	E	E	U	U	-	
Calcium Carbonate 60° F (16° C)	F	-	G	E	G	-	E	E	E	E	-	E	-	-	-	
Calcium Chlorate 20% 160° F (71° C)	-	G	E	G	U	E	E	E	-	E	E	-	-	-	-	
Calcium Chlorate 20% 160° F (71° C)	-	G	E	G	U	E	E	E	-	E	E	-	-	-	-	
Calcium Chloride	F	G	G	G	E	G	E	E	E	E	E	-	-	-	E	
Calcium Hydroxide 50% 175° F (79° C)	F	E	E	E	U	E	E	E	G	E	E	E	-	-	G	
Calcium Hypochloride	-	G	G	-	-	G	-	-	U	U	E	E	-	U	F	
Calcium Sulfate 90% 60° F (16° C)	F	E	E	G	E	E	-	E	F	F	-	E	-	-	-	
Calgon	F	-	E	-	-	E	-	-	E	E	-	E	-	-	-	
Caliche Liquor	U	-	E	-	-	E	-	-	E	E	E	E	E	E	-	
Cane Sugar Liquors	F	E	E	G	E	E	-	-	E	E	-	-	-	-	G	
Carbon Dioxide (Dry)	F	E	E	-	E	E	-	E	E	G	G	E	-	-	G	
Carbon Disulfide	U	-	E	G	G	-	-	G	U	U	U	E	U	U	-	
Carbon Tetrachloride (Dry)	U	G	G	E	G	E	-	E	U	-	-	E	-	-	F	
Carbonic Acid	U	G	E	E	-	E	E	E	G	E	E	E	E	E	G	
Caster Oil	G	G	E	E	G	E	E	E	G	E	E	E	G	G	G	
Caustic Solutions 34% 200° F (93° C)	U	G	E	F	U	E	E	-	F	F	F	E	G	U	F	
China Wood Oil (Tung)	F	-	E	E	F	E	E	-	E	E	G	E	U	U	-	
Chlorine Gas – Dry 70° F (21° C)	U	F	G	G	G	G	E	E	U	U	G	E	F	U	-	
Chlorobenzene 90% 70° F (21° C)	F	E	G	G	G	E	-	E	U	U	U	G	U	U	U	
Chloroform 70° F (21° C)	F	G	E	E	G	E	-	E	U	U	U	E	U	U	U	
Chlorosulfonic Acid 10%	U	U	G	F	G	U	E	F	U	U	U	U	U	U	-	
Chocolate	-	-	-	-	-	-	-	-	E	U	-	-	-	-	-	
Chromic Acid 5% 70° F (21° C)	U	G	G	F	U	E	-	E	U	U	E	E	U	U	-	
Citrus Acid 5% 150° F 66° C)	U	F	E	G	F	E	E	E	E	E	E	E	E	F	E	
Coconut Oil (Food)	U	U	E	G	G	E	-	E	E	F	F	E	F	U	-	
Coffee (Food)	U	U	E	G	F	E	-	E	E	E	E	E	E	E	-	
Copper Chromate	-	-	E	-	-	-	-	-	-	-	-	-	-	-	-	
Copper Sulfate 80% 175° F (79° C)	F	G	E	F	U	E	-	E	E	E	E	E	E	E	-	
Corn Syrup	-	-	E	-	-	-	-	-	-	-	-	-	E	-	-	
Cottonseed Oil	G	E	E	E	E	E	E	E	E	F	G	G	F	U	G	
Creosol	U	F	E	E	-	E	-	F	U	U	U	F	U	U	-	
Creosote	E	E	E	E	G	E	E	-	G	U	F	E	U	U	U	
Cresylic Acid	U	G	E	G	G	E	-	G	U	U	U	E	U	U	U	
Crude Oil	G	G	E	E	E	E	E	-	E	-	-	E	U	U	E	
Cyclohexane	F	E	E	G	G	E	-	E	U	U	U	E	U	U	-	
Dextrose (Food)	U	U	E	-	-	E	-	-	E	-	-	-	-	-	-	

* See material trademark note on page 40.

