

DS-1 / DS-2 DRAIN SEPARATORS

Condensate in steam and air piping reduce thermal efficiency, cause water hammer, corrode equipment such as valves and pipes, and cause other problems.

Armstrong drain separators separate condensate efficiently by using the centrifugal force of steam or air created by introducing it into a specifically shaped path. Because of the simple structure of the drain separators, pressure loss is minimized, enabling clean, dry steam or air to be fed to equipment.

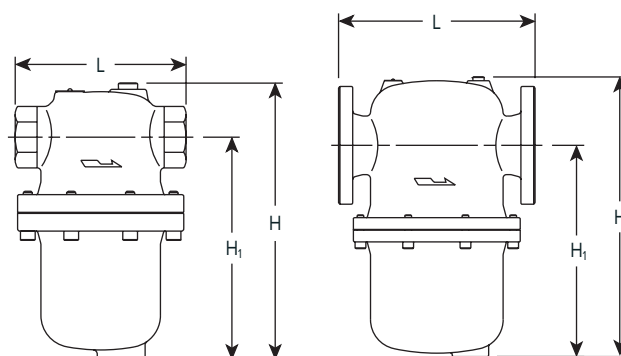
With correct sizing and proper drainage, the separators are designed to eliminate 98% of all entrained liquids and particles that are 10 microns and larger in size.

Features

- A cyclone structure maximizes liquid separation efficiency
- Pressure loss is extremely low
- No moving parts means no breakdowns

Operating Principle

When steam or air flow enters the drain separator, centrifugal force is generated in the fluid because of the device's internal structural design. The fluid drains along the wall because of the difference in specific gravity with steam or air, eventually striking the baffle. The baffle guides the fluid to the drain outlet and to the trap, which drains it. As a result, both small dirt particles and condensate are separated and removed from the system through the bottom drain.



DS-1

DS-2

DS Series Specifications

Model	Application	Maximum Pressure psig (barg)	Maximum Temp. °F (°C)	Materials	
				Body	Nozzle
DS-1	Steam Air	NPT 300 (20)	430 (221)	Ductile Iron ASTM A536	Cast Iron ASTM A48
DS-2		150 lb. Flanged 185 (13)			
		300 lb. Flanged 300 (20)			

For fully certified drawings refer to:

DS-1/ DS-2

CDY1102

DS Series Dimension and Weights

Model	Size	Face-to-Face "L"			H	H'	Drain	Weight		
		NPT	150#	300#				NPT	150#	300#
	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	lb (kg)	lb (kg)	lb (kg)
DS-1	1/2 (15)	5-15/16 (150)	—	—	9-9/16 (243)	7-5/8 (193)	3/4 (20)	16 (7.3)	—	—
	3/4 (20)	5-15/16 (150)	—	—	9-9/16 (243)	7-5/8 (193)	3/4 (20)	16 (7.3)	—	—
	1 (25)	5-15/16 (150)	—	—	9-9/16 (243)	7-5/8 (193)	3/4 (20)	16 (7.3)	—	—
	1-1/4 (32)	7-1/2 (190)	—	—	11-1/8 (243)	8-3/8 (213)	1 (25)	28 (12.7)	—	—
	1-1/2 (40)	7-1/2 (190)	—	—	11-1/8 (243)	8-3/8 (213)	1 (25)	28 (12.7)	—	—
	2 (50)	8-5/8 (219)	—	—	13-15/32 (243)	10-1/4 (260)	1 (25)	45 (20.5)	—	—
DS-2	2-1/2 (65)	—	11-1/2 (292)	11-15/16 (303)	16-15/32 (418)	12-3/8 (314)	1 (25)	—	45 (20.5)	77 (35)
	3 (80)	—	13-1/2 (343)	14-1/64 (356)	19 (484)	14-1/2 (361)	1-1/4 (32)	—	77 (35)	99 (45)
	4 (100)	—	15-13/16 (402)	16-7/16 (418)	23-3/8 (594)	17-1/2 (445)	1-1/4 (32)	—	99 (45)	143 (65)

Capacities for Steam Service

DS-1/DS-2 Series Steam Capacities (lb/hr)

Size	5 psig	10 psig	25 psig	50 psig	100 psig	150 psig	200 psig	250 psig	300 psig
1/2"	34	43	69	113	200	287	374	461	548
3/4"	60	75	121	198	351	503	656	809	962
1"	98	122	197	320	568	816	1 063	1 311	1 559
1-1/4"	169	212	340	555	983	1 412	1 840	2 269	2 698
1-1/2"	230	288	463	755	1 338	1 922	2 505	3 088	3 672
2"	379	475	763	1 244	2 206	3 167	4 129	5 090	6 052
2-1/2"	541	678	1 089	1 775	3 147	4 519	5 891	7 263	8 635
3"	835	1 046	1 682	2 741	4 860	6 978	9 096	11 215	13 333
4"	1 437	1 802	2 896	4 720	8 368	12 016	15 664	19 312	22 960

DS-1/DS-2 Series Steam Capacities (kg/hr)

Size	0.34 barg	0.69 barg	1.7 barg	3.4 barg	6.9 barg	10.3 barg	13.8 barg	17.2 barg	20.7 barg
1/2"	16	20	31	51	91	130	170	209	249
3/4"	27	34	55	90	159	228	298	367	436
1"	44	55	89	145	258	370	482	595	707
1-1/4"	77	96	154	252	446	640	835	1 029	1 224
1-1/2"	104	131	210	342	607	872	1 136	1 401	1 665
2"	172	215	346	564	1 001	1 437	1 873	2 309	2 745
2-1/2"	245	307	494	805	1 428	2 050	2 672	3 294	3 917
3"	379	475	763	1 243	2 204	3 165	4 126	5 087	6 048
4"	652	817	1 314	2 141	3 796	5 450	7 105	8 760	10 414