

	PROJECT _____ UNIT _____ P.O. _____ ITEM _____ CONTRACT _____ *MFR. SERIAL _____				DATA SHEET _____ of _____ SPEC _____ TAG _____ DWG _____ SERVICE _____			
	1 Fluid _____ Crit Press PC _____							
		Units	Max Flow	Norm Flow	Min Flow	Shut-Off		
2	Flow Rate					—		
3	Inlet Pressure							
4	Outlet Pressure							
5	Inlet Temperature							
6	Spec Wt./Spec Grav./Mol Wt					—		
7	Viscosity/Spec Heats Ratio					—		
8	Vapor Pressure $P_v$					—		
9	*Required $C_v$					—		
10	*Travel	%				0		
11	Allowable/*Predicted SPL	dBA	/	/	/	—		
12								
13	PIPE LINE SIZE	In _____				53 *Type _____		
14	& Schedule	Out _____				54 *Mfr & Model _____		
15	PIPE LINE INSULATION					55 *Size _____ Eff Area _____		
16	*Type					56 On/Off _____ Modulating _____		
17	*Size	ANSI Class _____				57 Spring Action Open/Close _____		
18	Max Press./Temp					58 *Max Allowable Pressure _____		
19	*Mfr & Model					59 *Min Required Pressure _____		
20	*Body/Bonnet Matl					60 Available Air Supply Pressure:		
21	*Liner Material/ID					61 Max _____ Min _____		
22	End	In _____				62 *Bench Range _____ / _____		
23	Connection	Out _____				63 Actuator Orientation _____		
24	Fig Face Finish					64 Handwheel Type _____		
25	End Ext./Matl					65 Air Failure Valve _____ Set at _____		
26	*Flow Direction					66		
27	*Type of Bonnet					67 Input Signal _____		
28	Lub & Iso Valve	Lube _____				68 *Type _____		
29	*Packing Material					69 *Mfr & Model _____		
30	*Packing Type					70 *On Incr Signal Output Incr/Decr _____		
31						71 Gauges _____ By-pass _____		
32	*Type					72 *Cam Characteristic _____		
33	*Size	Rated Travel _____				73		
34	*Characteristic					74 Type _____ Quantity _____		
35	*Balanced/Unbalanced					75 *Mfr & Model _____		
36	*Rated $C_v$	$F_L$ _____ $X_T$ _____				76 Contacts/Rating _____		
37	*Plug/Ball/Disk Material					77 Actuation Points _____		
38	*Seat Material					78		
39	*Cage/Guide Material					79 *Mfr & Model _____		
40	*Stem Material					80 *Set Pressure _____		
41						81 Filter _____ Gauge _____		
42						82		
43	NEC Class _____	Group _____	Div _____			83 *Hydro Pressure _____		
44						84 ANSI/FCI Leakage Class _____		
45						85		
46						86		
47						Rev _____ Date _____		
48						Revision _____ Orig _____ App _____		
49								
50								
51								
52								

\*Information supplied by manufacturer unless already specified

Line	Explanation of Terms and Definitions	Examples
PROJECT	Specify project name for which control valve is intended.	XYZ Nuclear PS
UNIT	Specify unit within project.	#1
P.O.	Specify purchase order number from purchaser to control valve manufacturer.	P.O. 12345
ITEM	Specify item number of purchase order.	3
CONTRACT	Specific contract number of project for purchaser's reference.	56-V-32510
MFR SERIAL	This line may show the valve manufacturer's serial number(s) and is normally filled in at the time of shipment of the valve. Serial numbers often contain the manufacturer's shop order number.	C12650-3
DATA SHEET	Specify data sheet number. Normally assigned by purchaser.	3 of 12
SPEC	Specify number of technical specification on which valve selection is based.	FL-13265-A
TAG	Specify tag number, if any, used to designate location of valve.	FV-103
DWG	Specify piping and instrumentation diagram number, loop diagram number, engineering flow diagram number, etc.	17-453
SERVICE	Describe service of control valve and/or pipe line number.	Feedwater control Reheat spray 2" MA 1051 WA7

NOTE: The above lines are suggested only and may be modified to fit the individual company's needs. If the provided space is insufficient, add an additional sheet and refer to it.

