



## Flow Control Valves

10,000 PSI Rated



CVN1 and CVN3



CVC3



CVP3



| Valve Type                 | Model Number | Ports       | Applications                                                                                                                                                                                                                                                         | Hydraulic Symbol |
|----------------------------|--------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Needle Valve               | CVN1         | 1/4"-18NPTF | Controls cylinder speed and acts as temporary shut-off valve for load holding.                                                                                                                                                                                       |                  |
|                            | CVN3         | 3/8"-18NPTF |                                                                                                                                                                                                                                                                      |                  |
| Check Valve                | CVC3         | 3/8"-18NPTF | Allows flow in one direction only.                                                                                                                                                                                                                                   |                  |
| Pilot Operated Check Valve | CVP3         | 3/8"-18NPTF | Mounted in line to a cylinder which will hold pressure in the event of pressure loss in the system. Most often used on double-acting cylinders with pilot port, receiving pressure from a tee off of the cylinder retracting line. Pilot pressure ratio 15% or 6.5:1 |                  |

# Flow Control Valves

10,000 PSI Rated



CVR3



CVM3



CVMS3



Control Valves / Accessories

| Valve Type                  | Model Number | Ports       | Applications                                                                                                                                                                                       | Hydraulic Symbol |
|-----------------------------|--------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|
| Pressure Relief Valve       | CVR3         | 3/8"-18NPTF | Controls pressure developed by the pump in hydraulic loop. By-pass occurs when preset pressure reaches 0-10,000 PSI. Turns clockwise to increase pressure, counter-clockwise to decrease.          |                  |
| Manual Operated Check Valve | CVM3         | 3/8"-18NPTF | Mounted in line to a cylinder and will hold pressure in the cylinder in the event of pressure loss in the system. Pressure is manually released.                                                   |                  |
|                             | CVMS3        | 3/8"-18NPTF | Mounted in line to a cylinder and will hold pressure in the cylinder in the event of pressure loss in the system. This model is equipped with high-pressure bypass. Pressure is manually released. |                  |



## Manifolds

10,000 PSI Rated



CMH6



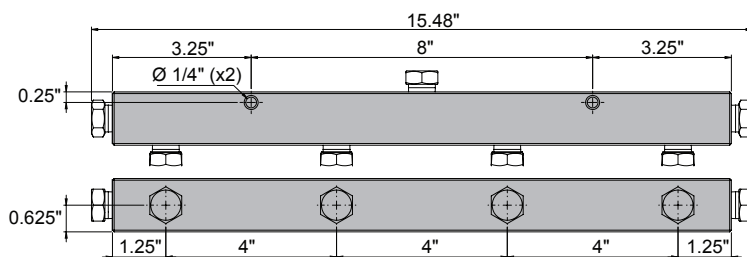
CM7



CM14



MFC4



MFC2



### FCMH6

- Controls the flow of (5) hydraulic hoses from one central location
- Sturdy design for long product life
- Convenient carry handle



FCMH6

| Manifold Type                    | Model Number | Number of Ports | Port Size   | Mounting Holes |
|----------------------------------|--------------|-----------------|-------------|----------------|
| 6-Port Hexagon Manifold          | CMH6         | 6               | 3/8"-18NPTF | 1/4"-20UNC     |
| 7" Long Manifold                 | CM7          | 7               | 3/8"-18NPTF | 1/4"-20UNC     |
| 14" Long Manifold                | CM14         | 7               | 3/8"-18NPTF | 1/4"-20UNC     |
| Manifold with Two Needle Valves  | MFC2         | 3               | 3/8"-18NPTF | 0.28" Dia.     |
| Manifold with Four Needle Valves | MFC4         | 5               | 3/8"-18NPTF | 0.28" Dia.     |
| Spider Valves                    | FCMH6        | 6               | 3/8"-18NPTF | -              |

