



# PRESSURE REDUCING VALVE SERIES

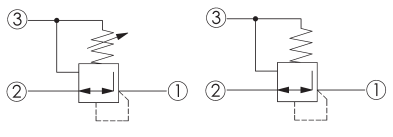
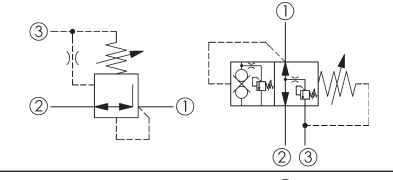
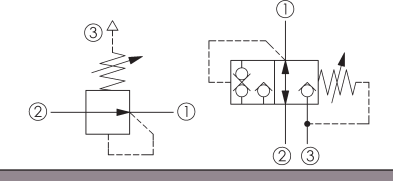
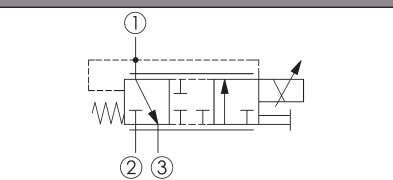
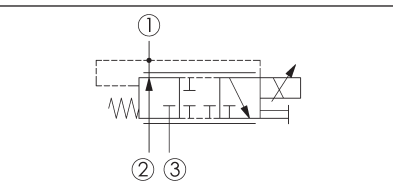
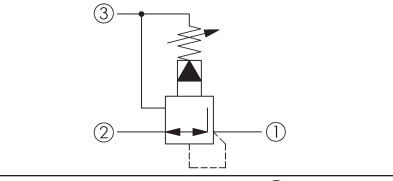
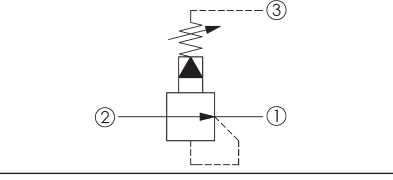
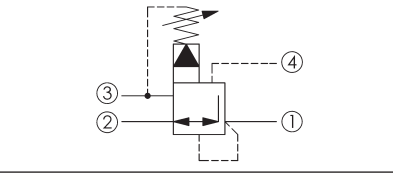
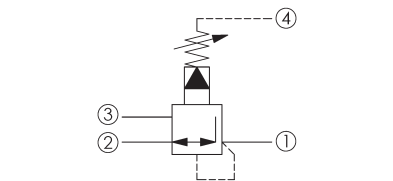
Smart Pressure Control for Reliable Hydraulic Systems

- ◆ Excellent Pressure Control from 0 to 420 bar
- ◆ Pilot-Operated High Flow Up to 320 LPM
- ◆ Patent Design Near-Zero Internal Leakage
- ◆ Direct-Acting Type, Low Leakage
- ◆ Compact Design, Flange Mounted Type



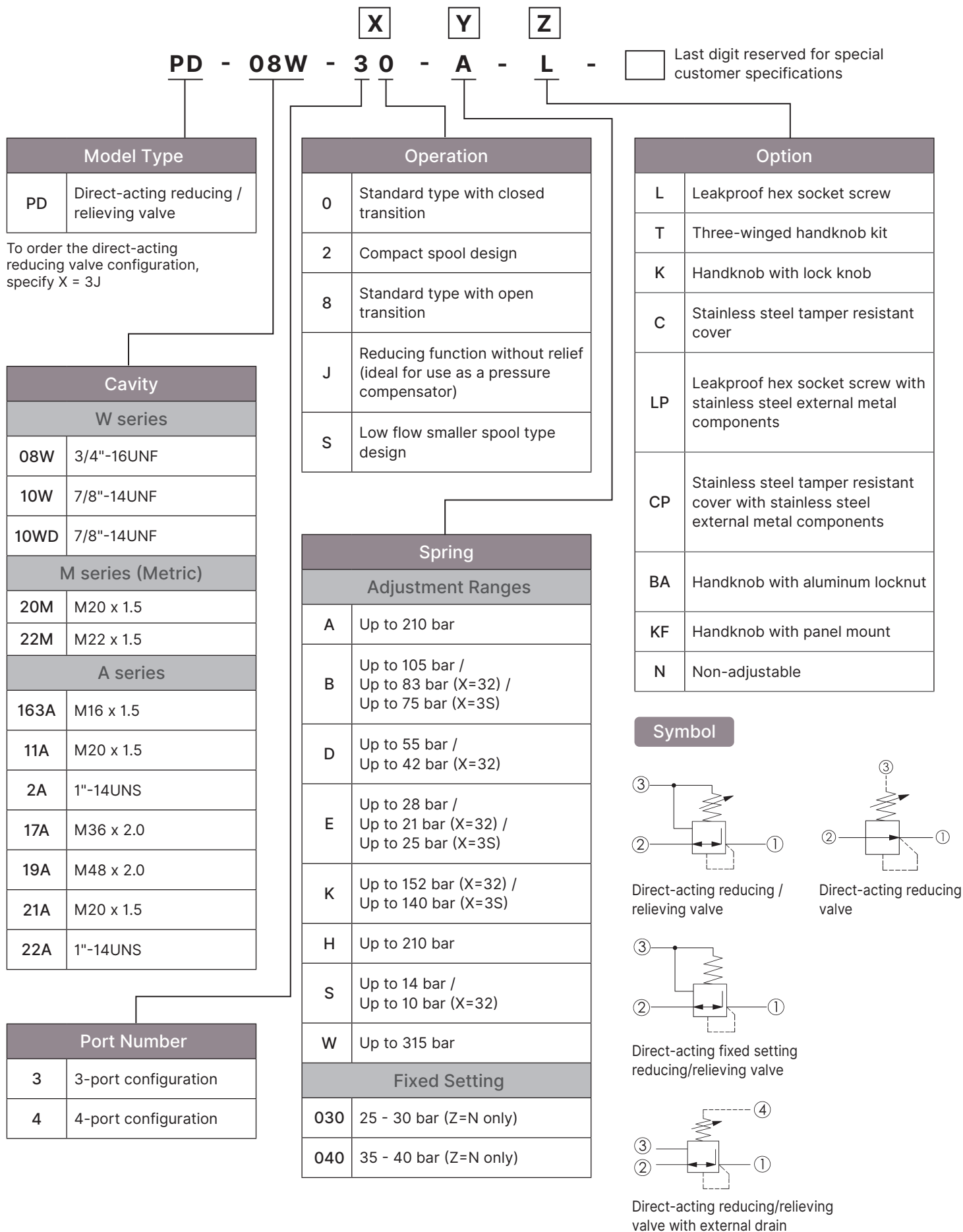
Master the Pressure. Perfect the Flow.  
Advanced Pressure Management Solutions for the Modern Circuit.

