

# Consolidated™ 19000 Series Safety Relief Valve

ASME and PED certified, the 19000 Series Safety Relief Valve provides superior capacity and blowdown performance on all media types



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Baker Hughes provides a full range of Consolidated pressure valve styles, sizes, options and configurations for multiple industries, applications, environments, and media. From spring-actuated to pilot-operated, each pressure valve is configured to offer safer process flow control in hars environments.

## Conversion Table

**All the USCS values are converted to metric values using the following conversion factors:**

| USCS Unit            | Conversion Factor | Metric Unit         |
|----------------------|-------------------|---------------------|
| in.                  | 25.4              | mm                  |
| lb.                  | 0.4535924         | kg                  |
| in <sup>2</sup>      | 6.4516            | cm <sup>2</sup>     |
| ft <sup>3</sup> /min | 0.02831685        | m <sup>3</sup> /min |
| gal/min              | 3.785412          | L/min               |
| lb/hr                | 0.4535924         | kg/hr               |
| psig                 | 0.06894757        | barg                |
| ft lb                | 1.3558181         | Nm                  |
| °F                   | 5/9 (°F-32)       | °C                  |

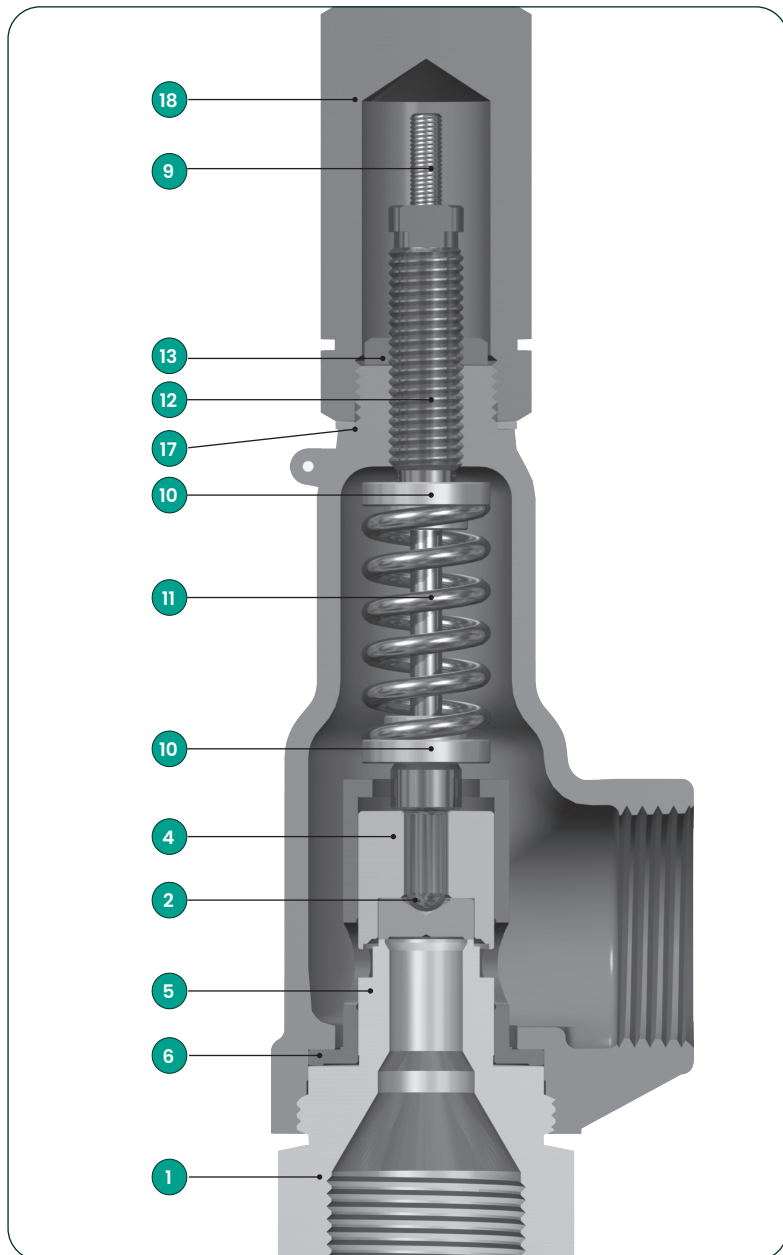
# Scope of Design

| Standard Inlet and Outlet Connections and Pressure Classes |                 |                |       |       |        |            |        |           |        |        |        |        |
|------------------------------------------------------------|-----------------|----------------|-------|-------|--------|------------|--------|-----------|--------|--------|--------|--------|
| Orifice                                                    |                 | Pressure Range |       |       |        | Valve Type | Inlet  |           |        | Outlet |        |        |
| in <sup>2</sup>                                            | cm <sup>2</sup> | psig           |       | barg  |        |            | Size   |           | Type   | Size   |        | Type   |
|                                                            |                 | min            | max   | min   | max    |            | in     | mm        |        | in     | mm     |        |
| 0.096                                                      | 0.619           | 5              | 290   | 0.34  | 19.99  | 19096L     | 0.5    | 12.7      | MNPT   | 1      | 25.4   | FNPT   |
|                                                            |                 |                |       |       |        |            | 0.75   | 19.05     | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            | 1      | 25.4      | MNPT   |        |        | FNPT   |
|                                                            |                 | 291            | 2000  | 20.06 | 137.90 | 19096M     | 0.5    | 12.7      | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            | 0.75   | 19.05     | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            | 1      | 25.4      | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            | 2001   | 5000      | 137.96 |        |        | 344.74 |
|                                                            |                 | 0.096 BP       | 0.619 | 50    | 2000   | 3.45       | 137.90 | 19096M-BP | 0.5    |        |        | 12.7   |
| 0.75                                                       | 19.05           |                |       |       |        |            |        |           | MNPT   | FNPT   |        |        |
| 1                                                          | 25.4            |                |       |       |        |            |        |           | MNPT   | FNPT   |        |        |
| 0.110                                                      | 0.71            |                |       |       |        |            |        |           | 5      | 290    | 0.34   | 19.99  |
|                                                            |                 | 0.75           | 19.05 | MNPT  | FNPT   |            |        |           |        |        |        |        |
|                                                            |                 | 1              | 25.4  | MNPT  | FNPT   |            |        |           |        |        |        |        |
|                                                            |                 | 291            | 2000  | 20.06 | 137.90 | 19110M     | 0.5    | 12.7      | MNPT   | FNPT   |        |        |
|                                                            |                 |                |       |       |        |            | 0.75   | 19.05     | MNPT   | FNPT   |        |        |
|                                                            |                 |                |       |       |        |            | 1      | 25.4      | MNPT   | FNPT   |        |        |
|                                                            |                 |                |       |       |        |            | 2001   | 5000      | 137.96 | 344.74 | 19110H | 0.75   |
|                                                            |                 | 0.110 BP       | 0.71  | 50    | 2000   | 3.45       | 137.9  | 19110M-BP | 0.5    | 12.7   | MNPT   | 1      |
| 0.75                                                       | 19.05           |                |       |       |        |            |        |           | MNPT   | FNPT   |        |        |
| 1                                                          | 25.4            |                |       |       |        |            |        |           | MNPT   | FNPT   |        |        |
| 0.126                                                      | 0.813           | 5              | 290   | 0.34  | 19.99  | 19126L     | 0.75   | 19.05     | MNPT   | 1      | 25.4   | FNPT   |
|                                                            |                 |                |       |       |        |            | 1      | 25.4      | MNPT   |        |        | FNPT   |
|                                                            |                 | 291            | 2000  | 20.06 | 137.90 | 19126M     | 0.75   | 19.05     | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            | 1      | 25.4      | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            | 2001   | 8000      | 137.96 |        |        | 551.58 |
|                                                            |                 | 0.126 BP       | 0.813 | 75    | 2000   | 5.17       | 137.9  | 19126M-BP | 0.75   |        |        | 19.05  |
| 1                                                          | 25.4            |                |       |       |        |            |        |           | MNPT   | FNPT   |        |        |
| 0.226                                                      | 1.458           | 5              | 290   | 0.34  | 19.99  | 19226L     | 11     | 25.4      | MNPT   | 1.5    | 38.1   | FNPT   |
|                                                            |                 |                |       |       |        |            |        |           | FNPT   |        |        | FNPT   |
|                                                            |                 | 291            | 2000  | 20.06 | 137.90 | 19226M     |        |           | MNPT   |        |        | FNPT   |
|                                                            |                 |                |       |       |        |            |        |           | FNPT   |        |        | FNPT   |
| 0.226 BP                                                   | 1.458           | 195            | 2000  | 13.44 | 137.9  | 19226M-BP  | 1      | 25.4      | MNPT   | 1.5    | 38.1   | FNPT   |
| 0.357                                                      | 2.303           | 5              | 290   | 0.34  | 19.99  | 19357L     | 1.5    | 38.1      | FNPT   | 2      | 50.8   | FNPT   |
|                                                            |                 | 291            | 1500  | 20.06 | 103.42 | 19357M     |        |           | FNPT   |        |        | FNPT   |
| 0.567                                                      | 3.658           | 5              | 290   | 0.34  | 19.99  | 19567L     | 2      | 50.8      | FNPT   | 2.5    | 63.5   | FNPT   |
|                                                            |                 | 291            | 1000  | 20.06 | 68.95  | 19567M     |        |           | FNPT   |        |        | FNPT   |

# Materials

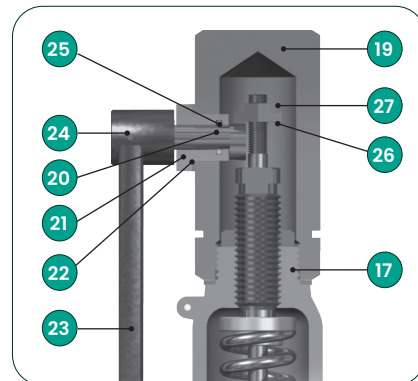
## 19000 Metal Seat Valve

### 19000 Threaded End Connection

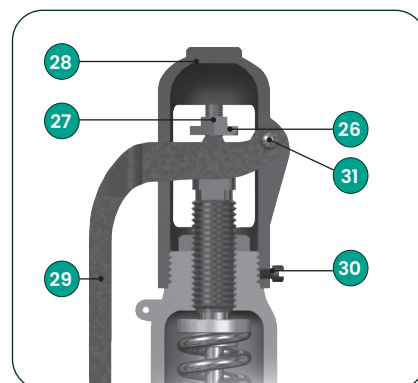


**Note:** Body (Integral Cast Flange Design), nozzle (Integral Cast Flange Design), bonnet gasket (Integral Cast Flange Design), studs and nuts (Integral Cast Flange Design), base locknut (Socket Weld Flange with Locknut Design), inlet and outlet extensions, inlet and outlet flanges not shown for flanged options. Socket Weld connections not shown.

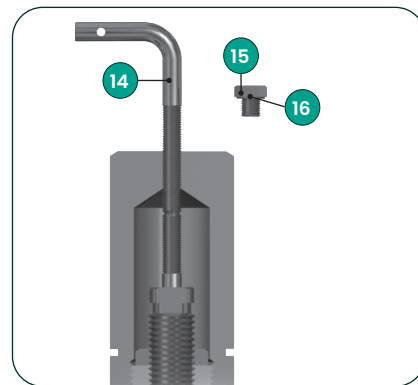
### Packed Lever



### Plain Lever



### Cap with Gag



# Materials– 19000 Metal Seat Valve

| 19000 Metal Seat Valve – Standard Materials |                                                                         |                                  |
|---------------------------------------------|-------------------------------------------------------------------------|----------------------------------|
| Ref. No.                                    | Part                                                                    | Material (–CC)                   |
| 1                                           | <b>Base</b>                                                             |                                  |
|                                             | 19000L                                                                  | ASME SA479 316 SS                |
|                                             | 19000M                                                                  | ASME SA479 316 SS                |
|                                             | 19000H                                                                  | ASME SA479 316 SS <sup>(1)</sup> |
| 2                                           | <b>Disc</b>                                                             |                                  |
|                                             | 19000L and M                                                            | 316 Stainless Steel              |
|                                             | 19000L and M (steam) <sup>(2)</sup>                                     | 616 Stainless Steel              |
|                                             | 19000H                                                                  | Inconel X-750                    |
| 4                                           | <b>Disc Holder</b>                                                      |                                  |
|                                             | Metal Seat 19000L                                                       | 316 Stainless Steel              |
|                                             | Metal Seat 19000M                                                       | 316 Stainless Steel              |
|                                             | Metal Seat 19000H                                                       | 316 Stainless Steel              |
| 5                                           | Guide                                                                   | 316 Stainless Steel              |
| 6                                           | Bonnet                                                                  | ASME SA216 WCC CS                |
| 9                                           | <b>Spindle</b>                                                          |                                  |
|                                             | Metal Seat 19000L                                                       | 316 Stainless Steel              |
|                                             | Metal Seat 19000M                                                       | 316 Stainless Steel              |
|                                             | Metal Seat 19000H                                                       | Inconel X-750                    |
| 10                                          | Spring Washer                                                           | Carbon Steel                     |
| 11                                          | <b>Spring</b>                                                           |                                  |
|                                             | 19000Lc                                                                 | 17-7 PH Stainless Steel          |
|                                             | 19000Lt                                                                 | Inconel X-750                    |
|                                             | 19000Mc                                                                 | 17-7 PH Stainless Steel          |
|                                             | 19000Mt                                                                 | Inconel X-750                    |
|                                             | 19000Hc                                                                 | 17-7 PH Stainless Steel          |
|                                             | 19000Ht                                                                 | Inconel X-750                    |
| 12                                          | Adjusting Screw                                                         | 316 Stainless Steel              |
| 13                                          | Adjusting Screw Locknut                                                 | 316 Stainless Steel              |
| 14                                          | Gag Bolt                                                                | Carbon Steel                     |
| 15                                          | Sealing Plug                                                            | Carbon Steel                     |
| 16                                          | Sealing Plug Gasket                                                     | Soft Iron                        |
| 17                                          | Cap Gasket                                                              | Soft Iron                        |
| 18                                          | Screwed Cap                                                             | Carbon Steel                     |
| 19                                          | Packed Cap                                                              | Carbon Steel                     |
| 20                                          | Cam Shaft                                                               | 410 Stainless Steel              |
| 21                                          | Bushing                                                                 | 416 Stainless Steel              |
| 22                                          | Bushing Gasket                                                          | Soft Iron                        |
| 23                                          | Packed Lifting Lever                                                    | Malleable Iron                   |
| 24                                          | Drive Pin                                                               | Steel (Ni-Plated)                |
| 25                                          | O-Ring                                                                  | Viton 70                         |
| 26                                          | Release Nut                                                             | Carbon Steel                     |
| 27                                          | Release Locknut                                                         | Carbon Steel                     |
| 28                                          | Plain Lever Cap                                                         | Malleable Iron                   |
| 29                                          | Plain Lifting Lever                                                     | Malleable Iron                   |
| 30                                          | Cap Screw                                                               | Carbon Steel                     |
| 31                                          | Lever Pin                                                               | Carbon Steel                     |
| 32                                          | Inlet Extension (not shown)                                             | 316 Stainless Steel              |
| 33                                          | Inlet Flange (not shown)                                                | ASME SA105 Carbon Steel          |
| 34                                          | Outlet Extension (not shown)                                            | 316 Stainless Steel              |
| 35                                          | Outlet Flange (not shown)                                               | ASME SA105 Carbon Steel          |
| 36                                          | Body – Integral Cast Flange Design (not shown)                          | ASME SA216 WCC CS                |
| 37                                          | Nozzle – Integral Cast Flange Design (not shown)                        | ASME SA479 316 SS                |
| 38                                          | Bonnet Gasket – Integral Cast Flange Design (not shown)                 | Monel                            |
| 39                                          | Body Studs – Integral Cast Flange Design (not shown)                    | ASME SA193 B7 Alloy Steel        |
| 40                                          | Stud Nuts – Integral Cast Flange Design (not shown)                     | ASME SA194 2H Carbon Steel       |
| 41                                          | Base Locknut – Socket Weld Flange with Locknut Design (not shown)       | 316 Stainless Steel              |
| 42                                          | Outlet Neck Flange – Socket Weld Flange with Locknut Design (not shown) | ASME SA216 WCC CS                |
| 43                                          | Inlet Nipple Extension (optional)                                       | 316 Stainless Steel              |
| 44                                          | Outlet Nipple Extension (optional)                                      | Carbon Steel                     |

## NACE Material Variations

N1 material variation is the same as the CC material variation, except for all springs, which will be Inconel X750, and the disc material for applications where the temperature is ≥ 251°F or steam, which will be Inconel X750.

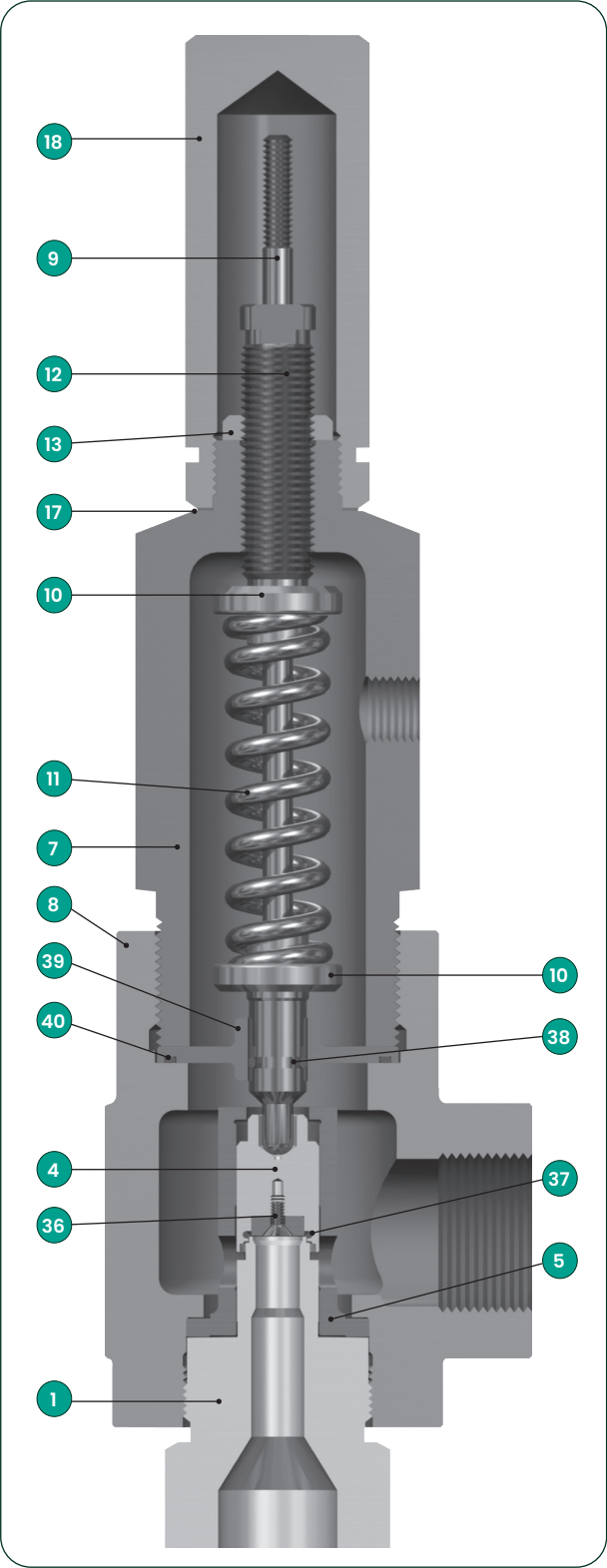
N2 material variation is the same as the S4 material variation, except the disc material for applications where the temperature is ≥ 251°F or steam, which will be Inconel X750. All disc holders and springs will be Inconel X750.

- 1. Stellite or equivalent seats.
- 2. Supplied for steam service at and above 251°F (122°C).

# Materials

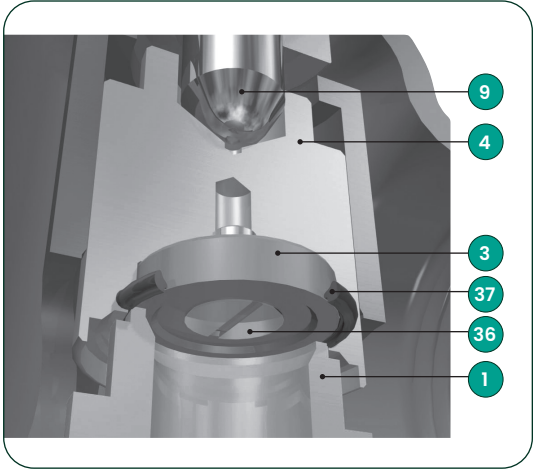
## 19000M-BP

19000M-BP

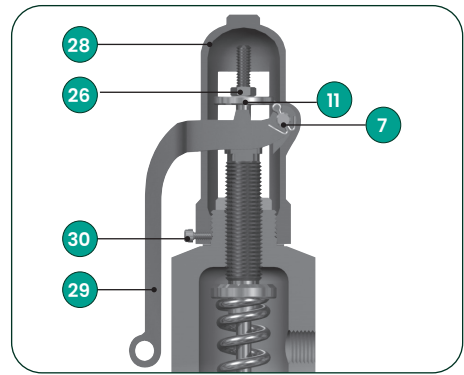


## 19000DA

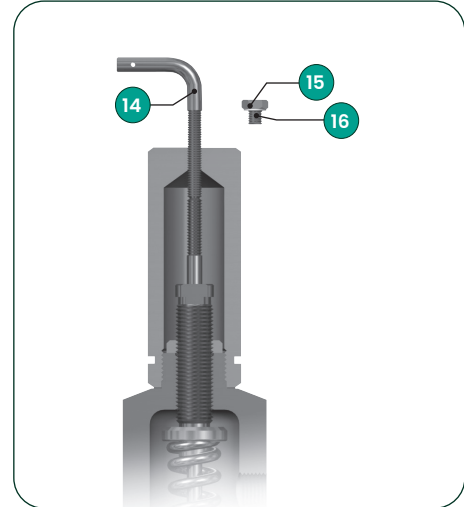
19000DA



### Plain Lever



### Cap with Gag



**Note:** Inlet and outlet extensions, inlet and outlet flanges not shown for flanged option. Socket Weld connections not shown.

# Materials – 19000M-BP

| 19000M-BP – Standard Materials |                                    |                                         |
|--------------------------------|------------------------------------|-----------------------------------------|
| Ref. No.                       | Part                               | Material (-CC)                          |
| 1                              | Base                               |                                         |
|                                | 19000L                             | ASME SA479 316 St.St.                   |
|                                | 19000M                             | ASME SA479 316 St.St.                   |
|                                | 19000H                             | ASME SA479 316 St.St. <sup>(1)</sup>    |
| 3                              | O-Ring Retainer                    |                                         |
|                                | 19000L                             | 316 Stainless Steel                     |
|                                | 19000M                             | 316 Stainless Steel                     |
|                                | 19000H                             | 316 Stainless Steel                     |
| 4                              | Disc Holder                        |                                         |
|                                | 19000L                             | 316 Stainless Steel                     |
|                                | 19000M                             | Inconel X-750                           |
|                                | 19000H                             | Inconel X-750                           |
| 5                              | Guide                              | 316 Stainless Steel                     |
| 7                              | Bonnet Top                         | ASME SA105 Carbon Steel                 |
| 8                              | Bonnet Bottom                      | ASME SA105 Carbon Steel                 |
| 9                              | Spindle                            |                                         |
|                                | 19000L                             | 316 Stainless Steel                     |
|                                | 19000M                             | Inconel X-750                           |
|                                | 19000H                             | Inconel X-750                           |
| 10                             | Spring Washer                      | Carbon Steel                            |
| 11                             | Spring                             |                                         |
|                                | 19000Mc                            | 17-7 PH Stainless Steel                 |
|                                | 19000Mt                            | Inconel X-750                           |
| 12                             | Adjusting Screw                    | 316 Stainless Steel                     |
| 13                             | Adjusting Screw Locknut            | 316 Stainless Steel                     |
| 14                             | Gag Bolt                           | Carbon Steel                            |
| 15                             | Sealing Plug                       | Carbon Steel                            |
| 16                             | Sealing Plug Gasket                | Soft Iron                               |
| 17                             | Cap Gasket                         | Soft Iron                               |
| 18                             | Screwed Cap                        | Carbon Steel                            |
| 26                             | Release Nut                        | Carbon Steel                            |
| 27                             | Release Locknut                    | Carbon Steel                            |
| 28                             | Plain Lever Cap                    | Malleable Iron                          |
| 29                             | Plain Lifting Lever                | Malleable Iron                          |
| 30                             | Cap Screw                          | Carbon Steel                            |
| 31                             | Lever Pin                          | Carbon Steel                            |
| 32                             | Inlet Extension (not shown)        | 316 Stainless Steel                     |
| 33                             | Inlet Flange (not shown)           | ASME SA105 Carbon Steel                 |
| 34                             | Outlet Extension (not shown)       | 316 Stainless Steel                     |
| 35                             | Outlet Flange (not shown)          | ASME SA105 Carbon Steel                 |
| 36                             | O-Ring Retainer Lockscrew          | 316 Stainless Steel                     |
| 37                             | O-Ring Seat Seal                   | Select                                  |
| 38                             | Spindle O-Ring                     | Same as O-Ring Seat Seal <sup>(2)</sup> |
| 39                             | Backup Plate                       | 316 Stainless Steel                     |
| 40                             | Backup Plate O-Ring                | Same as O-Ring Seat Seal                |
| 41                             | Inlet Nipple Extension (optional)  | 316 Stainless Steel                     |
| 42                             | Outlet Nipple Extension (optional) | Carbon Steel                            |

## NACE Material Variations

N1 material variation will be the same as the CC material variation, except for the spring, which will be Inconel X750.

N2 material variation will be the same as the S4 material variation, except for the spring, which will be Inconel X750.

## Soft Seat Material Temp. Limits

| Material           | Temperature Limits |      |      |      |
|--------------------|--------------------|------|------|------|
|                    | °F                 |      | °C   |      |
|                    | min.               | max. | min. | max. |
| Nitrile            | -45                | +300 | -43  | +149 |
| Ethylene/Propylene | -70                | +500 | -57  | +260 |
| Fluoro-Carbon      | -15                | +400 | -26  | +204 |
| Fluoro-Silicone    | -100               | +350 | -73  | +177 |
| Neoprene           | -45                | +300 | -43  | +149 |
| Silicone           | -65                | +437 | -54  | +225 |
| Teflon             | -300               | +505 | -184 | +263 |

## 19000DA – Standard Materials

| Ref. No. | Part                      | Material (-CC)                       |
|----------|---------------------------|--------------------------------------|
| 1        | Base                      |                                      |
|          | 19000L                    | ASME SA479 316 St.St.                |
|          | 19000M                    | ASME SA479 316 St.St.                |
|          | 19000H                    | ASME SA479 316 St.St. <sup>(1)</sup> |
| 3        | O-Ring Retainer           |                                      |
|          | 19000L                    | 316 Stainless Steel                  |
|          | 19000M                    | 316 Stainless Steel                  |
|          | 19000H                    | 316 Stainless Steel                  |
| 4        | Disc Holder               |                                      |
|          | 19000L                    | 316 Stainless Steel                  |
|          | 19000M                    | Inconel X-750                        |
|          | 19000H                    | Inconel X-750                        |
| 9        | Spindle                   |                                      |
|          | 19000L                    | 316 Stainless Steel                  |
|          | 19000M                    | Inconel X-750                        |
|          | 19000H                    | Inconel X-750                        |
| 36       | O-Ring Retainer Lockscrew | 316 Stainless Steel                  |
| 37       | O-Ring Seat Seal          | Select                               |

1. Stellite or equivalent seats.
2. Not to be Teflon.

# Corrosive Service Materials

| Stainless Material Variations                                        |                                    |                                  |                                  |
|----------------------------------------------------------------------|------------------------------------|----------------------------------|----------------------------------|
| Part                                                                 | Stainless Steel Valve Construction |                                  |                                  |
|                                                                      | S2                                 | S3                               | S4                               |
| <b>Base</b>                                                          |                                    |                                  |                                  |
| 19000L, 19000M                                                       | ASME SA479 316 SS                  | ASME SA479 316 SS                | ASME SA479 316 SS                |
| 19000H                                                               | ASME SA479 316 SS <sup>(1)</sup>   | ASME SA479 316 SS <sup>(1)</sup> | ASME SA479 316 SS <sup>(1)</sup> |
| Body (Integral Cast Flange Design)                                   | ASME SA216 WCC CS                  | ASME SA351 CF8M SS               | ASME SA351 CF8M SS               |
| Nozzle (Integral Cast Flange Design)                                 | ASME SA479 316 SS                  | ASME SA479 316 SS                | ASME SA479 316 SS                |
| Base Locknut (Socket Weld Flange with Locknut Design)                | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| <b>Disc (MS)</b>                                                     |                                    |                                  |                                  |
| 19000L and M                                                         | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| 19000L and M (steam) <sup>(2)</sup>                                  | 616 Stainless Steel                | 616 Stainless Steel              | 616 Stainless Steel              |
| 19000H                                                               | Inconel X-750                      | Inconel X-750                    | Inconel X-750                    |
| <b>O-Ring Retainer (DA and BP)</b>                                   |                                    |                                  |                                  |
| 19000L, 19000M                                                       | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| 19000H                                                               | Inconel X-750                      | Inconel X-750                    | Inconel X-750                    |
| <b>Disc Holder (BP-Soft Seat only)</b>                               |                                    |                                  |                                  |
| Metal Seat; 19000L, 19000M, 19000H, Soft Seat; 19000L                | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Soft Seat; 19000M, 19000H                                            | Inconel X-750                      | Inconel X-750                    | Inconel X-750                    |
| Guide, Outlet Extension                                              | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Bonnet (DA and MS)                                                   | ASME SA216 WCC CS                  | ASME SA351 CF8M SS               | ASME SA351 CF8M SS               |
| Bonnet Top and Bonnet Bottom (BP only)                               | ASME SA105 Carbon Steel            | ASME SA479 316 SS                | ASME SA479 316 SS                |
| Body Studs (Integral Cast Flange Design)                             | ASME SA193 B7 Alloy Steel          | ASME SA193 B8M SS                | ASME SA193 B8M SS                |
| Stud Nuts (Integral Cast Flange Design)                              | ASME SA194 2H Alloy Steel          | ASME SA194 8M SS                 | ASME SA194 8M SS                 |
| Bonnet Gasket (Integral Cast Flange Design)                          | Monel                              | Monel                            | Monel                            |
| <b>Spindle (BP-Soft Seat only)</b>                                   |                                    |                                  |                                  |
| Metal Seat; 19000L, 19000M, Soft Seat; 19000L                        | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Metal Seat; 19000H, Soft Seat; 19000M, 19000H                        | Inconel X-750                      | Inconel X-750                    | Inconel X-750                    |
| Spring Washer                                                        | Carbon Steel                       | Carbon Steel                     | 316 Stainless Steel              |
| <b>Spring (BP-19000M only)</b>                                       |                                    |                                  |                                  |
| 19000Lc                                                              | 17-7 PH Stainless Steel            | 17-7 PH Stainless Steel          | 316 Stainless Steel              |
| 19000Lt, 19000Mt, 19000Ht                                            | Inconel X-750                      | Inconel X-750                    | Inconel X-750                    |
| 19000Mc, 19000Hc                                                     | 17-7 PH Stainless Steel            | 17-7 PH Stainless Steel          | Inconel X-750                    |
| Adjusting Screw, Adjusting Screw Locknut                             | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Gag Bolt, Sealing Plug                                               | Carbon Steel                       | 316 Stainless Steel              | 316 Stainless Steel              |
| Sealing Plug Gasket, Cap Gasket, Bushing Gasket                      | Soft Iron                          | Monel                            | Monel                            |
| Screwed Cap, Packed Cap, Cap Screw                                   | Carbon Steel                       | 316 Stainless Steel              | 316 Stainless Steel              |
| Cam Shaft                                                            | 410 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Bushing                                                              | 416 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Packed Lifting Lever                                                 | Malleable Iron                     | 316 Stainless Steel              | 316 Stainless Steel              |
| Drive Pin                                                            | Steel (Ni-Plated)                  | 303 Stainless Steel              | 303 Stainless Steel              |
| O-Ring                                                               | Viton 70                           | Viton 70                         | Viton 70                         |
| Release Nut, Release Locknut, Lever Pin                              | Carbon Steel                       | 316 Stainless Steel              | 316 Stainless Steel              |
| Plain Lever Cap, Plain Lifting Lever                                 | Malleable Iron                     | 316 Stainless Steel              | 316 Stainless Steel              |
| Inlet Extension, Inlet Nipple Extension (optional)                   | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| Inlet Flange                                                         | ASME SA105 Carbon Steel            | ASME SA182-F316 <sup>(3)</sup>   | ASME SA182-F316 <sup>(3)</sup>   |
| Outlet Nipple Extension (optional)                                   | Carbon Steel                       | 316 Stainless Steel              | 316 Stainless Steel              |
| Outlet Flange                                                        | ASME SA105 Carbon Steel            | ASME SA182-F316 <sup>(3)</sup>   | ASME SA182-F316 <sup>(3)</sup>   |
| Outlet Neck Flange (Socket Weld Flange with Locknut Design)          | ASME SA216 WCC CS                  | ASME SA351 CF8M SS               | ASME SA351 CF8M SS               |
| Backup Plate, O-Ring Retainer Lockscrew                              | 316 Stainless Steel                | 316 Stainless Steel              | 316 Stainless Steel              |
| O-Ring Seat Seal, Backup Plate O-Ring, Spindle O-Ring <sup>(4)</sup> | Select                             | Select                           | Select                           |

1. Stellite or equivalent seats.

2. Supplied for steam service at and above 251°F (122°C).

3. or SA479-316 Stainless Steel.