Rating Interpretation	Stem and Disc								Seat						
	Nickel-Plated Ductile Iron	416 SS	316 SS	Monel*	Aluminum Bronze	Alloy 20	Hastelloy C*	PVF	Buna-N	Neoprene	Hypalon*	FKM	EPDM	Natural Rubber	ETM-30230
Diacetone	U	-	E	-	E	-	-	U	U	U	U	E	U	-	
Diamylamine	F	E	E	-	E	E	-	-	G	F	-	U	-	G	
Dichlorethene	U	-	G	G	G	G	-	F	U	U	-	G	U	-	
Diesel Fuels	E	E	E	E	G	E	E	E	E	F	F	E	U	F	
Diethyl Amine	F	E	E	G	E	E	-	U	G	F	F	U	F	U	
Dimethane Sulfide	-	-	-	-	-	-	-	-	-	-	F	U	G	-	
Dowtherms	G	E	E	E	G	E	-	-	U	G	G	E	-	U	
Drilling Mud	G	-	E	E	G	-	-	-	E	F	E	E	-	G	
Ethers	U	-	G	G	G	E	E	F	U	U	U	F	F	U	
Ethyl Acetate	F	G	E	E	G	E	E	F	U	U	U	U	G	U	
Ethyl Chloride 5% 60° F (16° C)	F	G	E	G	E	E	E	E	E	G	G	G	G	G	
Ethyl Glycol	G	E	E	E	E	E	E	E	E	G	E	E	E	E	
Ethylene Dichloride	U	-	G	G	G	-	-	E	U	U	U	F	U	-	
Ethylene Oxide	G	G	G	G	U	E	-	U	U	U	U	U	F	U	
Ferric Chloride	U	U	U	U	U	-	U	E	E	G	G	E	E	E	
Ferric Nitrate (pH 7+) 5% 60° F (16° C)	U	-	G	F	U	E	-	E	E	E	E	E	E	E	
Ferric Sulfate 5% 60° F (16° C)	U	-	E	E	U	-	-	E	E	E	E	E	E	E	
Ferrous Sulfate	F	G	G	-	U	E	-	E	E	E	-	E	E	E	
Fluorine 70° F (21° C)	U	U	F	G	U	G	-	E	G	F	G	G	F	-	
Fluorosilicic Acid	U	F	G	G	F	E	-	E	E	G	E	-	-	G	
Formaldehyde 70° F (21° C)	U	G	E	G	E	E	E	G	F	-	E	E	-	F	
Formic Acid 5% 150° F (66° C)	U	G	E	G	G	E	E	E	G	E	E	E	E	E	
Freon 11	F	E	E	E	E	E	-	E	G	G	E	G	U	-	
Freon 12	F	E	E	E	E	E	-	E	G	G	U	U	U	-	
Freon 22	F	E	E	E	E	E	-	E	U	-	E	U	E	-	
Freon 113	F	E	E	E	E	E	-	-	G	G	E	G	U	U	
Freon 114	F	E	E	E	E	E	-	-	G	G	F	F	U	-	
Fructose	-	-	E	-	-	-	-	-	-	-	-	-	E	-	
Fruit Juices (Food) 70%	U	U	E	E	U	E	E	-	E	E	F	E	G	G	
Fuel Oil	F	E	E	E	E	E	E	E	G	F	F	E	U	U	
Furfural	F	E	E	G	G	E	E	U	U	U	U	U	F	U	
Gallic Acid 5% 200° F (93° C)	U	-	E	G	-	E	E	F	G	G	G	E	G	E	
Gasohol	F	G	E	-	G	-	-	E	U	-	-	G	U	-	
Gasoline – Regular	G	E	E	E	E	E	E	E	G	-	G	E	U	U	
Gasoline – Unleaded	F	E	E	E	E	-	-	E	U	-	-	E	U	-	
Gelatin (Food)	U	U	E	G	G	E	-	-	E	E	E	E	E	E	
Glucose	U	F	E	-	E	E	-	E	E	E	E	E	E	E	
Glycerine/Glycerol 70° F (21° C)	F	E	E	G	G	E	E	E	E	E	E	E	E	E	
Heptane	F	G	E	G	E	E	-	E	E	G	G	E	U	U	
Hexane	F	G	E	G	E	E	-	E	E	G	G	E	U	U	
Hydraulic Oils	F	G	E	E	E	E	-	-	G	F	E	E	U	U	
Hydrobromic Acid 200° F (93° C)	U	U	U	U	U	U	E	E	U	U	E	E	E	E	
Hydrochloric Acid 10% 60° F (16° C)	U	U	U	F	U	U	E	E	F	G	G	E	G	-	
Hydrochloric Acid 20% 60° F (16° C)	U	U	U	U	U	U	E	E	F	G	G	E	-	-	
Hydrochloric Acid 35% 60° F (16° C)	U	U	U	U	U	U	G	G	F	G	G	E	-	U	
Hydrocyanic Acid	U	-	G	F	U	E	E	E	G	G	E	E	G	G	
Hydrofluoric Acid 48%	U	F	U	F	U	F	E	E	U	U	E	E	-	-	
Hydrofluoric Acid 60%	U	U	U	U	U	F	E	E	G	U	G	G	E	G	
Hydrofluoric Acid 100%	U	U	U	U	U	F	E	E	U	U	U	F	-	-	
Hydrofluosilicic Acid 5% 70° F (21° C)	U	G	G	G	E	G	E	G	G	G	E	E	E	E	
Hydrogen	F	G	E	E	F	E	-	E	E	E	E	E	E	G	
Hydrogen Peroxide 90%	U	F	G	G	U	G	E	E	U	U	G	G	F	U	
Hydrogen Sulfide – Dry	F	F	E	G	F	G	E	E	F	-	G	G	E	G	
Hydrogen Sulfide – Wet	F	F	G	F	F	E	-	E	-	-	G	G	G	U	

