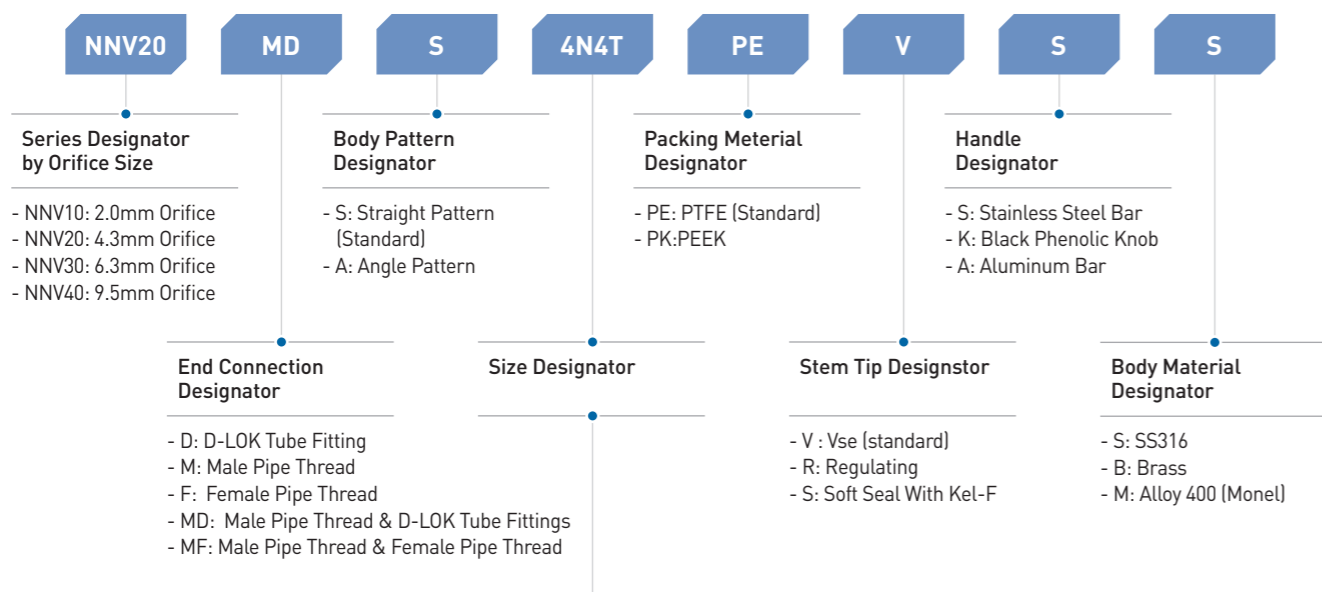


### How to Order



**NPT(ISO/BSP)**

| Thread(In) | 1/8   | 1/4   | 3/8   | 1/2   |
|------------|-------|-------|-------|-------|
| Designator | 2N(R) | 4N(R) | 6N(R) | 8N(R) |

**Tube**

| Fractional Tube | O.D.(In.)  | 1/8 | 1/4 | 3/8 | 1/2 | 3/4 |
|-----------------|------------|-----|-----|-----|-----|-----|
|                 | Designator | 2T  | 4T  | 6T  | 8T  | 12T |
| Metric Tube     | O.D.(mm)   | 3   | 6   | 8   | 10  | 12  |
|                 | Designator | 3M  | 6M  | 8M  | 10M | 12M |

### Technical Data

#### Temperature and Pressure Rating

| Body Material       | Stem              | Temperature Rating            | Pressure Rating     |
|---------------------|-------------------|-------------------------------|---------------------|
| Stainless Steel 316 | Vee & Regulating  | -65°F ~ 450°F (-54°C ~ 232°C) | 5000 psig (345 bar) |
|                     | Soft Seat (Kel-F) | -65°F ~ 200°F (-54°C ~ 93°C)  |                     |
| Brass               | Vee & Regulating  | -65°F ~ 400°F (-54°C ~ 204°C) | 3000 psig (207 bar) |
|                     | Soft Seat (Kel-F) | -65°F ~ 200°F (-54°C ~ 93°C)  |                     |
| Alloy 400 (Monel)   | Vee & Regulating  | -65°F ~ 450°F (-54°C ~ 232°C) | 3000 psig (207 bar) |
|                     | Soft Seat (Kel-F) | -65°F ~ 200°F (-54°C ~ 93°C)  |                     |

