

## GROOVED FITTINGS

The Shield Grooved System provides an economical and efficient piping system solution and offers significant benefits when compared to conventional types of pipe connections including:

- Faster Installation
- Because there is no need for welding or heating, the Shield System ensures a safer and reliable working environment
- Ensures easy alignment
- Reduces noise and vibration
- Easy to install and remove in case of any maintenance requirements

Feature a wide range of coupling and fittings for piping applications in Air Conditioning, Fire Fighting Systems and water pipe lines etc.

Shield Grooved Systems offer 3 types of couplings:

- High Pressure Couplings (Flexible)
- Medium Pressure Couplings (Rigid, Flexible)
- Light Pressure Couplings (Rigid, Flexible)

### GASKET (C Shaped)

It is important to use the gasket that suits your application, use the table below to select the optimum gasket.



### MATERIAL

Shield Grooved Coupling housing and other grooved fittings are cast from Ductile Iron to ASTM A536 Grade 65-45-12 in red paint or hot dipped galvanized, bolts are carbon steel to ISO 898 - 1 class 8.8 heat treated.

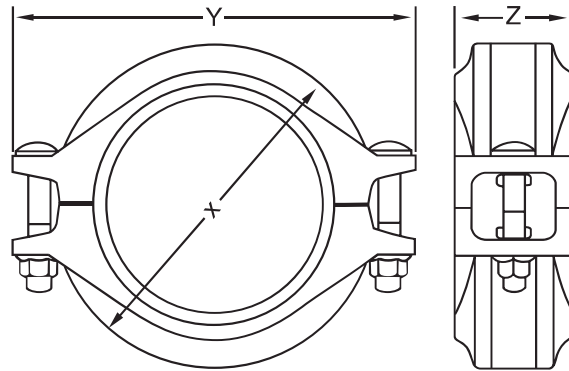
| MATERIAL | TEMP RANGE      | COLOUR       | GENERAL RECOMMENDED APPLICATION  |
|----------|-----------------|--------------|--|
| EPDM     | -34°C to +110°C | Green Strip  | Hot water service, variety of diluted acid, oil free air, chemical. This is NOT recommended for Petroleum services.                              |
| Nitrile  | -29°C to +82°C  | Orange Strip | Petroleum products, vegetable and mineral oils, air with oil vapours. This is NOT recommended for hot water +66°C or for hot dry air over +60°C. |
| Silicone | -34°C to +177°C | Red Gasket   | Dry heat and air without hydrocarbons up to +177°C and certain chemicals   |

*Shield Grooved Coupling Gaskets must be lubricated on the lips and outside back prior to assembly using Shield lubricant or equivalent for a wet system. However for a dry system Shield recommends using a silicone based lubricant. Note: Petroleum based lubricants should NOT be used at all.*

## RIGID COUPLING

### SDG-22 STANDARD

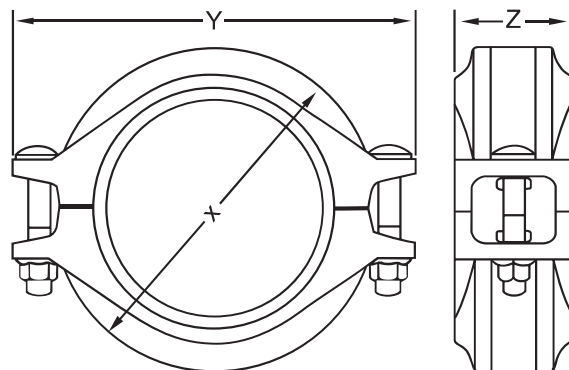
| Nominal Pipe Size    | Pipe O.D. | Maximum Working Pressure | Dimensions |       |       | Bolt/Nut No. - Size   |
|----------------------|-----------|--------------------------|------------|-------|-------|-----------------------|
|                      |           |                          | X mm       | Y mm  | Z mm  |                       |
| 1                    | 33.4      | 500                      | 59         | 100   | 44    | 2 $\frac{3}{8}$ x 55  |
| 1 $\frac{1}{4}$      | 42.2      | 500                      | 66         | 105   | 45.05 | 2 $\frac{3}{8}$ x 55  |
| 1 $\frac{1}{2}$      | 48.3      | 500                      | 72         | 110   | 45.5  | 2 $\frac{3}{8}$ x 55  |
| 2                    | 60.3      | 500                      | 86         | 132.5 | 46.5  | 2 $\frac{3}{8}$ x 55  |
| 2 $\frac{1}{2}$      | 73.0      | 500                      | 99         | 154   | 46.5  | 2 $\frac{1}{2}$ x 60  |
| 3 O.D.               | 76.1      | 500                      | 102.5      | 152.5 | 46.5  | 2 $\frac{1}{2}$ x 70  |
| 3                    | 88.9      | 500                      | 117        | 168.5 | 46.5  | 2 $\frac{1}{2}$ x 75  |
| 4                    | 114.3     | 500                      | 148        | 200   | 52.5  | 2 $\frac{1}{2}$ x 75  |
| 5 $\frac{1}{2}$ O.D. | 139.7     | 500                      | 172        | 235   | 52.5  | 2 $\frac{5}{8}$ x 85  |
| 5                    | 141.3     | 500                      | 172        | 231.5 | 52.5  | 2 $\frac{5}{8}$ x 85  |
| 6 $\frac{1}{2}$ O.D. | 165.1     | 500                      | 199.5      | 267.5 | 53.5  | 2 $\frac{5}{8}$ x 85  |
| 6                    | 168.3     | 500                      | 203        | 271.5 | 53.5  | 2 $\frac{5}{8}$ x 85  |
| 8                    | 219.1     | 450                      | 246.5      | 350   | 61.5  | 2 $\frac{3}{4}$ x 115 |
| 10                   | 273.0     | 300                      | 333        | 428   | 63    | 2 $\frac{3}{4}$ x 115 |
| 12                   | 323.9     | 300                      | 390        | 470   | 63    | 2 $\frac{7}{8}$ x 140 |
| 14                   | 355.6     | 300                      | 415        | 510   | 72    | 3 $\frac{1}{8}$ x 140 |
| 16                   | 406.4     | 300                      | 468        | 575   | 72    | 3 $\frac{1}{8}$ x 140 |
| 18                   | 426.0     | 225                      | 490        | 592   | 72    | 4 $\frac{7}{8}$ x 140 |
| 20                   | 529.0     | 225                      | 595        | 700   | 76    | 4 $\frac{7}{8}$ x 140 |



Shield Rigid Coupling provides rigid joints to prevent linear movement of pipe assembly. With a unique ends locked design, SDG-22 coupling can be used when the application or design calls for rigid installations.

