

control units



Table 4: Control Units/Unanchored

Control Units must be installed when pressures (test + design + surge + operating) exceed rating below:

| Pipe Size | Series 240 P.S.I.G. | Series 242 P.S.I.G. |
|--------------|---------------------|---------------------|
| 1" thru 4" | 180 | 135 |
| 5" thru 10" | 135 | 90 |
| 12" thru 14" | 90 | 135 |
| 16" thru 24" | 45 | 45 |
| 26" thru 30" | 35 | 35 |

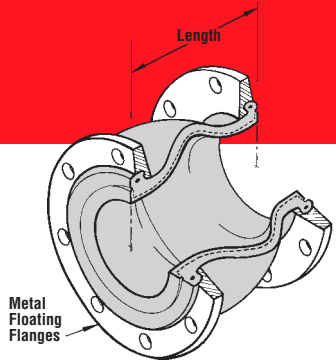


Figure 1.
Style 240
Single Sphere Connector

Table 5: Control Units

| Control Rod Plate O.D. (in) | Control Rod Plate Thickness (in) | Rod Diameter ² (in) | Nominal Pipe Size (in) | Maximum Surge or Test Pressure of System/PSIG ³ | | |
|-----------------------------|----------------------------------|--------------------------------|------------------------|--|-----|-----|
| | | | | Number of Rods Required: | | |
| | | | | 2 | 3 | 4 |
| 8.375 | 0.375 | 0.625 | 1 | 949 | — | — |
| 8.750 | 0.375 | 0.625 | 1.25 | 830 | — | — |
| 9.125 | 0.375 | 0.625 | 1.5 | 510 | — | — |
| 10.125 | 0.375 | 0.625 | 2 | 661 | — | — |
| 11.125 | 0.375 | 1.000 | 2.5 | 529 | — | — |
| 11.625 | 0.375 | 1.000 | 3 | 441 | — | — |
| 12.625 | 0.375 | 1.000 | 3.5 | 365 | 547 | 729 |
| 13.125 | 0.375 | 1.000 | 4 | 311 | 467 | 622 |
| 14.125 | 0.500 | 1.000 | 5 | 235 | 353 | 470 |
| 15.125 | 0.500 | 1.000 | 6 | 186 | 278 | 371 |
| 19.125 | 0.500 | 1.000 | 8 | 163 | 244 | 326 |
| 21.625 | 0.750 | 1.000 | 10 | 163 | 244 | 325 |
| 24.625 | 0.750 | 1.000 | 12 | 160 | 240 | 320 |
| 26.625 | 0.750 | 1.000 | 14 | 112 | 167 | 223 |
| 30.125 | 0.750 | 1.250 | 16 | 113 | 170 | 227 |
| 31.625 | 0.750 | 1.250 | 18 | 94 | 141 | 187 |
| 34.125 | 0.750 | 1.250 | 20 | 79 | 118 | 158 |
| 36.125 | 1.000 | 1.250 | 22 | 85 | 128 | 171 |
| 38.625 | 1.000 | 1.250 | 24 | 74 | 110 | 147 |
| 40.825 | 1.000 | 1.250 | 26 | 62 | 93 | 124 |
| 44.125 | 1.250 | 1.500 | 28 | 65 | 98 | 130 |
| 46.375 | 1.250 | 1.500 | 30 | 70 | 105 | 141 |

NOTES: 1. Control Rod Plate O.D. installed dimension is based on a maximum O.D. PROCO would supply. (See Figures 3 & 4)
2. Control Rod diameter is based on a maximum diameter PROCO would use to design a Control Rod.
3. Rod pressure ratings are based on metal conforming to F.S.A. standards and dimensions.

