



### Product feature

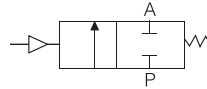
2/2-way Angle-Seat Valve  
Pneumatically Operated, for  
medium up to +180°C, threaded  
port connection DN 10-80

1. High flow rate;
2. Long life cycle;
3. Modular universal accessories can be assembled on NC and NO universal actuators' head;
4. Available with flow direction below or above seat;
5. Convenient conversion of the circuit function.

### Symbol

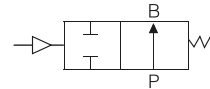
#### Control function A

(closed by spring force  
in rest position)



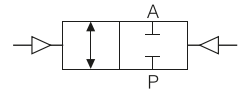
#### Control function B

(open in rest position)



#### Control function I

(double-acting actuator)



### Ordering code

| PV100                  |                             | P | 015 | NC |  | S × 63mm |
|------------------------|-----------------------------|---|-----|----|--|----------|
| Model                  |                             |   |     |    |  |          |
| PV100                  | 100 Series angle seat valve |   |     |    |  |          |
| Actuator material code |                             |   |     |    |  |          |
| P                      | PA Actuator                 |   |     |    |  |          |
| S                      | S.S. Actuator               |   |     |    |  |          |
| A                      | Aluminum actuator           |   |     |    |  |          |

### Actuator size

| Port size | Standard actuator size (mm) |            |            |
|-----------|-----------------------------|------------|------------|
|           | PA                          | S.S.       | AL         |
| DN10      | 40, 50                      | 40, 50     | 40, 50     |
| DN15      | 40, 50                      | 40, 50     | 40, 50     |
| DN20      | 50, 63, 80                  | 50, 63, 90 | 50, 63, 80 |
| DN25      | 50, 63, 80                  | 50, 63, 90 | 50, 63, 80 |
| DN32      | 63, 80                      | 63, 90     | 63, 80     |
| DN40      | 63, 80                      | 63, 90     | 63, 80     |
| DN50      | 63, 80                      | 63, 90     | 63, 80     |
| DN65      | 80, 100                     | 90, 125    | 80, 100    |
| DN80      | 100                         | 125        | 100        |
| DN100     | 125                         | 125        | 125        |

PV100 Series plunger pilot angle seat valve is propelled by piston actuator, either single acting or double acting. Actuators are made of three different materials, be applicable to different working temperature:

2/2 Way stainless steel valve with big flow capacity, V type seals ensure reliable and effective sealing.

Maintenance free, compatible with various accessories.

Direction indicating, stroke limiting or manual switching can be assembled conveniently.

### Specifications

| Model Specification        | Normally closed | P010NC                                | P015NC | P020NC | P025NC | P032NC | P040NC | P050NC | P065NC | P080NC |
|----------------------------|-----------------|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
|                            | Normally open   | P010NO                                | P015NO | P020NO | P025NO | P032NO | P040NO | P050NO | P065NO | P080NO |
| Material of body/ Actuator |                 | S.S304 316 /PA                        |        |        |        |        |        |        |        |        |
| Operating method           |                 | Plunger pilot                         |        |        |        |        |        |        |        |        |
| Ambient and fluid          |                 | Air, Water, Oil, Steam (50CTS Bellow) |        |        |        |        |        |        |        |        |
| Port size                  |                 | 3/8"                                  | 1/2"   | 3/4"   | 1"     | 1¼"    | 1½"    | 2"     | 2½"    | 3"     |
| Nominal diameter (mm)      |                 | 13                                    | 13     | 18     | 24     | 31     | 35     | 45     | 61     | 80     |
| Kv (m³/h)                  |                 | 3.7                                   | 4.2    | 9      | 19     | 33     | 42     | 59     | 90     | 135    |
| Model Specification        | Normally closed | S010NC                                | S015NC | S020NC | S025NC | S032NC | S040NC | S050NC | S065NC | S080NC |
|                            | Normally open   | S010NO                                | S015NO | S020NO | S025NO | S032NO | S040NO | S050NO | S065NO | S080NO |
| Material of body/ Actuator |                 | S.S304 316 /PA                        |        |        |        |        |        |        |        |        |
| Seat seal                  |                 | PTFE/FPM                              |        |        |        |        |        |        |        |        |
| Stem seal                  |                 | PTFE/FPM                              |        |        |        |        |        |        |        |        |
| Piston seal                |                 | PTFE/FPM/NBR                          |        |        |        |        |        |        |        |        |
| Tempreture of medium       | PTFE            | -10~200℃                              |        |        |        |        |        |        |        |        |
|                            | FPM             | -10~150℃                              |        |        |        |        |        |        |        |        |
| Installing                 |                 | Downstream/Upstream                   |        |        |        |        |        |        |        |        |

Note: PT, G, NPT, Metric thread are available.

