

Item No. / Qty	1		1		Ref. No.	
Tag No.	3FIC9122V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		2-1/2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			85		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA4R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mA DC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	C4 AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	35.8	29.8	14.9	m3/h		
Inlet pressure	6.5	6.5	6.5	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2.25	2.25	2.25	kgf/cm2		
Shut-off press.	17			kgf/cm2		
Temperature	35	35	35	degC		
Density/Gravity(Liq)	586.7	586.7	586.7	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.14	0.14	0.14	cP		
Flash	Cavitation	Cavitation	Cavitation	%		
Calculated CV	21.34	17.76	8.882			
Travel	58	54	40	%		
Inlet velocity	1.267	1.054	0.5272	m/s		
Predictive SPL	70	68	64	dBA		
<b>&lt;Piping spec.&gt;</b>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		4 in.		4 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	2		1		Ref. No.	
Tag No.	3FIC9123V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.		2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			50		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA4R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mA DC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4 AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	17.9	14.9	7.45	m3/h		
Inlet pressure	6.5	6.5	6.5	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2.25	2.25	2.25	kgf/cm2		
Shut-off press.	17			kgf/cm2		
Temperature	35	35	35	degC		
Density/Gravity(Liq)	586.7	586.7	586.7	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.14	0.14	0.14	cP		
Flash	Cavitation	Cavitation	Cavitation	%		
Calculated CV	10.67	8.882	4.441			
Travel	55	51	37	%		
Inlet velocity	1.126	0.9373	0.4687	m/s		
Predictive SPL	65	64	60	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size			3 in.		3 in.	
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	3		1		Ref. No.	
Tag No.	3FIC9124V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.		2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			50		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3R					
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX			1		
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T			1		
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4 AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	17.9	14.9	7.45	m3/h		
Inlet pressure	6.5	6.5	6.5	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2.25	2.25	2.25	kgf/cm2		
Shut-off press.	17			kgf/cm2		
Temperature	35	35	35	degC		
Density/Gravity(Liq)	586.7	586.7	586.7	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.14	0.14	0.14	cP		
Flash	Cavitation	Cavitation	Cavitation	%		
Calculated CV	10.67	8.882	4.441			
Travel	55	51	37	%		
Inlet velocity	1.126	0.9373	0.4687	m/s		
Predictive SPL	65	64	60	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		3 in.		3 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	4		1		Ref. No.	
Tag No.	3HC9131V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	HTS				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single Seated Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	6 in.		4 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			175		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA6R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543					
Air supply / Spring range	5.0kgf/cm2		2.0-4.0kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD5B-1DYL-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-3B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	water/solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	117.9	98.2	49.1	m3/h		
Inlet pressure	5.83	5.63	5.11	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.43	1.95	2.15	kgf/cm2		
Shut-off press.		14.8		kgf/cm2		
Temperature	57.1	57.1	57.1	degC		
Density/Gravity(Liq)	981.3	981.3	981.3	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.95	0.95	0.95	cP		
Flash				%		
Calculated CV	114	81.32	38.72			
Travel	87	77	55	%		
Inlet velocity	1.854	1.544	0.7722	m/s		
Predictive SPL	69	70	67	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.	114.1				degC	
Size	6 in.		6 in.			
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	5		1		Ref. No.	
Tag No.	3FIC9352V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		4 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			200		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA4D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Open		AC110V 50Hz			
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	water/solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	117.9	98.2	49.1	m3/h		
Inlet pressure	5.83	5.83	5.83	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.72	0.72	0.72	kgf/cm2		
Shut-off press.		14.8		kgf/cm2		
Temperature	74.1	74.1	74.1	degC		
Density/Gravity(Liq)	981.3	981.3	981.3	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.95	0.95	0.95	cP		
Flash				%		
Calculated CV	160.7	133.8	66.92			
Travel	83	78	64	%		
Inlet velocity	4.172	3.475	1.737	m/s		
Predictive SPL	65	64	61	dBA		
<b>&lt;Piping spec.&gt;</b>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		114.1			degC	
Size		4 in.		4 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	6		1		Ref. No.	
Tag No.	3FIC9801V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	ACP				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	8 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			610		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543,V8590					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	383.57	348.7	174.35	m3/h		
Inlet pressure	15.2	15.2	15.2	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.72	0.72	0.72	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	67.7	67.7	67.7	degC		
Density/Gravity(Liq)	1000.6	1000.6	1000.6	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	1.15	1.15	1.15	cP		
Flash				%		
Calculated CV	527.9	479.9	239.9			
Travel	95	92	70	%		
Inlet velocity	3.393	3.085	1.542	m/s		
Predictive SPL	67	67	64	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design			99		kgf/cm2G	
Temp.			8 in.		degC	
Size			8 in.		8 in.	
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	7		1		Ref. No.	
Tag No.	3FIC9125V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	ACP				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	8 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			610		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543,V8590					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	380	345.4	172.7	m3/h		
Inlet pressure	14.48	14.48	14.48	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.71	0.71	0.71	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	57.1	57.1	57.1	degC		
Density/Gravity(Liq)	1010.2	1010.2	1010.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	1.36	1.36	1.36	cP		
Flash				%		
Calculated CV	529.1	481	240.5			
Travel	96	92	70	%		
Inlet velocity	3.362	3.056	1.528	m/s		
Predictive SPL	67	67	64	dBA		
					<Piping spec.>	
					Strength Calc. Sheet	
Design						kgf/cm2G
Temp.				99		degC
Size				8 in.		8 in.
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	8		1		Ref. No.	
Tag No.	3HC9211V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	ADVM				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			705		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				SV0507 Actuator yoke material: SCPH2 or WCB	
Flow characteristic	EQ%				HART AVP SP No.2	
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)+V563(PTFE)+T1806GR					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	374.2	340.2	170.1	m3/h		
Inlet pressure	14.48	14.48	14.48	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.71	0.71	0.71	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	40	40	40	degC		
Density/Gravity(Liq)	1025.7	1025.7	1025.7	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	1.85	1.85	1.85	cP		
Flash				%		
Calculated CV	525	477.3	238.7			
Travel	79	76	61	%		
Inlet velocity	2.119	1.926	0.9631	m/s		
Predictive SPL	68	67	64	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		99			degC	
Size		10 in.		10 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	9		1		Ref. No.	
Tag No.	3HC9121V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	ADVM				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			705		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				SV0507 Actuator yoke material: SCPH2 or WCB	
Flow characteristic	EQ%				HART AVP SP No.2	
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)+V563(PTFE)+T1806GR					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	380	345.4	172.7	m3/h		
Inlet pressure	15.2	14.48	14.48	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.71	1.53	1.53	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	57.1	57.1	57.1	degC		
Density/Gravity(Liq)	1010.2	1010.2	1010.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	1.36	1.36	1.36	cP		
Flash				%		
Calculated CV	529.1	327.6	163.8			
Travel	79	68	53	%		
Inlet velocity	2.151	1.956	0.9778	m/s		
Predictive SPL	68	71	68	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		99			degC	
Size		10 in.		10 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	10	1	Ref. No.	
Tag No.	3HC9212V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	2-1/2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		85	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA6R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	2.0-3.5kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYL-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch	VCX7001-J	1		
Action	Full Open and Close on			
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Lean Solvent AND LIQ		LIQUID	
	MAX	NOR	MIN	Unit
Flow rate	100			m3/h
Inlet pressure	14.48			kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	12			kgf/cm2
Shut-off press.		33.8		kgf/cm2
Temperature	40			degC
Density/Gravity(Liq)	1025.7			kg/m3
Density/Gravity(G,V)				MW
Viscosity	1.85			cP
Flash				%
Calculated CV	34.13			
Travel	68			%
Inlet velocity	3.539			m/s
Predictive SPL	76			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		99		degC
Size		4 in.		4 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	11	1	Ref. No.	
Tag No.	3FIC9251V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		50	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Raffinate Reflux AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	64.4	58.5	22	m3/h
Inlet pressure	14.29	14.29	14.29	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	4.39	4.39	4.39	kgf/cm2
Shut-off press.		24.14		kgf/cm2
Temperature	42	42	42	degC
Density/Gravity(Liq)	567	567	567	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.15	0.15	0.15	cP
Flash				%
Calculated CV	27.02	24.54	9.23	
Travel	74	72	52	%
Inlet velocity	4.051	3.68	1.384	m/s
Predictive SPL	67	66	62	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		3 in.		3 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				



