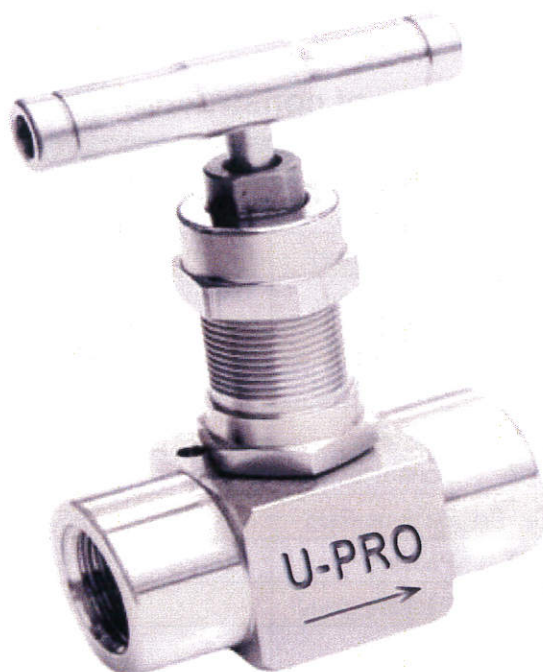


INSULATE BONNET NEEDLE VALVES



Features & Specifications

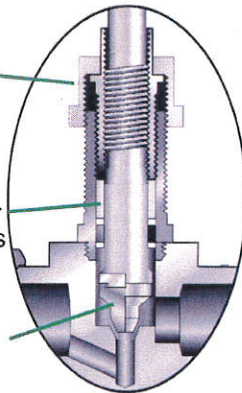
- End connections size : 6mm to 25mm tube, 1/4 in. to 1 in. tube OD and 1/4 in. to 1 in. Pipe.
- Variety of end connections include U-proLOK tube fittings, female NPT or P.T. pipe threads Socket weld end.
- Temperatures from 165°F to 450°F (156°C to 232°C) with standard PTFE Packing.
- Up to 600°F (315°C) Temperatures with Optional "PEEK" packing.
- Up to 1200°F (648°C) Temperatures with Optional Grafoil® packing.
- 6000 psi (414 bar) pressure rating (@ 100°F maximum).
- Cv Factor : 0.35 to 2.2
- Orifice : 4mm to 11.1mm (0.156 in. to 0.437 in.)
- All 316 Stainless Steel stems for long life.

Features

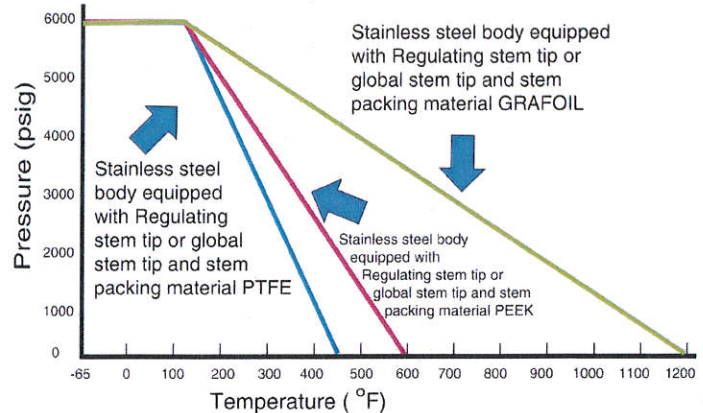
Packing nut for in service adjustment.

Packing installed below operating threads constructions. Isolates the lubricants from system fluids and

Non rotating stem tip design for leak tight shut-off and long seat life.



