



shopvalves.com Fixed Pivot and Snap Action Drain Traps

For Loads to 3,900 lb/hr (1,769 kg/hr)...Pressures to 1,000 psig (69 bar)

Continuous Flow or On-Off Float Type Drain Traps

Armstrong's line of fixed lever and snap action drain traps includes two basic models available in cast iron and forged steel. The floats are light enough to handle light liquids.

No. 21—A small, high-quality, economical drain trap for use on drainage jobs where dirt and oil are not encountered. It employs a single lever with a fixed pivot.

No. 21-312—Forged steel version of the No. 21 with larger float and higher leverage.

No. 71-A—Wide open, tight-shut drain trap for use where fine dirt and grit may be present or where liquid load is light. A flat spring in the leverage system holds the valve closed until the trap body is nearly full of water. Then it snaps open, washing dirt through. When the trap body is nearly empty, the spring snaps the valve shut.

No. 71-315—Forged steel version of No. 71-A.

CAUTION: Ball float drain traps are not recommended where heavy oil, sludge or considerable dirt are encountered in lines. Under these circumstances use Armstrong inverted bucket BVSU traps.

Table LD-23. Maximum Operating Pressures for Handling Different Specific Gravity With Orifices Available in Fixed Lever and Snap Action Drain Traps
(See pages LD-29 and LD-30.)

Model No.		Sp. Grav.	1.00		.95		.90		.85		.80		.75		.70		.65		.60		.55		.50	
		Orifice size (in)	Maximum Operating Pressure psig (bar) at 100°F (38°C)																					
			psig	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig
21		1/4	22	1.5	20	1.4	18	1.3	16	1.1	15	1.0	13	0.9	11	0.8	10	0.7	8	0.5	6	0.4	4	0.3
		7/32	28	1.9	26	1.8	24	1.6	21	1.5	19	1.0	17	1.2	15	1.0	12	0.9	10	0.7	8	0.6	6	0.4
		3/16	38	2.6	35	2.4	32	2.2	29	2.0	26	1.8	23	1.6	20	1.4	17	1.2	14	1.0	11	0.7	8	0.5
		5/32	54	3.8	50	3.5	46	3.2	41	2.9	37	2.6	33	2.3	29	2.0	24	1.7	20	1.4	16	1.1	11	0.8
		9/64	67	4.6	62	4.2	56	3.9	51	3.5	46	3.1	40	2.8	35	2.4	30	2.1	24	1.7	19	1.3	14	1.0
		1/8	84	5.8	78	5.4	71	4.9	64	4.4	58	4.0	51	3.5	44	3.0	37	2.6	31	2.1	24	1.7	17	1.2
		3/32	148	10.2	136	9.4	124	8.6	112	7.7	101	6.9	89	6.1	77	5.3	66	4.5	54	3.7	42	2.9	30	2.1
		5/64	210	14	193	13	176	12	160	11	143	9.9	126	8.7	110	7.6	93	6.4	77	5.3	60	4.1	43	3.0
		1/16	250	17	250	17	250	17	245	17	220	15	194	13	168	12	143	9.9	117	8.1	92	6.3	66	4.6
21-312*	3-3/8 oz (96 g) Float	1/4	42	2.9	39	2.7	36	2.5	33	2.3	30	2.1	28	1.9	25	1.7	22	1.5	19	1.3	16	1.1	13	0.9
		7/32	54	3.8	51	3.5	47	3.2	43	3.0	40	2.7	36	2.5	32	2.2	28	2.0	25	1.7	21	1.5	17	1.2
		3/16	74	5.1	69	4.7	64	4.4	59	4.0	54	3.7	49	3.4	44	3.0	39	2.7	34	2.3	28	2.0	23	1.6
		5/32	200	14	197	14	182	13	168	12	153	10.6	139	9.6	125	8.6	110	7.6	96	6.6	82	5.6	67	4.6
	4-1/2 oz (128 g) Float	9/64	229	16	211	15	200	14	200	14	189	13	171	12	153	10.6	136	9.4	118	8.1	100	6.9	83	5.7
		1/8	288	20	266	18	243	17	221	15	200	14	200	14	193	13	171	12	148	10.2	126	8.7	104	7.2
		3/32	500	34	465	32	426	29	387	27	348	24	309	21	270	19	231	16	200	14	200	14	182	13
	6 oz (170 g) Float	5/64	589	41	533	37	500	34	500	34	495	34	440	30	384	27	329	23	274	19	218	15	200	14
		1/16	600	41	600	41	600	41	600	41	563	39	500	34	500	34	500	34	420	29	335	23	250	17
71-A & 71-315 **		1/4	10	0.7	10	0.7	10	0.7	10	0.7	10	0.7	10	0.7	10	0.7	10	0.7	—	—	—	—	—	—
		3/16	20	1.4	20	1.4	20	1.4	20	1.4	20	1.4	20	1.4	20	1.4	20	1.4	—	—	—	—	—	—
		1/8	100	6.9	100	6.9	100	6.9	100	6.9	100	6.9	100	6.9	100	6.9	100	6.9	—	—	—	—	—	—
		7/64	200	14	200	14	200	14	200	14	200	14	200	14	200	14	200	14	—	—	—	—	—	—
71-A		5/64	250	17	250	17	250	17	250	17	—	—	—	—	—	—	—	—	—	—	—	—	—	
71-315		5/64	500	35	500	35	500	35	500	35	—	—	—	—	—	—	—	—	—	—	—	—	—	
		1/16	1,000	69	1,000	69	1,000	69	1,000	69	—	—	—	—	—	—	—	—	—	—	—	—	—	

NOTE: If actual specific gravity falls between those shown in above table, use next lower. For example, if actual gravity is 0.73, use 0.70 gravity data.