### Valve

|           |
|-----------|
| 2P        |
| 2V        |
| 2W        |
| 2W(Big)   |
| 2WB       |
| 2WBF      |
| US(2L)    |
| DG223     |
| DG523     |
| 0927/0955 |
| PU220     |
| PU225     |
| VX        |
| QX        |
| PT        |
| Q24JH     |
| K23JH     |
| K25JH     |
| K25JH     |
| K35JH     |
| K23JD     |
| K25JD     |
| K25JK     |
| PV100     |
| PV200     |
| PV300     |
| PV400     |
| PV500     |
| PV700     |
| PV800     |
| PV1527    |
| PVN       |
| MV100     |
| MV200     |
| NAA       |
| GT        |
| K         |
| R         |
| FAL       |
| FP-M      |
| NTP       |
| SX        |

### Valve

### Pressure data sheet

| Control function | Acting type   | Flow direction | Water hammer | Application                                                                                                          |
|------------------|---------------|----------------|--------------|----------------------------------------------------------------------------------------------------------------------|
| Normally closed  | Single acting | Upstream       | Yes          | For compressible medium (such as gas and steam) and liquid of comparatively low pressure.                            |
|                  |               | Downstream     | No           | For anti water hammer pipeline, bears certain pressure difference.                                                   |
|                  | Double acting | Upstream       | Yes          | Reliable performance, bears pressure difference; valve closes automatically in case of an emergency.                 |
|                  |               | Downstream     | No           | For pipeline required of better anti water hammer, bears big pressure difference.                                    |
| Normally open    |               | Upstream       | Yes          | For pipeline where valve keeps open. double acting & normally open when silencer removed off.                        |
|                  |               | Downstream     | No           | For pipeline where valve keeps open, anti water hammer, double acting & normally open when silencer was removed off. |

Water hammer (or, more generally, fluid hammer) is a pressure surge or wave caused when a fluid (usually a liquid but sometimes also a gas) in motion is forced to stop or change direction suddenly (momentum change). A water hammer commonly occurs when a valve closes suddenly at an end of a pipeline system, and a pressure wave propagates in the pipe. It is also called hydraulic shock.

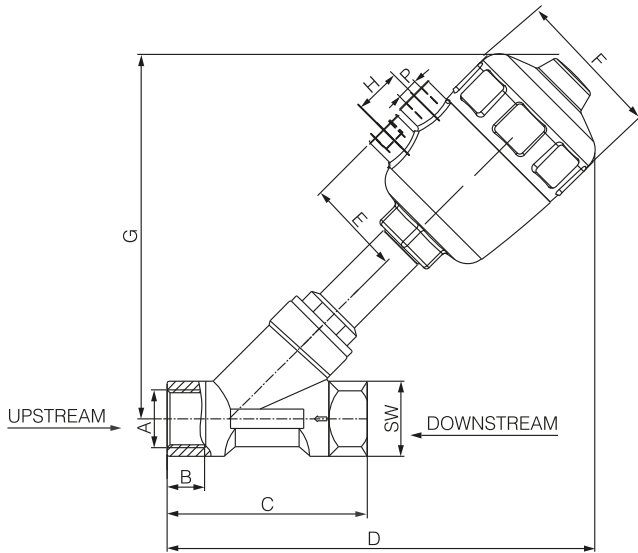
This pressure wave can cause major problems, from noise and vibration to pipe collapse. It is possible to reduce the effects of the water hammer pulses with accumulators, expansion tanks, surge tanks, and other features.

Designed to close against the flow. Will not chatter or produce water hammer. Operates smoothly and quietly.