Line No.	Explanation of Terms and Definitions	Examples
1	Describe fluid flowing into valve and its state. Indicate corrosive or erosive service and the corrosive or erosive agents.	Superheated steam, Saturated water, Crude oil and natural gas
2	Specify thermodynamic critical pressure of the fluid.	3206 psia
2	Specify volumetric or mass flow rate at inlet or standard conditions. Maximum flow condition, if greater than normal flow condition, is the condition for which the valve is sized.	3000 gpm 10000 bdp 600 std.m <sup>3</sup> /s 7500 scfm 300 kg/h
3	Specify inlet pressure (gauge or absolute).	5000 psig 2000 kPa abs.
4	Specify outlet pressure (gauge or absolute).	1000 psig 400 kPa gauge
5	Specify inlet temperature in °F, °R, °C or K. Must agree with state of fluid and its inlet pressure.	750°F 200°C 815 K
6	Specify specific weight (in lb/ft <sup>3</sup> or kg/m <sup>3</sup> ), specific gravity, or molecular weight of fluid. Identify the appropriate term.	61.9 lb/ ft <sup>3</sup> 1.03 44.01
7	Specify viscosity in appropriate units for liquids or specific heats ratio for gases.	20 centipoise 17.8 centistokes 1.27
8	Specify vapor (saturation) pressure at inlet temperature in absolute units. Only required for liquid flow.	680 psia 46.9 bar abs.
9	Specify required $C_V$ as calculated for each condition per ANSI/ISA S75.01-1985. No additional safety (oversize) factor should be included at this point.	260

Line No.	Explanation of Terms and Definitions	Examples
10	Specify travel of the valve in percent of rated travel calculated from required $C_V$ , rated $C_V$ of the valve, trim selected, and characteristic (see lines 33, 34, and 36). 0% is full closed, 100% is full open.	78%
11	Specify laboratory-measured allowable and predicted sound pressure levels, both normally in dBA as measured per ISA-S75.07-1987.	90/87 dBA
12	Extra line for information not covered in lines 1 through 11.	Compressibility factor Z Ambient temperature Base pressure and temperature
13 & 14	Specify size and schedule (or wall thickness if nonstandard) of pipe line into which valve is installed.	8" SCH 40, 15" OD x 0.500" wall, DN 200, PN 100
15	Specify pipe line insulation. This information is required for predicted sound pressure level calculations.	2" thermal None
16	Specify type of valve body.	Globe (through, angle) Split body, Double port, Butterfly, Ball, Pinch
17	Specify nominal size of valve body. Specify ANSI class in accordance with ANSI B16.34-81.	4" 600 2500 SPECIAL
18	Specify maximum pressure and temperature of the valve.	2500 psig, 650°F
19	Specify manufacturer and model number.	XYZ Controls Model 719-2
20	Specify body and bonnet material.	Steel, ASTM A216, WCB
21	Specify body liner material, if any, and its inside diameter.	Polyurethane, 3.9"
22 & 23	Specify end connection. May be integral or welded onto body.	6" RTJ Class 1500 flange Buttweld end 2" FNPT
24	Specify flange face finish per ANSI B16.5-81 or special finish as required.	ANSI B16.5-81 Special finish: 32 RMS
25	Specify end extensions, if any. Normally, refers to sections of pipe or reducers welded to the body by the valve manufacturer.	6" long, SCH 80, A106, GR.B
26	Specify direction of the flow through the body. FTO = flow-to-open, FTC = flow-to-close valve.	FTO FTC
	NOTE: The descriptors "FTO" and "FTC" refer to the direction of fluid forces on the closure member. If immaterial, leave blank. When FTO and FTC are not applicable, specify direction as appropriate.	
27	Specify type of bonnet.	Standard, Cooling fin, Extended
28	Specify whether a lubricator and isolation valve are required. Specify lubricant.	Yes Silicone
29	Specify packing material.	Graphite impreg. asbestos, TFE, Non-asbestos
30	Specify type of packing.	Braided, Molded V-ring, Laminated filament, Pressure/Vacuum
31	Extra line for special body or bonnet not covered in lines 16 through 30.	Body drain Separable flanges, Flangeless
32	Specify type of trim.	Single seat cage-guided, Multi-stage, Multi-hole, Top- and bottom-guided, Double seat
33	Specify nominal size and rated travel of installed trim.	2", 50 mm
34	Specify inherent flow characteristic of installed trim.	Linear, Equal %, Modified parabolic, Quick-opening
35	Specify whether trim is balanced or unbalanced. Semi-balanced trim should be considered as balanced.	Balanced Unbalanced
36	Specify rated $C_V$ , $F_L$ , and $X_T$ of installed trim. Refer to ANSI/ISA-S75.01-1985.	260 0.9 0.68

