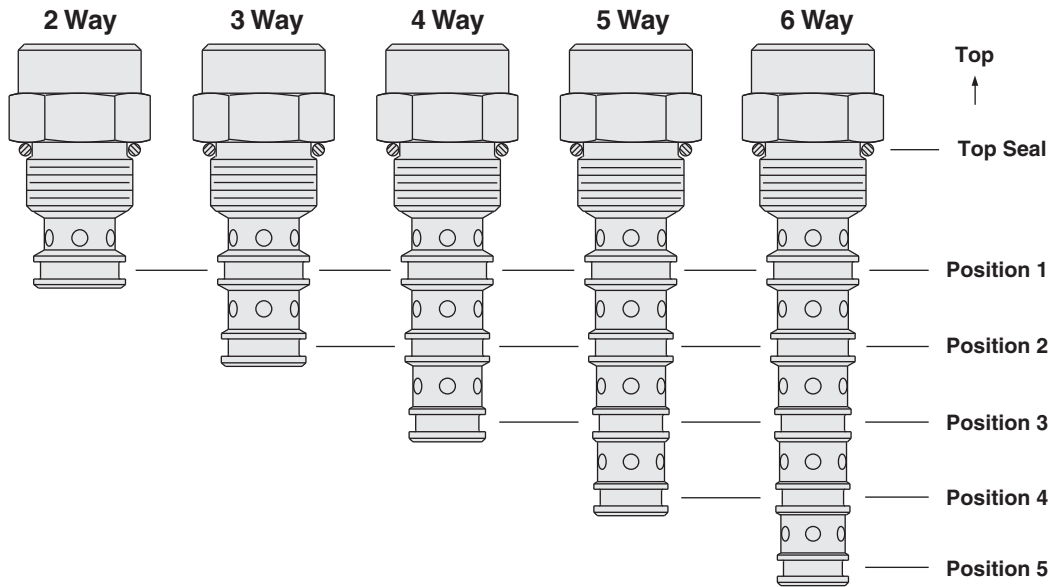


# Seal Kit Installation & Ordering Guide

## O-RING/BACKUP RING POSITION



## STANDARD O-RING SIZES

| Cavity Size | Type         | Top Seal    | Position 1  | Position 2  | Position 3  | Position 4  | Position 5  |
|-------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 08          | 2-Way        | -908        | -012        | —           | —           | —           | —           |
|             | 3-Way        | -908        | -014        | -013        | —           | —           | —           |
|             | 4-Way        | -908        | -014        | -013        | -012        | —           | —           |
| 10          | 2-Way        | -910        | -014        | —           | —           | —           | —           |
|             | 3-Way        | -910        | -015        | -014        | —           | —           | —           |
|             | 3-Way Short  | -910        | -016        | -015        | —           | —           | —           |
|             | 3-Way Long   | -910        | -015        | -014        | —           | —           | —           |
|             | 4-Way        | -910        | -016        | -015        | -014        | —           | —           |
|             | 5-Way        | -910        | -016        | -015        | -014        | -013        | —           |
|             | 6-Way        | -910        | -016        | -015        | -014        | -013        | -012        |
| 6-Way Short | -910         | -016        | -015        | -014        | -013        | -012        |             |
| 12          | 2-Way        | -912        | -115        | —           | —           | —           | —           |
|             | 2-Way Long   | -912        | -115        | —           | —           | —           | —           |
|             | 3-Way        | -912        | -019        | -018        | —           | —           | —           |
|             | 4-Way        | -912        | -019        | -018        | -017        | —           | —           |
|             | 5-Way Short  | -912        | -019        | -018        | -017        | -016        | —           |
|             | 6-Way Short  | -912        | -019        | -018        | -017        | -016        | -015        |
| 16          | 2-Way        | -916        | -119        | —           | —           | —           | —           |
|             | 3-Way Short  | -916        | -119        | -117        | —           | —           | —           |
|             | 3-Way        | -916        | -119        | -117        | —           | —           | —           |
|             | 4-Way        | -916        | -119        | -118        | -117        | —           | —           |
|             | 5-Way Short  | -916        | -125        | -119        | -118        | -117        | —           |
|             | 6-Way Short  | -916        | -125        | -119        | -118        | -117        | -116        |
| 20          | 2-Way        | -920        | -124        | —           | —           | —           | —           |
|             | 3-Way Short  | M2.9        | -122        | -124        | —           | —           | —           |
| 42          | 4-Way Metric | M2.4 x 38.6 | -125        | M2.4 x 31.6 | M2.4 x 29.6 | —           | —           |
|             | 6-Way Metric | -131        | -125        | M2.4 x 31.6 | M2.4 x 29.6 | M2.9 x 38.6 | M2.4 x 27.6 |
| 98          | 3-Way Metric | M1.5 x 21.5 | M2.2 x 18.0 | M1.6 x 15.1 | M1.6 x 14.1 | —           | —           |

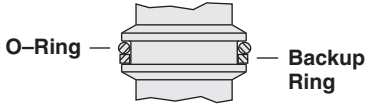
Seal Kit information continued on following page.

