



Capsule Hold Up Volume

During filtration, all systems retain some liquid that cannot be recovered. This is called “hold-up” volume. The larger the hold-up volume, the greater the loss of media and reagents. However, the Upstream “Hold up” Volume can be recovered by pumping air through the vent. A hefty percentage of the upstream volume can be collected from the process. Downstream hold up volume is harder to recover. One of the conventional ways is to drip it out from the filter outlet.

International Filter products offers filters with low retention rates that reduces the hold-up volume significantly. The approximate hold up volume in different filters are mentioned in the table below:

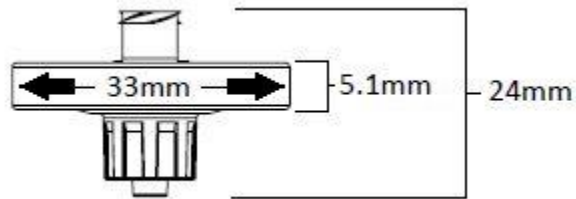
Hold Up Volume				
Filter Type	Connection	Upstream Volume (ml)	Downstream Volume (ml)	Total (ml)
D13	LFLM	0.25	0.23	0.48
D25	LFLM	0.7	0.57	1.27
D40	LFLM	1.34	0.95	2.29
D50	LFLM	2.04	1.25	3.29
D65	LFLM	6.77	4.76	11.53
D90	LFLM	11.27	10.85	22.12
JKP	LFLM	7.7	0.9	8.6
JKP	MTMT	9.4	1.6	11
MKP	LFLM	36	11	47
MKP	MTMT	40	15	55
SKL - H	LFLM	66	7.7	73.7
SKL - H	2HS2HS	71	9.4	80.4
SKL - H	TCTC	85	23	108
SKL - S	LFLM	98	11	109
SKL - S	2HS2HS	105	15	120
SKL - S	TCTC	119	33	152
SKL - L	LFLM	128	20	148
SKL - L	2HS2HS	135	27	162
SKL - L	TCTC	157	64	221
SKL - E	LFLM	225	28	253
SKL - E	2HS2HS	235	40	275
SKL - E	TCTC	276	97	373
SKL - K	LFLM	420	35	455
SKL - K	2HS2HS	440	45	485
SKL - K	TCTC	517	121	638

Note: Fittings, membrane, and specific fluid (viscosity, surface tension, etc.) would affect the hold-up volume significantly.

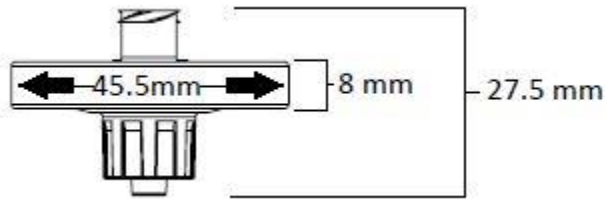


The detail and dimension for different fitting options are mentioned below:

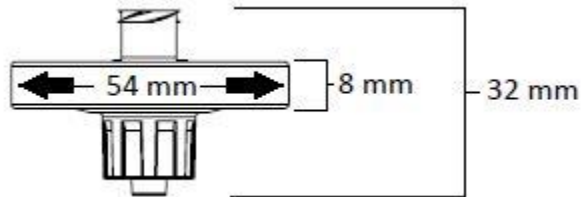
Disc Filters with Luer Loc Fittings



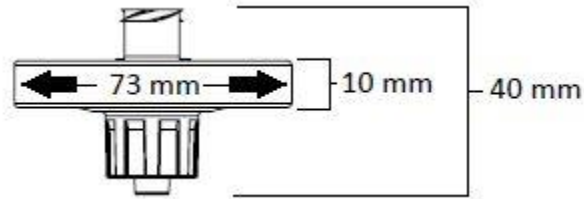
D25 Disc with Luer Loc Female Inlet & Luer Loc Male Outlet