## ■ Screw-In Pressure Reducing Valves and Reducing/ Relieving Valves Overview

| Series Code                | Symbols                                                                             | Description                                                 | Rated Flow    | Rated Inlet Pressure | Features                                                                                                                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Direct-Acting              |                                                                                     |                                                             |               |                      |                                                                                                                                                                                                    |
| PD                         |    | Direct-Acting Reducing/Relieving Valve (Spool Type)         | Up to 320 LPM | 350 bar              | <ul style="list-style-type: none"> <li>• Robust construction</li> <li>• High contamination tolerance</li> <li>• No pilot flow required</li> <li>• Low internal leakage</li> </ul>                  |
| PG                         |    | Direct-Acting Reducing Valve (Poppet Type)                  | 30 LPM        | 350 bar              | <ul style="list-style-type: none"> <li>• Near-zero internal leakage</li> <li>• With thermal relief</li> <li>• Optimized, patented design</li> </ul>                                                |
| PF                         |    | Direct-Acting Reducing Valve (Poppet Type)                  | 30 LPM        | 350 bar              | <ul style="list-style-type: none"> <li>• Near-zero internal leakage</li> <li>• No drain line required</li> <li>• Long-term pressure-holding applications may gradually rise over time</li> </ul>   |
| Direct-Acting Proportional |                                                                                     |                                                             |               |                      |                                                                                                                                                                                                    |
| PPD                        |   | Direct-Acting Proportional Reducing/Relieving Valve         | 20 LPM        | 350 bar              | <ul style="list-style-type: none"> <li>• Low pressure at no command</li> <li>• Low internal leakage</li> <li>• Optimized, patented design</li> </ul>                                               |
| PPC                        |  | Direct-Acting Proportional Reducing/Relieving Valve         | 20 LPM        | 350 bar              | <ul style="list-style-type: none"> <li>• High pressure at no command</li> <li>• Low internal leakage</li> <li>• Optimized, patented design</li> </ul>                                              |
| Pilot-Operated             |                                                                                     |                                                             |               |                      |                                                                                                                                                                                                    |
| PP                         |  | Pilot-Operated Reducing/Relieving Valve                     | Up to 320 LPM | 350 bar              | <ul style="list-style-type: none"> <li>• Lower pressure variation with flow changes</li> <li>• Reduced pressure override</li> <li>• Stable pressure control under high-flow conditions</li> </ul>  |
| PB                         |  | Pilot-Operated Reducing Valve                               | Up to 320 LPM | 350 bar              | <ul style="list-style-type: none"> <li>• Non-relieving design</li> <li>• High flow capacity</li> <li>• Stable pressure control</li> <li>• Can be used as a pressure compensator</li> </ul>         |
| PV                         |  | Pilot-Operated, Ventable Reducing/Relieving Valve           | Up to 320 LPM | 350 bar              | <ul style="list-style-type: none"> <li>• High flow capacity</li> <li>• Stable pressure control</li> <li>• Vent port for remote pressure control</li> </ul>                                         |
| PW                         |  | Pilot-Operated Reducing/Relieving Valve with External Drain | Up to 320 LPM | 350 bar              | <ul style="list-style-type: none"> <li>• External drain port minimizes back-pressure influence</li> <li>• Port 4 allows external pilot control to increase the reduced pressure setting</li> </ul> |

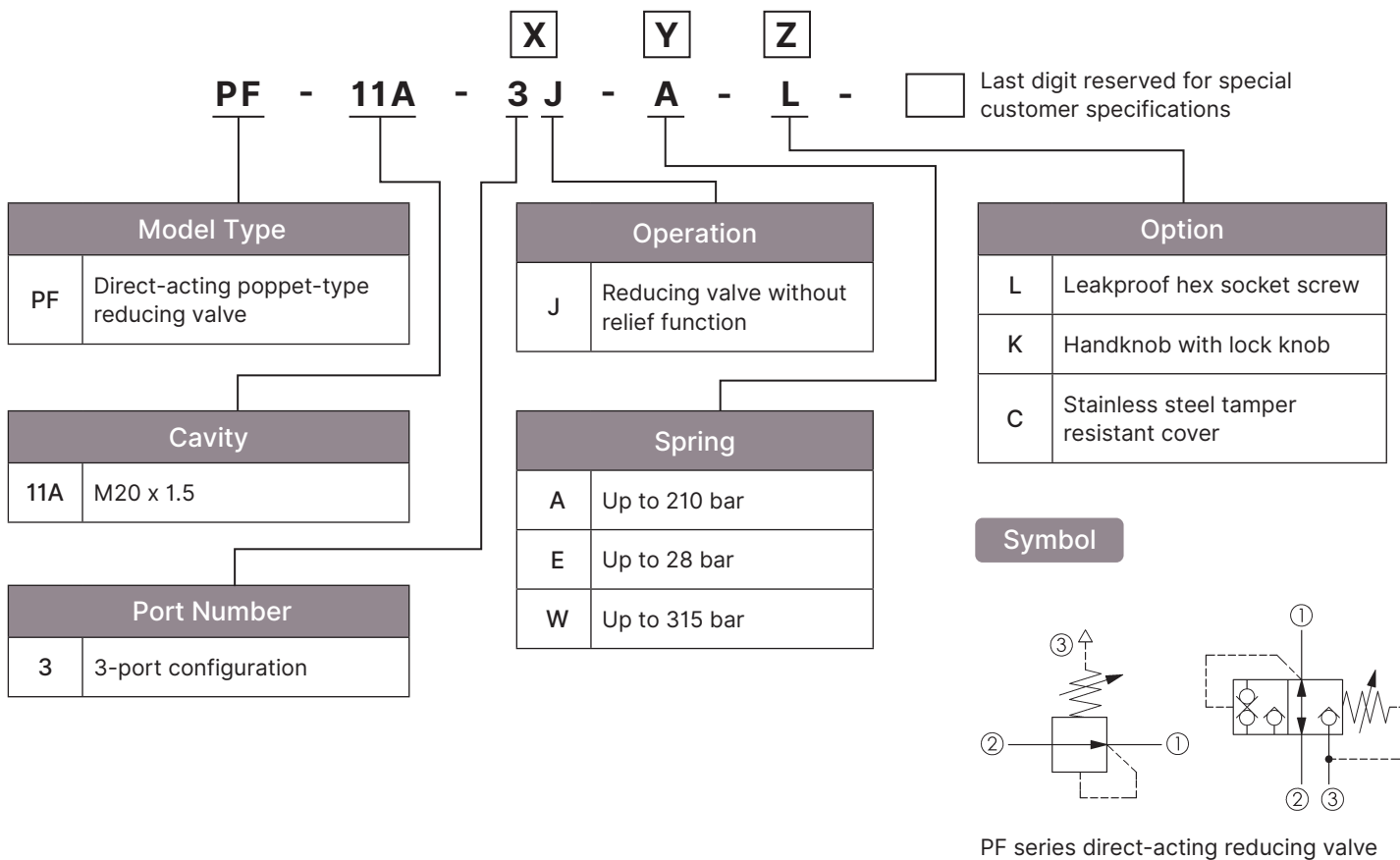
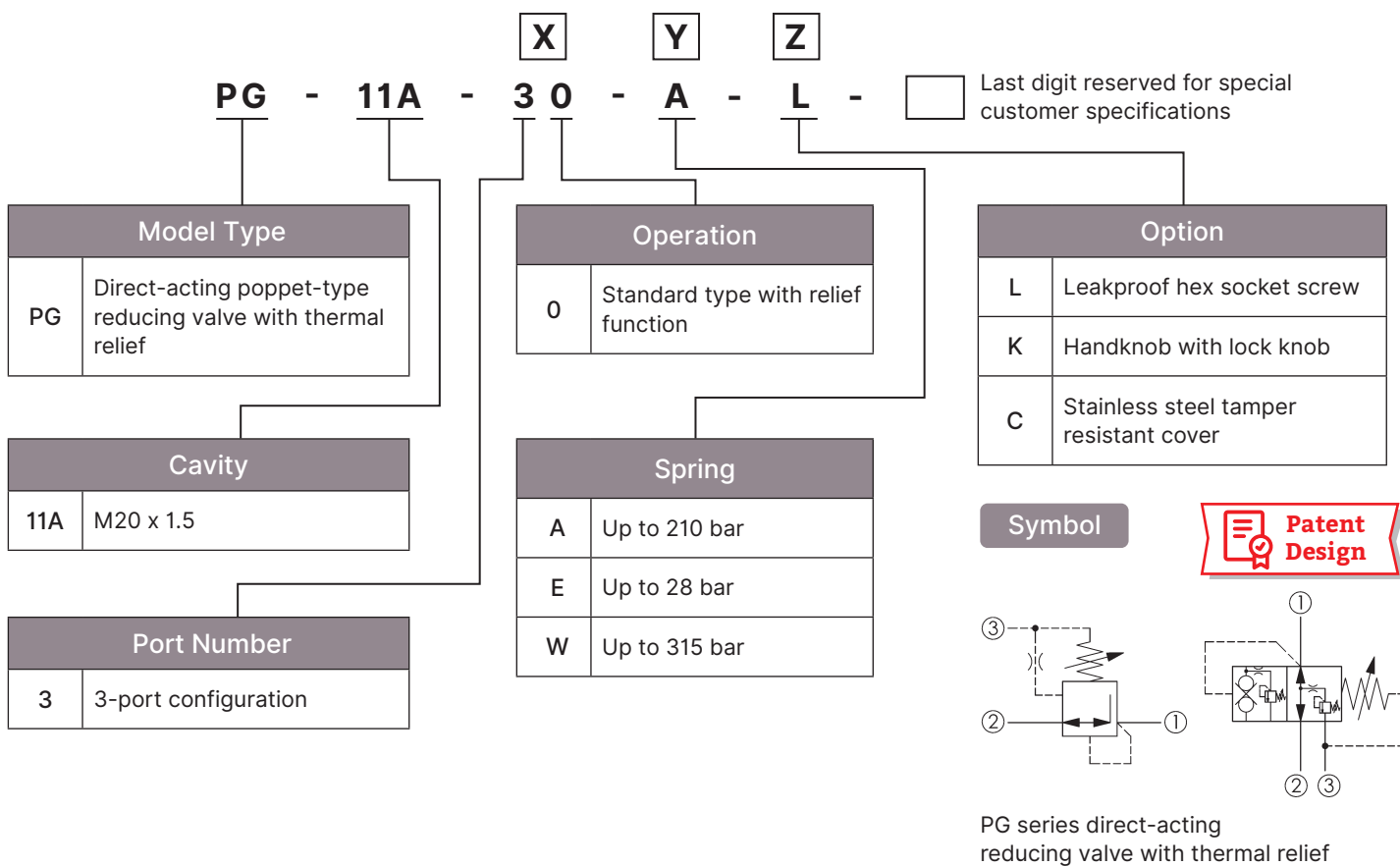
## Model Numbering