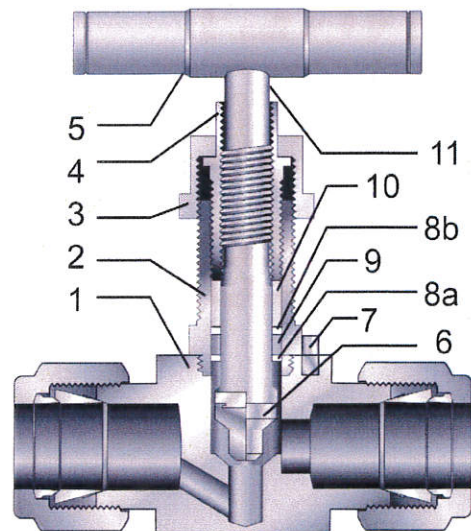
Pressure VS Temperature



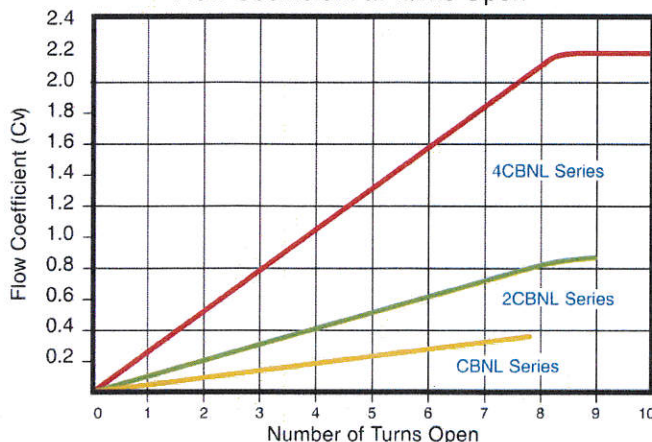
when valves with end connection fittings are connected to tubes, the working pressure of tubes must be considered in calculation of total system working pressure.

Material of construction

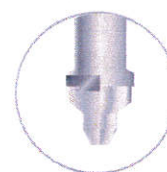
Part NO.	Material
1 Valve body	316SS / A479
2 Valve bonnet	316SS / A479
3 Packing nut	316SS / A276
4 Stem guide	416SS / A582
5 Valve handle	304SS Aluminum Aluminum
6 Stem tip	316SS / A276
7 Bonnet lock pin	316SS
8a 8b Back up Ring	PTFE PEEK GRAFOIL®
9 Packing	PTFE PEEK GRAFOIL®
10 Packing gland	316SS / A276
11 Stem	316SS / A276



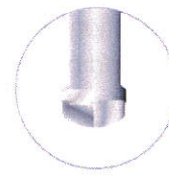
Flow Data at 100°F (37°C)
Regulating Stems
Flow Coefficient at Turns Open



Stem of Tip



Regulating



Global stem tip (S)

Non rotating stem
CBN series regulating tip is standard.

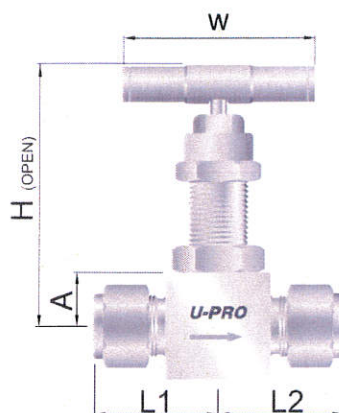
Test

Every integral needle valves is factory tested with nitrogen at 1000psig (69 bar) to maximum leak rate of 0.1SCCM. Include standard production test and

BONNET NEEDLE VALVES

TUBE TO TUBE

U-PRO
FITTINGS Inc



DIMENSIONS

Dimensions for reference only. Subject to change.

