

# DD & DM Valves

## Dualine, Grease & Oil



### General

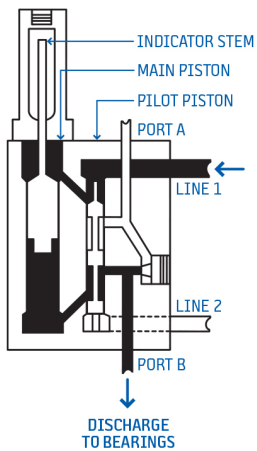
DD and DM Valves are completely hydraulic in operation and will deliver either oil or grease. These Dualine valves are also fully and individually adjustable in regard to discharge quantity and are equipped with operational indicators. Each DD valve serves two bearings; however, by a simple method of cross-porting, it will serve one. Therefore, a four valve block, as an example, can actually serve anywhere between four and eight bearings. DM series valves always have one discharge port per valve section located on the bottom of the valve. DD and DM valves can be supplied in several basic discharge capacities and are available in blocks consisting of one, two, three or four valves.



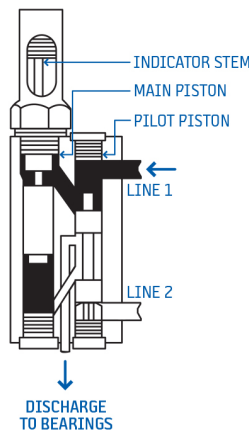
### Operation

Pressurized lubricant entering the valve forces the pilot piston down, allowing pressure to be applied to top of the main piston. The main piston begins to move down under pressure, forcing lubricant from its chamber, past the lower land of the pilot piston and out the discharge line to the bearing. When pressure in the supply line is reversed, lubricant then enters valve and forces the pilot piston up, allowing pressure to be applied to bottom of main piston, which begins to move up, forcing lubricant from its chamber, past the upper land of the pilot piston and out the second discharge line to the bearing.



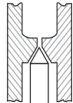

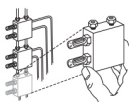

#### DD Valve



#### DM Valve



### Features

|  |  |
|--|--|
| <p>No springs or check valves.</p>                            | <p>Positive indication at every bearing.</p>  |
| <p>No small ports.</p>                                        | <p>Has only two moving parts.</p>             |
| <p>No system redesign when adding or subtracting points.</p>  | <p>Individual adjustability.</p>              |



## DD & DM Valve Output

| Model | Discharge per piston stroke |                        | Discharge change per adj. screw revolution | Total adj. range |
|-------|-----------------------------|------------------------|--|------------------|
|       | Minimum                     | Maximum                |  |                  |
| DD-2X | .09cc (.006 cu. in.)        | .59cc (.036 cu. in.)   | .03cc (.002 cu. in.)                       | 0.45" (11mm)     |
| DD-5X | .18cc (.011 cu. in.)        | 4.74cc (.289 cu. in.)  | .18cc (.011 cu. in.)                       | 1.21" (30mm)     |
| DM-3X | .19cc (.012 cu. in.)        | 1.18cc (.072 cu. in.)  | .08cc (.005 cu. in.)                       | 0.56" (14mm)     |
| DM-4X | .59cc (.036 cu. in.)        | 2.21cc (.135 cu. in.)  | .11cc (.007 cu. in.)                       | 0.69" (17mm)     |
| DM-5X | 1.23cc (.075 cu. in.)       | 5.01cc (.306 cu. in.)  | .16cc (.010 cu. in.)                       | 1.12" (28mm)     |
| DM-6X | 2.95cc (.180 cu. in.)       | 13.11cc (.800 cu. in.) | .64cc (.039 cu. in.)                       | 0.97" (24mm)     |

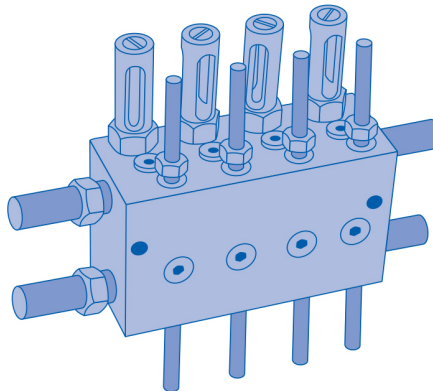
Note: All DD & DM valves are rated to 3500 psi (240 bar) max.