### Direct-Acting Reducing and Reducing/Relieving Valve Encoding Principle



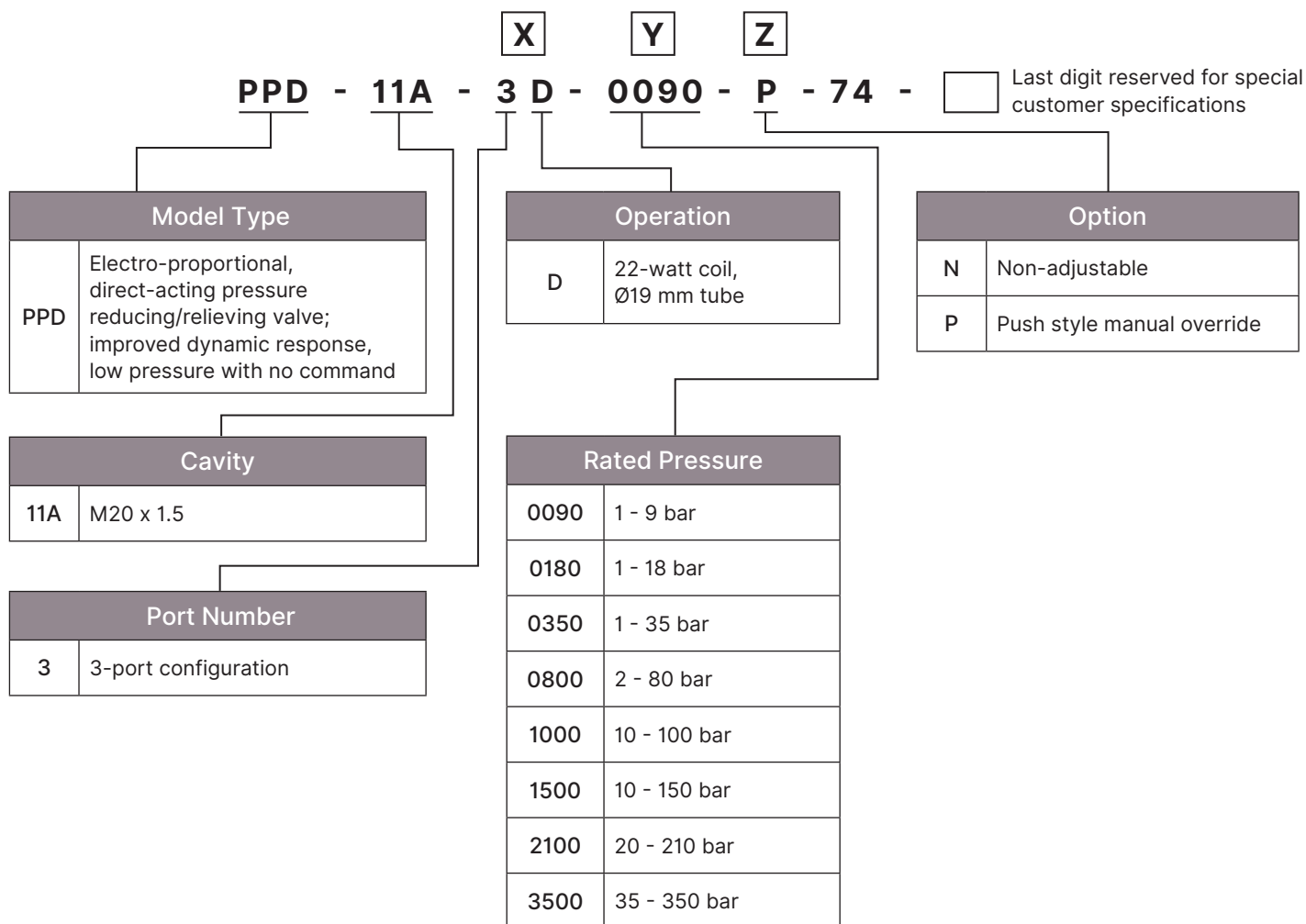
## ■ Model Numbering

### Direct-Acting Reducing and Reducing/Relieving Valve Encoding Principle

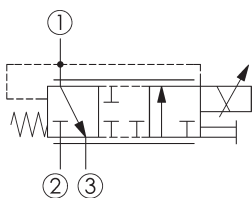


## ■ Model Numbering

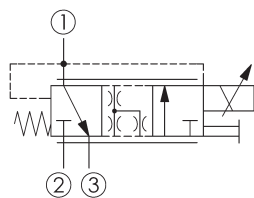
### Direct-Acting Proportional Reducing/Relieving Valve Encoding Principle