Part No.	End Connections	Dimensions										Flow Data			
U-PRO Tube Fittings	TUBE O.D.	A		L1		L2		W		H		Cv	Orifice		
	mm	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.	
CBNL-S3-T04	4	10.0	0.39	30.0	1.18	30.0	1.18	51.0	2.01	82.0	3.23	0.35	4.00	0.16	
CBNL-S3-T06	6	10.0	0.39	30.0	1.18	30.0	1.18	51.0	2.01	82.0	3.23				
CBNL-S3-T08	8	10.0	0.39	30.9	1.22	30.9	1.22	51.0	2.01	82.0	3.23				
2CBNL-S3-T10	10	12.5	0.49	33.0	1.30	33.0	1.30	64.0	2.52	101.0	3.98	0.86	6.4	0.25	
2CBNL-S3-T12	12	12.5	0.49	36.0	1.42	36.0	1.42	64.0	2.52	101.0	3.98				
2CBNL-S3-T14	14	12.5	0.49	43.0	1.69	43.0	1.69	64.0	2.52	103.0	4.06				
2CBNL-S3-T15	15	12.5	0.49	43.0	1.69	43.0	1.69	64.0	2.52	103.0	4.06				
2CBNL-S3-T16	16	12.5	0.49	44.0	1.73	44.0	1.73	64.0	2.52	103.0	4.06	2.20	11.10	0.44	
4CBNL-S3-T12	12	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T14	14	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T15	15	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T16	16	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T18	18	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T20	20	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T22	22	20.0	0.79	48.0	1.89	48.0	1.89	80.0	3.15	147.0	5.79				
4CBNL-S3-T25	25	20.0	0.79	48.0	1.89	48.0	1.89	80.0	3.15	147.0	5.79	2.20	11.10	0.44	
U-PRO Tube Fittings	TUBE O.D.	A		L1		L2		W		H					Cv
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		
CBNL-S3-T20	1/8	10.0	0.39	30.0	1.18	30.0	1.18	51.0	2.01	82.0	3.23	0.35	4.00	0.16	
CBNL-S3-T40	1/4	10.0	0.39	30.0	1.18	30.0	1.18	51.0	2.01	82.0	3.23				
2CBNL-S3-T40	1/4	12.5	0.49	32.0	1.26	32.0	1.26	64.0	2.52	101.0	3.98				
2CBNL-S3-T60	3/8	12.5	0.49	33.0	1.30	33.0	1.30	64.0	2.52	101.0	3.98	0.86	6.40	0.25	
2CBNL-S3-T80	1/2	12.5	0.49	36.0	1.42	36.0	1.42	64.0	2.52	101.0	3.98				
4CBNL-S3-T80	1/2	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67	2.20	11.10	0.44	
4CBNL-S3-T120	3/4	20.0	0.79	42.0	1.65	42.0	1.65	80.0	3.15	144.0	5.67				
4CBNL-S3-T160	1	20.0	0.79	48.0	1.89	48.0	1.89	80.0	3.15	147.0	5.79				

Ordering No. Description

CBNL - S3 - T60 -

Pattern type	Code
Straight pattern	CBNL
Angle pattern	CBNA (see figure 1)

Figure 1



Angle pattern

Body material	Code
316 Stainless Steel	S3

Available end connections	Code
U-proLOK (Tube Fitting)	T
Available end connections size	Code
3/8 in. Tube O.D.	60

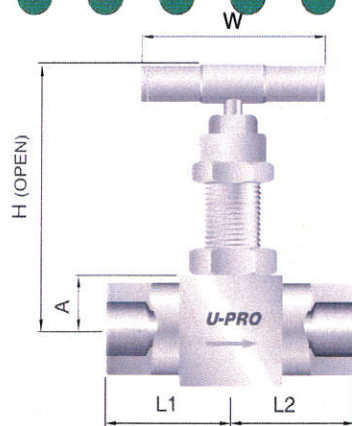
Options	Code	
Stem tip design	Regulating tip	-*
	Global tip	-S
Packing	PTFE	-*
	PEEK	-E
	Grafoil®	-G

Note : "- *" The CODE is standard part, eliminate the CODE.

Ex. 2CBNA-S3-T60-SG

Describes a angle pattern CBN series valve equipped with stainless steel construction, 3/8 in. **U-proLOK** tube fitting inlet and outlet connection port, a global stem tip and Grafoil® stem packing.

U-pro Fittings Inc.



DIMENSIONS

Dimensions for reference only. Subject to change.

