

DDRP+AS series

Hydraulic/Pneumatic (dual-use) Thick flat spray nozzles with Even Distribution

Patent pending

Steel making process

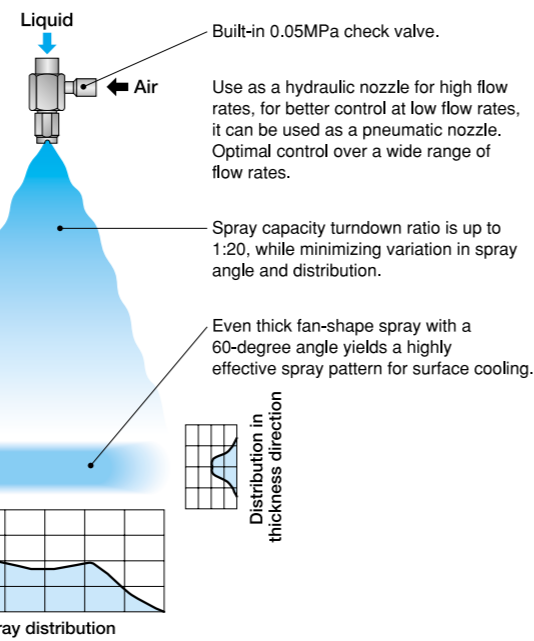
- Cooling continuous casted steel (Bloom)
- Cooling continuous casted steel (Slab short side)
- Cooling continuous casted steel (Billet)
- Cooling roll on continuous casting machine

Rolling mill process

- Cooling sheets on continuous annealing line
- Cooling roll in heat treatment
- Cooling electromagnetic steel



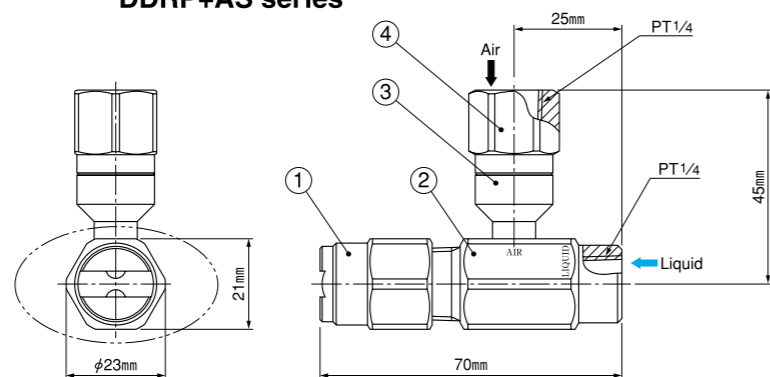
FEATURES



DDRP+AS series

MATERIALS

- ① Nozzle: S303
- ② Mixing adaptor: S304
- ③ Check valve: S304
- ④ Air socket: S303



Pipe conn. size	Spray angle code		Spray angle (width)				Spray angle (thickness)				Spray capacity Qw (ℓ/min) & Air consumption Qa (ℓ/min, Normal) at Liquid pressure Pw (MPa) & Air pressure of 0.1MPa										Mean droplet diameter (μm)	Free pass. dia. (mm)		Mass (g)		
	Width	Thickness	0.01 MPa	0.1 MPa	0.3 MPa	1 MPa	0.01 MPa	0.1 MPa	0.3 MPa	1 MPa	0.01 MPa	0.02 MPa	0.05 MPa	0.07 MPa	0.1 MPa	0.2 MPa	0.3 MPa	0.5 MPa	1 MPa	1.5 MPa		Nozzle	Adaptor			
1/4F	115°	60°	200	110	113	115	116	65	58	60	60	Qw	1.55	2.93	6.81	9.29	10.9	15.5	19	24.5	34.7	42.5	430	2.9	6.7	1.8
			260	110	113	115	116	65	58	60	60	Qa	29	25	2	—	—	—	—	—	—	—				
	90°	60°	200	86	89	90	90	65	58	60	60	Qw	1.55	2.93	6.81	9.29	10.9	15.5	19	24.5	34.7	42.5	455	2.9	6.7	1.8
			260	86	89	90	90	65	58	60	60	Qa	29	25	2	—	—	—	—	—	—	—				