#### Symbol

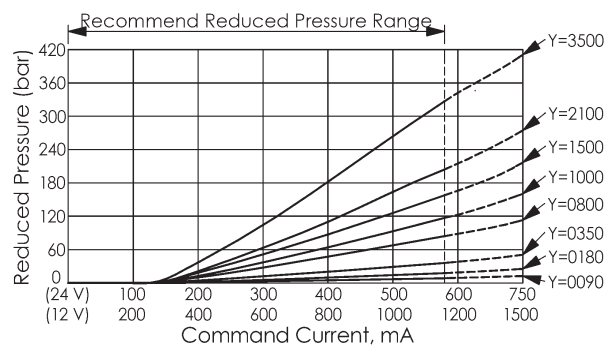


PPD series with suffix -74-1



PPD series with suffix -74-3

#### Performance Curve

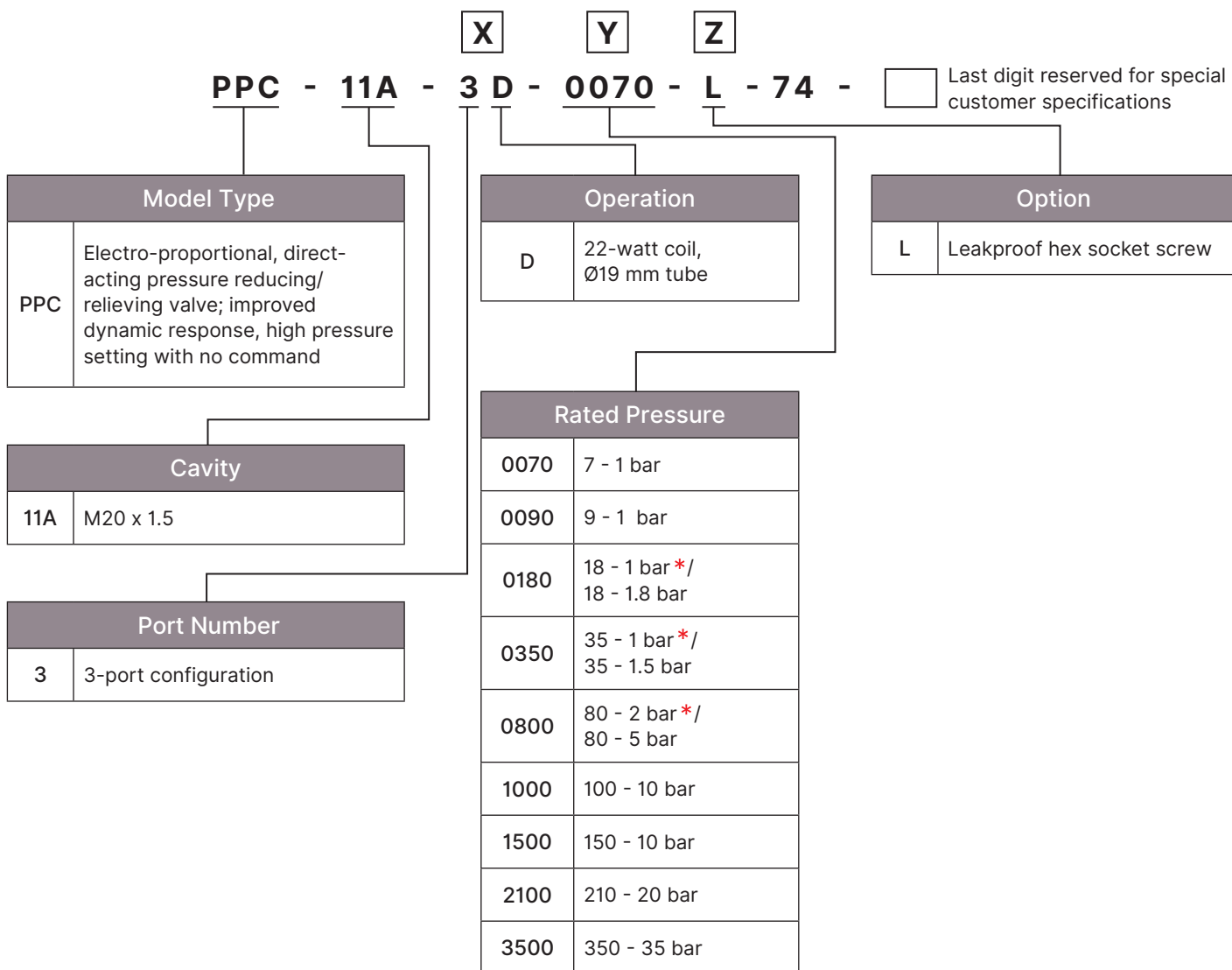


PPD series command current vs reduced pressure curve

## Model Numbering

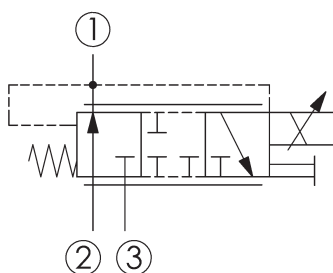


### Direct-Acting Proportional Reducing/Relieving Valve Encoding Principle



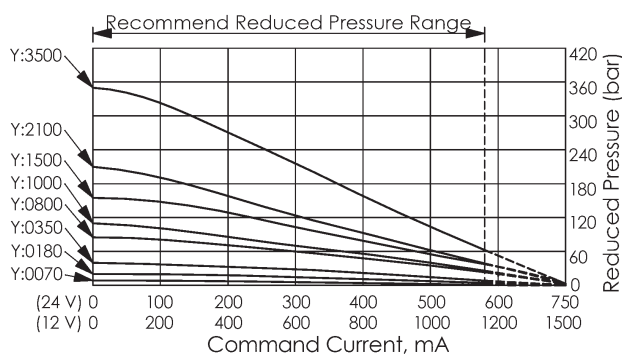
\* with suffix -74-1

#### Symbol



PPC series

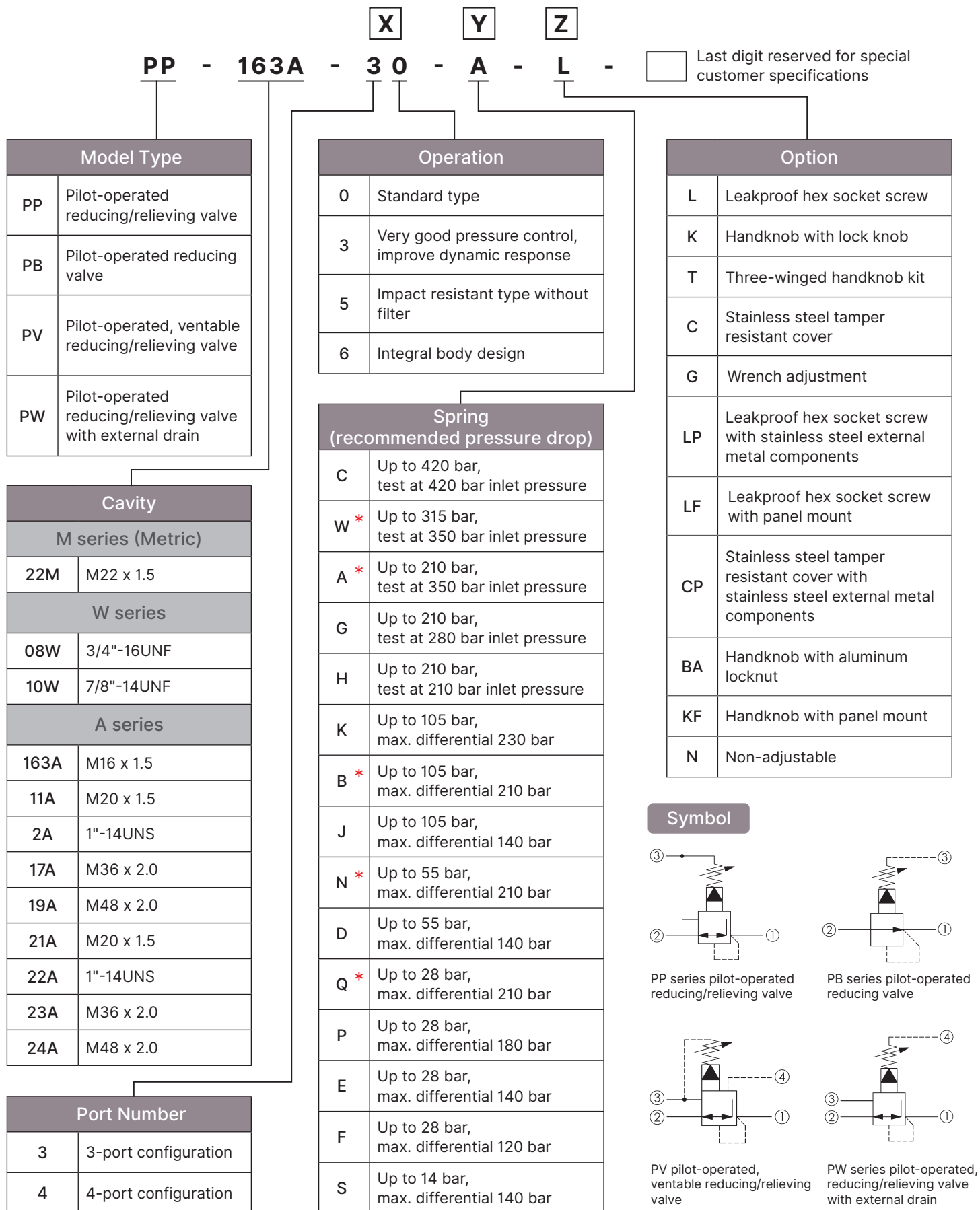
#### Performance Curve



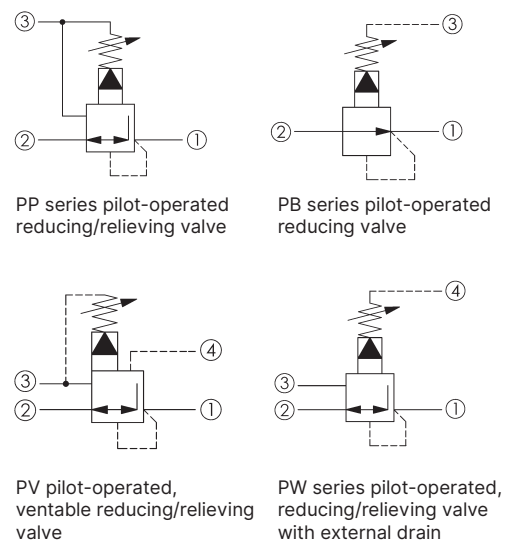
PPC series command current vs reduced pressure curve