# Hydraulic Pressure Gauge

Digital or Analog



GE2514 Back-Lit digital pressure gauge displays in: PSI, BAR, KG/CM2 and MPa

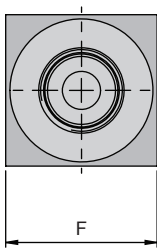
| Gauge Type | Model Number | Certified Gauge | Face Dia. (in) | Thread (in)  | Material  | Pressure Range |           | Graduation             |                        |                        |                        |
|------------|--------------|-----------------|----------------|--------------|-----------|----------------|-----------|------------------------|------------------------|------------------------|------------------------|
|            |              |                 |                |              |           | (psi)          | (bar)     | Major Graduation (psi) | Minor Graduation (psi) | Major Graduation (bar) | Minor Graduation (bar) |
| Digital    | GE2514       | -               | 2.50           | 1/4"-18 NPTF | Stainless | 0 - 10,000     | 0 - 700   | -                      | -                      | -                      | -                      |
| Dry        | GD2514       | -               | 2.50           | 1/4"-18 NPTF | Brass     | 0 - 15,000     | 0 - 1,034 | 2,000                  | 200                    | 100                    | 20                     |
|            | GD4014       | -               | 4.00           | 1/4"-18 NPTF | Brass     | 0 - 15,000     | 0 - 1,034 | 2,000                  | 200                    | 100                    | 20                     |
|            | GD2512       | -               | 2.50           | 1/2"-14 NPTF | Brass     | 0 - 10,000     | 0 - 700   | 2,000                  | 200                    | 100                    | 20                     |
|            | GD4012       | -               | 4.00           | 1/2"-14 NPTF | Brass     | 0 - 10,000     | 0 - 700   | 2,000                  | 200                    | 100                    | 20                     |
| Wet        | GW2514       | -               | 2.50           | 1/4"-18 NPTF | Brass     | 0 - 15,000     | 0 - 1,034 | 2,000                  | 200                    | 100                    | 20                     |
|            | GW4014       | -               | 4.00           | 1/4"-18 NPTF | Brass     | 0 - 15,000     | 0 - 1,034 | 2,000                  | 200                    | 100                    | 20                     |
|            | GW4014-CERT  | yes             | 4.00           | 1/4"-18 NPTF | Stainless | 0 - 20,000     | 0 - 1,379 | 2,000                  | 200                    | 100                    | 20                     |
|            | GW2512       | -               | 2.50           | 1/2"-14 NPTF | Brass     | 0 - 10,000     | 0 - 700   | 2,000                  | 200                    | 100                    | 20                     |
|            | GW4012       | -               | 4.00           | 1/2"-14 NPTF | Brass     | 0 - 10,000     | 0 - 700   | 2,000                  | 200                    | 100                    | 20                     |

## Gauge Adapter

10,000 PSI Rated



CF3814



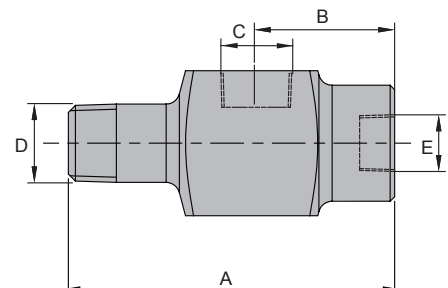
CF3812E



CF3812



| Model Number | Dimensions (in) |      |             |             |             |      |
|--------------|-----------------|------|-------------|-------------|-------------|------|
|              | A               | B    | C           | D           | E           | F    |
| CF3814       | 5.12            | 1.38 | 1/4"-18NPTF | 3/8"-18NPTF | 3/8"-18NPTF | 1.25 |
| CF3812       | 2.81            | 1.38 | 1/2"-14NPTF | 3/8"-18NPTF | 3/8"-18NPTF | 1.25 |
| CF3812E      | 6.10            | 1.38 | 1/2"-14NPTF | 3/8"-18NPTF | 3/8"-18NPTF | 1.25 |





## Hydraulic Oil

ISO 46

- Recommended for all BVA cylinders and pumps



F01

| Volume (gal) | Model Number | Viscosity Index (min) | Viscosity @ 100°F (S.U.S.) | Viscosity @ 210°F (S.U.S.) | ASTM Grade | Flash Point (°F) | Pour Point (°F) | API Gravity |
|--------------|--------------|-----------------------|----------------------------|----------------------------|------------|------------------|-----------------|-------------|
| 1            | F01          | 144                   | 234                        | 53                         | 215        | 356              | -49             | 30.8        |
| 55           | F55          | 144                   | 234                        | 53                         | 215        | 356              | -49             | 30.8        |