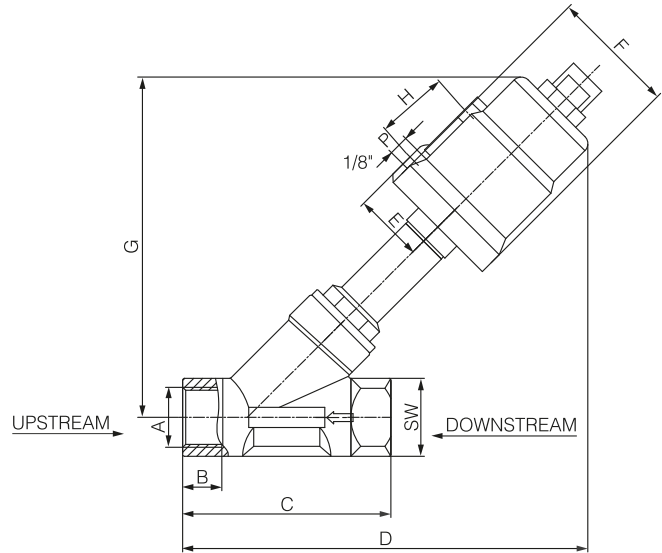
| Port size | DN (mm) | Actuator (mm) | Single acting normally closed |                    |                  |                    | Double acting normally closed |                    |                  |                    | Normally open    |                    |                  |                    |                                      |                            |
|-----------|---------|---------------|-------------------------------|--------------------|------------------|--------------------|-------------------------------|--------------------|------------------|--------------------|------------------|--------------------|------------------|--------------------|--------------------------------------|----------------------------|
|           |         |               | Upstream                      |                    | Downstream       |                    | Upstream                      |                    | Downstream       |                    | Upstream         |                    | Downstream       |                    | Double acting assistant pressure MPa | Rest position pressure MPa |
|           |         |               | Press. range MPa              | Control press. MPa | Press. range MPa | Control press. MPa | Press. range MPa              | Control press. MPa | Press. range MPa | Control press. MPa | Press. range MPa | Control press. MPa | Press. range MPa | Control press. MPa |                                      |                            |
| 3/8"      | DN10    | 40            | 0~1.6                         | 0.3~0.45           | 0~1.1            | 0.3                | 0~1.6                         | 0.3~0.45           | 0~1.6            | ≥0.3               | 0~1.6            | 0~1.6              | 0~1.6            | 0.2~0.4            | ≥0.4                                 | 0~0.2                      |
|           |         | 50            | 0~1.6                         | 0.3~0.35           | 0~1.4            | 0.45               | 0~1.6                         | 0.3~0.35           | 0~1.6            | ≥0.3               | 0~1.6            | 0~1.6              | 0~1.6            | 0.2~0.4            | ≥0.3                                 | 0~0.1                      |
| 1/2"      | DN15    | 40            | 0~1.6                         | 0.3~0.45           | 0~1.1            | 0.3                | 0~1.6                         | 0.3~0.45           | 0~1.6            | ≥0.3               | 0~1.6            | 0~1.6              | 0~1.6            | 0.2~0.4            | ≥0.4                                 | 0~0.2                      |
|           |         | 50            | 0~1.6                         | 0.3~0.35           | 0~1.4            | 0.45               | 0~1.6                         | 0.3~0.35           | 0~1.6            | ≥0.3               | 0~1.6            | 0~1.6              | 0~1.6            | 0.2~0.4            | ≥0.4                                 | 0~0.1                      |
| 3/4"      | DN20    | 50            | 0~1.6                         | 0.3~0.4            | 0~1.4            | 0.45               | 0~1.6                         | 0.3~0.4            | 0~1.6            | ≥0.3               | 0~1.6            | 0~1.2              | 0~1.6            | 0.3~0.65           | 0.3~0.4                              | 0~0.2                      |
|           |         | 63            | 0~1.6                         | 0.3~0.38           | 0~1.4            | 0.45               | 0~1.6                         | 0.3~0.38           | 0~1.6            | 0.3~0.5            | 0~1.6            | 0~1.4              | 0~1.6            | 0.35~0.7           | 0.3~0.35                             | 0~0.35                     |
|           |         | 80            | 0~1.6                         | 0.2~0.35           | 0~1.4            | 0.4                | 0~1.6                         | 0.2~0.35           | 0~1.6            | 0.3~0.4            | 0~1.6            | 0~1.4              | 0~1.6            | 0.35~0.7           | 0.3~0.4                              | 0~0.5                      |
|           |         | 90 SS         | 0~1.6                         | 0.2~0.3            | 0~1.4            | 0.35               | 0~1.6                         | 0.2~0.3            | 0~1.6            | 0.3~0.4            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.7           | 0.3~0.4                              | 0~0.4                      |
| 1"        | DN25    | 50            | 0~1.6                         | 0.3~0.45           | 0~0.75           | 0.45               | 0~1.6                         | 0.3~0.45           | 0~1.3            | 0.3~0.6            | 0~1.6            | 0~0.3              | 0~1.3            | 0.3~0.6            | 0.3~0.4                              | 0~0.35                     |
|           |         | 63            | 0~1.6                         | 0.3~0.35           | 0~1.4            | 0.5                | 0~1.6                         | 0.3~0.35           | 0~1.6            | 0.3~0.4            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.6           | 0.3~0.55                             | 0~0.35                     |
|           |         | 80            | 0~1.6                         | 0.2~0.3            | 0~1.4            | 0.45               | 0~1.6                         | 0.2~0.3            | 0~1.6            | 0.3~0.4            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.6           | 0.35~0.55                            | 0~0.5                      |
|           |         | 90 SS         | 0~1.6                         | 0.2~0.25           | 0~1.4            | 0.4                | 0~1.6                         | 0.2~0.25           | 0~1.6            | 0.2~0.3            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.6           | 0.35~0.55                            | 0~0.4                      |