Item No. / Qty	13	1	Ref. No.	
Tag No.	3FIC9203V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	3 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		115	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Rich Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	211	110.07	99	m3/h
Inlet pressure	15.1	15.1	15.1	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	11	11	11	kgf/cm2
Shut-off press.		22.6		kgf/cm2
Temperature	63	63	63	degC
Density/Gravity(Liq)	927.4	927.4	927.4	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.98	0.98	0.98	cP
Flash	Flash	Flash	Flash	%
Calculated CV	76.73	39.33	35.3	
Travel	78	65	62	%
Inlet velocity	13.27	6.924	6.228	m/s
Predictive SPL	77	74	74	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size				
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	14	1	Ref. No.	
Tag No.	3FICA9201V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	ADVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.	6 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		450	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		SV0507 Actuator yoke material: SCPH2 or WCB	
Flow characteristic	EQ%		HART AVP SP No.2	
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)+V563(PTFE)+T1806GR			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYN-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX		1	
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Rich Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	421.9	366.9	211	m3/h
Inlet pressure	13.36	13.36	13.36	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2	2	2	kgf/cm2
Shut-off press.		22.6		kgf/cm2
Temperature	63	63	63	degC
Density/Gravity(Liq)	927.4	927.4	927.4	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.98	0.98	0.98	cP
Flash				%
Calculated CV	335.4	291.7	167.7	
Travel	79	75	63	%
Inlet velocity	2.389	2.077	1.195	m/s
Predictive SPL	72	72	69	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		10 in.		10 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	15	1	Ref. No.	
Tag No.	3LIC9252V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.4	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.4	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Waste water AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	0.05	0.04	0.02	m3/h
Inlet pressure	4.73	3.73	3.73	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2	3	3	kgf/cm2
Shut-off press.		6.5		kgf/cm2
Temperature	42	42	42	degC
Density/Gravity(Liq)	988	988	988	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.65	0.65	0.65	cP
Flash				%
Calculated CV	0.04103	0.0268	0.01377	
Travel	37	26		%
Inlet velocity	0.02831	0.02265	0.01132	m/s
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1-1/2 in.		1-1/2 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	16	1	Ref. No.	
Tag No.	3HC9251V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.	1 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		14	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Vent AND GAS		GAS	
	MAX	NOR	MIN	Unit
Flow rate	150			m3/h(N)
Inlet pressure	4.5			kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2.2			kgf/cm2
Shut-off press.		6.5		kgf/cm2
Temperature	42			degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	55.49			MW
Viscosity	0.01			cP
Flash				%
Calculated CV	3.233			
Travel	56			%
Outlet velocity	0.04981			Mach
Predictive SPL	66			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1-1/2 in.		1-1/2 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	17	1	Ref. No.	
Tag No.	3LIC9251V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	2-1/2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		85	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX		1	
Regulator2				
Limit switch				
Action				
Solenoid valve	JE38320G174/104-094-15T		1	
Action / Power	En: Control, De: Close		AC110V 50Hz	
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Raffinate AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	43.9	36.4	18.2	m3/h
Inlet pressure	14.29	14.29	14.29	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2.29	2.29	2.29	kgf/cm2
Shut-off press.		18.4		kgf/cm2
Temperature	42	42	42	degC
Density/Gravity(Liq)	567	567	567	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.15	0.15	0.15	cP
Flash				%
Calculated CV	25.5	21.14	10.57	
Travel	62	58	44	%
Inlet velocity	1.553	1.288	0.644	m/s
Predictive SPL	64	63	60	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		4 in.		4 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	18	1	Ref. No.	
Tag No.	3FIC9451V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.	1-1/2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		30	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Crude Butadiene AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	37.3	33.9	17	m3/h
Inlet pressure	11.2	11.2	11.2	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2.95	2.95	2.95	kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature	42	42	42	degC
Density/Gravity(Liq)	593.5	593.5	593.5	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.12	0.12	0.12	cP
Flash				%
Calculated CV	19.53	17.75	8.902	
Travel	78	76	62	%
Inlet velocity	9.386	8.53	4.278	m/s
Predictive SPL	60	60	57	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		66		degC
Size		1-1/2 in.		1-1/2 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	19	1	Ref. No.	
Tag No.	3FIC9212V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	ACP		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	4 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		158	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA3R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543,V8590			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYT-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	65.7	59.7	29.9	m3/h
Inlet pressure	12.83	12.83	12.83	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.6	0.6	0.6	kgf/cm2
Shut-off press.		33.8		kgf/cm2
Temperature	40	40	40	degC
Density/Gravity(Liq)	1025.7	1025.7	1025.7	kg/m3
Density/Gravity(G,V)				MW
Viscosity	1.85	1.85	1.85	cP
Flash				%
Calculated CV	100.3	91.12	45.64	
Travel	85	82	59	%
Inlet velocity	2.325	2.113	1.058	m/s
Predictive SPL	57	56	53	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.	99			degC
Size	4 in.		4 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	20	1	Ref. No.	
Tag No.	3FIC9413V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	VDC		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Cage Type Double Seated Control Valve		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	12 in.	8 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		640	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-002 Seat leakage: Less than 0.1%CV (Equivalent IEC, JIS Class III)	
Trim material	SCS24		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (0 to 200 degC)			
Actuator / Handle	VA5D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543			
Air supply / Spring range	2.6kgf/cm2	0.2-1.0kgf/cm2		
Seat leakage	CLASS III			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYL-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mA DC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Rich Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	571	519.1	259	m3/h
Inlet pressure	12.42	12.42	12.42	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	7.2	7.2	7.2	kgf/cm2
Shut-off press.		33.8		kgf/cm2
Temperature	120	120	120	degC
Density/Gravity(Liq)	824.9	824.9	824.9	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.47	0.47	0.47	cP
Flash	Flash	Flash	Flash	%
Calculated CV	248.3	225.1	110.9	
Travel	59	57	45	%
Inlet velocity	2.245	2.041	1.018	m/s
Predictive SPL	79	78	75	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		18 in.		18 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	21		1		Ref. No.	
Tag No.	3FIC9412V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVM				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		3 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			115		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA4D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Rich Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	277	192.72	144	m3/h		
Inlet pressure	18.15	18.15	18.15	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	13.85	13.85	13.85	kgf/cm2		
Shut-off press.		23.43		kgf/cm2		
Temperature	104	104	104	degC		
Density/Gravity(Liq)	921.5	921.5	921.5	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.66	0.66	0.66	cP		
Flash	Cavitation	Cavitation	Cavitation	%		
Calculated CV	90.08	61.84	45.86			
Travel	82	74	68	%		
Inlet velocity	9.802	6.82	5.096	m/s		
Predictive SPL	84	83	81	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size						
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	22	1	Ref. No.	
Tag No.	3HC9051V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	3 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		115	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Solvent AND LIQ		LIQUID	
	MAX	NOR	MIN	Unit
Flow rate	90			m3/h
Inlet pressure	7.52			kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	3			kgf/cm2
Shut-off press.		11.5		kgf/cm2
Temperature	31			degC
Density/Gravity(Liq)	1026			kg/m3
Density/Gravity(G,V)				MW
Viscosity	1.85			cP
Flash				%
Calculated CV	61.44			
Travel	74			%
Inlet velocity	3.185			m/s
Predictive SPL	70			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		4 in.		4 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	23	1	Ref. No.	
Tag No.	3FIC9402V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	3 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		115	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA4D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Rich Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	242	193	145	m3/h
Inlet pressure	21.6	21.6	21.6	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	15.36	15.36	15.36	kgf/cm2
Shut-off press.		27.5		kgf/cm2
Temperature	103	103	103	degC
Density/Gravity(Liq)	921.5	921.5	921.5	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.66	0.66	0.66	cP
Flash	Cavitation	Cavitation	Cavitation	%
Calculated CV	70.06	55.49	41.46	
Travel	77	72	66	%
Inlet velocity	15.22	12.14	9.122	m/s
Predictive SPL	85	83	80	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size				
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	24		1		Ref. No.	
Tag No.	3FIC9302V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	ACP				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	8 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			610		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4R					
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543,V8590					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	415	377	188	m3/h		
Inlet pressure	17.32	17.32	17.32	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.4	1.4	1.4	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	148.6	148.6	148.6	degC		
Density/Gravity(Liq)	927.3	927.3	927.3	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.45	0.45	0.45	cP		
Flash				%		
Calculated CV	394.3	358.2	178.6			
Travel	86	83	60	%		
Inlet velocity	3.671	3.335	1.663	m/s		
Predictive SPL	70	70	67	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		8 in.		8 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	25		1		Ref. No.	
Tag No.	3HC9411V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	ADVM				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.		10 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1100		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				SV0507 Actuator yoke material: SCPH2 or WCB	
Flow characteristic	EQ%				HART AVP SP No.2	
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)+V563(PTFE)+T1806GR					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	415	377	188	m3/h		
Inlet pressure	15.9	15.9	15.9	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.25	0.25	0.25	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	95.7	95.7	95.7	degC		
Density/Gravity(Liq)	975.2	975.2	975.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.76	0.76	0.76	cP		
Flash				%		
Calculated CV	956.8	869.2	433.5			
Travel	87	81	65	%		
Inlet velocity	2.35	2.134	1.064	m/s		
Predictive SPL	63	63	60	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.	148.6				degC	
Size	10 in.		10 in.			
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	26		1		Ref. No.	
Tag No.	3FICA9403V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	ADVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	12 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			705		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				SV0507 Actuator yoke material: SCPH2 or WCB	
Flow characteristic	EQ%				HART AVP SP No.2	
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA4D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)+V563(PTFE)+T1806GR					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYN-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Crude Butadiene AND VAP			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	9636	8046	4023	m3/h(N)		
Inlet pressure	4.1	4.1	4.1	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.36	0.36	0.36	kgf/cm2		
Shut-off press.		6.5		kgf/cm2		
Temperature	45.5	45.5	45.5	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	53.54	53.54	53.54	MW		kgf/cm2G
Viscosity	0.009	0.009	0.009	cP		degC
Flash				%		12 in. 12 in.
Calculated CV	455.5	380.4	192.1			Sch No.
Travel	75	71	57	%		Thickness
Outlet velocity	0.03463	0.02892	0.01446	Mach		
Predictive SPL	64	62	58	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						
Temp.						
Size						
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	27		1		Ref. No.	
Tag No.	3FICA9404V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		3 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			115		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Crude Butadiene AND VAP			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	1446	1206.9	603	m3/h(N)		
Inlet pressure	4.1	4.1	4.1	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.36	0.36	0.36	kgf/cm2		
Shut-off press.		6.5		kgf/cm2		
Temperature	45.5	45.5	45.5	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	53.54	53.54	53.54	MW		
Viscosity	0.009	0.009	0.009	cP		
Flash				%		
Calculated CV	68.28	56.97	28.44			
Travel	76	72	58	%		
Outlet velocity	0.04677	0.03904	0.0195	Mach		
Predictive SPL	58	58	54	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		4 in.				4 in.
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	28		1		Ref. No.	
Tag No.	3HC9451V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.		1 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			14		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	Vent AND GAS			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	150	150		m3/h(N)		
Inlet pressure	4.4	3.64		kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2.14	2.9		kgf/cm2		
Shut-off press.		6.5		kgf/cm2		
Temperature	42	42		degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	53.4	53.4		MW		
Viscosity	0.01	0.01		cP		
Flash				%		
Calculated CV	3.248	3.39				
Travel	56	57		%		
Outlet velocity	0.04981	0.09252		Mach		
Predictive SPL	66	72		dBA		
					<b>&lt;Piping spec.&gt;</b>	
					Strength Calc. Sheet	
					Design	
					Temp.	
					Size	
					Sch No.	
					Thickness	
					<b>Yamatake Corporation</b>	

Item No. / Qty	29		1		Ref. No.	
Tag No.	3LIC9454V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Waste Water AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.08	0.07	0.03	m3/h		
Inlet pressure	4.64	4.64	4.64	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2	2	2	kgf/cm2		
Shut-off press.		6.5		kgf/cm2		
Temperature	42	42	42	degC		
Density/Gravity(Liq)	987.1	987.1	987.1	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.65	0.65	0.65	cP		
Flash				%		
Calculated CV	0.06561	0.05741	0.0246			
Travel	50	46	24	%		
Inlet velocity	0.04529	0.03963	0.01699	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size				1-1/2 in.		1-1/2 in.
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	30		1		Ref. No.	
Tag No.	3FIC9351V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	ACP				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	6 in.		5 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			261		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA3D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543,V8590					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYT-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Open		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Water/Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	117.3	97.1	48.5	m3/h		
Inlet pressure	5.11	5.11	5.11	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.93	0.93	0.93	kgf/cm2		
Shut-off press.		14.8		kgf/cm2		
Temperature	57.1	57.1	57.1	degC		
Density/Gravity(Liq)	949.8	949.8	949.8	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.65	0.65	0.65	cP		
Flash				%		
Calculated CV	138.4	114.6	57.22			
Travel	79	73	50	%		
Inlet velocity	1.845	1.527	0.7628	m/s		
Predictive SPL	62	61	58	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		95.5			degC	
Size		6 in.		6 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	31		1		Ref. No.	
Tag No.	3TIC9303V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	ADVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	6 in.		6 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			450		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)+V563(PTFE)+T1806GR					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	Water/Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	117.3	97.1	48.5	m3/h		
Inlet pressure	5.11	5.11	5.11	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.1	0.1	0.1	kgf/cm2		
Shut-off press.		14.8		kgf/cm2		
Temperature	57.1	57.1	57.1	degC		
Density/Gravity(Liq)	949.8	949.8	949.8	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.65	0.65	0.65	cP		
Flash				%		
Calculated CV	422	349.3	174.5			
Travel	93	80	64	%		
Inlet velocity	1.845	1.527	0.7628	m/s		
Predictive SPL	52	52	50	dBA		
					<b>&lt;Piping spec.&gt;</b>	
					Strength Calc. Sheet	
					Design	
					Temp. 95.5 degC	
					Size 6 in. 6 in.	
					Sch No.	
					Thickness	
<b>Yamatake Corporation</b>						

