Control Valve Data Sheet

Item No. / Qty	1	1
Tag No.	28-PV-012	
Service		

Ref. No.		
Purchaser		
End user	KADUNA REFINING AND PETROCHEMI	
Project		

<Control valve>

Model	AGVM		
Description	Top-Guided Single-Seat Control Valves		
Body/Port size	4 in.	4 in.	
Conn. Size. / Rated CV		200	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316 STELLITE FACE		
Flow characteristic	EQ%		
Bonnet	EXT-1 (230 to 400 degC)		
Actuator / Handle	PSA6R	---	
Action	AIR TO OPEN		
Gland packing / Grease	P6610CL+P6722	650	
Gasket	V543,V564(MONEL)		
Air supply / Spring range	2.6kgf/cm2	1.0-1.8kgf/cm2	
Seat leakage	CLASS IV		
Color: Body/Diaph./Yoke	SILVER	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D		
Structure			
Input signal	0.2-1.0 kgf/cm2		
Regulator	KZ03-2B-1N		1
Regulator2			
Limit switch			
Action			
Solenoid valve			
Action / Power			
Booster			
Air lock valve			

<Process data>

Fluid name/Phase	Hot Oil			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	138.5			m3/h
Inlet pressure	7.4			kgf/cm2A
Outlet pressure	6.4			kgf/cm2A
Differential press.	1.0			kgf/cm2
Shut-off press.	12.3			kgf/cm2
Temperature	346			degC
Density/Gravity(Liq)	0.689			water=1
Density/Gravity(G,V)				MW
Viscosity	0.46			cP
Flash				%
Calculated CV	134.2			
Travel	79			%
Inlet velocity	4.901			m/s
Predictive SPL	66			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8318-1400

Replacement from Model:VZZ(VDP)

<Piping spec.>

Strength Calc. Sheet		

Design			kgf/cm2G
Temp.			degC
Size	4 in.	4 in.	
Sch No.	40	40	
Thickness	6	6	

Yamatake Corporation

Item No. / Qty	2	1	
Tag No.	28-TV-001		
Service			

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	HDT		
Description	Three way Control Valve		
Body/Port size	4 in.	4 in.	
Conn. Size. / Rated CV		130	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316		
Flow characteristic	LINEAR		
Bonnet	PLAIN (0 to 200 degC)		
Actuator / Handle	HA4D	SIDE	
Action	AIR FAIL BOTTOM CLOSE		
Gland packing / Grease	P4519	---	
Gasket	V543		
Air supply / Spring range	3.5kgf/cm2	0.8-2.4kgf/cm2	
Seat leakage	CLASS IV		
Color: Body/Diaph./Yoke	SILVER	7.5R3/12	7.5R3/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1N	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	Asphalt			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	44.4	44.4		m3/h
Inlet pressure	10.1	10.1		kgf/cm2A
Outlet pressure	9.4	9.4		kgf/cm2A
Differential press.	0.7	0.7		kgf/cm2
Shut-off press.		10.1		kgf/cm2
Temperature	142	142		degC
Density/Gravity(Liq)	0.947	0.947		water=1
Density/Gravity(G,V)				MW
Viscosity	28	5		cP
Flash				%
Calculated CV	63.48	60.29		
Travel	49	46		%
Inlet velocity	1.571	1.571		m/s
Predictive SPL	55	55		dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8318-0700

Replacement from Model:VTD

<Piping spec.>

Strength Calc. Sheet		

Design		kgf/cm2G
Temp.		degC
Size	4 in.	4 in.
Sch No.	40	40
Thickness	6	6

Yamatake Corporation

Item No. / Qty	3	1
Tag No.	28-LV-007	
Service		

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	AGVB		
Description	Top-Guided Single-Seat Control Valves		
Body/Port size	1-1/2 in.	1-1/2 in.	
Conn. Size. / Rated CV		30	
Rating / Conn. Type	ANSI150	RF	
Body material	A216WCB		
Trim material	SUS316		
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	2.3Y8/12	2.3Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	Cracked Oil			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	8			m3/h
Inlet pressure	5.7			kgf/cm2A
Outlet pressure	5			kgf/cm2A
Differential press.	0.7			kgf/cm2
Shut-off press.	11			kgf/cm2
Temperature	80			degC
Density/Gravity(Liq)	0.858			water=1
Density/Gravity(G,V)				MW
Viscosity	1.9			cP
Flash				%
Calculated CV	10.34			
Travel	65			%
Inlet velocity	2.013			m/s
Predictive SPL	50			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8318-2210