Line No.	Explanation of Terms and Definitions	Examples
37	Specify closure member, i.e., plug, ball, or disk material as applicable.	17-4 PH H-1150, 316
38	Specify seat material.	420 hardened 316 hardfaced
39	Specify cage, bearing, or guide material.	410 hardened
40	Specify stem material.	17-4 PH H-1150, 316
41 & 42	Extra lines for additional trim requirements not covered in lines 32 through 40.	Chrome-plate Pilot-operated
43	Specify hazardous location classification per the <i>National Electrical Code</i> , ANSI/NFPA 70-1987.	NEC® Class I, Div. 1, Group C
44-52	Specify special requirements and/or accessories not covered elsewhere.	Solenoid valves, E/P transducer, NACE MR-01-75, Seismic, Net weight = 275 lb
53	Specify type of actuator.	Diaphragm, pneumatic, Hydr. piston, double-acting, Pneumatic rotary vane
54	Specify manufacturer and model number.	XYZ Controls, P-100-160
55	Specify nominal size and effective diaphragm/piston area.	8", 160 square inch, 0.2 m <sup>2</sup>
56	Specify whether actuator is for on/off or modulating service.	Modulating On/ off
57	Specify whether spring, if any, acts to open or to close valve.	Open Close None
58	Specify maximum pressure for which the actuator is designed.	100 psig 60 kPa
59	Specify minimum pressure required to fully stroke the installed valve under specified conditions.	65 psig
60 & 61	Specify limits of available air or hydraulic supply pressure. If upper limit is greater than line 58, a reducing valve (air set) should be furnished. Lower limit or reducing valve setting must be higher than pressure shown on line 59.	90 psig/ 70 psig
62	Specify the pressures in the actuator when valve starts travel and at its rated travel position without fluid forces acting on the valve.	8/32 psig 10/22 psig 1.2/2.1 Kpa
63	Specify orientation of actuator as "VERT.UP" or "VERT.DOWN" (vertical) or "HORIZ." (horizontal). For rotary valves, also specify whether mounting is "RH" (right-hand) or "LH" (left-hand) as viewed from valve inlet, if appropriate. Specify additional information as appropriate or provide sketch.	VERT. UP HORIZ. RH LH
64	Specify type and orientation of handwheel (manual override), if any.	Top-mounted Side-mounted/LH
65	Specify if air failure valve (actuator air lock-up valve) is required and at what supply pressure it shuts.	Yes 40 psig
66	Extra line for additional actuator requirements not covered in lines 53 through 65.	Hydraulic damper, Stroking speed 1"/ sec., Stainless steel tubing
67	Specify input signal range for full travel.	3-15 psig, 200-100 kPa, 4-20 mA
68	Specify type of positioner.	None Single acting Double acting
69	Specify manufacturer and model number.	XYZ Control Co., Model AB
70	Specify whether an increasing signal increases or decreases output pressure to actuator.	Incr. Decr.
71	Specify whether air pressure gauges and whether positioner bypass are required.	No Yes
72	Specify cam characteristic, if positioner has a cam. Normally linear.	Linear Square root

Line No.	Explanation of Terms and Definitions	Examples
73	Extra line for positioner requirements not covered in lines 67 through 72.	Aluminum-free
74	Specify type and quantity of limit switches.	Mech. (lever arm), Proximity, Pneumatic 2
75	Specify manufacturer and model number.	ABC Electric Co., Model A20Z
76	Specify electrical rating and number of contacts and action.	10A, 600 VAC/DPDT
77	Specify valve travel at which switches are to actuate.	Full open/full closed
78	Extra line for additional limit switch requirements not covered in lines 74 through 77.	NEMA 4 IP 65
79	Specify manufacturer and model number of air set (pressure regulator).	RBJ Co. Model R-70
80	Specify output pressure setting.	70 psig 20 psig
81	Specify whether filter and/or output pressure gauge is required.	Yes No
82	Extra line for additional air set requirements not covered in lines 79 through 81.	Mount separate from valve
83	Specify pressure of hydrostatic test. Normally per ANSI B16.37-80 or API 6A-83.	3350 psig
84	Specify leakage class per ANSI/FCI 70-2-76.	Class IV
85 & 86	Extra lines for additional test requirements not covered in lines 83 and 84.	Hydro for 30 minutes, Helium leak test, Stroking time test, Dead band test