## ■ Model Numbering

### Pilot-Operated Reducing and Reducing/Relieving Valve Encoding Principle



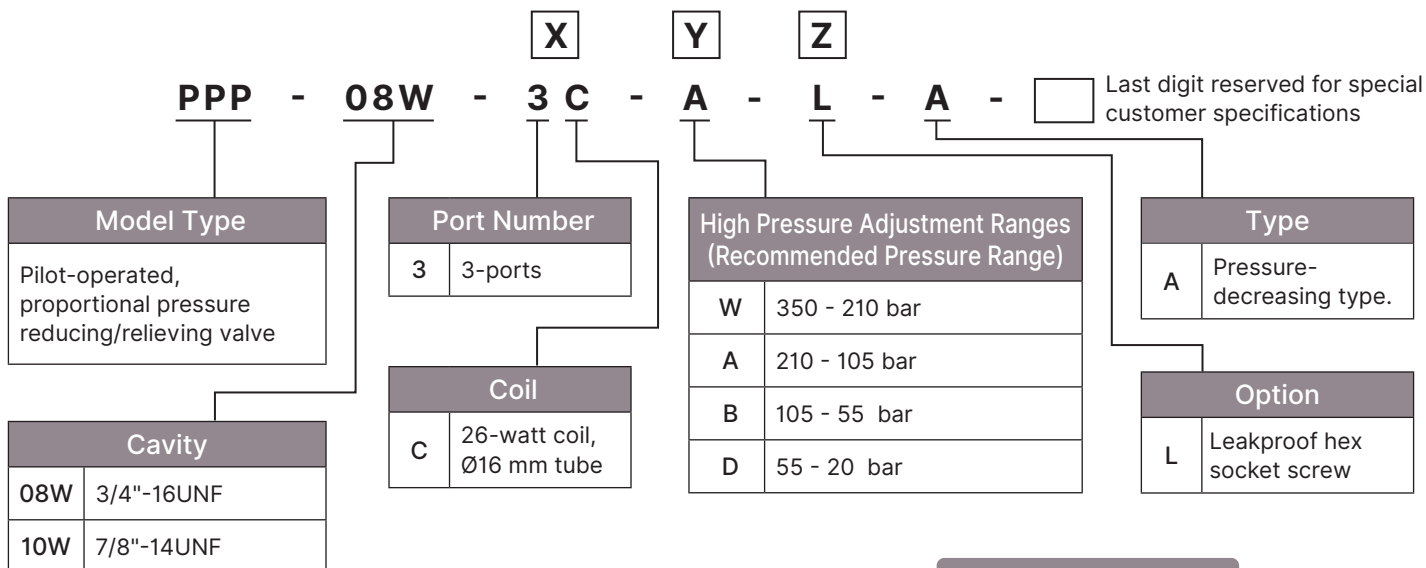
#### Symbol



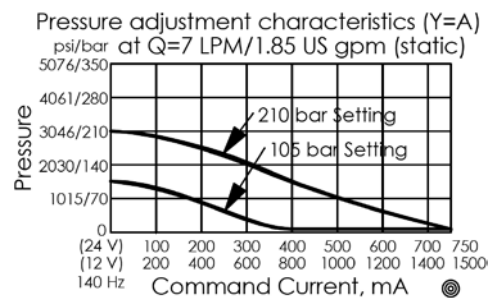
Spring and pressure specifications are for reference only and are subject to change without notice. For further details, please visit the Winner website.

## Model Numbering

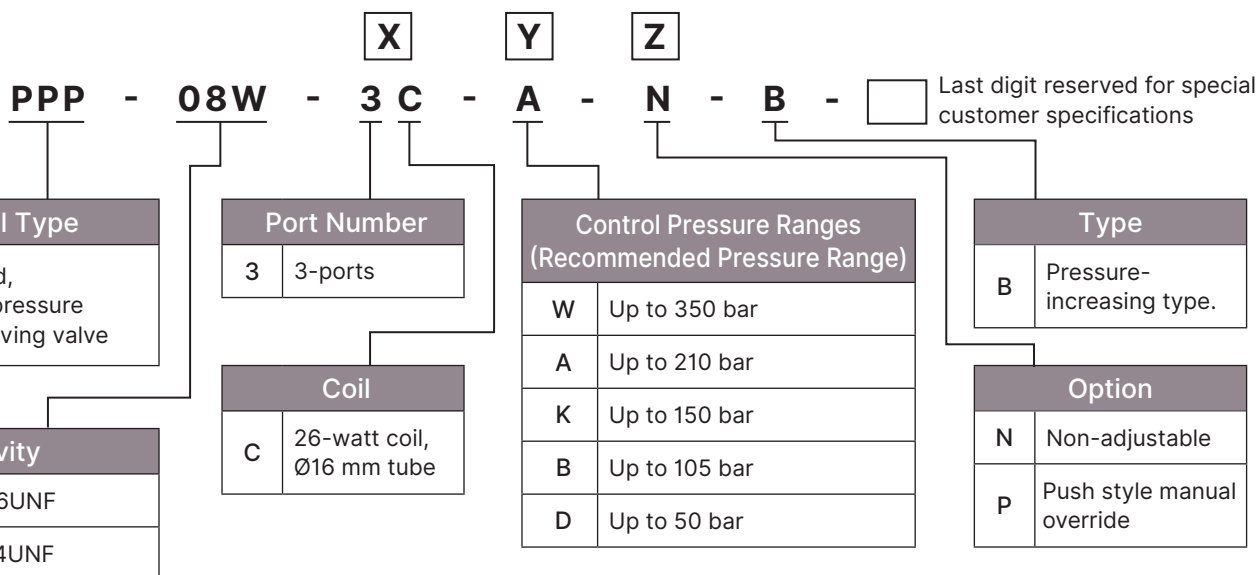
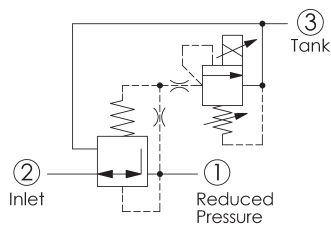
### Pilot-Operated Reducing/Relieving Proportional Valve Encoding Principle



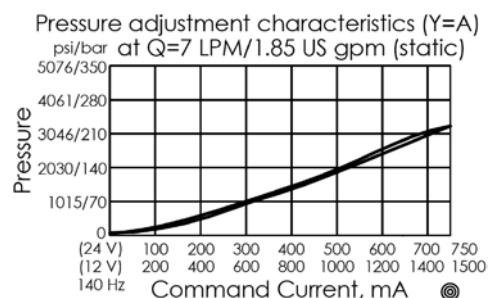
Performance Curve



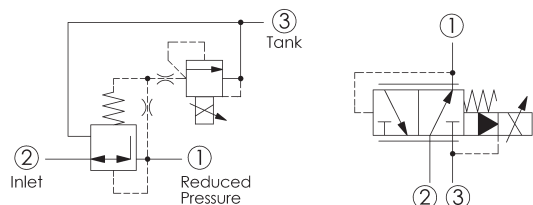
Symbol



Performance Curve



Symbol

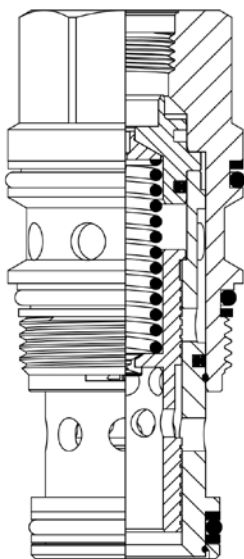
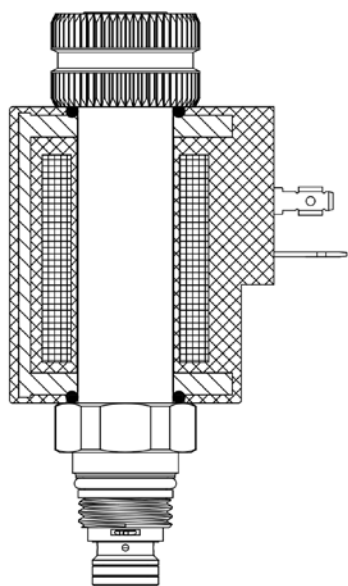


## ■ ■ How to Select a High-Flow Proportional Valve

For pilot-operated proportional reducing/relieving control, we also provide customized assemblies. You can order the PP, PB, or PW series with an integral 8A-2 control cavity, which pairs separately with specified proportional pilot relief valves, such as the PRB-8A-2C or PRA-8A-2C series. For model numbering, please refer to the next page.