Table 6: Special Construction Pressures

| Pipe Size | Series 240 & 242 Heavyweight P.S.I.G. |
|--------------|---------------------------------------|
| 1" thru 8" | 300 |
| 10" thru 12" | 275 |
| 14" | 200 |
| 16" thru 20" | 175 |
| 22" thru 30" | 160 |

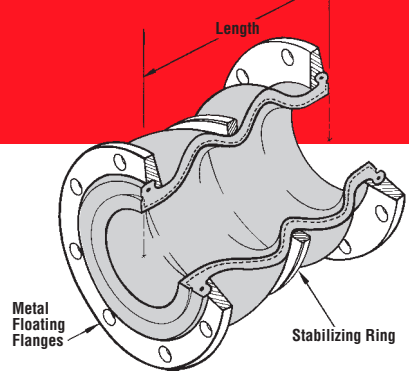
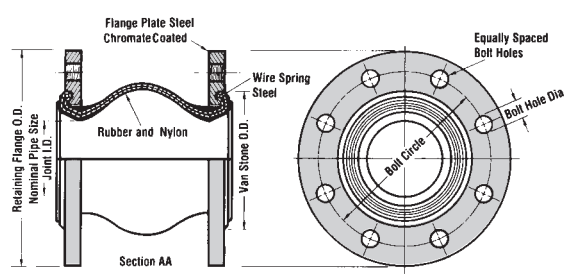


Figure 2.
Style 242
Twin Sphere Connector

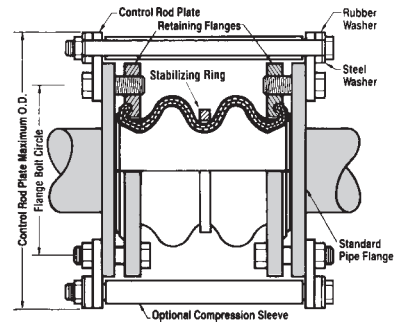
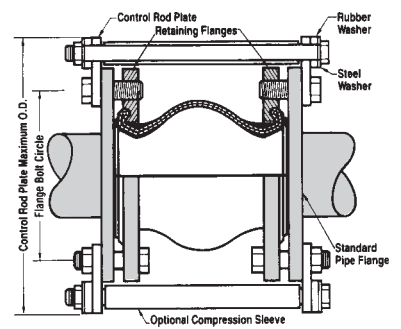
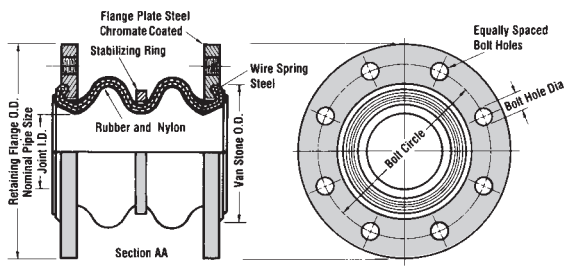
Style 240 Single Sphere Connector

Figure 3.



Style 242 Twin Sphere Connector

Figure 4.



Control Rod/Unit Applications. Control unit assemblies are designed to absorb static pressure thrust developed at the expansion joint. When used in this manner, control unit assemblies are an additional safety factor, minimizing possible failure of the expansion joint or damage to equipment. (See Tables 4 & 5).

- 1. Anchored Systems:** Control unit assemblies are not required in piping systems that are anchored on both sides of the expansion joint, provided piping movements are within the rated movements as shown in Tables 2 & 3.
- 2. Unanchored Systems:** Control unit assemblies are always required in unanchored systems. Additionally, control unit assemblies must be used when maximum pressure exceeds the limits shown in Table 4 & 5, or

- 3. Spring-Mounted Equipment:** Control unit assemblies are always recommended for spring-mounted equipment. Additionally, control unit assemblies must be used when maximum pressure exceeds the limits shown in Tables 4 & 5, or the movement exceeds the rated movements as shown in Tables 2 & 3.

Special Applications. Certain Style 240 (Single Sphere) and 242 (Twin Sphere) expansion joints are available in High-Pressure Designs. For specific pressures, see Table 6. Style designations are listed as 240-HW (sizes stocked in Table 2) and 242-HA, 242-HB & 242-HC (sizes stocked in Table 3.) The High-Pressure Design is recommended when the connector is to be installed into ANSI 250/