### SDG-20

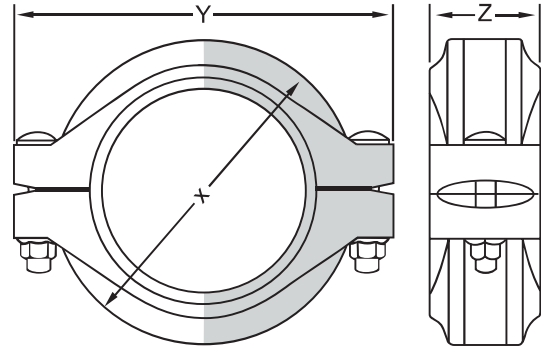
| Nominal Pipe Size    | Pipe O.D. | Maximum Working Pressure | Dimensions |       |      | Bolt/Nut No. - Size               |
|----------------------|-----------|--------------------------|------------|-------|------|-----------------------------------|
|                      |           |                          | X mm       | Y mm  | Z mm |                                   |
| 2                    | 60.3      | 300                      | 87.2       | 122.5 | 44   | 2 $\frac{3}{8}$ x 2 $\frac{1}{2}$ |
| 2 $\frac{1}{2}$      | 73.0      | 300                      | 96.8       | 138.5 | 44   | 2 $\frac{3}{8}$ x 2 $\frac{1}{2}$ |
| 3 O.D.               | 76.1      | 300                      | 100.8      | 141.5 | 44   | 2 $\frac{3}{8}$ x 2 $\frac{1}{2}$ |
| 3                    | 88.9      | 300                      | 113.5      | 157.5 | 44   | 2 $\frac{3}{8}$ x 2 $\frac{3}{4}$ |
| 4                    | 114.3     | 300                      | 142.0      | 185.5 | 48   | 2 $\frac{3}{8}$ x 2 $\frac{3}{4}$ |
| 5 $\frac{1}{2}$ O.D. | 139.7     | 300                      | 168.5      | 225.5 | 50   | 2 $\frac{1}{2}$ x 3               |
| 6 $\frac{1}{2}$ O.D. | 165.1     | 300                      | 196.0      | 252.7 | 50   | 2 $\frac{1}{2}$ x 3               |
| 6                    | 168.3     | 300                      | 198.8      | 256.5 | 50   | 2 $\frac{1}{2}$ x 3               |
| 8                    | 219.1     | 300                      | 256.0      | 325.0 | 58   | 2 $\frac{1}{2}$ x 75              |



## FLEXIBLE COUPLINGS

### SDG-27 HEAVY DUTY

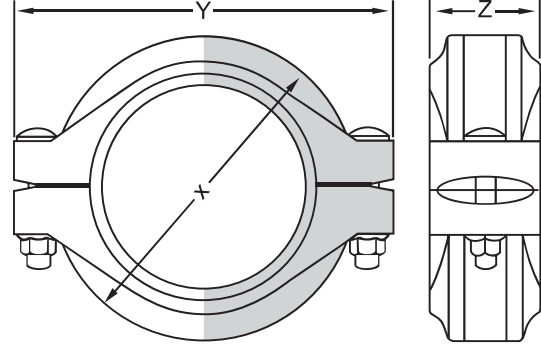
| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | Dimensions |      |      | Bolt/Nut No. - Size |
|-------------------|-----------|--------------------------|------------|------|------|---------------------|
|                   |           |                          | X mm       | Y mm | Z mm |                     |
| Inch              | mm        | PSI                      |            |      |      | mm                  |
| 2                 | 60.3      | 750                      | 91         | 133  | 46.5 | 2½ x 75             |
| 2½                | 73.0      | 750                      | 104        | 165  | 46.5 | 2½ x 75             |
| 3 O.D             | 76.1      | 750                      | 107        | 165  | 46.5 | 2½ x 75             |
| 3                 | 88.9      | 750                      | 122        | 171  | 47.0 | 2½ x 75             |
| 4                 | 114.3     | 750                      | 151.5      | 213  | 52.0 | 2¾x 85              |
| 5                 | 141.3     | 750                      | 182        | 241  | 52.0 | 2¾x 115             |
| 6½ O.D            | 165.1     | 750                      | 208        | 281  | 52.0 | 2¾x 115             |
| 6                 | 168.3     | 750                      | 210        | 286  | 52.0 | 2¾x 115             |
| 8                 | 219.1     | 750                      | 268        | 354  | 62.0 | 2¾x 140             |



Shield SDG-27 is a high pressure flexible coupling can be used in different applications where high pressure service is required

### SDG-25 STANDARD

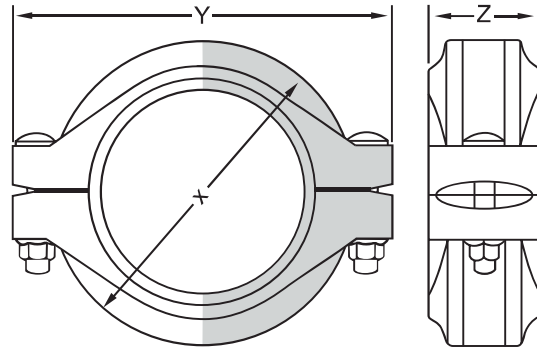
| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | Dimensions |       |      | Bolt/Nut No. - Size |
|-------------------|-----------|--------------------------|------------|-------|------|---------------------|
|                   |           |                          | X mm       | Y mm  | Z mm |                     |
| Inch              | mm        | PSI                      |            |       |      | mm                  |
| 1¼                | 42.2      | 500                      | 66.5       | 103.0 | 45.5 | 2 ⅜ x 55            |
| 1½                | 48.3      | 500                      | 72.0       | 108.0 | 45.0 | 2 ⅜ x 55            |
| 2                 | 60.3      | 500                      | 84         | 129.0 | 45.0 | 2 ⅜ x 55            |
| 2½                | 73.0      | 500                      | 101        | 142.0 | 45.5 | 2 ⅜ x 55            |
| 3 O.D             | 76.1      | 500                      | 102        | 147.0 | 45.5 | 2 ⅜ x 55            |
| 3                 | 88.9      | 500                      | 116.0      | 163.5 | 45.5 | 2 ½ x 75            |
| 4                 | 114.3     | 500                      | 145        | 197.0 | 50.0 | 2 ½ x 75            |
| 5½ O.D            | 139.7     | 500                      | 169        | 237.5 | 51.0 | 2 ⅝ x 80            |
| 5                 | 141.3     | 500                      | 169        | 230.0 | 51.0 | 2 ⅝ x 80            |
| 6½ O.D            | 165.1     | 500                      | 196.5      | 261.5 | 51.0 | 2 ⅝ x 85            |
| 6                 | 168.3     | 500                      | 201        | 268.0 | 51.0 | 2 ⅝ x 85            |
| 8                 | 219.1     | 450                      | 260.5      | 349.5 | 58.5 | 2 ¾ x 115           |
| 10                | 273.0     | 300                      | 318        | 395.0 | 65.0 | 2 ¾ x 120           |
| 12                | 323.9     | 300                      | 368.7      | 458.2 | 65.0 | 2 ⅞ x 140           |
| 14                | 355.6     | 225                      | 428        | 520.0 | 72.0 | 3 ⅞ x 140           |
| 16                | 406.4     | 225                      | 476        | 570.0 | 72.0 | 3 ⅞ x 140           |
| 18                | 457.2     | 300                      | 505        | 598.0 | 78.0 | 3 ⅞ x 140           |
| 20                | 508.0     | 300                      | 550        | 648.0 | 78.0 | 4 ⅞ x 140           |
| 24                | 610.0     | 300                      | 660        | 760.0 | 78.0 | 4-1 x 140           |



Shield Flexible Couplings allow controlled angular movement of the pipe to assist alignment and installation. The advantage of flexibility must be considered in the design for hanger and support Spacing.