\* Above ratings shown are for a standard valve with PTFE packing

#### Temperature Vs. Working Pressure

| Temperature                   | Stainless Steel 316 | Brass               | Alloy 400 (Monel)   |
|-------------------------------|---------------------|---------------------|---------------------|
|                               | Working Pressure    |                     |                     |
| -65°F to 100°F (-54° to 38°C) | 5000 psig (345 bar) | 3000 psig (207 bar) | 3000 psig (207 bar) |
| 200°F (93°C)                  | 4300 psig (296 bar) | 2500 psig (172 bar) | 2650 psig (183 bar) |
| 250°F (121°C)                 | 4090 psig (282 bar) | 2320 psig (160 bar) | 2550 psig (176 bar) |
| 300°F (148°C)                 | 3865 psig (266 bar) | 2220 psig (153 bar) | 2485 psig (171 bar) |
| 350°F (176°C)                 | 3705 psig (255 bar) | 1460 psig (100 bar) | 2435 psig (168 bar) |
| 400°F (204°C)                 | 3550 psig (245 bar) | 725 psig (50 bar)   | 2380 psig (164 bar) |
| 450°F (232°C)                 | 3425 psig (236 bar) | -                   | 2360 psig (163 bar) |

#### Packing and Body Materials vs. Temperature and Pressure Rating

| Packing Material | Body Material       | Temperature Rating            | Pressure Rating     |
|------------------|---------------------|-------------------------------|---------------------|
| PTFE (Standard)  | Stainless Steel 316 | 450°F (232°C)                 | 3425 psig (236 bar) |
|                  | Alloy 400 (Monel)   | -65°F ~ 500°F (-54°C ~ 260°C) | 2360 psig (163 bar) |
| PEEK (Option)    | Stainless Steel 316 | -65°F ~ 600°F (-54°C ~ 315°C) | 3120 psig (215 bar) |
|                  | Alloy 400 (Monel)   | -65°F ~ 500°F (-54°C ~ 260°C) | 2360 psig (163 bar) |

### Factory Testing

Every NATMAN NNV Series Needle Valve is adjusted for factory testing at 1000 psig (69 bar) with nitrogen. Seat tests have a maximum allowable leak rate of 0.1 std cm<sup>3</sup>/min.

### Cleaning and Packaging

All valves are cleaned and packaged in accordance with D-LOK standard cleaning and packaging procedures.

### Safety in Valve Selection

Selections of valve function and rating, proper installation, material compatibility, operation and maintenance of these valves are the responsibility of the user. The system design, application must be taken into consideration to ensure optimal performance and safety. We accept no liability for any improper selection, installation, operation or maintenance.

