



PROCESS
INDUSTRY
PRACTICES

Hygienic Process Sample

**PIP PHCM0004
Hygienic Valve Commodity Codes
Designator System**

Sample - Not for Commercial Use

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PIP PHCM0004 Hygienic Valve Commodity Codes Designator System

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1. Introduction

1.1 Purpose

This Practice provides the designator system for identifying PIP hygienic valve commodity codes.

1.2 Scope

This Practice describes the arrangement of the PIP hygienic valve commodity codes designations for manually operated valves and the requirements for each field within a designation. Designation requirements are provided for both PIP-developed and purchaser-developed hygienic valve commodity codes.

Exclusion: Valves that must be engineered for a specific installation and application are not included in the scope of this Practice (e.g. control valves, pressure relief valves, mix proof valves, etc.).

2. References

Applicable parts of the following Practice shall be considered an integral part of this Practice. The edition in effect on the date of contract award shall be used, except as otherwise noted. Short titles will be used herein where appropriate.

Process Industry Practices (PIP)

- PIP PHCM0001 – *Hygienic Process Systems Line Class Designator System*

3. Requirements

3.1 General

- 3.1.1 The PIP hygienic valve commodity code shall consist of six alternating alphanumeric fields containing one to three characters each (maximum of 12 characters). The first five fields are mandatory while the sixth is optional.
- 3.1.2 Valves listed in PIP Piping Material Specifications and PIP Valve Descriptions shall use the first five fields resulting in a 10-character alphanumeric valve commodity code.
- 3.1.3 Each field shall describe various features of a valve.

3.2 Field Definitions

3.2.1 First Field – ID Surface Finish (per ASME BPE Table SF-2.4-1)

The first field shall define the ID surface finish based on ASME BPE Table SF-2.4-1. The ID Surface Finish code shall consist of one numeric character in accordance with the following list:

- 0 = SF0; No finish requirement
- 1 = SF1; Ra 20 µin (0.51 µm) Mechanical Polish
- 2 = SF2; Ra 25 µin (0.64 µm) Mechanical Polish

3 = SF3; Ra 30 μin (0.76 μm) Mechanical Polish

4 = SF4; Ra 15 μin (0.38 μm) Mechanical Polish and Electro-polish

5 = SF5; Ra 20 μin (0.51 μm) Mechanical Polish and Electro-polish

6 = SF6; Ra 25 μin (0.64 μm) Mechanical Polish and Electro-polish

3.2.2 Second Field – Valve Type

3.2.2.1 The second field shall define the valve type.

3.2.2.2 The valve type field shall consist of two alphabetic characters in accordance with Table 1.

3.2.3 Third Field – Pressure Class

3.2.3.1 The third field shall define the pressure class.

3.2.3.2 The pressure class field shall consist of two numeric characters in accordance with Table 2.

3.2.4 Fourth Field – Body Material

3.2.4.1 The fourth field shall define the nominal valve body material.

3.2.4.2 The nominal valve body material field shall consist of two alphabetic characters in accordance with *PIP PHCM0001*, Table 2.

3.2.4.3 The fourth field shall not be used to identify the product form (e.g., casting, forging, etc.) or grade, but merely to categorize by nominal material composition.

3.2.5 Fifth Field – End Connection Type and Sequence Number

3.2.5.1 The fifth field shall define the valve end connections and provide a sequence number to differentiate between similar valves.

3.2.5.2 The end connection type and sequence number field shall consist of three numeric or alpha numeric characters in accordance with Table 3, PIP column.

3.2.5.3 Plug, ball, and butterfly valves in the PIP Piping Material Specifications and the PIP Valve Descriptions have gear operators specified if the force required to operate the valve is excessive. In these instances, two valve commodity codes shall be used that have different sequence numbers to distinguish between the two types of valves (i.e., one with and the other without the gear operator).

3.2.5.4 Gear operators for gate and globe valves shall not be specified in PIP Piping Material Specifications or PIP Valve Descriptions. Handwheels shall be specified for all gate and globe valves in the PIP Valve Descriptions.

3.2.5.5 If an owner finds that creating a unique valve commodity code by using the sixth field is not suitable, the owner may use numbers reserved in the fifth field as shown in Table 3, Owners column. The valve descriptions should be provided in supplemental specifications provided by the owner.

Comment: Owner numbers are intended for special valves that are not likely to be a PIP standard (e.g., special trim, metal seats, bellows seal, additional testing, etc.). The owner end connection series (i.e., numbers less than 900) permit easy identification of the end connection type. The 930 to 999 series allows easy recognition of an owner-specified valve.

3.2.6 Sixth Field – Owner Designation (Optional)

3.2.6.1 The sixth field shall be reserved for owner-specified options.

Comment: Typical use of the sixth field is to identify variations from the base PIP Valve Description (e.g., gear operators if not already addressed in the PIP Material Specification or PIP Valve Description) and lockable features, bellows seal, special trim, 100% RT, etc.

3.2.6.2 The number of alphabetic or alpha-numeric characters should be limited to two for a maximum of 12 characters total to designate a valve.

3.2.6.3 The alphabetic or alpha-numeric character(s) should be added directly to the PIP valve number as a suffix and without a delimiter.

3.3 Example Designations

3.3.1 Examples of valve commodity codes generated by PIP authors are as follows:

a. 4DP14SDH00, where:

First Field (ID Surface Finish) 4 = SF4; Ra 15 µm (0.38 µm)
Mechanical Polish and
Electro-polish.