## Typical Valve Layout

### DD Valve

A typical four valve DD block with eight discharge ports. The valves can easily be converted from dual to single discharge by a cross porting kit. Valve can be reconverted later to dual discharge.

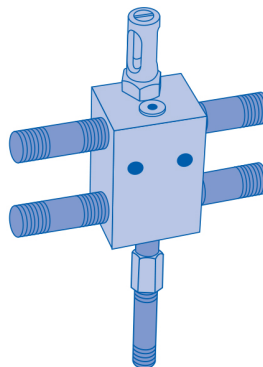
- + Brass indicator housing standard
- + Solid copper crush washers for superior sealing
- + Viton seals standard 350°F (163°C)
- + Easy ID if using single or dual outlet plugs
- + Stainless steel indicator pins standard
- + NPT or BSP outlets available will accept all standard fittings and Farval U81 fittings
- + 10,000 psi rated Koenig plugs used to seal machining ports
- + Solid pin connection to main piston
- + Available in 1-12 lubrication outlets



### DM Valve

A typical one valve DM block. Valve has a discharge port on the bottom. A four valve block would have four discharge ports.

- + Supply ports from pump
- + Adjustment screw (varies valve output)
- + Indicator stem (shows that valve is operating)
- + Check valve (required in discharge port of some oil systems)

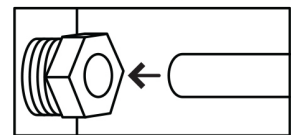


## U-81 One Piece Nut & Sleeve

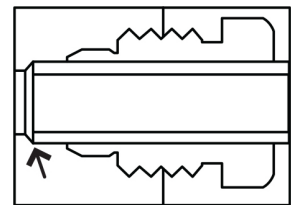
Tube to male pipe. Farval U-81 connectors allow you to connect both supply and discharge lubrication lines to the DD or DM valves. It is rated beyond the burst pressure of the tubing used.

### U-81 Assembly Procedure

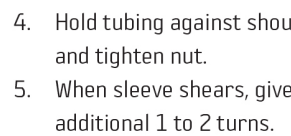
1. Cut tubing off squarely and remove burrs from cut end. (Do not chamfer outside of tubing.)



2. Insert tubing into fitting.

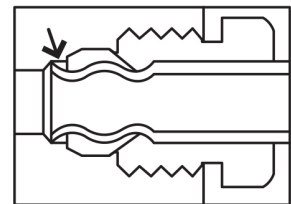


3. Make sure tubing bottoms against valve shoulder.



4. Hold tubing against shoulder and tighten nut.

5. When sleeve shears, give nut additional 1 to 2 turns.





## How to Order

| Name     | Lube points (#) | Basic valve without connectors | Basic valve with U-81-XX connectors | Basic valve without indicator stem | Basic valve without indicator stem and with connectors |
|----------|-----------------|--------------------------------|-------------------------------------|------------------------------------|--|
| DD Valve | 2               | DD22250                        | DD22250T <sup>1</sup>               | DD22251                            | DD22251T <sup>1</sup>                                  |
|          | 4               | DD24250                        | DD24250T <sup>1</sup>               | DD24251                            | DD24251T <sup>1</sup>                                  |
|          | 6               | DD26250                        | DD26250T <sup>1</sup>               | DD26251                            | DD26251T <sup>1</sup>                                  |
|          | 8               | DD28250                        | DD28250T <sup>1</sup>               | DD28251                            | DD28251T <sup>1</sup>                                  |
|          | 2               | DD52250                        | DD52250T <sup>2</sup>               | ---                                | ---  |
|          | 4               | DD54250                        | DD54250T <sup>2</sup>               | DD54251                            | ---  |
|          | 6               | DD56250                        | DD56250T <sup>2</sup>               | DD56251                            | ---  |
|          | 8               | DD58250                        | DD58250T <sup>2</sup>               | DD58251                            | ---  |
|          | 10              | DD510250                       | DD510250T <sup>2</sup>              | ---                                | ---  |
|          | 12              | DD512250                       | DD512250T <sup>2</sup>              | ---                                | ---  |
|          | 12              | DD512C250 (BSPP)               | ---                                 | ---                                | ---  |
|          | DM Valve        | 1                              | DM31100                             | DM31100T <sup>2</sup>              | ---  |
| 2        |                 | DM32100                        | DM32100T <sup>2</sup>               | ---                                | ---  |
| 3        |                 | DM33100                        | DM33100T <sup>2</sup>               | ---                                | ---  |
| 4        |                 | DM34100                        | DM34100T <sup>2</sup>               | ---                                | ---  |
| 1        |                 | DM41100                        | DM41100T <sup>2</sup>               | ---                                | ---  |
| 2        |                 | DM42100                        | DM42100T <sup>2</sup>               | ---                                | ---  |
| 3        |                 | DM43100                        | DM43100T <sup>2</sup>               | ---                                | ---  |
| 4        |                 | DM44100                        | DM44100T <sup>2</sup>               | ---                                | ---  |
| 1        |                 | DM51100                        | DM51100T <sup>2</sup>               | ---                                | ---  |
| 2        |                 | DM52100                        | DM52100T <sup>2</sup>               | ---                                | ---  |
| 3        |                 | DM53100                        | DM53100T <sup>2</sup>               | ---                                | ---  |
| 4        |                 | DM54100                        | DM54100T <sup>2</sup>               | ---                                | ---  |
| 1        |                 | DM61100A                       | DM61100AT <sup>2</sup>              | ---                                | ---  |
| 2        |                 | DM62100A                       | DM62100AT <sup>2</sup>              | ---                                | ---  |
| 1        |                 | DM62101A <sup>3</sup>          | DM62101AT <sup>2</sup>              | ---                                | ---  |