Item No. / Qty	32		1		Ref. No.	
Tag No.	3LIC9351V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.		1 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			14		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Water/Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	5.1	4.4	2.2	m3/h		
Inlet pressure	8.1	6.99	6.99	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2.75	3.9	3.9	kgf/cm2		
Shut-off press.		15.2		kgf/cm2		
Temperature	74.1	74.1	74.1	degC		
Density/Gravity(Liq)	970.6	970.6	970.6	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.74	0.74	0.74	cP		
Flash				%		
Calculated CV	3.537	2.562	1.281			
Travel	58	52	37	%		
Inlet velocity	1.283	1.107	0.5536	m/s		
Predictive SPL	53	54	51	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		95.5			degC	
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	33	1	Ref. No.	
Tag No.	3PIC9355V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	2-1/2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		85	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Recycle gas bypass AND GAS			GAS
	MAX	NOR	MIN	Unit
Flow rate	2469	2114	1056	m3/h(N)
Inlet pressure	4.55	4.55	4.55	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	3.8	3.8	3.8	kgf/cm2
Shut-off press.		6.5		kgf/cm2
Temperature	101	101	101	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	52.28	52.28	52.28	MW
Viscosity	0.01	0.01	0.01	cP
Flash				%
Calculated CV	57.82	49.24	24.19	
Travel	79	75	61	%
Outlet velocity	0.2702	0.2313	0.1156	Mach
Predictive SPL	91	89	84	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		105		degC
Size		4 in.		4 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				



Item No. / Qty	35		1		Ref. No.	
Tag No.	3HC9302V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.		2-1/2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			85		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	Vent AND GAS			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	2469		1056	m3/h(N)		
Inlet pressure	4.55		4.55	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	3		3	kgf/cm2		
Shut-off press.	6.5			kgf/cm2		
Temperature	101		101	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	52.13		52.13	MW		
Viscosity	0.01		0.01	cP		
Flash				%		
Calculated CV	59.52		24.94			
Travel	79		61	%		
Outlet velocity	0.3291		0.1408	Mach		
Predictive SPL	89		82	dBA		
<b>&lt;Piping spec.&gt;</b>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		105			degC	
Size		3 in.		3 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	36	1	Ref. No.	
Tag No.	3HC9303V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	VDC		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Cage Type Double Seated Control Valve		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	12 in.	12 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		1440	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0212 Cage plug with piston ring	
Trim material	SCS14+SOFT SEAT		SV0201-008 Seat leakage: IEC, JIS Class VI	
Flow characteristic	EQ%		HART AVP SP No.2	
Bonnet	PLAIN (0 to 200 degC)			
Actuator / Handle	VA5R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS VI			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYL-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch	VCX7001-J	1		
Action	Full Open and Close on			
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Recycle gas AND GAS		GAS	
	MAX	NOR	MIN	Unit
Flow rate	17822	16201		m3/h(N)
Inlet pressure	4.55	4.55		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.2	0.2		kgf/cm2
Shut-off press.		6.5		kgf/cm2
Temperature	101	101		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	52.13	52.13		MW
Viscosity	0.01	0.01		cP
Flash				%
Calculated CV	1153	1048		
Travel	85	80		%
Outlet velocity	0.07125	0.06477		Mach
Predictive SPL	58	58		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		105		degC
Size		12 in.		12 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	37		1		Ref. No.	
Tag No.	3FIC7011V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	VDC				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Cage Type Double Seated Control Valve				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.		8 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			640		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SCS14+SOFT SEAT				SV0212 Cage plug with piston ring	
Flow characteristic	EQ%				HART AVP SP No.2	
Bonnet	FIN (200 to 450 degC)					
Actuator / Handle	PSA6R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P6610CH+P6528		PS6			
Gasket	V543					
Air supply / Spring range	5.0kgf/cm2		2.0-4.0kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD5B-1DYL-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-3B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	HP Steam			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	33394	20577	10289	kg/h		
Inlet pressure	9.1	9.1	9.1	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.99	0.99	0.99	kgf/cm2		
Shut-off press.		47		kgf/cm2		
Temperature	182	182	182	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	18.02	18.02	18.02	MW		
Viscosity	0.015	0.015	0.015	cP		
Flash				%		
Calculated CV	581.4	358.3	178.9			
Travel	93	69	53	%		
Outlet velocity	0.08212	0.0506	0.0253	Mach		
Predictive SPL	82	79	73	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		229			degC	
Size		10 in.		10 in.		
Sch No.		30		30		
Thickness		7.8		7.8		
<b>Yamatake Corporation</b>						

Item No. / Qty	38		1		Ref. No.	
Tag No.	3LIC7011V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	ACP				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	6 in.		5 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			261		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	HA3R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543,V8590					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYT-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Steam Condensate			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	33394	20577	10289	kg/h		
Inlet pressure	25.1	8.3	8.3	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.1	0.2	0.2	kgf/cm2		
Shut-off press.		30		kgf/cm2		
Temperature	175	175	175	degC		
Density/Gravity(Liq)	891	891	891	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.015	0.015	0.015	cP		
Flash				%		
Calculated CV	130.6					
Travel	77			%		
Inlet velocity	0.5894			m/s		
Predictive SPL	50			dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.	225				degC	
Size	6 in.		6 in.			
Sch No.	40		40			
Thickness	7.1		7.1			
<b>Yamatake Corporation</b>						

Item No. / Qty	39		1		Ref. No.	
Tag No.	3FIC9321V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	VDC				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Cage Type Double Seated Control Valve				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.		10 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1000		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SCS14+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (0 to 200 degC)					
Actuator / Handle	PSA6R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543					
Air supply / Spring range	5.0kgf/cm2		2.0-4.0kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD5B-1DYL-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-3B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Rich Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	501.9	430.4	215.2	m3/h		
Inlet pressure	11.6	10.6	10.6	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.3	5.6	5.6	kgf/cm2		
Shut-off press.		25.9		kgf/cm2		
Temperature	120	120	120	degC		
Density/Gravity(Liq)	899.6	899.6	899.6	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.56	0.56	0.56	cP		
Flash				%		
Calculated CV						
Travel				%		
Inlet velocity				m/s		
Predictive SPL				dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		147.3			degC	
Size		10 in.		10 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	40	1	Ref. No.	
Tag No.	3HC9303V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		50	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS VI			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Vent AND VAP		GAS	
	MAX	NOR	MIN	Unit
Flow rate	292.93	292.93		m3/h(N)
Inlet pressure	4.26	0.69		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.19	0.19		kgf/cm2
Shut-off press.		6.5		kgf/cm2
Temperature	104.4	104.4		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	45.91	45.91		MW
Viscosity	0.011	0.011		cP
Flash				%
Calculated CV	18.82	34.59		
Travel	67	79		%
Outlet velocity	0.01872	0.0623		Mach
Predictive SPL	50	58		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		138		degC
Size		3 in.		3 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	41		1		Ref. No.			
Tag No.	3TIC9321V 1				Purchaser			
Service					End user			
<Control valve>					<Remarks>			
Model	VDC				SV0703-105 Indicating unit : "kgf/cm2"			
Description	Cage Type Double Seated Control Valve				SV0601-001 Air piping Connection: 1/4 NPT			
Body/Port size	10 in.		8 in.		SVH002 SUS316 Airtubing			
Conn. Size. / Rated CV			640		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)			
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet			
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI			
Trim material	SCS14+SOFT SEAT				SV0212 Cage plug with piston ring			
Flow characteristic	EQ%				HART AVP SP No.2			
Bonnet	PLAIN (0 to 200 degC)							
Actuator / Handle	VA5R		---					
Action	AIR TO OPEN							
Gland packing / Grease	P4519		---					
Gasket	V543							
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2					
Seat leakage	CLASS VI							
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER			
Paint	Corrosion Resistant							
<Accessories>								
Positioner	AVP302-FSD2B-1DYL-X							
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT							
Input signal	4-20 mADC							
Regulator	KZ03-2B-XX		1					
Regulator2								
Limit switch	VCX7001-J		1					
Action	Full Open and Close on							
Solenoid valve	JE38320G174/104-094-15T		1					
Action / Power	En: Control, De: Close		AC110V 50Hz					
Booster								
Air lock valve								
<Process data>								
Fluid name/Phase	LP Steam			STEAM				
	MAX	NOR	MIN	Unit				
Flow rate	7889	7172	3586	kg/h				
Inlet pressure	2.5	3.5	2.5	kgf/cm2G				
Outlet pressure				kgf/cm2G				
Differential press.	0.8	0.8	1.7	kgf/cm2				
Shut-off press.		5.5		kgf/cm2				
Temperature	150	150	150	degC				
Density/Gravity(Liq)				kg/m3				
Density/Gravity(G,V)	1.831	2.372	1.831	kg/m3(A)				
Viscosity	0.01411	0.0141	0.01411	cP				
Flash				%				
Calculated CV	269.5	209.6	96.05					
Travel	61	55	43	%				
Outlet velocity	0.06126	0.04058	0.04152	Mach				
Predictive SPL	79	75	79	dBA				
<Piping spec.>								
Strength Calc. Sheet								
Design				kgf/cm2G				
Temp.				degC				
Size		10 in.		10 in.				
Sch No.		40		40				
Thickness		9.3		9.3				
<b>Yamatake Corporation</b>								

Item No. / Qty	42		1		Ref. No.	
Tag No.	3LIC9501V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.6		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.6		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R					
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	H2O/Solvent AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.77	0.4	0.2	m3/h		
Inlet pressure	6.2	6.2	6.2	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1	1	1	kgf/cm2		
Shut-off press.	12.5			kgf/cm2		
Temperature	109	109	109	degC		
Density/Gravity(Liq)	951.5	951.5	951.5	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.27	0.27	0.27	cP		
Flash				%		
Calculated CV	0.8768	0.4555	0.2277			
Travel	83	65	46	%		
Inlet velocity	0.436	0.2265	0.1132	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size			1 in.		1 in.	
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	43		1		Ref. No.	
Tag No.	3FIC9511V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Recycle Water AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.33	0.2	0.1	m3/h		
Inlet pressure	5.3	5.3	5.3	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	3.5	3.5	3.5	kgf/cm2		
Shut-off press.		9.9		kgf/cm2		
Temperature	40	40	40	degC		
Density/Gravity(Liq)	989.4	989.4	989.4	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.67	0.67	0.67	cP		
Flash				%		
Calculated CV	0.2048	0.1241	0.06207			
Travel	81	68	48	%		
Inlet velocity	0.1868	0.1132	0.05662	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size			1 in.		1 in.	
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	44		1		Ref. No.	
Tag No.	3FIC9205V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	2 in.		1-1/4 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			21		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4/H2O AND VAP			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	100.9	51.7	25.8	m3/h(N)		
Inlet pressure	3.83	3.83	3.83	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	3.2	3.2	3.2	kgf/cm2		
Shut-off press.		6.5		kgf/cm2		
Temperature	44.1	44.1	44.1	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	56.1	56.1	56.1	MW		
Viscosity	0.008	0.008	0.008	cP		
Flash				%		
Calculated CV	2.426	1.235	0.6048			
Travel	42	28	13	%		
Outlet velocity	0.0451	0.02311	0.01153	Mach		
Predictive SPL	69	63	57	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		2 in.				2 in.
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	45		1		Ref. No.	
Tag No.	3FIC9811V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.6		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.6		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Cooled Condensate AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.33	0.2	0.1	m3/h		
Inlet pressure	1.52	1.52	1.52	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.1	0.1	0.1	kgf/cm2		
Shut-off press.		14.2		kgf/cm2		
Temperature	40	40	40	degC		
Density/Gravity(Liq)	989.4	989.4	989.4	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.67	0.67	0.67	cP		
Flash				%		
Calculated CV	1.212	0.7344	0.3783			
Travel	92	78	60	%		
Inlet velocity	0.1868	0.1132	0.05662	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		1 in.		1 in.		
Sch No.		40		40		
Thickness		3.4		3.4		
<b>Yamatake Corporation</b>						