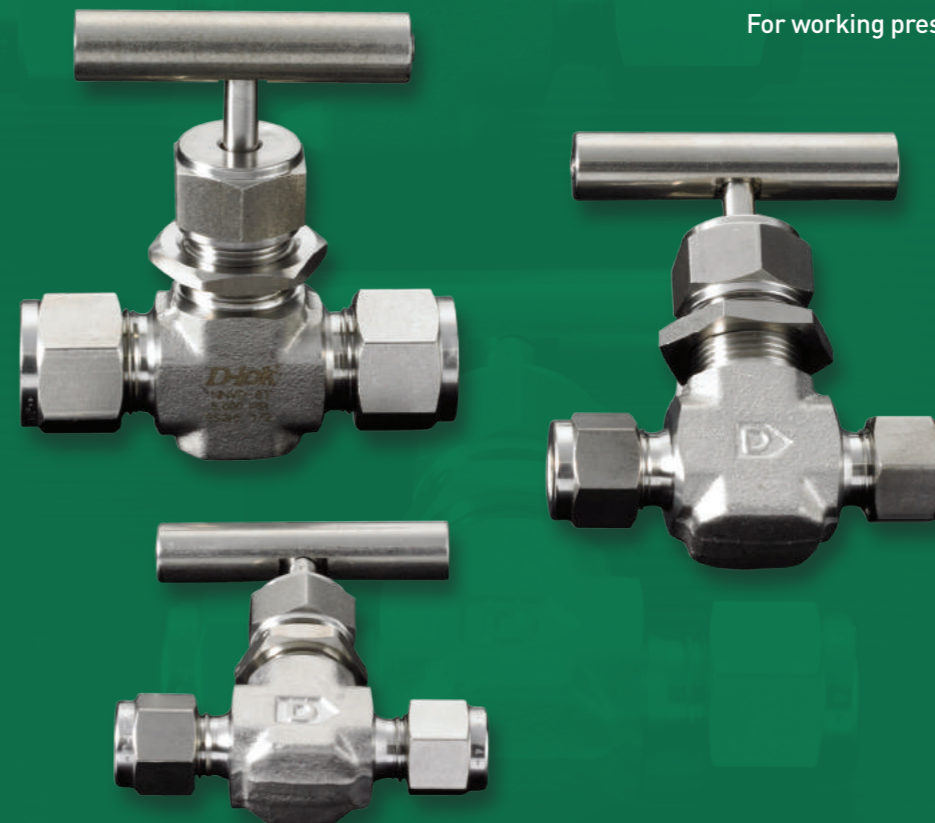


**NATMAN**®

# INTEGRAL BONNET NEEDLE VALVES

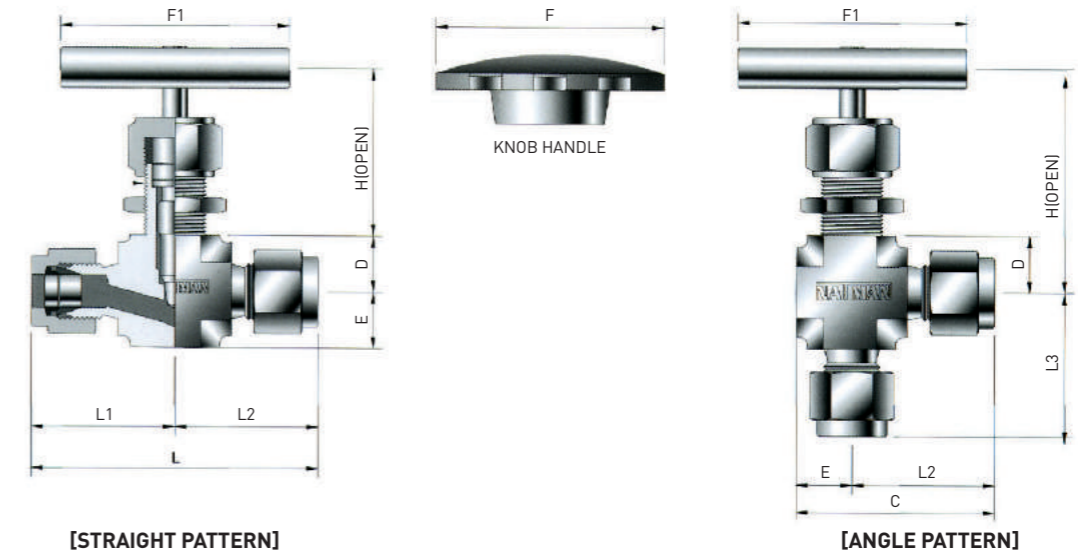
## NNV SERIES

For working pressure up to 5000psig (345bar)