Second Field (Valve Type): DP = Diaphragm Valve

Third Field (Pressure Class) 14 = Refer to ASME-BPE table
DT-2-1

Fourth Field (Body Material) SD = 316/316L SS Body

Fifth Field (Connections/Seq.) H00 = Hygienic Clamped
Joints (HCJ)

Sixth Field (Owner Designation) blank = Not applicable

b. 4DP14SDH01, where the difference between this valve and 4DP14SDH00 in Section 3.3.1.a is the fifth field (PIP sequence number) that may indicate a gear operator within the PIP Valve Description.

3.3.2 Examples of valve commodity codes generated by owners using the sixth field are as follows:

a. 2BA14SA800G, where:

First Field (ID Surface Finish) 2 = SF2; Ra 25 µm (0.64 µm)
Mechanical Polish.

Second Field (Valve Type): BA = Ball Valve

Third Field (Pressure Class)	14 = Refer to ASME-BPE Table DT-2-1
Fourth Field (Body Material)	SA = 304/304L SS Body
Fifth Field (Connections/Seq.)	800 = Buttweld Ends; first valve in 800 (PIP) series
Sixth Field (Owner Designation)	G = Owner's designation for an owner-specified gear operator
b. 2BA03SD506LC, where:	
First Field (ID Surface Finish)	2 = SF2; Ra 25 µin (0.64 µm) Mechanical Polish.
Second Field (Valve Type):	BA = Ball Valve
Third Field (Pressure Class):	03 = ASME Pressure Class 300
Fourth Field (Body Material):	SD = 316/316L SS Body
Fifth Field (Connections/Seq.):	506 = Flanged Ends; sixth valve in 500 (PIP) series
Sixth Field (Owner Designation):	LC = Owner's designation for an owner-specified lockable lever handle (L) and a second owner-specified option indicating cleaned for oxygen service (C)

3.3.3 Examples of valve commodity codes generated by owners using the fifth field are as follows:

a. 0BA01SA600, where:	
First Field (ID Surface Finish)	0 = SF0; No finish requirement
Second Field (Valve Type):	BA = Ball Valve
Third Field (Pressure Class)	01 = ASME Pressure Class 150
Fourth Field (Body Material)	SA = 304/304L SS Body
Fifth Field (Connections/Seq.)	600 = Flanged Ends; first valve in 600 (Owner) series
Sixth Field (Owner Designation)	blank = Not used
b. 0BA01SA930, where:	
First Field (ID Surface Finish)	0 = SF0; No finish requirement
Second Field (Valve Type):	BA = Ball Valve
Third Field (Pressure Class)	01 = ASME Pressure Class 150
Fourth Field (Body Material)	SA = 304/304L SS Body
Fifth Field (Connections/Seq.)	930 = First valve in 930 (Owner) series
Sixth Field (Owner Designation)	blank = Not used

3.3.4 Example of OD finish incorporated into valve designation

First Field (ID Surface Finish)	4	= SF4; Ra 15 μin (0.38 μm) Mechanical Polish and Electro-polish.
Second Field (Valve Type):	DP	= Diaphragm Valve
Third Field (Pressure Class)	14	= Refer to ASME-BPE table DT-2-1
Fourth Field (Body Material)	SD	= 316/316L SS Body
Fifth Field (Connections/Seq.)	H00	= Hygienic Clamped Joints (HCJ)
Sixth Field (Owner Designation)	D2	= Owner's designation for an owner-specified OD finish SF2; Ra 25 μin (0.64 μm) Mechanical Polish

Table 1 – Valve Type

Symbol	Valve Type
AG	Globe (Angle Pattern)
BA	Ball
BF	Butterfly
BV	V-Ball
BM	Multi-port Ball (e.g. CIP / SIP)
BT	Three-way Ball
CA	Angle Check
CD	Dual Plate Check
CL	Lift Check (includes Piston & Ball Check)
CS	Swing Check
CT	Tilting Disk
DP	Diaphragm
DM	Multi-port Diaphragm (e.g. CIP / SIP)
FB	Flush / Tank Bottom
FM	Multi-port Flush / Tank Bottom (e.g. CIP / SIP)
GA	Gate
GL	Globe (T-Pattern)
KG	Knife Gate
ND	Needle
PC	Pinch/Clamp
PL	Plug
PM	Multi-port Plug (e.g. CIP / SIP)
PT	Three-way Plug
RD	Radial Diaphragm
RM	Multi-port Radial Diaphragm (e.g. CIP / SIP)
SC	Stop Check (includes Non-Return)
SP	Special
YG	Globe (Y-Pattern)

Table 2 – Pressure Class

Symbol	Class
00	No ASME, API, or MSS Pressure Class. Consult Manufacturer's Specification.
12	125
14	Hygienic Clamped Joints Refer to ASME BPE Table DT-2-1 for max working pressure
01	150
17	175
02	200
13	250
03	300
04	400
06	600
08	800
09	900
10	1,000
15	1,500
16	1,690
20	2,000
25	2,500
26	2,680
30	3,000
40	4,000
45	4,500
50	5,000
60	6,000
68	8,000
70	10,000
80-99	Reserved for Owners

Table 3 – End Connection Type and Sequence Number

Sequence Number Range		End Connection Type
PIP	Owners	
000-099	100-199	THRD
200-249	250-299	THRD X SW
300-399	400-499	SW
500-599	600-699	FLG
700-749	750-799	Wafer & Lugged
800-849	850-899	BW or ATW
900-929	-	Special
H00-H49	H50-H99	HCJ
-	930-999	Reserved for Owners