4. Not to be Teflon.

# Corrosive Service Materials

| Monel Material Variations                                               |                                  |                                  |                                  |                                  |                                  |
|-------------------------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Part                                                                    | Monel Valve Construction         |                                  |                                  |                                  |                                  |
|                                                                         | M1                               | MB                               | M2                               | M3                               | M4                               |
| Base                                                                    |                                  |                                  |                                  |                                  |                                  |
| 19000L, 19000M                                                          | ASME SB164 N04400                | ASME SB164 N04400                | ASME SB164 N04400                | ASME SB164 N04400                | ASME SB164 N04400                |
| 19000H                                                                  | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> |
| Body (Integral Cast Flange Design)                                      | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA494 M35-1                 | ASME SA494 M35-1                 |
| Nozzle (Integral Cast Flange Design)                                    | SB164 N04400                     | SB164 N04400                     | SB164 N04400                     | SB164 N04400                     | SB164 N04400                     |
| Base Locknut<br>(Socket Weld Flange with Locknut Design)                | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| Disc (MS)                                                               |                                  |                                  |                                  |                                  |                                  |
| 19000L and M                                                            | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| 19000L and M (steam) <sup>(2)</sup> , 19000H                            | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| O-Ring Retainer (DA and BP)                                             |                                  |                                  |                                  |                                  |                                  |
| 19000L, 19000M                                                          | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| 19000H                                                                  | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Disc Holder (BP-Soft Seat only)                                         |                                  |                                  |                                  |                                  |                                  |
| Metal Seat; 19000L, 19000M, 19000H                                      | 316 Stainless Steel              | Monel                            | Monel                            | Monel                            | Monel                            |
| Soft Seat; 19000L                                                       | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| Soft Seat; 19000M, 19000H                                               | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Guide                                                                   | 316 Stainless Steel              | 316 Stainless Steel              | 316 Stainless Steel              | 316 Stainless Steel              | 316 Stainless Steel              |
| One Piece Bonnet (DA and MS)                                            | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASTM A494 M35-1 NiCu Alloy       | ASTM A494 M35-1 NiCu Alloy       |
| Bonnet Top and Bonnet Bottom (BP only)                                  | ASME SAI05 CS                    | ASME SAI05 CS                    | ASME SAI05 CSI                   | ASME SB164-N04400                | ASME SB164-N04400                |
| Body Studs (Integral Cast Flange Design)                                | ASME SA193 B7 AS                 | ASME SA193 B7 AS                 | ASME SA193 B7 AS                 | Monel K500                       | Monel K500                       |
| Stud Nuts (Integral Cast Flange Design)                                 | ASME SA194 2H CS                 | ASME SA194 2H CS                 | ASME SA194 2H CS                 | Monel K500                       | Monel K500                       |
| Bonnet Gasket (Integral Cast Flange Design)                             | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| Spindle (BP-Soft Seat only)                                             |                                  |                                  |                                  |                                  |                                  |
| Metal Seat; 19000L, 19000M                                              | 316 Stainless Steel              | 316 Stainless Steel              | Monel                            | Monel                            | Monel                            |
| Metal Seat; 19000H                                                      | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Soft Seat; 19000M, 19000H                                               |                                  |                                  |                                  |                                  |                                  |
| Soft Seat; 19000L                                                       | 316 Stainless Steel              | 316 Stainless Steel              | Monel                            | Monel                            | Monel                            |
| Spring Washer                                                           | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | Monel                            |
| Spring (BP-19000M only)                                                 |                                  |                                  |                                  |                                  |                                  |
| 19000Lc, 19000Mc, 19000Hc                                               | 17-7 PH SS                       | 17-7 PH SS                       | 17-7 PH SS                       | 17-7 PH SS                       | Monel                            |
| 19000Lt, 19000Mt, 19000Ht                                               | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Adjusting Screw, Adjusting Screw Locknut                                | 316 Stainless Steel              | 316 Stainless Steel              | 316 Stainless Steel              | Monel                            | Monel                            |
| Gag Bolt                                                                | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | 316 Stainless Steel              | 316 Stainless Steel              |
| Sealing Plug, Screwed Cap                                               | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | Monel                            | Monel                            |
| Sealing Plug Gasket, Cap Gasket                                         | Soft Iron                        | Soft Iron                        | Soft Iron                        | Monel                            | Monel                            |
| Packed Cap                                                              | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | N/A                              | N/A                              |
| Cam Shaft                                                               | 410 Stainless Steel              | 410 Stainless Steel              | 410 Stainless Steel              | N/A                              | N/A                              |
| Bushing                                                                 | 416 Stainless Steel              | 416 Stainless Steel              | 416 Stainless Steel              | N/A                              | N/A                              |
| Bushing Gasket                                                          | Soft Iron                        | Soft Iron                        | Soft Iron                        | N/A                              | N/A                              |
| Packed Lifting Lever                                                    | Malleable Iron                   | Malleable Iron                   | Malleable Iron                   | N/A                              | N/A                              |
| Drive Pin                                                               | Steel (Ni-Plated)                | Steel (Ni-Plated)                | Steel (Ni-Plated)                | N/A                              | N/A                              |
| O-Ring                                                                  | Viton 70                         | Viton 70                         | Viton 70                         | N/A                              | N/A                              |
| Release Nut, Release Locknut                                            | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | N/A                              | N/A                              |
| Plain Lever Cap, Plain Lifting Lever                                    | Malleable Iron                   | Malleable Iron                   | Malleable Iron                   | N/A                              | N/A                              |
| Cap Screw, Lever Pin                                                    | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | N/A                              | N/A                              |
| Inlet Extension                                                         | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| Inlet Flange, Outlet Flange                                             | ASME SAI05 CS                    | ASME SAI05 CS                    | ASME SAI05 CS                    | ASME SB564 <sup>(3)</sup>        | ASME SB564 <sup>(3)</sup>        |
| Outlet Ext., Outlet Nipple Ext. (optional)                              | 316 Stainless Steel              | 316 Stainless Steel              | 316 Stainless Steel              | Monel                            | Monel                            |
| O-Ring Retainer Lockscrew                                               | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |
| Outlet Neck Flange<br>(Socket Weld Flange with Locknut Design)          | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA494 M35-1                 | ASME SA494 M35-1                 |
| O-Ring Seat Seal, Backup Plate<br>O-Ring, Spindle O-Ring <sup>(4)</sup> | Select                           | Select                           | Select                           | Select                           | Select                           |
| Backup Plate, Inlet Nipple Ext. (optional)                              | Monel                            | Monel                            | Monel                            | Monel                            | Monel                            |

1. Stellite or equivalent seats.

2. Supplied for steam service at and above 251°F (122°C).
3. SB164-N04400.

4. Not to be Teflon.

# Corrosive Service Materials

| Hastelloy Material Variations                                          |                                  |                                  |                                     |                                     |
|------------------------------------------------------------------------|----------------------------------|----------------------------------|-------------------------------------|-------------------------------------|
| Part                                                                   | Hastelloy Valve Construction     |                                  |                                     |                                     |
|                                                                        | H1                               | H2                               | H3                                  | H4                                  |
| Base                                                                   |                                  |                                  |                                     |                                     |
| 19000L, 19000M                                                         | ASME SB574 N10276                | ASME SB574 N10276                | ASME SB574 N10276                   | ASME SB574 N10276                   |
| 19000H                                                                 | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup>    | ASME SB446 N06625 <sup>(1)</sup>    |
| Body (Integral Cast Flange Design)                                     | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA494 CW12MW                   | ASME SA494 CW12MW                   |
| Nozzle (Integral Cast Flange Design)                                   | SB574 N10276                     | SB574 N10276                     | SB574 N10276                        | SB574 N10276                        |
| Base Locknut<br>(Socket Weld Flange with Locknut Design)               | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| Disc (MS)                                                              |                                  |                                  |                                     |                                     |
| 19000L and M                                                           | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| 19000L and M (steam) <sup>(2)</sup> , 19000H                           | Inconel X-750                    | Inconel X-750                    | Inconel X-750                       | Inconel X-750                       |
| O-Ring Retainer (DA and BP)                                            |                                  |                                  |                                     |                                     |
| 19000L, 19000M                                                         | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| 19000H                                                                 | Inconel X-750                    | Inconel X-750                    | Inconel X-750                       | Inconel X-750                       |
| Disc Holder (BP–Soft Seat only)                                        |                                  |                                  |                                     |                                     |
| Metal Seat; 19000L, 19000M, 19000H                                     | 316 Stainless Steel              | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| Soft Seat; 19000L                                                      | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| Soft Seat; 19000M, 19000H                                              | Inconel X-750                    | Inconel X-750                    | Inconel X-750                       | Inconel X-750                       |
| Guide                                                                  | 316 Stainless Steel              | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| Bonnet (DA and MS)                                                     | ASME SA216 WCC Carbon Steel      | ASME SA216 WCC Carbon Steel      | ASME SA194 CW12MW NA <sup>(3)</sup> | ASME SA194 CW12MW NA <sup>(3)</sup> |
| Bonnet Top and Bonnet Bottom (BP only)                                 | ASME SA105 Carbon Steel          | ASME SA105 Carbon Steel          | ASME SB574–N10276                   | ASME SB574–N10276                   |
| Body Studs (Integral Cast Flange Design)                               | ASME SA193 B7 AS                 | ASME SA193 B7 AS                 | Hastelloy                           | Hastelloy                           |
| Stud Nuts (Integral Cast Flange Design)                                | ASME SA194 2H CS                 | ASME SA194 2H CS                 | Hastelloy                           | Hastelloy                           |
| Bonnet Gasket (Integral Cast Flange Design)                            | Monel                            | Monel                            | Monel                               | Monel                               |
| Spindle (BP–Soft Seat only)                                            |                                  |                                  |                                     |                                     |
| Metal Seat; 19000L, 19000M                                             | 316 Stainless Steel              | Hastelloy                        | Hastelloy                           | Monel                               |
| Metal Seat; 19000H,<br>Soft Seat; 19000M, 19000H                       | Inconel X-750                    | Inconel X-750                    | Inconel X-750                       | Inconel X-750                       |
| Soft Seat; 19000L                                                      | 316 Stainless Steel              | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| Spring Washer                                                          | Carbon Steel                     | Carbon Steel                     | Carbon Steel                        | Hastelloy                           |
| Spring (BP–19000M only)                                                |                                  |                                  |                                     |                                     |
| 19000Lc                                                                | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel             | Hastelloy                           |
| 19000Lt, 19000Mt, 19000Ht                                              | Inconel X-750                    | Inconel X-750                    | Inconel X-750                       | Inconel X-750                       |
| 19000Mc, 19000Hc                                                       | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel             | Inconel X-750                       |
| Adjusting Screw, Adjusting Screw Locknut                               | 316 Stainless Steel              | 316 Stainless Steel              | Hastelloy                           | Hastelloy                           |
| Gag Bolt                                                               | Carbon Steel                     | Carbon Steel                     | 316 Stainless Steel                 | 316 Stainless Steel                 |
| Sealing Plug, Screwed Cap                                              | Carbon Steel                     | Carbon Steel                     | Hastelloy                           | Hastelloy                           |
| Sealing Plug Gasket, Cap Gasket                                        | Soft Iron                        | Soft Iron                        | Monel                               | Monel                               |
| Packed Cap, Cap Screw, Lever Pin                                       | Carbon Steel                     | Carbon Steel                     | N/A                                 | N/A                                 |
| Cam Shaft                                                              | 410 Stainless Steel              | 410 Stainless Steel              | N/A                                 | N/A                                 |
| Bushing                                                                | 416 Stainless Steel              | 416 Stainless Steel              | N/A                                 | N/A                                 |
| Bushing Gasket                                                         | Soft Iron                        | Soft Iron                        | N/A                                 | N/A                                 |
| Packed Lifting Lever, Plain Lifting Lever                              | Malleable Iron                   | Malleable Iron                   | N/A                                 | N/A                                 |
| Drive Pin                                                              | Steel (Ni-Plated)                | Steel (Ni-Plated)                | N/A                                 | N/A                                 |
| O-Ring                                                                 | Viton 70                         | Viton 70                         | N/A                                 | N/A                                 |
| Release Nut, Release Locknut                                           | Carbon Steel                     | Carbon Steel                     | N/A                                 | N/A                                 |
| Plain Lever Cap                                                        | Malleable Iron                   | Malleable Iron                   | N/A                                 | N/A                                 |
| Inlet Ext., Inlet Nipple Ext. (optional)                               | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| Inlet Flange, Outlet Flange                                            | ASME SA105 Carbon Steel          | ASME SA105 Carbon Steel          | ASME SB574–N10276                   | ASME SB574–N10276                   |
| Outlet Ext., Outlet Nipple Ext. (optional)                             | 316 Stainless Steel              | 316 Stainless Steel              | Hastelloy                           | Hastelloy                           |
| Outlet Neck Flange<br>(Socket Weld Flange with Locknut Design)         | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA494 CW12MW                   | ASME SA494 CW12MW                   |
| O-Ring Retainer Lockscrew (DA and BP)                                  | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |
| O-Ring Seat Seal Spindle O-Ring,<br>Backup Plate O-Ring <sup>(4)</sup> | Select                           | Select                           | Select                              | Select                              |
| Backup Plate (BP only)                                                 | Hastelloy                        | Hastelloy                        | Hastelloy                           | Hastelloy                           |

1. Stellite or equivalent seats.

2. Supplied for steam service at and above 251°F (122°C).
3. For slip-on flanged and socket weld flange with locknut design 19000 valves, bonnets must be made from barstock ASME SB574 UNS N10276.

4. Not to be Teflon.

# Corrosive Service Materials

| Alloy 20 Material Variations                                                                 |                                  |                                  |                                  |                                  |
|----------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| Part                                                                                         | Alloy 20 Valve Construction      |                                  |                                  |                                  |
|                                                                                              | A1                               | A2                               | A3                               | A4                               |
| Base                                                                                         |                                  |                                  |                                  |                                  |
| 19000L, 19000M                                                                               | ASME SB473 N08020                | ASME SB473 N08020                | ASME SB473 N08020                | ASME SB473 N08020                |
| 19000H                                                                                       | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> | ASME SB446 N06625 <sup>(1)</sup> |
| Body (Integral Cast Flange Design)                                                           | ASME SA216WCC CS                 | ASME SA216WCC CS                 | ASME SA351 CN7M                  | ASME SA351 CN7M                  |
| Nozzle (Integral Cast Flange Design)                                                         | SB473 N08020                     | SB473 N08020                     | SB473 N08020                     | SB473 N08020                     |
| Base Locknut<br>(Socket Weld Flange with Locknut Design)                                     | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| Disc (MS)                                                                                    |                                  |                                  |                                  |                                  |
| 19000L and M                                                                                 | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| 19000L and M (steam) <sup>(2)</sup> , 19000H                                                 | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| O-Ring Retainer (DA and BP)                                                                  |                                  |                                  |                                  |                                  |
| 19000L, 19000M                                                                               | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| 19000H                                                                                       | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Disc Holder (BP-Soft Seat only)                                                              |                                  |                                  |                                  |                                  |
| Metal Seat; 1900L, 1900M, 1900H                                                              | 316 Stainless Steel              | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| Soft Seat; 19000L                                                                            | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| Soft Seat; 19000M, 19000H                                                                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Guide                                                                                        | 316 Stainless Steel              | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| Bonnet (DA and MS)                                                                           | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA351 CN7M                  | ASME SA351 CN7M                  |
| Bonnet Top and Bonnet Bottom (BP only)                                                       | ASME SA105 Carbon Steel          | ASME SA105 Carbon Steel          | ASTM B473 N08020                 | ASTM B473 N08020                 |
| Body Studs (Integral Cast Flange Design)                                                     | ASME SA193 B7 AS                 | ASME SA193 B7 AS                 | Alloy 20                         | Alloy 20                         |
| Stud Nuts (Integral Cast Flange Design)                                                      | ASME SA194 2H CS                 | ASME SA194 2H CS                 | Alloy 20                         | Alloy 20                         |
| Bonnet Gasket<br>(Integral Cast Flange Design)                                               | Monel                            | Monel                            | Monel                            | Monel                            |
| Spindle (BP-Soft Seat only)                                                                  |                                  |                                  |                                  |                                  |
| Metal Seat; 1900L, 1900M,<br>Soft Seat; 19000L                                               | 316 Stainless Steel              | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| Metal Seat; 1900H,<br>Soft Seat; 19000M, 19000H                                              | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| Spring Washer                                                                                | Carbon Steel                     | Carbon Steel                     | Carbon Steel                     | Alloy 20                         |
| Spring (BP-19000M only)                                                                      |                                  |                                  |                                  |                                  |
| 19000Lc                                                                                      | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel          | Alloy 20                         |
| 19000Lt, 19000Mt, 19000Ht                                                                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    | Inconel X-750                    |
| 19000Mc, 19000Hc                                                                             | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel          | 17-7 PH Stainless Steel          | Inconel X-750                    |
| Adjusting Screw, Adjusting Screw Locknut                                                     | 316 Stainless Steel              | 316 Stainless Steel              | Alloy 20                         | Alloy 20                         |
| Gag Bolt                                                                                     | Carbon Steel                     | Carbon Steel                     | 316 Stainless Steel              | 316 Stainless Steel              |
| Sealing Plug, Screwed Cap                                                                    | Carbon Steel                     | Carbon Steel                     | Alloy 20                         | Alloy 20                         |
| Sealing Plug Gasket, Cap Gasket                                                              | Soft Iron                        | Soft Iron                        | Monel                            | Monel                            |
| Packed Cap, Cap Screw, Lever Pin                                                             | Carbon Steel                     | Carbon Steel                     | N/A                              | N/A                              |
| Cam Shaft                                                                                    | 410 Stainless Steel              | 410 Stainless Steel              | N/A                              | N/A                              |
| Bushing                                                                                      | 416 Stainless Steel              | 416 Stainless Steel              | N/A                              | N/A                              |
| Bushing Gasket                                                                               | Soft Iron                        | Soft Iron                        | N/A                              | N/A                              |
| Packed Lifting Lever, Plain Lifting Lever                                                    | Malleable Iron                   | Malleable Iron                   | N/A                              | N/A                              |
| Drive Pin                                                                                    | Steel (Ni-Plated)                | Steel (Ni-Plated)                | N/A                              | N/A                              |
| O-Ring                                                                                       | Viton 70                         | Viton 70                         | N/A                              | N/A                              |
| Release Nut, Release Locknut                                                                 | Carbon Steel                     | Carbon Steel                     | N/A                              | N/A                              |
| Plain Lever Cap                                                                              | Malleable Iron                   | Malleable Iron                   | N/A                              | N/A                              |
| Inlet Ext., Inlet Nipple Ext. (optional)                                                     | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| Inlet Flange, Outlet Flange                                                                  | ASME SA105 Carbon Steel          | ASME SA105 Carbon Steel          | ASME SB462 <sup>(3)</sup>        | ASME SB462 <sup>(3)</sup>        |
| Outlet Ext., Outlet Nipple Ext. (optional)                                                   | 316 Stainless Steel              | 316 Stainless Steel              | Alloy 20                         | Alloy 20                         |
| Outlet Neck Flange<br>(Socket Weld Flange with Locknut Design)                               | ASME SA216 WCC CS                | ASME SA216 WCC CS                | ASME SA351 CN7M                  | ASME SA351 CN7M                  |
| O-Ring Retainer Lockscrew (DA and BP)                                                        | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |
| O-Ring Seat Seal (DA and BP), Backup<br>Plate O-Ring Spindle O-Ring (BP only) <sup>(4)</sup> | Select                           | Select                           | Select                           | Select                           |
| Backup Plate (BP only)                                                                       | Alloy 20                         | Alloy 20                         | Alloy 20                         | Alloy 20                         |

1. Stellite or equivalent seats.

2. Supplied for steam service at and above 251°F (122°C).
3. or SB473-N08020.

4. Not to be Teflon.

# Corrosive Service Materials

| Duplex Material Variations                                     |                                          |                           |                         |                       |
|----------------------------------------------------------------|------------------------------------------|---------------------------|-------------------------|-----------------------|
| Part                                                           | Duplex Valve Construction <sup>(1)</sup> |                           |                         |                       |
|                                                                | D1                                       | D2                        | D3                      | D4                    |
| Base                                                           |                                          |                           |                         |                       |
| 19000L, 19000M                                                 | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| 19000H                                                         | Duplex <sup>(2)</sup>                    | Duplex <sup>(2)</sup>     | Duplex <sup>(2)</sup>   | Duplex <sup>(2)</sup> |
| Body (Integral Cast Flange Design)                             | ASME SA216 WCC CS                        | ASME SA216 WCC CS         | Duplex                  | Duplex                |
| Nozzle (Integral Cast Flange Design)                           | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| Base Locknut<br>(Socket Weld Flange with Locknut Design)       | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| Disc (MS)                                                      |                                          |                           |                         |                       |
| 19000L and M                                                   | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| 19000L and M (steam) <sup>(3)</sup> , 19000H                   | Inconel X-750                            | Inconel X-750             | Inconel X-750           | Inconel X-750         |
| O-Ring Retainer (DA and BP)                                    |                                          |                           |                         |                       |
| 19000L, 19000M                                                 | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| 19000H                                                         | Inconel X-750                            | Inconel X-750             | Inconel X-750           | Inconel X-750         |
| Disc Holder (BP-Soft Seat only)                                |                                          |                           |                         |                       |
| Metal Seat; 19000L, 19000M, 19000H                             | 316 Stainless Steel                      | Duplex                    | Duplex                  | Duplex                |
| Soft Seat; 19000L                                              | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| Soft Seat; 19000M, 19000H                                      | Inconel X-750                            | Inconel X-750             | Inconel X-750           | Inconel X-750         |
| Guide                                                          | 316 Stainless Steel                      | Duplex                    | Duplex                  | Duplex                |
| Bonnet (DA and MS)                                             | ASME SA216 WCC Carbon St.                | ASME SA216 WCC Carbon St. | Duplex                  | Duplex                |
| Bonnet Top and Bonnet Bottom (BP only)                         | ASME SA105 Carbon St.                    | ASME SA105 Carbon St.     | Duplex                  | Duplex                |
| Body Studs (Integral Cast Flange Design)                       | ASME SA193 B7 AS                         | ASME SA193 B7 AS          | Duplex                  | Duplex                |
| Stud Nuts (Integral Cast Flange Design)                        | ASME SA194 2H CS                         | ASME SA194 2H CS          | Duplex                  | Duplex                |
| Bonnet Gasket (Integral Cast Flange Design)                    | Monel                                    | Monel                     | Monel                   | Monel                 |
| Spindle (BP-Soft Seat only)                                    |                                          |                           |                         |                       |
| Metal Seat: 19000L, 19000M; Soft Seat: 19000L                  | 316 Stainless Steel                      | Duplex                    | Duplex                  | Duplex                |
| Metal Seat: 19000H; Soft Seat: 19000M, 19000H                  | Inconel X-750                            | Inconel X-750             | Inconel X-750           | Inconel X-750         |
| Spring Washer                                                  | Carbon Steel                             | Carbon Steel              | Carbon Steel            | Duplex                |
| Spring (BP-19000M only)                                        |                                          |                           |                         |                       |
| 19000Lc                                                        | 17-7 PH Stainless Steel                  | 17-7 PH Stainless Steel   | 17-7 PH Stainless Steel | Duplex                |
| 19000Lt, 19000Mt, 19000Ht                                      | Inconel X-750                            | Inconel X-750             | Inconel X-750           | Inconel X-750         |
| 19000Mc, 19000Hc                                               | 17-7 PH Stainless Steel                  | 17-7 PH Stainless Steel   | 17-7 PH Stainless Steel | Inconel X-750         |
| Adjusting Screw, Adjusting Screw Locknut                       | 316 Stainless Steel                      | 316 Stainless Steel       | Duplex                  | Duplex                |
| Gag Bolt                                                       | Carbon Steel                             | Carbon Steel              | 316 Stainless Steel     | 316 Stainless Steel   |
| Sealing Plug, Screwed Cap                                      | Carbon Steel                             | Carbon Steel              | Duplex                  | Duplex                |
| Sealing Plug Gasket, Cap Gasket                                | Soft Iron                                | Soft Iron                 | Monel                   | Monel                 |
| Packed Cap, Cap Screw, Lever Pin                               | Carbon Steel                             | Carbon Steel              | N/A                     | N/A                   |
| Cam Shaft                                                      | 410 Stainless Steel                      | 410 Stainless Steel       | N/A                     | N/A                   |
| Bushing                                                        | 416 Stainless Steel                      | 416 Stainless Steel       | N/A                     | N/A                   |
| Bushing Gasket                                                 | Soft Iron                                | Soft Iron                 | N/A                     | N/A                   |
| Packed Lifting Lever, Plain Lifting Lever                      | Malleable Iron                           | Malleable Iron            | N/A                     | N/A                   |
| Drive Pin                                                      | Steel (Ni-Plated)                        | Steel (Ni-Plated)         | N/A                     | N/A                   |
| O-Ring                                                         | Viton 70                                 | Viton 70                  | N/A                     | N/A                   |
| Release Nut, Release Locknut                                   | Carbon Steel                             | Carbon Steel              | N/A                     | N/A                   |
| Plain Lever Cap                                                | Malleable Iron                           | Malleable Iron            | N/A                     | N/A                   |
| Inlet Extension, Inlet Nipple Ext. (optional)                  | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| Inlet Flange, Outlet Flange                                    | ASME SA105 Carbon Steel                  | ASME SA105 Carbon St.     | Duplex                  | Duplex                |
| Outlet Ext., Outlet Nipple Ext. (optional)                     | 316 Stainless Steel                      | 316 Stainless Steel       | Duplex                  | Duplex                |
| Outlet Neck Flange<br>(Socket Weld Flange with Locknut Design) | ASME SA216 WCC CS                        | ASME SA216 WCC CS         | Duplex                  | Duplex                |
| O-Ring Retainer Lockscrew (DA and BP)                          | Duplex                                   | Duplex                    | Duplex                  | Duplex                |
| O-Ring Seat Seal (DA and BP)                                   | Select                                   | Select                    | Select                  | Select                |
| Backup Plate O-Ring (BP only)                                  | Select                                   | Select                    | Select                  | Select                |
| Spindle O-Ring                                                 | Select <sup>(4)</sup>                    | Select <sup>(4)</sup>     | Select <sup>(4)</sup>   | Select <sup>(4)</sup> |
| Backup Plate (BP only)                                         | Duplex                                   | Duplex                    | Duplex                  | Duplex                |

1.