* See material trademark note on page 40.

MATERIAL SELECTION GUIDE (CONT.)

Rating Interpretation	Stem and Disc								Seat						
	Nickel-Plated Ductile Iron	416 SS	316 SS	Monel*	Aluminum Bronze	Alloy 20	Hastelloy C*	PVF	Buna-N	Neoprene	Hypalon*	FKM	EPDM	Natural Rubber	ETM-30230
Iodine Solution	U	U	U	U	U	U	E	E	F	U	G	E	G	F	-
Iso – Octane	F	E	E	E	E	E	E	E	E	G	G	E	U	U	G
Isopropyl Alcohol	F	E	E	E	E	E	E	-	G	F	E	E	E	E	G
Isopropyl Ether	F	E	E	E	E	E	E	-	G	F	F	U	U	U	-
Kerosene	E	E	E	E	E	E	E	E	E	G	U	E	U	U	E
Lacquer Solvents	F	E	E	E	E	E	E	-	U	U	U	U	U	U	U
Lactic Acid 5% 70° F (21° C)	U	F	G	G	U	E	E	U	G	E	E	E	G	G	-
Lard Oil 70° F (21° C)	G	-	E	G	G	E	E	E	E	F	U	E	U	U	E
Lemon Oil	U	F	E	E	E	E	E	E	G	F	-	-	-	-	-
Linseed Oil	F	E	E	E	E	E	E	E	E	G	G	E	U	-	-
Lubricating Oil	E	E	E	E	E	E	E	E	E	F	G	E	U	U	E
Magnesium Chloride 4% 75° F (24° C)	F	F	G	G	F	E	E	E	E	E	E	E	E	E	E
Magnesium Hydroxide	F	E	E	G	G	E	-	E	G	E	E	E	E	G	G
Magnesium Sulfate 5% 120° F (49° C)	F	G	E	E	E	E	E	E	E	E	E	E	E	G	E
Mercuric Chloride 3% 60° F (16° C)	U	U	F	U	U	F	E	E	E	E	E	E	E	E	E
Mecuric Cyanide	U	-	E	U	U	E	E	F	G	F	F	F	G	-	F
Mercurous Nitrate (pH 7+)	U	-	G	U	U	E	E	E	F	F	-	-	-	-	-
Mercury	E	E	E	E	U	E	E	E	E	E	E	E	E	E	E
Methyl Acetate	F	G	E	-	-	E	-	-	U	U	U	U	G	U	U
Methyl Acetone	F	E	E	-	E	E	-	-	U	U	U	-	-	U	U
Methyl Cellosolve	F	E	E	E	E	E	-	E	U	U	U	U	G	U	-
Methyl Chloride	G	G	E	G	E	E	-	E	U	U	U	G	F	U	-
Methyl Ethyl Ketone (MEK)	E	E	E	-	E	E	-	U	U	U	U	U	E	U	U
Milk (Food)	U	U	E	F	U	E	E	E	E	E	-	E	U	-	-
Mineral Oil	F	-	E	E	G	E	E	E	E	G	G	E	U	U	E