Part No.	End Connections	Dimensions										Flow Data		
Socket Weld	TUBE O.D.	A		L1		L2		W		H		Cv	Orifice	
	mm	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
CBNL-S3-S04	4	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	71.0	2.80	0.35	4.00	0.16
CBNL-S3-S06	6	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	71.0	2.80			
CBNL-S3-S08	8	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	71.0	2.80			
2CBNL-S3-S10	10	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46	0.86	6.4	0.25
2CBNL-S3-S12	12	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46			
2CBNL-S3-S14	14	12.5	0.49	32.0	1.26	32.0	1.26	64.0	2.52	88.0	3.46			
2CBNL-S3-S15	15	12.5	0.49	32.0	1.26	32.0	1.26	64.0	2.52	88.0	3.46	2.20	11.10	0.44
2CBNL-S3-S16	16	12.5	0.49	32.0	1.26	32.0	1.26	64.0	2.52	88.0	3.46			
4CBNL-S3-S12	12	20.0	0.79	32.0	1.26	32.0	1.26	73.0	2.87	144.0	5.67			
4CBNL-S3-S14	14	20.0	0.79	32.0	1.26	32.0	1.26	73.0	2.87	144.0	5.67			
4CBNL-S3-S15	15	20.0	0.79	32.0	1.26	32.0	1.26	73.0	2.87	144.0	5.67			
4CBNL-S3-S16	16	20.0	0.79	32.0	1.26	32.0	1.26	73.0	2.87	144.0	5.67			
4CBNL-S3-S18	18	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
4CBNL-S3-S20	20	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
4CBNL-S3-S22	22	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
4CBNL-S3-S25	25	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
Socket Weld	TUBE O.D.	A		L1		L2		W		H		Cv	Orifice	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
CBNL-S3-SE20	1/8	10.0	0.39	22.0	0.87	23.0	0.91	51.0	2.01	71.0	2.80	0.35	4.00	0.16
CBNL-S3-SE40	1/4	10.0	0.39	22.0	0.87	23.0	0.91	51.0	2.01	71.0	2.80			
2CBNL-S3-SE40	1/4	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46			
2CBNL-S3-SE60	3/8	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46	0.86	6.40	0.25
2CBNL-S3-SE80	1/2	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46			
4CBNL-S3-SE80	1/2	20.0	0.79	32.0	1.26	32.0	1.26	73.0	2.87	144.0	5.67	2.20	11.10	0.44
4CBNL-S3-SE120	3/4	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
4CBNL-S3-SE160	1	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
Socket Weld	Pipe O.D.	A		L1		L2		W		H		Cv	Office	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
CBNL-S3-SW20	1/8	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	71.0	2.80	0.35	4.00	0.16
CBNL-S3-SW40	1/4	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	71.0	2.80			
2CBNL-S3-SW40	1/4	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46			
2CBNL-S3-SW60	3/8	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46	0.86	6.40	0.25
2CBNL-S3-SW80	1/2	12.5	0.49	25.0	0.98	25.0	0.98	64.0	2.52	88.0	3.46			
4CBNL-S3-SW80	1/2	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67	2.20	11.10	0.44
4CBNL-S3-SW120	3/4	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			
4CBNL-S3-SW160	1	20.0	0.79	36.0	1.42	36.0	1.42	73.0	2.87	144.0	5.67			

Ordering No. Description

CBNL - S3 - SE60 -

Pattern type	Code
Straight pattern	CBNL
Angle pattern	CBNA (see figure 2)



Body material	Code
316 Stainless Steel	S3

Available end connections	Code
Metric tube socket weld	S
Fractional tube socket weld	SE
Pipe socket weld	SW

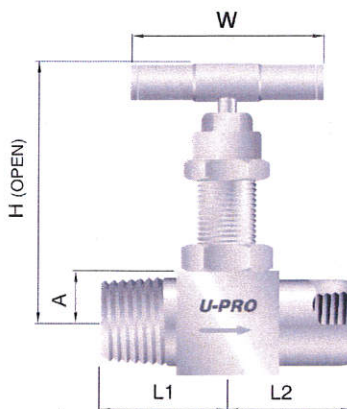
Available end connections size	Code
3/8 in. Tube OD	60

Options	Code	
Stem tip design	Regulating tip	-*
	Global tip	-S
Packing	PTFE	-*
	PEEK	-E
	Grafoil®	-G

Note : "- *" The CODE is standard part, eliminate the CODE.