# Seal Kit Installation & Ordering Guide

## O-RING/BACKUP RING INSTALLATION

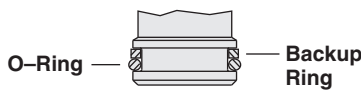
### Installation Type T

O-Ring installed toward top of cavity



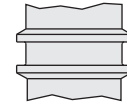
### Installation Type B

O-Ring installed toward bottom of cavity



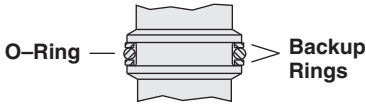
### Installation Type X

No seals this location



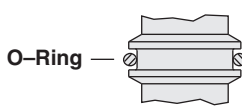
### Installation Type M

O-Ring installed between backups



### Installation Type O

O-Ring only; no back-ups



**Note:** Cartridges which are originally built with polyester elastomer (black) back-up rings, are serviced with single-turn (white) Fluorocarbon back-up rings. This facilitates field installation of the back-up rings, since the original production rings require special tools for installation.

Type "M" back-up rings are 1/2 size single-turn Fluorocarbon rings on all cavities **except** VC12-3, VC12-4, VC16-S3, VC20-S3 and VC98-3.

**Temperature Considerations:** As per ASTM Standard D2000/SAE J200 Standard **Buna N (N)** seals are designed for applications that operate within the -40°C to 100°C (-40° to 212°F) temperature range. Maximum temperature for optimum seal life is 107°C with reduced life if operated within the 107°C to 120°C range.

**Hydrogenated Nitrile (HNBR)** seals have high strength and resistance to extrusion and wear for applications with the temperature range of -48 to 150°C (-40 to 300°F).

**Fluorocarbon (V)** seals have excellence resistance to high temperatures and should be used for applications with an average temperature range between -26°C to 204°C (-15°F to 400°F).

**Polyurethane (P)** seals should be used for applications with an average temperature range between 104°C to -54°C (-65°F to 225°F).

**PPDI Urethane (U)** seals should be used for applications with an average temperature range between 107°C to -54°C (-65°F to 225°F).

## ORDERING INFORMATION

| Cavity Thread Size     |    | Cavity Type | Seals                       | Position 1 Installation Type (Required for 2, 3, 4, 5 & 6-Way Valves) | Position 2 Installation Type (Required for 3, 4, 5 & 6-Way Valves) | Position 3 Installation Type (Required for 4, 5 & 6-Way Valves) | Position 4 Installation Type (Required for 5 & 6-Way Valves) | Position 5 Installation Type (Required for 6-Way Valves Only) |
|------------------------|----|-------------|-----------------------------|---|--|---|--|---|
| HyPerformance™ H (H)SK |    |             |                             |   |  |   |  |   |
| 7/16-20                | 04 | 2-Way       | Buna N (Std.)               | N   |  |   |  |   |
| 5/8-18                 | 07 | 3-Way       | Hydrogenated Nitrile (HNBR) | N   |  |   |  |   |
| 3/4-16                 | 08 | 3-Way Short | Fluorocarbon                | V   |  |   |  |   |
|                        | 38 | 4-Way       | Polyurethane                | P   |  |   |  |   |
|                        | 58 | 5-Way       | PPDI Urethane               | U   |  |   |  |   |
|                        | 78 | 6-Way       |                             |   |  |   |  |   |
| 7/8-14                 | 10 |             |                             |   |  |   |  |   |
|                        | 50 |             |                             |   |  |   |  |   |
|                        | 70 |             |                             |   |  |   |  |   |
|                        | 80 |             |                             |   |  |   |  |   |
| 1-1/16-12              | 12 |             |                             |   |  |   |  |   |
|                        | 52 |             |                             |   |  |   |  |   |
|                        | 72 |             |                             |   |  |   |  |   |
| 1-5/16-12              | 16 |             |                             |   |  |   |  |   |
|                        | 56 |             |                             |   |  |   |  |   |
| 1-5/8-12               | 20 |             |                             |   |  |   |  |   |
| M42 x 2.0              | 42 |             |                             |   |  |   |  |   |