Replacement from Model:VZZ(VDP)

<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

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Item No. / Qty	4	1
Tag No.	24-TV-017	
Service		

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	AGVB		
Description	Top-Guided Single-Seat Control Valves		
Body/Port size	1-1/2 in.	1-1/2 in.	
Conn. Size. / Rated CV		30	
Rating / Conn. Type	ANSI150	RF	
Body material	A216WCB		
Trim material	SUS440C		
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	7.5R3/12	7.5R3/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	STEAM			STEAM
	MAX	NOR	MIN	Unit
Flow rate	546			kg/h
Inlet pressure	4.53			kgf/cm2A
Outlet pressure	4.03			kgf/cm2A
Differential press.	0.5			kgf/cm2
Shut-off press.	4.53			kgf/cm2
Temperature	148			degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	2.384			kg/m3(A)
Viscosity	0.01403			mPa-s
Flash				%
Calculated CV	19.53			
Travel	78			%
Outlet velocity	0.1268			Mach
Predictive SPL	65			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8313-2700

Replacement from Model:VZZ(VDP)

<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

Yamatake Corporation

Item No. / Qty	5	1	
Tag No.	21-FV-054		
Service			

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	ACN		
Description	Compressible Fluid Service Low-Noise Cage Type Control Valves		
Body/Port size	8 in.	6 in.	
Conn. Size. / Rated CV		330	
Rating / Conn. Type	ANSI150	RF	
Body material	A216WCB		
Trim material	A351CF8M/SUS316 STELLITE		
Flow characteristic	LINEAR		
Bonnet	DOUBLE/EXT-1 (230 to 400 degC)		
Actuator / Handle	HA4R	SIDE	
Action	AIR TO OPEN		
Gland packing / Grease	P6610CH+P6528	PS6	
Gasket	V543		
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2	
Seat leakage	CLASS IV		
Color: Body/Diaph./Yoke	SILVER	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve	JE3HT8320A107	1
Action / Power	En: Control, De: Close	DC48V
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	LP STEAM			STEAM
	MAX	NOR	MIN	Unit
Flow rate	4584			kg/h
Inlet pressure	2.83			kgf/cm2A
Outlet pressure	0.2			kgf/cm2A
Differential press.	2.63			kgf/cm2
Shut-off press.	5.0			kgf/cm2
Temperature	300			degC
Density/Gravity(Liq)				kg/m3
Density/Gravity(G,V)	1.056			kg/m3(A)
Viscosity	0.01967			mPa-s
Flash				%
Calculated CV	164.5			
Travel	48			%
Outlet velocity	0.8957			Mach
Predictive SPL	92			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8310-6300

Replacement from Model:VDN

<Piping spec.>

Strength Calc. Sheet		

Design		kgf/cm2G
Temp.		degC
Size	8 in.	8 in.
Sch No.	40	40
Thickness	8.2	8.2

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Item No. / Qty	6	1
Tag No.	21-LV-022	
Service		

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	HTS		
Description	Top-Guided Single Seated Control Valves		
Body/Port size	3 in.	3 in.	
Conn. Size. / Rated CV		125	
Rating / Conn. Type	ANSI150	RF	
Body material	A216WCB		
Trim material	MONEL K-500		
Flow characteristic	EQ%		
Bonnet	PLAIN (-17 to 230 degC)		
Actuator / Handle	HA4R	---	
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	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1N	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	WATER			WATER
	MAX	NOR	MIN	Unit
Flow rate	35			m3/h
Inlet pressure	6			kgf/cm2A
Outlet pressure	5.6			kgf/cm2A
Differential press.	0.4			kgf/cm2
Shut-off press.	9			kgf/cm2
Temperature	41			degC
Density/Gravity(Liq)	992.1			kg/m3
Density/Gravity(G,V)				MW
Viscosity	0.6599			mPa-s
Flash				%
Calculated CV	64.35			
Travel	64			%
Inlet velocity	2.202			m/s
Predictive SPL	56			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8310-5110

Replacement from Model:VZZ(VDP)