## SDG-21

| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | Dimensions |      |      | Bolt/Nut No. - Size  |
|-------------------|-----------|--------------------------|------------|------|------|----------------------|
|                   |           |                          | X mm       | Y mm | Z mm |                      |
| Inch              | mm        | PSI                      |            |      |      | mm                   |
| 2                 | 60.3      | 300                      | 85.0       | 124  | 46.0 | 2 $\frac{3}{8}$ x 55 |
| 2½                | 73.0      | 300                      | 99.0       | 137  | 46.0 | 2 $\frac{3}{8}$ x 55 |
| 3 O.D.            | 76.1      | 300                      | 102        | 140  | 46.0 | 2 $\frac{3}{8}$ x 55 |
| 3                 | 88.9      | 300                      | 115.5      | 153  | 46.0 | 2 $\frac{3}{8}$ x 70 |
| 4                 | 114.3     | 300                      | 148        | 184  | 50.5 | 2 $\frac{3}{8}$ x 70 |
| 5½ O.D.           | 139.7     | 300                      | 173        | 225  | 50.5 | 2½ x 75              |
| 6½ O.D.           | 165.1     | 300                      | 199.5      | 248  | 50.5 | 2½ x 80              |
| 6                 | 168.3     | 300                      | 203        | 252  | 50.5 | 2½ x 80              |
| 8                 | 219.1     | 300                      | 261        | 399  | 61.5 | 2½ x 95              |

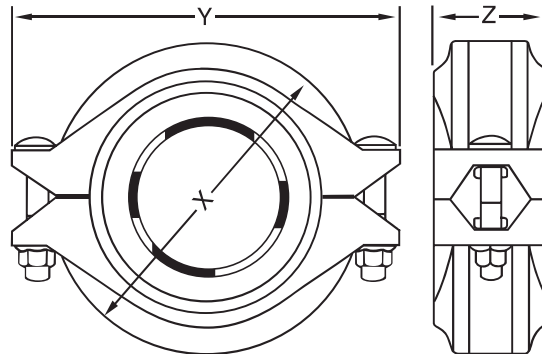


SDG-21 is designed for a maximum working pressure of 300psi. The flexibility benefits of this coupling can be used in applications where high pressure is not required.

## REDUCING COUPLING

### SDG-30

| Nominal Pipe Size | Pipe O.D.     | Maximum Working Pressure | Dimensions |      |      | Bolt/Nut No. - Size  |
|-------------------|---------------|--------------------------|------------|------|------|----------------------|
|                   |               |                          | X mm       | Y mm | Z mm |                      |
| Inch              | mm            | PSI                      |            |      |      | mm                   |
| 2 x 1½            | 60.3 x 48.3   | 300                      | 85         | 122  | 46.7 | 2 $\frac{3}{8}$ x 55 |
| 2½ x 2            | 73.0 x 60.3   | 300                      | 101        | 138  | 46.7 | 2 $\frac{3}{8}$ x 55 |
| 3 O.D x 2         | 76.1 x 60.3   | 300                      | 102.5      | 144  | 46.7 | 2 $\frac{3}{8}$ x 55 |
| 3 x 2             | 88.9 x 60.3   | 300                      | 117.5      | 168  | 46.7 | 2½ x 55              |
| 3 x 2½            | 88.9 x 73.0   | 300                      | 117.5      | 168  | 46.7 | 2½ x 55              |
| 3 x 3 O.D.        | 88.9 x 76.1   | 300                      | 117.5      | 168  | 46.7 | 2½ x 55              |
| 4 x 2             | 114.3 x 60.3  | 300                      | 147.8      | 198  | 52.4 | 2½ x 55              |
| 4 x 2½            | 114.3 x 73.0  | 300                      | 147.8      | 198  | 52.4 | 2½ x 55              |
| 4 x 3 O.D.        | 114.3 x 76.1  | 300                      | 147.8      | 198  | 52.4 | 2½ x 55              |
| 4 x 3             | 114.3 x 88.9  | 300                      | 147.8      | 198  | 52.4 | 2½ x 55              |
| 5½ O.D x 4        | 139.7 x 114.3 | 300                      | 172        | 250  | 52.4 | 2½ x 85              |
| 6½ O.D x 3        | 165.1 x 88.9  | 300                      | 199.6      | 269  | 53.4 | 2½ x 85              |
| 6½ O.D x 4        | 165.1 x 114.3 | 300                      | 199.6      | 269  | 53.4 | 2½ x 85              |
| 6 x 3             | 168.3 x 88.9  | 300                      | 202.8      | 275  | 53.4 | 2½ x 85              |
| 6 x 4             | 168.3 x 114.3 | 300                      | 202.8      | 275  | 53.4 | 2½ x 85              |
| 8 x 6½ O.D.       | 219.1 x 165.1 | 300                      | 260        | 334  | 61.7 | 2¾ x 115             |
| 8 x 6             | 219.1 x 168.3 | 300                      | 260        | 334  | 61.7 | 2¾ x 115             |

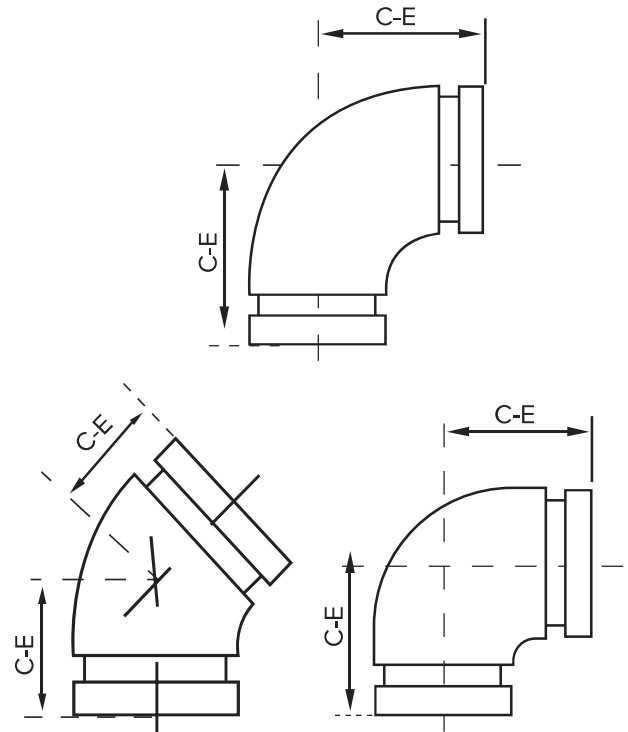


Shield SDG-30 Reducing Coupling allows in line reduction of the pipe diameter on a piping run. SDG-30 can also replace the need for two couplings as well as reducing fittings.

## 90° & 45° ELBOWS

### 90° SDG-100, 45° SDG-200, 90° SDG-105

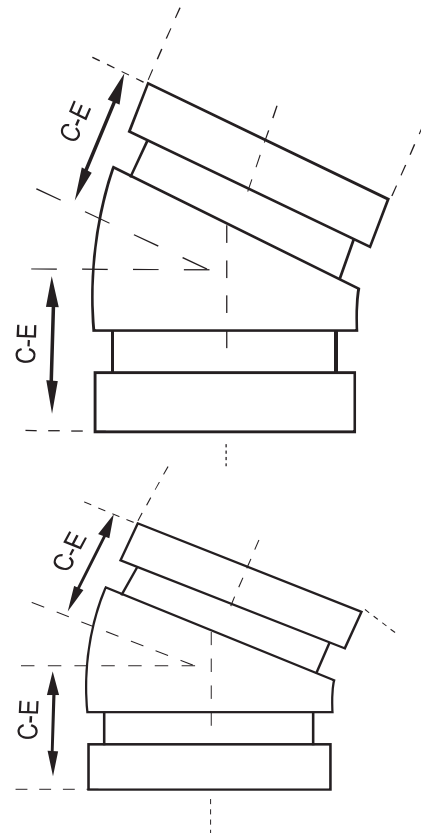
| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | 90° SDG-100 | 45° SDG-200 | 90° SDG-105 |        |
|-------------------|-----------|--------------------------|-------------|-------------|-------------|--------|
| Inch              | mm        | PSI                      | C-E mm      | C-E mm      | PSI         | C-E mm |
| 1                 | 33.4      | 500                      | 57          | 38.0        |             |        |
| 1¼                | 42.2      | 500                      | 70          | 44.0        |             |        |
| 1½                | 48.3      | 500                      | 70          | 44.0        |             |        |
| 2                 | 60.3      | 500                      | 82.50       | 51.0        | 300         | 70.00  |
| 2½                | 73.0      | 500                      | 95          | 57          | 300         | 76.00  |
| 3 O.D             | 76.1      | 500                      | 101.5       | 57          | 300         | 76.00  |
| 3                 | 88.9      | 500                      | 108         | 64          | 300         | 85.50  |
| 4                 | 114.3     | 500                      | 127         | 76.0        | 300         | 101.00 |
| 5½ O.D            | 139.7     | 500                      | 140         | 82.5        | 300         | 101.00 |
| 5                 | 141.3     | 500                      | 140         | 83.0        | 300         | 124.00 |
| 6½ O.D            | 165.1     | 500                      | 165         | 89.0        | 300         | 140.00 |
| 6                 | 168.3     | 500                      | 165         | 89.0        | 300         | 140.00 |
| 8                 | 219.1     | 500                      | 197         | 108.0       | 300         | 175.00 |
| 10                | 273.0     | 500                      | 229         | 120.0       |             |        |
| 12                | 323.9     | 500                      | 254         | 133.0       |             |        |
| 14                | 355.6     | 300                      | 279         | 152.0       |             |        |
| 16                | 406.4     | 300                      | 305         | 184.0       |             |        |
| 18                | 457.2     | 300                      | 394         | 203.0       |             |        |