Pilot Element: PRB-8A-2C-Y-Z / PRA-8A-2C-Y-Z

Solenoid Coil: EC-16B-260-H-Z (Ordered separately)



Main Valve: PP-17A-X-Y-8  
(Integral with 8A-2 control cavity)



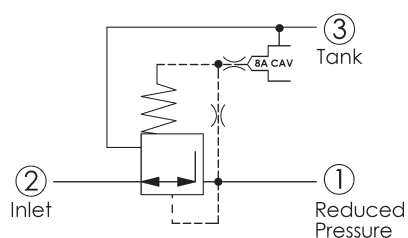
Assembled as a high-flow  
proportional reducing/relieving valve

## ■ Model Numbering

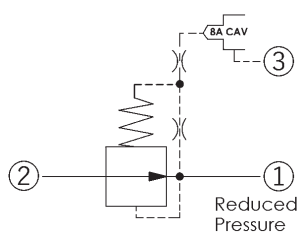
### Pilot-Operated Reducing/Relieving Valve, Main Stage with Integral 8A Control Cavity Encoding Principle

|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|--------------------------|-------------------------------------------------------------------------------------|---|------------|--------------------|---|----------------------|--|---|----------|---|----------|----------------------------------------------|-------------|---------------------------------------------------------|
| <b>PP</b>                |                                                                                     | - | <b>17A</b> |                    | - | <b>30</b>            |  | - | <b>D</b> | - | <b>8</b> | -                                            | <div></div> | Last digit reserved for special customer specifications |
| <b>Model Type</b>        |                                                                                     |   |            | <b>Port Number</b> |   |                      |  |   |          |   |          | <b>Spring<br/>(minimum control pressure)</b> |             |                                                         |
| <b>PP</b>                | Pilot-operated reducing/relieving valve, main stage with integral 8A control cavity |   |            | <b>3</b>           |   | 3-port configuration |  |   |          |   |          | <b>D</b>                                     |             | 1.7 bar (25 psi)                                        |
| <b>PB</b>                | Pilot-operated reducing valve, main stage with integral 8A control cavity           |   |            | <b>4</b>           |   | 4-port configuration |  |   |          |   |          | <b>W</b>                                     |             | 7 bar (100 psi)                                         |
| <b>PW</b>                | Pilot-operated reducing/relieving valve, main stage with integral 8A control cavity |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>Cavity</b>            |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>A series (PP/ PB)</b> |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>11A</b>               | M20 x 1.5                                                                           |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>2A</b>                | 1"-14UNS                                                                            |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>17A</b>               | M36 x 2.0                                                                           |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>19A</b>               | M48 x 2.0                                                                           |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>A series (PW)</b>     |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>21A</b>               | M20 x 1.5                                                                           |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>22A</b>               | 1"-14UNS                                                                            |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>23A</b>               | M36 x 2.0                                                                           |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
| <b>24A</b>               | M48 x 2.0                                                                           |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
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|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
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|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
|                          |                                                                                     |   |            |                    |   |                      |  |   |          |   |          |                                              |             |                                                         |
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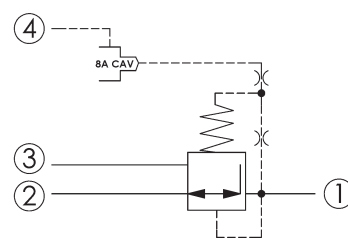
#### Symbol



PP series with 8A-2 control cavity



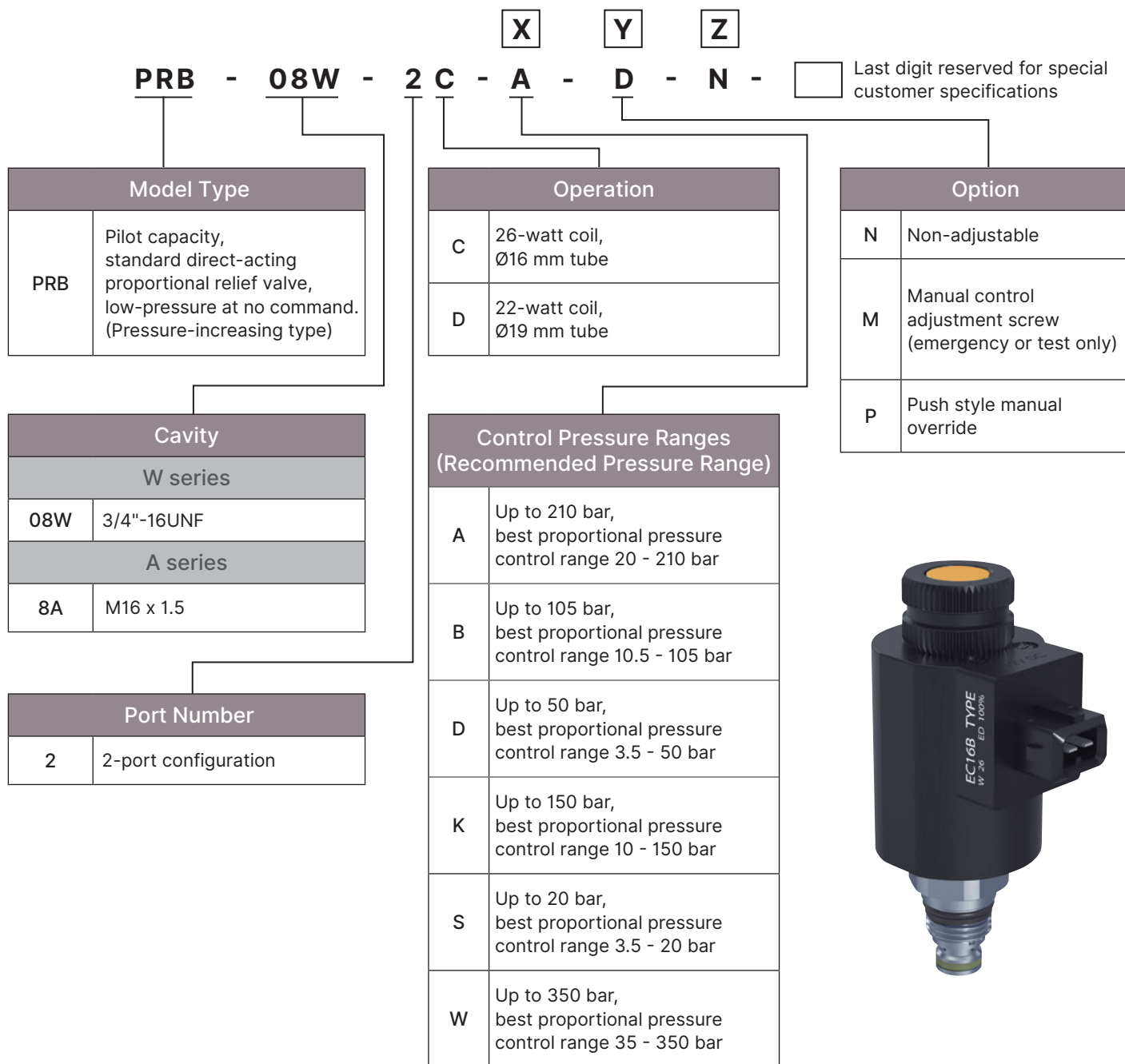
PB series with 8A-2 control cavity



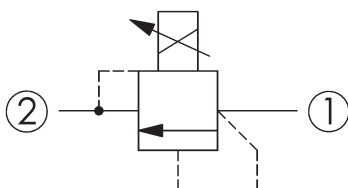
PW series with 8A-2 control cavity

## ■ Model Numbering

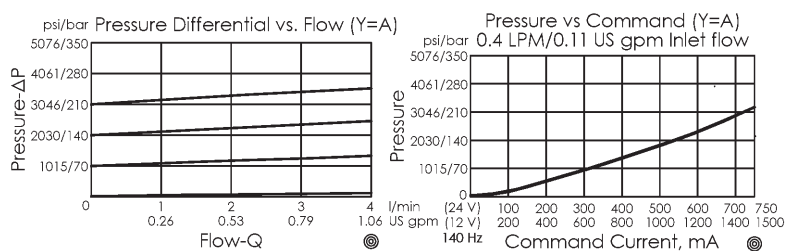
### Pilot Capacity Proportional Relief Valve Encoding Principle



