Specification Sheet

No.: 1 QTY: 1
Tag no. PCV-3121 / -3122
Service N2 Gas

< Specification >

Model	HTS	
Description	Top-Guided Single Seated Control Valves	
Valve size	4	inch
Port size	4	inch
Rated Cv	175	
Connection size		inch
Body rating	JIS10K	
End connection	RF	
Body material	SCPH2	
Trim material	SUS316	
Flow characteristic	EQ%	
Bonnet type	PLAIN	
Actuator	HA3	
Manual operator	---	
Valve action	REVERSE(Air fail close)	
Gland packing	V-PTFE	
Gasket	V543	
Grease		
Air supply	2.8kgf/cm2	
Spring range	0.8-2.4kgf/cm2	

< Accesories >

Positioner / Signal	AVP300-XSD2B-1CYT-X
Exprosion-proof	Water-proof, Rc 1/4, G1/2
Signal	4-20 mADC
Regurator	KZ03-2A-XX
Regulator 2	
Limit Switch	
Action	
Solenoid valve	
Action	
Power supply	
Others	

Product no.: -

<Option>

SV0703-105 Indicating unit : "kgf/cm2"

SV0601-000 Air piping Connection: Rc1/4

<Finish>

Body:	M10B5/10
Diaph. Case:	M10B5/10
Yoke:	M10B5/10
Paint:	Standard

<Operating condition>

Fluid name N2 Gas [GAS]

	MAX	NOR	MIN	UNIT
Flow rate	2250		894	m3/h[N]
Inlet pressure	2.7		2.5	kgf/cm2G
Outlet pressure	2.5		0.5	kgf/cm2G
Diff. pressure	0.2		2.2	kgf/cm2
Shut-off press.				kgf/cm2
Temperature	50		30	degC
Sp.Gr. (liq.)				water=1
Sp.Gr.(gas,vapor)	0.967			air=1
Viscosity				cP
Flash				%
Velocity	0.07			Mach
S.P.L.				dBA
Calculated Cv	121.4			
Travel	87			%

<Seat Leakage>

<Note> Tokumi: V93-1592-00 - 1
Original Productin No. : S-03741-41-180-2
Tokumi : Rustproof processing

<Line spec>

Design press.				kgf/cm2G
Design temp.				degC
Line size in/out	4	/	4	inch
Line Sch. / Thick.	40	/	6	mm

Specification Sheet

No.: 2 QTY: 1
Tag no. FCV-5031 / -5032
Service Air

< Specification >

Model	HTS	
Description	Top-Guided Single Seated Control Valves	
Valve size	2	inch
Port size	2	inch
Rated Cv	44	
Connection size		inch
Body rating	JIS10K	
End connection	RF	
Body material	SCPH2	
Trim material	SUS316	
Flow characteristic	EQ%	
Bonnet type	PLAIN	
Actuator	HA2	
Manual operator	---	
Valve action	REVERSE(Air fail close)	
Gland packing	V-PTFE	
Gasket	V543	
Grease		
Air supply	2.8kgf/cm2	
Spring range	0.8-2.4kgf/cm2	

< Accesories >

Positioner / Signal	AVP300-XSD2B-1CYT-X
Exprosion-proof	Water-proof, Rc 1/4, G1/2
Signal	4-20 mADC
Regurator	KZ03-2A-XX
Regulator 2	
Limit Switch	
Action	
Solenoid valve	
Action	
Power supply	
Others	

Product no.: -

<Option>

SV0703-105 Indicating unit : "kgf/cm2"

SV0601-000 Air piping Connection: Rc1/4

<Finish>

Body:	M10B5/10
Diaph. Case:	M10B5/10
Yoke:	M10B5/10
Paint:	Standard

<Operating condition>

Fluid name Air [GAS]

	MAX	NOR	MIN	UNIT
Flow rate	500		150	m3/h[N]
Inlet pressure	4.3		3.9	kgf/cm2G
Outlet pressure	3.7		0.7	kgf/cm2G
Diff. pressure	0.6			kgf/cm2
Shut-off press.				kgf/cm2
Temperature	50		50	degC
Sp.Gr. (liq.)				water=1
Sp.Gr.(gas,vapor)	1		1	air=1
Viscosity				cP
Flash				%
Velocity	0.04		0.04	Mach
S.P.L.				dBA
Calculated Cv	13.45		2.321	
Travel	63		21	%

<Seat Leakage>

<Note> Tokumi: V93-1592-00 - 2
Original Productin No. : S-03741-41-190
Tokumi : Rustproof processing

<Line spec>

Design press.			kgf/cm2G
Design temp.			degC
Line size in/out		/	inch
Line Sch. / Thick.	0	/	mm

Cv Calculation Sheet

No: 1 TAG NO: PCV-3121 / -3122 CASE: MAX

Flow rate:	2250	m3/h[N]	Fluid state:	GAS		
Inlet Pressure:	2.7	kgf/cm2G	Model:	HTS		
Outlet pressure:	2.5	kgf/cm2G	Valve size:	4		inch
Diff. pressure	0.2	kgf/cm2	Line size In/Out:	4	4	inch
Temperature:	50	degC	Pipe Sch/ Thick:	40	6	mm
Sp.Gr. (liq.):		water=1	Saturated temp.:			degC
Sp.Gr. (gas,vapor):	0.967	air=1	KC:		0.05	
Viscosity:		cP				
Vapor pressure:		kgf/cm2A	Velocity:	0.07		Mach
Critical pressure:		kgf/cm2A	S.P.L.:			dBA
CP/CV , Z:			Calc. Cv:	121.4		
Flash:		%	Travel:	87		%

$$Cv(Gas) = \frac{2378m3/h[S] \times Sqr(0.967 \times 323.2degK) \times 1}{2.930 \times Sqr(19.61kPa \times (366.1kPaA + 346.5kPaA))} = 121.4$$

No: 2 TAG NO: FCV-5031 / -5032 CASE: MAX

Flow rate:	500	m3/h[N]	Fluid state:	GAS		
Inlet Pressure:	4.3	kgf/cm2G	Model:	HTS		
Outlet pressure:	3.7	kgf/cm2G	Valve size:	2		inch
Diff. pressure	0.6	kgf/cm2	Line size In/Out:			inch
Temperature:	50	degC	Pipe Sch/ Thick:	0		mm
Sp.Gr. (liq.):		water=1	Saturated temp.:			degC
Sp.Gr. (gas,vapor):	1	air=1	KC:		0.11	
Viscosity:		cP				
Vapor pressure:		kgf/cm2A	Velocity:	0.04		Mach
Critical pressure:		kgf/cm2A	S.P.L.:			dBA
CP/CV , Z:			Calc. Cv:	13.45		
Flash:		%	Travel:	63		%

$$Cv(Gas) = \frac{528.5m3/h[S] \times Sqr(1 \times 323.2degK) \times 1}{2.930 \times Sqr(58.84kPa \times (523kPaA + 464.2kPaA))} = 13.45$$