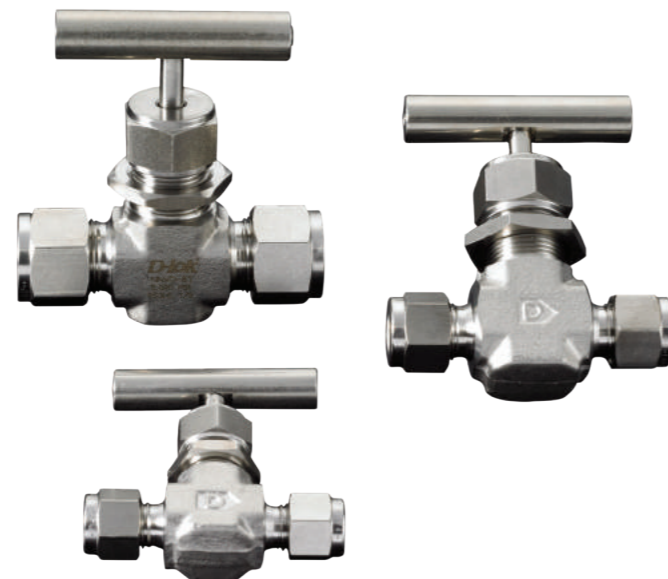
### Design Feature

- Pressure rating up to 5000 psig (345 bar)
- Temperature rating from -65°F to 450°F (-54°C to 232°C) with standard PTFE packing and up to 600°F (315°C) with optional PEEK packing
- Body materials available in SS316, Brass, and Alloy 400.
- Various end connection.
- Straight and angle patterns.
- Various stem tip types. vee, Regulating, and Soft Seat construction.
- Packing nut enables easy external adjustment.
- Various handle types.  
Stainless steel bar handle, Aluminum bar handle, and Black phenolic knob handle construction.
- 100% factory tested.



### Materials of Construction

| Part Description |            | Valve Body Materials          |                     |                    |
|------------------|------------|-------------------------------|---------------------|--------------------|
|                  |            | SS316                         | Brass               | Alloy 400          |
| Handle           | Bar        | Stainless Steel               | -                   | Stainless Steel    |
|                  | Knob       | -                             | Black Phenolic Knob | -                  |
| Packing Nut      |            | SS316 / A479                  | Brass 360 / B16     | Alloy R-405 / B164 |
| Packing          |            | SS316 / A479                  | Brass 360 / B16     | Alloy R-405 / B164 |
| Packing Ring     |            | Standard : PTFE Option : PEEK |                     |                    |
| Stem             | Vee        | SS316 / A479                  | Brass 360 / B16     | Alloy R-405 / B164 |
|                  | Regulation |                               |                     |                    |
|                  | Soft Seat  |                               |                     |                    |
| Soft Tip         |            | Kel-F (CTFE)                  |                     |                    |
| Panel Nut        |            | SS316 / A479                  | Brass 360 / B16     | SS316 / A276       |
| Body             |            | SS316 / A182                  | Brass 377 / B283    | Alloy R-400 / B564 |