Molasses (Food)	U	U	E	-	U	E	-	G	-	E	-	-	E	-	-
Naphtha	F	E	E	G	G	E	E	E	G	U	U	E	U	U	G
Naphthalene	F	E	E	G	G	E	-	E	U	U	U	E	U	U	-
Natural Gas (Methane)	G	E	E	-	E	E	-	-	E	E	E	E	U	F	E
Nickel Ammonium Sulfate	U	-	E	F	U	-	-	-	-	E	-	-	-	-	-
Nickel Chloride	U	-	G	G	U	G	E	E	E	E	E	E	E	E	-
Nickel Sulfate 10% 60° F (16° C)	U	-	E	G	G	E	E	E	E	E	E	E	E	G	-
Nitric Acid 10% 70° F (21° C)	U	-	G	U	U	G	G	U	U	G	E	E	G	U	U
Nitric Acid 30% 70° F (21° C)	U	-	G	U	U	G	G	U	U	F	E	E	G	U	U
Nitric Acid 60% 175° F (79° C)	U	-	G	U	U	G	G	U	U	U	U	E	U	U	U
Nitric Acid 70%	U	U	G	U	U	G	G	U	U	U	U	E	U	U	U
Nitrobenzene	U	-	E	G	-	E	-	F	U	U	U	G	U	-	U
Oils and Fats	E	E	E	G	E	E	-	-	E	-	-	U	U	-	E
Oils, Fish	U	G	E	-	F	E	-	-	G	E	F	U	U	-	E
Oleic Acid 100° F (38° C)	U	F	G	G	G	E	E	E	F	G	G	G	-	U	G
Oleum (Fuming Sulfuric Acid)	U	U	F	-	-	G	G	-	U	U	U	E	U	U	U
Oxalic Acid	U	F	G	F	F	G	G	F	G	G	G	E	G	U	F
Oxygen	E	E	E	E	E	E	-	E	G	E	E	E	E	-	G
Ozone	U	G	E	-	-	-	-	E	U	F	E	E	E	U	G
Palmitic Acid	U	G	E	G	G	E	-	E	E	G	F	G	G	F	G
Perchlorethylene	F	G	E	G	G	E	-	E	F	U	U	E	U	U	F
Petroleum – Refined	G	-	E	E	E	-	-	E	E	G	E	E	U	U	E
Petroleum – Sour	U	G	G	G	F	G	E	E	F	-	E	G	U	-	G
Phenol	U	-	E	E	G	E	E	E	U	U	U	G	-	U	F
Phosgene	-	-	E	-	-	-	-	-	G	U	U	G	U	U	-
Phosphoric Acid 10% 70° F (21° C)	U	F	G	F	U	G	E	E	G	G	G	E	G	F	-
Phosphoric Acid 25% 70° F (21° C)	U	U	G	F	U	G	G	E	F	G	G	E	E	U	-
Phosphoric Acid 75% 70° F (21° C)	U	U	G	F	U	-	F	E	U	G	G	G	E	U	-
Phosphorous Oxchloride	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* See material trademark note on page 40.