#### Symbol

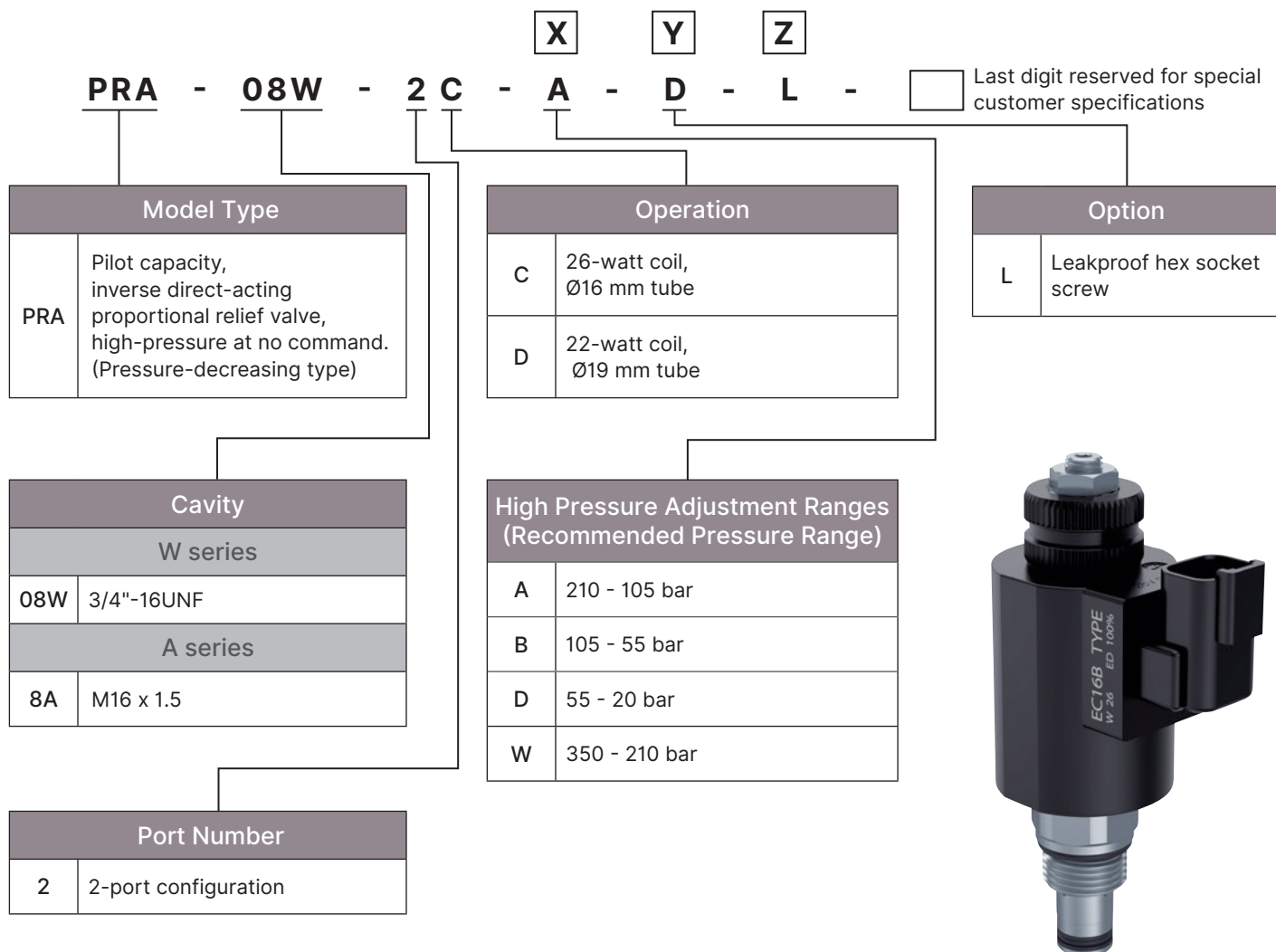


#### Performance Curve

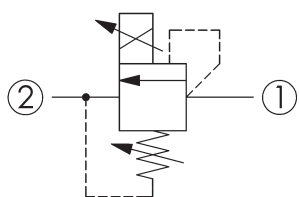


## ■ Model Numbering

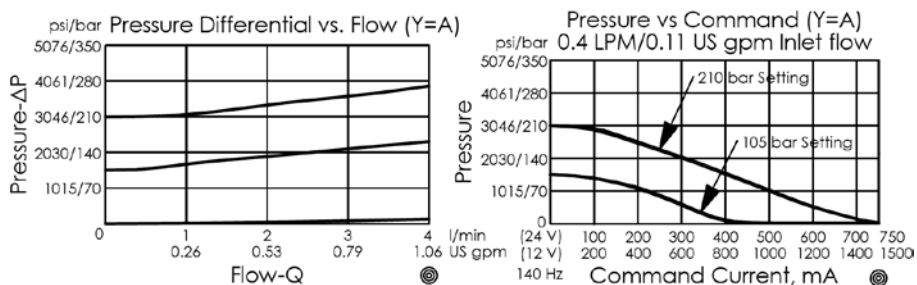
### Pilot Capacity Proportional Relief Valve Encoding Principle



#### Symbol



#### Performance Curve



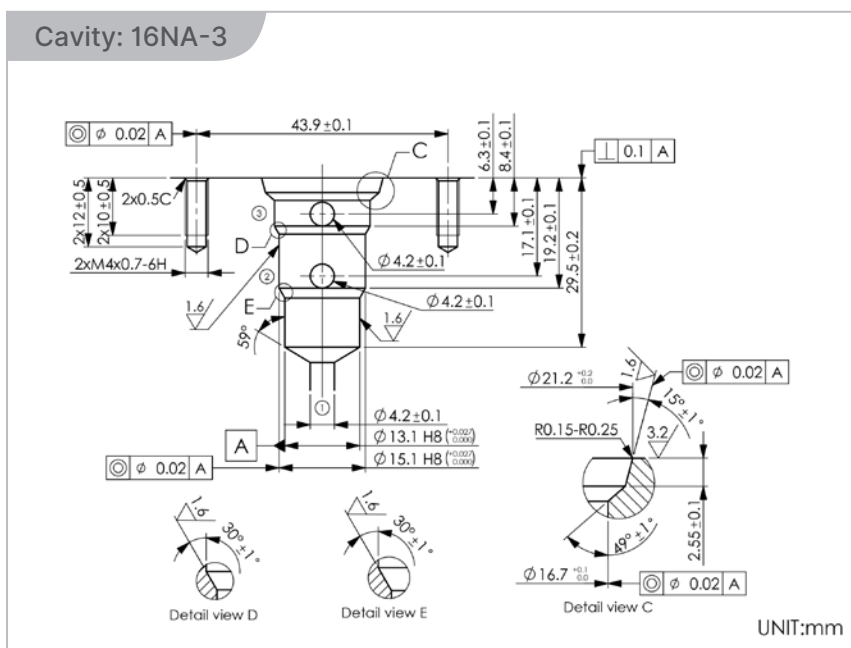
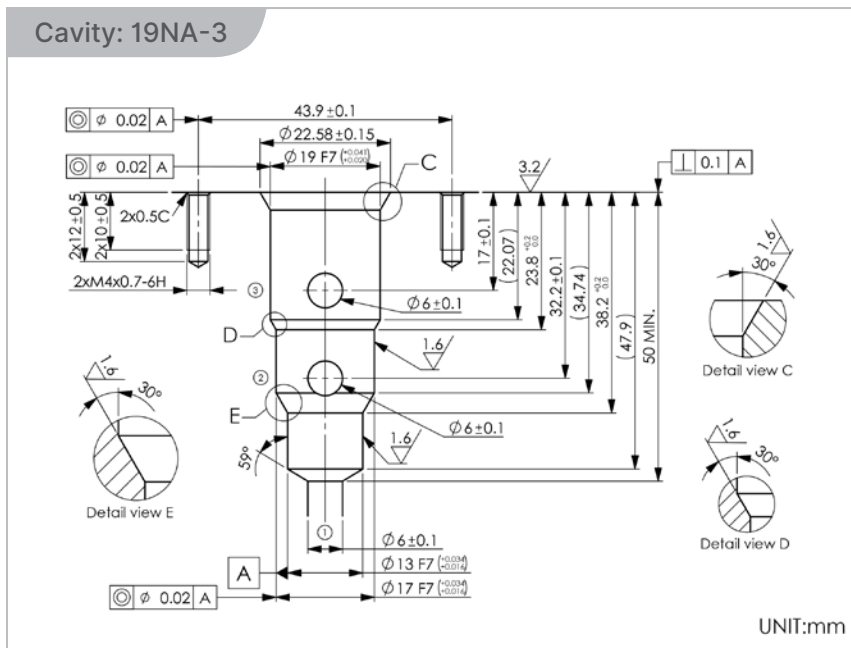
## Product Introduction