Parts made from castings shall be constructed from ASME SA995 CE8MN Duplex. Parts made from barstock shall be constructed from ASME SA479 UNS S31803 Duplex.
2.

Stellite or equivalent seats.
3.

Supplied for steam service at and above 251°F (122°C).
4.

Not to be Teflon.

# Cryogenic Service Materials

| Low Temperature Material Variation <sup>(1)</sup>           |                                                |
|-------------------------------------------------------------|------------------------------------------------|
| Part                                                        | Material Variation (–C1)                       |
| <b>Base</b>                                                 |                                                |
| 19000L, 19000M                                              | ASME SA479 316 Stainless Steel                 |
| 19000H                                                      | ASME SA479 316L Stainless Steel <sup>(2)</sup> |
| Body – Integral Cast Flange Design                          | ASME SA352 LCC Carbon Steel                    |
| Nozzle – Integral Cast Flange Design                        | ASME SA479 316 Stainless Steel                 |
| Base Locknut – Socket Weld Flange with Locknut Design       | 316 Stainless Steel                            |
| <b>Disc (MS)</b>                                            |                                                |
| 19000L and M                                                | 316 Stainless Steel                            |
| 19000L and M (steam) <sup>(3)</sup>                         | 616 Stainless Steel                            |
| 19000H                                                      | Inconel X-750                                  |
| <b>O-Ring Retainer (DA and BP)</b>                          |                                                |
| 19000L, 19000M, 19000H                                      | 316 Stainless Steel                            |
| <b>Disc Holder (BP–Soft Seat only)</b>                      |                                                |
| Metal Seat: 19000L, 19000M                                  | 316 Stainless Steel                            |
| Metal Seat: 19000H, Soft Seat: 19000L                       | 316 Stainless Steel                            |
| Soft Seat: 19000M, 19000H                                   | Inconel X-750                                  |
| Guide, Adjusting Screw, Adjusting Screw Locknut             | 316 Stainless Steel                            |
| One Piece Bonnet (DA and MS)                                | ASME SA352 LCC Carbon Steel                    |
| Bonnet Top and Bonnet Bottom (BP only)                      | ASME SA479 316 Stainless Steel                 |
| Body Studs (Integral Cast Flange Design)                    | ASME SA193 B8M SS                              |
| Stud Nuts (Integral Cast Flange Design)                     | ASME SA194 8M SS                               |
| Bonnet Gasket (Integral Cast Flange Design)                 | Monel                                          |
| <b>Spindle (BP–Soft Seat only)</b>                          |                                                |
| Metal Seat: 19000L, 19000M; Soft Seat: 19000L               | 316 Stainless Steel                            |
| Metal Seat: 19000H; Soft Seat: 19000M, 19000H               | Inconel X-750                                  |
| Spring Washer, Screwed Cap, Packed Cap                      | SA105/LF2 <sup>(5)</sup>                       |
| <b>Spring (BP–19000M only)</b>                              |                                                |
| 19000Lc, 19000Mc, 19000Hc                                   | 17-7 PH Stainless Steel                        |
| 19000Lt, 19000Mt, 19000Ht                                   | Inconel X-750                                  |
| Gag Bolt, Sealing Plug, Cap Screw                           | Carbon Steel                                   |
| Sealing Plug Gasket, Cap Gasket                             | Soft Iron                                      |
| Cam Shaft                                                   | 410 Stainless Steel                            |
| Bushing                                                     | 416 Stainless Steel                            |
| Bushing Gasket                                              | Soft Iron                                      |
| Packed Lifting Lever, Plain Lifting Lever                   | Malleable Iron                                 |
| Drive Pin                                                   | Steel (Ni-Plated)                              |
| O-Ring                                                      | EPR-70                                         |
| Release Nut, Release Locknut, Lever Pin                     | Carbon Steel                                   |
| Plain Lever Cap                                             | Malleable Iron                                 |
| Inlet Extension, Inlet Nipple Extension (optional)          | 316 Stainless Steel                            |
| Inlet Flange                                                | ASME SA182–F316 or SA479–316 SS                |
| Outlet Nipple Extension (optional)                          | Carbon Steel                                   |
| Outlet Extension, O-Ring Retainer Lockscrew (DA and BP)     | 316 Stainless Steel                            |
| Backup Plate (BP only)                                      | 316 Stainless Steel                            |
| Outlet Flange                                               | ASME SA182–F316 or SA479–316 SS                |
| Outlet Neck Flange (Socket Weld Flange with Locknut Design) | ASME SA352 LCC Carbon Steel                    |
| O-Ring Seat Seal (DA and BP), Backup Plate O-Ring (BP only) | Select                                         |
| Spindle O-Ring (BP only)                                    | Select <sup>(4)</sup>                          |

1. Applicable to Ambient Temperatures of –50°F (–45.6°C).
2. Stellite or equivalent seats
3. Supplied for steam service at and above 251°F (122°C).

4. Not to be Teflon.
5. Forging/Bar dual certified components

# Cryogenic Service Materials

| Low Temperature Material Variation<br>(Standard Design only)   |                                                                 |                                                                 |
|----------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|
| Part                                                           | Material Variation (L1)<br>-27 to -100°F (127 to -73°C)         | Material Variation (L3)<br>-101 to -450°F (-74 to -268°C)       |
| <b>Base</b>                                                    |                                                                 |                                                                 |
| 19000L, 19000M                                                 | ASME SA479 316 Stainless Steel                                  | ASME SA479 316 Stainless Steel                                  |
| 19000H                                                         | ASME SA479 316 Stainless Steel,<br>Stellite or Equivalent Seats | ASME SA479 316 Stainless Steel,<br>Stellite or Equivalent Seats |
| Body (Integral Cast Flange Design)                             | ASME SA351 CF8M Stainless Steel                                 | ASME SA351 CF8M Stainless Steel                                 |
| Nozzle (Integral Cast Flange Design)                           | ASME SA479 316 Stainless Steel                                  | ASME SA479 316 Stainless Steel                                  |
| Base Locknut (Socket Weld Flange with Locknut Design)          | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| <b>Disc (MS)</b>                                               |                                                                 |                                                                 |
| 19000L and M                                                   | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| 19000H                                                         | Inconel X-750                                                   | Inconel X-750                                                   |
| <b>Disc Holder</b>                                             |                                                                 |                                                                 |
| Metal Seat: 19000 L/M/H                                        | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Body Studs (Integral Cast Flange Design)                       | ASME SA193 B8M SS                                               | ASME SA193 B8M SS                                               |
| Stud Nuts (Integral Cast Flange Design)                        | ASME SA194 8M SS                                                | ASME SA194 8M SS                                                |
| Bonnet Gasket (Integral Cast Flange Design)                    | Monel                                                           | Monel                                                           |
| Guide, Adjusting Screw Locknut                                 | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Bonnet                                                         | ASME SA351 CF8M Stainless Steel                                 | ASME SA351 CF8M Stainless Steel                                 |
| <b>Spindle</b>                                                 |                                                                 |                                                                 |
| Metal Seat: 19000 L/M/H                                        | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Spring Washer                                                  | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| <b>Spring</b>                                                  |                                                                 |                                                                 |
| 19000Lc                                                        | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| 19000Lt, 19000Mc, 19000Mt                                      | Inconel X-750                                                   | Inconel X-750                                                   |
| Adjusting Screw                                                | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Gag Bolt, Sealing Plug                                         | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Sealing Plug Gasket, Cap Gasket, Bushing Gasket                | Monel                                                           | Monel                                                           |
| Screwed Cap, Packed Cap, Cam Shaft                             | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Bushing, Packed Lifting Lever                                  | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Drive Pin                                                      | 303 Stainless Steel                                             | 303 Stainless Steel                                             |
| O-Ring                                                         | Viton 70                                                        | Viton 70                                                        |
| Release Nut, Release Locknut, Plain Lever Cap                  | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Plain Lifting Lever, Cap Screw, Lever Pin                      | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Inlet Extension, Inlet Nipple Extension (optional)             | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Inlet Flange, Outlet Flange                                    | 316 Stainless Steel                                             | 316 Stainless Steel                                             |
| Outlet Neck Flange<br>(Socket Weld Flange with Locknut Design) | ASME SA351 CF8M SS                                              | ASME SA351 CF8M SS                                              |
| Outlet Extension, Outlet Nipple Extension (optional)           | 316 Stainless Steel                                             | 316 Stainless Steel                                             |

# Materials

## O-Ring Selection Procedure

In addition to the rating of the valve based on materials and temperatures, it is possible that if the valve is equipped with O-Rings (soft seats), the O-Ring may limit the range of valve application.

The following selection process is simple and straight forward and should yield a satisfactory valve selection.

Use the following steps in the O-Ring selection process:

1. Refer to "Table A" (O-Ring Selection - Durometer). Using the valve set pressure, determine the durometer hardness which will be needed.
2. Refer to "Table B". Utilizing the material selected and the durometer hardness selected, check the temperature limits of the material.
3. If the selected material is not adequate, select another material and repeat the procedure.

**Note:** For fire applications use the operating temperature when selecting a material.

| Table A: O-Ring Selection - Durometer |                   |      |      |      |                   |      |      |       |                   |       |      |        |                                       |       |      |        |                                   |      |      |        |
|---------------------------------------|-------------------|------|------|------|-------------------|------|------|-------|-------------------|-------|------|--------|---------------------------------------|-------|------|--------|-----------------------------------|------|------|--------|
| Valve Type                            | O-Ring Durometer  |      |      |      |                   |      |      |       |                   |       |      |        | Teflon                                |       |      |        |                                   |      |      |        |
|                                       | Set Pressure      |      |      |      |                   |      |      |       |                   |       |      |        | Set Pressure                          |       |      |        |                                   |      |      |        |
|                                       | 50 <sup>(1)</sup> |      |      |      | 70 <sup>(1)</sup> |      |      |       | 90 <sup>(2)</sup> |       |      |        | -300 to 200 °F<br>(-184.4 to 93.3 °C) |       |      |        | 201 to 500 °F<br>(93.9 to 260 °C) |      |      |        |
|                                       | min.              |      | max. |      | min.              |      | max. |       | min.              |       | max. |        | min.                                  |       | max. |        | min.                              |      | max. |        |
|                                       | psig              | barg | psig | barg | psig              | barg | psig | barg  | psig              | barg  | psig | barg   | psig                                  | barg  | psig | barg   | psig                              | barg | psig | barg   |
| 19096                                 | 5                 | 0.34 | 50   | 3.45 | 51                | 3.52 | 500  | 34.47 | 501               | 34.54 | 2500 | 172.37 | 1400                                  | 96.53 | 5000 | 344.74 | 15                                | 1.03 | 5000 | 344.74 |
| 19110                                 | 5                 | 0.34 | 50   | 3.45 | 51                | 3.52 | 500  | 34.47 | 501               | 34.54 | 2500 | 172.37 | 1400                                  | 96.53 | 5000 | 344.74 | 15                                | 1.03 | 5000 | 344.74 |
| 19126                                 | 5                 | 0.34 | 50   | 3.45 | 51                | 3.52 | 500  | 34.47 | 501               | 34.54 | 2250 | 155.13 | 1000                                  | 68.95 | 6000 | 413.69 | 15                                | 1.03 | 6000 | 413.69 |
| 19226                                 | 5                 | 0.34 | 50   | 3.45 | 51                | 3.52 | 450  | 31.03 | 451               | 31.10 | 2000 | 137.90 | 1000                                  | 68.95 | 6000 | 413.69 | 15                                | 1.03 | 6000 | 413.69 |
| 19357                                 | 5                 | 0.34 | 50   | 3.45 | 51                | 3.52 | 400  | 27.58 | 401               | 27.65 | 1500 | 103.42 | -                                     | -     | -    | -      | 15                                | 1.03 | 1500 | 103.42 |
| 19567                                 | 5                 | 0.34 | 50   | 3.45 | 51                | 3.52 | 400  | 27.58 | 401               | 27.65 | 1000 | 68.95  | -                                     | -     | -    | -      | 15                                | 1.03 | 1000 | 68.95  |

1. Maximum set pressure for silicone compounds is half of the maximum value.
2. The E9 62-90D O-Ring can be used in steam service to a lower pressure limit of 15 psig (1.03 barg).

# Materials

## O-Ring Selection Procedure

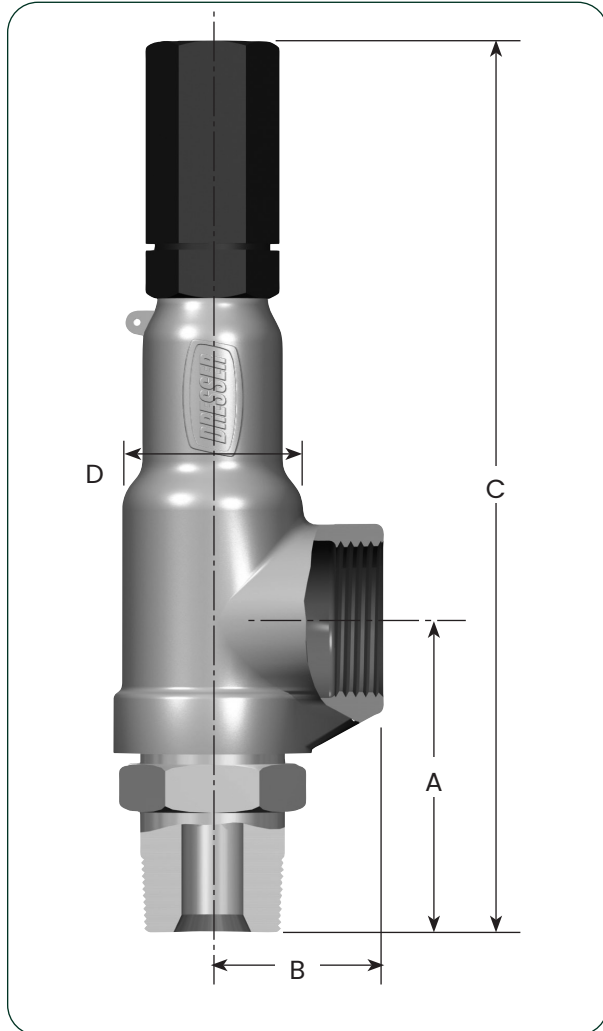
| Table B: O-Ring Temperature Limits |                          |                        |                    |      |            |            |
|------------------------------------|--------------------------|------------------------|--------------------|------|------------|------------|
| Material                           | Durometer                | Description            | Temperature Limits |      |            |            |
|                                    |                          |                        | min.               |      | max.       |            |
|                                    |                          |                        | °F                 | °C   | °F         | °C         |
| Nitrile                            | 50                       | N299-50 or N1009-50    | -45                | -42  | 225        | 107        |
|                                    | 70                       | N674-70                | -40                | -40  | 250        | 121        |
|                                    | 90                       | N552-90                | -40                | -40  | 250        | 121        |
|                                    | 70 <sup>(1)</sup>        | N1173-70               | -25                | -31  | 300        | 148        |
| Ethylene and Propylene             | 50                       | E981-50                | -65                | -53  | 212        | 100        |
|                                    | 70                       | E603-70                | -65                | -53  | 212        | 100        |
|                                    | 75 and 80 <sup>(2)</sup> | E740-75 and E515-80    | -70                | -56  | 250        | 121        |
|                                    | 90                       | E962-90 <sup>(3)</sup> | -70                | -56  | 500        | 260        |
|                                    | 75 <sup>(4)</sup>        | E962-75                | -60                | -51  | 250 to 400 | 121 to 204 |
| Fluorocarbon                       | 50                       | V986-50                | -15                | -26  | 400        | 204        |
|                                    | 75                       | V747-75 or V884-75     | -15                | -26  | 400        | 204        |
|                                    | 90                       | V894-90 or V709-90     | -15                | -26  | 400        | 204        |
| Neoprene                           | 50                       | C267-50                | -45                | -42  | 300        | 148        |
|                                    | 70                       | C944-70 or C873-70     | -45                | -42  | 300        | 148        |
| Silicone                           | 50                       | S595-50                | -65                | -53  | 437        | 225        |
|                                    | 70                       | S604-70                | -65                | -53  | 437        | 225        |
| Teflon                             | N/A                      | Teflon                 | -300               | -184 | 505        | 263        |
| Kalrez <sup>(5)</sup>              | 90                       | 7390                   | -15                | -26  | 572        | 300        |
|                                    | 75                       | 4079                   | -4                 | -20  | 600        | 316        |
|                                    | 90                       | 7390                   | -15                | -26  | 572        | 300        |
|                                    | 70                       | 0040                   | -40                | -40  | 450        | 232        |

1. Consult Factory before using. For use with Freon 134A and Ester Oil Service.
2. Set Pressure Ranges per "Table B" For durometer shall apply to these compounds (For Nuclear Service, Radiation Environment.)
3. EPR962-90D can be used in steam service to a lower pressure limit of 15 psig (1.03 barg). A maximum temperature of 500°F (260°C) is possible for steam only.
4. Up to 400°F (204.4°C) for steam applications only.
5. Consult Factory before selecting. (4079 - Not for use in hot water or steam applications.)

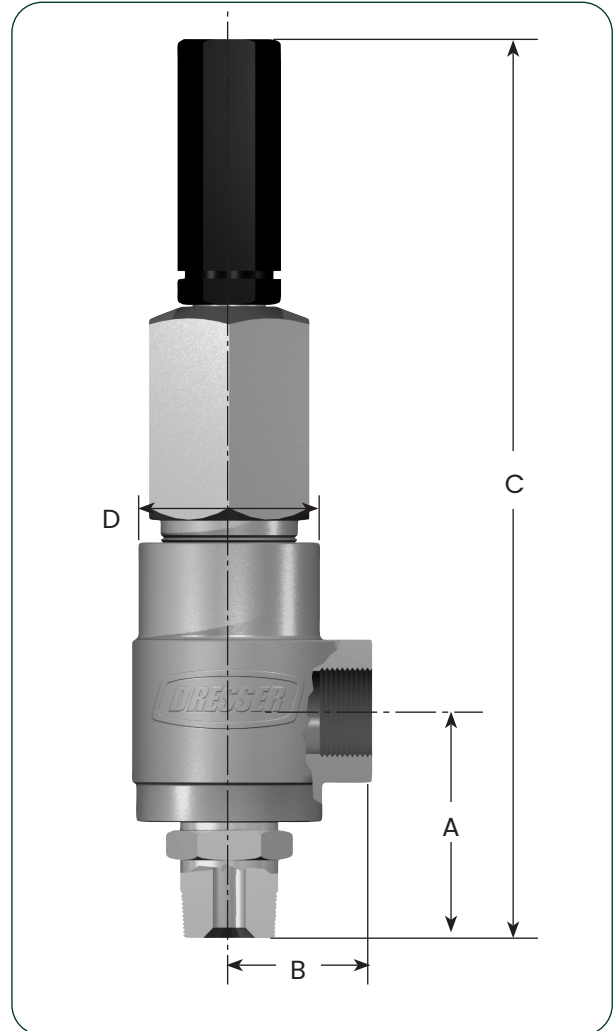
# Dimensions and Weights

## Threaded Connections

19000 Threaded Connections



19000M-BP Threaded Connections



The key to selecting the appropriate dimensions is to use the numbers in the column named "Valve Type". The "Inlet" column defines the valve by inlet size and connection type, then by outlet size and connection type.

Example: 0.5 - MNPT x 1.0 - FNPT

Inlet size is 0.5" (12.7 mm) with a male NPT pipe thread and the outlet is 1" (25.4 mm) size with a female NPT pipe thread. "SW" indicates socket weld. "Flanged Connections" show size of flange and pressure rating.



## CAUTION

**Do not seal weld inlet and outlet connections.**

# Dimensions and Weights

## Threaded Connections

| Threaded Connections (Standard and Backpressure Designs) |       |      |                     |        |      |                     |      |       |      |       |       |       |       |       |
|----------------------------------------------------------|-------|------|---------------------|--------|------|---------------------|------|-------|------|-------|-------|-------|-------|-------|
| Valve Type                                               | Inlet |      |                     | Outlet |      |                     | A    |       | B    |       | C     |       |       |       |
|                                                          | Size  |      | Type <sup>(1)</sup> | Size   |      | Type <sup>(1)</sup> |      |       |      |       | STD   |       | M-BP  |       |
|                                                          | in    | mm   |                     | in     | mm   |                     | in   | mm    | in   | mm    | in    | mm    |       |       |
| 19096L                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 3.25 | 82.6  | 1.88 | 47.75 | 10.38 | 263.7 | N/A   | N/A   |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 10.38 | 263.7 |       |       |
|                                                          |       |      | FNPT                |        |      |                     | 3.13 | 79.5  |      |       | 10.25 | 260.4 |       |       |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 10.38 | 263.7 |       |       |
| 19096M                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 3.25 | 82.6  | 2    | 50.80 | 12.19 | 309.6 | 12.88 | 327.2 |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 12.19 | 309.6 | 12.88 | 327.2 |
|                                                          |       |      | FNPT                |        |      |                     | 3.13 | 79.5  |      |       | 12.06 | 306.3 | 12.75 | 323.9 |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 12.19 | 309.6 | 12.88 | 327.2 |
| 19096H                                                   | 0.75  | 19.1 | FNPT                | 1      | 25.4 | FNPT                | 3.13 | 79.5  | 2.38 | 60.45 | 12.50 | 317.5 | N/A   | N/A   |
| 19110L                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 3.25 | 82.6  | 1.88 | 47.75 | 10.38 | 263.7 | N/A   | N/A   |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 10.38 | 263.7 |       |       |
|                                                          |       |      | FNPT                |        |      |                     | 3.13 | 79.5  |      |       | 10.25 | 260.4 |       |       |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 10.38 | 263.7 |       |       |
| 19110M                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 3.25 | 82.6  | 2    | 50.80 | 12.19 | 309.6 | 12.88 | 327.2 |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 12.19 | 309.6 |       |       |
|                                                          |       |      | FNPT                |        |      |                     | 3.13 | 79.5  |      |       | 12.06 | 306.3 | N/A   | N/A   |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 12.19 | 309.6 | 12.88 | 327.2 |
| 19110H                                                   | 0.75  | 19.1 | FNPT                | 1      | 25.4 | FNPT                | 3.13 | 79.5  | 2.38 | 60.45 | 12.50 | 317.5 | N/A   | N/A   |
| 19126L                                                   | 0.75  | 19.1 | MNPT                | 1      | 25.4 | FNPT                | 3.25 | 82.6  | 1.88 | 47.75 | 10.38 | 263.7 | N/A   | N/A   |
|                                                          |       |      | FNPT                |        |      |                     | 3.13 | 79.5  |      |       | 10.25 | 260.4 |       |       |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 10.38 | 263.7 |       |       |
| 19126M                                                   | 0.75  | 19.1 | MNPT                | 1      | 25.4 | FNPT                | 3.25 | 82.6  | 2    | 50.80 | 12.19 | 309.6 | 12.88 | 327.2 |
|                                                          |       |      | FNPT                |        |      |                     | 3.13 | 79.5  |      |       | 12.06 | 306.3 | N/A   | N/A   |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     | 3.25 | 82.6  |      |       | 12.19 | 309.6 | 12.88 | 327.2 |
| 19126H                                                   | 0.75  | 19.1 | FNPT                | 1      | 25.4 | FNPT                | 3.13 | 79.5  | 3.13 | 79.50 | 15.94 | 404.9 | N/A   | N/A   |
| 19226L                                                   | 1     | 25.4 | MNPT                | 1.5    | 38.1 | FNPT                | 3.63 | 92.2  | 2.25 | 57.15 | 11.63 | 295.4 | N/A   | N/A   |
|                                                          |       |      | FNPT                |        |      |                     | 3.38 | 85.9  |      |       | 11.38 | 289.1 |       |       |
| 19226M                                                   | 1     | 25.4 | MNPT                | 1.5    | 38.1 | FNPT                | 3.63 | 92.2  | 2.38 | 60.45 | 13    | 330.2 | 13.88 | 352.6 |
|                                                          |       |      | FNPT                |        |      |                     | 3.38 | 85.9  |      |       | 12.75 | 323.9 | N/A   | N/A   |
| 19226H                                                   | 1     | 25.4 | FNPT                | 1.5    | 38.1 | FNPT                | 3.13 | 79.5  | 3.13 | 79.50 | 15.94 | 404.9 | N/A   | N/A   |
| 19357L                                                   | 1.5   | 38.1 | FNPT                | 2      | 50.8 | FNPT                | 4.06 | 103.1 | 3.13 | 79.50 | 15.06 | 382.5 | N/A   | N/A   |
| 19357M                                                   | 1.5   | 38.1 | FNPT                | 2      | 50.8 | FNPT                | 4.06 | 103.1 | 3.13 | 79.50 | 16.88 | 428.8 | N/A   | N/A   |
| 19567L                                                   | 2     | 50.8 | FNPT                | 2.5    | 63.5 | FNPT                | 4.06 | 103.1 | 3.13 | 79.50 | 15.06 | 382.5 | N/A   | N/A   |
| 19567M                                                   | 2     | 50.8 | FNPT                | 2.5    | 63.5 | FNPT                | 4.06 | 103.1 | 3.13 | 79.50 | 16.88 | 428.8 | N/A   | N/A   |

1. Valves are provided with a male pipe threaded (MNPT) or a female pipe threaded (FNPT) inlet connection.

# Dimensions and Weights

## Threaded Connections

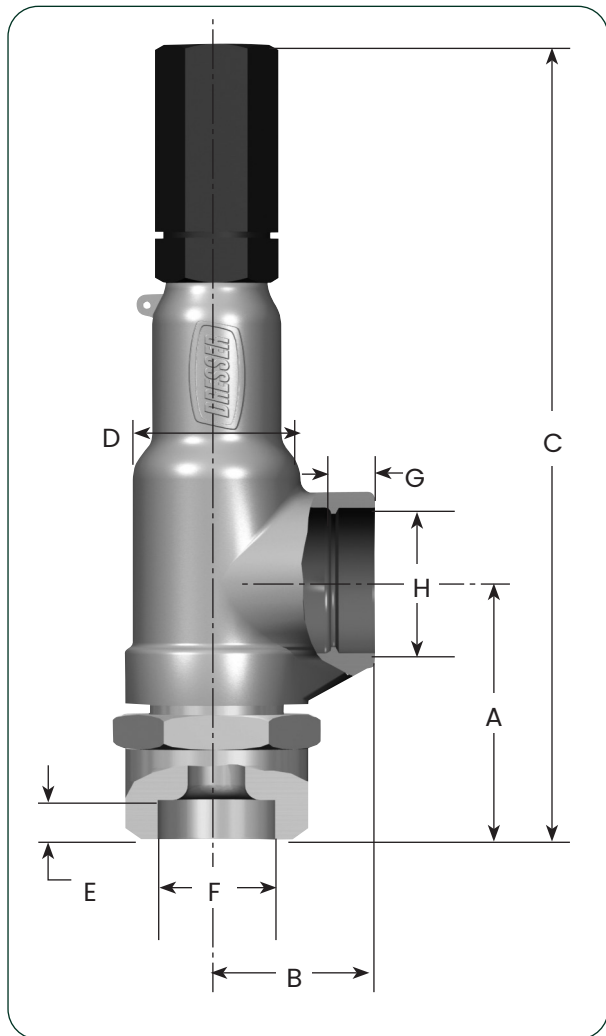
| Threaded Connections (Standard and Backpressure Designs) |       |      |                     |        |      |                     |      |       |       |      |                |       |      |      |
|----------------------------------------------------------|-------|------|---------------------|--------|------|---------------------|------|-------|-------|------|----------------|-------|------|------|
| Valve Type                                               | Inlet |      | Type <sup>(1)</sup> | Outlet |      | Type <sup>(1)</sup> | D    |       |       |      | Approx. Weight |       |      |      |
|                                                          | Size  |      |                     | Size   |      |                     | STD  |       | M-BP  |      | STD            |       | M-BP |      |
|                                                          | in    | mm   |                     | in     | mm   |                     | in   | mm    | in    | mm   | lb             | kg    | lb   | kg   |
| 19096L                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 2    | 50.8  | N/A   | N/A  | 4.75           | 2.15  | N/A  | N/A  |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     |      |       |       |      | 4.75           | 2.15  |      |      |
|                                                          |       |      | FNPT                |        |      |                     |      |       |       |      | 4.5            | 2.04  |      |      |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     |      |       |       |      | 4.75           | 2.15  |      |      |
| 19096M                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 2.56 | 65.0  | 3.75  | 95.3 | 6.5            | 2.95  | 11.5 | 5.22 |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     |      |       |       |      |                |       |      |      |
|                                                          |       |      | FNPT                |        |      |                     |      |       |       |      |                |       |      |      |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     |      |       |       |      |                |       |      |      |
| 19096H                                                   | 0.75  | 19.1 | FNPT                | 1      | 25.4 | FNPT                | 3.13 | 79.5  | N/A   | N/A  | 11.5           | 5.22  | N/A  | N/A  |
| 19110L                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 2    | 50.8  | N/A   | N/A  | 4.75           | 2.15  | N/A  | N/A  |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     |      |       |       |      | 4.75           | 2.15  |      |      |
|                                                          |       |      | FNPT                |        |      |                     |      |       |       |      | 4.5            | 2.04  |      |      |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     |      |       |       |      | 4.75           | 2.15  |      |      |
| 19110M                                                   | 0.5   | 12.7 | MNPT                | 1      | 25.4 | FNPT                | 2.56 | 65    | 3.75  | 95.3 | 6.5            | 2.95  | 11.5 | 5.22 |
|                                                          | 0.75  | 19.1 | MNPT                |        |      |                     |      |       | 3.75  | 95.3 |                |       | 11.5 | 5.22 |
|                                                          |       |      | FNPT                |        |      |                     |      |       | N/A   | N/A  |                |       | N/A  | N/A  |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     |      |       | 3.75  | 95.3 |                |       | 11.5 | 5.22 |
| 19110H                                                   | 0.75  | 19.1 | FNPT                | 1      | 25.4 | FNPT                | 3.13 | 79.5  | N/A   | N/A  | 11.50          | 5.22  | N/A  | N/A  |
| 19126L                                                   | 0.75  | 19.1 | MNPT                | 1      | 25.4 | FNPT                | 2    | 50.8  | N/A   | N/A  | 5.25           | 2.38  | N/A  | N/A  |
|                                                          |       |      | FNPT                |        |      |                     |      |       |       |      | 5              | 2.27  |      |      |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     |      |       |       |      | 5.25           | 2.38  |      |      |
| 19126M                                                   | 0.75  | 19.1 | MNPT                | 1      | 25.4 | FNPT                | 2.56 | 65.   | 3.75  | 95.3 | 6.5            | 2.95  | 11.5 | 5.22 |
|                                                          |       |      | FNPT                |        |      |                     |      |       | N/A   | N/A  |                |       | N/A  | N/A  |
|                                                          | 1     | 25.4 | MNPT                |        |      |                     |      |       | 3.75  | 95.3 |                |       | 11.5 | 5.22 |
| 19126H                                                   | .75   | 19.1 | FNPT                | 1      | 25.4 | FNPT                | 4.63 | 117.6 | N/A   | N/A  | 30             | 13.61 | N/A  | N/A  |
| 19226L                                                   | 1     | 25.4 | MNPT                | 1.5    | 38.1 | FNPT                | 2.38 | 60.5  | N/A   | N/A  | 6.75           | 3.06  | N/A  | N/A  |
|                                                          |       |      | FNPT                |        |      |                     |      |       |       |      | 6.5            | 2.95  |      |      |
| 19226M                                                   | 1     | 25.4 | MNPT                | 1.5    | 38.1 | FNPT                | 3.13 | 79.5  | 3.875 | 98.4 | 11.5           | 5.22  | 19.2 | 8.71 |
|                                                          |       |      | FNPT                |        |      |                     |      |       | N/A   | N/A  |                |       | N/A  | N/A  |
| 19226H                                                   | 1     | 25.4 | FNPT                | 1.5    | 38.1 | FNPT                | 4.63 | 117.6 | N/A   | N/A  | 30             | 13.61 | N/A  | N/A  |
| 19357L                                                   | 1.5   | 38.1 | FNPT                | 2      | 50.8 | FNPT                | 3.63 | 92.2  | N/A   | N/A  | 18             | 8.16  | N/A  | N/A  |
| 19357M                                                   | 1.5   | 38.1 | FNPT                | 2      | 50.8 | FNPT                | 4.63 | 117.6 | N/A   | N/A  | 30             | 13.61 | N/A  | N/A  |
| 19567L                                                   | 2     | 50.8 | FNPT                | 2.5    | 63.5 | FNPT                | 3.63 | 92.2  | N/A   | N/A  | 19             | 8.62  | N/A  | N/A  |
| 19567M                                                   | 2     | 5.08 | FNPT                | 2.5    | 63.5 | FNPT                | 4.63 | 117.6 | N/A   | N/A  | 30             | 13.61 | N/A  | N/A  |