Item No. / Qty	46		1		Ref. No.	
Tag No.	3FIC9602V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		3 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			115		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4s/C5s/H2O AND VAPOR			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	326.2	181.2	90.6	m3/h(N)		
Inlet pressure	0.7	0.7	0.7	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.06	0.06	0.06	kgf/cm2		
Shut-off press.	3			kgf/cm2		
Temperature	47.4	47.4	47.4	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	52.19	52.19	52.19	MW		
Viscosity	0.009	0.009	0.009	cP		
Flash				%		
Calculated CV	63.02	34.99	17.48			
Travel	74	62	48	%		
Outlet velocity	0.03498	0.01943	0.009714	Mach		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		48.2			degC	
Size		4 in.		4 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	47	1	Ref. No.	
Tag No.	3TIC9601V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model			SV0703-105 Indicating unit : "kgf/cm2"	
Description			SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size			SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type			SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material			SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material				
Flow characteristic				
Bonnet				
Actuator / Handle				
Action				
Gland packing / Grease				
Gasket				
Air supply / Spring range				
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner				
Structure				
Input signal				
Regulator				
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Cooling Water AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	23.04	12.8	6.4	m3/h
Inlet pressure	3.8	3.8	3.8	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.3	1.3	1.3	kgf/cm2
Shut-off press.	7			kgf/cm2
Temperature	43	43	43	degC
Density/Gravity(Liq)	946.8	946.8	946.8	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.62	0.62	0.62	cP
Flash				%
Calculated CV	22.95	12.75	6.376	
Travel				%
Inlet velocity				m/s
Predictive SPL				dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	4 in.		4 in.	
Sch No.	40		40	
Thickness	6		6	
<b>Yamatake Corporation</b>				

Item No. / Qty	48	1	Ref. No.	
Tag No.	3PIC9309V 2		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	ACP		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	8 in.	6 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		360	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543,V8590			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYN-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	HCs/H2O/NMP AND VAP			GAS
	MAX	NOR	MIN	Unit
Flow rate	703.6	411	205.5	m3/h(N)
Inlet pressure	0.7	0.7	0.7	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.01	0.01	0.01	kgf/cm2
Shut-off press.		6.5		kgf/cm2
Temperature	133	133	133	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	30.13	30.13	30.13	MW
Viscosity	0.012	0.012	0.012	cP
Flash				%
Calculated CV	281.3	164.3	82.14	
Travel	92	74	52	%
Outlet velocity	0.01513	0.008839	0.004419	Mach
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		173		degC
Size		8 in.		8 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	49		1		Ref. No.	
Tag No.	3FIC9607V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.6		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.6		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Waste Water AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.88	0.6	0.3	m3/h		
Inlet pressure	3.5	3.5	3.5	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.5	1.5	1.5	kgf/cm2		
Shut-off press.		7.3		kgf/cm2		
Temperature	46.8	46.8	46.8	degC		
Density/Gravity(Liq)	985.2	985.2	985.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.59	0.59	0.59	cP		
Flash				%		
Calculated CV	0.8326	0.5677	0.2838			
Travel	82	71	52	%		
Inlet velocity	0.4982	0.3397	0.1699	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.			47.3			degC
Size			1 in.		1 in.	
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	50	1	Ref. No.	
Tag No.	3PIC9652V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	3 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		115	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Actylene Noncondensables AND		GAS	
	MAX	NOR	MIN	Unit
Flow rate	181.4			m3/h(N)
Inlet pressure	0.32			kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.01			kgf/cm2
Shut-off press.		3.5		kgf/cm2
Temperature	8.6			degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	52.34			MW
Viscosity	0.24			cP
Flash				%
Calculated CV	92.36			
Travel	83			%
Outlet velocity	0.04044			Mach
Predictive SPL	50			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.		11.2		degC
Size				
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	51	1	Ref. No.	
Tag No.	3PIC7002V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	2-1/2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		85	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX		1	
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Propylene Refrigerant AND VA			GAS
	MAX	NOR	MIN	Unit
Flow rate	477.9	265.5	132.7	m3/h(N)
Inlet pressure	4.67	4.67	4.67	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.17	1.17	1.17	kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature	2	2	2	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	42.08	42.08	42.08	MW
Viscosity	0.01	0.01	0.01	cP
Flash				%
Calculated CV	10.05	5.574	2.776	
Travel	42	30	16	%
Outlet velocity	0.0152	0.008444	0.00422	Mach
Predictive SPL	61	56	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		4 in.		4 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	52		1		Ref. No.	
Tag No.	3LIC9651V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.		1 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			14		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Propylene Refrigerant AND LI			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	2.12	1.18	0.59	m3/h		
Inlet pressure	15.8	15.8	15.8	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	10.4	10.4	10.4	kgf/cm2		
Shut-off press.		17		kgf/cm2		
Temperature	40	40	40	degC		
Density/Gravity(Liq)	476.5	476.5	476.5	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.055	0.055	0.055	cP		
Flash	Flash	Flash	Flash	%		
Calculated CV	0.9463	0.5202	0.2561			
Travel	31	18		%		
Inlet velocity	0.5335	0.2969	0.1485	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1-1/2 in.		1-1/2 in.		
Sch No.		40		40		
Thickness		3.7		3.7		
<b>Yamatake Corporation</b>						

Item No. / Qty	53		1		Ref. No.	
Tag No.	3LIC9652V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.6		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.6		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4 Acetylenes AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	1.1	0.6	0.3	m3/h		
Inlet pressure	8.52	8.52	8.52	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.02	1.02	1.02	kgf/cm2		
Shut-off press.		14.9		kgf/cm2		
Temperature	8.6	8.6	8.6	degC		
Density/Gravity(Liq)	647	647	647	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.2	0.2	0.2	cP		
Flash				%		
Calculated CV	1.023	0.5579	0.2789			
Travel	87	71	52	%		
Inlet velocity	0.6228	0.3397	0.1699	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		11.2			degC	
Size		1 in.		1 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	54	1	Ref. No.	
Tag No.	3LIC9653V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.4	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.4	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Waste Water AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	0.017	0.008	0.004	m3/h
Inlet pressure	0.6	0.6	0.6	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.28	0.28	0.28	kgf/cm2
Shut-off press.		3.5		kgf/cm2
Temperature	8.6	8.6	8.6	degC
Density/Gravity(Liq)	998	998	998	kg/m3
Density/Gravity(G,V)				MW
Viscosity	1.35	1.35	1.35	cP
Flash				%
Calculated CV	0.04748	0.02461	0.01331	
Travel	41	24		%
Inlet velocity	0.009625	0.004529	0.002265	m/s
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1-1/2 in.		1-1/2 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	55	1	Ref. No.	
Tag No.	3PY7001V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	3 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		115	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Steam Condensate AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	74659	67815	33908	kg/h
Inlet pressure	6.3	6.3	6.3	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.3	1.3	1.3	kgf/cm2
Shut-off press.		14.2		kgf/cm2
Temperature	70	70	70	degC
Density/Gravity(Liq)	975.5	975.5	975.5	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.41	0.41	0.41	cP
Flash				%
Calculated CV	77.39	70.3	35.15	
Travel	79	77	62	%
Inlet velocity	2.708	2.46	1.23	m/s
Predictive SPL	65	65	62	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	4 in.		4 in.	
Sch No.	40		40	
Thickness	6		6	
<b>Yamatake Corporation</b>				

Item No. / Qty	56	1	Ref. No.	
Tag No.	3TIC7005V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=10	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		10	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Steam Condensate AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	5368	4870	2435	kg/h
Inlet pressure	6.3	6.3	6.3	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.3	1.3	1.3	kgf/cm2
Shut-off press.		14.2		kgf/cm2
Temperature	70	70	70	degC
Density/Gravity(Liq)	975.5	975.5	975.5	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.41	0.41	0.41	cP
Flash				%
Calculated CV	5.565	5.048	2.524	
Travel	84	81	62	%
Inlet velocity	3.116	2.827	1.413	m/s
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1 in.		1 in.	
Sch No.	40		40	
Thickness	3.4		3.4	
<b>Yamatake Corporation</b>				

Item No. / Qty	57		1		Ref. No.	
Tag No.	3FIC9711TV 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.		2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			50		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Crude Butadiene AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	26.7	24.28	12.14	m3/h		
Inlet pressure	7.9	7.9	7.9	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.56	0.56	0.56	kgf/cm2		
Shut-off press.		16.4		kgf/cm2		
Temperature	53.7	53.7	53.7	degC		
Density/Gravity(Liq)	577.2	577.2	577.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.1	0.1	0.1	cP		
Flash				%		
Calculated CV	31.64	28.78	14.39			
Travel	77	75	61	%		
Inlet velocity	1.68	1.527	0.7637	m/s		
Predictive SPL	54	54	51	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		3 in.		3 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	58		1		Ref. No.	
Tag No.	3FIC9755V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.		2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			50		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	C4 HC Reflux AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	27.5	23.8	11.9	m3/h		
Inlet pressure	8.9	8.9	8.9	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.22	1.22	1.22	kgf/cm2		
Shut-off press.		12.6		kgf/cm2		
Temperature	42	42	42	degC		
Density/Gravity(Liq)	590.2	590.2	590.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.12	0.12	0.12	cP		
Flash				%		
Calculated CV	22.33	19.32	9.662			
Travel	70	67	53	%		
Inlet velocity	1.73	1.497	0.7486	m/s		
Predictive SPL	58	57	54	dBA		
					<b>&lt;Piping spec.&gt;</b>	
					Strength Calc. Sheet	
					Design	
					Temp.	
					Size	
					Sch No.	
					Thickness	
					kgf/cm2G	
					degC	
					3 in.	
					3 in.	
<b>Yamatake Corporation</b>						

Item No. / Qty	59		1		Ref. No.	
Tag No.	3FIC9702V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		2-1/2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			85		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD2B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	Crude Butadiene AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	26.9	24.5	12.3	m3/h		
Inlet pressure	6.1	6.1	6.1	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.74	0.74	0.74	kgf/cm2		
Shut-off press.		8.5		kgf/cm2		
Temperature	56.9	56.9	56.9	degC		
Density/Gravity(Liq)	572.1	572.1	572.1	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.1	0.1	0.1	cP		
Flash	Flash	Flash	Flash	%		
Calculated CV	27.61	25.15	12.63			
Travel	63	62	47	%		
Inlet velocity	0.9519	0.8669	0.4352	m/s		
Predictive SPL	57	56	53	dBA		
<b>&lt;Piping spec.&gt;</b>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.		57			degC	
Size		4 in.		4 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	60	1	Ref. No.	
Tag No.	3PIC9702V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model			SV0703-105 Indicating unit : "kgf/cm2"	
Description			SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size			SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type			SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material				
Trim material				
Flow characteristic				
Bonnet				
Actuator / Handle				
Action				
Gland packing / Grease				
Gasket				
Air supply / Spring range				
Seat leakage				
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner				
Structure				
Input signal				
Regulator				
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Cooling Water AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	208	189	94.5	m3/h
Inlet pressure	3.8	3.8	3.8	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.3	1.3	1.3	kgf/cm2
Shut-off press.		7		kgf/cm2
Temperature	40	40	40	degC
Density/Gravity(Liq)	1000	1000	1000	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.65	0.65	0.65	cP
Flash				%
Calculated CV	213	193.5	96.76	
Travel				%
Inlet velocity				m/s
Predictive SPL				dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	8 in.		8 in.	
Sch No.	40		40	
Thickness	8.2		8.2	
<b>Yamatake Corporation</b>				