Rating Interpretation	Stem and Disc								Seat						
	Nickel-Plated Ductile Iron	416 SS	316 SS	Monel*	Aluminum Bronze	Alloy 20	Hastelloy C*	PVF	Buna-N	Neoprene	Hypalon*	FKM	EPDM	Natural Rubber	ETM-30230
Pickling Sol. (20% Nitric to 4% HF)	U	-	G	G	-	-	-	-	U	U	U	G	F	U	U
Picric Acid 80% 70° F (21° C)	U	-	G	U	-	E	E	E	G	E	E	G	E	G	-
Polyethylene Glycol Dimethyl Ether (Selexol)	-	-	-	-	-	-	-	-	-	-	-	U	G	U	-
Potassium Chloride	U	-	G	G	E	E	-	E	E	E	E	E	E	E	E
Potassium Cyanide	F	G	G	G	U	E	-	E	E	E	E	E	E	E	E
Potassium Hydroxide 5% 70° F (21° C)	F	G	E	E	U	E	E	G	E	G	E	G	E	G	-
Potassium Nitrate 6% 68° F (20° C)	F	G	E	G	F	E	E	E	E	E	G	E	E	E	E
Potassium Phosphate	U	-	G	G	F	-	-	-	E	E	-	E	-	-	-
Potassium Sulfate 7% 180° F (82° C)	F	G	E	E	E	E	-	E	E	E	G	E	E	-	E
Potassium Sulfide	U	G	E	F	U	E	-	E	E	G	G	G	G	G	-
Potassium Sulfite	U	-	E	-	-	E	-	-	E	G	G	E	E	G	-
Propane	F	E	E	E	E	E	-	E	E	G	G	E	U	U	E
Resins and Rosins	U	E	E	G	E	E	E	-	F	F	F	E	-	F	-
SAE #10 Oil	G	-	-	-	E	-	-	-	E	-	E	E	U	-	E
Sea Water 70° F (21° C)	U	F	G	E	E	G	E	E	E	E	E	G	E	F	-
Sewage	U	G	E	G	G	E	-	E	E	E	E	E	G	F	-
Silicate Ester Synthetic Oil	-	-	-	-	-	-	-	-	-	G	E	E	U	-	-
Skydrol 500	G	E	E	-	E	E	-	-	U	U	U	U	E	U	U
Soap Solution (Stearate) 70° F (21° C)	U	F	E	E	E	E	E	E	E	E	E	E	E	F	E
Sodium Acetate 5% 75° F (24° C)	U	F	E	G	G	E	E	E	G	G	U	U	E	E	-
Sodium Aluminate	U	-	E	G	G	E	-	-	E	E	G	E	G	G	-
Sodium Bisulfate	U	F	E	-	-	E	-	E	E	E	E	E	E	E	E
Sodium Carbonate 80% 60° F (16° C)	U	G	E	E	G	E	E	E	E	E	E	E	E	E	E
Sodium Chloride 30% 180° F (82° C)	U	F	E	E	E	E	E	E	E	E	E	E	E	E	E
Sodium Cyanide	U	-	G	U	U	E	-	E	E	E	E	E	E	E	-