<Piping spec.>

Strength Calc. Sheet		

Design		kgf/cm2G
Temp.		degC
Size	3 in.	3 in.
Sch No.	40	40
Thickness	5.5	5.5

Yamatake Corporation

Item No. / Qty	7	1
Tag No.	21-TV-002	
Service		

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	AGVM		
Description	Top-Guided Single-Seat Control Valves		
Body/Port size	1-1/2 in.	1-1/2 in.	
Conn. Size. / Rated CV		30	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316 STELLITE		
Flow characteristic	EQ%		
Bonnet	EXT-1 (230 to 400 degC)		
Actuator / Handle	PSA2R	---	
Action	AIR TO OPEN		
Gland packing / Grease	P6610CL+P6722	650	
Gasket	V543,V564(MONEL)		
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2	
Seat leakage	CLASS IV		
Color: Body/Diaph./Yoke	SILVER	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	Intermediate Dist			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	37.5			m3/h
Inlet pressure	12			kgf/cm2A
Outlet pressure	3			kgf/cm2A
Differential press.	9			kgf/cm2
Shut-off press.	20.5			kgf/cm2
Temperature	250			degC
Density/Gravity(Liq)	0.755			water=1
Density/Gravity(G,V)				MW
Viscosity	0.763			cP
Flash				%
Calculated CV	12.68			
Travel	69			%
Inlet velocity	9.436			m/s
Predictive SPL	66			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8310-3100

Replacement from Model:VZZ(VDP)

<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

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Item No. / Qty	8	1
Tag No.	21-TV-003	
Service		

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	AGVM		
Description	Top-Guided Single-Seat Control Valves		
Body/Port size	1 in.	Cv=14	
Conn. Size. / Rated CV		14	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316		
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	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1N	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	Vacuum Gas Oil			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	17.9			m3/h
Inlet pressure	11.6			kgf/cm2A
Outlet pressure	4.7			kgf/cm2A
Differential press.	6.9			kgf/cm2
Shut-off press.	19			kgf/cm2
Temperature	140			degC
Density/Gravity(Liq)	0.795			water=1
Density/Gravity(G,V)				MW
Viscosity	1.47			cP
Flash				%
Calculated CV	7.093			
Travel	81			%
Inlet velocity	10.13			m/s
Predictive SPL	59			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8310-3200

Replacement from Model:VZZ(VDP)

<Piping spec.>

Strength Calc. Sheet		

Design		kgf/cm2G
Temp.		degC
Size	1 in.	1 in.
Sch No.	40	40
Thickness	3.4	3.4

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Item No. / Qty	9	1
Tag No.	25-LV-043	
Service		

Ref. No.		
Purchaser		
End user	KADUNA REFINING AND PETROCHEMI	
Project		

<Control valve>

Model	HLS		
Description	Small-Port Single Seated Control Valves		
Body/Port size	1 in.	Cv=6.3	
Conn. Size. / Rated CV		6.3	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316 STELLITE FACE		
Flow characteristic	EQ%		
Bonnet	PLAIN (-17 to 230 degC)		
Actuator / Handle	PSA1R	---	
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	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	FOOTSOIL			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	5.6			m3/h
Inlet pressure	7.33			kgf/cm2A
Outlet pressure	4.53			kgf/cm2A
Differential press.	2.8			kgf/cm2
Shut-off press.	14.5			kgf/cm2
Temperature	80			degC
Density/Gravity(Liq)	0.822			water=1
Density/Gravity(G,V)				MW
Viscosity				cP
Flash				%
Calculated CV	3.542			
Travel	84			%
Inlet velocity	3.171			m/s
Predictive SPL	51			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8315-2600

Replacement from Model:VSL

<Piping spec.>

Strength Calc. Sheet		

Design			kgf/cm2G
Temp.			degC
Size	1 in.	1 in.	
Sch No.	40	40	
Thickness	3.4	3.4	

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Item No. / Qty	10	1	
Tag No.	25-LV-038		
Service			

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	AGVM		
Description	Top-Guided Single-Seat Control Valves		
Body/Port size	1 in.	Cv=14	
Conn. Size. / Rated CV		14	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316		
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	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1N	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	WAX			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	4588			kg/h
Inlet pressure	1.7			kgf/cm2A
Outlet pressure	0.8			kgf/cm2A
Differential press.	0.9			kgf/cm2
Shut-off press.	13			kgf/cm2
Temperature	156			degC
Density/Gravity(Liq)	0.733			water=1
Density/Gravity(G,V)				MW
Viscosity	1.374			cP
Flash				%
Calculated CV	6.594			
Travel	79			%
Inlet velocity	3.544			m/s
Predictive SPL	50			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8315-2200