Item No. / Qty	61		1		Ref. No.	
Tag No.	3FIC9751AV 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Open		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C3/C4 Vent AND VAP			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	4.73	4.3	2.15	m3/h(N)		
Inlet pressure	5.32	5.32	5.32	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.32	0.32	0.32	kgf/cm2		
Shut-off press.		7.5		kgf/cm2		
Temperature	42	42	42	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	46.6	46.6	46.6	MW		
Viscosity	0.009	0.009	0.009	cP		
Flash				%		
Calculated CV	0.1913	0.1739	0.08686			
Travel	79	77	58	%		
Outlet velocity	0.002099	0.001908	0.000954	Mach		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	62		1		Ref. No.	
Tag No.	3FIC9751BV 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.		1 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			14		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI	
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS VI					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch	VCX7001-J		1			
Action	Full Open and Close on					
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Open		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Propyne Vent AND VAP			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	25.3	20.94		m3/h(N)		
Inlet pressure	5.32	5.32		kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	5.27	5.27		kgf/cm2		
Shut-off press.		7.5		kgf/cm2		
Temperature	42	42		degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	46.6	46.6		MW		
Viscosity	0.009	0.009		cP		
Flash				%		
Calculated CV	0.4158	0.3427				
Travel	14	11		%		
Outlet velocity	0.0278	0.02301		Mach		
Predictive SPL	62	60		dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	63		1		Ref. No.	
Tag No.	3LIC9754V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1/2 in.		Cv=0.1		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.1		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE FACE				HART AVP SP No.2	
Flow characteristic	LINEAR(EQ% by POSITIONER)					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Waste Water AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.022	0.02	0.01	m3/h		
Inlet pressure	5.75	5.75	5.75	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	4.43	4.43	4.43	kgf/cm2		
Shut-off press.		7.5		kgf/cm2		
Temperature	42	42	42	degC		
Density/Gravity(Liq)	983	983	983	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.64	0.64	0.64	cP		
Flash				%		
Calculated CV	0.0121	0.011	0.00584			
Travel	13	12	6	%		
Inlet velocity	0.04982	0.04529	0.02265	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	64		1		Ref. No.	
Tag No.	3FIC9858V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		2-1/2 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			85		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA3D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Butadiene Reflux AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	88.6	76.9	38.5	m3/h		
Inlet pressure	10.9	10.9	10.9	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	4.8	4.8	4.8	kgf/cm2		
Shut-off press.		18.8		kgf/cm2		
Temperature	42	42	42	degC		
Density/Gravity(Liq)	593	593	593	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.12	0.12	0.12	cP		
Flash				%		
Calculated CV	36.35	31.55	15.8			
Travel	69	66	52	%		
Inlet velocity	3.135	2.721	1.362	m/s		
Predictive SPL	70	69	66	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		4 in.				4 in.
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	65	1	Ref. No.	
Tag No.	3HC9801V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	ADVM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top and Bottom Guided Double-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	10 in.	10 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		1100	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E03 Material certificate in English. Scope: valve body, bonnet and tailpiece (bottom flange)	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		SV0507 Actuator yoke material: SCPH2 or WCB	
Flow characteristic	EQ%		HART AVP SP No.2	
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)+V563(PTFE)+T1806GR			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYN-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	383.6	357.8	178.9	m3/h
Inlet pressure	15.2	14.9	14.9	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.2	0.2	0.2	kgf/cm2
Shut-off press.		33.8		kgf/cm2
Temperature	68	68	68	degC
Density/Gravity(Liq)	1000.6	1000.6	1000.6	kg/m3
Density/Gravity(G,V)				MW
Viscosity	1.15	1.15	1.15	cP
Flash				%
Calculated CV	1002	934.3	467.1	
Travel	90	85	66	%
Inlet velocity	2.172	2.026	1.013	m/s
Predictive SPL	62	62	59	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		10 in.	10 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	66	1	Ref. No.	
Tag No.	3FIC9416V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	ACP		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	8 in.	8 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		610	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA4D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543,V8590			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYN-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Lean Solvent AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	383.6	357.8	178.9	m3/h
Inlet pressure	15.9	15.6	15.6	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.7	0.7	0.7	kgf/cm2
Shut-off press.		33.8		kgf/cm2
Temperature	96	96	96	degC
Density/Gravity(Liq)	975.2	975.2	975.2	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.76	0.76	0.76	cP
Flash				%
Calculated CV	528.6	493	246.5	
Travel	95	93	70	%
Inlet velocity	3.393	3.165	1.583	m/s
Predictive SPL	67	67	64	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		8 in.	8 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	67		1		Ref. No.	
Tag No.	3FIC9802V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.63		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.63		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4s/C5s HC AND LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.3	0.2	0.1	m3/h		
Inlet pressure	4.57	4.57	4.57	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	2.76	2.76	2.76	kgf/cm2		
Shut-off press.		6.8		kgf/cm2		
Temperature	57.7	57.7	57.7	degC		
Density/Gravity(Liq)	588.4	588.4	588.4	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.15	0.15	0.15	cP		
Flash	Flash	Flash	Flash	%		
Calculated CV	0.2523	0.1668	0.08189			
Travel	75	63	44	%		
Inlet velocity	0.1699	0.1132	0.05662	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	68	1	Ref. No.	
Tag No.	3PIC9806V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model			SV0703-105 Indicating unit : "kgf/cm2"	
Description			SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size			SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type			SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material				
Trim material				
Flow characteristic				
Bonnet				
Actuator / Handle				
Action				
Gland packing / Grease				
Gasket				
Air supply / Spring range				
Seat leakage				
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner				
Structure				
Input signal				
Regulator				
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Cooling Water AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	829.1	753.7	376.9	m3/h
Inlet pressure	3.8	3.8	3.8	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.3	1.3	1.3	kgf/cm2
Shut-off press.	7			kgf/cm2
Temperature	40	40	40	degC
Density/Gravity(Liq)	1000	1000	1000	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.65	0.65	0.65	cP
Flash				%
Calculated CV	848.9	771.7	385.9	
Travel				%
Inlet velocity				m/s
Predictive SPL				dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	12 in.		12 in.	
Sch No.	20		20	
Thickness	6.4		6.4	
<b>Yamatake Corporation</b>				

Item No. / Qty	69	1	Ref. No.	
Tag No.	3HC9851V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.	1 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		14	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	C4s Non condensables AND V		GAS	
	MAX	NOR	MIN	Unit
Flow rate	90.52			m3/h(N)
Inlet pressure	3.59			kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	3.09			kgf/cm2
Shut-off press.		5.8		kgf/cm2
Temperature	42			degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	54.08			MW
Viscosity	0.12			cP
Flash				%
Calculated CV	2.269			
Travel	49			%
Outlet velocity	0.07637			Mach
Predictive SPL	70			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1-1/2 in.			1-1/2 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	70		1		Ref. No.	
Tag No.	3PIC7001V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.		4 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			200		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				SV0305 Bonnet type is customer's requirement.	
Flow characteristic	EQ%				SV0020-310 Oil free treatment for stainless steel body and Water free treatment	
Bonnet	EXT-1 (-45 to -17 degC)				HART AVP SP No.2	
Actuator / Handle	PSA4D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	V-PTFE+V7233		---			
Gasket	V543(PTFE),V563(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	XXX		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD3B-1DYQ-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	Propylene Refrigerant AND VA			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	2033.7	1848.8	924.4	m3/h(N)		
Inlet pressure	3.68	3.68	3.68	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.18	0.18	0.18	kgf/cm2		
Shut-off press.		17		kgf/cm2		
Temperature	-8	-8	-8	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	42.08	42.08	42.08	MW		kgf/cm2G
Viscosity	0.008	0.008	0.008	cP		degC
Flash				%		Size
Calculated CV	107.7	97.86	48.9			4 in.
Travel	74	72	58			4 in.
Outlet velocity	0.06349	0.05772	0.02886	Mach		Sch No.
Predictive SPL	50	50	50	dBA		Thickness
<b>&lt;Piping spec.&gt;</b>						
Strength Calc. Sheet						
Design						
Temp.						
Size						
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	71	1	Ref. No.	
Tag No.	3LIC9872V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	2 in.	2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		50	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Propylene Refrigerant AND LI		LIQUID	
	MAX	NOR	MIN	Unit
Flow rate	8.99	8.18	4.1	m3/h
Inlet pressure	15.8	15.8	15.8	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	12.1	12.1	12.1	kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature	40	40	40	degC
Density/Gravity(Liq)	477	477	477	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.07	0.07	0.07	cP
Flash				%
Calculated CV				
Travel				%
Inlet velocity				m/s
Predictive SPL				dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		2 in.		2 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	72	1	Ref. No.	
Tag No.	3LIC9852V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	3 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		115	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A		SV0305 Bonnet type is customer's requirement.	
Trim material	SUS316 STELLITE		SV0020-310 Oil free treatment for stainless steel body and Water free treatment	
Flow characteristic	EQ%		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Bonnet	EXT-1 (-45 to -17 degC)		HART AVP SP No.2	
Actuator / Handle	PSA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	V-PTFE+V7233			
Gasket	V543(PTFE),V563(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Butadiene Product and LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	25.8	21.3	10.7	m3/h
Inlet pressure	9.5	9.5	9.5	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.1	0.1	0.1	kgf/cm2
Shut-off press.		18		kgf/cm2
Temperature	-5	-5	-5	degC
Density/Gravity(Liq)	652.2	652.2	652.2	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.2	0.2	0.2	cP
Flash				%
Calculated CV	76.92	63.5	31.9	
Travel	78	74	60	%
Inlet velocity	1.623	1.34	0.6731	m/s
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		3 in.	3 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	73		1		Ref. No.	
Tag No.	3TIC9881V 1				Purchaser	
Service					End user	
					Project	
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	2 in.		1-1/4 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			21		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	XXX		SILVER		SILVER	
Paint	Corrosion Resistant					
<b>&lt;Accessories&gt;</b>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<b>&lt;Process data&gt;</b>						
Fluid name/Phase	Steam Condensate			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	14742	13402	6701	kg/h		
Inlet pressure	6.3	6.3	6.3	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	5.0	5.0	5.0	kgf/cm2		
Shut-off press.		14.2		kgf/cm2		
Temperature	70	70	70	degC		
Density/Gravity(Liq)	919.6	919.6	919.6	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.4	0.4	0.4	cP		
Flash				%		
Calculated CV	8.026	7.296	3.648			
Travel	67	65	50	%		
Inlet velocity	2.269	2.063	1.031	m/s		
Predictive SPL	62	61	58	dBA		
					<b>&lt;Piping spec.&gt;</b>	
					Strength Calc. Sheet	
					Design	
					Temp.	
					Size	
					Sch No.	
					Thickness	
					<b>Yamatake Corporation</b>	