| 1-1/4"    | DN32    | 63            | 0~1.6                         | 0.3~0.5            | 0~0.06           | 0.5                | 0~1.4                         | 0.3~0.5            | 0~1.4            | 0.3~0.6            | 0~1.6            | 0~1.4              | 0~1.3            | 0.35~0.7           | 0.3~0.5                              | 0~0.4                      |
|           |         | 80            | 0~1.6                         | 0.2~0.45           | 0~1.4            | 0.6                | 0~1.6                         | 0.2~0.45           | 0~1.6            | 0.3~0.5            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.7           | 0.3~0.55                             | 0~0.5                      |
|           |         | 90 SS         | 0~1.6                         | 0.2~0.35           | 0~1.6            | 0.65               | 0~1.6                         | 0.2~0.35           | 0~1.6            | 0.2~0.4            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.7           | 0.3~0.55                             | 0~0.4                      |
| 1-1/2"    | DN40    | 63            | 0~1.6                         | 0.3~0.6            | 0~0.05           | 0.5                | 0~1.1                         | 0.3~0.6            | 0~1.3            | 0.3~0.7            | 0~1.6            | 0~1.4              | 0~0.6            | 0.35~0.7           | 0.3~0.6                              | 0~0.4                      |
|           |         | 80            | 0~1.6                         | 0.3~0.55           | 0~1.4            | 0.6                | 0~1.6                         | 0.3~0.55           | 0~1.6            | 0.3~0.6            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.7           | 0.3~0.7                              | 0~0.5                      |
|           |         | 90 SS         | 0~1.6                         | 0.2~0.35           | 0~1.6            | 0.65               | 0~1.6                         | 0.2~0.35           | 0~1.6            | 0.2~0.6            | 0~1.6            | 0~1.6              | 0~1.6            | 0.35~0.7           | 0.3~0.7                              | 0~0.5                      |
| 2"        | DN50    | 63            | 0~1.0                         | 0.3~0.65           | 0~0.35           | 0.5                | 0~0.9                         | 0.3~0.65           | 0~0.8            | 0.35~0.8           | 0~1.0            | 0~0.6              | 0~0.5            | 0.35~0.7           | 0.35~0.7                             | 0~0.8                      |
|           |         | 80            | 0~1.6                         | 0.3~0.55           | 0~0.9            | 0.65               | 0~1.6                         | 0.3~0.55           | 0~1.6            | 0.3~0.7            | 0~1.6            | 0~1.0              | 0~0.6            | 0.35~0.7           | 0.35~0.7                             | 0~0.5                      |
|           |         | 90 SS         | 0~1.6                         | 0.3~0.5            | 0~1.1            | 0.65               | 0~1.6                         | 0.3~0.5            | 0~1.6            | 0.3~0.6            | 0~1.6            | 0~1.0              | 0~1.2            | 0.35~0.7           | 0.35~0.7                             | 0~0.4                      |
|           |         | 100           | 0~1.6                         | 0.25~0.4           | 0~1.4            | 0.65               | 0~1.6                         | 0.25~0.4           | 0~1.6            | 0.3~0.6            | 0~1.6            | 0~1.4              | 0~1.4            | 0.35~0.7           | 0.35~0.7                             | 0~0.4                      |
|           |         | 125 SS        | 0~1.6                         | 0.2~0.3            | 0~1.6            | 0.65               | 0~1.6                         | 0.2~0.3            | 0~1.6            | 0.3~0.4            | 0~1.6            | 0~1.4              | 0~1.4            | 0.35~0.7           | 0.35~0.7                             | 0~0.5                      |
| 2-1/2"    | DN65    | 80            | 0~1.6                         | 0.3~0.65           | 0~0.5            | 0.65               | 0~1.6                         | 0.3~0.65           | 0~1.1            | 0.3~0.7            | 0~1.6            | 0~0.5              | 0~0.75           | 0.3~0.65           | 0.35~0.7                             | 0~0.5                      |
|           |         | 90 SS         | 0~1.6                         | 0.2~0.6            | 0~0.7            | 0.65               | 0~1.6                         | 0.2~0.6            | 0~1.6            | 0.3~0.7            | 0~1.6            | 0~1.0              | 0~1.4            | 0.3~0.6            | 0.35~0.7                             | 0~0.4                      |
|           |         | 100           | 0~1.6                         | 0.3~0.45           | 0~0.8            | 0.65               | 0~1.6                         | 0.3~0.45           | 0~1.6            | 0.3~0.55           | 0~1.6            | 0~1.0              | 0~0.8            | 0.35~0.7           | 0.35~0.7                             | 0~0.4                      |
|           |         | 125 SS        | 0~1.6                         | 0.2~0.7            | 0~0.9            | 0.65               | 0~1.6                         | 0.2~0.7            | 0~1.6            | 0.2~0.55           | 0~1.6            | 0~1.4              | 0~1.4            | 0.3~0.7            | 0.35~0.7                             | 0~0.5                      |
| 3"        | DN80    | 100           | 0~1.6                         | 0.35~0.6           | 0~0.5            | 0.65               | 0~1.6                         | 0.35~0.6           | 0~1.6            | 0.3~0.55           | 0~1.6            | 0~0.6              | 0~0.75           | 0.35~0.7           | 0.35~0.7                             | 0~0.4                      |
|           |         | 125 SS        | 0~1.6                         | 0.2~0.7            | 0~0.6            | 0.65               | 0~1.6                         | 0.2~0.7            | 0~1.6            | 0.3~0.65           | 0~1.6            | 0~0.7              | 0~1.2            | 0.35~0.7           | 0.35~0.7                             | 0~0.5                      |