Ex. 2CBNA-S3-SE60-SG

Describes a angle pattern CBN series valve equipped with stainless steel construction, 3/8 in. Metric tube socket weld tube inlet and outlet connection port, a global



DIMENSIONS

Dimensions for reference only. Subject to change.

Part No.	End Connections	Dimensions										Flow Data		
Male NPT To Female NPT	Pipe Threads	A		L1		L2		W		H		Cv	Orifice	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
	CBNL-S3-40-F40	1/4	10.0	0.39	28.0	1.10	23.0	0.91	51.0	2.01	80.0		3.15	0.35
2CBNL-S3-40-F40	1/4	13.0	0.51	28.0	1.10	23.0	0.91	29.0	1.14	100.0	3.94	0.86	6.40	0.25
2CBNL-S3-60-F60	3/8	13.0	0.51	29.0	1.14	25.0	0.98	59.0	2.32	100.0	3.94			
2CBNL-S3-80-F80	1/2	15.0	0.59	36.0	1.42	32.0	1.26	64.0	2.52	105.0	4.13			
4CBNL-S3-80-F80	1/2	20.0	0.79	40.0	1.57	37.0	1.46	80.0	3.15	144.0	5.67	2.20	11.10	0.44
4CBNL-S3-120-F120	3/4	20.0	0.79	42.0	1.65	37.0	1.46	80.0	3.15	144.0	5.67			
4CBNL-S3-160-F160	1	22.0	0.87	50.0	1.97	45.0	1.77	80.0	3.15	150.0	5.91			
Male P.T. To Female P.T.	Pipe Threads	A		L1		L2		W		H		Cv	Orifice	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
	CBNL-S3-P40-FP40	1/4	10.0	0.39	28.0	1.10	23.0	0.91	51.0	2.01	80.0		3.15	0.35
2CBNL-S3-P40-FP40	1/4	13.0	0.51	28.0	1.10	23.0	0.91	29.0	1.14	100.0	3.94	0.86	6.40	0.25
2CBNL-S3-P60-FP60	3/8	13.0	0.51	29.0	1.14	25.0	0.98	59.0	2.32	100.0	3.94			
2CBNL-S3-P80-FP80	1/2	15.0	0.59	36.0	1.42	32.0	1.26	64.0	2.52	105.0	4.13			
4CBNL-S3-P80-FP80	1/2	20.0	0.79	40.0	1.57	37.0	1.46	80.0	3.15	144.0	5.67	2.20	11.10	0.44
4CBNL-S3-P120-FP120	3/4	20.0	0.79	42.0	1.65	37.0	1.46	80.0	3.15	144.0	5.67			
4CBNL-S3-P160-FP160	1	22.0	0.87	50.0	1.97	45.0	1.77	80.0	3.15	150.0	5.91			

Ordering No. Description

CBNL - S3 - 60 - FP60 -

Pattern type	Code
Straight pattern	CBNL
Angle pattern	CBNA (see figure 3)
Body material	Code
316 Stainless Steel	S3

Available end connections	Code
Male Pipe NPT threads	-# Note 1
Male Pipe P.T. threads	P
Available end connections size	Code
3/8 in.	60
Available end connections	Code
Female Pipe NPT threads	F
Female Pipe P.T. threads	FP
Available end connections size	Code
3/8 in.	60

Options	Code
Stem tip design	Regulating tip -* Note 2
	Global tip -S
Packing	PTFE -*
	PEEK -E
	Grafoil® -G