Conversion of unit [Pressure] 0.1MPa ≈ 14.50psi [Flow rate] 1ℓ (liter) ≈ 0.264 US gal. 10psi ≈ 0.069MPa 1US gal. ≈ 3.79ℓ (liter)

How to order

Please inquire or order for a specific nozzle using this coding system.

⟨Example⟩ 1/4DDRP11560200S303+1/4F×3/8AS S303

1/4 DDRP 115 60 200 S303+1/4F×3/8AS S303

Spray angle code (width)
■ 115°
■ 90°

Spray capacity code
■ 200
■ 260

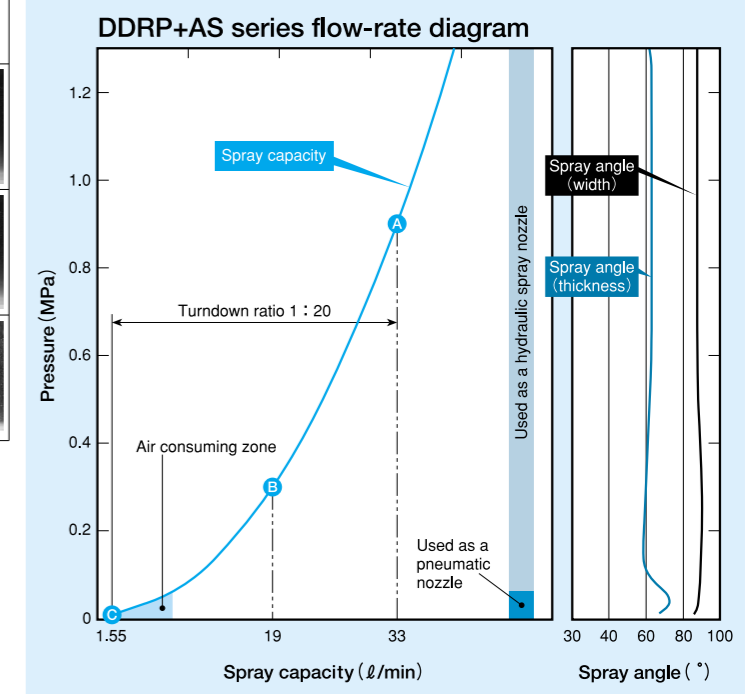
DDRP+AS series Hydraulic/Pneumatic (dual-use) Thick flat spray nozzles with Even Distribution

Turndown ratio of DDRP+AS

Turndown ratio range of normal hydraulic spray nozzles at maximum pressure is limited by pump capacity, and at minimum pressure it is limited by narrower spray angle and unstable spray condition. When the max liquid pressure of water is 0.9MPa, the turndown ratio of normal hydraulic spray nozzles is 1: 4-4.5.

DDRP+AS series can keep stable spray at very low flow due to air pressure. When the maximum liquid pressure is 0.9MPa, turndown ratio can be extended to 1: 20.

Large ↑ Spray capacity ↓ Small	Spray capacity (ℓ/min)	Liquid pressure (MPa)	Air pressure (MPa)	Air consumption (ℓ/min, Normal)	Width	Thickness
	A	33	0.9	0.1	0	
B	19	0.3	0.1	0		
C	1.55	0.01	0.1	29		



Turndown ratio of hydraulic spray nozzle

Turndown ratio range of hydraulic spray nozzles at maximum pressure is limited by pump capacity, and at minimum pressure it is limited by narrower spray angle and unstable spray condition. When the maximum liquid pressure is 0.6MPa, the turndown ratio of hydraulic nozzle is 1: 2.5-3.5.