Sodium Fluoride 5% 60° F (16° C)	U	-	G	G	F	-	E	E	E	E	G	E	G	G	-
Sodium Hydroxide 5%	U	G	E	G	F	E	E	G	G	F	E	G	E	E	-
Sodium Hydroxide 20%	U	F	E	E	F	E	E	G	G	U	E	G	E	E	-
Sodium Hydroxide 50%	U	F	G	G	U	E	E	E	G	U	G	F	G	G	-
Sodium Hydroxide 70%	U	U	F	F	U	G	G	G	F	U	U	U	G	F	-
Sodium Hypochlorite 5% 60° F (16° C)	U	-	G	G	U	G	E	E	F	U	E	E	G	F	G
Sodium Nitrate 30% 60° F (16° C)	U	G	E	G	G	E	E	E	G	G	E	E	E	G	G
Sodium Perborate	U	G	G	G	G	-	-	-	G	G	G	E	E	G	-
Sodium Peroxide	U	G	E	G	U	-	-	E	G	G	G	E	E	G	-
Sodium Phosphate 5% 60° F (16° C)	U	G	E	G	F	E	E	E	E	G	E	E	E	E	U
Sodium Silicate	U	G	E	G	G	E	E	E	E	E	E	E	E	E	-
Sodium Sulfate 80% 60° F (16° C)	U	G	E	G	G	E	E	E	E	E	E	E	E	G	E
Sodium Sulfide 70% 70° F (21° C)	U	G	E	-	-	E	E	E	E	E	E	E	E	G	-
Sodium Sulfite 5% 70° F (21° C)	U	-	E	G	U	E	E	E	E	E	E	E	E	G	-
Steam 225° F (107° C)	U	U	E	E	E	-	-	-	U	U	U	U	G	U	U
Steam 300° F (149° C)	U	U	E	E	G	-	-	-	U	U	U	U	U	U	U
Stearic Acid 90% 200° F (93° C)	U	G	E	G	F	E	E	E	G	G	G	E	G	G	F
Steep Water	-	-	-	-	-	-	-	-	-	-	G	G	-	U	-
Styrene (Fumes)	-	-	E	-	-	-	-	-	U	-	-	G	U	-	-
Sulfamic Acid	-	-	-	-	-	E	-	E	-	-	E	-	G	-	-
Sulfur (Molten)	U	F	G	U	U	E	E	-	U	F	U	G	F	U	F
Sulfur Dioxide 60° F (16° C)	U	G	E	E	F	E	E	E	U	G	F	E	E	G	-
Sulfur Trioxide	U	G	E	-	-	E	E	-	U	U	U	E	G	G	-
Sulfuric Acid 0% to 7% 70° F (21° C)	U	F	G	F	U	E	E	E	U	G	E	E	U	U	F
Sulfuric Acid 7% to 40% 70° F (21° C)	U	U	U	U	U	G	G	E	U	U	E	E	U	U	-
Sulfuric Acid 40% to 75% 70° F (21° C)	U	U	U	U	U	G	G	E	U	U	G	G	U	U	-
Sulfuric Acid 75% to 95%	U	U	U	U	U	U	G	E	U	U	U	G	U	U	-
Sulfuric Acid 95% to 100%	U	U	U	U	U	U	E	E	U	U	G	G	U	U	U
Sulfurous Acid 80% 100° F (38° C)	U	U	G	F	U	E	E	G	U	U	E	E	U	-	-