### Dimensions

#### Female threaded ends --PV100P



#### Female threaded ends --PV100S



Female threaded ends -- PV100P

| Port size | DN(mm) | Actuator(mm) | A      | B  | C   | D   | E  | F    | G   | H  | P    | SW  |
|-----------|--------|--------------|--------|----|-----|-----|----|------|-----|----|------|-----|
| 3/8"      | DN10   | 40           | 3/8"   | 12 | 65  | 142 | 30 | 53   | 85  | 20 | 1/8" | 25  |
|           |        | 50           | 3/8"   | 12 | 65  | 145 | 44 | 64   | 100 | 24 | 1/4" | 25  |
| 1/2"      | DN15   | 40           | 1/2"   | 14 | 76  | 162 | 30 | 53   | 115 | 20 | 1/8" | 28  |
|           |        | 50           | 1/2"   | 14 | 76  | 168 | 44 | 64   | 115 | 24 | 1/4" | 28  |
| 3/4"      | DN20   | 50           | 3/4"   | 16 | 92  | 175 | 44 | 64   | 131 | 24 | 1/4" | 32  |
|           |        | 63           | 3/4"   |    |     |     |    |      |     |    |      |     |
| 1"        | DN25   | 50           | 1"     | 21 | 103 | 186 | 44 | 64   | 138 | 24 | 1/4" | 39  |
|           |        | 63           | 1"     | 21 | 103 | 218 | 54 | 79.5 | 166 | 24 | 1/4" | 39  |
| 1-1/4"    | DN32   | 63           | 1-1/4" | 19 | 112 | 228 | 54 | 79.5 | 172 | 24 | 1/4" | 49  |
| 1-1/2"    | DN40   | 63           | 1-1/2" | 21 | 129 | 232 | 54 | 79.5 | 174 | 24 | 1/4" | 56  |
| 2"        | DN50   | 63           | 2"     | 27 | 143 | 252 | 54 | 79.5 | 193 | 24 | 1/4" | 68  |
|           |        | 80           | 2"     | 27 | 143 | 263 | 62 | 101  | 202 | 24 | 1/4" | 68  |
| 2-1/2"    | DN65   | 80           | 2-1/2" | 28 | 186 | 280 | 62 | 101  | 209 | 24 | 1/4" | 84  |
| 3"        | DN80   | 100          | 3"     | 34 | 218 | 355 | 71 | 125  | 268 | 30 | 1/4" | 101 |