Item No. / Qty	74		1		Ref. No.	
Tag No.	3FIC9415V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVM				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.63		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.63		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI300		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	V-PTFE(DIR/REV)		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Regen Solvent/LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.88	0.7	0.35	m3/h		
Inlet pressure	15.9	15.9	15.9	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	15.4	15.4	15.4	kgf/cm2		
Shut-off press.		33.8		kgf/cm2		
Temperature	95.7	95.7	95.7	degC		
Density/Gravity(Liq)	975.2	975.2	975.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.76	0.76	0.76	cP		
Flash	Cavitation	Cavitation	Cavitation	%		
Calculated CV	0.2702	0.2139	0.105			
Travel	76	70	50	%		
Inlet velocity	0.4982	0.3963	0.1982	m/s		
Predictive SPL	58	56	51	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1 in.		1 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	75	1	Ref. No.	
Tag No.	3HC9701V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.	1 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		14	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Steam Condensate			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	3129		2540	kg/h
Inlet pressure	6.3		6.3	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	6.2		6.2	kgf/cm2
Shut-off press.	14.2			kgf/cm2
Temperature	70		70	degC
Density/Gravity(Liq)	919.6		919.6	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.4		0.4	cP
Flash				%
Calculated CV	1.53		1.242	
Travel	41		37	%
Inlet velocity	0.8562		0.695	m/s
Predictive SPL	55		54	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1-1/2 in.		1-1/2 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	76	1	Ref. No.	
Tag No.	3HC9961V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.4	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.4	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch	VCX7001-J	1		
Action	Full Open and Close on			
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	LP Nitrogen/Gas		GAS	
	MAX	NOR	MIN	Unit
Flow rate		1.75		m3/h(N)
Inlet pressure		1.5		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		1.4		kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature		40		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28		MW
Viscosity		0.019		cP
Flash				%
Calculated CV		0.05651		
Travel		46		%
Outlet velocity		0.002979		Mach
Predictive SPL		50		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		4 in.		4 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	77		1		Ref. No.		
Tag No.	3LIC9961V 1				Purchaser		
Service					End user		
					Project		
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>		
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"		
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT		
Body/Port size	3 in.		2 in.		SVH002 SUS316 Airtubing		
Conn. Size. / Rated CV			50		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)		
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet		
Body material	SCPH2				SV0201-008 Seat leakage: IEC, JIS Class VI		
Trim material	SUS316+SOFT SEAT				HART AVP SP No.2		
Flow characteristic	EQ%						
Bonnet	PLAIN (-17 to 230 degC)						
Actuator / Handle	PSA3R		---				
Action	AIR TO OPEN						
Gland packing / Grease	P4519		---				
Gasket	V543(PTFE)						
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2				
Seat leakage	CLASS VI						
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER		
Paint	Corrosion Resistant						
<b>&lt;Accessories&gt;</b>							
Positioner	AVP302-FSD2B-1DYQ-X						
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT						
Input signal	4-20 mADC						
Regulator	KZ03-2B-XX		1				
Regulator2							
Limit switch	VCX7001-J		1				
Action	Full Open and Close on						
Solenoid valve	JE38320G174/104-094-15T		1				
Action / Power	En: Control, De: Close		AC110V 50Hz				
Booster							
Air lock valve							
<b>&lt;Process data&gt;</b>							
Fluid name/Phase	LP Steam			GAS			
	MAX	NOR	MIN	Unit			
Flow rate	256	233	116.5	kg/h			
Inlet pressure	3.5	3.5	3.5	kgf/cm2G			
Outlet pressure				kgf/cm2G			
Differential press.	3.4	3.4	3.4	kgf/cm2			
Shut-off press.		5.5		kgf/cm2			
Temperature	150	150	150	degC			
Density/Gravity(Liq)				kg/m3			
Density/Gravity(G,V)	2.3	2.3	2.3	kg/m3(A)			
Viscosity	0.019	0.019	0.019	cP			
Flash				%			
Calculated CV	5.023	4.568	2.266				
Travel	39	37	23	%			
Outlet velocity	0.05484	0.04991	0.02496	Mach			
Predictive SPL	74	74	67	dBA			
					<b>&lt;Piping spec.&gt;</b>		
					Strength Calc. Sheet		
					Design		kgf/cm2G
					Temp.		degC
					Size		3 in. 3 in.
					Sch No.		40 40
					Thickness		5.5 5.5
<b>Yamatake Corporation</b>							

Item No. / Qty	78		1		Ref. No.	
Tag No.	3PIC9921AV 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	VSM				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Micro-Flow Control Valve				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.01		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.01		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SUS304				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	STELLITE(MS-6B)				HART AVP SP No.2	
Flow characteristic	LINEAR					
Bonnet	PLAIN (-30 to 200 degC)					
Actuator / Handle	PSK1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	V-PTFE		---			
Gasket	V560(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-1.6kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	XXX		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	LP Nitrogen/Gas			GAS		
	MAX	NOR	MIN	Unit		
Flow rate		0.13	0.13	m3/h(N)		
Inlet pressure		1.5	1.5	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.		1.1	1.4	kgf/cm2		
Shut-off press.		17		kgf/cm2		
Temperature		40	40	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)		28	28	MW		
Viscosity		0.019	0.019	cP		
Flash				%		
Calculated CV		0.00579	0.005555			
Travel		58	56	%		
Outlet velocity		0.000175	0.000221	Mach		
Predictive SPL		50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1 in.		1 in.		
Sch No.		40		40		
Thickness		3.4		3.4		
<b>Yamatake Corporation</b>						

Item No. / Qty	79		1		Ref. No.	
Tag No.	3PIC9921BV 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Nitrogen/Gas			GAS		
	MAX	NOR	MIN	Unit		
Flow rate		0.08	0.08	m3/h(N)		
Inlet pressure		0.1	0.3	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.		0.01	0.01	kgf/cm2		
Shut-off press.		3.5		kgf/cm2		
Temperature		45	45	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)		28	28	MW		
Viscosity		0.019	0.019	cP		
Flash				%		
Calculated CV		0.04768	0.0426			
Travel		41	38	%		
Outlet velocity		0.000138	0.000118	Mach		
Predictive SPL		50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1 in.		1 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	80	1	Ref. No.	
Tag No.	3LIC9922V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=10	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		10	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Regenerated Solvent/LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	1	0.8	0.4	m3/h
Inlet pressure	7.84	7.84	7.84	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.1	0.1	0.1	kgf/cm2
Shut-off press.		14.5		kgf/cm2
Temperature	45.2	45.2	45.2	degC
Density/Gravity(Liq)	1006.3	1006.3	1006.3	kg/m3
Density/Gravity(G,V)				MW
Viscosity	2.2	2.2	2.2	cP
Flash				%
Calculated CV	3.793	3.07	1.601	
Travel	73	67	49	%
Inlet velocity	0.5662	0.4529	0.2265	m/s
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1 in.		1 in.	
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	81	1	Ref. No.	
Tag No.	3PIC9981AV 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	VSM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Micro-Flow Control Valve		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.01	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.01	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SUS304		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	STELLITE(MS-6B)		HART AVP SP No.2	
Flow characteristic	LINEAR			
Bonnet	PLAIN (-30 to 200 degC)			
Actuator / Handle	PSK1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	V-PTFE	---		
Gasket	V560(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-1.6kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	LP Nitrogen/Gas			GAS
	MAX	NOR	MIN	Unit
Flow rate		0.13	0.13	m3/h(N)
Inlet pressure		1.5	1.5	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		1.2	1.4	kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature		40	40	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28	28	MW
Viscosity		0.019	0.019	cP
Flash				%
Calculated CV		0.005642	0.005555	
Travel		56	56	%
Outlet velocity		0.000188	0.000221	Mach
Predictive SPL		50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1 in.	1 in.	
Sch No.		40	40	
Thickness		3.4	3.4	
<b>Yamatake Corporation</b>				

Item No. / Qty	82		1		Ref. No.	
Tag No.	3PIC9981BV 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.		1 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			14		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Non-condensables/Vapour			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	5.3	4.6	2.3	m3/h(N)		
Inlet pressure	0.1	0.3	0.3	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.01	0.01	0.01	kgf/cm2		
Shut-off press.		3.5		kgf/cm2		
Temperature	50	50	50	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	26.86	26.86	26.86	MW		kgf/cm2G
Viscosity	0.018	0.018	0.018	cP		degC
Flash				%		1-1/2 in.
Calculated CV	2.29	1.811	0.935			1-1/2 in.
Travel	49	44	31	%		Sch No.
Outlet velocity	0.004025	0.002965	0.001483	Mach		Thickness
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						
Temp.						
Size						
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	83		1		Ref. No.	
Tag No.	3LIC9982V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.0		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.0		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Waste Water/LIQ			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	0.055	0.04	0.02	m3/h		
Inlet pressure	2.6	2.6	2.6	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.01	0.01	0.01	kgf/cm2		
Shut-off press.		7.04		kgf/cm2		
Temperature	50	50	50	degC		
Density/Gravity(Liq)	985.2	985.2	985.2	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.56	0.56	0.56	cP		
Flash				%		
Calculated CV	0.7092	0.529	0.2808			
Travel	90	82	65	%		
Inlet velocity	0.03114	0.02265	0.01132	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size			1 in.		1 in.	
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	84		1		Ref. No.	
Tag No.	3PIC9092V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.63		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.63		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Nitrogen/Vapour			GAS		
	MAX	NOR	MIN	Unit		
Flow rate		0.42	0.42	m3/h(N)		
Inlet pressure		0.1	0.3	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.		0.01	0.01	kgf/cm2		
Shut-off press.		2		kgf/cm2		
Temperature		40	40	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)		28	28	MW		
Viscosity		0.019	0.019	cP		
Flash				%		
Calculated CV		0.2129	0.1913			
Travel		70	67	%		
Outlet velocity		0.000721	0.000612	Mach		
Predictive SPL		50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	85	1	Ref. No.	
Tag No.	3PIC9093V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	VSM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Micro-Flow Control Valve		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.02	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.02	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SUS304		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	STELLITE(MS-6B)		HART AVP SP No.2	
Flow characteristic	LINEAR			
Bonnet	PLAIN (-30 to 200 degC)			
Actuator / Handle	PSK1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	V-PTFE	---		
Gasket	V560(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-1.6kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	LP Nitrogen/Gas		GAS	
	MAX	NOR	MIN	Unit
Flow rate		0.42		m3/h(N)
Inlet pressure		1.5		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		1.35		kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature		40		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28		MW
Viscosity		0.019		cP
Flash				%
Calculated CV		0.01357		
Travel		68		%
Outlet velocity		0.000685		Mach
Predictive SPL		50		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1 in.		1 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	86		1		Ref. No.		
Tag No.	3TIC9091V 1				Purchaser		
Service					End user		
<Control valve>					<Remarks>		
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"		
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT		
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing		
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)		
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet		
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)		
Trim material	SUS316 STELLITE				HART AVP SP No.2		
Flow characteristic	EQ%						
Bonnet	PLAIN (-17 to 230 degC)						
Actuator / Handle	PSA1R		---				
Action	AIR TO OPEN						
Gland packing / Grease	P4519		---				
Gasket	V543(PTFE)						
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2				
Seat leakage	CLASS IV						
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER		
Paint	Corrosion Resistant						
<Accessories>							
Positioner	AVP302-FSD2B-1DYS-X						
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT						
Input signal	4-20 mADC						
Regulator	KZ03-2B-XX		1				
Regulator2							
Limit switch							
Action							
Solenoid valve							
Action / Power							
Booster							
Air lock valve							
<Process data>							
Fluid name/Phase				LIQUID			
	MAX	NOR	MIN	Unit			
Flow rate	300	200	100	kg/h			
Inlet pressure	4.5	4.5	4.5	kgf/cm2G			
Outlet pressure				kgf/cm2G			
Differential press.	4	4	4	kgf/cm2			
Shut-off press.		14.2		kgf/cm2			
Temperature	90	90	90	degC			
Density/Gravity(Liq)	899	899	899	kg/m3			
Density/Gravity(G,V)				kg/m3(A)			
Viscosity	0.31	0.31	0.31	cP			
Flash				%			
Calculated CV	0.1847	0.1231	0.06156				
Travel	78	67	48	%			
Inlet velocity	0.1889	0.126	0.06298	m/s			
Predictive SPL	50	50	50	dBA			
					<Piping spec.>		
					Strength Calc. Sheet		
					Design		kgf/cm2G
					Temp.		degC
					Size		1 in. 1 in.
					Sch No.		40 40
					Thickness		3.4 3.4
<b>Yamatake Corporation</b>							