## 22.5° & 11.25° ELBOWS

### 22.5° SDG-225 & 11.25° SDG-112

| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | 90° SDG-100 | 45° SDG-200 |
|-------------------|-----------|--------------------------|-------------|-------------|
| Inch              | mm        | PSI                      | C-E mm      | C-E mm      |
| 2                 | 60.3      | 500                      | 51          | 35          |
| 2½                | 73.0      | 500                      | 51          | 38          |
| 3 O.D             | 76.1      | 500                      | 51          | 38          |
| 3                 | 88.9      | 500                      | 57          | 38          |
| 4                 | 114.3     | 500                      | 73          | 44          |
| 5                 | 141.3     | 500                      | 73          | 51          |
| 6                 | 168.3     | 500                      | 79          | 51          |
| 6½ O.D            | 165.1     | 500                      | 79          | 51          |
| 8                 | 219.1     | 500                      | 98          | 51          |

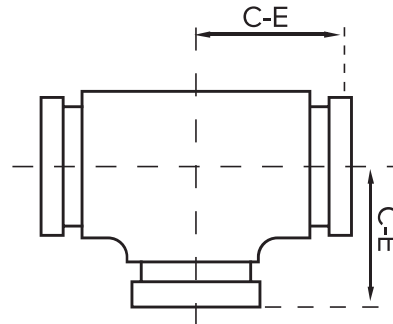
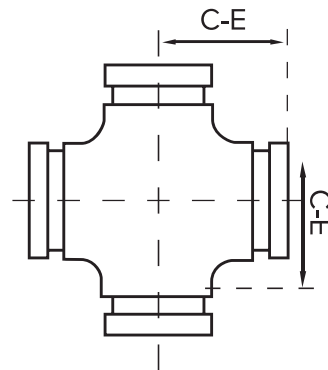
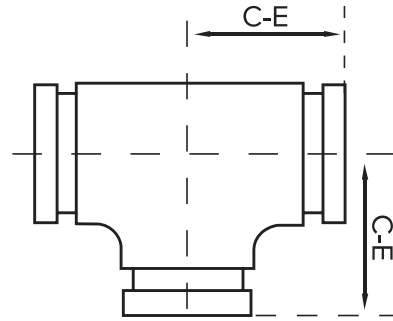


## TEES

### SDG-12 TEE, SDG-13 CROSS TEE, SDG-102 TEE

| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | SDG-12 Tee | SDG-13 Cross Tee | SDG-102 Tee (Short) |        |
|-------------------|-----------|--------------------------|------------|------------------|---------------------|--------|
|                   |           |                          | C-E mm     | C-E mm           | PSI                 | C-E mm |
| 1                 | 33.4      | 500                      | 57         | 57               |                     |        |
| 1¼                | 42.2      | 500                      | 70         | 70               |                     |        |
| 1½                | 48.3      | 500                      | 70         | 70               |                     |        |
| 2                 | 60.3      | 500                      | 82.5       | 82.5             | 300                 | 69.8   |
| 2½                | 73.0      | 500                      | 95         | 95               | 300                 | 76.1   |
| 3 O.D             | 76.1      | 500                      | 101.5      | 101.5            | 300                 | 76.1   |
| 3                 | 88.9      | 500                      | 108        | 108              | 300                 | 85.87  |
| 4                 | 114.3     | 500                      | 127        | 127              | 300                 | 101.7  |
| 5½ O.D            | 139.7     | 500                      | 140        | 139.5            | 300                 | 124.0  |
| 5                 | 141.3     | 500                      | 140        | 139.5            | 300                 | 124.0  |
| 6½ O.D            | 165.1     | 500                      | 165        | 165              | 300                 | 140.0  |
| 6                 | 168.3     | 500                      | 165        | 165              | 300                 | 140.0  |
| 8                 | 219.1     | 500                      | 197        | 197              | 300                 | 174.7  |
| 10                | 273.0     | 500                      | 229        | 229              |                     |        |
| 12                | 323.9     | 500                      | 254        | 254              |                     |        |
| 14                | 355.6     | 300                      | 279        |                  |                     |        |
| 16                | 406.4     | 300                      | 305        |                  |                     |        |

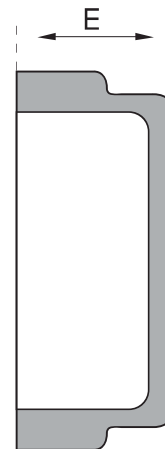
Note: Reducing Cross (grooved, threaded) are also available.



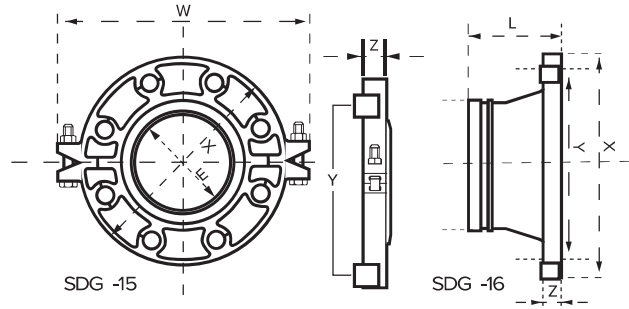
## CAP

### SDG-14

| Nominal Pipe Size | Pipe O.D. | Maximum Working Pressure | Cap Dimension |
|-------------------|-----------|--------------------------|---------------|
|                   |           |                          | E mm          |
| 1¼                | 42.2      | 500                      | 25.50         |
| 1½                | 48.3      | 500                      | 25.50         |
| 2                 | 60.3      | 500                      | 25.50         |
| 2½                | 73.0      | 500                      | 25.50         |
| 3 O.D             | 76.1      | 500                      | 25.50         |
| 3                 | 88.9      | 500                      | 25.50         |
| 4                 | 114.3     | 500                      | 27            |
| 5½ O.D            | 139.7     | 500                      | 27            |
| 5                 | 141.3     | 500                      | 27            |
| 6½ O.D            | 165.1     | 500                      | 27            |
| 6                 | 168.3     | 500                      | 27            |
| 8                 | 219.1     | 500                      | 30.2          |
| 10                | 273.0     | 500                      | 32            |
| 12                | 323.9     | 500                      | 32            |