1. Valves are provided with a male pipe threaded (MNPT) or a female pipe threaded (FNPT) inlet connection.

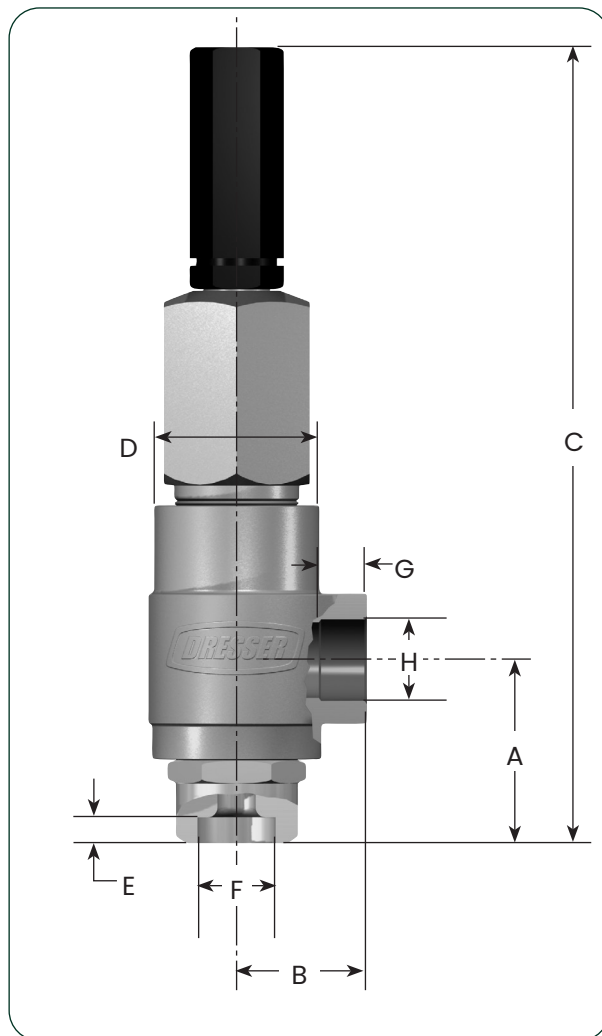
# Dimensions

## Socket Weld Connections

19000 Socket Weld Connections



19000M-BP Socket Weld Connections



**CAUTION**

Avoid excessive weld deposits.

# Dimensions and Weights

## Socket Weld Connections

| Socket Weld Connections (Standard and Backpressure Designs) |       |      |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
|-------------------------------------------------------------|-------|------|------|--------|------|------|------|-------|------|------|-------|-------|-------|-------|------|-------|-------|------|
| Valve Type                                                  | Inlet |      |      | Outlet |      |      | A    |       | B    |      | C     |       |       |       | D    |       |       |      |
|                                                             | Size  |      | Type | Size   |      | Type |      |       |      |      | STD   |       | M-BP  |       | STD  |       | M-BP  |      |
|                                                             | in    | mm   |      | in     | mm   |      | in   | mm    | in   | mm   | in    | mm    | in    | mm    | in   | mm    |       |      |
| 19096L                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 3.5  | 88.9  | 1.88 | 47.8 | 10.63 | 270   | N/A   | N/A   | 2    | 50.8  | N/A   | N/A  |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
|                                                             | 1     | 25.4 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
| 19096M                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 3.5  | 88.9  | 2    | 50.8 | 12.44 | 316   | 13.13 | 333.4 | 2.56 | 65    | 3.75  | 95.3 |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
|                                                             | 1     | 25.4 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
| 19096H                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 4    | 101.6 | 2.38 | 60.5 | 13.38 | 339.9 | N/A   | N/A   | 3.13 | 79.5  | N/A   | N/A  |
| 19110L                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 3.5  | 88.9  | 1.88 | 47.8 | 10.63 | 270   | N/A   | N/A   | 2    | 50.8  | N/A   | N/A  |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
|                                                             | 1     | 25.4 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
| 19110M                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 3.5  | 88.9  | 2    | 50.8 | 12.44 | 316   | 13.13 | 333.4 | 2.56 | 65    | 3.75  | 95.3 |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
|                                                             | 1     | 25.4 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
| 19110H                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 4    | 101.6 | 2.38 | 60.5 | 13.38 | 339.9 | N/A   | N/A   | 3.13 | 79.5  | N/A   | N/A  |
| 19126L                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 3.5  | 88.9  | 1.88 | 47.8 | 10.63 | 270   | N/A   | N/A   | 2    | 50.8  | N/A   | N/A  |
|                                                             | 1     | 25.4 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
| 19126M                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 3.5  | 88.9  | 2    | 50.8 | 12.44 | 316   | 13.13 | 333.4 | 2.56 | 65    | 3.75  | 95.3 |
|                                                             | 1     | 25.4 |      |        |      |      |      |       |      |      |       |       |       |       |      |       |       |      |
| 19126H                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 4.5  | 114.3 | 3.13 | 79.5 | 17.31 | 439.7 | N/A   | N/A   | 4.63 | 117.6 | N/A   | N/A  |
| 19226L                                                      | 1     | 25.4 | SW   | 1.5    | 38.1 | SW   | 3.94 | 100.1 | 2.25 | 57.2 | 11.94 | 303.3 | N/A   | N/A   | 2.38 | 60.5  | N/A   | N/A  |
| 19226M                                                      | 1     | 25.4 | SW   | 1.5    | 38.1 | SW   | 3.94 | 100.1 | 2.38 | 60.5 | 13.31 | 338.1 | 13.88 | 352.6 | 3.13 | 79.5  | 3.875 | 98.4 |
| 19226H                                                      | 1     | 25.4 | SW   | 1.5    | 38.1 | SW   | 4.5  | 114.3 | 3.13 | 79.5 | 17.31 | 439.7 | N/A   | N/A   | 4.63 | 117.6 | N/A   | N/A  |
| 19357L                                                      | 1.5   | 38.1 | SW   | 2      | 50.8 | SW   | 4.75 | 120.7 | 3.13 | 79.5 | 15.75 | 400.1 | N/A   | N/A   | 3.63 | 92.2  | N/A   | N/A  |
| 19357M                                                      | 1.5   | 38.1 | SW   | 2      | 50.8 | SW   | 4.75 | 120.7 | 3.13 | 79.5 | 17.56 | 446   | N/A   | N/A   | 4.63 | 117.6 | N/A   | N/A  |
| 19567L                                                      | 2     | 50.8 | SW   | 2.5    | 63.5 | SW   | 5.38 | 136.7 | 3.13 | 79.5 | 16.38 | 416.1 | N/A   | N/A   | 3.63 | 92.2  | N/A   | N/A  |
| 19567M                                                      | 2     | 50.8 | SW   | 2.5    | 63.5 | SW   | 5.38 | 136.7 | 3.13 | 79.5 | 18.19 | 462   | N/A   | N/A   | 4.63 | 117.6 | N/A   | N/A  |

# Dimensions and Weights

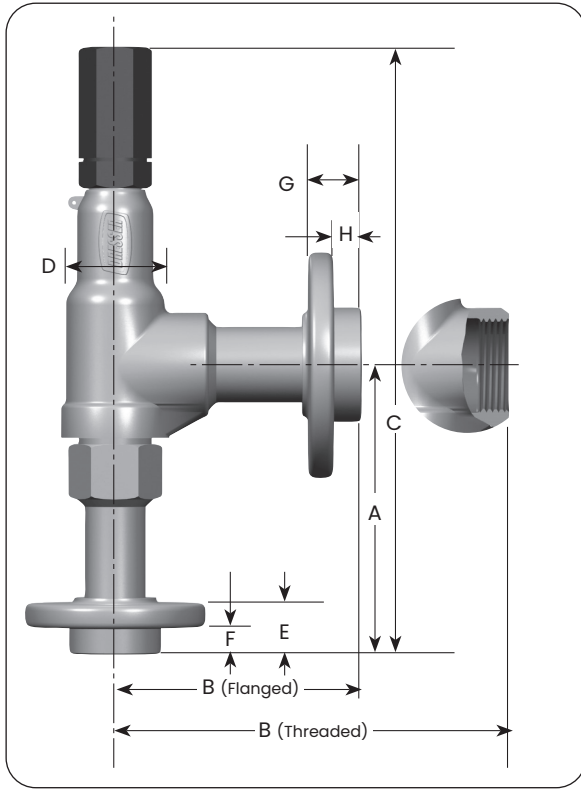
## Socket Weld Connections

| Socket Weld Connections (Standard and Backpressure Designs) |       |      |      |        |      |      |      |      |      |      |      |    |      |      |                |       |      |      |
|-------------------------------------------------------------|-------|------|------|--------|------|------|------|------|------|------|------|----|------|------|----------------|-------|------|------|
| Valve Type                                                  | Inlet |      | Type | Outlet |      | Type | E    |      | F    |      | G    |    | H    |      | Approx. Weight |       |      |      |
|                                                             | Size  |      |      | Size   |      |      |      |      |      |      |      |    |      |      | STD            |       | M-BP |      |
|                                                             | in    | mm   |      | in     | mm   |      | in   | mm   | in   | mm   | in   | mm | lb   | kg   | lb             | kg    |      |      |
| 19096L                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 0.86 | 21.7 | 0.63 | 16 | 1.33 | 33.8 | 5.5            | 2.49  | N/A  | N/A  |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |      | 1.07 | 27.1 |      |    |      |      | 5.5            | 2.49  |      |      |
|                                                             | 1     | 25.4 |      |        |      |      |      |      | 1.33 | 33.8 |      |    |      |      | 6.25           | 2.83  |      |      |
| 19096M                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 0.86 | 21.7 | 0.63 | 16 | 1.33 | 33.8 | 7              | 3.18  | 12   | 5.44 |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |      | 1.07 | 27.1 |      |    |      |      | 7.5            | 3.4   | 12.5 | 5.67 |
|                                                             | 1     | 25.4 |      |        |      |      |      |      | 1.33 | 33.8 |      |    |      |      | 8              | 3.63  | 13   | 5.9  |
| 19096H                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 1.07 | 27.1 | 0.63 | 16 | 1.33 | 33.8 | 12             | 5.44  | N/A  | N/A  |
| 19110L                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 0.86 | 21.7 | 0.63 | 16 | 1.33 | 33.8 | 5.5            | 2.49  | N/A  | N/A  |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |      | 1.07 | 27.1 |      |    |      |      | 5.5            | 2.49  |      |      |
|                                                             | 1     | 25.4 |      |        |      |      |      |      | 1.33 | 33.8 |      |    |      |      | 6.25           | 2.83  |      |      |
| 19110M                                                      | 0.5   | 12.7 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 0.86 | 21.7 | 0.63 | 16 | 1.33 | 33.8 | 7              | 3.18  | 12   | 5.44 |
|                                                             | 0.75  | 19.1 |      |        |      |      |      |      | 1.07 | 27.1 |      |    |      |      | 7.5            | 3.4   | 12   | 5.44 |
|                                                             | 1     | 25.4 |      |        |      |      |      |      | 1.33 | 33.8 |      |    |      |      | 8              | 3.63  | 12.5 | 5.67 |
| 19110H                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 1.07 | 27.1 | 0.63 | 16 | 1.33 | 33.8 | 12             | 5.44  | N/A  | N/A  |
| 19126L                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 1.07 | 27.1 | 0.63 | 16 | 1.33 | 33.8 | 6              | 2.72  | N/A  | N/A  |
|                                                             | 1     | 25.4 |      |        |      |      |      |      | 1.33 | 33.8 |      |    |      |      | 6.75           | 3.06  |      |      |
| 19126M                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 0.5  | 12.7 | 1.07 | 27.1 | 0.63 | 16 | 1.33 | 33.8 | 7              | 3.18  | 12   | 5.44 |
|                                                             | 1     | 25.4 |      |        |      |      |      |      | 1.33 | 33.8 |      |    |      |      | 8              | 3.63  | 12.5 | 5.67 |
| 19126H                                                      | 0.75  | 19.1 | SW   | 1      | 25.4 | SW   | 0.63 | 16.0 | 1.07 | 27.1 | 0.63 | 16 | 1.33 | 33.8 | 32             | 14.51 | N/A  | N/A  |
| 19226L                                                      | 1     | 25.4 | SW   | 1.5    | 38.1 | SW   | 0.5  | 12.7 | 1.33 | 33.8 | 0.63 | 16 | 1.92 | 48.6 | 8              | 3.63  | N/A  | N/A  |
| 19226M                                                      | 1     | 25.4 | SW   | 1.5    | 38.1 | SW   | 0.5  | 12.7 | 1.33 | 33.8 | 0.63 | 16 | 1.92 | 48.6 | 12.5           | 5.67  | 19.2 | 8.71 |
| 19226H                                                      | 1     | 25.4 | SW   | 1.5    | 38.1 | SW   | 0.63 | 16   | 1.33 | 33.8 | 0.63 | 16 | 1.92 | 48.6 | 32             | 14.51 | N/A  | N/A  |
| 19357L                                                      | 1.5   | 38.1 | SW   | 2      | 50.8 | SW   | 0.63 | 16   | 1.92 | 48.6 | 0.63 | 16 | 2.41 | 61.1 | 18.25          | 8.28  | N/A  | N/A  |
| 19357M                                                      | 1.5   | 38.1 | SW   | 2      | 50.8 | SW   | 0.63 | 16   | 1.92 | 48.6 | 0.63 | 16 | 2.41 | 61.1 | 31             | 14.06 | N/A  | N/A  |
| 19567L                                                      | 2     | 50.8 | SW   | 2.5    | 63.5 | SW   | 0.63 | 16   | 2.41 | 61.1 | 0.63 | 16 | 2.91 | 73.8 | 24             | 10.89 | N/A  | N/A  |
| 19567M                                                      | 2     | 50.8 | SW   | 2.5    | 63.5 | SW   | 0.63 | 16   | 2.41 | 61.1 | 0.63 | 16 | 2.91 | 73.8 | 34             | 15.42 | N/A  | N/A  |

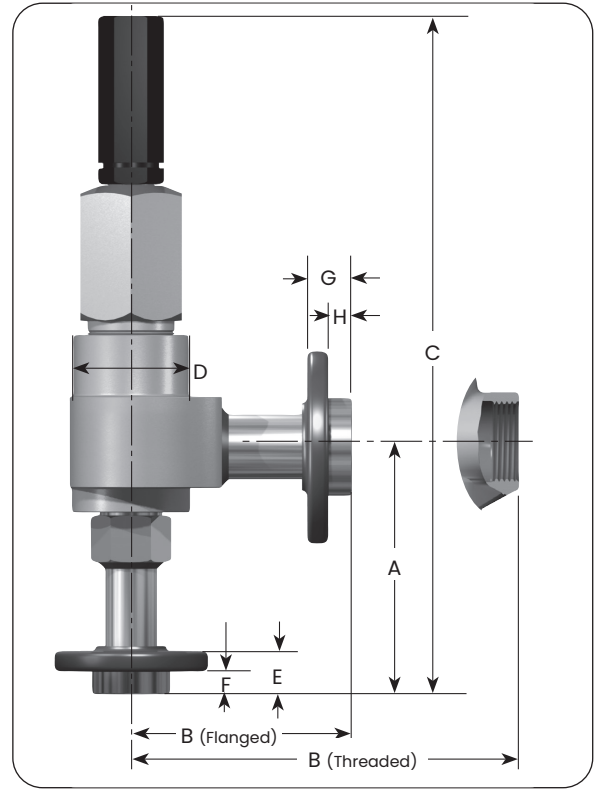
# Dimensions

## Flanged Connections

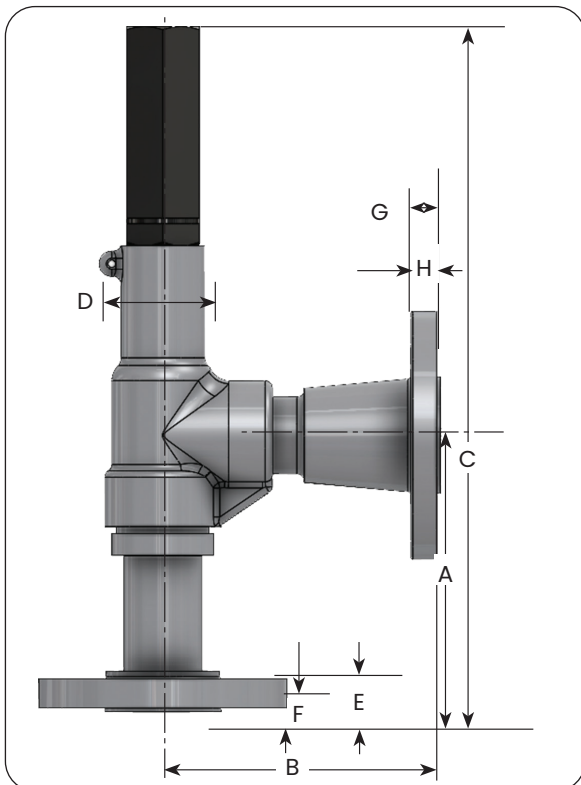
19000 Slip-On Flange Connections  
(standard design)



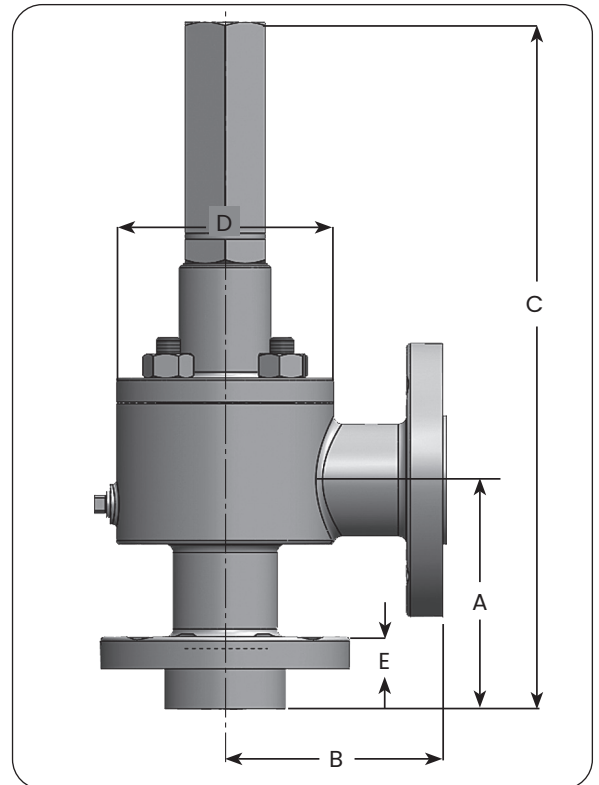
19000M-BP Slip-On Flange Connections  
(standard design)



