DD-2,3

RED MAN™
ULTRA-HIGH PERFORMANCE SOLENOID

Pilot type	Direct type	Piston	Diaphragm
Normally closed	Normally opened	AC coil	DC coil
Stainless steel	110 V / 220 V	Explosion-proof	JWWA
Leak 0			

■Features

1. Outstanding corrosion resistance achieved by adopting stainless steel for major parts and body.
2. Significantly improved corrosion resistance with stainless steel made body and trim parts.
3. Various installation postures: Vertical or horizontal including intermediates.
4. Equipped with coil of AC 110/220V selective and common for 50 Hz/60 Hz.

■Specifications

Model		DD-2	DD-2-8	DD-3	DD-3-8
Application		Steam, Air, Cold and hot water, N_2 gas, CO_2 gas (dry), Ar gas, Oil		Air, Cold and hot water, N_2 gas, CO_2 gas (dry), Ar gas, Oil	
Fluid viscosity		20 cSt or less			
Working pressure		0-0.15 MPa	0-0.8 MPa	0-0.15 MPa	0-0.8 MPa
Orifice (mm)		ϕ9.5	ϕ4.0	ϕ9.5	ϕ4.0
Cv value		1.7	0.55	1.7	0.55
Allowable valve seat leakage		50 mL/min under standard conditions		No (by confirming pressure gauge visually)	
MAX temperature		175°C		100°C	
Operation		Normally closed			
Material	Body	Stainless steel (SCS14A)			
	Plunger	Stainless steel			
	Valve disc	PTFE		FKM	
Connection		JIS Rc screwed			

■Specification of Coil

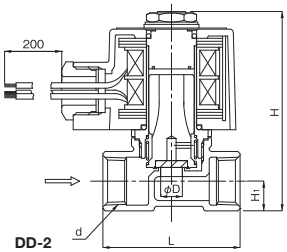
Rated voltage	AC 100 / 200 V selective type	AC 110 / 220 V selective type
	50 / 60 Hz common	
Allowable fluctuation	Rated voltage ±10%	
Rated current	0.42 / 0.21 A	0.38 / 0.19 A
Starting current	1.10 / 0.55 A	1.00 / 0.50 A
Insulation class	Insulation class H	
Protective structure	Dust proof, Splash proof	
Ingress protection code	IP64 (JIS C0920)	
Insulation resistance	50 MΩ and more/500V megger	
Withstand voltage test	1500 V/min	

· Available with the terminal box.

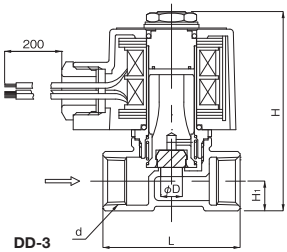
■Dimensions (mm) and Weights (kg)

Nominal size	d	L	H	H_1	Weight
10A	Rc 3/8	50	85.5	12	0.66
15A	Rc 1/2	60	87.5	13	0.69
20A	Rc 3/4	65	91	16.5	0.74

Model	ϕD(mm)
DD-2	9.5
DD-3	
DD-2-8	4.0
DD-3-8	



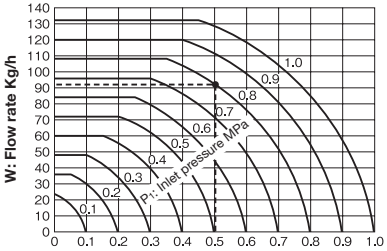
DD-2



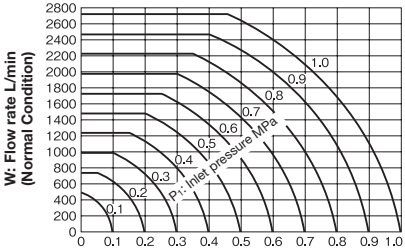
DD-3

■Nominal Size Selection Chart

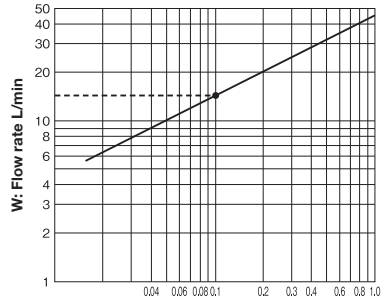
· For steam (Cv = 1)



· For air (Cv = 1)



· For water (Cv = 1)



* Please refer to P.11-9 for Cv value and calculation formula.

· How to determine the flow rate (Steam, Air)

First find the flow rate (W for steam, Q for air), the intersection of inlet pressure P_1 and outlet pressure P_2. Secondly, multiply the flow rate Q or W by Cv value for each model.
[Example] · Model: DD-2-8 (Cv value: 0.55)
· Fluid: Steam
· Inlet Pressure (P_1): 0.8 MPa
· Outlet Pressure (P_2): 0.5 MPa
Flow rate W is 92 kg/h, which is the intersection of P_1 = 0.8 MPa and P_2 = 0.5 MPa, as shown by the dashed line. Next, multiply W = 92 kg/h by the Cv value of 0.55.
Therefore: 92 kg/h x 0.55 = 50.6 kg/h

· How to determine the flow rate (Water)

First calculate pressure loss ΔP and then find the flow rate V in the above chart. Secondly, multiply the flow rate V by Cv value for each model.
[Example] · Model: DD-3 (Cv value: 1.7)
· Inlet Pressure (P_1): 0.15 MPa
· Outlet Pressure (P_2): 0.05 MPa
Pressure loss is calculated as $\Delta P = P_1 - P_2$ = 0.1 MPa. Then, find the flow rate V = 14 L/min as shown by the dashed lines in the above chart. Next, multiply V = 14 L/min by the Cv value of 1.7.
Therefore: 14 L/min x 1.7 = 23.8 L/min