## GROOVED & ADAPTOR FLANGE



### GROOVED FLANGE SDG-15 & ADAPTOR FLANGE SDG-16 (PN10/PN16)

| Nominal Pipe Size | Pipe O.D. | Max. Working Pressure | Grooved Flange Dimensions |    |     |      |       |          |        | Adaptor Flange Dimensions |              |         |      |        |      |
|-------------------|-----------|-----------------------|---------------------------|----|-----|------|-------|----------|--------|---------------------------|--------------|---------|------|--------|------|
|                   |           |                       | Inch                      | mm | PSI | W mm | Z mm  | X mm     | Y mm   | E mm                      | Bolt/Nut No. | Size mm | L mm | X mm   | Y mm |
| 1½                | 48.3      | 300                   | 195                       | 19 | 150 | 110  | 45.4  | 2-M10x50 | 4-M16  | 60.3                      | 150          | 110     | 16   | 4-M16  |      |
| 2                 | 60.3      | 300                   | 220                       | 19 | 165 | 125  | 57.5  | 2-M10x50 | 4-M16  | 65                        | 165          | 125     | 16   | 4-M16  |      |
| 3 O.D             | 76.1      | 300                   | 235                       | 19 | 185 | 145  | 72.7  | 2-M10x50 | 4-M16  | 65                        | 185          | 145     | 16   | 4-M16  |      |
| 3                 | 88.9      | 300                   | 252                       | 19 | 200 | 160  | 85.5  | 2-M10x50 | 8-M16  | 65                        | 200          | 160     | 16   | 8-M16  |      |
| 4                 | 114.3     | 300                   | 277                       | 19 | 229 | 180  | 110.5 | 2-M10x55 | 8-M16  | 70                        | 220          | 180     | 16   | 8-M16  |      |
| 5½ O.D            | 139.7     | 300                   | 318                       | 23 | 254 | 210  | 135.5 | 2-M12x65 | 8-M16  | 70                        | 250          | 210     | 18   | 8-M16  |      |
| 6½ O.D            | 165.1     | 300                   | 346                       | 23 | 280 | 240  | 160.8 | 2-M12x65 | 8-M20  | 70                        | 285          | 240     | 18   | 8-M20  |      |
| 6                 | 168.3     | 300                   | 346                       | 24 | 280 | 240  | 164.3 | 2-M12x65 | 8-M20  | 70                        | 285          | 240     | 18   | 8-M20  |      |
| 8                 | 219.1     | 300                   | 414                       | 30 | 340 | 295  | 214.9 | 2 ¾ x 70 | 12-M20 | 80                        | 340          | 295     | 19   | 12-M20 |      |
| 10                | 273.0     | 300                   | 481                       | 30 | 406 | 355  | 268.9 | 2 ¾ x 70 | 12-M24 | 85                        | 406          | 355     | 21   | 12-M24 |      |
| 12                | 323.9     | 300                   | 530                       | 30 | 483 | 410  | 318.9 | 2 ¾ x 70 | 12-M24 | 90                        | 460          | 410     | 25   | 12-M24 |      |

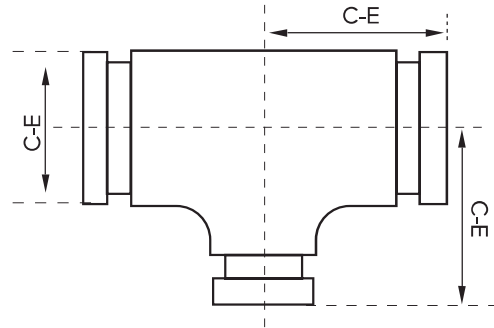
### ANSI 125/150

| Nominal Pipe Size | Pipe O.D. | Max. Working Pressure | Grooved Flange Dimensions |    |     |       |          |        | Adaptor Flange Dimensions |              |           |      |        |      |
|-------------------|-----------|-----------------------|---------------------------|----|-----|-------|----------|--------|---------------------------|--------------|-----------|------|--------|------|
|                   |           |                       | Inch                      | mm | PSI | X mm  | Z mm     | Y mm   | E mm                      | Bolt/Nut No. | Size inch | L mm | X mm   | Y mm |
| 2½                | 73        | 300                   | 178                       | 19 | 140 | 69.8  | 2-M10x50 | ¾/08   | 65                        | 185          | 139.7     | 16   | ¾/08   |      |
| 3                 | 88.9      | 300                   | 192                       | 19 | 152 | 85.5  | 2-M10x50 | ¾/08   | 65                        | 200          | 152.4     | 16   | ¾/08   |      |
| 4                 | 114.3     | 300                   | 229                       | 19 | 191 | 110.5 | 2-M10x55 | ¾/08   | 70                        | 229          | 190.5     | 16   | ¾/08   |      |
| 5                 | 141.3     | 300                   | 250                       | 22 | 216 | 137.4 | 2-M12x65 | ¾/04   | 70                        | 250          | 216       | 18   | ¾/04   |      |
| 6                 | 168.3     | 300                   | 285                       | 22 | 241 | 164.3 | 2-M12x65 | ¾/04   | 70                        | 282          | 241.3     | 18   | ¾/04   |      |
| 8                 | 219.1     | 300                   | 341                       | 30 | 298 | 214.9 | 2 ¾ x 70 | ¾/04   | 80                        | 340          | 298.5     | 19   | ¾/04   |      |
| 10                | 273       | 300                   | 406                       | 30 | 362 | 268.9 | 2 ¾ x 70 | 1 ¼/08 | 100                       | 406          | 361.9     | 22   | 1 ¼/04 |      |
| 12                | 323.9     | 300                   | 482                       | 30 | 432 | 318.9 | 2 ¾ x 70 | 1 ¼/08 | 102                       | 483          | 431.8     | 22   | 1 ¼/04 |      |

### CLASS 300

| Nominal Pipe Size | Pipe O.D. | Grooved Flange Dimensions |        |                     |          |                |          |
|-------------------|-----------|---------------------------|--------|---------------------|----------|----------------|----------|
|                   |           | Inch                      | mm     | O.D. of Flange X mm | I.D E mm | Thickness Z mm | PCD Y mm |
| 2½                | 73        | 190                       | 69.6   | 19                  | 149.2    | 244            | ¾/04     |
| 3                 | 88.9      | 210                       | 84.6   | 19                  | 168.3    | 274            | ¾/04     |
| 4                 | 114.3     | 255                       | 110.2  | 19                  | 200      | 310            | ¾/04     |
| 6                 | 168.3     | 320                       | 164.2  | 24                  | 269.9    | 388            | 1 ¼/04   |
| 8                 | 219.1     | 380                       | 214.93 | 30                  | 330.2    | 470.4          | 1 ¼/08   |