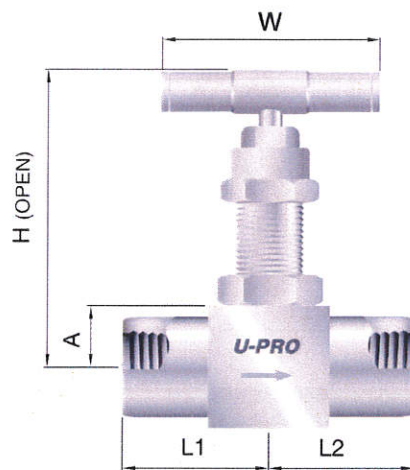
Note 2 : " -* " The CODE is standard part, eliminate the CODE.



Ex.2CBNA-S3-P60-FP60-SG

Describes a angle pattern CBN series valve equipped with stainless steel construction, 3/8 in. male pipe P.T. threads inlet and 3/8 in. female pipe P.T. threads outlet connection port, a global stem tip and Grafoil® stem packing.

Female Pipe TO Female Pipe



DIMENSIONS

Dimensions for reference only. Subject to change.

Part No.	End Connections	Dimensions										Folw Data		
Female NPT To Female NPT	Pipe Threads	A		L1		L2		W		H		Cv	Orifice	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
CBNL-S3-F20	1/8	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	80.0	3.15	0.35	4.00	0.16
CBNL-S3-F40	1/4	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	80.0	3.15			
2CBNL-S3-F40	1/4	13.0	0.51	23.0	0.91	23.0	0.91	59.0	2.32	100.0	3.94			
2CBNL-S3-F60	3/8	13.0	0.51	25.0	0.98	25.0	0.98	59.0	2.32	100.0	3.94			
2CBNL-S3-F80	1/2	15.0	0.59	32.0	1.26	32.0	1.26	64.0	2.52	105.0	4.13	0.86	6.40	0.25
4CBNL-S3-F80	1/2	20.0	0.79	37.0	1.46	37.0	1.46	80.0	3.15	144.0	5.67			
4CBNL-S3-F120	3/4	20.0	0.79	37.0	1.46	37.0	1.46	80.0	3.15	144.0	5.67			
4CBNL-S3-F160	1	22.0	0.87	45.0	1.77	45.0	1.77	80.0	3.15	150.0	5.91			
Female PT. To Female P.T.	Pipe Threads	A		L1		L2		W		H		Cv	Orifice	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.		mm	in.
CBNL-S3-FP20	1/8	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	80.0	3.15	0.35	4.00	0.16
CBNL-S3-FP40	1/4	10.0	0.39	23.0	0.91	23.0	0.91	51.0	2.01	80.0	3.15			
2CBNL-S3-FP40	1/4	13.0	0.51	23.0	0.91	23.0	0.91	59.0	2.32	100.0	3.94			
2CBNL-S3-FP60	3/8	13.0	0.51	25.0	0.98	25.0	0.98	59.0	2.32	100.0	3.94			
2CBNL-S3-FP80	1/2	15.0	0.59	32.0	1.26	32.0	1.26	64.0	2.52	105.0	4.13	0.86	6.40	0.25

Ordering No. Description

CBNL - S3 - F60 -

Pattern type	Code
Straight pattern	CBNL
Angle pattern	CBNA (see figure 4)

Body material	Code
316 Stainless Steel	S3

Figure 4



Available end connections	Code
Female NPT threads	F
Female P.T. threads	FP
Available end connections size	Code
3/8 in.	60

Options	Code
Stem tip design	Regulating tip -* Note
	Global tip -S
Packing	PTFE -*
	PEEK -E
	Grafoil® -G

Note : " -* " The CODE is standard part, eliminate the CODE.

Ex. 2CBNA-S3-F60-SG

Describes a angle pattern CBN series valve equipped with stainless steel construction, 3/8 in. female pipe N.P.T. threads inlet and 3/8 in. female pipe N.P.T. threads outlet connection port, a global stem tip and Grafoil® stem packing.