Specification Sheet

No.: 1 QTY: 1
Tag no. 16-FV-005
Service

< Specification >

Model	VBZ	
Description	Special Butterfly Valve	
Valve size	600A	inch
Port size		inch
Rated Cv	9800	
Connection size		inch
Body rating	ANSI150	
End connection	RF	
Body material	SCPH2	
Trim material	STEM: SUS316	
Flow characteristic		
Bonnet type	PLAIN	
Actuator	VA5D	
Manual operator	SIDE	
Valve action	DIRECT(Push down to close)	
Gland packing	NP4519	
Gasket		
Grease	PS6	
Air supply	2.8 kgf/cm2	
Spring range	1.0-2.6 kgf/cm2	

< Accesories >

Positioner / Signal	HTP-1D
Exprosion-proof	
Signal	0.2-1.0 kgf/cm2
Regurator	KZ03-2B-1B
Regulator 2	
Limit Switch	
Action	
Solenoid valve	
Action	
Power supply	
Others	

Product no.: -

<Option>

SV0703-105 Indicating unit : "kgf/cm2"

SV0601-001 Air piping Connection: 1/4 NPT

SV0602-002 Air piping: Vinyl covered copper tube. Joint:Cr plated with vinyl cap

SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)

<Finish>

Body:	Silver
Diaph. Case:	7.5R3/12
Yoke:	7.5R3/12
Paint:	Standard

<Operating condition>

Fluid name Air [GAS]

	MAX	NOR	MIN	UNIT
Flow rate		60380		m3/h[N]
Inlet pressure		3.76		kgf/cm2A
Outlet pressure				kgf/cm2A
Diff. pressure		0.04		kgf/cm2
Shut-off press.		3.18		kgf/cm2
Temperature		208.0		degC
Sp.Gr. (liq.)				water=1
Sp.Gr.(gas,vapor)		1.265		kg/m3[N]
Viscosity		0.026		cP
Flash				%
Velocity				
S.P.L.		78		dBA
Calculated Cv		8810		
Travel				%

<Seat Leakage>

<Note> Tokumi: -

Original production No. : 416-8305-3000, '78

<Line spec>

Design press.				kgf/cm2G
Design temp.				degC
Line size in/out	1	/	1	inch
Line Sch. / Thick.	40	/	3.4	mm

YAMATAKE

Specification Sheet

No.: 2 QTY: 1
Tag no. 16-FV-003
Service

< Specification >

Model	VDP	
Description	Top and Bottom-Guided Double Seated Control Valve	
Valve size	1	inch
Port size	1	inch
Rated Cv	13	
Connection size		inch
Body rating	ANSI150	
End connection	RF	
Body material	SCPH2	
Trim material	MONEL	
Flow characteristic	EQ%(P)	
Bonnet type	PLAIN	
Actuator	HA2	
Manual operator	---	
Valve action	DIRECT(Push down to close)	
Gland packing	NP4519	
Gasket	V543	
Grease	PS6	
Air supply	4.0kgf/cm2	
Spring range	0.8-2.4kgf/cm2	

< Accesories >

Positioner / Signal
Exprosion-proof
Signal
Regurator
Regulator 2
Limit Switch
Action
Solenoid valve
Action
Power supply
Others

Product no.: -

<Option>

SV0703-105 Indicating unit : "kgf/cm2"

SV0601-001 Air piping Connection: 1/4 NPT

SV0602-002 Air piping: Vinyl covered copper tube. Joint:Cr plated with vinyl cap

SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)

<Finish>

Body: Silver
Diaph. Case:
Yoke:
Paint: Standard

<Operating condition>

Fluid name Sour Water [WATER]

	MAX	NOR	MIN	UNIT
Flow rate	5.96			m3/h
Inlet pressure	2.96			kgf/cm2A
Outlet pressure				kgf/cm2A
Diff. pressure	0.71			kgf/cm2
Shut-off press.		3.0		kgf/cm2
Temperature	54			degC
Sp.Gr. (liq.)	0.9863			water=1
Sp.Gr.(gas,vapor)				MW
Viscosity				cP
Flash				%
Velocity	3.26			m/s
S.P.L.	54			dBA
Calculated Cv	8.2			
Travel				%

<Seat Leakage>

CLASS II (SV0201-007)

<Note> Tokumi: -

Original production No. : 416-8305-3600, '78

<Line spec>

Design press.				kgf/cm2G
Design temp.				degC
Line size in/out	1	/	1	inch
Line Sch. / Thick.	40	/	3.4	mm