19000 Socket Weld Flange with Locknut  
(optional design)



19000 Integral Cast Flange  
(optional design)



# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |        |       |              |              |      |         |         |              |       |       |       |       |       |      |       |       |      |       |       |      |      |      |     |
|-------------------------------------------------------|--------|-------|--------------|--------------|------|---------|---------|--------------|-------|-------|-------|-------|-------|------|-------|-------|------|-------|-------|------|------|------|-----|
| Valve Type                                            | Inlet  |       |              | Outlet       |      |         | A       |              | B     |       | C     |       | D     |      | E     |       |      |       |       |      |      |      |     |
|                                                       | Size   |       | Type         | Size         |      | Type    |         |              |       |       |       |       |       |      |       |       |      |       |       |      |      |      |     |
|                                                       | in     | mm    |              | Type         | in   |         | mm      | Type         | in.   | mm    | in.   | mm    | in.   | mm   | in.   | mm    | in.  | mm    |       |      |      |      |     |
| 19096L<br>19110L                                      | 0.5    | 12.7  | 150# Slip-On | 1            | 25.4 | FNPT    | 6       | 152.4        | 1.88  | 47.8  | 13.13 | 333.5 | 2     | 50.8 | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 0.88  |       |       |       |      | 22.4  |       |      |       |       |      |      |      |     |
|                                                       |        |       | 300# Slip-On |              |      | FNPT    |         |              | 1.88  | 47.8  | 13.13 |       |       |      | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1     | 25.4  |       |       |      |       |       |      |       |       |      |      |      |     |
|                                                       | 0.75   | 19.05 | 150# Slip-On | 1            | 25.4 | FNPT    | 6.25    | 158.8        | 1.88  | 47.8  | 13.38 | 339.9 | 2     | 50.8 | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1     |       |       |       |      | 25.4  |       |      |       |       |      |      |      |     |
|                                                       |        |       | 150# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   |       |      | 0.56  | 14.2  |      |       |       |      |      |      |     |
|                                                       |        |       | 300# Slip-On |              |      | FNPT    | 6.25    | 158.8        | 1.88  | 47.8  | 13.38 | 339.9 |       |      | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1.13  | 28.7  |       |       |      |       |       |      |       |       |      |      |      |     |
|                                                       |        |       | 300# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   |       |      | 0.56  | 14.2  |      |       |       |      |      |      |     |
|                                                       | 1      | 25.4  | 150# Slip-On | 1            | 25.4 | FNPT    | 6.5     | 165.1        | 1.88  | 47.8  | 13.63 | 346.2 | 2     | 50.8 | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1.06  |       |       |       |      | 26.9  |       |      |       |       |      |      |      |     |
|                                                       |        |       | 150# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   |       |      | 0.56  | 14.2  |      |       |       |      |      |      |     |
|                                                       |        |       | 300# Slip-On |              |      | FNPT    | 6.5     | 165.1        | 1.88  | 47.8  | 13.63 | 346.2 |       |      | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1.19  | 30.2  |       |       |      |       |       |      |       |       |      |      |      |     |
|                                                       |        |       | 300# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   |       |      | 0.56  | 14.2  |      |       |       |      |      |      |     |
|                                                       | 19126L | 0.75  | 19.05        | 150# Slip-On | 1    | 25.4    | FNPT    | 6.25         | 158.8 | 1.88  | 47.8  | 13.38 | 339.9 | 2    | 50.8  | N/A   | N/A  |       |       |      |      |      |     |
|                                                       |        |       |              | 150# Slip-On |      |         | 4.88    |              |       | 124   | 1     |       |       |      |       | 25.4  |      |       |       |      |      |      |     |
|                                                       |        |       |              | 150# SW      |      |         | 150# SW | 4.72         | 119.9 | 4.75  | 120.7 | 11.85 | 301   |      |       | 0.56  | 14.2 |       |       |      |      |      |     |
|                                                       |        |       |              | 300# Slip-On |      |         | FNPT    | 6.25         | 158.8 | 1.88  | 47.8  | 13.38 | 339.9 |      |       | N/A   | N/A  |       |       |      |      |      |     |
| 150# Slip-On                                          |        |       |              | 4.88         |      |         | 124     |              |       | 1.13  | 28.7  |       |       |      |       |       |      |       |       |      |      |      |     |
| 300# SW                                               |        |       |              | 150# SW      |      |         | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   | 0.56  |      |       | 14.2  |      |       |       |      |      |      |     |
| 1                                                     |        | 25.4  | 150# Slip-On | 1            | 25.4 | FNPT    | 6.5     | 165.1        | 1.88  | 47.8  | 13.63 | 346.2 | 2     | 50.8 | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1.06  |       |       |       |      | 26.9  |       |      |       |       |      |      |      |     |
|                                                       |        |       | 150# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   |       |      | 0.56  | 14.2  |      |       |       |      |      |      |     |
|                                                       |        |       | 300# Slip-On |              |      | FNPT    | 6.5     | 165.1        | 1.88  | 47.8  | 13.63 | 346.2 |       |      | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 4.88    |         |              | 124   | 1.19  | 30.2  |       |       |      |       |       |      |       |       |      |      |      |     |
|                                                       |        |       | 300# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 11.85 | 301   |       |      | 0.56  | 14.2  |      |       |       |      |      |      |     |
| 19226L                                                | 1      | 25.4  | 150# Slip-On | 1.5          | 38.1 | FNPT    | 6.25    | 158.8        | 2.25  | 57.2  | 14.25 | 362   | 2.38  | 60.5 | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 6.13    |         |              | 155.7 | 1.06  |       |       |       |      | 26.9  |       |      |       |       |      |      |      |     |
|                                                       |        |       | 150# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 12.72 | 323.1 |       |      | 0.69  | 17.5  |      |       |       |      |      |      |     |
|                                                       |        |       | 300# Slip-On |              |      | FNPT    | 6.25    | 158.8        | 2.25  | 57.2  | 14.25 | 362   |       |      | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 6.13    |         |              | 155.7 | 1.19  | 30.2  |       |       |      |       |       |      |       |       |      |      |      |     |
|                                                       |        |       | 300# SW      |              |      | 150# SW | 4.72    | 119.9        | 4.75  | 120.7 | 12.72 | 323.1 |       |      | 0.69  | 17.5  |      |       |       |      |      |      |     |
|                                                       |        |       | 19357L       |              |      | 1.5     | 38.1    | 150# Slip-On | 2     | 50.8  | FNPT  | 7.13  |       |      | 181.1 | 3.13  | 79.5 | 18.13 | 460.5 | 3.63 | 92.2 | N/A  | N/A |
|                                                       |        |       |              |              |      |         |         | 150# Slip-On |       |       | 6.13  |       |       |      |       | 155.7 | 1.19 |       |       |      |      | 30.2 |     |
| 300# Slip-On                                          | FNPT   | 3.13  |              | 79.5         | N/A  |         |         | N/A          |       |       |       |       |       |      |       |       |      |       |       |      |      |      |     |
| 150# Slip-On                                          | 6.13   | 155.7 |              | 1.31         | 33.3 |         |         |              |       |       |       |       |       |      |       |       |      |       |       |      |      |      |     |
| 19567L                                                | 2      | 50.8  | 150# Slip-On | 2.5          | 63.5 | FNPT    | 7.13    | 181.1        | 3.13  | 79.5  | 18.13 | 460.5 | 3.63  | 92.2 | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 6.13    |         |              | 155.7 | 1.38  |       |       |       |      | 35.1  |       |      |       |       |      |      |      |     |
|                                                       |        |       | 300# Slip-On |              |      | FNPT    |         |              | 3.13  | 79.5  |       |       |       |      | N/A   | N/A   |      |       |       |      |      |      |     |
|                                                       |        |       | 150# Slip-On |              |      | 6.13    |         |              | 155.7 | 1.5   |       |       |       |      | 38.1  |       |      |       |       |      |      |      |     |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |       |       |              |        |      |         |      |      |      |      |      |      |                |       |
|-------------------------------------------------------|-------|-------|--------------|--------|------|---------|------|------|------|------|------|------|----------------|-------|
| Valve Type                                            | Inlet |       |              | Outlet |      |         | F    |      | G    |      | H    |      | Approx. Weight |       |
|                                                       | Size  |       | Type         | Size   |      | Type    |      |      |      |      |      |      |                |       |
|                                                       | in    | mm    |              | Type   | in   |         | mm   | Type | in.  | mm   | in.  | mm   | in.            | mm    |
| 19096L<br>19110L                                      | 0.5   | 12.7  | 150# Slip-On | 1      | 25.4 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 6.3            | 2.86  |
|                                                       |       |       | 150# Slip-On |        |      | 0.44    | 11.1 | 1.06 | 26.9 | 0.5  | 12.7 | 9.3  | 4.22           |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 7.3            | 3.31  |
|                                                       |       |       | 150# Slip-On |        |      | 0.44    | 11.1 | 1.06 | 26.9 | 0.5  | 12.7 | 10.3 | 4.67           |       |
|                                                       | 0.75  | 19.05 | 150# Slip-On | 1      | 25.4 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 7              | 3.18  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 10   | 4.54           |       |
|                                                       |       |       | 150# SW      |        |      | 0.06    | 1.5  | 0.56 | 14.2 | 0.06 | 1.5  |      |                |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 8.5            | 3.86  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 11.5 | 5.22           |       |
|                                                       |       |       | 300# SW      |        |      | 150# SW | 0.06 | 1.5  | 0.56 | 14.2 | 0.06 |      |                | 1.5   |
|                                                       | 1     | 25.4  | 150# Slip-On | 1      | 25.4 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 7.8            | 3.54  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 10.8 | 4.9            |       |
|                                                       |       |       | 150# SW      |        |      | 0.06    | 1.5  | 0.56 | 14.2 | 0.06 | 1.5  |      |                |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 9.3            | 4.22  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 12.3 | 5.58           |       |
|                                                       |       |       | 300# SW      |        |      | 150# SW | 0.06 | 1.5  | 0.56 | 14.2 | 0.06 |      |                | 1.5   |
| 19126L                                                | 0.75  | 19.05 | 150# Slip-On | 1      | 25.4 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 7.5            | 3.4   |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 10.3 | 4.67           |       |
|                                                       |       |       | 150# SW      |        |      | 0.06    | 1.5  | 0.56 | 14.2 | 0.06 | 1.5  |      |                |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 9              | 4.08  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 12   | 5.44           |       |
|                                                       |       |       | 300# SW      |        |      | 150# SW | 0.06 | 1.5  | 0.56 | 14.2 | 0.06 |      |                | 1.5   |
|                                                       | 1     | 25.4  | 150# Slip-On | 1      | 25.4 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 8.3            | 3.76  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 11.3 | 5.13           |       |
|                                                       |       |       | 150# SW      |        |      | 0.06    | 1.5  | 0.56 | 14.2 | 0.06 | 1.5  |      |                |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 9.8            | 4.45  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 12.8 | 5.81           |       |
|                                                       |       |       | 300# SW      |        |      | 150# SW | 0.06 | 1.5  | 0.56 | 14.2 | 0.06 |      |                | 1.5   |
| 19226L                                                | 1     | 25.4  | 150# Slip-On | 1.5    | 38.1 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 9.8            | 4.45  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.19 | 30.2 | 0.5  | 12.7 | 14.8 | 6.71           |       |
|                                                       |       |       | 150# SW      |        |      | 0.06    | 1.5  | 0.69 | 17.5 | 0.06 | 1.5  |      |                |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 11.3           | 5.13  |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.19 | 30.2 | 0.5  | 12.7 | 16.3 | 7.39           |       |
|                                                       |       |       | 300# SW      |        |      | 150# SW | 0.06 | 1.5  | 0.69 | 17.5 | 0.06 |      |                | 1.5   |
| 19357L                                                | 1.5   | 38.1  | 150# Slip-On | 2      | 50.8 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 22.8           | 10.34 |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.38 | 35.1 | 0.63 | 16   | 30.3 | 13.74          |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 26.3           | 11.93 |
|                                                       |       |       | 150# Slip-On |        |      | 0.5     | 12.7 | 1.38 | 35.1 | 0.63 | 16   | 33.8 | 15.33          |       |
| 19567L                                                | 2     | 50.8  | 150# Slip-On | 2.5    | 63.5 | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 26.8           | 12.16 |
|                                                       |       |       | 150# Slip-On |        |      | 0.63    | 15.9 | 1.5  | 38.1 | 0.63 | 16   | 38.3 | 17.37          |       |
|                                                       |       |       | 300# Slip-On |        |      | FNPT    | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 28.8           | 13.06 |
|                                                       |       |       | 150# Slip-On |        |      | 0.63    | 15.9 | 1.5  | 38.1 | 0.63 | 16   | 40.3 | 18.28          |       |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |               |               |               |              |        |              |              |              |      |       |       |        |        |      |       |       |       |       |       |      |      |      |     |
|-------------------------------------------------------|---------------|---------------|---------------|--------------|--------|--------------|--------------|--------------|------|-------|-------|--------|--------|------|-------|-------|-------|-------|-------|------|------|------|-----|
| Valve Type                                            | Inlet         |               |               | Outlet       |        |              | A            |              | B    |       | C     |        | D      |      | E     |       |       |       |       |      |      |      |     |
|                                                       | Size          |               | Type          | Size         |        | Type         |              |              |      |       |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       | in            | mm            |               | Type         | in     |              | mm           | Type         | in.  | mm    | in.   | mm     | in.    | mm   | in.   | mm    | in.   | mm    |       |      |      |      |     |
| 19096M<br>19110M                                      | 0.5           | 12.7          | 300# Slip-On  | 1            | 25.4   | FNPT         | 6            | 152.4        | 2    | 50.8  | 14.94 | 379.5  | 2.56   | 65   | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       |               |               | 150# Slip-On  |              |        | 4.88         |              |              | 124  | 1     |       |        |        |      | 25.4  |       |       |       |       |      |      |      |     |
|                                                       |               |               | FNPT          |              |        | 2            |              |              | 50.8 | N/A   |       |        |        |      | N/A   |       |       |       |       |      |      |      |     |
|                                                       |               |               | 600# Slip-On  |              |        | 150# Slip-On | 4.88         | 124          | 1    | 25.4  |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 900# Slip-On  |              |        | FNPT         | 2            | 50.8         | N/A  | N/A   |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 1500# Slip-On |              |        | 300# Slip-On | 4.88         | 124          | 1.5  | 38.1  |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | FNPT          |              |        | 2            | 50.8         | N/A          | N/A  |       |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 300# Slip-On  |              |        | 4.88         | 124          | 1.5          | 38.1 |       |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 0.75          |              |        | 19.1         | 300# Slip-On | 1            | 25.4 | FNPT  | 6.25  | 158.75 |        |      | 2     | 50.8  | 15.19 | 385.8 | 2.56  | 65   | N/A  | N/A  |     |
|                                                       | 150# Slip-On  | 4.88          |               | 124          | 1.13   |              | 28.7         |              |      |       |       |        |        |      |       |       |       |       |       |      |      |      |     |
|                                                       | 300# SW       | 150# SW       |               | 4.72         | 119.9  |              | 4.75         |              |      | 120.7 | 13.66 | 347    | 0.62   | 15.7 |       |       |       |       |       |      |      |      |     |
|                                                       | 600# Slip-On  | FNPT          |               | 6.25         | 158.75 |              | 2            |              |      | 50.8  | 15.19 | 385.8  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       | 600# SW       | 150# Slip-On  |               |              |        |              | 4.88         |              |      | 124   |       |        |        |      | 1.13  | 28.7  |       |       |       |      |      |      |     |
|                                                       | 900# Slip-On  | 150# SW       |               | 4.72         | 119.9  |              | 4.75         |              |      | 120.7 | 13.66 | 347    | 0.87   | 22.1 |       |       |       |       |       |      |      |      |     |
|                                                       | 900# SW       | FNPT          |               | 6.75         | 171.45 |              | 2            |              |      | 50.8  | 15.69 | 398.5  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       | 1500# Slip-On | 300# Slip-On  |               |              |        |              | 4.88         |              |      | 124   |       |        |        |      | 1.63  | 41.4  |       |       |       |      |      |      |     |
|                                                       | 1500# SW      | 300# SW       |               | 4.72         | 119.9  |              | 4.75         |              |      | 120.7 | 13.66 | 347    | 1.25   | 31.8 |       |       |       |       |       |      |      |      |     |
|                                                       | 1500# SW      | 300# SW       |               | 4.72         | 119.9  |              | 4.75         |              |      | 120.7 | 13.66 | 347    | 1.25   | 31.8 |       |       |       |       |       |      |      |      |     |
|                                                       | 1             | 25.4          |               | 300# Slip-On | 1      |              | 25.4         |              |      | FNPT  | 6.5   | 165.1  | 2      | 50.8 | 15.44 | 392.2 | 2.56  | 65    |       |      | N/A  | N/A  |     |
|                                                       |               |               |               | 150# Slip-On |        |              |              |              |      | 4.88  |       |        | 124    | 1.19 |       |       |       |       |       |      | 30.2 |      |     |
|                                                       |               |               | 300# SW       | 150# SW      |        | 4.72         |              | 119.9        | 4.75 | 120.7 | 13.66 | 347    | 0.69   | 17.5 |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 600# Slip-On  | FNPT         |        | 6.5          |              | 165.1        | 2    | 50.8  | 15.44 | 392.2  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       |               |               | 600# SW       | 150# Slip-On |        |              |              |              | 4.88 | 124   |       |        |        |      | 1.19  | 30.2  |       |       |       |      |      |      |     |
|                                                       |               |               | 900# Slip-On  | 150# SW      |        | 4.72         |              | 119.9        | 4.75 | 120.7 | 13.66 | 347    | 0.94   | 23.9 |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 900# SW       | FNPT         |        | 7.5          |              | 190.5        | 2    | 50.8  | 16.44 | 417.6  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       |               |               | 1500# Slip-On | 300# Slip-On |        |              |              |              | 4.88 | 124   |       |        |        |      | 1.75  | 44.5  |       |       |       |      |      |      |     |
|                                                       |               |               | 1500# SW      | 300# SW      |        | 5.72         |              | 145.3        | 6.75 | 171.5 | 14.66 | 372.4  | 1.37   | 34.8 |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 1500# SW      | 300# SW      |        | 5.72         |              | 145.3        | 6.75 | 171.5 | 14.66 | 372.4  | 1.37   | 34.8 |       |       |       |       |       |      |      |      |     |
|                                                       |               |               | 19126M        | 0.75         |        | 19.1         |              | 300# Slip-On | 1    | 25.4  | FNPT  | 6.25   | 158.75 | 2    | 50.8  | 15.19 |       |       | 385.8 | 2.56 | 65   | N/A  | N/A |
|                                                       |               |               |               |              |        |              |              | 150# Slip-On |      |       | 4.88  |        |        | 124  | 1.13  |       |       |       |       |      |      | 28.7 |     |
|                                                       | 300# SW       | 150# SW       |               |              | 4.72   |              | 119.9        | 4.75         |      |       | 120.7 | 13.66  | 347    | 0.62 | 15.7  |       |       |       |       |      |      |      |     |
|                                                       | 600# Slip-On  | FNPT          |               |              | 6.25   |              | 158.75       | 2            |      |       | 50.8  | 15.19  | 385.8  |      |       | N/A   | N/A   |       |       |      |      |      |     |
|                                                       | 600# SW       | 150# Slip-On  |               |              |        |              |              | 4.88         |      |       | 124   |        |        |      |       | 1.13  | 28.7  |       |       |      |      |      |     |
| 900# Slip-On                                          | 150# SW       | 4.72          |               |              | 119.9  |              | 4.75         | 120.7        |      |       | 13.66 | 347    | 0.87   | 22.1 |       |       |       |       |       |      |      |      |     |
| 900# SW                                               | FNPT          | 6.75          |               |              | 171.45 |              | 2            | 50.8         |      |       | 15.69 | 398.5  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
| 1500# Slip-On                                         | 300# Slip-On  |               |               |              |        |              | 4.88         | 124          |      |       |       |        |        |      | 1.63  | 41.4  |       |       |       |      |      |      |     |
| 1500# SW                                              | 300# SW       | 4.72          |               |              | 119.9  |              | 4.75         | 120.7        |      |       | 13.66 | 347    | 1.25   | 31.8 |       |       |       |       |       |      |      |      |     |
| 1500# SW                                              | 300# SW       | 4.72          |               |              | 119.9  |              | 4.75         | 120.7        |      |       | 13.66 | 347    | 1.25   | 31.8 |       |       |       |       |       |      |      |      |     |
| 1                                                     | 25.4          | 300# Slip-On  |               |              | 1      |              | 25.4         | FNPT         |      |       | 6.5   | 165.1  | 2      | 50.8 | 15.44 | 392.2 | 2.56  | 65    | N/A   |      |      | N/A  |     |
|                                                       |               | 150# Slip-On  |               |              |        |              |              | 4.88         |      |       |       |        | 124    | 1.19 |       |       |       |       | 30.2  |      |      |      |     |
|                                                       |               | 300# SW       |               | 150# SW      |        | 4.72         |              | 119.9        | 4.75 | 120.7 | 13.66 | 347    | 0.69   | 17.5 |       |       |       |       |       |      |      |      |     |
|                                                       |               | 600# Slip-On  |               | FNPT         |        | 6.5          |              | 165.1        | 2    | 50.8  | 15.44 | 392.2  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       |               | 600# SW       |               | 150# Slip-On |        |              |              |              | 4.88 | 124   |       |        |        |      | 1.19  | 30.2  |       |       |       |      |      |      |     |
|                                                       |               | 900# Slip-On  |               | 150# SW      |        | 4.72         |              | 119.9        | 4.75 | 120.7 | 13.66 | 347    | 0.94   | 23.9 |       |       |       |       |       |      |      |      |     |
|                                                       |               | 900# SW       |               | FNPT         |        | 7.5          |              | 190.5        | 2    | 50.8  | 16.44 | 417.6  |        |      | N/A   | N/A   |       |       |       |      |      |      |     |
|                                                       |               | 1500# Slip-On |               | 300# Slip-On |        |              |              |              | 4.88 | 124   |       |        |        |      | 1.75  | 44.5  |       |       |       |      |      |      |     |
|                                                       |               | 1500# SW      |               | 300# SW      |        | 5.72         |              | 145.3        | 6.75 | 171.5 | 14.66 | 372.4  | 1.37   | 34.8 |       |       |       |       |       |      |      |      |     |
|                                                       |               | 1500# SW      |               | 300# SW      |        | 5.72         |              | 145.3        | 6.75 | 171.5 | 14.66 | 372.4  | 1.37   | 34.8 |       |       |       |       |       |      |      |      |     |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |               |               |               |              |              |              |              |      |      |      |      |      |                |      |      |
|-------------------------------------------------------|---------------|---------------|---------------|--------------|--------------|--------------|--------------|------|------|------|------|------|----------------|------|------|
| Valve Type                                            | Inlet         |               |               | Outlet       |              |              | F            |      | G    |      | H    |      | Approx. Weight |      |      |
|                                                       | Size          |               | Type          | Size         |              | Type         |              |      |      |      |      |      |                |      |      |
|                                                       | in            | mm            |               | in           | mm           |              | in.          | mm   | in.  | mm   | in.  | mm   | lb             | kg   |      |
| 19096M<br>19110M                                      | 0.5           | 12.7          | 300# Slip-On  | 1            | 25.4         | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  | 9              | 4.08 |      |
|                                                       |               |               | 150# Slip-On  |              |              | 0.44         | 11.1         | 1.06 | 26.9 | 0.5  | 12.7 | 12   | 5.44           |      |      |
|                                                       |               |               | 600# Slip-On  |              |              | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  | 9              | 4.08 |      |
|                                                       |               |               | 150# Slip-On  |              |              | 0.44         | 11.1         | 1.06 | 26.9 | 0.5  | 12.7 | 12   | 5.44           |      |      |
|                                                       |               |               | 900# Slip-On  |              |              | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  | 13.3           | 6.03 |      |
|                                                       |               |               | 300# Slip-On  |              |              | 0.63         | 15.9         | 1.19 | 30.2 | 0.5  | 12.7 | 17.8 | 8.07           |      |      |
|                                                       |               |               | FNPT          |              |              | N/A          | N/A          | N/A  | N/A  | N/A  | N/A  | 13.3 | 6.03           |      |      |
|                                                       |               |               | 1500# Slip-On |              |              | 0.63         | 15.9         | 1.19 | 30.2 | 0.5  | 12.7 | 17.8 | 8.07           |      |      |
|                                                       | 0.75          | 19.1          | 300# Slip-On  | 1            | 25.4         | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  | 10.3           | 4.67 |      |
|                                                       |               |               | 150# Slip-On  |              |              | 0.5          | 12.7         | 1.06 | 26.9 | 0.5  | 12.7 | 13.3 | 6.03           |      |      |
|                                                       |               |               | 300# SW       |              |              | 150# SW      | 0.06         | 1.5  | 0.56 | 14.2 | 0.06 |      |                | 1.5  |      |
|                                                       |               |               | 600# Slip-On  |              |              | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  | 10.3           | 4.67 |      |
|                                                       |               |               | 600# SW       |              |              | 150# Slip-On | 0.5          | 12.7 | 1.06 | 26.9 | 0.5  | 12.7 | 13.3           | 6.03 |      |
|                                                       |               |               | 900# Slip-On  |              |              | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  |                |      | 13.5 |
|                                                       |               |               | 900# SW       |              |              | 300# Slip-On | 0.63         | 15.9 | 1.19 | 30.2 | 0.5  | 12.7 | 18             | 8.16 |      |
|                                                       |               |               | 1500# Slip-On |              |              | 300# SW      | 0.25         | 6.4  | 0.69 | 17.5 | 0.06 | 1.5  |                |      |      |
|                                                       |               |               | 1500# SW      |              |              | FNPT         | N/A          | N/A  | N/A  | N/A  | N/A  | N/A  | 13.5           | 6.12 |      |
|                                                       |               |               | 300# SW       |              |              | 300# Slip-On | 0.63         | 15.9 | 1.19 | 30.2 | 0.5  | 12.7 | 18             | 8.16 |      |
|                                                       |               |               | 300# SW       |              |              | 0.25         | 6.4          | 0.69 | 17.5 | 0.06 | 1.5  |      |                |      |      |
|                                                       |               |               | 1             |              |              | 25.4         | 300# Slip-On | 1    | 25.4 | FNPT | N/A  | N/A  | N/A            | N/A  | N/A  |
|                                                       | 150# Slip-On  | 0.5           |               | 12.7         | 1.06         |              | 26.9         |      |      | 0.5  | 12.7 | 14   | 6.35           |      |      |
|                                                       | 300# SW       | 150# SW       |               | 0.06         | 1.5          |              | 0.56         |      |      | 14.2 | 0.06 |      |                | 1.5  |      |
|                                                       | 600# Slip-On  | FNPT          |               | N/A          | N/A          |              | N/A          |      |      | N/A  | N/A  | N/A  | 11             | 4.99 |      |
|                                                       | 600# SW       | 150# Slip-On  |               | 0.5          | 12.7         |              | 1.06         |      |      | 26.9 | 0.5  | 12.7 | 14             | 6.35 |      |
|                                                       | 900# Slip-On  | FNPT          |               | N/A          | N/A          |              | N/A          |      |      | N/A  | N/A  | N/A  |                |      | 15.5 |
|                                                       | 900# SW       | 300# Slip-On  |               | 0.63         | 15.9         |              | 1.19         |      |      | 30.2 | 0.5  | 12.7 | 20             | 9.07 |      |
|                                                       | 1500# Slip-On | 300# SW       |               | 0.25         | 6.4          |              | 0.69         |      |      | 17.5 | 0.06 | 1.5  |                |      |      |
|                                                       | 1500# SW      | FNPT          |               | N/A          | N/A          |              | N/A          |      |      | N/A  | N/A  | N/A  | 15.5           | 7.03 |      |
|                                                       | 300# Slip-On  | 0.63          |               | 15.9         | 1.19         |              | 30.2         |      |      | 0.5  | 12.7 | 20   | 9.07           |      |      |
|                                                       | 300# SW       | 0.25          |               | 6.4          | 0.69         |              | 17.5         |      |      | 0.06 | 1.5  |      |                |      |      |
|                                                       | 19126M        | 0.75          |               | 19.1         | 300# Slip-On |              | 1            |      |      | 25.4 | FNPT | N/A  | N/A            | N/A  | N/A  |
|                                                       |               |               | 150# Slip-On  |              | 0.5          | 12.7         |              | 1.06 | 26.9 |      | 0.5  | 12.7 | 13.3           | 6.03 |      |
| 300# SW                                               |               |               | 150# SW       |              | 0.06         | 1.5          |              | 0.56 | 14.2 |      | 0.06 | 1.5  |                |      |      |
| 600# Slip-On                                          |               |               | FNPT          |              | N/A          | N/A          |              | N/A  | N/A  |      | N/A  | N/A  | 10.3           | 4.67 |      |
| 600# SW                                               |               |               | 150# Slip-On  |              | 0.5          | 12.7         |              | 1.06 | 26.9 |      | 0.5  | 12.7 | 13.3           | 6.03 |      |
| 900# Slip-On                                          |               |               | FNPT          |              | N/A          | N/A          |              | N/A  | N/A  |      | N/A  | N/A  |                |      | 13.5 |
| 900# SW                                               |               |               | 300# Slip-On  |              | 0.63         | 15.9         |              | 1.19 | 30.2 |      | 0.5  | 12.7 | 18             | 8.16 |      |
| 1500# Slip-On                                         |               |               | 300# SW       |              | 0.25         | 6.4          |              | 0.69 | 17.5 |      | 0.06 | 1.5  |                |      |      |
| 1500# SW                                              |               |               | FNPT          |              | N/A          | N/A          |              | N/A  | N/A  |      | N/A  | N/A  | 13.5           | 6.12 |      |
| 300# Slip-On                                          |               |               | 0.63          |              | 15.9         | 1.19         |              | 30.2 | 0.5  |      | 12.7 | 18   | 8.16           |      |      |
| 300# SW                                               |               |               | 0.25          |              | 6.4          | 0.69         |              | 17.5 | 0.06 |      | 1.5  |      |                |      |      |
| 1                                                     |               |               | 25.4          |              | 300# Slip-On | 1            |              | 25.4 | FNPT |      | N/A  | N/A  | N/A            | N/A  | N/A  |
|                                                       |               | 150# Slip-On  |               | 0.5          | 12.7         |              | 1.06         |      | 26.9 | 0.5  | 12.7 | 14   | 6.35           |      |      |
|                                                       |               | 300# SW       |               | 150# SW      | 0.06         |              | 1.5          |      | 0.56 | 14.2 | 0.06 |      |                | 1.5  |      |
|                                                       |               | 600# Slip-On  |               | FNPT         | N/A          |              | N/A          |      | N/A  | N/A  | N/A  | N/A  | 11             | 4.99 |      |
|                                                       |               | 600# SW       |               | 150# Slip-On | 0.5          |              | 12.7         |      | 1.06 | 26.9 | 0.5  | 12.7 | 14             | 6.35 |      |
|                                                       |               | 900# Slip-On  |               | FNPT         | N/A          |              | N/A          |      | N/A  | N/A  | N/A  | N/A  |                |      | 15.8 |
|                                                       |               | 900# SW       |               | 300# Slip-On | 0.63         |              | 15.9         |      | 1.19 | 30.2 | 0.5  | 12.7 | 20.3           | 9.21 |      |
|                                                       |               | 1500# Slip-On |               | 300# SW      | 0.25         |              | 6.4          |      | 0.69 | 17.5 | 0.06 | 1.5  |                |      |      |
|                                                       |               | 1500# SW      |               | FNPT         | N/A          |              | N/A          |      | N/A  | N/A  | N/A  | N/A  | 15.8           | 7.17 |      |
|                                                       |               | 300# Slip-On  |               | 0.63         | 15.9         |              | 1.19         |      | 30.2 | 0.5  | 12.7 | 20.3 | 9.21           |      |      |
|                                                       |               | 300# SW       |               | 0.25         | 6.4          |              | 0.69         |      | 17.5 | 0.06 | 1.5  |      |                |      |      |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |       |      |               |        |      |              |      |       |      |       |       |       |      |       |      |      |
|-------------------------------------------------------|-------|------|---------------|--------|------|--------------|------|-------|------|-------|-------|-------|------|-------|------|------|
| Valve Type                                            | Inlet |      |               | Outlet |      |              | A    |       | B    |       | C     |       | D    |       | E    |      |
|                                                       | Size  |      | Type          | Size   |      | Type         |      |       |      |       |       |       |      |       |      |      |
|                                                       | in    | mm   |               | Type   | in   |              | mm   | Type  | in.  | mm    | in.   | mm    | in.  | mm    | in.  | mm   |
| 19226M                                                | 1     | 25.4 | 300# Slip-On  | 1.5    | 38.1 | FNPT         | 6.25 | 158.8 | 2.38 | 60.5  | 15.63 | 397   | 3.13 | 79.5  | N/A  | N/A  |
|                                                       |       |      |               |        |      | 150# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.19 | 30.2 |
|                                                       |       |      | 300# SW       |        |      | 150# SW      | 4.72 | 119.9 | 4.75 | 120.7 | 14.1  | 358.1 |      |       | 0.69 | 17.5 |
|                                                       |       |      | 600# Slip-On  |        |      | FNPT         | 6.25 | 158.8 | 2.38 | 60.5  | 15.63 | 397   |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 150# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.19 | 30.2 |
|                                                       |       |      | 600# SW       |        |      | 150# SW      | 4.72 | 119.9 | 4.75 | 120.7 | 14.1  | 358.1 |      |       | 0.94 | 23.9 |
|                                                       |       |      | 900# Slip-On  |        |      | FNPT         | 7.25 | 184.2 | 2.38 | 60.5  | 16.63 | 422.4 |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 300# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.75 | 44.5 |
|                                                       |       |      | 900# SW       |        |      | 300# SW      | 5.72 | 145.3 | 6.75 | 171.5 | 15.1  | 383.5 |      |       | 1.37 | 34.8 |
|                                                       |       |      | 1500# Slip-On |        |      | FNPT         | 7.25 | 184.2 | 2.38 | 60.5  | 16.63 | 422.4 |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 300# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.75 | 44.5 |
|                                                       |       |      | 1500# SW      |        |      | 300# SW      | 5.72 | 145.3 | 6.75 | 171.5 | 15.1  | 383.5 |      |       | 1.37 | 34.8 |
| 19357M                                                | 1.5   | 38.1 | 300# Slip-On  | 2      | 50.8 | FNPT         | 7.13 | 181.1 | 3.13 | 79.5  | 19.94 | 506.5 | 4.63 | 117.6 | N/A  | N/A  |
|                                                       |       |      |               |        |      | 150# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.31 | 33.3 |
|                                                       |       |      | 600# Slip-On  |        |      | FNPT         |      |       | 3.13 | 79.5  |       |       |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 150# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.38 | 35.1 |
|                                                       |       |      | 900# Slip-On  |        |      | FNPT         | 8.25 | 209.6 | 3.13 | 79.5  | 21.06 | 534.9 |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 300# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.88 | 47.8 |
|                                                       |       |      | 1500# Slip-On |        |      | FNPT         |      |       | 3.13 | 79.5  |       |       |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 300# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.88 | 47.8 |
| 19567M                                                | 2     | 50.8 | 300# Slip-On  | 2.5    | 63.5 | FNPT         | 7.13 | 181.1 | 3.13 | 79.5  | 19.94 | 506.5 | 4.63 | 117.6 | N/A  | N/A  |
|                                                       |       |      |               |        |      | 150# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.5  | 38.1 |
|                                                       |       |      | 600# Slip-On  |        |      | FNPT         |      |       | 3.13 | 79.5  |       |       |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 150# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 1.63 | 41.4 |
|                                                       |       |      | 900# Slip-On  |        |      | FNPT         | 8.25 | 209.6 | 3.13 | 79.5  | 21.06 | 534.9 |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 300# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 2.13 | 54.1 |
|                                                       |       |      | 1500# Slip-On |        |      | FNPT         |      |       | 3.13 | 79.5  |       |       |      |       | N/A  | N/A  |
|                                                       |       |      |               |        |      | 300# Slip-On |      |       | 6.13 | 155.7 |       |       |      |       | 2.13 | 54.1 |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |       |      |               |        |      |              |      |      |      |      |      |      |                |       |
|-------------------------------------------------------|-------|------|---------------|--------|------|--------------|------|------|------|------|------|------|----------------|-------|
| Valve Type                                            | Inlet |      |               | Outlet |      |              | F    |      | G    |      | H    |      | Approx. Weight |       |
|                                                       | Size  |      | Type          | Size   |      | Type         |      |      |      |      |      |      |                |       |
|                                                       | in    | mm   |               | Type   | in   |              | mm   | Type | in.  | mm   | in.  | mm   | in.            | mm    |
| 19226M                                                | 1     | 25.4 | 300# Slip-On  | 1.5    | 38.1 | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 16             | 7.26  |
|                                                       |       |      | 150# Slip-On  |        |      | 0.5          | 12.7 | 1.19 | 30.2 | 0.5  | 12.7 | 19   | 8.62           |       |
|                                                       |       |      | 300# SW       |        |      | 150# SW      | 0.06 | 1.5  | 0.69 | 17.5 | 0.06 | 1.5  | 17.6           | 8.0   |
|                                                       |       |      | 600#          |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 16             | 7.26  |
|                                                       |       |      | 600# SW       |        |      | 150# Slip-On | 0.5  | 12.7 | 1.19 | 30.2 | 0.5  | 12.7 | 21             | 9.53  |
|                                                       |       |      | 600# SW       |        |      | 150# SW      | 0.25 | 6.4  | 0.69 | 17.5 | 0.06 | 1.5  |                |       |
|                                                       |       |      | 900#          |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 20.5           | 9.3   |
|                                                       |       |      | 900# SW       |        |      | 300# Slip-On | 0.63 | 15.9 | 1.31 | 33.3 | 0.5  | 12.7 | 29             | 13.15 |
|                                                       |       |      | 900# SW       |        |      | 300# SW      | 0.25 | 6.4  | 0.81 | 20.6 | 0.06 | 1.5  |                |       |
|                                                       |       |      | 1500#         |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 20.5           | 9.3   |
|                                                       |       |      | 1500# SW      |        |      | 300# Slip-On | 0.63 | 15.9 | 1.31 | 33.3 | 0.5  | 12.7 | 29             | 13.15 |
|                                                       |       |      | 1500# SW      |        |      | 300# SW      | 0.25 | 6.4  | 0.81 | 20.6 | 0.06 | 1.5  |                |       |
| 19357M                                                | 1.5   | 38.1 | 300# Slip-On  | 2      | 50.8 | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 38.3           | 17.37 |
|                                                       |       |      | 150# Slip-On  |        |      | 0.5          | 12.7 | 1.38 | 35.1 | 0.63 | 15.9 | 45.8 | 20.77          |       |
|                                                       |       |      | 600# Slip-On  |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 38.3           | 17.37 |
|                                                       |       |      | 600# Slip-On  |        |      | 150# Slip-On | 0.5  | 12.7 | 1.38 | 35.1 | 0.63 | 15.9 | 45.8           | 20.77 |
|                                                       |       |      | 900# Slip-On  |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 46.8           | 21.23 |
|                                                       |       |      | 900# Slip-On  |        |      | 300# Slip-On | 0.63 | 15.9 | 1.5  | 38.1 | 0.63 | 15.9 | 56.3           | 25.54 |
|                                                       |       |      | 1500# Slip-On |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 46.8           | 21.23 |
|                                                       |       |      | 1500# Slip-On |        |      | 300# Slip-On | 0.63 | 15.9 | 1.5  | 38.1 | 0.63 | 15.9 | 56.3           | 25.54 |
| 19567M                                                | 2     | 50.8 | 300# Slip-On  | 2.5    | 63.5 | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 39.8           | 18.05 |
|                                                       |       |      | 150# Slip-On  |        |      | 0.63         | 15.9 | 1.5  | 38.1 | 0.63 | 15.9 | 51.3 | 23.27          |       |
|                                                       |       |      | 600# Slip-On  |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 40.8           | 18.51 |
|                                                       |       |      | 600# Slip-On  |        |      | 150# Slip-On | 0.63 | 15.9 | 1.5  | 38.1 | 0.63 | 15.9 | 52.3           | 23.72 |
|                                                       |       |      | 900# Slip-On  |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 55.3           | 25.08 |
|                                                       |       |      | 900# Slip-On  |        |      | 300# Slip-On | 0.63 | 15.9 | 1.63 | 41.4 | 0.63 | 15.9 | 68.8           | 31.21 |
|                                                       |       |      | 1500# Slip-On |        |      | FNPT         | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 55.3           | 25.08 |
|                                                       |       |      | 1500# Slip-On |        |      | 300# Slip-On | 0.63 | 15.9 | 1.63 | 41.4 | 0.63 | 15.9 | 68.8           | 31.21 |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |         |       |               |               |       |         |        |               |       |       |       |       |        |      |       |       |
|-------------------------------------------------------|---------|-------|---------------|---------------|-------|---------|--------|---------------|-------|-------|-------|-------|--------|------|-------|-------|
| Valve Type                                            | Inlet   |       |               | Outlet        |       |         | A      |               | B     |       | C     |       | D      |      | E     |       |
|                                                       | Size    |       | Type          | Size          |       | Type    |        |               |       |       |       |       |        |      |       |       |
|                                                       | in      | mm    |               |               | in    |         | mm     |               | in.   | mm    | in.   | mm    | in.    | mm   | in.   | mm    |
| 19096H<br>19110H                                      | 0.75    | 19.1  | 1500# Slip-On | 1             | 25.4  | FNPT    | 6.5    | 165.1         | 2.38  | 60.5  | 15.63 | 397   | 3.13   | 79.5 | N/A   | N/A   |
|                                                       |         |       | 300# Slip-On  |               |       | 1.63    |        |               |       |       |       |       |        |      | 41.4  |       |
|                                                       |         |       | 1500# SW      |               |       | 300# SW | 5.72   | 145.3         | 6.75  | 171.5 | 14.85 | 377.2 |        |      | 1.37  | 34.8  |
|                                                       |         |       | 2500# Slip-On |               |       | FNPT    | 6.5    | 165.1         | 2.38  | 60.5  | 15.63 | 397   |        |      | N/A   | N/A   |
|                                                       |         |       | 300# Slip-On  |               |       | 1.88    |        |               |       |       |       |       |        |      | 47.8  |       |
|                                                       |         |       | 19126H        |               |       | 0.75    | 19.1   | 1500# Slip-On | 1     | 25.4  | FNPT  | 6.5   |        |      | 165.1 | 3.13  |
| 300# Slip-On                                          | 6.25    | 158.8 |               | 1.63          | 41.4  |         |        |               |       |       |       |       |        |      |       |       |
| 1500# SW                                              | 300# SW | 5.72  |               | 145.3         | 6.75  |         |        | 171.5         |       |       | 18.28 | 464.3 | 1.37   | 34.8 |       |       |
| 2500# Slip-On                                         | FNPT    | 6.5   |               | 165.1         | 3.13  |         |        | 79.5          |       |       | 19.06 | 484.1 | N/A    | N/A  |       |       |
| 300# Slip-On                                          | 6.25    |       |               |               | 158.8 |         |        | 1.88          |       |       |       |       | 47.8   |      |       |       |
| 19226H                                                | 1       | 25.4  |               | 1500# Slip-On | 1.5   |         |        | 38.1          |       |       | FNPT  | 7.25  | 184.15 | 3.13 | 79.5  | 16.38 |
|                                                       |         |       | 300# Slip-On  | 6.13          |       | 155.7   | 1.75   |               | 44.5  |       |       |       |        |      |       |       |
|                                                       |         |       | 1500# SW      | 300# SW       |       | 5.72    | 145.3  |               | 6.75  | 171.5 | 14.85 | 377.2 | 1.37   | 34.8 |       |       |
|                                                       |         |       | 2500# Slip-On | FNPT          |       | 7.25    | 184.15 |               | 3.13  | 79.5  | 16.38 | 416.1 | N/A    | N/A  |       |       |
|                                                       |         |       | 300# Slip-On  | 6.13          |       |         |        |               | 155.7 | 2     |       |       | 50.8   |      |       |       |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Slip-On and Socket Weld Designs) |       |      |               |        |      |      |      |      |      |      |      |      |                |       |
|-------------------------------------------------------|-------|------|---------------|--------|------|------|------|------|------|------|------|------|----------------|-------|
| Valve Type                                            | Inlet |      |               | Outlet |      |      | F    |      | G    |      | H    |      | Approx. Weight |       |
|                                                       | Size  |      | Type          | Size   |      | Type |      |      |      |      |      |      |                |       |
|                                                       | in    | mm   |               | Type   | in   |      | mm   | Type | in.  | mm   | in.  | mm   | in.            | mm    |
| 19096H<br>19110H                                      | 0.75  | 19.1 | 1500# Slip-On | 1      | 25.4 | FNPT | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 18.5           | 8.39  |
|                                                       |       |      | 300# Slip-On  |        |      | 0.63 | 15.9 | 1.19 | 30.2 | 0.5  | 12.7 | 23   | 10.43          |       |
|                                                       |       |      | 1500# SW      |        |      | 0.25 | 6.4  | 0.69 | 17.5 | 0.06 | 1.5  |      |                |       |
|                                                       |       |      | 2500# Slip-On |        |      | FNPT | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 20.8           | 9.43  |
|                                                       |       |      | 300# Slip-On  |        |      | 0.63 | 15.9 | 1.19 | 30.2 | 0.5  | 12.7 | 25.3 | 11.48          |       |
| 19126H                                                | 0.75  | 19.1 | 1500# Slip-On | 1      | 25.4 | FNPT | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 37             | 16.78 |
|                                                       |       |      | 300# Slip-On  |        |      | 0.63 | 15.9 | 1.19 | 30.2 | 0.5  | 12.7 | 41.5 | 18.82          |       |
|                                                       |       |      | 1500# SW      |        |      | 0.25 | 6.4  | 0.69 | 17.5 | 0.06 | 1.5  |      |                |       |
|                                                       |       |      | 2500# Slip-On |        |      | FNPT | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 39             | 17.69 |
|                                                       |       |      | 300# Slip-On  |        |      | 0.63 | 15.9 | 1.19 | 30.2 | 0.5  | 12.7 | 43.5 | 19.73          |       |
| 19226H                                                | 1     | 25.4 | 1500# Slip-On | 1.5    | 38.1 | FNPT | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 39             | 17.69 |
|                                                       |       |      | 300# Slip-On  |        |      | 0.63 | 15.9 | 1.31 | 33.3 | 0.5  | 12.7 | 47   | 21.32          |       |
|                                                       |       |      | 1500# SW      |        |      | 0.25 | 6.4  | 0.69 | 17.5 | 0.06 | 1.5  |      |                |       |
|                                                       |       |      | 2500# Slip-On |        |      | FNPT | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 43.5           | 19.73 |
|                                                       |       |      | 300# Slip-On  |        |      | 0.63 | 15.9 | 1.31 | 33.3 | 0.5  | 12.7 | 51.5 | 23.36          |       |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Back Pressure Design) |               |               |               |              |      |      |              |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|--------------------------------------------|---------------|---------------|---------------|--------------|------|------|--------------|--------------|-------|------|-------|---------|--------|--------|-------|-------|-------|-------|---------|------|--------|------|-----|
| Valve Type                                 | Inlet         |               |               | Outlet       |      |      | A            |              | B     |      | C     |         | D      |        | E     |       |       |       |         |      |        |      |     |
|                                            | Size          |               | Type          | Size         |      | Type |              |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | in            | mm            |               |              | in   |      | mm           |              | in.   | mm   | in.   | mm      | in.    | mm     | in.   | mm    | in.   | mm    |         |      |        |      |     |
| 19096M-BP<br>19110M-BP                     | 0.5           | 12.7          | 150# Slip-On  | 1            | 25.4 | FNPT | 6            | 152.4        | 2     | 50.8 | 15.63 | 397     | 3.75   | 95.3   | N/A   | N/A   |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 4.88 |              |              | 124   | 0.88 |       |         |        |        | 22.4  |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  |              |      | 2    |              |              | 50.8  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 4.88 |              |              | 124   | 1    |       |         |        |        | 25.4  |       |       |       |         |      |        |      |     |
|                                            |               |               | 600# Slip-On  |              |      | 2    |              |              | 50.8  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 4.88 |              |              | 124   | 1    |       |         |        |        | 25.4  |       |       |       |         |      |        |      |     |
|                                            |               |               | 900# Slip-On  |              |      | 2    | 50.8         | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  |              |      | 4.88 | 124          | 1.5          | 38.1  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 1500# Slip-On |              |      | 2    | 50.8         | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  |              |      | 4.88 | 124          | 1.5          | 38.1  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 0.75          |              |      | 19.1 | 150# Slip-On | 1            | 25.4  | FNPT | 6.25  | 158.75  |        |        | 2     | 50.8  | 15.88 | 403.4 | 3.75    | 95.3 | N/A    | N/A  |     |
|                                            |               |               |               |              |      |      | 150# Slip-On |              |       | 4.88 |       |         |        |        | 124   | 1     |       |       |         |      | 25.4   |      |     |
|                                            | 300# Slip-On  | 2             |               | 50.8         | N/A  |      | N/A          |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 150# Slip-On  | 4.88          |               | 124          | 1.13 |      | 28.7         |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 600# Slip-On  | 2             |               | 50.8         | N/A  |      | N/A          |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 150# Slip-On  | 4.88          |               | 124          | 1.13 |      | 28.7         |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 900# Slip-On  | 2             |               | 50.8         | N/A  |      | N/A          |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 300# Slip-On  | 4.88          |               | 124          | 1.63 |      | 41.4         |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 1500# Slip-On | 2             |               | 50.8         | N/A  |      | N/A          |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 300# Slip-On  | 4.88          |               | 124          | 1.63 |      | 41.4         |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 1             | 25.4          |               | 150# Slip-On | 1    |      | 25.4         |              |       | FNPT | 6.5   | 165.1   | 2      | 50.8   | 16.13 | 409.7 | 3.75  | 95.3  |         |      | N/A    | N/A  |     |
|                                            |               |               |               | 150# Slip-On |      |      |              |              |       | 4.88 |       |         | 124    | 1.06   |       |       |       |       |         |      | 26.9   |      |     |
|                                            |               |               | 300# Slip-On  | 2            |      | 50.8 |              | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  | 4.88         |      | 124  |              | 1.19         | 30.2  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 600# Slip-On  | 2            |      | 50.8 |              | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  | 4.88         |      | 124  |              | 1.19         | 30.2  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 900# Slip-On  | 2            |      | 50.8 |              | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  | 4.88         |      | 124  |              | 1.75         | 44.5  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 1500# Slip-On | 2            |      | 50.8 |              | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  | 4.88         |      | 124  |              | 1.75         | 44.5  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 19126M-BP     | 0.75         |      | 19.1 |              | 150# Slip-On | 1     | 25.4 | FNPT  | 6.25    | 158.75 | 2      | 50.8  | 15.19 |       |       | 385.826 | 2.56 | 65.024 | N/A  | N/A |
|                                            |               |               |               |              |      |      |              | 150# Slip-On |       |      | 4.88  |         |        | 124    | 1     |       |       |       |         |      |        | 25.4 |     |
|                                            | 300# Slip-On  | 2             |               |              | 50.8 |      | N/A          | N/A          |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 150# Slip-On  | 4.88          |               |              | 124  |      | 1.13         | 28.7         |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 600# Slip-On  | 2             |               |              | 50.8 |      | N/A          | N/A          |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            | 150# Slip-On  | 4.88          |               |              | 124  |      | 1.13         | 28.7         |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
| 900# Slip-On                               | 2             | 50.8          |               |              | N/A  |      | N/A          |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
| 1500# Slip-On                              | 4.88          | 124           |               |              | 1.63 |      | 41.4         |              |       |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
| 1                                          | 25.4          | 300# Slip-On  |               | 1            | 25.4 | FNPT | 6.75         | 171.45       | 2     | 50.8 | 15.69 | 398.526 | 2.56   | 65.024 | N/A   | N/A   |       |       |         |      |        |      |     |
|                                            |               | 150# Slip-On  |               |              |      | 4.88 |              |              | 124   | 1.63 |       |         |        |        | 41.4  |       |       |       |         |      |        |      |     |
|                                            |               | 600# Slip-On  |               |              |      | 2    |              |              | 50.8  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               | 150# Slip-On  |               |              |      | 4.88 |              |              | 124   | 1.63 |       |         |        |        | 41.4  |       |       |       |         |      |        |      |     |
|                                            |               | 900# Slip-On  |               |              |      | 2    |              |              | 50.8  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               | 1500# Slip-On |               |              |      | 4.88 |              |              | 124   | 1.63 |       |         |        |        | 41.4  |       |       |       |         |      |        |      |     |
|                                            |               | 300# Slip-On  |               |              |      | 2    | 50.8         | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               | 1500# Slip-On |               |              |      | 4.88 | 124          | 1.63         | 41.4  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
| 19226M-BP                                  | 1             | 25.4          | 150# Slip-On  | 1.5          | 38.1 | FNPT | 6.25         | 158.8        | 2.38  | 60.5 | CF    | CF      | CF     | CF     | N/A   | N/A   |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 6.13 |              |              | 155.7 | 1.06 |       |         |        |        | 26.9  |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  |              |      | 2.38 |              |              | 60.5  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 6.13 |              |              | 155.7 | 1.19 |       |         |        |        | 30.2  |       |       |       |         |      |        |      |     |
|                                            |               |               | 600# Slip-On  |              |      | 2.38 |              |              | 60.5  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 6.13 |              |              | 155.7 | 1.19 |       |         |        |        | 30.2  |       |       |       |         |      |        |      |     |
|                                            |               |               | 900# Slip-On  |              |      | 2.38 | 60.5         | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 1500# Slip-On |              |      | 6.13 | 155.7        | 1.75         | 44.5  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
| 19226M-BP                                  | 1             | 25.4          | 150# Slip-On  | 1.5          | 38.1 | FNPT | 7.25         | 184.2        | 2.38  | 60.5 | CF    | CF      | CF     | CF     | N/A   | N/A   |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 6.13 |              |              | 155.7 | 1.75 |       |         |        |        | 44.5  |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  |              |      | 2.38 |              |              | 60.5  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               |               | 150# Slip-On  |              |      | 6.13 |              |              | 155.7 | 1.75 |       |         |        |        | 44.5  |       |       |       |         |      |        |      |     |
|                                            |               |               | 900# Slip-On  |              |      | 2.38 |              |              | 60.5  | N/A  |       |         |        |        | N/A   |       |       |       |         |      |        |      |     |
|                                            |               |               | 1500# Slip-On |              |      | 6.13 |              |              | 155.7 | 1.75 |       |         |        |        | 44.5  |       |       |       |         |      |        |      |     |
|                                            |               |               | 300# Slip-On  |              |      | 2.38 | 60.5         | N/A          | N/A   |      |       |         |        |        |       |       |       |       |         |      |        |      |     |
|                                            |               |               | 1500# Slip-On |              |      | 6.13 | 155.7        | 1.75         | 44.5  |      |       |         |        |        |       |       |       |       |         |      |        |      |     |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Back Pressure Design) |              |       |              |              |      |       |      |       |      |      |      |       |                |     |     |
|--------------------------------------------|--------------|-------|--------------|--------------|------|-------|------|-------|------|------|------|-------|----------------|-----|-----|
| Valve Type                                 | Inlet        |       |              | Outlet       |      |       | F    |       | G    |      | H    |       | Approx. Weight |     |     |
|                                            | Size         |       | Type         | Size         |      | Type  |      |       |      |      |      |       |                |     |     |
|                                            | in           | mm    |              | Type         | in   |       | mm   | Type  | in.  | mm   | in.  | mm    | in.            | mm  | lb  |
| 19096M-BP<br>19110M-BP                     | 0.5          | 12.7  | 150# Slip-On | 1            | 25.4 | FNPT  | N/A  | N/A   | N/A  | N/A  | N/A  | N/A   | 13             | 5.9 |     |
|                                            |              |       | 150# Slip-On |              |      | 0.438 | 11.1 | 1.06  | 26.9 | 0.5  | 12.7 | 16    | 7.3            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 14    | 6.4            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.438 | 11.1 | 1.06  | 26.9 | 0.5  | 12.7 | 17    | 7.7            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 14    | 6.4            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.438 | 11.1 | 1.06  | 26.9 | 0.5  | 12.7 | 17    | 7.7            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 18.25 | 8.3            |     |     |
|                                            |              |       | 300# Slip-On |              |      | 0.625 | 15.9 | 1.19  | 30.2 | 0.5  | 12.7 | 22.75 | 10.3           |     |     |
|                                            | FNPT         | N/A   | N/A          | N/A          | N/A  | N/A   | N/A  | 18.25 | 8.3  |      |      |       |                |     |     |
|                                            | 300# Slip-On | 0.625 | 15.9         | 1.19         | 30.2 | 0.5   | 12.7 | 22.75 | 10.3 |      |      |       |                |     |     |
|                                            | 0.75         | 19.1  | 150# Slip-On | 1            | 25.4 | FNPT  | N/A  | N/A   | N/A  | N/A  | N/A  | N/A   | 13.75          | 6.2 |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 16.75 | 7.6            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 15.25 | 6.9            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 18.25 | 8.3            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 15.25 | 6.9            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 18.25 | 8.3            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 20    | 9.1            |     |     |
|                                            |              |       | 300# Slip-On |              |      | 0.625 | 15.9 | 1.19  | 30.2 | 0.5  | 12.7 | 23    | 10.4           |     |     |
|                                            | FNPT         | N/A   | N/A          | N/A          | N/A  | N/A   | N/A  | 20    | 9.1  |      |      |       |                |     |     |
|                                            | 300# Slip-On | 0.625 | 15.9         | 1.19         | 30.2 | 0.5   | 12.7 | 23    | 10.4 |      |      |       |                |     |     |
|                                            | 1            | 25.4  | 150# Slip-On | 1            | 25.4 | FNPT  | N/A  | N/A   | N/A  | N/A  | N/A  | N/A   | 14.5           | 6.6 |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 17.5  | 7.9            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 16    | 7.3            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 19    | 8.6            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 16    | 7.3            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 19    | 8.6            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 22    | 10             |     |     |
|                                            |              |       | 300# Slip-On |              |      | 0.625 | 15.9 | 1.19  | 30.2 | 0.5  | 12.7 | 25    | 11.3           |     |     |
|                                            | FNPT         | N/A   | N/A          | N/A          | N/A  | N/A   | N/A  | 22    | 10   |      |      |       |                |     |     |
|                                            | 300# Slip-On | 0.625 | 15.9         | 1.19         | 30.2 | 0.5   | 12.7 | 25    | 11.3 |      |      |       |                |     |     |
|                                            | 19126M-BP    | 0.75  | 19.1         | 150# Slip-On | 1    | 25.4  | FNPT | N/A   | N/A  | N/A  | N/A  | N/A   | N/A            | 13  | 5.9 |
|                                            |              |       |              | 150# Slip-On |      |       | 0.5  | 12.7  | 1.06 | 26.9 | 0.5  | 12.7  | 16             | 7.3 |     |
| FNPT                                       |              |       |              | N/A          |      |       | N/A  | N/A   | N/A  | N/A  | N/A  | 15.25 | 6.9            |     |     |
| 150# Slip-On                               |              |       |              | 0.5          |      |       | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 18.25 | 8.3            |     |     |
| FNPT                                       |              |       |              | N/A          |      |       | N/A  | N/A   | N/A  | N/A  | N/A  | 15.25 | 6.9            |     |     |
| 150# Slip-On                               |              |       |              | 0.5          |      |       | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 18.25 | 8.3            |     |     |
| FNPT                                       |              |       |              | N/A          |      |       | N/A  | N/A   | N/A  | N/A  | N/A  | 20    | 9.1            |     |     |
| 300# Slip-On                               |              |       |              | 0.63         |      |       | 15.9 | 1.19  | 30.2 | 0.5  | 12.7 | 23    | 10.4           |     |     |
| FNPT                                       |              | N/A   | N/A          | N/A          | N/A  | N/A   | N/A  | 20    | 9.1  |      |      |       |                |     |     |
| 300# Slip-On                               |              | 0.63  | 15.9         | 1.19         | 30.2 | 0.5   | 12.7 | 23    | 10.4 |      |      |       |                |     |     |
| 1                                          |              | 25.4  | 300# Slip-On | 1            | 25.4 | FNPT  | N/A  | N/A   | N/A  | N/A  | N/A  | N/A   | 16             | 7.3 |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 19    | 8.6            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 16    | 7.3            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 19    | 8.6            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 22    | 10             |     |     |
|                                            |              |       | 300# Slip-On |              |      | 0.63  | 15.9 | 1.19  | 30.2 | 0.5  | 12.7 | 25    | 11.3           |     |     |
|                                            | FNPT         |       | N/A          |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | 22   | 10    |                |     |     |
|                                            | 300# Slip-On |       | 0.63         |              |      | 15.9  | 1.19 | 30.2  | 0.5  | 12.7 | 25   | 11.3  |                |     |     |
| 19226M-BP                                  | 1            | 25.4  | 150# Slip-On | 1.5          | 38.1 | FNPT  | N/A  | N/A   | N/A  | N/A  | N/A  | N/A   | 13             | 5.9 |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.06  | 26.9 | 0.5  | 12.7 | 16    | 7.3            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 17    | 7.7            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.19  | 30.2 | 0.5  | 12.7 | 20    | 9.1            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 17    | 7.7            |     |     |
|                                            |              |       | 150# Slip-On |              |      | 0.5   | 12.7 | 1.19  | 30.2 | 0.5  | 12.7 | 20    | 9.1            |     |     |
|                                            |              |       | FNPT         |              |      | N/A   | N/A  | N/A   | N/A  | N/A  | N/A  | 23    | 10.4           |     |     |
|                                            |              |       | 300# Slip-On |              |      | 0.63  | 15.9 | 1.19  | 30.2 | 0.5  | 12.7 | 26    | 11.8           |     |     |
| FNPT                                       | N/A          | N/A   | N/A          | N/A          | N/A  | N/A   | 23   | 10.4  |      |      |      |       |                |     |     |
| 300# Slip-On                               | 0.63         | 15.9  | 1.19         | 30.2         | 0.5  | 12.7  | 26   | 11.8  |      |      |      |       |                |     |     |