## GROOVED REDUCING TEE



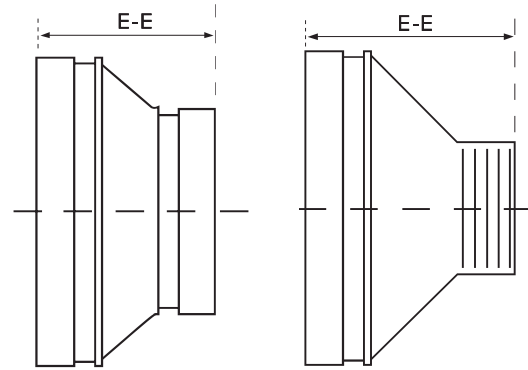
### SDG-53

| Nominal Pipe Size | Pipe O.D.     | Maximum Working Pressure | C-E   |
|-------------------|---------------|--------------------------|-------|
| Inch              | mm            | PSI                      | mm    |
| 2 x 1             | 60.3 x 33.4   | 500                      | 82.5  |
| 2 x 1½            | 60.3 x 48.3   | 500                      | 82.5  |
| 3O.D x 2          | 76.1 x 60.3   | 500                      | 101.5 |
| 3 x 1             | 76.1 x 33.4   | 500                      | 108   |
| 3 x 2             | 88.9 x 60.3   | 500                      | 108   |
| 3 x 3 O.D         | 88.9 x 76.1   | 500                      | 108   |
| 4 x 1             | 114.3 x 33.4  | 500                      | 127   |
| 4 x 2             | 114.3 x 60.3  | 500                      | 127   |
| 4 x 3 O.D         | 114.3 x 76.1  | 500                      | 127   |
| 4 x 3             | 114.3 x 88.9  | 500                      | 127   |
| 5½ O.D x 2        | 139.7 x 60.3  | 500                      | 139.5 |
| 5½ O.D x 3 O.D    | 139.7 x 76.1  | 500                      | 139.5 |
| 5½ O.D x 3        | 139.7 x 88.9  | 500                      | 139.5 |
| 5½ O.D x 4        | 139.7 x 114.3 | 500                      | 139.5 |
| 5 x 2             | 141.3 x 60.3  | 500                      | 139.5 |
| 6 ½ O.D x 2       | 165.1 x 60.3  | 500                      | 165   |
| 6 ½ O.D x 3 O.D   | 165.1 x 76.1  | 500                      | 165   |
| 6 ½ O.D x 3       | 165.1 x 88.9  | 500                      | 165   |
| 6 ½ O.D x 4       | 165.1 x 114.3 | 500                      | 165   |
| 6½ O.D x 5½ O.D   | 165.1 x 139.7 | 500                      | 165   |
| 6 x 2             | 168.3 x 60.3  | 500                      | 165   |
| 6 x 2½            | 168.3 x 73.0  | 500                      | 165   |
| 6 x 4             | 168.3 x 114.3 | 500                      | 165   |
| 6 x 5             | 168.3 x 141.3 | 500                      | 165   |
| 8 x 2             | 219.1 x 60.3  | 500                      | 197   |
| 8 x 3 O.D         | 219.1 x 76.1  | 500                      | 197   |
| 8 x 3             | 219.1 x 88.9  | 500                      | 197   |
| 8 x 4             | 219.1 x 114.3 | 500                      | 197   |
| 8 x 5½ O.D        | 219.1 x 139.7 | 500                      | 197   |
| 8 x 6½ O.D        | 219.1 x 165.1 | 500                      | 197   |
| 8 x 6             | 219.1 x 168.3 | 500                      | 197   |
| 10 x 6½ O.D       | 273.0 x 165.1 | 500                      | 229   |
| 10 x 8            | 273.0 x 219.1 | 500                      | 229   |
| 12 x 8            | 323.9 x 219.1 | 500                      | 254   |
| 12 x 10           | 323.9 x 273.0 | 500                      | 254   |

Note: Reducing Tee SDG-55 threaded outlet are also available.



## GROOVED REDUCING TEE



### GROOVED SDG-35 & THREADED SDG-37

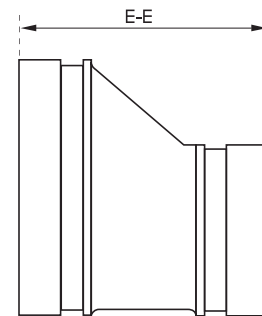
| Nominal Pipe Size | Pipe O.D.     | Maximum Working Pressure | SDG-35 Grooved | SDG-37 Threaded |
|-------------------|---------------|--------------------------|----------------|-----------------|
| Inch              | mm            | PSI                      | EE mm          | EE mm           |
| 2 x 1¼            | 60.3 x 42.2   | 500                      | 64             | 64              |
| 2 x 1½            | 60.3 x 48.3   | 500                      | 64             | 64              |
| 2½ x 2            | 73.0 x 60.3   | 500                      | 64             | 64              |
| 3 O.D x 2         | 76.1 x 60.3   | 500                      | 64             | 64              |
| 3 x 1             | 88.9 x 33.4   | 500                      | 64             | 64              |
| 3 x 1½            | 88.9 x 48.3   | 500                      | 64             | 64              |
| 3 x 2             | 88.9 x 60.3   | 500                      | 64             | 64              |
| 3 x 2½            | 88.9 x 73.0   | 500                      | 64             | 64              |
| 3 x 3 O.D         | 88.9 x 76.1   | 500                      | 64             | 64              |
| 4 x 1¼            | 114.3 x 42.2  | 500                      | 76             | 76              |
| 4 x 1½            | 114.3 x 48.3  | 500                      | 76             | 76              |
| 4 x 2             | 114.3 x 60.3  | 500                      | 76             | 76              |
| 4 x 2½            | 114.3 x 73.0  | 500                      | 76             | 76              |
| 4 x 3 O.D         | 114.3 x 76.1  | 500                      | 76             | 76              |
| 4 x 3             | 114.3 x 88.9  | 500                      | 76             | 76              |
| 5½ O.D x 2        | 139.7 x 60.3  | 500                      | 102            | 102             |
| 5½ O.D x 3 O.D    | 139.7 x 76.1  | 500                      | 102            | 102             |
| 5½ O.D x 3        | 139.7 x 88.9  | 500                      | 102            | 102             |
| 5½ O.D x 4        | 139.7 x 114.3 | 500                      | 102            | 102             |
| 6½ O.D x 2        | 165.1 x 60.3  | 500                      | 102            | 102             |
| 6½ O.D x 3 O.D    | 165.1 x 76.1  | 500                      | 102            | 102             |
| 6½ O.D x 3        | 165.1 x 88.9  | 500                      | 102            | 102             |
| 6½ O.D x 4        | 165.1 x 114.3 | 500                      | 102            | 102             |
| 6½ O.D x 5½ O.D   | 165.1 x 139.7 | 500                      | 102            | 102             |
| 6 x 2             | 168.3 x 60.3  | 500                      | 102            | 102             |
| 6 x 2½            | 168.3 x 73.0  | 500                      | 102            | 102             |
| 6 x 3 O.D         | 168.3 x 76.1  | 500                      | 102            | 102             |
| 6 x 3             | 168.3 x 88.9  | 500                      | 102            | 102             |
| 6 x 4             | 168.3 x 114.3 | 500                      | 102            | 102             |
| 6 x 5½ O.D        | 168.3 x 139.7 | 500                      | 102            | 102             |
| 6 x 5             | 168.3 x 141.3 | 500                      | 102            | 102             |
| 8 x 2½            | 219.1 x 73.0  | 500                      | 127            | 127             |

## GROOVED REDUCING TEE (CONTINUATION)

### GROOVED SDG-35 & THREADED SDG-37

| Nominal Pipe Size | Pipe O.D.     | Maximum Working Pressure | SDG-35 Grooved | SDG-37 Threaded |
|-------------------|---------------|--------------------------|----------------|-----------------|
| Inch              | mm            | PSI                      | EE mm          | EE mm           |
| 8 x 3             | 219.1 x 88.9  | 500                      | 127            | 127             |
| 8 x 4             | 219.1 x 114.3 | 500                      | 127            | 127             |
| 8 x 5½ O.D        | 219.1 x 139.7 | 500                      | 127            | 127             |
| 8 x 5             | 219.1 x 141.3 | 500                      | 127            | 127             |
| 8 x 6½ O.D        | 219.1 x 165.1 | 500                      | 127            | 127             |
| 8 x 6             | 219.1 x 168.3 | 500                      | 127            | 127             |
| 10 x 6½ O.D       | 373.0 x 165.1 | 500                      | 152            | 152             |
| 10 x 8            | 273.0 x 219.1 | 500                      | 152            | 152             |
| 12 x 8            | 323.9 x 219.1 | 500                      | 178            | 178             |
| 12 x 10           | 323.9 x 273.0 | 500                      | 178            | 178             |
| 16 x 12           | 406.4 x 323.9 | 300                      | 229            | 229             |
| 16 x 14           | 406.4 x 355.6 | 300                      | 229            | 229             |
| 18 x 14           | 457.2 x 355.6 | 300                      | 241            | 241             |
| 18 x 16           | 457.2 x 406.4 | 300                      | 241            | 241             |