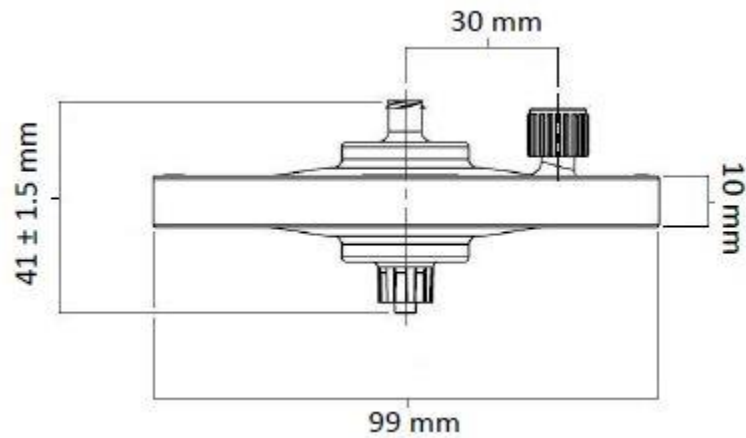
D40 Disc with Luer Loc Female Inlet & Luer Loc Male Outlet



D50 Disc with Luer Loc Female Inlet & Luer Loc Male Outlet



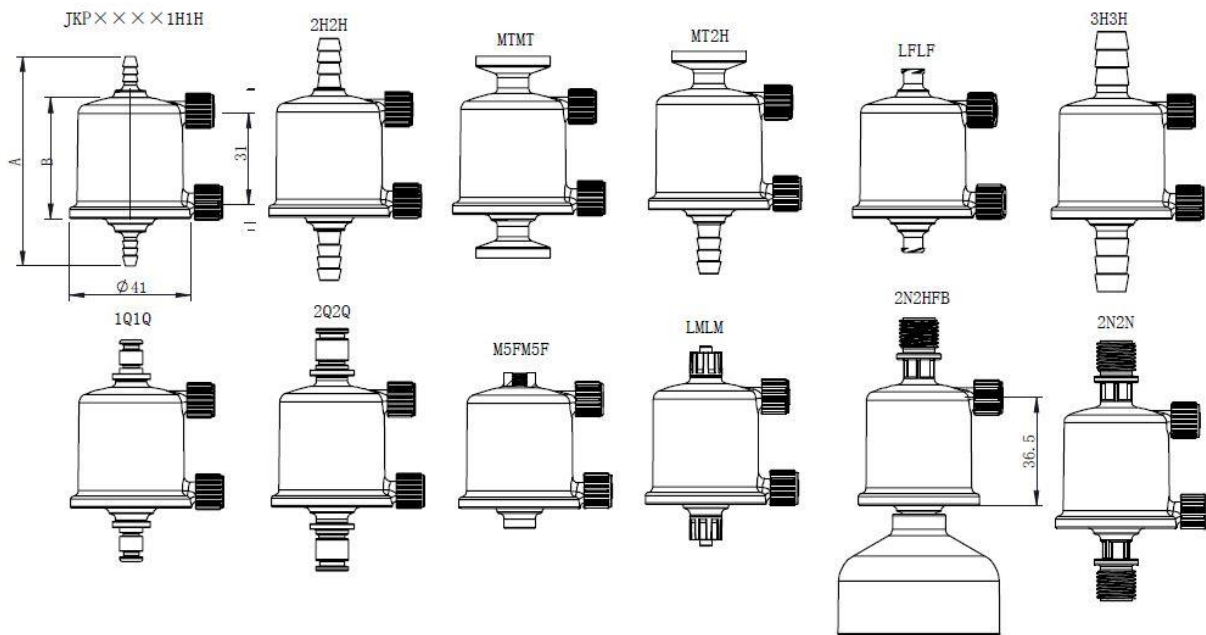
D65 Disc with Luer Loc Female Inlet & Luer Loc Male Outlet