*5/32" orifice (and smaller) utilizes higher leverage mechanism designated 21-312V.

**Use 6 1/4 oz. float for 0.85 - 1.0 S.G. Use 3 3/8 oz. float for 0.65 - 0.80 S.G.

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Physical Data

Table LD-24. Armstrong Fixed Lever and Snap Action Drain Traps								
Model No.	Cast Iron				Forged Steel			
	21†		71-A*		21-312†		71-315*	
Pipe Connections	in	mm	in	mm	in	mm	in	mm
"A"	1/2, 3/4	15, 20	3/4, 1	20, 25	1/2, 3/4, 1	15, 20, 25	3/4, 1, 1-1/4, 1-1/2	20, 25, 32, 40
"B"	6-3/16	157	8-1/2	216	6-3/4	171	9-3/4	248
"D"	5-1/4	133	10-3/4	273	10-3/16	259	15-5/8	397
"K"	—	—	4-1/4	108	5-9/16	141	7-13/16	198
"L"	1-5/16	33	—	—	1-1/4	32	—	—
"L"	—	—	3-1/2	89	3-5/16	84	4-5/8	117
Weight, lbs (kg)	8 (4)		29 (13)		30 (14)		92 (42)	
Maximum Allowable Pressure (Vessel Design)	250 psig @ 450°F (17 bar @ 232°C)				600 psig @ 100°F (41 bar @ 38°C) 500 psig @ 750°F (34 bar @ 400°C)		1,000 psig @ 100°F (69 bar @ 38°C) 600 psig @ 750°F (41 bar @ 400°C)	

† Cast 316 stainless steel body and cap with all stainless steel internals available. Aluminum body and cap available for Model 21 only. Consult factory.

*Snap action drain traps should not be used where load exceeds 120 lb/hr (54 kg/hr). Use on greater loads shortens spring life.

List of Materials

Table LD-25.					
Model No.	Valve & Seat	Leverage System	Float	Body & Cap	Gasket
21	Stainless Steel			Cast Iron ASTM A48 Class 30	Compressed Asbestos-free
71-A				Forged Steel* ASTM A105	
21-312 71-315					

*No. 71-315 cap is cast steel.

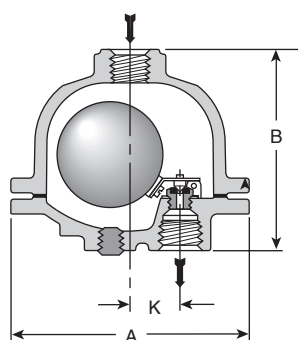


Figure LD-38.
No. 21 cast iron fixed lever drain trap.

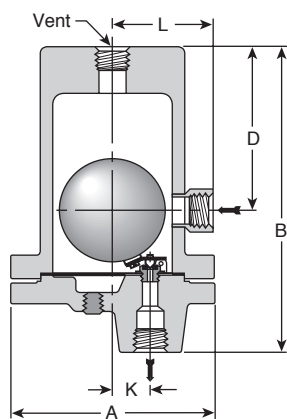


Figure LD-39.
No. 21-312 forged steel fixed lever drain trap.

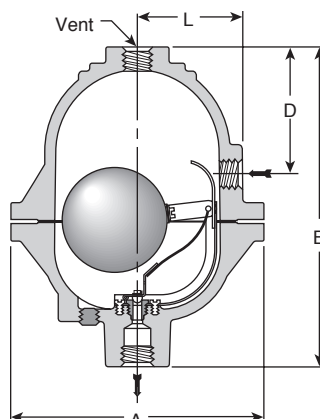


Figure LD-40.
No. 71-A cast iron snap action drain trap.

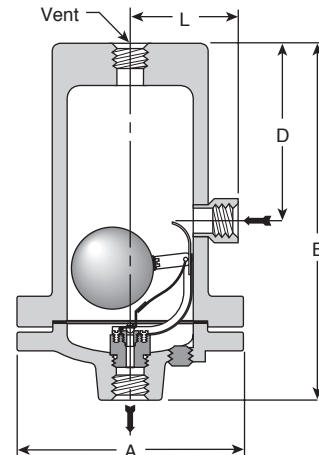


Figure LD-41.
No. 71-315 forged steel snap action drain trap.

For a fully detailed certified drawing, refer to list below:

No. 21 CD #1037 No. 71-A CD #1038
No. 21-312 CD #1106 No. 71-315 CD #1107

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