Specification Sheet

No.: 3 QTY: 1
Tag no. 16-HV-005
Service

< Specification >

Model	VDP	
Description	Top and Bottom-Guided Double Seated Control Valve	
Valve size	2	inch
Port size	2	inch
Rated Cv	50	
Connection size		inch
Body rating	ANSI300	
End connection	RF	
Body material	SCPH2	
Trim material	SUS316 STELLITE#6	
Flow characteristic	EQ%(P)	
Bonnet type	FIN	
Actuator	HA2	
Manual operator	---	
Valve action	DIRECT(Push down to close)	
Gland packing	P6610CH+P6528	
Gasket	V543	
Grease	PS6	
Air supply	4.0kgf/cm2	
Spring range	0.8-2.4kgf/cm2	

< Accesories >

Positioner / Signal	HTP-1D
Exprosion-proof	
Signal	0.2-1.0 kgf/cm2
Regurator	KZ03-2B-1B
Regulator 2	
Limit Switch	
Action	
Solenoid valve	
Action	
Power supply	
Others	

Product no.: -

<Option>

SV0703-105 Indicating unit : "kgf/cm2"

SV0601-001 Air piping Connection: 1/4 NPT

SV0602-002 Air piping: Vinyl covered copper tube. Joint:Cr plated with vinyl cap

SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)

<Finish>

Body:	Silver
Diaph. Case:	
Yoke:	
Paint:	Standard

<Operating condition>

Fluid name SM [ ]

	MAX	NOR	MIN	UNIT
Flow rate				kg/h
Inlet pressure				kgf/cm2A
Outlet pressure				kgf/cm2A
Diff. pressure				kgf/cm2
Shut-off press.				kgf/cm2
Temperature				degC
Sp.Gr. (liq.)				water=1
Sp.Gr.(gas,vapor)				MW
Viscosity				cP
Flash				%
Velocity				m/s
S.P.L.				dBA
Calculated Cv				
Travel				%

<Seat Leakage>

CLASS II (SV0201-007)

<Note> Tokumi: -

Original production No. : 416-8352-0600, '78

<Line spec>

Design press.				kgf/cm2G
Design temp.				degC
Line size in/out	1	/	1	inch
Line Sch. / Thick.	40	/	3.4	mm

YAMATAKE

Cv Calculation Sheet

No: 1 TAG NO: 16-FV-005 CASE: NOR

Flow rate:	60380	m3/h[N]	Fluid state:	GAS		
Inlet Pressure:	3.76	kgf/cm2A	Model:	VBZ		
Outlet pressure:		kgf/cm2A	Valve size:	600A		inch
Diff. pressure	0.04	kgf/cm2	Line size In/Out:	1	1	inch
Temperature:	208.0	degC	Pipe Sch/ Thick:	40	3.4	mm
Sp.Gr. (liq.):		water=1	Saturated temp.:			degC
Sp.Gr. (gas,vapor):	1.265	kg/m3[N]	KC:		0.01	
Viscosity:	0.026	cP				
Vapor pressure:		kgf/cm2A	Velocity:			
Critical pressure:		kgf/cm2A	S.P.L.:		78	dBA
CP/CV , Z:			Calc. Cv:		8810	
Flash:		%	Travel:			%

$$Cv(Gas) = \frac{63822 m3/h[S] \times Sqr(0.9783 \times 481.2 degK) \times 1}{2.930 \times Sqr(3.923 kPa \times (368.7 kPaA + 364.8 kPaA))} = 8810$$

No: 2 TAG NO: 16-FV-003 CASE: MAX

Flow rate:	5.96	m3/h	Fluid state:	WATER		
Inlet Pressure:	2.96	kgf/cm2A	Model:	VDP		
Outlet pressure:		kgf/cm2A	Valve size:	1		inch
Diff. pressure	0.71	kgf/cm2	Line size In/Out:	1	1	inch
Temperature:	54	degC	Pipe Sch/ Thick:	40	3.4	mm
Sp.Gr. (liq.):	0.9863	water=1	Saturated temp.:		133.5	degC
Sp.Gr. (gas,vapor):		MW	KC:		0.25	
Viscosity:		cP				
Vapor pressure:	0.153	kgf/cm2A	Velocity:	3.26		m/s
Critical pressure:	225.6	kgf/cm2A	S.P.L.:	54		dBA
CP/CV , Z:			Calc. Cv:	8.2		
Flash:		%	Travel:			%

$$Cv(Liq) = \frac{11.56 \times 5.96 m3/h \times Sqr(0.9863) \times 1}{Sqr(69.63 kPa)} = 8.2$$