### Ordering Information and Table of Dimensions

| Basic Part No. | End Connections |                 | Dimensions (mm) |      |      |      |      |      |      |      |      |      | Flow Data |     |      |
|----------------|-----------------|-----------------|-----------------|------|------|------|------|------|------|------|------|------|-----------|-----|------|
|                | Inlet           | Outlet          | L               | L1   | L2   | L3   | C    | D    | E    | F    | F1   | H    | Orifice   | CV  |      |
| NNV10          | F -2N-          | 1/8" Female NPT | 1/8" Female NPT | 42.0 | 21.0 | 21.0 | 21.0 | 30.5 | 11.0 | 9.5  | 28.0 | 32.0 | 51.2      | 2.0 | 0.09 |
|                | M -2N-          | 1/8" Male NPT   | 1/8" Male NPT   | 42.0 | 21.0 | 20.0 | 21.0 | 29.5 |      |      |      |      |           |     |      |
|                | MD -2N-2T-      | 1/8" Male NPT   | 1/8" D-LOK      | 47.0 | 21.0 | 26.0 |      | 35.5 |      |      |      |      |           |     |      |
|                | D -2T-          | 1/8" D-LOK      | 1/8" D-LOK      | 52.0 | 26.0 | 26.0 | 26.0 | 35.5 |      |      |      |      |           |     |      |
| NNV20          | D -3M-          | 3mm D-LOK       | 3mm D-LOK       | 52.0 | 26.0 | 26.0 | 26.0 | 35.5 | 11.0 | 9.5  | 38.0 | 45.0 | 51.2      | 4.3 | 0.37 |
|                | F -2N-          | 1/8" Female NPT | 1/8" Female NPT | 42.0 | 21.0 | 21.0 | 21.0 | 30.5 |      |      |      |      |           |     |      |
|                | M -2N-          | 1/8" Male NPT   | 1/8" Male NPT   | 42.0 | 21.0 | 21.0 | 21.0 | 30.5 |      |      |      |      |           |     |      |
|                | M -4N-          | 1/4" Male NPT   | 1/4" Male NPT   | 50.0 | 25.0 | 25.0 | 25.0 | 34.5 |      |      |      |      |           |     |      |
|                | MD -4N4T-       | 1/4" Male NPT   | 1/4" D-LOK      | 53.8 | 25.0 | 28.8 | 25.0 | 38.3 |      |      |      |      |           |     |      |
|                | D -6M-          | 6mm D-LOK       | 6mm D-LOK       | 57.6 | 28.8 | 28.8 | 28.8 | 38.3 |      |      |      |      |           |     |      |
|                | D -4T-          | 1/4" D-LOK      | 1/4" D-LOK      | 57.6 | 28.8 | 28.8 | 28.8 | 38.3 |      |      |      |      |           |     |      |
|                | D -8M-          | 8mm D-LOK       | 8mm D-LOK       | 59.2 | 29.6 | 29.6 | 29.6 | 39.1 |      |      |      |      |           |     |      |
| NNV30          | F -4N-          | 1/4" Female NPT | 1/4" Female NPT | 56.0 | 28.0 | 28.0 | 28.0 | 41.0 | 13.5 | 13.0 | 50.0 | 64.0 | 63.6      | 6.3 | 0.73 |
|                | F -4R-          | 1/4" Female ISO | 1/4" Female ISO |      |      |      |      |      |      |      |      |      |           |     |      |
|                | MF -4N-         | 1/4" Male NPT   | 1/4" Female NPT |      |      |      |      |      |      |      |      |      |           |     |      |
|                | MD -4N6T-       | 1/4" Male NPT   | 3/8" D-LOK      | 61.2 |      | 33.2 |      | 46.2 |      |      |      |      |           |     |      |
|                | M -6N-          | 3/8" Male NPT   | 3/8" Male NPT   | 58.0 |      | 29.0 |      | 42.0 |      |      |      |      |           |     |      |
|                | MD -6N6T-       | 3/8" Male NPT   | 3/8" D-LOK      | 62.2 | 29.0 | 33.2 | 29.0 | 46.2 |      |      |      |      |           |     |      |
|                | MD -6N8T-       | 3/8" Male NPT   | 1/2" D-LOK      | 65.0 |      | 36.0 |      | 49.0 |      |      |      |      |           |     |      |
|                | D -10M-         | 10mm D-LOK      | 10mm D-LOK      | 66.4 | 33.2 | 33.2 | 33.2 | 46.2 |      |      |      |      |           |     |      |
|                | D -6T-          | 3/8" D-LOK      | 3/8" D-LOK      | 66.4 | 33.2 | 33.2 | 33.2 | 46.2 |      |      |      |      |           |     |      |
|                | D -12M-         | 12mm D-LOK      | 12mm D-LOK      | 72.0 | 36.0 | 36.0 | 36.0 | 49.0 |      |      |      |      |           |     |      |
| D -8T-         | 1/2" D-LOK      | 1/2" D-LOK      | 72.0            | 36.0 | 36.0 | 36.0 | 49.0 |      |      |      |      |      |           |     |      |
| NNV40          | F -6N-          | 3/8" Female NPT | 3/8" Female NPT | 76.0 | 38.0 | 38.0 | 38.0 | 57.0 | 19.0 | 19.0 | 63.5 | 76.0 | 99.4      | 9.5 | 1.8  |
|                | F -6R-          | 3/8" Female ISO | 3/8" Female ISO |      |      |      |      |      |      |      |      |      |           |     |      |
|                | F -8N-          | 1/2" Female NPT | 1/2" Female NPT |      |      |      |      |      |      |      |      |      |           |     |      |
|                | F -8R-          | 1/2" Female ISO | 1/2" Female ISO |      |      |      |      |      |      |      |      |      |           |     |      |
|                | M -8N-          | 1/2" Male NPT   | 1/2" Male NPT   |      |      |      |      |      |      |      |      |      |           |     |      |
|                | MF -8N-         | 1/2" Male NPT   | 1/2" Female NPT |      |      |      |      |      |      |      |      |      |           |     |      |
|                | D -8T-          | 1/2" D-LOK      | 1/2" D-LOK      |      |      |      |      |      |      |      |      |      |           |     |      |
|                | D -12T-         | 3/4" D-LOK      | 3/4" D-LOK      |      |      |      |      |      |      |      |      |      |           |     |      |

\* All dimensions shown are for reference purposes only, are subject to change.  
\* Dimensions shown with D-LOK nuts in finger-tight position, where applicable.