## GROOVED ECCENTRIC REDUCER

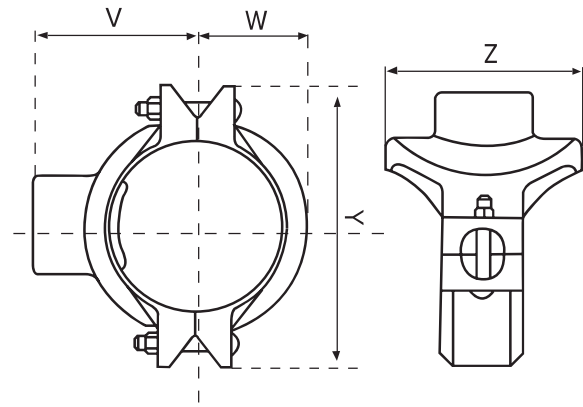


### GROOVED SDG-33

| Nominal Size Grooved x Grooved | Pipe O.D.     | Maximum Working Pressure | SDG-33 Grooved |
|--------------------------------|---------------|--------------------------|----------------|
| Inch                           | mm            | PSI                      | EE mm          |
| 4 x 3 O.D                      | 114.3 x 76.1  | 500                      | 102            |
| 4 x 3                          | 114.3 x 88.9  | 500                      | 102            |
| 5½ O.D x 4                     | 139.7 x 114.3 | 500                      | 127            |
| 6½ O.D x 3                     | 165.1 x 88.9  | 500                      | 140            |
| 6½ O.D x 4                     | 165.1 x 114.3 | 500                      | 140            |
| 6½ O.D x 5½ O.D                | 165.1 x 139.7 | 500                      | 140            |
| 8 x 4                          | 219.1 x 114.3 | 500                      | 215            |

## THREADED OUTLET MECHANICAL TEE

Shield Mechanical Tees allow a direct branch connection to be made on a pipe run where sufficient space allows a hole to be cut. Material: Ductile Iron ASTM A536. Gasket material EPDM. Threads are available to BSPT or NPT and can be supplied in red coating or hot dipped galvanized.



### SDG-42

| Nominal Size<br>Run x Branch | Pipe O.D.    | Maximum<br>Working Pressure | Hole Dia   | Dimensions |         |         |         | Bolt - Size |
|------------------------------|--------------|-----------------------------|------------|------------|---------|---------|---------|-------------|
|                              |              |                             |            | Y<br>mm    | Z<br>mm | V<br>mm | W<br>mm |             |
| Inch                         | mm           | PSI                         | +1.6<br>mm |            |         |         |         | mm          |
| 2 x 1                        | 60.3 x 33.4  | 300                         | 38         | 116        | 68      | 60      | 39      | 3/8 x 55    |
| 2 x 1/4                      | 60.3 x 42.2  | 300                         | 45         | 116        | 76      | 62      | 39      | 3/8 x 55    |
| 2 x 1/2                      | 60.3 x 48.3  | 300                         | 45         | 116        | 76      | 62      | 39      | 3/8 x 55    |
| 2 1/2 x 3/4                  | 73.0 x 26.9  | 300                         | 38         | 144        | 70      | 69      | 49      | 1/2 x 60    |
| 2 1/2 x 1                    | 73.0 x 33.4  | 300                         | 38         | 144        | 70      | 69      | 49      | 1/2 x 60    |
| 2 1/2 x 1/4                  | 73.0 x 42.2  | 300                         | 51         | 144        | 84.5    | 73      | 49      | 1/2 x 60    |
| 2 1/2 x 1/2                  | 73.0 x 48.3  | 300                         | 51         | 144        | 84.5    | 73      | 49      | 1/2 x 60    |
| 3 O.D x 1                    | 76.1 x 33.4  | 300                         | 38         | 144        | 72      | 77.5    | 46.5    | 1/2 x 75    |
| 3 O.D x 1/4                  | 76.1 x 42.2  | 300                         | 51         | 144        | 84.5    | 77.5    | 46.5    | 1/2 x 75    |
| 3 O.D x 1/2                  | 76.1 x 48.3  | 300                         | 51         | 144        | 90.5    | 79.5    | 46.5    | 1/2 x 75    |
| 3 x 1                        | 88.9 x 33.4  | 300                         | 38         | 160        | 73.5    | 80      | 53.5    | 1/2 x 75    |
| 3 x 1/4                      | 88.9 x 42.2  | 300                         | 51         | 160        | 85.5    | 80      | 53.5    | 1/2 x 75    |
| 3 x 1/2                      | 88.9 x 48.3  | 300                         | 51         | 160        | 90      | 80      | 53.5    | 1/2 x 75    |
| 3 x 2                        | 88.9 x 60.3  | 300                         | 64         | 160        | 104     | 80      | 53.5    | 1/2 x 75    |
| 4 x 1/2                      | 114.3 x 21.3 | 300                         | 42         | 186        | 78.4    | 93      | 68      | 1/2 x 75    |
| 4 x 3/4                      | 114.3 x 26.9 | 300                         | 42         | 186        | 89      | 93      | 68      | 1/2 x 75    |
| 4 x 1                        | 114.3 x 33.4 | 300                         | 38         | 186        | 89      | 93      | 68      | 1/2 x 75    |
| 4 x 1/4                      | 114.3 x 42.2 | 300                         | 51         | 186        | 89      | 95      | 68      | 1/2 x 75    |
| 4 x 1/2                      | 114.3 x 48.3 | 300                         | 51         | 186        | 104.4   | 97      | 68      | 1/2 x 75    |
| 4 x 2                        | 114.3 x 60.3 | 300                         | 64         | 186        | 104.4   | 120     | 68      | 1/2 x 75    |
| 4 x 2 1/2                    | 114.3 x 73.0 | 300                         | 70         | 186        | 124     | 100     | 68      | 1/2 x 75    |
| 4 x 3                        | 114.3 x 88.9 | 300                         | 89         | 208        | 96.5    | 100     | 68      | 1/2 x 75    |
| 5 1/2 O.D x 1                | 139.7 x 33.4 | 300                         | 51         | 226        | 95      | 110     | 81      | 5/8 x 85    |
| 5 1/2 O.D x 1/4              | 139.7 x 42.2 | 300                         | 51         | 226        | 95      | 114     | 81      | 5/8 x 85    |
| 5 1/2 O.D x 1/2              | 139.7 x 48.3 | 300                         | 51         | 226        | 95      | 112     | 81      | 5/8 x 85    |
| 5 1/2 O.D x 2                | 139.7 x 60.3 | 300                         | 70         | 226        | 114     | 114     | 81      | 5/8 x 85    |
| 5 1/2 O.D x 3 O.D            | 139.7 x 76.1 | 300                         | 70         | 226        | 114     | 119     | 81      | 5/8 x 85    |
| 5 1/2 O.D x 3                | 139.7 x 88.9 | 300                         | 89         | 226        | 136     | 122     | 81      | 5/8 x 85    |
| 5 x 1/4                      | 141.3 x 42.2 | 300                         | 51         | 226        | 98      | 110     | 81      | 5/8 x 85    |
| 6 1/2 O.D x 1/2              | 165.1 x 21.3 | 300                         | 42         | 242        | 80.5    | 110     | 95      | 5/8 x 110   |
| 6 1/2 O.D x 3/4              | 165.1 x 26.9 | 300                         | 42         | 242        | 80.5    | 110     | 95      | 5/8 x 110   |
| 6 1/2 O.D x 1                | 165.1 x 33.4 | 300                         | 38         | 242        | 78      | 118     | 95      | 5/8 x 110   |
| 6 1/2 O.D x 1/4              | 165.1 x 42.2 | 300                         | 51         | 242        | 93      | 118     | 95      | 5/8 x 110   |
| 6 1/2 O.D x 1/2              | 165.1 x 48.3 | 300                         | 51         | 242        | 93      | 118     | 95      | 5/8 x 110   |