# Dimensions and Weights

## Flanged Connections

| Flanged Connections (Integral Cast Flange Design) |                  |       |       |        |      |      |      |        |        |       |       |        |        |       |       |       |                |      |      |
|---------------------------------------------------|------------------|-------|-------|--------|------|------|------|--------|--------|-------|-------|--------|--------|-------|-------|-------|----------------|------|------|
| Valve Type                                        | Inlet            |       |       | Outlet |      |      | A    |        | B      |       | C     |        | D      |       | E     |       | Approx. Weight |      |      |
|                                                   | Size             |       | Type  | Size   |      | Type |      |        |        |       |       |        |        |       |       |       |                |      |      |
|                                                   | in               | mm    |       |        | in   |      | mm   |        | in.    | mm    | in.   | mm     | in.    | mm    | in.   | mm    | lb             | kg   |      |
| 19096L<br>19110L                                  | 0.75             | 19.05 | 150#  | 1      | 25.4 | 150# | 3.56 | 90.42  | 3.44   | 87.38 | 10.75 | 273.05 | 3.56   | 90.42 | 1.03  | 26.16 | 12.75          | 5.78 |      |
|                                                   |                  |       | 300#  |        |      |      | 4.13 | 104.90 |        |       | 11.25 | 285.75 |        |       | 1.28  | 32.51 | 15             | 6.80 |      |
|                                                   | 1                | 25.4  | 150#  | 1      | 25.4 | 150# | 3.56 | 90.42  | 3.44   | 87.38 | 10.75 | 273.05 | 3.56   | 90.42 | 1.06  | 26.92 | 13.25          | 6.01 |      |
|                                                   |                  |       | 300#  |        |      |      | 4.13 | 104.90 |        |       | 11.25 | 285.75 |        |       | 1.35  | 34.29 | 15.75          | 7.14 |      |
|                                                   | 19096M<br>19110M | 0.75  | 19.05 | 300#   | 1    | 25.4 | 150# | 4.13   | 104.90 | 3.44  | 87.38 | 13     | 330.20 | 3.56  | 90.42 | 1.28  | 32.51          | 15   | 6.80 |
|                                                   |                  |       |       | 600#   |      |      |      |        |        |       |       |        |        |       |       |       |                |      |      |
| 1                                                 |                  | 25.4  | 300#  | 1      | 25.4 | 150# | 4.13 | 104.90 | 3.44   | 87.38 | 13    | 330.20 | 3.56   | 90.42 | 1.35  | 34.29 | 15.75          | 7.14 |      |
|                                                   |                  |       | 600#  |        |      |      |      |        |        |       |       |        |        |       |       |       |                |      |      |

# Pressure and Temperature

## General Information

### 19000 and 19000M-BP Series

These ratings apply to threaded or socket weld end connections.

When the valves are supplied with flanged connections the flange ratings may govern the range of valve pressure and temperature rating.

Allowable total backpressure is the sum of the constant and variable back pressure, superimposed and built-up.

#### 19000

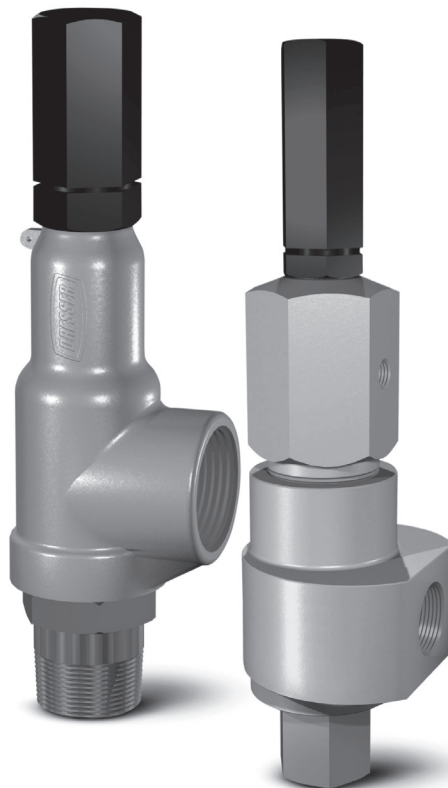
- Constant back pressure - 400 psig (27.58 barg).
- Variable back pressure (superimposed or built-up) - 400 psig (27.58 barg) or 10 percent of set pressure whichever is smaller.

#### 19000M-BP

- Liquid: 70 percent of set pressure (Thermal relief applications may be supplied with back pressure up to 90% of set pressure)
- Gas: 50 percent of set pressure
- Total back pressure for liquid or gas shall not exceed 400 psig (27.58 barg)

Valves with set pressures less than 15 psig (1.03 barg) cannot be stamped with the ASME Code stamp.