<sup>1</sup> Supply 1/4" tube; discharge 3/16" tube <sup>2</sup> Supply 3/8" tube; discharge 1/4" tube <sup>3</sup> Discharge supply twice DM61

When ordering specify by name, lube points and part number, e.g. DM Valve without connectors, 3 lube points, Part #DM33-100.

### U-81 One Piece Nut & Sleeve

| Tube Size A | Pipe Size B | Steel Part # | Brass Part # |
|-------------|-------------|--------------|--------------|
| 3/16" NPT   | 1/8" NPT    | U-81-AA1     | U-81-AA1B    |
| 1/4" NPT    | 1/8" NPT    | U-81-B1      | U-81-B1B     |
| 1/4" NPT    | 1/4" NPT    | U-81-B2      | U-81-B2B     |
| 3/8" NPT    | 3/8" NPT    | U-81-D3      | U-81-D3B     |

Note: Steel tube fittings are to be used with seamless steel or copper metal plated steel tubing. Brass tube fittings are to be used with brass, copper or nylon tubing only.



**Micro Switch Kits**

| Description                        | Part #     |
|------------------------------------|------------|
| For DM30 series                    | KIT13025B  |
| For DM40 series                    | 39877      |
| For DM60 series                    | KIT13009B  |
| For DD50 series & DM50 series      | KIT13014B  |
| For DM60 series with NEMA 4 switch | KIT13009B4 |
| For DD50 & DM50 with NEMA 4 switch | 39145      |

*Note: Need one kit for each indicator pin.*

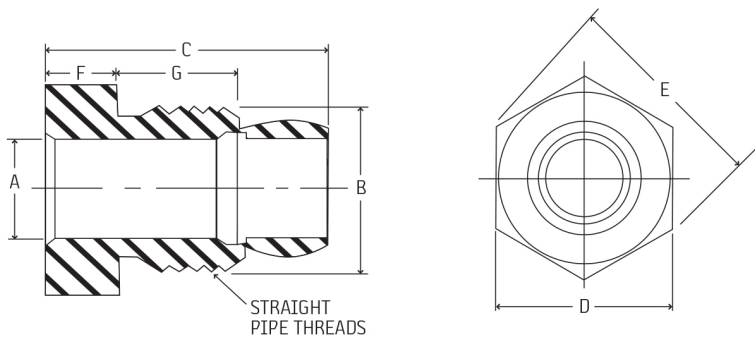
Refer to the following documents:  
 + Datasheet #35695:  
 DD50 & DM60 Indicator Pin Monitor

**Porting Kits (Optional)**

| Description  | Part #    |
|--|-----------|
| For field conversion to single outlet. For DD20 series | DDK20-200 |
| For DD50 series  | DDK30-200 |