## Coupler Dust Cover

- Keeps contaminants out of the system

| Model Number | Coupler Compatibility |
|--------------|-----------------------|
| CDC38        | CH38, CH38F, CH38M    |



CDC38

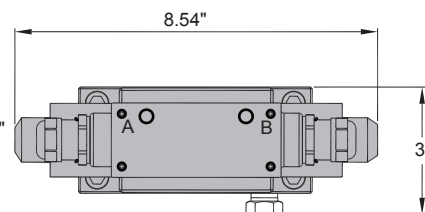
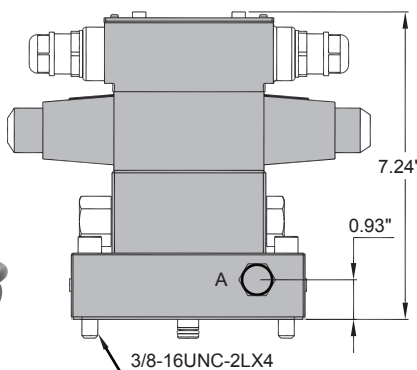
## Solenoid Valves

**Pump Mounted**

- Pump mounted solenoid kits converts your manual pump to an electrically controlled pump.



PS33L



| Use With Cylinder | Model Number | Valve Type      | Valve Function        | Hydraulic Symbol | Schematic Flow path |  |   | Weight (lbs) |
|-------------------|--------------|-----------------|-----------------------|------------------|---------------------|--|---|--------------|
| Single Acting     | PS33L        | Solenoid 115VAC | Advance/ Hold/Re-turn |                  |                     |  |   | 7.0          |
| Single Acting     | PD33         | Solenoid 115VAC | Advance/ / Return     |                  |                     |  | - | 6.0          |
| Double Acting     | PS43L        | Solenoid 115VAC | Advance/ Hold/Re-turn |                  |                     |  |   | 7.0          |

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CH38



CFS38



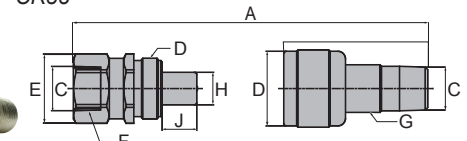
CH14



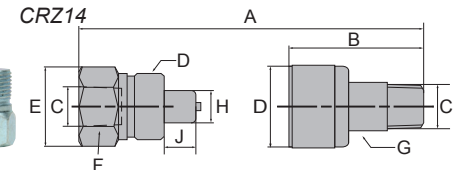
## Hydraulic Couplers

10,000 PSI Rated

CR38



CRZ14



| Coupler Type         | Model Numbers |           |             | Dimensions (in) |      |             |      |      |      |      |      |      |
|----------------------|---------------|-----------|-------------|-----------------|------|-------------|------|------|------|------|------|------|
|                      | Complete Set  | Male Half | Female Half | A*              | B    | C           | D    | E    | F    | G    | H    | J    |
| High-Flow Coupler    | CH38          | CH38M     | CH38F       | 3.35            | 2.84 | 3/8"-18NPTF | 1.10 | -    | 1.00 | 0.75 | 0.63 | 0.63 |
| Flush-Face Coupler   | CFS38         | CFS38M    | CFS38F      | 4.36            | 2.85 | 3/8"-18NPTF | 1.21 | 1.06 | 1.12 | 0.79 | 0.63 | 0.63 |
| Regular-Flow Coupler | CR38          | CR38M     | CR38F       | 3.15            | 2.20 | 3/8"-18NPTF | 1.04 | -    | 0.73 | 0.50 | 0.53 | 0.53 |
| High-Flow Coupler    | CH14          | CH14M     | CH14F       | 2.83            | 2.35 | 1/4"-18NPTF | 0.87 | -    | 0.83 | 0.62 | 0.41 |      |
| Zinc Coupler         | CRZ14         | CRZ14M    | CRZ14F      | 2.42            | 1.67 | 1/4"-18NPTF | 0.95 | 0.83 | 0.58 | 0.39 | 0.35 | 0.35 |

\* Value A is total length when male and female couplers are connected.