**Note: When soft seats are used, Elastomer material may govern the valve pressure and temperature rating.**



19000 and 19000M-BP Series

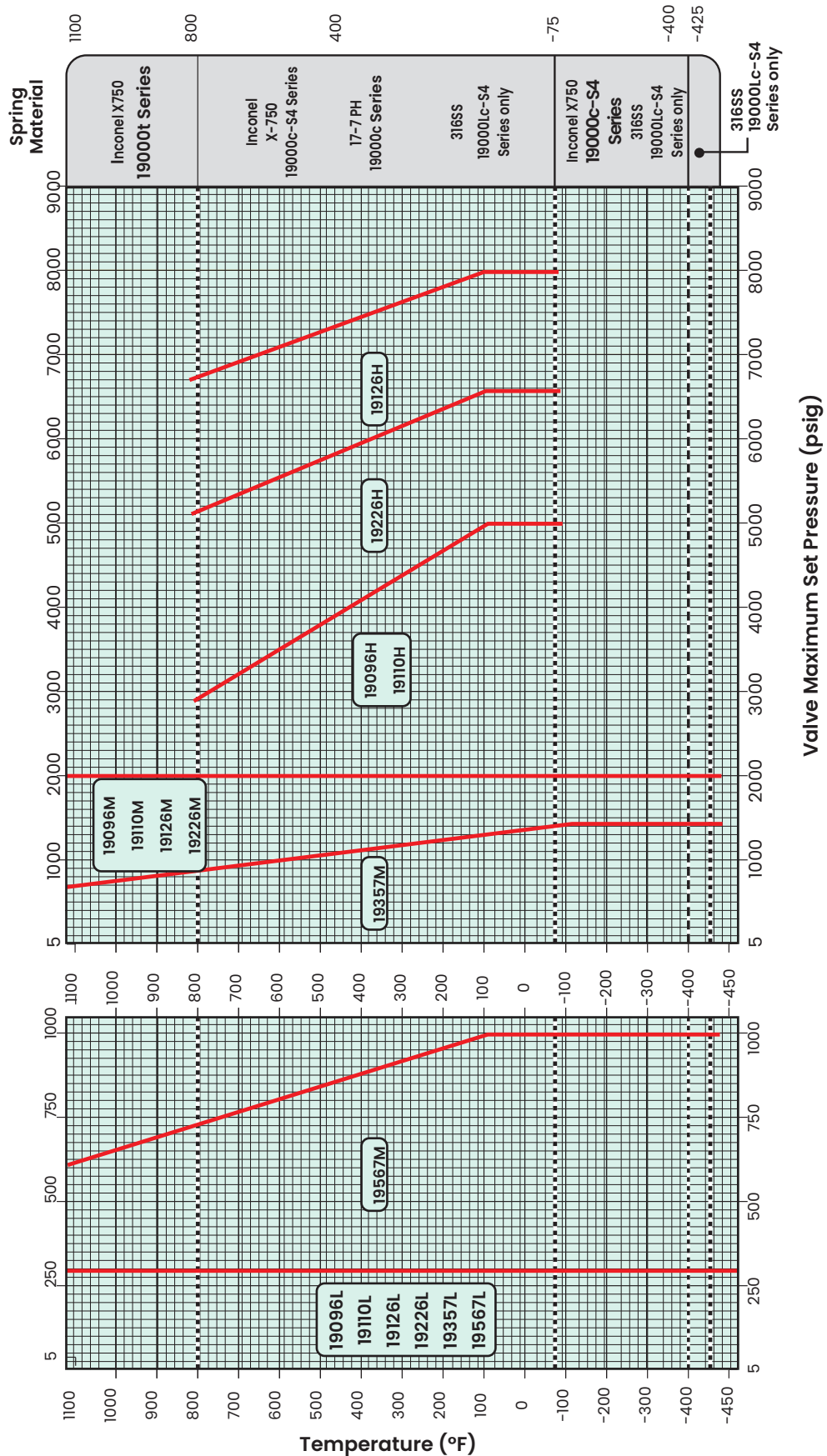
# Pressure and Temperature

| Pressure Temperature Ratings of 19000 Series Valves |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
|-----------------------------------------------------|------------------------|--------|----------------------|--------|--------------------|--------|--------------------|--------|---------------------|--------|---------------------|--------|
| Valve Type                                          | -425 °F<br>(-253.9 °C) |        | -75 °F<br>(- 59.4°C) |        | 100 °F<br>(37.8°C) |        | 200 °F<br>(93.3°C) |        | 300 °F<br>(148.9°C) |        | 400 °F<br>(204.4°C) |        |
|                                                     | psig                   | barg   | psig                 | barg   | psig               | barg   | psig               | barg   | psig                | barg   | psig                | barg   |
| 19096L                                              | 290                    | 19.99  | 290                  | 19.99  | 290                | 19.99  | 290                | 19.99  | 290                 | 19.99  | 290                 | 19.99  |
| 19110L                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19126L                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19226L                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19357L                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19567L                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19096M                                              | 2000                   | 137.89 | 2000                 | 137.89 | 2000               | 137.89 | 2000               | 137.89 | 2000                | 137.89 | 2000                | 137.89 |
| 19110M                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19126M                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19226M                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19357M                                              | 1500                   | 103.42 | 1500                 | 103.42 | 1500               | 103.42 | 1420               | 97.90  | 1340                | 92.38  | 1260                | 86.87  |
| 19567M                                              | 1000                   | 68.94  | 1000                 | 68.94  | 1000               | 68.94  | 960                | 66.18  | 920                 | 63.43  | 880                 | 60.67  |
| 19096H                                              | 5000                   | 344.73 | 5000                 | 344.73 | 5000               | 344.73 | 4811               | 331.70 | 4621                | 318.60 | 4432                | 305.57 |
| 19110H                                              |                        |        |                      |        |                    |        |                    |        |                     |        |                     |        |
| 19126H                                              | 8000                   | 551.58 | 8000                 | 551.58 | 8000               | 551.58 | 7785               | 536.75 | 7571                | 522    | 7357                | 507.24 |
| 19226H                                              | 6400                   | 441.26 | 6400                 | 441.26 | 6400               | 441.26 | 6107               | 421.06 | 5814                | 400.86 | 5521                | 380.65 |

| Pressure Temperature Ratings of 19000 Series Valves |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
|-----------------------------------------------------|--------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|---------------------|--------|----------------------|--------|----------------------|--------|
| Valve Type                                          | 500 °F<br>(260.°C) |        | 600 °F<br>(315.6°C) |        | 700 °F<br>(371.1°C) |        | 800 °F<br>(426.7°C) |        | 900 °F<br>(482.2°C) |        | 1000 °F<br>(537.8°C) |        | 1100 °F<br>(593.3°C) |        |
|                                                     | psig               | barg   | psig                | barg   | psig                | barg   | psig                | barg   | psig                | barg   | psig                 | barg   | psig                 | barg   |
| 19096L                                              | 290                | 19.99  | 290                 | 19.99  | 290                 | 19.99  | 290                 | 19.99  | 290                 | 19.99  | 290                  | 19.99  | 290                  | 19.99  |
| 19110L                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19126L                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19226L                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19357L                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19567L                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19096M                                              | 2000               | 137.89 | 2000                | 137.89 | 2000                | 137.89 | 2000                | 137.89 | 2000                | 137.89 | 2000                 | 137.89 | 2000                 | 137.89 |
| 19110M                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19126M                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19226M                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19357M                                              | 1180               | 81.35  | 1100                | 75.84  | 1020                | 70.32  | 940                 | 64.81  | 860                 | 59.29  | 780                  | 53.77  | 700                  | 48.26  |
| 19567M                                              | 840                | 57.91  | 800                 | 55.15  | 760                 | 52.40  | 720                 | 49.64  | 680                 | 46.88  | 640                  | 44.12  | 600                  | 41.36  |
| 19096H                                              | 4243               | 292.54 | 4054                | 279.51 | 3864                | 266.41 | 3675                | 253.38 | -                   | -      | -                    | -      | -                    | -      |
| 19110H                                              |                    |        |                     |        |                     |        |                     |        |                     |        |                      |        |                      |        |
| 19126H                                              | 7142               | 492.42 | 6928                | 477.66 | 6714                | 462.91 | 6500                | 448.15 |                     |        |                      |        |                      |        |
| 19226H                                              | 5228               | 360.45 | 4935                | 340.25 | 4642                | 320.05 | 4350                | 299.92 |                     |        |                      |        |                      |        |

# Pressure and Temperature

## Pressure and Temperature Rating of 19000 Series Valves



# Capacities

## Valve Capacity for ASME BPVC Section XIII (UV) – for Air

Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, showing 90 percent of actual capacity in accordance with latest ASME Code requirements. Units of ft<sup>3</sup>/min (m<sup>3</sup>/min) of air are at a temperature of 60°F (15.6°C).

| Orifice      |       | 19096 <sup>(1)</sup> |                     | 19110                |                     | 19126                |                     | 19226                |                     | 19357                |                     | 19567                |                     |
|--------------|-------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| Orifice Area |       | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     |
|              |       | 0.096                | 0.619               | 0.110                | 0.710               | 0.126                | 0.813               | 0.226                | 1.458               | 0.357                | 2.303               | 0.567                | 3.658               |
| Set Pressure |       | Orifice Capacity     |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |
| psig         | barg  | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min |
| 15           | 1.03  | 50                   | 1.41                | 57                   | 1.61                | 66                   | 1.86                | 119                  | 3.36                | 188                  | 5.32                | 298                  | 8.43                |
| 20           | 1.37  | 58                   | 1.64                | 66                   | 1.86                | 76                   | 2.15                | 137                  | 3.87                | 216                  | 6.11                | 344                  | 9.74                |
| 30           | 2.06  | 73                   | 2.06                | 84                   | 2.37                | 96                   | 2.71                | 173                  | 4.89                | 274                  | 7.75                | 435                  | 12.31               |
| 40           | 2.75  | 90                   | 2.54                | 104                  | 2.94                | 119                  | 3.36                | 213                  | 6.03                | 337                  | 9.54                | 536                  | 15.17               |
| 50           | 3.44  | 107                  | 3.02                | 123                  | 3.48                | 141                  | 3.99                | 253                  | 7.16                | 400                  | 11.32               | 636                  | 18                  |
| 60           | 4.13  | 124                  | 3.51                | 143                  | 4.04                | 163                  | 4.61                | 293                  | 8.29                | 464                  | 13.13               | 737                  | 20.86               |
| 70           | 4.82  | 141                  | 3.99                | 162                  | 4.58                | 186                  | 5.26                | 333                  | 9.42                | 527                  | 14.92               | 837                  | 23.70               |
| 80           | 5.51  | 158                  | 4.47                | 182                  | 5.15                | 208                  | 5.88                | 374                  | 10.59               | 590                  | 16.70               | 938                  | 26.56               |
| 90           | 6.20  | 175                  | 4.95                | 201                  | 5.69                | 230                  | 6.51                | 414                  | 11.72               | 654                  | 18.51               | 1038                 | 29.39               |
| 100          | 6.89  | 192                  | 5.43                | 221                  | 6.25                | 253                  | 7.16                | 454                  | 12.85               | 717                  | 20.30               | 1139                 | 32.25               |
| 120          | 8.27  | 226                  | 6.39                | 260                  | 7.36                | 297                  | 8.41                | 534                  | 15.12               | 843                  | 23.87               | 1340                 | 37.94               |
| 140          | 9.65  | 260                  | 7.36                | 299                  | 8.46                | 342                  | 9.68                | 614                  | 17.38               | 970                  | 27.46               | 1541                 | 43.63               |
| 160          | 11.03 | 295                  | 8.35                | 338                  | 9.57                | 387                  | 10.95               | 694                  | 19.65               | 1097                 | 31.06               | 1742                 | 49.32               |
| 180          | 12.41 | 329                  | 9.31                | 377                  | 10.67               | 431                  | 12.20               | 774                  | 21.91               | 1223                 | 34.63               | 1943                 | 55.01               |
| 200          | 13.78 | 363                  | 10.27               | 416                  | 11.77               | 476                  | 13.47               | 854                  | 24.18               | 1350                 | 38.22               | 2144                 | 60.71               |
| 220          | 15.16 | 397                  | 11.24               | 455                  | 12.88               | 521                  | 14.75               | 934                  | 26.44               | 1476                 | 41.79               | 2345                 | 66.40               |
| 240          | 16.54 | 431                  | 12.20               | 494                  | 13.98               | 565                  | 15.99               | 1015                 | 28.74               | 1603                 | 45.39               | 2546                 | 72.09               |
| 260          | 17.92 | 465                  | 13.16               | 533                  | 15.09               | 610                  | 17.27               | 1095                 | 31                  | 1729                 | 48.95               | 2747                 | 77.78               |
| 280          | 19.30 | 499                  | 14.13               | 572                  | 16.19               | 655                  | 18.54               | 1175                 | 33.27               | 1856                 | 52.55               | 2948                 | 83.47               |
| 300          | 20.68 | 533                  | 15.09               | 611                  | 17.30               | 699                  | 19.79               | 1255                 | 35.53               | 1983                 | 56.15               | 3149                 | 89.16               |
| 320          | 22.06 | 567                  | 16.05               | 650                  | 18.40               | 744                  | 21.06               | 1335                 | 37.80               | 2109                 | 59.72               | 3350                 | 94.86               |
| 340          | 23.44 | 601                  | 17.01               | 689                  | 19.51               | 789                  | 22.34               | 1415                 | 40.06               | 2236                 | 63.31               | 3551                 | 100.55              |
| 360          | 24.82 | 635                  | 17.98               | 728                  | 20.61               | 833                  | 23.58               | 1495                 | 42.33               | 2362                 | 66.88               | 3752                 | 106.24              |
| 380          | 26.20 | 669                  | 18.94               | 767                  | 21.71               | 878                  | 24.86               | 1575                 | 44.59               | 2489                 | 70.48               | 3953                 | 111.93              |
| 400          | 27.57 | 703                  | 19.90               | 806                  | 22.82               | 923                  | 26.13               | 1656                 | 46.89               | 2615                 | 74.04               | 4154                 | 117.62              |
| 420          | 28.95 | 737                  | 20.86               | 845                  | 23.92               | 967                  | 27.38               | 1736                 | 49.15               | 2742                 | 77.64               | 4355                 | 123.31              |
| 440          | 30.33 | 771                  | 21.83               | 884                  | 25.03               | 1012                 | 28.65               | 1816                 | 51.42               | 2869                 | 81.24               | 4556                 | 129.01              |
| 460          | 31.71 | 805                  | 22.79               | 923                  | 26.13               | 1057                 | 29.93               | 1896                 | 53.68               | 2995                 | 84.80               | 4757                 | 134.70              |
| 480          | 33.09 | 839                  | 23.75               | 962                  | 27.24               | 1101                 | 31.17               | 1976                 | 55.95               | 3122                 | 88.40               | 4958                 | 140.39              |
| 500          | 34.47 | 873                  | 24.72               | 1001                 | 28.34               | 1146                 | 32.45               | 2056                 | 58.21               | 3248                 | 91.97               | 5159                 | 146.08              |

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.90 barg).

# Capacities

## Valve Capacity for ASME BPVC Section XIII (UV) – for Air

Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, showing 90 percent of actual capacity in accordance with latest ASME Code requirements. Units of ft<sup>3</sup>/min (m<sup>3</sup>/min) of air are at a temperature of 60°F (15.6°C).

| Orifice      |        | 19096 <sup>(1)</sup> |                     | 19110                |                     | 19126                |                     | 19226                |                     | 19357                |                     | 19567                |                     |
|--------------|--------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|----------------------|---------------------|
| Orifice Area |        | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     | in <sup>2</sup>      | cm <sup>2</sup>     |
|              |        | 0.096                | 0.619               | 0.110                | 0.710               | 0.126                | 0.813               | 0.226                | 1.458               | 0.357                | 2.303               | 0.567                | 3.658               |
| Set Pressure |        | Orifice Capacity     |                     |                      |                     |                      |                     |                      |                     |                      |                     |                      |                     |
| psig         | barg   | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min | ft <sup>3</sup> /min | m <sup>3</sup> /min |
| 600          | 41.36  | 1043                 | 29.53               | 1196                 | 33.86               | 1370                 | 38.79               | 2457                 | 69.57               | 3881                 | 109.89              | 6165                 | 174.57              |
| 700          | 48.26  | 1213                 | 34.34               | 1391                 | 39.38               | 1593                 | 45.10               | 2857                 | 80.90               | 4514                 | 127.82              | 7170                 | 203.03              |
| 750          | 51.71  | 1299                 | 36.78               | 1488                 | 42.13               | 1705                 | 48.28               | 3058                 | 86.59               | 4830                 | 136.77              | 7672                 | 217.24              |
| 800          | 55.15  | 1384                 | 39.19               | 1586                 | 44.91               | 1816                 | 51.42               | 3258                 | 92.25               | 5147                 | 145.74              | 8175                 | 231.49              |
| 900          | 62.05  | 1554                 | 44                  | 1781                 | 50.43               | 2040                 | 57.76               | 3659                 | 103.61              | 5780                 | 163.67              | 9180                 | 259.94              |
| 1000         | 68.94  | 1724                 | 48.81               | 1976                 | 55.95               | 2263                 | 64.08               | 4059                 | 114.93              | 6413                 | 181.59              | 10185                | 288.40              |
| 1100         | 75.84  | 1894                 | 53.63               | 2171                 | 61.47               | 2486                 | 70.39               | 4460                 | 126.29              | 7045                 | 199.49              | -                    | -                   |
| 1200         | 82.73  | 2064                 | 58.44               | 2366                 | 66.99               | 2710                 | 76.73               | 4861                 | 137.64              | 7678                 | 217.41              | -                    | -                   |
| 1300         | 89.63  | 2235                 | 63.28               | 2561                 | 72.51               | 2933                 | 83.05               | 5261                 | 148.97              | 8311                 | 235.34              | -                    | -                   |
| 1400         | 96.52  | 2405                 | 68.10               | 2756                 | 78.04               | 3156                 | 89.36               | 5662                 | 160.33              | 8944                 | 253.26              | -                    | -                   |
| 1500         | 103.42 | 2575                 | 72.91               | 2951                 | 83.56               | 3380                 | 95.71               | 6062                 | 171.65              | 9577                 | 271.19              | -                    | -                   |
| 1600         | 110.31 | 2745                 | 77.72               | 3146                 | 89.08               | 3603                 | 102.02              | 6463                 | 183.01              | -                    | -                   | -                    | -                   |
| 1700         | 117.21 | 2915                 | 82.54               | 3341                 | 94.60               | 3826                 | 108.34              | 6864                 | 194.36              | -                    | -                   | -                    | -                   |
| 1800         | 124.10 | 3085                 | 87.35               | 3535                 | 100.10              | 4050                 | 114.68              | 7264                 | 205.69              | -                    | -                   | -                    | -                   |
| 1900         | 131    | 3256                 | 92.19               | 3730                 | 105.62              | 4273                 | 120.99              | 7665                 | 217.04              | -                    | -                   | -                    | -                   |
| 2000         | 137.89 | 3426                 | 97.01               | 3925                 | 111.14              | 4497                 | 127.34              | 8066                 | 228.40              | -                    | -                   | -                    | -                   |
| 2500         | 172.36 | 4277                 | 121.11              | 4900                 | 138.75              | 5613                 | 158.94              | 10069                | 285.12              | -                    | -                   | -                    | -                   |
| 3000         | 206.84 | 5128                 | 145.20              | 5875                 | 166.36              | 6730                 | 190.57              | 12072                | 341.84              | -                    | -                   | -                    | -                   |
| 3500         | 241.31 | 5979                 | 169.30              | 6850                 | 193.97              | 7847                 | 222.20              | 14075                | 398.55              | -                    | -                   | -                    | -                   |
| 4000         | 275.79 | 6829                 | 193.37              | 7825                 | 221.57              | 8964                 | 253.83              | 16078                | 455.27              | -                    | -                   | -                    | -                   |
| 4500         | 310.26 | 7680                 | 217.47              | 8800                 | 249.18              | 10081                | 285.46              | 18081                | 511.99              | -                    | -                   | -                    | -                   |
| 5000         | 344.73 | 8531                 | 241.57              | 9775                 | 276.79              | 11197                | 317.06              | 20085                | 568.74              | -                    | -                   | -                    | -                   |
| 5500         | 379.21 | -                    | -                   | -                    | -                   | 12314                | 348.69              | 22088                | 625.46              | -                    | -                   | -                    | -                   |
| 6000         | 413.68 | -                    | -                   | -                    | -                   | 13431                | 380.32              | 24091                | 682.18              | -                    | -                   | -                    | -                   |
| 6400         | 441.26 | -                    | -                   | -                    | -                   | 14324                | 405.61              | 25693                | 727.54              | -                    | -                   | -                    | -                   |
| 6500         | 448.15 | -                    | -                   | -                    | -                   | 14548                | 411.95              | -                    | -                   | -                    | -                   | -                    | -                   |
| 7000         | 482.63 | -                    | -                   | -                    | -                   | 15665                | 443.58              | -                    | -                   | -                    | -                   | -                    | -                   |
| 7500         | 517.10 | -                    | -                   | -                    | -                   | 16781                | 475.18              | -                    | -                   | -                    | -                   | -                    | -                   |
| 8000         | 551.58 | -                    | -                   | -                    | -                   | 17898                | 506.81              | -                    | -                   | -                    | -                   | -                    | -                   |

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.90 barg).

# Capacities

## Valve Capacity for ASME BPVC Section XIII (UV) – for Saturated Steam

Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, showing 90 percent of actual capacity in accordance with latest ASME Code requirements.

| Orifice           |        | 19096 <sup>(1)</sup> |                 | 19110           |                 | 19126           |                 | 19226           |                 | 19357           |                 | 19567           |                 |
|-------------------|--------|----------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Orifice Area      |        | in <sup>2</sup>      | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> |
|                   |        | 0.096                | 0.619           | 0.110           | 0.710           | 0.126           | 0.813           | 0.226           | 1.458           | 0.357           | 2.303           | 0.567           | 3.658           |
| Set Pressure      |        | Orifice Capacity     |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |                 |
| psig              | barg   | lb/hr                | kg/hr           | lb/hr           | kg/hr           | lb/hr           | kg/hr           | lb/hr           | kg/hr           | lb/hr           | kg/hr           | lb/hr           | kg/hr           |
| 15                | 1.03   | 141                  | 63              | 162             | 73              | 186             | 84              | 334             | 151             | 527             | 239             | 838             | 380             |
| 20                | 1.37   | 163                  | 73              | 187             | 84              | 214             | 97              | 385             | 174             | 608             | 275             | 966             | 438             |
| 30                | 2.06   | 207                  | 93              | 237             | 107             | 271             | 122             | 487             | 220             | 769             | 348             | 1222            | 554             |
| 40                | 2.75   | 254                  | 115             | 291             | 131             | 334             | 151             | 599             | 271             | 947             | 429             | 1504            | 682             |
| 50                | 3.44   | 302                  | 136             | 346             | 156             | 397             | 180             | 712             | 322             | 1125            | 510             | 1786            | 810             |
| 60                | 4.13   | 350                  | 158             | 401             | 181             | 459             | 208             | 824             | 373             | 1302            | 590             | 2068            | 938             |
| 70                | 4.82   | 398                  | 180             | 456             | 206             | 522             | 236             | 937             | 425             | 1480            | 671             | 2351            | 1066            |
| 80                | 5.51   | 445                  | 201             | 510             | 231             | 585             | 265             | 1049            | 475             | 1657            | 751             | 2633            | 1194            |
| 90                | 6.20   | 493                  | 223             | 565             | 256             | 647             | 293             | 1161            | 526             | 1835            | 832             | 2915            | 1322            |
| 100               | 6.89   | 541                  | 245             | 620             | 281             | 710             | 322             | 1274            | 577             | 2012            | 912             | 3197            | 1450            |
| 120               | 8.27   | 636                  | 288             | 729             | 330             | 835             | 378             | 1499            | 679             | 2368            | 1074            | 3761            | 1705            |
| 140               | 9.65   | 732                  | 332             | 839             | 380             | 961             | 435             | 1723            | 781             | 2723            | 1235            | 4325            | 1961            |
| 160               | 11.03  | 827                  | 375             | 948             | 430             | 1086            | 492             | 1948            | 883             | 3078            | 1396            | 4889            | 2217            |
| 180               | 12.41  | 923                  | 418             | 1057            | 479             | 1211            | 549             | 2173            | 985             | 3433            | 1557            | 5453            | 2473            |
| 200               | 13.78  | 1018                 | 461             | 1167            | 529             | 1337            | 606             | 2398            | 1087            | 3788            | 1718            | 6017            | 2729            |
| 220               | 15.16  | 1114                 | 505             | 1276            | 578             | 1462            | 663             | 2623            | 1189            | 4143            | 1879            | 6581            | 2985            |
| 240               | 16.54  | 1209                 | 548             | 1386            | 628             | 1587            | 719             | 2848            | 1291            | 4498            | 2040            | 7145            | 3240            |
| 260               | 17.92  | 1305                 | 591             | 1495            | 678             | 1713            | 777             | 3072            | 1393            | 4854            | 2201            | 7709            | 3496            |
| 280               | 19.30  | 1400                 | 635             | 1605            | 728             | 1838            | 833             | 3297            | 1495            | 5209            | 2362            | 8273            | 3752            |
| 300               | 20.68  | 1496                 | 678             | 1714            | 777             | 1963            | 890             | 3522            | 1597            | 5564            | 2523            | 8837            | 4008            |
| 320               | 22.06  | 1591                 | 721             | 1823            | 826             | 2089            | 947             | 3747            | 1699            | 5919            | 2684            | 9401            | 4264            |
| 340               | 23.44  | 1687                 | 765             | 1933            | 876             | 2214            | 1004            | 3972            | 1801            | 6274            | 2845            | 9965            | 4520            |
| 360               | 24.82  | 1782                 | 808             | 2042            | 926             | 2339            | 1060            | 4196            | 1903            | 6629            | 3006            | 10529           | 4775            |
| 380               | 26.20  | 1878                 | 851             | 2152            | 976             | 2465            | 1118            | 4421            | 2005            | 6984            | 3167            | 11093           | 5031            |
| 400               | 27.57  | 1973                 | 894             | 2261            | 1025            | 2590            | 1174            | 4646            | 2107            | 7339            | 3328            | 11657           | 5287            |
| 420               | 28.95  | 2069                 | 938             | 2371            | 1075            | 2715            | 1231            | 4871            | 2209            | 7695            | 3490            | 12221           | 5543            |
| 440               | 30.33  | 2164                 | 981             | 2480            | 1124            | 2841            | 1288            | 5096            | 2311            | 8050            | 3651            | 12785           | 5799            |
| 460               | 31.71  | 2260                 | 1025            | 2589            | 1174            | 2966            | 1345            | 5321            | 2413            | 8405            | 3812            | 13349           | 6055            |
| 480               | 33.09  | 2355                 | 1068            | 2699            | 1224            | 3091            | 1402            | 5545            | 2515            | 8760            | 3973            | 13913           | 6310            |
| 500               | 34.47  | 2451                 | 1111            | 2808            | 1273            | 3217            | 1459            | 5770            | 2617            | 9115            | 4134            | 14477           | 6566            |
| 600               | 41.36  | 2928                 | 1328            | 3355            | 1521            | 3843            | 1743            | 6894            | 3127            | 10891           | 4940            | 17297           | 7845            |
| 700               | 48.26  | 3406                 | 1544            | 3902            | 1769            | 4470            | 2027            | 8018            | 3636            | 12666           | 5745            | 20118           | 9125            |
| 750               | 51.71  | 3644                 | 1652            | 4176            | 1894            | 4784            | 2169            | 8580            | 3891            | 13554           | 6147            | 21528           | 9764            |
| 800               | 55.15  | 3883                 | 1761            | 4450            | 2018            | 5097            | 2311            | 9142            | 4146            | 14442           | 6550            | 22938           | 10404           |
| 900               | 62.05  | 4361                 | 1978            | 4997            | 2266            | 5724            | 2596            | 10267           | 4657            | 16218           | 7356            | 25758           | 11683           |
| 1000              | 68.94  | 4838                 | 2194            | 5544            | 2514            | 6350            | 2880            | 11391           | 5166            | 17994           | 8161            | 28578           | 12962           |
| 1100              | 75.84  | 5316                 | 2411            | 6091            | 2762            | 6977            | 3164            | 12515           | 5676            | 19769           | 8967            | -               | -               |
| 1200              | 82.73  | 5793                 | 2627            | 6638            | 3010            | 7604            | 3449            | 13639           | 6186            | 21545           | 9772            | -               | -               |
| 1300              | 89.63  | 6271                 | 2844            | 7185            | 3259            | 8230            | 3733            | 14763           | 6696            | 23321           | 10578           | -               | -               |
| 1400              | 96.52  | 6748                 | 3060            | 7732            | 3507            | 8857            | 4017            | 15887           | 7206            | 25096           | 11383           | -               | -               |
| 1423 <sup>2</sup> | 98.11  | 6858                 | 3110            | 7858            | 3564            | 9001            | 4082            | 16146           | 7323            | 25505           | 11568           | -               | -               |
| 1500              | 103.42 | 7260                 | 3293            | 8319            | 3773            | 9529            | 4322            | 17093           | 7753            | 27001           | 12247           | -               | -               |
| 1600              | 110.31 | 7792                 | 3534            | 8928            | 4049            | 10227           | 4638            | 18343           | 8320            | -               | -               | -               | -               |
| 1700              | 117.21 | 8333                 | 3779            | 9549            | 4331            | 10938           | 4961            | 19619           | 8899            | -               | -               | -               | -               |
| 1800              | 124.10 | 8888                 | 4031            | 10184           | 4619            | 11665           | 5291            | 20923           | 9490            | -               | -               | -               | -               |
| 1900              | 131    | 9455                 | 4288            | 10834           | 4914            | 12410           | 5629            | 22260           | 10096           | -               | -               | -               | -               |
| 2000              | 137.89 | 10039                | 4553            | 11503           | 5217            | 13176           | 5976            | 23633           | 10719           | -               | -               | -               | -               |
| 2500              | 172.36 | 13285                | 6025            | 15222           | 6904            | 17436           | 7908            | 31275           | 14186           | -               | -               | -               | -               |
| 2903 <sup>3</sup> | 200.15 | 16611                | 7534            | 19033           | 8633            | 21802           | 9889            | 39106           | 17738           | -               | -               | -               | -               |

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.9 barg).