Item No. / Qty	87	1	Ref. No.	
Tag No.	3PIC7014V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.4	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.4	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	LP Nitrogen/Gas		GAS	
	MAX	NOR	MIN	Unit
Flow rate		0.86		m3/h(N)
Inlet pressure		1.5		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		1.35		kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature		40		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28		MW
Viscosity		0.019		cP
Flash				%
Calculated CV		0.02775		
Travel		27		%
Outlet velocity		0.001402		Mach
Predictive SPL		50		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1 in.		1 in.
Sch No.		40		40
Thickness		3.4		3.4
<b>Yamatake Corporation</b>				

Item No. / Qty	88	1	Ref. No.	
Tag No.	3PIC7015V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.	1 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		14	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Nitrogen/Vapour			GAS
	MAX	NOR	MIN	Unit
Flow rate		0.86	0.86	m3/h(N)
Inlet pressure		0.1	0.2	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		0.01	0.01	kgf/cm2
Shut-off press.		2		kgf/cm2
Temperature		40	40	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28	28	MW
Viscosity		0.019	0.019	cP
Flash				%
Calculated CV		0.4074	0.3865	
Travel		13	13	%
Outlet velocity		0.000656	0.000603	Mach
Predictive SPL		50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1-1/2 in.	1-1/2 in.	
Sch No.		80	80	
Thickness		5.1	5.1	
<b>Yamatake Corporation</b>				

Item No. / Qty	89		1		Ref. No.		
Tag No.	3PIC7017V 1				Purchaser		
Service					End user		
					Project		
<b>&lt;Control valve&gt;</b>					<b>&lt;Remarks&gt;</b>		
Model	VSM				SV0703-105 Indicating unit : "kgf/cm2"		
Description	Micro-Flow Control Valve				SV0601-001 Air piping Connection: 1/4 NPT		
Body/Port size	1 in.		Cv=0.005		SVH002 SUS316 Airtubing		
Conn. Size. / Rated CV			0.005		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)		
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet		
Body material	SUS304				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)		
Trim material	STELLITE(MS-6B)				HART AVP SP No.2		
Flow characteristic	LINEAR						
Bonnet	PLAIN (-30 to 200 degC)						
Actuator / Handle	PSK1R		---				
Action	AIR TO OPEN						
Gland packing / Grease	V-PTFE						
Gasket	V560(PTFE)						
Air supply / Spring range	2.8kgf/cm2		0.8-1.6kgf/cm2				
Seat leakage	CLASS IV						
Color: Body/Diaph./Yoke	XXX		SILVER		SILVER		
Paint	Corrosion Resistant						
<b>&lt;Accessories&gt;</b>							
Positioner	AVP302-FSD2B-1DYS-X						
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT						
Input signal	4-20 mADC						
Regulator	KZ03-2B-XX		1				
Regulator2							
Limit switch							
Action							
Solenoid valve							
Action / Power							
Booster							
Air lock valve							
<b>&lt;Process data&gt;</b>							
Fluid name/Phase	LP Nitrogen/Gas			GAS			
	MAX	NOR	MIN	Unit			
Flow rate		0.063		m3/h(N)			
Inlet pressure		1.5		kgf/cm2G			
Outlet pressure				kgf/cm2G			
Differential press.		1.35		kgf/cm2			
Shut-off press.		17		kgf/cm2			
Temperature		40		degC			
Density/Gravity(Liq)				kg/m3			
Density/Gravity(G,V)		28		MW			
Viscosity		0.019		cP			
Flash				%			
Calculated CV		0.003941					
Travel		79		%			
Outlet velocity		0.000103		Mach			
Predictive SPL		50		dBA			
					<b>&lt;Piping spec.&gt;</b>		
					Strength Calc. Sheet		
					Design		kgf/cm2G
					Temp.		degC
					Size		1 in. 1 in.
					Sch No.		40 40
					Thickness		3.4 3.4
<b>Yamatake Corporation</b>							

Item No. / Qty	90	1	Ref. No.	
Tag No.	3PIC7018V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	VSM		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Micro-Flow Control Valve		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.05	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.05	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SUS304		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	STELLITE(MS-6B)		HART AVP SP No.2	
Flow characteristic	LINEAR			
Bonnet	PLAIN (-30 to 200 degC)			
Actuator / Handle	PSK1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	V-PTFE	---		
Gasket	V560(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-1.6kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Nitrogen/Vapour			GAS
	MAX	NOR	MIN	Unit
Flow rate		0.038	0.038	m3/h(N)
Inlet pressure		0.1	0.2	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		0.01	0.01	kgf/cm2
Shut-off press.		2		kgf/cm2
Temperature		40	40	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28	28	MW
Viscosity		0.019	0.019	cP
Flash				%
Calculated CV		0.02536	0.02449	
Travel		51	49	%
Outlet velocity		0.000065	0.00006	Mach
Predictive SPL		50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1-1/2 in.		1-1/2 in.
Sch No.		80		80
Thickness		5.1		5.1
<b>Yamatake Corporation</b>				

Item No. / Qty	91	1	Ref. No.	
Tag No.	3PIC7019V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1-1/2 in.	1 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		14	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	LP Nitrogen/Gas		GAS	
	MAX	NOR	MIN	Unit
Flow rate		82.75		m3/h(N)
Inlet pressure		1.5		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		1.48		kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature		40		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28		MW
Viscosity		0.019		cP
Flash				%
Calculated CV		2.669		
Travel		52		%
Outlet velocity		0.06736		Mach
Predictive SPL		66		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1-1/2 in.		1-1/2 in.
Sch No.		40		40
Thickness		3.7		3.7
<b>Yamatake Corporation</b>				

Item No. / Qty	92		1		Ref. No.	
Tag No.	3LIC9041V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.6		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.6		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve	JE38320G174/104-094-15T		1			
Action / Power	En: Control, De: Close		AC110V 50Hz			
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Waste C4-C5 HC/Liquid			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	1	0.2	0.1	m3/h		
Inlet pressure	8.68	8.68	8.68	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	1.18	1.18	1.18	kgf/cm2		
Shut-off press.		11.5		kgf/cm2		
Temperature	30	30	30	degC		
Density/Gravity(Liq)	620	620	620	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.19	0.19	0.19	cP		
Flash				%		
Calculated CV	0.8462	0.1692	0.08462			
Travel	82	38	21	%		
Inlet velocity	0.5662	0.1132	0.05662	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design				kgf/cm2G		
Temp.				degC		
Size		1 in.		1 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	93		1		Ref. No.	
Tag No.	3PIC9041V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=1.6		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			1.6		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1D		---			
Action	AIR TO CLOSE					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	4.0kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD3B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	C4-C5/Gas			GAS		
	MAX	NOR	MIN	Unit		
Flow rate	18	12.5	6.25	m3/h(N)		
Inlet pressure	1.44	1.44	1.44	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.98	0.98	0.98	kgf/cm2		
Shut-off press.		3.5		kgf/cm2		
Temperature	30	30	30	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	55.44	55.44	55.44	MW		
Viscosity	0.008	0.008	0.008	cP		
Flash				%		
Calculated CV	0.9068	0.6261	0.3101			
Travel	84	74	55	%		
Outlet velocity	0.03423	0.02377	0.01188	Mach		
Predictive SPL	51	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design						kgf/cm2G
Temp.						degC
Size		1-1/2 in.		1-1/2 in.		
Sch No.						
Thickness						
<b>Yamatake Corporation</b>						

Item No. / Qty	94	1	Ref. No.	
Tag No.	3LIC9511V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=10	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		10	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve	JE38320G174/104-094-15T	1		
Action / Power	En: Control, De: Close	AC110V 50Hz		
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Waste Water/Liquid			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	5	0.5	0.5	m3/h
Inlet pressure	5.29	5.29	5.29	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	1.29	1.29	1.29	kgf/cm2
Shut-off press.		9.5		kgf/cm2
Temperature	40	40	40	degC
Density/Gravity(Liq)	989.4	989.4	989.4	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.67	0.67	0.67	cP
Flash				%
Calculated CV	5.112	0.5112	0.5112	
Travel	81	21	21	%
Inlet velocity	2.831	0.2831	0.2831	m/s
Predictive SPL	50	50	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1 in.			1 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				



Item No. / Qty	96		1		Ref. No.	
Tag No.	3TIC7021V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.63		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.63		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	XXX		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Steam Condensate			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	607	552	276	kg/h		
Inlet pressure	7	7	7	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	3.5	3.5	3.5	kgf/cm2		
Shut-off press.	14.76			kgf/cm2		
Temperature	90	90	90	degC		
Density/Gravity(Liq)	899	899	899	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.31	0.31	0.31	cP		
Flash				%		
Calculated CV	0.3995	0.3633	0.1816			
Travel	87	85	66	%		
Inlet velocity	0.3823	0.3476	0.1738	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1 in.		1 in.		
Sch No.		40		40		
Thickness		3.4		3.4		
<b>Yamatake Corporation</b>						

Item No. / Qty	97	1	Ref. No.	
Tag No.	3TIC7020V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	HLS		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Small-Port Single Seated Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=4.0	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		4.0	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI600	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA2R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYT-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	HP BFW/Liquid			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	4419	2945	1473	kg/h
Inlet pressure	50	50	50	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	9.1	9.1	9.1	kgf/cm2
Shut-off press.		83		kgf/cm2
Temperature	140	140	140	degC
Density/Gravity(Liq)	847	847	847	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.195	0.195	0.195	cP
Flash				%
Calculated CV	1.858	1.238	0.6194	
Travel	79	67	48	%
Inlet velocity	2.954	1.969	0.9846	m/s
Predictive SPL	55	53	50	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1 in.		1 in.	
Sch No.	80		80	
Thickness	4.5		4.5	
<b>Yamatake Corporation</b>				

Item No. / Qty	98		1		Ref. No.	
Tag No.	3TIC9811V 1				Purchaser	
Service					End user	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	2 in.		1-1/4 in.		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			21		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519		---			
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	LP Steam			STEAM		
	MAX	NOR	MIN	Unit		
Flow rate	425	353	177	kg/h		
Inlet pressure	3.5	3.5	3.5	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	3.4	3.4	3.4	kgf/cm2		
Shut-off press.		5.5		kgf/cm2		
Temperature	148	148	148	degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)	2.386	2.386	2.386	kg/m3(A)		
Viscosity	0.01403	0.01403	0.01403	cP		
Flash				%		
Calculated CV	8.454	6.996	3.446			
Travel	68	64	49	%		
Outlet velocity	0.1975	0.164	0.08225	Mach		
Predictive SPL	84	82	76	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size			2 in.		2 in.	
Sch No.			40		40	
Thickness			3.9		3.9	
<b>Yamatake Corporation</b>						