**Dimensional Schematics**

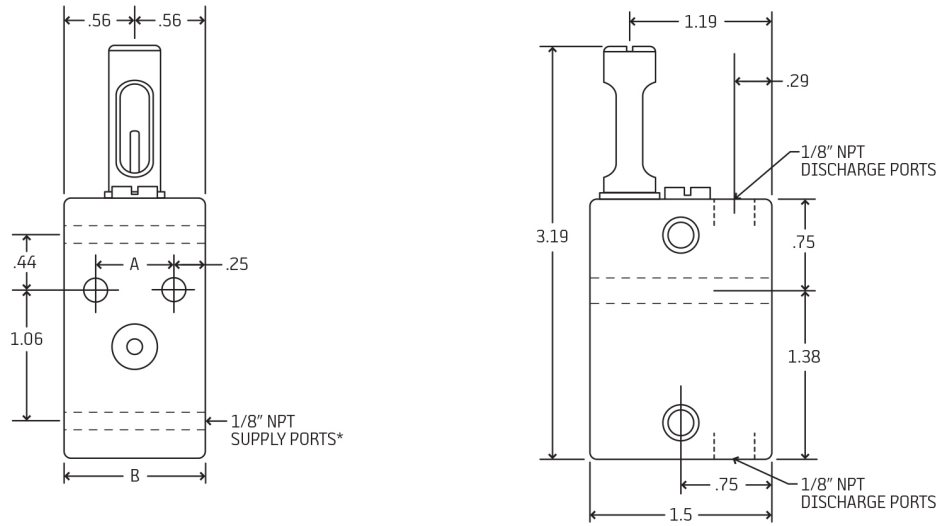
**U-81 One Piece Nut & Sleeve**



| Dimensions |         |       |       |       |  |
|------------|---------|-------|-------|-------|--|
| C          | D (HEX) | E     | F     | G     |  |
| 0.84"      | 0.44"   | 0.51" | 0.23" | 0.33" |  |
| 0.75"      | 0.44"   | 0.51" | 0.22" | 0.34" |  |
| 0.94"      | 0.56"   | 0.65" | 0.25" | 0.50" |  |
| 1"         | 0.69"   | 0.79" | 0.25" | 0.44" |  |



**DD20 Valve**

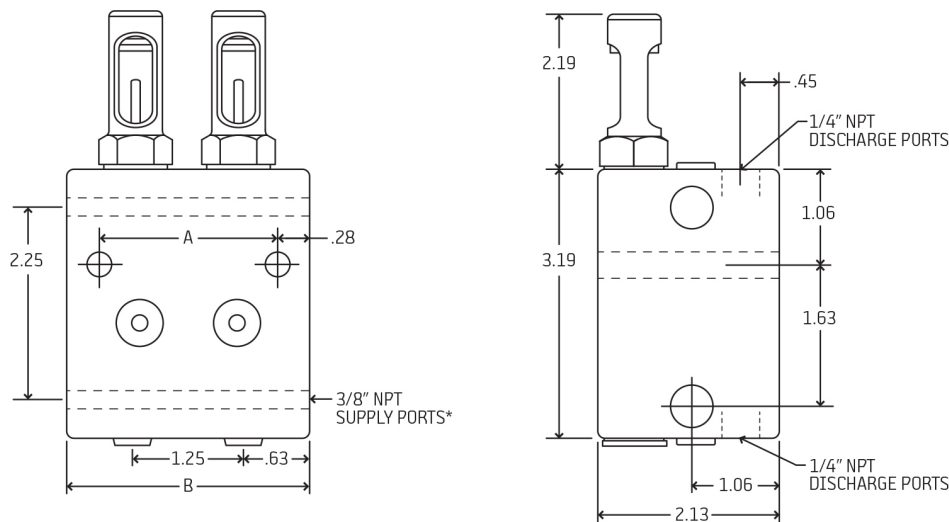


Measurements shown in inches.