D90 Disc with Luer Loc Female Inlet & Luer Loc Male Outlet



JKP Series Capsule Fitting Options



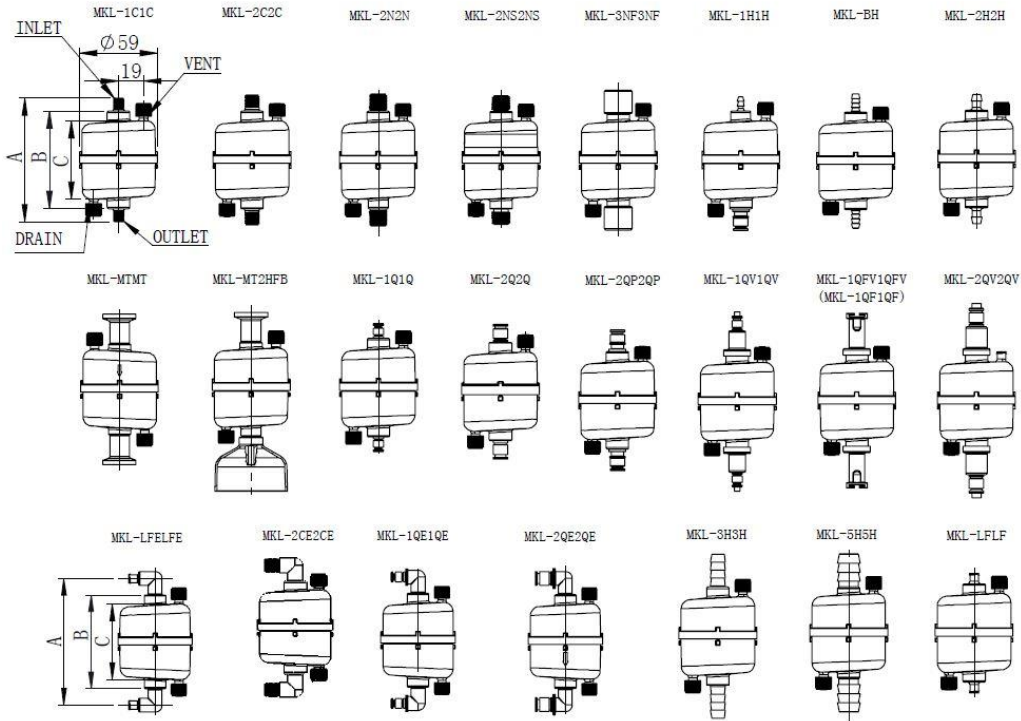
Code name	Inlet/Outlet	Vent/Drain	Size (±1.5mm)	
			A	B
JKP××××1H1H	1/8" Hose barbs	Female Luer Lock	71	41
JKP××××2H2H	1/4" Hose barbs	Female Luer Lock	82	41
JKP××××MTMT	0.5" Tri clamps	Female Luer Lock	69	41
JKP××××MT2H	0.5" Tri clamps/1/4" Hose barbs	Female Luer Lock	75	41
JKP××××LFLF	Luer Lock Female	Female Luer Lock	62	41
JKP××××3H3H	3/8" Hose barbs	Female Luer Lock	88	41
JKP××××1Q1Q	1/4" Male Quick Coupling	Female Luer Lock	75	41
JKP××××2Q2Q	1/8" Male Quick Coupling	Female Luer Lock	82	41
JKP××××M5FM5F	M5	Female Luer Lock	53	41
JKP××××LMLM	Luer Lock Male	Female Luer Lock	68	41
JKP××××2N2HFB	1/4"NPT MAIL/1/4" Hose barbs	Female Luer Lock	108	41
JKP××××2N2N	1/4"NPT MAIL/1/4" NPT MAIL	Female Luer Lock	88	41



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MKP (MKL Series Fitting Options and Sizes)