* See material trademark note on page 40.

MATERIAL SELECTION GUIDE (CONT.)

Rating Interpretation E – Excellent G – Good F – Fair U – Unsatisfactory	Stem and Disc								Seat						
	Nickel-Plated Ductile Iron	416 SS	316 SS	Monel*	Aluminum Bronze	Alloy 20	Hastelloy C*	PVF	Buna-N	Neoprene	Hypalon*	FKM	EPDM	Natural Rubber	ETM-30230
Tall Oil	G	G	E	G	-	E	-	E	G	G	-	E	-	E	-
Tannic Acid 150° F (66° C)	U	F	E	G	G	E	E	G	E	G	G	E	E	E	F
Tar	F	E	E	E	E	E	E	-	F	F	-	E	U	E	F
Tartaric Acid 150° F (66° C)	U	G	E	G	G	E	E	G	G	G	E	E	G	E	F
Toluol and Toluolene	G	E	E	-	E	E	-	G	U	U	U	E	U	U	U
Toluene Sulfonic Acid	-	-	U	-	-	-	-	U	-	-	-	G	-	-	-
Transformer Oil	-	-	-	-	-	-	-	-	U	-	-	E	U	-	-
Tributyl Phosphate	G	F	E	-	-	E	-	E	U	U	U	E	E	G	-
Trichloroacetic Acid	U	U	U	G	G	-	-	F	G	U	U	F	G	F	-
Trichloroethylene	F	U	E	G	G	E	-	G	U	U	U	E	U	U	U
Triethinolamine	U	U	E	G	-	-	-	G	F	E	E	U	G	G	-
Trisodium Phosphate	U	U	G	G	F	-	-	E	F	F	-	-	-	-	-
Tung Oil	U	U	E	F	E	E	E	-	E	G	G	E	U	U	-
Turpentine	U	U	E	G	G	-	-	E	G	U	U	E	U	U	F
Vinegar 70° F (24° C)	U	-	E	E	-	E	E	G	G	G	E	E	E	G	-
Water, Acid – Mine	U	-	E	U	-	E	E	G	F	F	E	E	F	F	-
Water – Deionized	-	-	E	-	-	-	-	E	E	-	E	-	E	-	-
Water – Demineralized	U	-	E	E	E	E	-	E	E	E	E	E	E	F	-
Water – Fresh 180° F (82° C)	G	E	E	E	E	E	E	E	G	G	F	U	E	U	F
Water – Fresh 225° F (107° C)	G	E	E	E	E	E	E	E	U	U	U	U	E	U	-
Water – Salt 180° F (82° C)	U	U	G	E	G	E	E	E	G	G	F	U	E	U	-
Water – Sewage 80° F (27° C)	U	G	E	E	E	E	E	-	E	-	-	E	E	-	-
Whiskey and Wine	U	U	E	E	G	E	E	E	E	E	G	E	E	-	-
White Liquor	U	-	E	-	-	E	E	-	G	-	G	-	-	F	-
Xylene, Xylol	F	E	E	-	E	E	-	E	U	U	U	E	U	U	U
Zinc Chloride 5% 160° F (71° C)	U	U	F	G	U	G	G	E	E	E	E	E	E	E	-
Zinc Phosphate	-	-	G	-	-	-	-	E	E	-	-	-	E	-	-
Zinc Sulfate 25% 180° F (82° C)	U	G	E	G	G	E	E	E	E	E	E	E	E	G	-

* See material trademark note on page 40.

For proper valve repair, use genuine DEMCO replacement parts.

Services for Valves and Actuation

WE BUILD IT. WE BACK IT.

Startup and Commissioning

Our experts understand that each project is unique. That's why Cameron's service team helps facilitate commissioning and start-up activities.

- Integrated solutions, onsite or at our global service centers
- Increased equipment and product performance
- The shortest possible trouble-free startup for your critical assets

Spare Parts and Asset Management

Cameron offers the assets and expertise to cover all aspects of valve management.

- Full inventory of quality exact OEM parts and spares
- Complete asset risk and criticality assessments
- Comprehensive inventory of your assets, including a complete recommended spare valves and parts list

Operational Support

Cameron's ability to address valve requirements in the field is a reflection of our commitment to life-of-asset support.

- Innovative asset management solutions
- Trouble-free installation, startup and operations
- Support from commission to operation – extending through all phases of a valve's life cycle
- Extensive inventory of spare valves and parts

Cameron's site management team helps mitigate the risk of project delays by identifying issues in the construction process prior to valve installation to ensure valve integrity.



Trademark Information

DEMCO is a registered trademark of Cameron.

This document contains references to registered trademarks or product designations, which are not owned by Cameron.

Trademark	Owner
CELCON	Hoechst Celanese Corporation
DELRIN	E.I. DuPont De Nemours & Company
FLUOREL	Minnesota Mining and Manufacturing Company
HASTELLOY	Haynes International, Inc.
HYCAR	Hydrocarbon Chemical and Rubber Company
HYDRIN	Zeon Chemicals USA, Inc.
HYPALON	E.I. DuPont De Nemours & Company
INCONEL	INCO Nickel Sales, Inc.
MONEL	INCO Alloys International, Inc.
NORDEL	E.I. DuPont De Nemours & Company
STELLITE	Stoody Deloro Stellite, Inc.
TEFLON	E.I. DuPont De Nemours & Company

CERTIFICATIONS





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HSE Policy Statement

At Cameron, we are committed ethically, financially and personally to a working environment where no one gets hurt and nothing gets harmed.