2. The following Napier Factor is applied to the capacity of pressures greater than 1423 psig (98.11 barg):  $\left[ \frac{0.1906 \times P_{\text{psig}} - 1000}{0.2292 \times P_{\text{psig}} - 1061} \right]$

3. Maximum permissible set pressure on steam is 2903 psig (200.15). Value has been interpolated.

# Capacities

## Valve Capacity for ASME BPVC Section XIII (UV) – for Water

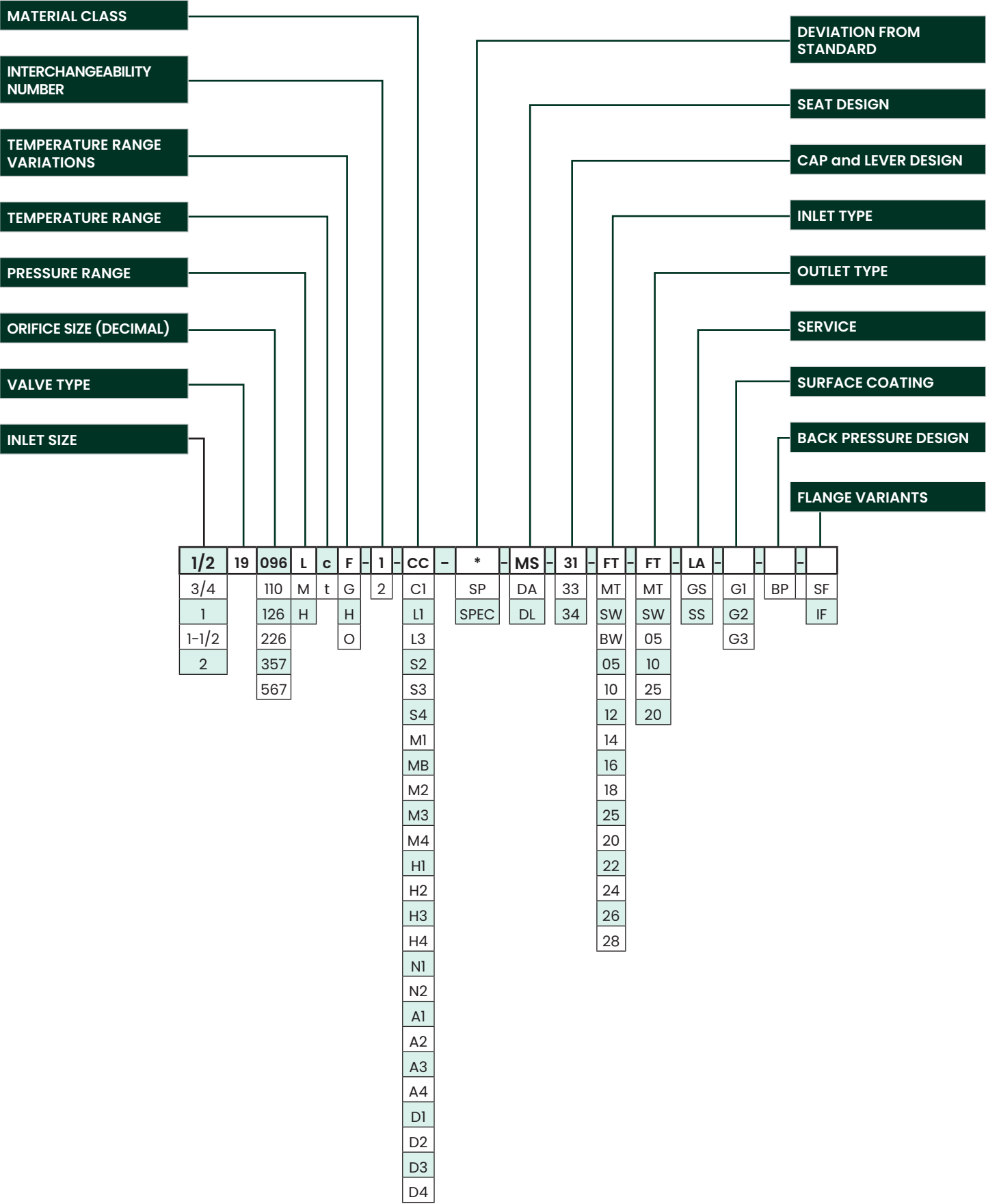
Based at 10 percent overpressure or 3 psig (0.21 barg), whichever is greater, with zero backpressure. Units of gal/min (L/min) at 70°F (21.1°C), showing 90 percent average capacity in accordance with latest ASME Code requirements.

| Orifice        |        | 19096 <sup>(1)</sup> |                 | 19110           |         |                 |       | 19126           |                 | 19226           |                 | 19357           |                 | 19567           |                 |
|----------------|--------|----------------------|-----------------|-----------------|---------|-----------------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Orifice Area   |        | in <sup>2</sup>      | cm <sup>2</sup> | in <sup>2</sup> |         | cm <sup>2</sup> |       | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> | in <sup>2</sup> | cm <sup>2</sup> |
|                |        | 0.096                | 0.619           | 0.110           |         | 0.710           |       | 0.126           | 0.813           | 0.226           | 1.458           | 0.357           | 2.303           | 0.567           | 3.658           |
| Set Pressure   |        | Orifice Capacity     |                 |                 |         |                 |       |                 |                 |                 |                 |                 |                 |                 |                 |
| Pressure Range |        | L/M/H                | L/M/H           | L               | M/H     | L               | M/H   | L/M/H           | L/M/H           | L/M/H           | L/M/H           | L/M/H           | L/M/H           | L/M/H           | L/M/H           |
| psig           | barg   | gal/min              | L/min           | gal/min         | gal/min | L/min           | L/min | gal/min         | L/min           | gal/min         | L/min           | gal/min         | L/min           | gal/min         | L/min           |
| 15             | 1.03   | 10                   | 38              | 11              | 9       | 42              | 34    | 13              | 49              | 24              | 91              | 38              | 144             | 61              | 231             |
| 20             | 1.37   | 11                   | 42              | 13              | 10      | 49              | 37    | 15              | 57              | 27              | 102             | 43              | 163             | 69              | 261             |
| 30             | 2.06   | 14                   | 53              | 16              | 12      | 61              | 45    | 18              | 68              | 33              | 125             | 52              | 197             | 83              | 314             |
| 40             | 2.75   | 16                   | 61              | 18              | 15      | 68              | 56    | 21              | 79              | 38              | 144             | 60              | 227             | 96              | 363             |
| 50             | 3.44   | 18                   | 68              | 20              | 16      | 76              | 60    | 23              | 87              | 42              | 159             | 67              | 254             | 107             | 405             |
| 60             | 4.13   | 19                   | 72              | 22              | 18      | 83              | 68    | 26              | 98              | 46              | 174             | 74              | 280             | 117             | 443             |
| 70             | 4.82   | 21                   | 79              | 24              | 19      | 91              | 71    | 28              | 106             | 50              | 189             | 80              | 303             | 127             | 481             |
| 80             | 5.51   | 23                   | 87              | 26              | 21      | 98              | 79    | 30              | 114             | 54              | 204             | 85              | 322             | 136             | 515             |
| 90             | 6.20   | 24                   | 91              | 27              | 22      | 102             | 83    | 32              | 121             | 57              | 216             | 90              | 341             | 144             | 545             |
| 100            | 6.89   | 25                   | 95              | 29              | 23      | 110             | 87    | 33              | 125             | 60              | 227             | 95              | 360             | 152             | 575             |
| 120            | 8.27   | 28                   | 106             | 32              | 25      | 121             | 94    | 37              | 140             | 66              | 250             | 104             | 394             | 166             | 628             |
| 140            | 9.65   | 30                   | 114             | 34              | 28      | 129             | 105   | 39              | 148             | 71              | 269             | 113             | 428             | 179             | 678             |
| 160            | 11.03  | 32                   | 121             | 37              | 30      | 140             | 113   | 42              | 159             | 76              | 288             | 121             | 458             | 192             | 727             |
| 180            | 12.41  | 34                   | 129             | 39              | 31      | 148             | 117   | 45              | 170             | 81              | 307             | 128             | 485             | 204             | 772             |
| 200            | 13.78  | 36                   | 136             | 41              | 33      | 155             | 124   | 47              | 178             | 85              | 322             | 135             | 511             | 215             | 814             |
| 220            | 15.16  | 38                   | 144             | 43              | 35      | 163             | 132   | 50              | 189             | 89              | 337             | 142             | 538             | 225             | 852             |
| 240            | 16.54  | 39                   | 148             | 45              | 36      | 170             | 136   | 52              | 197             | 93              | 352             | 148             | 560             | 235             | 890             |
| 260            | 17.92  | 41                   | 155             | 47              | 38      | 178             | 143   | 54              | 204             | 97              | 367             | 154             | 583             | 245             | 927             |
| 280            | 19.30  | 43                   | 163             | 49              | 39      | 185             | 147   | 56              | 212             | 101             | 382             | 160             | 606             | 254             | 961             |
| 300            | 20.68  | 44                   | 167             | -               | 41      | -               | 155   | 58              | 220             | 104             | 394             | 165             | 625             | 263             | 996             |
| 320            | 22.06  | 46                   | 174             | -               | 42      | -               | 158   | 60              | 227             | 108             | 409             | 171             | 647             | 272             | 1030            |
| 340            | 23.44  | 47                   | 178             | -               | 43      | -               | 162   | 62              | 235             | 111             | 420             | 176             | 666             | 280             | 1060            |
| 360            | 24.82  | 48                   | 182             | -               | 45      | -               | 170   | 64              | 242             | 115             | 435             | 181             | 685             | 288             | 1090            |
| 380            | 26.20  | 50                   | 189             | -               | 46      | -               | 174   | 65              | 246             | 118             | 447             | 186             | 704             | 296             | 1120            |
| 400            | 27.57  | 51                   | 193             | -               | 47      | -               | 177   | 67              | 254             | 121             | 458             | 191             | 723             | 304             | 1151            |
| 420            | 28.95  | 52                   | 197             | -               | 48      | -               | 181   | 69              | 261             | 124             | 469             | 196             | 742             | 311             | 1177            |
| 440            | 30.33  | 54                   | 204             | -               | 49      | -               | 185   | 70              | 265             | 127             | 481             | 200             | 757             | 319             | 1208            |
| 460            | 31.71  | 55                   | 208             | -               | 50      | -               | 189   | 72              | 273             | 130             | 492             | 205             | 776             | 326             | 1234            |
| 480            | 33.09  | 56                   | 212             | -               | 51      | -               | 193   | 74              | 280             | 132             | 500             | 209             | 791             | 333             | 1261            |
| 500            | 34.47  | 57                   | 216             | -               | 53      | -               | 200   | 75              | 284             | 135             | 511             | 214             | 810             | 340             | 1287            |
| 600            | 41.36  | 63                   | 238             | -               | 58      | -               | 219   | 82              | 310             | 148             | 560             | 234             | 886             | 372             | 1408            |
| 700            | 48.26  | 68                   | 257             | -               | 62      | -               | 234   | 89              | 337             | 160             | 606             | 253             | 958             | 402             | 1522            |
| 750            | 51.71  | 70                   | 265             | -               | 65      | -               | 246   | 92              | 348             | 166             | 628             | 262             | 992             | 416             | 1575            |
| 800            | 55.15  | 72                   | 273             | -               | 67      | -               | 253   | 95              | 360             | 171             | 647             | 270             | 1022            | 430             | 1628            |
| 900            | 62.05  | 77                   | 291             | -               | 71      | -               | 268   | 101             | 382             | 181             | 685             | 287             | 1086            | 456             | 1726            |
| 1000           | 68.94  | 81                   | 307             | -               | 75      | -               | 283   | 106             | 401             | 191             | 723             | 302             | 1143            | 480             | 1817            |
| 1100           | 75.84  | 85                   | 322             | -               | 78      | -               | 295   | 112             | 424             | 201             | 761             | 317             | 1200            | -               | -               |
| 1200           | 82.73  | 89                   | 337             | -               | 82      | -               | 310   | 117             | 443             | 209             | 791             | 331             | 1253            | -               | -               |
| 1300           | 89.63  | 92                   | 348             | -               | 85      | -               | 321   | 121             | 458             | 218             | 825             | 345             | 1306            | -               | -               |
| 1400           | 96.52  | 96                   | 363             | -               | 88      | -               | 333   | 126             | 477             | 226             | 856             | 358             | 1355            | -               | -               |
| 1500           | 103.42 | 99                   | 375             | -               | 91      | -               | 344   | 130             | 492             | 234             | 886             | 370             | 1401            | -               | -               |
| 1600           | 110.31 | 102                  | 386             | -               | 94      | -               | 355   | 135             | 511             | 242             | 916             | -               | -               | -               | -               |
| 1700           | 117.21 | 106                  | 401             | -               | 97      | -               | 367   | 139             | 526             | 249             | 943             | -               | -               | -               | -               |
| 1800           | 124.10 | 109                  | 413             | -               | 100     | -               | 378   | 143             | 541             | 257             | 973             | -               | -               | -               | -               |
| 1900           | 131    | 112                  | 424             | -               | 103     | -               | 389   | 147             | 556             | 264             | 999             | -               | -               | -               | -               |
| 2000           | 137.89 | 115                  | 435             | -               | 106     | -               | 401   | 151             | 572             | 271             | 1026            | -               | -               | -               | -               |
| 2500           | 172.36 | 128                  | 485             | -               | 118     | -               | 446   | 168             | 636             | 303             | 1147            | -               | -               | -               | -               |
| 3000           | 206.84 | 141                  | 534             | -               | 129     | -               | 488   | 185             | 700             | 332             | 1257            | -               | -               | -               | -               |
| 3500           | 241.31 | 152                  | 575             | -               | 140     | -               | 529   | 199             | 753             | 358             | 1355            | -               | -               | -               | -               |
| 4000           | 275.79 | 162                  | 613             | -               | 150     | -               | 567   | 213             | 806             | 383             | 1450            | -               | -               | -               | -               |
| 4500           | 310.26 | 172                  | 651             | -               | 159     | -               | 601   | 226             | 856             | 406             | 1537            | -               | -               | -               | -               |
| 5000           | 344.73 | 182                  | 689             | -               | 167     | -               | 632   | 238             | 901             | 428             | 1620            | -               | -               | -               | -               |
| 5500           | 379.21 | -                    | -               | -               | -       | -               | -     | 250             | 946             | 449             | 1700            | -               | -               | -               | -               |
| 6000           | 413.68 | -                    | -               | -               | -       | -               | -     | 261             | 988             | 469             | 1775            | -               | -               | -               | -               |
| 6400           | 441.26 | -                    | -               | -               | -       | -               | -     | 270             | 1022            | 484             | 1832            | -               | -               | -               | -               |
| 6500           | 448.15 | -                    | -               | -               | -       | -               | -     | 272             | 1030            | -               | -               | -               | -               | -               | -               |
| 7000           | 482.63 | -                    | -               | -               | -       | -               | -     | 282             | 1067            | -               | -               | -               | -               | -               | -               |
| 7500           | 517.10 | -                    | -               | -               | -       | -               | -     | 292             | 1105            | -               | -               | -               | -               | -               | -               |
| 8000           | 551.58 | -                    | -               | -               | -       | -               | -     | 302             | 1143            | -               | -               | -               | -               | -               | -               |

1. 19000M-BP set pressure range is 50 to 2000 psig (3.45 to 137.90 barg).

2. The following Napier Factor is applied to the capacity of pressures greater than 1423 psig (98.11 barg):  $\left[ \frac{0.1906 \times P_{\text{psia}} - 1000}{0.2292 \times P_{\text{psia}} - 1061} \right]$

# Safety Valve Configuration Code



# Safety Valve Configuration Code

| Orifice Area |                 |                 |
|--------------|-----------------|-----------------|
| Designation  | Area            |                 |
|              | in <sup>2</sup> | cm <sup>2</sup> |
| 096          | 0.096           | 0.619           |
| 110          | 0.110           | 0.710           |
| 126          | 0.126           | 0.813           |
| 226          | 0.226           | 1.458           |
| 357          | 0.357           | 2.303           |
| 567          | 0.567           | 3.658           |

| Pressure Range |       |        |      |        |
|----------------|-------|--------|------|--------|
| Designation    | Range |        |      |        |
|                | min.  |        | max. |        |
|                | psig  | barg   | psig | barg   |
| L              | 5     | 0.34   | 290  | 19.99  |
| M              | 291   | 20.06  | 2000 | 137.90 |
| H              | 2001  | 137.96 | 8000 | 551.58 |

| Temperature Range Variations |                         |
|------------------------------|-------------------------|
| Designation                  | Range                   |
| F                            | All Temps. (MS)         |
| G                            | > 250°F (121°C) (SS/MS) |
| H                            | > 250°F (121°C) (SG/MS) |
| O                            | DA (SOFT SEAT)          |

| Surface Coating |                                   |
|-----------------|-----------------------------------|
| Designation     | Description                       |
| G1              | Glide-Aloy™ Disc Holder           |
| G2              | Glide-Aloy™ Guide                 |
| G3              | Glide-Aloy™ Disc Holder and Guide |

| Seat Design |                                                                                |
|-------------|--------------------------------------------------------------------------------|
| Designation | Description                                                                    |
| MS          | Metal Seat                                                                     |
| DA          | Soft Seat                                                                      |
| DL          | Soft Seat Liquid Service Pressures ≤ 100 psig (6.89 barg) (Except 110 Orifice) |

| Back Pressure Design |                                                                                          |
|----------------------|------------------------------------------------------------------------------------------|
| Designation          | Description                                                                              |
| BP                   | Medium Pressure [50 - 2000 psig (3.45-137.90 barg)]<br>Maximum B/P 400 psig (27.58 barg) |

| Service     |             |
|-------------|-------------|
| Designation | Description |
| GS          | Gas, Air    |
| LA          | Liquid      |
| SS          | Steam       |

| Temperature Range |                 |
|-------------------|-----------------|
| Designation       | Class           |
| c                 | ≤ 800°F (427°C) |
| t                 | > 800°F (427°C) |

| Cap and Lever Design |             |
|----------------------|-------------|
| Designation          | Description |
| 31                   | Screwed     |
| 33                   | Packed      |
| 34                   | Plain       |

| Material Class |                                                          |
|----------------|----------------------------------------------------------|
| Designation    | Variation                                                |
| CC             | Standard Material                                        |
| C1             | Ambient Temp. to -50°F (-45.6°C) [LCC Construction]      |
| L1             | Low Temperature Service [-21 to -100°F (-29 to -73°C)]   |
| L3             | Low Temperature Service [-101 to -450°F (-74 to -268°C)] |
| S2             | Stainless Steel [Internals, Except Spring Assembly]      |
| S3             | Stainless Steel [All Except Spring Assembly]             |
| S4             | Stainless Steel [Complete Valve]                         |
| M1             | Monel [Base and Disc]                                    |
| MB             | Monel [M1+Disc Holder]                                   |
| M2             | Monel [Internals, Except Spring Assembly]                |
| M3             | Monel [All Except Spring Assembly]                       |
| M4             | Monel [Complete Valve]                                   |
| H1             | Hastelloy [Base and Disc]                                |
| H2             | Hastelloy [Internals, Except Spring Assembly]            |
| H3             | Hastelloy [All Except Spring Assembly]                   |
| H4             | Hastelloy [Complete Valve]                               |
| N1             | Sour Gas                                                 |
| N2             | Sour Gas (Stainless Steel)                               |
| A1             | Alloy 20 [Base and Disc]                                 |
| A2             | Alloy 20 [Internals, Except Spring Assembly]             |
| A3             | Alloy 20 [All Except Spring Assembly]                    |
| A4             | Alloy 20 [Complete Valve]                                |
| D1             | Duplex [Base and Disc]                                   |
| D2             | Duplex [Internals, Except Spring Assembly]               |
| D3             | Duplex [All Except Spring Assembly]                      |
| D4             | Duplex [Complete Valve]                                  |

# Safety Valve Configuration Code

| Inlet Connection Type |                           |
|-----------------------|---------------------------|
| Designation           | Variation                 |
| FT                    | Female NPT                |
| MT                    | Male NPT                  |
| SW                    | Socket Weld               |
| BW                    | Buttweld                  |
| 05                    | 150# Flanged Raised Face  |
| 10                    | 300# Flanged Raised Face  |
| 12                    | 600# Flanged Raised Face  |
| 14                    | 900# Flanged Raised Face  |
| 16                    | 1500# Flanged Raised Face |
| 18                    | 2500# Flanged Raised Face |
| 25                    | 150# Flanged Ring Joint   |
| 20                    | 300# Flanged Ring Joint   |
| 22                    | 600# Flanged Ring Joint   |
| 24                    | 900# Flanged Ring Joint   |
| 26                    | 1500# Flanged Ring Joint  |
| 28                    | 2500# Flanged Ring Joint  |

| Flange Variants |                                 |
|-----------------|---------------------------------|
| Designation     | Variation                       |
| SF              | Socket Weld Flange with Locknut |
| IF              | Integral Cast Flange            |

**Note:** The standard flanged default variation is a slip-on flange.

| Outlet Connection Type |                          |
|------------------------|--------------------------|
| Designation            | Variation                |
| FT                     | Female NPT               |
| MT                     | Male NPT                 |
| SW                     | Socket Weld              |
| 05                     | 150# Flanged Raised Face |
| 10                     | 300# Flanged Raised Face |
| 25                     | 150# Flanged Ring Joint  |
| 20                     | 300# Flanged Ring Joint  |

| Interchangeability |                                                            |
|--------------------|------------------------------------------------------------|
| Designation        | Valve Type                                                 |
| 1                  | Existing Soft Seat (DA and DL)<br>Previous Metal Seat (MS) |
| 2                  | Existing Metal Seat (MS)                                   |

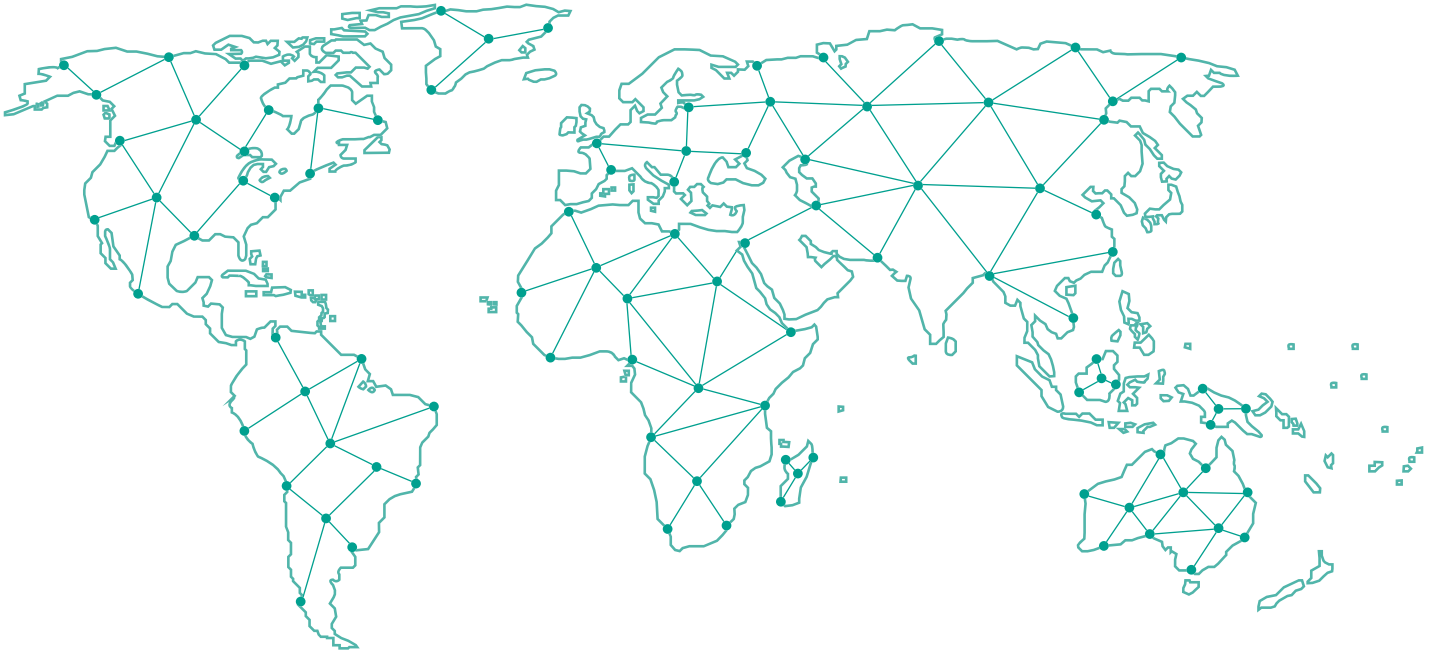
# Ordering a 19000 Series Safety Relief Valve

## Specification Sheet

|                             |                                                                                                                                                                                                                                  |                     |  |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--|
|                             |                                                                                                                                                                                                                                  | Page _____ of _____ |  |
| Requisition No.             | _____                                                                                                                                                                                                                            |                     |  |
| Job No.                     | _____                                                                                                                                                                                                                            |                     |  |
| Date                        | _____                                                                                                                                                                                                                            |                     |  |
| Revised By                  | _____                                                                                                                                                                                                                            |                     |  |
| <b>General</b>              |                                                                                                                                                                                                                                  |                     |  |
| 1.                          | Item Number:                                                                                                                                                                                                                     |                     |  |
| 2.                          | Tag Number:                                                                                                                                                                                                                      |                     |  |
| 3.                          | Service, Line or Equipment No:                                                                                                                                                                                                   |                     |  |
| 4.                          | Number Required:                                                                                                                                                                                                                 |                     |  |
| <b>Basis of Selection</b>   |                                                                                                                                                                                                                                  |                     |  |
| 5.                          | <b>Code:</b><br><input type="checkbox"/> ASME Sec. III<br><input type="checkbox"/> ASME Sec. XIII (UV)<br><input type="checkbox"/> OTHER Specify:                                                                                |                     |  |
| 6.                          | <input type="checkbox"/> Fire <input type="checkbox"/> OTHER Specify:                                                                                                                                                            |                     |  |
| 7.                          | Rupture Disk: <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                                                                                                           |                     |  |
| <b>Valve Design</b>         |                                                                                                                                                                                                                                  |                     |  |
| 8.                          | Type: Safety Relief                                                                                                                                                                                                              |                     |  |
| 9.                          | <b>Design:</b><br><input type="checkbox"/> Metal Seat <input type="checkbox"/> Resilient Seat<br><input type="checkbox"/> API 527 Seat Tightness<br><input type="checkbox"/> OTHER Specify:                                      |                     |  |
| <b>Connections</b>          |                                                                                                                                                                                                                                  |                     |  |
| 10.                         | <b>Flanged</b><br>Inlet Size:      Rating:      Facing:<br>Outlet Size:      Rating:      Facing:                                                                                                                                |                     |  |
| 11.                         | <b>Threaded</b><br>Inlet: <input type="checkbox"/> MNPT <input type="checkbox"/> FNPT<br>Outlet: <input type="checkbox"/> MNPT <input type="checkbox"/> FNPT                                                                     |                     |  |
| 12.                         | <input type="checkbox"/> OTHER Specify:                                                                                                                                                                                          |                     |  |
| <b>Materials</b>            |                                                                                                                                                                                                                                  |                     |  |
| 13.                         | Base:                                                                                                                                                                                                                            |                     |  |
| 14.                         | Bonnet:                                                                                                                                                                                                                          |                     |  |
| 15.                         | Guide and Rings:                                                                                                                                                                                                                 |                     |  |
| 16.                         | <b>Seat Material:</b><br>Metal:<br>Resilient:                                                                                                                                                                                    |                     |  |
| 17.                         | Spring:                                                                                                                                                                                                                          |                     |  |
| 18.                         | Comply with NACE MRO 175 <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                                                                                                |                     |  |
| 19.                         | <input type="checkbox"/> OTHER Specify:                                                                                                                                                                                          |                     |  |
| 20.                         | <b>Cap and Lever Selection</b><br><input type="checkbox"/> Screwed Cap (Standard) <input type="checkbox"/> Bolted Cap<br><input type="checkbox"/> Plain Lever <input type="checkbox"/> Packed Lever <input type="checkbox"/> Gag |                     |  |
| 21.                         | <input type="checkbox"/> OTHER Specify:                                                                                                                                                                                          |                     |  |
| <b>Service Conditions</b>   |                                                                                                                                                                                                                                  |                     |  |
| 22.                         | Fluid and State:                                                                                                                                                                                                                 |                     |  |
| 23.                         | Required Capacity per Valve and Units:                                                                                                                                                                                           |                     |  |
| 24.                         | Molecular Weight or Specific Gravity:                                                                                                                                                                                            |                     |  |
| 25.                         | Viscosity at Flowing Temperature and Units:                                                                                                                                                                                      |                     |  |
| 26.                         | Operating Pressure and Units:                                                                                                                                                                                                    |                     |  |
| 27.                         | Blowdown: <input type="checkbox"/> Standard <input type="checkbox"/> Other                                                                                                                                                       |                     |  |
| 28.                         | Latent Heat of Vaporization and Units:                                                                                                                                                                                           |                     |  |
| 29.                         | Operating Temperature and Units:                                                                                                                                                                                                 |                     |  |
| 30.                         | Relieving Temperature and Units:                                                                                                                                                                                                 |                     |  |
| 31.                         | Built-up Back Pressure and Units:                                                                                                                                                                                                |                     |  |
| 32.                         | Superimposed Back Pressure and Units:                                                                                                                                                                                            |                     |  |
| 33.                         | Cold differential Test Pressure and Units:                                                                                                                                                                                       |                     |  |
| 34.                         | Allowable Overpressure in Percent or Units:                                                                                                                                                                                      |                     |  |
| 35.                         | Compressibility Factor, Z:                                                                                                                                                                                                       |                     |  |
| 36.                         | Ratio of Specific Heats:                                                                                                                                                                                                         |                     |  |
| <b>Sizing and Selection</b> |                                                                                                                                                                                                                                  |                     |  |
| 37.                         | Calculated Orifice Area: _____ in <sup>2</sup> _____ cm <sup>2</sup>                                                                                                                                                             |                     |  |
| 38.                         | Selected Orifice Area: _____ in <sup>2</sup> _____ cm <sup>2</sup>                                                                                                                                                               |                     |  |
| 39.                         | Orifice Designation (letter):                                                                                                                                                                                                    |                     |  |
| 40.                         | Manufacturer:                                                                                                                                                                                                                    |                     |  |
| 41.                         | Model Number:                                                                                                                                                                                                                    |                     |  |
| 42.                         | Vendor Calculations Required: <input type="checkbox"/> YES <input type="checkbox"/> NO                                                                                                                                           |                     |  |

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