Female threaded ends -- PV100S

| Port size | DN(mm) | Actuator(mm) | A      | B  | C   | D   | E  | F   | G   | H  | P    | SW  |
|-----------|--------|--------------|--------|----|-----|-----|----|-----|-----|----|------|-----|
| 3/8"      | DN10   | 40           | 3/8"   | 12 | 65  | 144 | 28 | 53  | 105 | 38 | 1/8" | 25  |
|           |        | 50           | 3/8"   | 12 | 65  | //  | 35 | 56  | //  | 38 | 1/8" | 25  |
| 1/2"      | DN15   | 40           | 1/2"   | 14 | 76  | 157 | 28 | 53  | 113 | 38 | 1/8" | 28  |
|           |        | 50           | 1/2"   | 14 | 76  | 182 | 35 | 56  | 142 | 38 | 1/8" | 28  |
| 3/4"      | DN20   | 50           | 3/4"   | 16 | 92  | 189 | 35 | 56  | 152 | 38 | 1/8" | 32  |
|           |        | 63           | 3/4"   | 16 | 92  |     | 43 | 70  |     | 44 | 1/8" | 32  |
| 1"        | DN25   | 50           | 1"     | 21 | 103 | 207 | 35 | 56  | 155 | 38 | 1/8" | 39  |
|           |        | 63           | 1"     | 21 | 103 | 217 | 43 | 70  | 176 | 44 | 1/8" | 39  |
| 1-1/4"    | DN32   | 63           | 1-1/4" | 19 | 112 | 222 | 43 | 70  | 177 | 44 | 1/8" | 49  |
| 1-1/2"    | DN40   | 63           | 1-1/2" | 21 | 129 | 225 | 43 | 70  | 182 | 44 | 1/8" | 56  |
| 2"        | DN50   | 63           | 2"     | 27 | 143 | 249 | 43 | 70  | 196 | 44 | 1/8" | 68  |
|           |        | 90           | 2"     | 27 | 143 | 268 | 56 | 94  | 206 | 67 | 1/4" | 68  |
| 2-1/2"    | DN65   | 90           | 2-1/2" | 28 | 186 | 290 | 56 | 94  | 215 | 67 | 1/4" | 84  |
| 3"        | DN80   | 125          | 3"     | 34 | 218 | 335 | 73 | 135 | 295 | 67 | 1/4" | 101 |

Note: PT, G, NPT, Metric thread are available.

### Valve

|                                   |
|-----------------------------------|
| 2P                                |
| 2V                                |
| 2W                                |
| 2W(Big)                           |
| 2WB                               |
| 2WBF                              |
| US(2L)                            |
| DG223                             |
| DG523                             |
| 0927/0955                         |
| PU220                             |
| PU225                             |
| VX                                |
| QX                                |
| PT                                |
| Q24 <sup>3</sup> / <sub>8</sub> H |
| K23J <sup>3</sup> / <sub>8</sub>  |
| K25J <sup>3</sup> / <sub>8</sub>  |
| K25 <sup>3</sup> / <sub>8</sub> H |
| K35 <sup>3</sup> / <sub>8</sub> H |
| K23JD                             |
| K25JD                             |
| K25JK                             |
| PV100                             |
| PV200                             |
| PV300                             |
| PV400                             |
| PV500                             |
| PV700                             |
| PV800                             |
| PV1527                            |
| PVN                               |
| MV100                             |
| MV200                             |
| NAA                               |
| GT                                |
| K                                 |
| R                                 |
| FAL                               |
| FP-M                              |
| NTP                               |
| SX                                |