### Flange Mounted Direct-Acting Proportional Reducing/Relieving Valve

#### Features

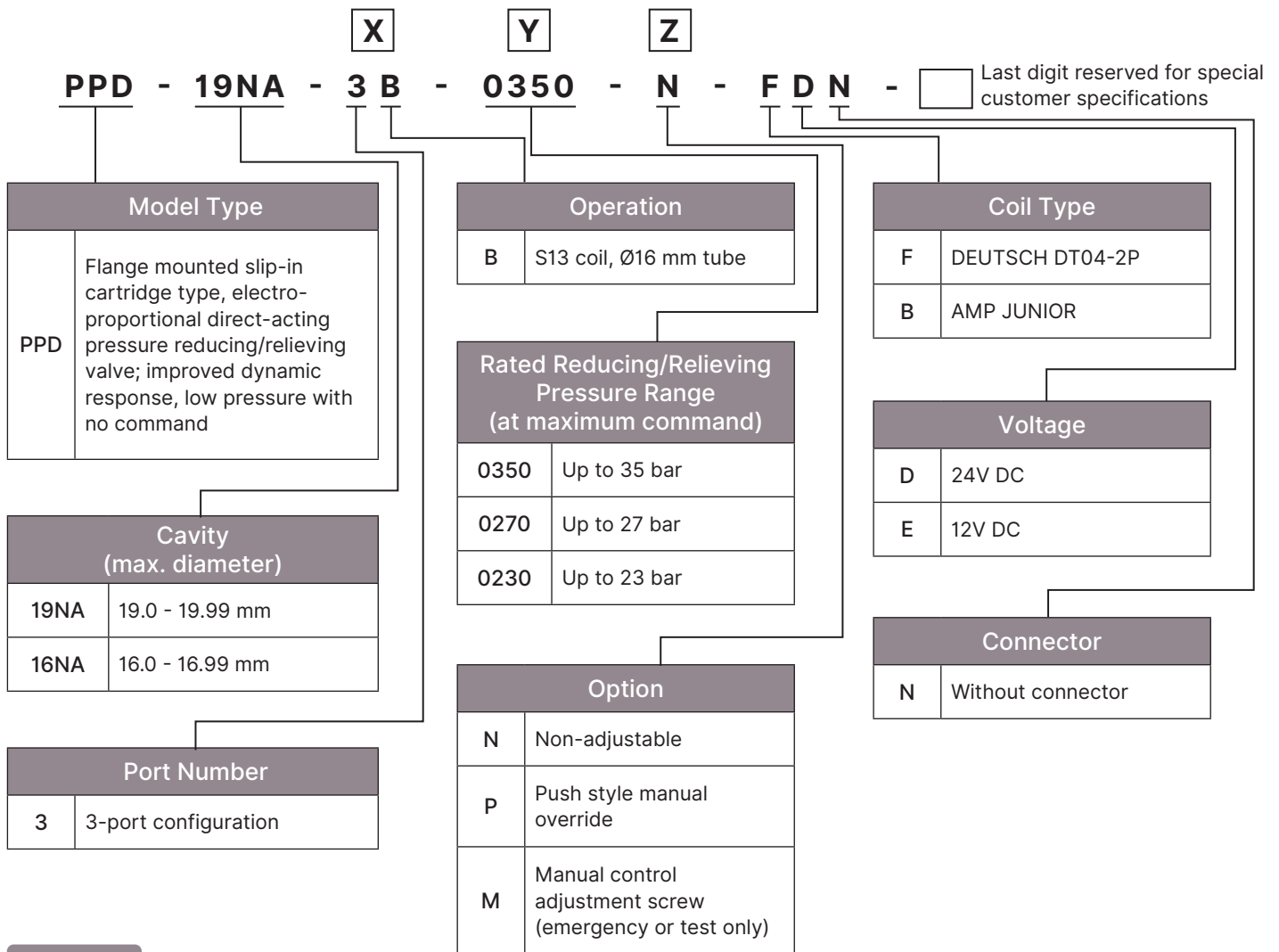
The PPD16NA and PPD19NA feature Winner's proprietary patented design with an independent coil structure. Designed as flange-mounted cartridge valves, they offer a rated inlet pressure of 350 bar and a maximum operating pressure of up to 420 bar. With a rated flow of 16 LPM. These valves accommodate high flow capacities while maintaining exceptionally stable pressure control.



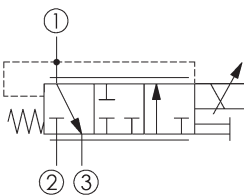
PPD19NA3B0350N—FDN

## ■ Model Numbering

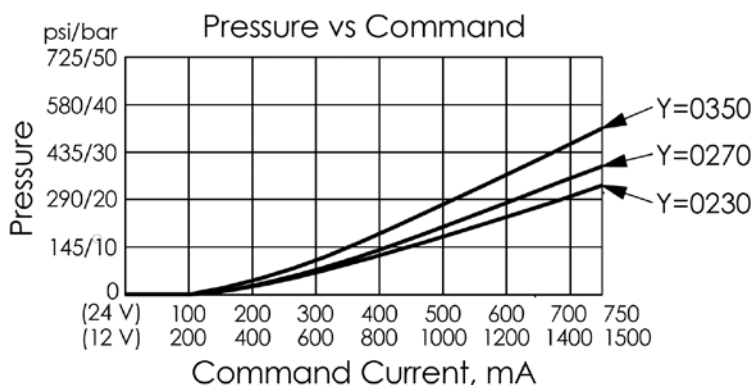
### Flange Mounted Direct-Acting Proportional Reducing/Relieving Valve Encoding Principle



#### Symbol



#### Performance Curve



PPD19NA3B0350N—BDN

## ■ Accessories

### Coil and Control Option

#### ► Coils

**EC19A (Coil D)** I.D. Ø19 x H49.3mm / O.D. Ø37.8mm



AMP JUNIOR



DEUTSCH DT04-2P



METRIPACK SERIES 150-2M

**EC16B (Coil C)** I.D. Ø16.1 x H50.2 mm / O.D. Ø39 mm



AMP JUNIOR



DEUTSCH DT04-2P



AMP SUPERSEAL

**EC16P (Coil B)** I.D. Ø16.1 x H36.3 mm / O.D. Ø32 mm



AMP JUNIOR



DEUTSCH DT04-2P

#### ► Control Options



Leakproof hex socket screw (code L)



Handknob with lock knob (code K)



Three-winged handknob kit (code T)



Stainless steel tamper resistant cover (code C)



Wrench adjustment (code G)



Manual control adjustment screw (code M)



Push style manual override (code P)



Handknob and aluminum locknut (code BA)



Handknob with panel mount (code KF)



Leakproof hex socket screw with steel cap with lockwire (code LC)

# Your Vision, Our Precision: Partner with Winner Hydraulics

Since 1993, Winner Hydraulics Corp. has been at the forefront of fluid power innovation, based in the heart of Taiwan's engineering hub. Whether you are optimizing a mobile braking system, designing a high-cycle industrial manifold, or requiring a custom-engineered solution, the Winner team stands ready to support your project.

## ✓ Global Reliability:

WINNERcoat® zinc-nickel plating targets 1,000-hour salt spray resistance (NFPA T2.6.1). Every unit is function-tested prior to shipment — zero exceptions.

## ✓ Streamlined Integration:

Our comprehensive digital catalog including 3D CAD models—allows you to move from design to deployment faster than ever before.

## ✓ Precision Control:

From near-zero-leakage PF and PG series reducing/relieving valves to the advanced PPD series for extreme low-pressure regulation approaching 0 bar, we provide the precision your circuits demand.

## ✓ Three Decades of Engineering:

Heat-treated, precision-ground internals and validated manufacturing processes maintain predictable pressure response curves across temperature and over the full service life of every cartridge.

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