Replacement from Model:VZZ(VDP)

<Piping spec.>

Strength Calc. Sheet		

Design			kgf/cm2G
Temp.			degC
Size	1 in.	1 in.	
Sch No.	40	40	
Thickness	3.4	3.4	

Yamatake Corporation

Item No. / Qty	11	1
Tag No.	25-LV-039	
Service		

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	HLS		
Description	Small-Port Single Seated Control Valves		
Body/Port size	1 in.	Cv=6.3	
Conn. Size. / Rated CV		6.3	
Rating / Conn. Type	ANSI300	RF	
Body material	A216WCB		
Trim material	SUS316 STELLITE FACE		
Flow characteristic	EQ%		
Bonnet	PLAIN (-17 to 230 degC)		
Actuator / Handle	PSA1R	---	
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	2.5Y8/12	2.5Y8/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	WAX			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	6.3			m3/h
Inlet pressure	8.8			kgf/cm2A
Outlet pressure	6.6			kgf/cm2A
Differential press.	2.2			kgf/cm2
Shut-off press.	13			kgf/cm2
Temperature	156			degC
Density/Gravity(Liq)	0.723			water=1
Density/Gravity(G,V)				MW
Viscosity				cP
Flash				%
Calculated CV	4.216			
Travel	89			%
Inlet velocity	3.567			m/s
Predictive SPL	50			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0201-003 Seat leakage: Less than 0.01%CV (Equivalent IEC, JIS Class IV)

SV0705-001 Without signal by-pass cock for HTP positioner

Old Production No : 416-8315-2300

Replacement from Model:VSL

<Piping spec.>

Strength Calc. Sheet		

Design		kgf/cm2G
Temp.		degC
Size	1 in.	1 in.
Sch No.	40	40
Thickness	3.4	3.4

Yamatake Corporation

Item No. / Qty	12	1	
Tag No.	21-FV-024		
Service			

Ref. No.	
Purchaser	
End user	KADUNA REFINING AND PETROCHEMI
Project	

<Control valve>

Model	VBZ		
Description	Special Butterfly Valve		
Body/Port size	3 in.		
Conn. Size. / Rated CV		150	
Rating / Conn. Type	ANSI150	WAFER	
Body material	SF440A		
Trim material	SCPH2/SUS316/SUS316ST		
Flow characteristic	EQ% APPROX.		
Bonnet	PLAIN (230 to 350 degC)		
Actuator / Handle	HA2D	SIDE	
Action	AIR TO CLOSE		
Gland packing / Grease	P6610CH+P6528	650	
Gasket	---		
Air supply / Spring range	2.8kgf/cm2	0.8-2.4kgf/cm2	
Seat leakage	5.8% Rated Cv		
Color: Body/Diaph./Yoke	SILVER	7.5R3/12	7.5R3/12
Paint	Standard		

<Accessories>

Positioner	HTP-1D	
Structure		
Input signal	0.2-1.0 kgf/cm2	
Regulator	KZ03-2B-1B	1
Regulator2		
Limit switch		
Action		
Solenoid valve		
Action / Power		
Booster		
Air lock valve		

<Process data>

Fluid name/Phase	Heavy Spindle Oil			LIQUID
	MAX	NOR	MIN	Unit
Flow rate	28.6			m3/h
Inlet pressure	0.402			kgf/cm2A
Outlet pressure	0.21			kgf/cm2A
Differential press.	0.192			kgf/cm2
Shut-off press.	2.5			kgf/cm2
Temperature	269			degC
Density/Gravity(Liq)	0.722			water=1
Density/Gravity(G,V)				MW
Viscosity	0.625			cP
Flash				%
Calculated CV	64.74			
Travel				%
Inlet velocity	1.799			m/s
Predictive SPL	51			dBA

<Remarks>

SV0703-105 Indicating unit : "kgf/cm2"

SV0003-001 Valve size indication: ' " '

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

SV0601-001 Air piping Connection: 1/4 NPT

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

SV0705-001 Without signal by-pass cock for HTP positioner

SV0505-003 Minimum and maximum flow stopper for actuator

Old Production No : 416-8310-1000

<Piping spec.>

Strength Calc. Sheet		
Design		kgf/cm2G
Temp.		degC
Size	3 in.	3 in.
Sch No.	40	40
Thickness	5.5	5.5

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