

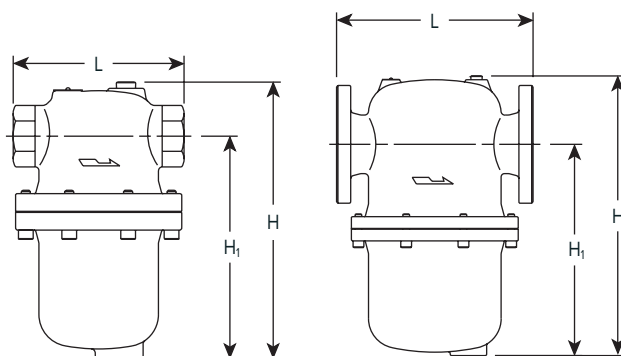


Armstrong® DS Series Drain Separators

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.



DS-1 / DS-3 / DS-4

DS-2 / DS-3 / DS-4

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.

For fully certified drawings refer to:

- DS-1 / DS-2** **CDY1102**
DS-3 **CD2126**
DS-4 **CD2127**

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)			
DS-3 DS-4		NPT 300 (20)	650 (343)	SS304 (DS-3)	Carbon Steel (DS-4)
		150 lb. Flanged 150 (10)	450 (232)		
		300 lb. Flanged 500 (34)	650 (343)		

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
DS-3	1/2	15	5-1/2	140	9	229	9	229	16	356	9	229	1	25	28	12.7	30	13.6	32	14.5
	3/4	20	5-1/2	140	9	229	9	229	16	356	9	229	1	25	28	12.7	30	13.6	32	14.5
	1	25	6-3/8	162	10-1/2	267	10-1/2	267	16	356	10-1/2	267	1	25	30	13.6	33	15	35	15.9
	1-1/4	32	6-3/8	162	10-1/2	267	10-1/2	267	16	356	10-1/2	267	1	25	32	14.5	35	15.9	37	16.8
	1-1/2	40	7-5/8	194	11-1/2	292	11-1/2	292	19	483	12-1/2	318	1	25	46	20.9	50	22.7	56	25.4
	2	50	7-7/8	200	11-1/2	292	11-1/2	292	19	483	12-1/2	318	1	25	51	23.1	55	24.9	59	26.8
DS-4	2-1/2	65	—	—	16	406	16	406	22	559	15	381	1	25	—	—	100	45.4	110	49.9
	3	80	—	—	18	457	18	457	26	660	18	457	1	25	—	—	140	63.5	150	68
	4	100	—	—	20	508	20	508	31	787	22	559	1-1/2	40	—	—	195	88.4	220	99.8
	6	150	—	—	24	610	24	610	41	1041	30	762	1-1/2	40	—	—	350	159	380	172
	8	200	—	—	28	711	28	711	50	1270	37	940	2	50	—	—	475	215	610	278
	10	250	—	—	34	864	34	864	70	1778	55	1397	2	50	—	—	780	354	1180	535
	12	300	—	—	38	965	38	965	75	1905	58	1473	2-1/2	65	—	—	940	426	1510	685

Ancillary Products

DS Series Drain Separators



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	1063	1311	1559
1-1/4"	169	212	340	555	983	1412	1840	2269	2698
1-1/2"	230	288	463	755	1338	1922	2505	3088	3672
2"	379	475	763	1244	2206	3167	4129	5090	6052
2-1/2"	541	678	1089	1775	3147	4519	5891	7263	8635
3"	835	1046	1682	2741	4860	6978	9096	11215	13333
4"	1437	1802	2896	4720	8368	12016	15664	19312	22960

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	1029	1224
1-1/2"	104	131	210	342	607	872	1136	1401	1665
2"	172	215	346	564	1001	1437	1873	2309	2745
2-1/2"	245	307	494	805	1428	2050	2672	3294	3917
3"	379	475	763	1243	2204	3165	4126	5087	6048
4"	652	817	1314	2141	3796	5450	7105	8760	10414

DS-3/DS-4 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"	190	225	295	390	550	675	780	860	1000
1-1/4"	320	345	460	620	860	1050	1125	1140	1160
1-1/2"	460	500	680	880	1225	1550	1800	2000	2250
2"	790	910	1050	1550	2200	2700	3150	3700	4000
2-1/2"	1075	1120	1585	2400	3400	4300	5000	5375	6400
3"	1950	2300	2950	3750	5250	6600	7600	9000	10000
4"	3250	3800	4975	6100	9000	11100	13000	11500	11650
5"	4975	5850	7650	9250	11400	11700	12000	23000	25000
6"	7700	8990	10100	10450	21500	26500	31000	36000	39000
8"	10750	11450	12000	23750	34000	43000	51000	58000	66000
10"	20000	22500	29500	37000	54500	68000	78000	90000	100000
12"	29500	34000	44000	54000	81000	100000	105000	112000	114000

DS-3/DS-4 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"	86	102	134	177	249	306	354	390	454
1-1/4"	145	156	209	281	390	476	510	517	526
1-1/2"	209	227	308	399	556	703	816	907	1021
2"	358	413	476	703	998	1225	1429	1678	1814
2-1/2"	488	508	719	1089	1542	1950	2268	2438	2903
3"	885	1043	1338	1701	2381	2994	3447	4082	4536
4"	1474	1724	2257	2767	4082	5035	5897	5216	5284
5"	2257	2654	3470	4196	5171	5307	5443	10433	11340
6"	3943	4078	4581	4740	9752	12020	14061	16329	17690
8"	4876	5194	5443	10773	15422	19504	23133	26308	29937
10"	9072	10206	13381	16783	24721	30844	35380	40823	45359
12"	13381	15422	19958	24494	36741	45359	47627	50802	51710

Designs, materials, weights and performance ratings are approximate and subject to change without notice. Visit armstronginternational.com for up-to-date information.