\* All DD models have 4 pipe supply ports.

| Discharge Ports | A     | B     |
|-----------------|-------|-------|
| 2               | 0.63" | 1.13" |
| 4               | 1.19" | 1.69" |
| 6               | 1.75" | 2.25" |
| 8               | 2.31" | 2.81" |

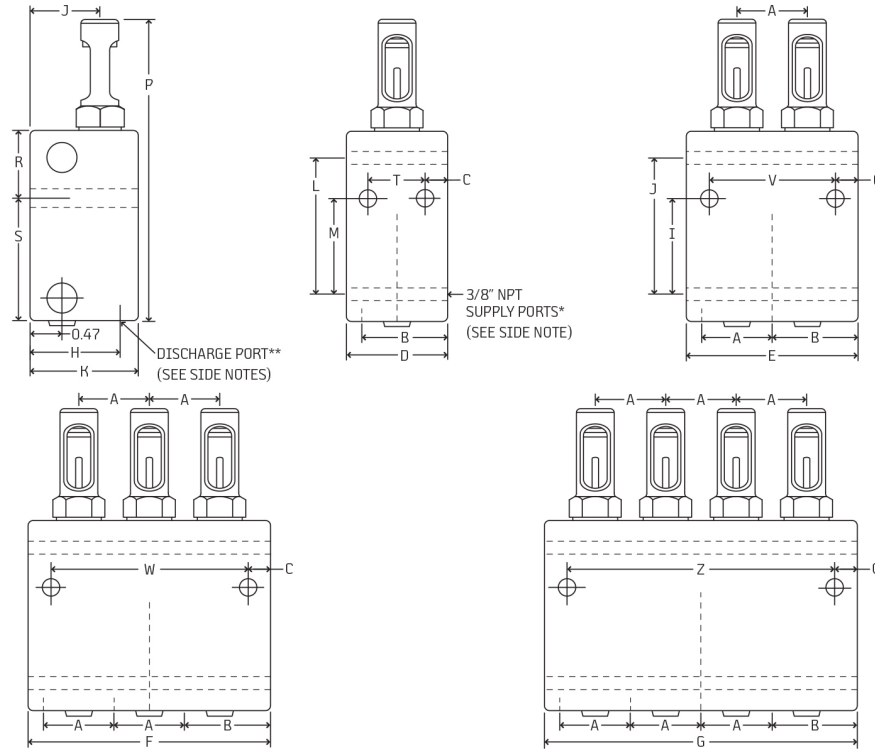
**DD50 Valve**



| Discharge Ports | A     | B     |
|-----------------|-------|-------|
| 2               | 1.19" | 1.75" |
| 4               | 2.44" | 3"    |
| 6               | 3.69" | 4.25" |
| 8               | 4.94" | 5.5"  |



**DM Valve**



**ATTENTION**

\* All DM models have 4 pipe supply ports.

**\*\*Discharge ports on bottom only:  
1/8" NPT for DM 31, 32, 33, 34  
1/4" NPT for all other DM valves**

|   | DM31  | DM32, 33, 34 | DM41, 42, 43, 44 | DM51, 52, 53, 54 | DM61, 62 |
|---|-------|--------------|------------------|------------------|----------|
| A | 1.13" | 1.13"        | 1.25"            | 1.44"            | 1.81"    |
| B | 1.44" | 1.44"        | 1.56"            | 1.69"            | 2.03"    |
| C | 0.47" | 1.44"        | 0.41"            | 0.41"            | 0.41"    |
| D | 1.75" | ---          | 1.94"            | 2.13"            | 2.44"    |
| E | ---   | 2.88"        | 3.19"            | 3.56"            | 4.25"    |
| F | ---   | 4"           | 4.44"            | 5"               | ---      |
| G | ---   | 5.13"        | 5.69"            | 6.44"            | ---      |
| H | 1.09" | 1.09"        | 1.16"            | 1.28"            | 1.47"    |
| J | 1.09" | 1.09"        | 1.16"            | 1.28"            | 1.47"    |
| K | 1.5"  | 1.5"         | 1.56"            | 1.75"            | 2.25"    |
| L | 1.63" | 1.63"        | 2.19"            | 2.19"            | 2.19"    |
| M | 1.09" | 1.19"        | 1.5"             | 1.56"            | 1.56"    |
| P | 3.94" | 3.94"        | 4.75"            | 5.44"            | 5.94"    |
| R | 0.97" | 0.88"        | 1.09"            | 1.16"            | 1.28"    |
| S | 1.53" | 1.63"        | 1.91"            | 2.09"            | 2.22"    |
| T | 0.81" | ---          | 1.06"            | 1.31"            | 1.63"    |
| V | ---   | ---          | 2.31"            | 2.75"            | 3.44"    |
| W | ---   | 1.13"        | 3.56"            | 4.19"            | ---      |
| Z | ---   | 2.25"        | 4.81"            | 5.63"            | ---      |