Item No. / Qty	99		1		Ref. No.	
Tag No.	3TIC9812V 1				Purchaser	
Service					End user	
<Control valve>					Project	
<Control valve>					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	XXX		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	Steam Condensate			LIQUID		
	MAX	NOR	MIN	Unit		
Flow rate	110	100	50	kg/h		
Inlet pressure	7	7	7	kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.	0.7	0.7	0.7	kgf/cm2		
Shut-off press.	14.76			kgf/cm2		
Temperature	89.9	89.9	89.9	degC		
Density/Gravity(Liq)	899	899	899	kg/m3		
Density/Gravity(G,V)				MW		
Viscosity	0.31	0.31	0.31	cP		
Flash				%		
Calculated CV	0.1619	0.1472	0.07358			
Travel	75	72	53	%		
Inlet velocity	0.06928	0.06298	0.03149	m/s		
Predictive SPL	50	50	50	dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1 in.		1 in.		
Sch No.		40		40		
Thickness		3.4		3.4		
<b>Yamatake Corporation</b>						

Item No. / Qty	100	1	Ref. No.	
Tag No.	3PIC7020V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	HCB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	6 in.	5 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		275	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI600	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-002 Seat leakage: Less than 0.1%CV (Equivalent IEC, JIS Class III)	
Trim material	SCS14A STELLITE		SV0212 Cage plug with piston ring	
Flow characteristic	EQ%		HART AVP SP No.2	
Bonnet	EXT-1 (230 to 450 degC)			
Actuator / Handle	HA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P6610CH+P6528	PS6		
Gasket				
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS III			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYN-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	High Pressure Steam			STEAM
	MAX	NOR	MIN	Unit
Flow rate	28885	17632	8816	kg/h
Inlet pressure	40.9	40.9	40.9	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2	2	2	kgf/cm2
Shut-off press.		47		kgf/cm2
Temperature	374	374	374	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	14.75	14.75	14.75	kg/m3(A)
Viscosity	0.02242	0.02242	0.02242	cP
Flash				%
Calculated CV	201.2	122.8	61.37	
Travel	90	74	51	%
Outlet velocity	0.05176	0.0316	0.0158	Mach
Predictive SPL	66	66	63	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	6 in.	6 in.		
Sch No.	80	80		
Thickness	11	11		
<b>Yamatake Corporation</b>				

Item No. / Qty	101	1	Ref. No.	
Tag No.	3LIC9821V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	ACP		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Pressure Balanced Cage Type Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	8 in.	5 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		275	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	A351CF8M STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	HA4R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543,V8590			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYN-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Steam Condensate			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	27958	19408	9704	kg/h
Inlet pressure	5.1	5.1	5.1	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	3.4	3.4	3.4	kgf/cm2
Shut-off press.		5.6		kgf/cm2
Temperature	148	148	148	degC
Density/Gravity(Liq)	841	841	841	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.19	0.19	0.19	cP
Flash	Flash	Flash	Flash	%
Calculated CV	24.23	16.82	8.198	
Travel	22	16	8	%
Inlet velocity	0.2941	0.2042	0.1021	m/s
Predictive SPL	61	59	56	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	8 in.		8 in.	
Sch No.	40		40	
Thickness	8.2		8.2	
<b>Yamatake Corporation</b>				

Item No. / Qty	102		1		Ref. No.	
Tag No.	3PIC9812V 1				Purchaser	
Service					End user	
<Control valve>					Project	
					<Remarks>	
Model	AGVB				SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves				SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.		Cv=0.4		SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			0.4		SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150		RF		SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2				SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE				HART AVP SP No.2	
Flow characteristic	EQ%					
Bonnet	PLAIN (-17 to 230 degC)					
Actuator / Handle	PSA1R		---			
Action	AIR TO OPEN					
Gland packing / Grease	P4519					
Gasket	V543(PTFE)					
Air supply / Spring range	2.8kgf/cm2		0.8-2.4kgf/cm2			
Seat leakage	CLASS IV					
Color: Body/Diaph./Yoke	SILVER		SILVER		SILVER	
Paint	Corrosion Resistant					
<Accessories>						
Positioner	AVP302-FSD2B-1DYS-X					
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT					
Input signal	4-20 mADC					
Regulator	KZ03-2B-XX		1			
Regulator2						
Limit switch						
Action						
Solenoid valve						
Action / Power						
Booster						
Air lock valve						
<Process data>						
Fluid name/Phase	LP Nitrogen/Gas			GAS		
	MAX	NOR	MIN	Unit		
Flow rate		3.96		m3/h(N)		
Inlet pressure		1.5		kgf/cm2G		
Outlet pressure				kgf/cm2G		
Differential press.		1.4		kgf/cm2		
Shut-off press.		17		kgf/cm2		
Temperature		40		degC		
Density/Gravity(Liq)				kg/m3		
Density/Gravity(G,V)		28		MW		
Viscosity		0.019		cP		
Flash				%		
Calculated CV		0.1299				
Travel		69		%		
Outlet velocity		0.006741		Mach		
Predictive SPL		50		dBA		
<Piping spec.>						
Strength Calc. Sheet						
Design					kgf/cm2G	
Temp.					degC	
Size		1 in.		1 in.		
Sch No.		40		40		
Thickness		3.4		3.4		
<b>Yamatake Corporation</b>						

Item No. / Qty	103	1	Ref. No.	
Tag No.	3PIC9813V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	4 in.	4 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		200	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Nitrogen/Vapour			GAS
	MAX	NOR	MIN	Unit
Flow rate	400		0	m3/h(N)
Inlet pressure	0.1		0.1	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.01		0.01	kgf/cm2
Shut-off press.	5.5			kgf/cm2
Temperature	90		40	degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	28		28	MW
Viscosity	0.02		0.019	cP
Flash				%
Calculated CV	182.4			
Travel	91			%
Outlet velocity	0.04624			Mach
Predictive SPL	50			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	4 in.		4 in.	
Sch No.	40		40	
Thickness	6		6	
<b>Yamatake Corporation</b>				

Item No. / Qty	104	1	Ref. No.	
Tag No.	3LIC9811V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	3 in.	2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		50	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCS13A		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA3R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	XXX	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYQ-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Steam Condensate/Liquid			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	28926	26296	13148	kg/h
Inlet pressure	7	7	7	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	2	2	2	kgf/cm2
Shut-off press.		14.76		kgf/cm2
Temperature	90	90	90	degC
Density/Gravity(Liq)	899	899	899	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.31	0.31	0.31	cP
Flash				%
Calculated CV	25.18	22.89	11.45	
Travel	73	71	56	%
Inlet velocity	2.024	1.84	0.92	m/s
Predictive SPL	62	62	59	dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		3 in.		3 in.
Sch No.		40		40
Thickness		5.5		5.5
<b>Yamatake Corporation</b>				

Item No. / Qty	105	1	Ref. No.	
Tag No.	3HC9811V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.4	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.4	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1D	---		
Action	AIR TO CLOSE			
Gland packing / Grease	P4519			
Gasket	V543(PTFE)			
Air supply / Spring range	4.0kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD3B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Steam Condensate/Liquid			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	120		0	kg/h
Inlet pressure	6.3		6.3	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	6		6	kgf/cm2
Shut-off press.	17			kgf/cm2
Temperature	40		40	degC
Density/Gravity(Liq)	949.8		949.8	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.65		0.65	cP
Flash				%
Calculated CV	0.05868			
Travel	47			%
Inlet velocity	0.07153			m/s
Predictive SPL	50			dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	1 in.		1 in.	
Sch No.	40		40	
Thickness	3.4		3.4	
<b>Yamatake Corporation</b>				

Item No. / Qty	106	1	Ref. No.	
Tag No.	3HC7001V 1		Purchaser	
Service			End user	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	2 in.	2 in.	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		50	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA2R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch	VCX7001-J	1		
Action	Full Open and Close on			
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase				
	MAX	NOR	MIN	Unit
Flow rate				m3/h
Inlet pressure				kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.				kgf/cm2
Shut-off press.				kgf/cm2
Temperature				degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)				MW
Viscosity				cP
Flash				%
Calculated CV				%
Travel				%
Outlet velocity				
Predictive SPL				dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size				
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	107	1	Ref. No.	
Tag No.	3PCV7012V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model	AGVB		SV0703-105 Indicating unit : "kgf/cm2"	
Description	Top-Guided Single-Seat Control Valves		SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size	1 in.	Cv=0.4	SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV		0.4	SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type	ANSI150	RF	SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material	SCPH2		SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)	
Trim material	SUS316 STELLITE		HART AVP SP No.2	
Flow characteristic	EQ%			
Bonnet	PLAIN (-17 to 230 degC)			
Actuator / Handle	PSA1R	---		
Action	AIR TO OPEN			
Gland packing / Grease	P4519	---		
Gasket	V543(PTFE)			
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2		
Seat leakage	CLASS IV			
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner	AVP302-FSD2B-1DYS-X			
Structure	FM Explosionproof & Flameproof, 1/4 NPT, 1/2 NPT			
Input signal	4-20 mADC			
Regulator	KZ03-2B-XX	1		
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	LP Nitrogen/Gas		GAS	
	MAX	NOR	MIN	Unit
Flow rate		1.75		m3/h(N)
Inlet pressure		1.5		kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.		1.4		kgf/cm2
Shut-off press.		17		kgf/cm2
Temperature		40		degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)		28		MW
Viscosity		0.019		cP
Flash				%
Calculated CV		0.05651		
Travel		46		%
Outlet velocity		0.002979		Mach
Predictive SPL		50		dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size		1-1/2 in.		1-1/2 in.
Sch No.				
Thickness				
<b>Yamatake Corporation</b>				

Item No. / Qty	108	1	Ref. No.	
Tag No.	3PIC9201V 1		Purchaser	
Service			End user	
<Control valve>			Project	
<Control valve>			<Remarks>	
Model			SV0703-105 Indicating unit : "kgf/cm2"	
Description			SV0601-001 Air piping Connection: 1/4 NPT	
Body/Port size			SVH002 SUS316 Airtubing	
Conn. Size. / Rated CV			SV0101-004 Flange facing finish : Serration ANSI B16.5 (Spiral)	
Rating / Conn. Type			SV0801-E01 Material certificate in English. Scope: valve body and bonnet	
Body material				
Trim material				
Flow characteristic				
Bonnet				
Actuator / Handle				
Action				
Gland packing / Grease				
Gasket				
Air supply / Spring range				
Seat leakage				
Color: Body/Diaph./Yoke	SILVER	SILVER	SILVER	
Paint	Corrosion Resistant			
<Accessories>				
Positioner				
Structure				
Input signal				
Regulator				
Regulator2				
Limit switch				
Action				
Solenoid valve				
Action / Power				
Booster				
Air lock valve				
<Process data>				
Fluid name/Phase	Cooling Water AND LIQ			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	533	242	421	m3/h
Inlet pressure	3.8	3.8	3.8	kgf/cm2G
Outlet pressure				kgf/cm2G
Differential press.	0.5	0.5	0.5	kgf/cm2
Shut-off press.		7		kgf/cm2
Temperature	40	40	40	degC
Density/Gravity(Liq)	998	998	998	kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.63	0.63	0.63	cP
Flash				%
Calculated CV	879.1	399.1	694.3	
Travel				%
Inlet velocity				m/s
Predictive SPL				dBA
<Piping spec.>				
Strength Calc. Sheet				
Design				kgf/cm2G
Temp.				degC
Size	10 in.		10 in.	
Sch No.	40		40	
Thickness	9.3		9.3	
<b>Yamatake Corporation</b>				