## Foot Pedals

Single or Double



FP1



FP2

Foot controls with 10' cord. This option replaces the hand controls on solenoid equipped models.

- Hands free pump operation
- Can be used with all pumps equipped with solenoid valves

## Wireless Hand Held Control



WR12K

- Allows for increased mobility and safety
- Nominal range of 325 feet (greater w/ unobstructed line of sight)
- Batteries last 100 hours with continuous key press (2 AAA batteries)
- For hands free pump operation
- Contact your local BVA dealer for further information

## External Pressure Adjustment

Sandwich Mounted

| Model Number | Pressure Adj. Range (psi) | Interval (psi) | Suitable Model               |
|--------------|---------------------------|----------------|------------------------------|
| PW-AS1       | 1,000 ~ 10,000            | 50             | PE Series, 1 Gal. Reservoir  |
| PW-AS2       |                           |                | PE Series, 2+ Gal. Reservoir |
| PW-AS3       |                           |                | PU20 Series Pump             |
| PW-AS4       |                           |                | PU20DMP Series               |



PW-AS1

- Pressure can be adjusted externally (1,000-10,000 psi)
- Works with single and double acting cylinders



CMR2

## Pump Mounted Manifold Block

### CMR2

- Converts BVA pumps with mounted valves for use with remote mounted valves
- Comes with 4 mounting bolts

## Pressure Switch

### CVS1

- Automatically shuts off electric pump when predetermined system pressure is reached



CVS1

| Model Number | Adjustable Pressure Range | Electrical Rating | Port Size   | Weight (lbs) |
|--------------|---------------------------|-------------------|-------------|--------------|
| CVS1         | 1,000~10,150 psi          | 15 amp @ 250V max | 1/4"-18NPTF | 1.32         |

## Hydraulic Hoses

### Rubber or Thermoplastic

- All hoses are designed with a Maximum Working Pressure of 10,000 psi
- Heavy Duty Rubber Hoses are made with 2 layers of steel braids and comply with the Material Handling Institutes IJ-100 standard for hoses and carries a 2:1 safety factor
- Thermoplastic Hoses are made with 2 layers of steel braids with wrapped in a Polyurethane jacket and carries a 4:1 safety factor

| Hose ID (in) | Hose Length (ft) | Hose End 1   | Hose End 2                                                                                                        |               |                                                                                                                   |               |                                                                                     |               |                                                                                      |               |
|--------------|------------------|--------------|-------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------------|---------------|
|              |                  |              |  |               |  |               |  |               |  |               |
|              |                  |              | 1/4"-18 NPTF                                                                                                      |               | 3/8"-18 NPTF                                                                                                      |               | CR38M Coupler                                                                       |               | CH38M Coupler                                                                        |               |
|              |                  |              | Rubber                                                                                                            | Thermoplastic | Rubber                                                                                                            | Thermoplastic | Rubber                                                                              | Thermoplastic | Rubber                                                                               | Thermoplastic |
|              |                  |              | Model Number                                                                                                      | Model Number  | Model Number                                                                                                      | Model Number  | Model Number                                                                        | Model Number  | Model Number                                                                         | Model Number  |
| 1/4"         | 6                | 1/4"-18 NPTF | CS1414                                                                                                            | CT1414        | -                                                                                                                 | -             | -                                                                                   | -             | CS1414M                                                                              | CT1414M       |
|              | 2                | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3814A                                                                                                           | -             | CS3814AMR                                                                           | -             | CS3814AM                                                                             | -             |
|              | 3                | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3814B                                                                                                           | CT3814B       | CS3814BRM                                                                           | -             | CS3814BM                                                                             | -             |
|              | 6                | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3814                                                                                                            | CT3814        | CS3814MR                                                                            | -             | CS3814M                                                                              | CT3814M       |
|              | 10               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3814C                                                                                                           | CT3814C       | CS3814CRM                                                                           | -             | CS3814CM                                                                             | CT3814CM      |
|              | 20               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3814D                                                                                                           | CT3814D       | CS3814DRM                                                                           | -             | CS3814DM                                                                             | CT3814DM      |
|              | 30               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3814G                                                                                                           | CT3814E       | -                                                                                   | -             | CS3814GM                                                                             | CT3814EM      |
| 3/8"         | 6                | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3838                                                                                                            | CT3838        | CS3838MR                                                                            | -             | CS3838M                                                                              | CT3838M       |
|              | 10               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3838C                                                                                                           | CT3838C       | -                                                                                   | -             | CS3838CM                                                                             | CT3838CM      |
|              | 20               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3838D                                                                                                           | CT3838D       | -                                                                                   | -             | CS3838DM                                                                             | CT3838DM      |
|              | 30               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3838E                                                                                                           | CT3838E       | -                                                                                   | -             | CS3838EM                                                                             | CT3838EM      |
|              | 50               | 3/8"-18 NPTF | -                                                                                                                 | -             | CS3838F                                                                                                           | CT3838F       | -                                                                                   | -             | CS3838FM                                                                             | CT3838FM      |