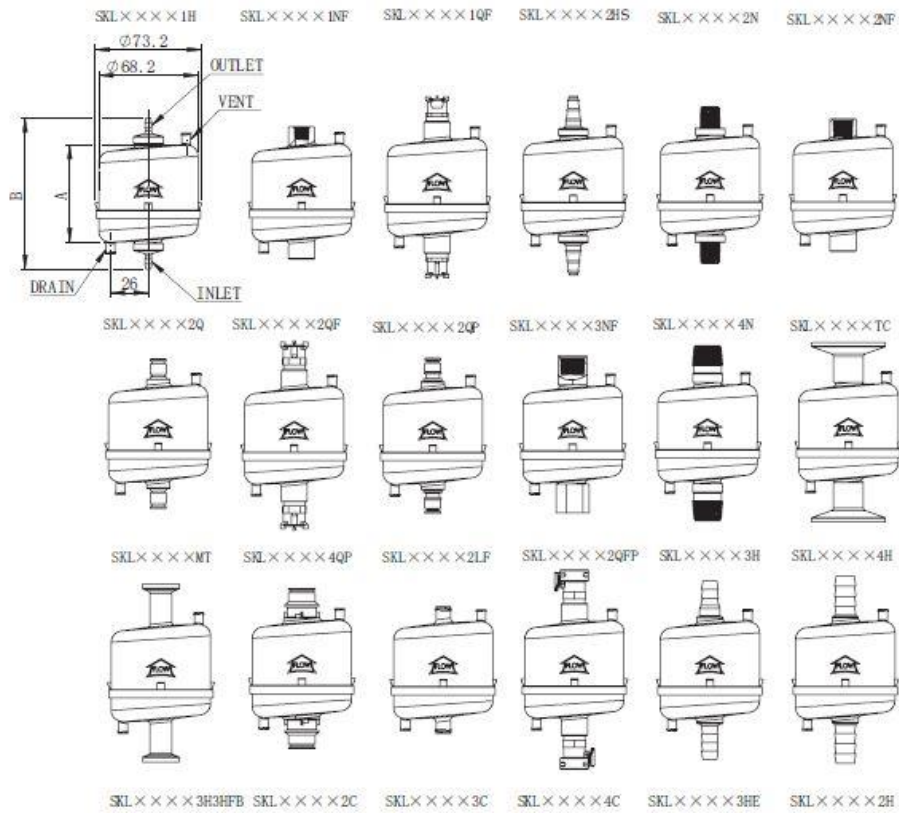
Code name	Inlet/Outlet	Vent/Drain	Size(±1.5)		
			A	B	C
MKL-1C1C	1/8" Compression	Female Luer Lock	94	74	60
MKL-2C2C	1/4" Compression	Female Luer Lock	99	74	60
MKL-2N2N	1/4" MNPT	Female Luer Lock	100	74	60
MKL-2NS2NS	1/4" NPTS	Female Luer Lock	92	74	60
MKL-3NF3NF	3/8" FNPT	Female Luer Lock	106	74	60
MKL-1H1H	1/8" Hose barbs	Female Luer Lock	96	74	60
MKL-BBH	3/16" Hose Barbs	Female Luer Lock	102	74	60
MKL-2H2H	1/4" Hose barbs	Female Luer Lock	98	74	60
MKL-3H3H	3/8" Hose barbs	Female Luer Lock	124	74	60
MKL-5H5H	9/16" Hose barbs	Female Luer Lock	120	74	60
MKL-LFLF	Female Luer Lock	Female Luer Lock	90	74	60
MKL-MTMT	0.5" Tri clamps	Female Luer Lock	114	74	60
MKL-MT2HFB	0.5" Tri clamps/1/4Hose barbs	Female Luer Lock	135	74	60
MKL-1Q1Q	1/8" Male Quick Coupling	Female Luer Lock	97	74	60
MKL-2Q2Q	1/4" Male Quick Coupling	Female Luer Lock	102	74	60
MKL-2QP2QP	1/4" Male Quick Compling Plastics	Female Luer Lock	107	74	60
MKL-1QV1QV	1/8" Male Quick Coupling	Female Luer Lock	133	74	60
MKL-1QFV1QFV	1/8" Female Quick Connect	Female Luer Lock	120	74	60
MKL-2QV2QV	1/4" Male Quick Coupling	Female Luer Lock	145	74	60
MKL-2QFV2QFV	1/4" Female Quick Connect	Female Luer Lock	109	74	60
MKL-2QF2QF	1/4" Female Quick Connect	Female Luer Lock	100	74	60
MKL-LMLM	Luer Lock Male	Female Luer Lock	94	74	60
MKL-LFELFE	Female Luer Lock	Female Luer Lock	100	74	60
MKL-2CE2CE	1/4" Compression	Female Luer Lock	100	74	60
MKL-1QE1QE	1/8" Male Quick Coupling	Female Luer Lock	100	74	60
MKL-2QE2QE	1/4" Male Quick Coupling	Female Luer Lock	100	74	60