## THREADED OUTLET MECHANICAL TEE

(CONTINUATION)

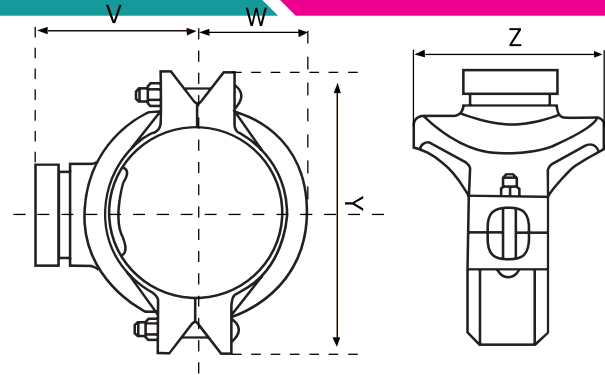
### SDG-42

| Nominal Size<br>Run x Branch | Pipe O.D. |               | Maximum<br>Working Pressure | Hole Dia | Dimensions |            |         |         | Bolt - Size |
|------------------------------|-----------|---------------|-----------------------------|----------|------------|------------|---------|---------|-------------|
|                              | Inch      | mm            |                             |          | PSI        | +1.6<br>mm | Y<br>mm | Z<br>mm |             |
| 6½ O.D x 2                   |           | 165.1 x 60.3  | 300                         | 64       | 242        | 112        | 128.5   | 95      | ⅝ x 110     |
| 6½ O.D x 3 O.D               |           | 165.1 x 76.0  | 300                         | 242      | 112        | 128        | 95      | 95      | ⅝ x 110     |
| 6½ O.D x 3                   |           | 165.1 x 88.9  | 300                         | 89       | 242        | 132        | 128.5   | 95      | ⅝ x 110     |
| 6½ O.D x 4                   |           | 165.1 x 114.3 | 300                         | 114      | 242        | 157        | 141     | 95      | ⅝ x 110     |
| 6 x 1¼                       |           | 168.3 x 42.4  | 300                         | 51       | 240        | 92.5       | 115     | 96.5    | ⅝ x 105     |
| 6 x 1½                       |           | 168.3 x 48.3  | 300                         | 51       | 240        | 92.5       | 115     | 96.5    | ⅝ x 105     |
| 6 x 2                        |           | 168.3 x 60.3  | 300                         | 64       | 246        | 114        | 135     | 98.5    | ⅝ x 110     |
| 6 x 2½                       |           | 168.3 x 73.0  | 300                         | 70       | 246        | 115        | 134     | 98.5    | ⅝ x 110     |
| 6 x 4                        |           | 168.3 x 114.3 | 300                         | 114      | 246        | 157        | 141     | 98.5    | ⅝ x 110     |
| 8 x 1                        |           | 219.0 x 33.4  | 300                         | 51       | 320        | 96.5       | 150     | 123     | ¾ x 115     |
| 8 x 1¼                       |           | 219.1 x 42.2  | 300                         | 51       | 320        | 96.5       | 150     | 123     | ¾ x 115     |
| 8 x 1½                       |           | 219.1 x 48.3  | 300                         | 51       | 320        | 96.5       | 150     | 123     | ¾ x 115     |
| 8 x 2                        |           | 219.1 x 60.3  | 300                         | 70       | 320        | 118        | 158.5   | 123     | ¾ x 115     |
| 8 x 2½                       |           | 219.1 x 73.0  | 300                         | 70       | 320        | 118        | 158.5   | 123     | ¾ x 115     |
| 8 x 3                        |           | 219.1 x 88.9  | 300                         | 89       | 320        | 142        | 161     | 123     | ¾ x 115     |
| 8 x 4                        |           | 219.1 x 114.3 | 300                         | 114      | 320        | 170        | 170     | 123     | ¾ x 115     |

The mechanical tee and cross features a gap between the bolt pads. Do not attempt to bring bolt pads together which would result in metal to metal when tightening bolts and nuts. Note that excessive torque may cause joint failure - the following table provides recommended bolt fastening torque.

| Bolt Size | Recommended Bolt Torque<br>N - m |
|-----------|----------------------------------|
| ⅜"        | 40~60                            |
| ½"        | 110~135                          |
| ⅝"        | 135~175                          |
| ¾"        | 175~245                          |
| 7/8"      | 245~325                          |

## GROOVED OUTLET MECHANICAL TEE



### SDG-44

| Nominal Size<br>Run x Branch | Pipe O.D.     | Maximum<br>Working Pressure | Hole Dia | Dimensions |         |         |         | Bolt - Size |
|------------------------------|---------------|-----------------------------|----------|------------|---------|---------|---------|-------------|
|                              |               |                             |          | Y<br>mm    | Z<br>mm | V<br>mm | W<br>mm |             |
| 2½ x ¼                       | 73.0 x 42.2   | 300                         | 51       | 144        | 84.5    | 75      | 49      | ½ x 60      |
| 3 x 2                        | 88.9 x 60.3   | 300                         | 64       | 160        | 104     | 92      | 53.5    | ½ x 75      |
| 4 x 2                        | 114.3 x 60.3  | 300                         | 64       | 186        | 104.4   | 101.5   | 68      | ½ x 75      |
| 4 x 2½                       | 114.3 x 73.0  | 300                         | 70       | 186        | 104.4   | 101.5   | 68      | ½ x 75      |
| 4 x 3 O.D                    | 114.3 x 76.1  | 300                         | 70       | 186        | 104.4   | 101.5   | 68      | ½ x 75      |
| 4 x 3                        | 114.3 x 88.9  | 300                         | 89       | 186        | 124     | 101.5   | 68      | ½ x 75      |
| 5½ O.D x 2                   | 139.7 x 60.3  | 300                         | 70       | 226        | 114     | 119     | 81      | ⅝ x 85      |
| 5½ O.D x 3 O.D               | 139.7 x 76.1  | 300                         | 70       | 226        | 114     | 119     | 81      | ⅝ x 85      |
| 5½ O.D x 3                   | 139.7 x 88.9  | 300                         | 89       | 226        | 136     | 122     | 81      | ⅝ x 85      |
| 6½ O.D x 2                   | 165.1 x 60.3  | 300                         | 64       | 242        | 112     | 127.5   | 95      | ⅝ x 110     |
| 6½ OD x 3 O.D                | 165.1 x 76.1  | 300                         | 70       | 242        | 112     | 127.5   | 95      | ⅝ x 110     |
| 6½ O.D x 3                   | 165.1 x 88.9  | 300                         | 89       | 242        | 142.6   | 141     | 95      | ⅝ x 110     |
| 6½ O.D x 4                   | 165.1 x 114.3 | 300                         | 114      | 242        | 157     | 141     | 95      | ⅝ x 110     |
| 6 x 2                        | 168.3 x 60.3  | 300                         | 64       | 246        | 114     | 134     | 98.5    | ⅝ x 110     |
| 6 x 4                        | 168.3 x 114.3 | 300                         | 114      | 246        | 157     | 142     | 98.5    | ⅝ x 110     |
| 8 x 2                        | 219.1 x 60.3  | 300                         | 70       | 320        | 118     | 158     | 123     | ¾ x 115     |
| 8 x 3 O.D                    | 219.1 x 76.1  | 300                         | 70       | 320        | 118     | 158     | 123     | ¾ x 115     |
| 8 x 3                        | 219.1 x 88.9  | 300                         | 89       | 320        | 142     | 161     | 123     | ¾ x 115     |
| 8 x 4                        | 219.1 x 114.3 | 300                         | 114      | 320        | 170     | 162     | 123     | ¾ x 115     |