# Pump Mounted Valves

For PE, PG and PD Pumps Only



| Valve Operation | Valve Type                                | Use w/ Cylinder | Model Number | Hydraulic Symbol | Schematic Flow path |  |   | Weight (lbs) |
|-----------------|-------------------------------------------|-----------------|--------------|------------------|---------------------|--|---|--------------|
| Manual          | 3-Way, 2-Position                         | Single Acting   | PW2          |                  |                     |  | - | 4            |
|                 | 3-way, 3-Position, Tandem center          | Single Acting   | PW3          |                  |                     |  |   | 4            |
|                 | 4-Way, 3-Position, Tandem center          | Double Acting   | PW4          |                  |                     |  |   | 3            |
|                 | 3-Way, 3-Position, Tandem center, Locking | Single Acting   | PW33L        |                  |                     |  |   | 6            |
|                 | 4-Way, 3-Position, Tandem center, Locking | Double Acting   | PW43L        |                  |                     |  |   | 6            |



## Remote Mounted Directional Control Valves

*Not to be used with Hand Pumps*

PR33, PR33C



PR33L, PR33CL



PR43, PR43C



PR43CL



| Valve Operation | Valve Type                                | Use w/ Cylinder | Model Number | Hydraulic Symbol | Schematic Flow path |  |  | Weight (lbs) |
|-----------------|-------------------------------------------|-----------------|--------------|------------------|---------------------|--|--|--------------|
| Manual          | 3-Way, 3 Position, Tandem center          | Single Acting   | PR33         |                  |                     |  |  | 3.5          |
|                 | 3-Way, 3 Position, Closed center          |                 | PR33C        |                  |                     |  |  | 3.5          |
|                 | 3-Way, 3 Position, Tandem center, Locking |                 | PR33L        |                  |                     |  |  | 5.7          |
|                 | 3-Way, 3 Position, Closed center, Locking |                 | PR33CL       |                  |                     |  |  | 5.7          |
|                 | 4-Way, 3 Position, Tandem center          | Double Acting   | PR43         |                  |                     |  |  | 3.5          |
|                 | 4-Way, 3 Position, Tandem center, Locking |                 | PR43L        |                  |                     |  |  | 5.7          |
|                 | 4-Way, 3 Position, Closed center          |                 | PR43C        |                  |                     |  |  | 3.5          |
|                 | 4-Way, 3 Position, Closed center, Locking |                 | PR43CL       |                  |                     |  |  | 5.7          |

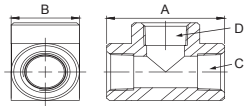
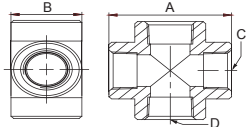
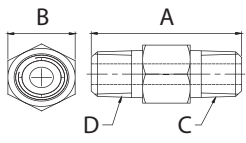
All valves have a detent in the center position.