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SKL Series Capsule Fitting options and Sizes



P/N	Inlet/Outlet	Vent/Drain	Size (±2mm)							
			SKL-H(1.5")		SKL-S(2.5")		SKL-L(5")		SKL-K(10")	
			A	B	A	B	A	B	A	B
SKLxxxx1H	1/8" Hose barbs	Female Luer Lock	68	106	98	136	153	190	281	318
SKLxxxx1NF	1/8" FNPT	Female Luer Lock	68	93	98	123	153	177	281	305
SKLxxxx1QF	1/8" Female Quick Coupling	Female Luer Lock	68	127	98	157	153	211	281	339
SKLxxxx2HS	1/4" to 3/8" Hose barbs	Female Luer Lock	68	125	98	155	153	209	281	337
SKLxxxx2N	1/4" MNPT	Female Luer Lock	68	110	98	140	153	194	281	322
SKLxxxx2NF	1/4" FNPT	Female Luer Lock	68	93	98	123	153	177	281	305
SKLxxxx2Q	1/4" Male Quick Coupling	Female Luer Lock	68	105	98	135	153	189	281	317
SKLxxxx2QF	1/4" Female Quick Coupling	Female Luer Lock	68	131	98	161	153	215	281	343
SKLxxxx2QP	1/4" Male Quick Coupling-P	Female Luer Lock	68	109	98	139	153	193	281	321
SKLxxxx3NF	3/8" FNPT	Female Luer Lock	68	110	98	140	153	194	281	320
SKLxxxx4N	1/2" MNPT	Female Luer Lock	68	123	98	153	153	207	281	335
SKLxxxxTC	1-1/2" Tri-clamp	Female Luer Lock	68	126	98	156	153	210	281	338
SKLxxxxMT	0.5" Tri-clamp	Female Luer Lock	68	125	98	155	153	209	281	337
SKLxxxx4QP	1/2" Male Quick Coupling-P	Female Luer Lock	68	113	98	143	153	197	281	325
SKLxxxx2LF	2L Female Luer Lock	Female Luer Lock	68	89	98	119	153	173	281	301
SKLxxxx2QFP	1/4" Female Quick Coupling-P	Female Luer Lock	68	140	98	170	153	224	281	352
SKLxxxx3H3HFB	3/8" Hose barbs	Female Luer Lock	68	125	98	155	153	209	281	337
SKLxxxx4H	1/2" Hose barbs	Female Luer Lock	68	131	98	161	153	215	281	343
SKLxxxx2C	1/4" Compression	1/4" Compression	68	95	98	125	153	179	281	308
SKLxxxx3C	3/8" Compression	1/4" Compression	68	95	98	125	153	179	281	308
SKLxxxx4C	1/2" Compression	1/4" Compression	68	101	98	131	153	185	281	314
SKLxxxx3HE	3/8" Hose barb-elbow	Female Luer Lock	68	102	98	132	153	186	281	315
SKLxxxx2H	1/4" to 1/2" Hose barbs	Female Luer Lock	68	125	98	155	153	209	281	338
SKLxxxx3H	3/8" Hose barbs	Female Luer Lock	68	125	98	155	153	209	281	337