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# Fittings

10,000 PSI Rated

| Fitting Type                                                                        |                                                       | Model Number | Dimensions |        |                     |                     | Display Image                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------|--------------|------------|--------|---------------------|---------------------|---------------------------------------------------------------------------------------|
|                                                                                     |                                                       |              | A (in)     | B (in) | C                   | D                   |                                                                                       |
| Adapters                                                                            |                                                       |              |            |        |                     |                     |                                                                                       |
|    | Adapter<br>½"-14NPTF - Female<br>¾"-18NPTF - Male     | FT108        | 1.69       | 1.14   | Male<br>¾"-18NPTF   | Female<br>½"-14NPTF |    |
|                                                                                     | Adapter<br>½"-14NPTF - Female<br>¼"-18NPTF - Male     | FT118        | 1.69       | 1.14   | Male<br>¼"-18NPTF   | Female<br>½"-14NPTF |                                                                                       |
|    | Fitting                                               | CA3814       | 1.38       | 0.91   | Male<br>¼"-18NPTF   | Female<br>¾"-18NPTF |    |
| Bushings/Connectors                                                                 |                                                       |              |            |        |                     |                     |                                                                                       |
|    | Bushing                                               | CB1438       | 0.87       | 0.67   | Male<br>¾"-18NPTF   | Female<br>¼"-18NPTF |    |
|                                                                                     | Bushing                                               | CB1412       | 1.10       | 0.87   | Male<br>½"-14NPTF   | Female<br>¼"-18NPTF |                                                                                       |
|                                                                                     | Bushing                                               | CB3812       | 1.10       | 0.87   | Male<br>½"-14NPTF   | Female<br>¾"-18NPTF |                                                                                       |
|   | 2 way 45° Connector<br>Street Elbow, ¾" to<br>¾"-NPTF | FT045        | 1.89       | 1.02   | Male<br>¾"-18NPTF   | Female<br>¾"-18NPTF |   |
|  | 2 way 90° Connector<br>Street Elbow, ¾" to<br>¾"-NPTF | FT101        | 1.81       | 1.02   | Male<br>¾"-18NPTF   | Female<br>¾"-18NPTF |  |
|  | 2 way 90° Connector<br>Elbow, ¾" to<br>¾" - NPTF      | FT107        | 1.40       | 1.02   | Female<br>¾"-18NPTF | Female<br>¾"-18NPTF |  |
|  | 3 Way Connector<br>¾" to ¾" - NPTF                    | FT106        | 1.77       | 1.02   | Female<br>¾"-18NPTF | Female<br>¾"-18NPTF |  |
|  | 4 Way Connector<br>Cross, ¾" to<br>¾" - NPTF          | FT105        | 1.77       | 1.02   | Female<br>¾"-18NPTF | Female<br>¾"-18NPTF |  |
| Couplings                                                                           |                                                       |              |            |        |                     |                     |                                                                                       |
|  | Coupling Reducing<br>Connector, ¾" to ¼"-NPTF         | FT102        | 1.18       | 1.02   | Female<br>¼"-18NPTF | Female<br>¾"-18NPTF |  |
|                                                                                     | Coupling Reducing Con-<br>nector, ½" to ¾" - NPTF     | FT112        | 1.89       | 1.14   | Female<br>½"-14NPTF | Female<br>¾"-18NPTF |                                                                                       |
|                                                                                     | Coupling ¾" to ¾"- NPTF                               | FT103        | 1.18       | 1.02   | Female<br>¾"-18NPTF | Female<br>¾"-18NPTF |                                                                                       |
| Hex Nipples                                                                         |                                                       |              |            |        |                     |                     |                                                                                       |
|  | Male Connector Hex<br>Nipple, ¼" to ¼" - NPTF         | FT104        | 1.50       | 0.67   | Male<br>¼"-18NPTF   | Male<br>¼"-18NPTF   |  |
|                                                                                     | Male Connector Hex<br>Nipple, ¾" to ¾"- NPTF          | FT114        | 1.50       | 0.75   | Male<br>¾"-18NPTF   | Male<br>¾"-18NPTF   |                                                                                       |
|                                                                                     | Male Connector Hex<br>Nipple, ¼" to ¾"- NPTF          | FT124        | 1.45       | 0.75   | Male<br>¼"-18NPTF   | Male<br>¾"-18NPTF   |                                                                                       |