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Simplex Basket Strainers

1/2" to 8" - PVC, Corzan® CPVC and Eastar® Clear Polyester



Features

- External Body Threads
- Low Pressure Drop
- Wide Choice of Baskets
- In-line or Loop Piping Design
- True Union Connections
- Ergonomic Hand Removable Cover
- FPM Seals
- Integral, Flat Mounting Base
- Hand Removable Vent On Cover
- Hand Removable Drain On Body
- Liquid Displacing Cover

Options

- Stainless Steel Mesh Strainer Baskets
- EPDM Seals
- Pressure Differential Gauge and Switch

Protect System Components

When pipeline system components require protection from dirt and debris and the line can be shut down for basket cleaning, a Hayward All Plastic Simplex Basket Strainer is the ideal choice. Unwanted particles are removed as the process media passes through a perforated strainer basket contained inside the strainer body. The basket traps the unwanted material while allowing the process media to flow freely.

Easy Basket Cleaning

Changing or cleaning the strainer basket is quick and easy. The hand removable, spin-off cover features two angled handles for easy access to the strainer basket. The housing features external cover threads that do not contact the process media and never need cleaning. Venting and draining are made possible by two hand removable, threaded plugs, one on the top of the cover and the other on the housing side.

Choice of Piping Connections

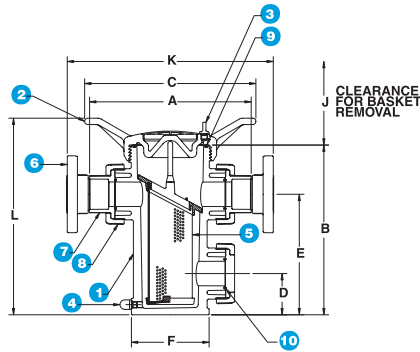
Hayward Simplex Basket Strainers can be installed either in-line or with loop piping configurations. This is made possible by a unique design that incorporates three piping connections on the strainer body that are used as inlets and outlets. The unused connection is plugged using a blind fitting (included). True union connections make it possible to remove the strainer from the piping system without disassembling the piping connections.

Wide Range of Strainer Baskets

Plastic baskets in perforation sizes from 1/32" to 3/16" are available. Stainless steel perforated baskets are available from 1/2" to 1/32". Mesh stainless steel baskets for very fine straining applications are available in sizes from 20 mesh down to 325 mesh.



Technical Information



Parts List Simplex Basket Strainer

1. Body
2. Cover
3. Vent Plug
4. Drain Plug
5. Basket
6. Flange
7. End Connector
8. Nut
9. Cover O-Ring
10. End Connector O-Ring

Dimensions - Inches / Millimeters

Size											WEIGHT (lb/kg)		VOLUME
	A	B	C	D	E	F	J	K	L	Skt/Thd	Flange	GAL / LT	
1/2"	8.64 / 219	9.63 / 245	11.0 / 279	2.25 / 57	6.75 / 171	4.31 / 109	8.00 / 203	10.77 / 274	10.77 / 274	8.0 / 3.4	9.0 / 4	0.20 / 0.8	
3/4"	8.64 / 219	9.63 / 245	11.0 / 279	2.25 / 57	6.75 / 171	4.31 / 109	8.00 / 203	11.02 / 280	10.77 / 274	8.0 / 3.4	9.0 / 4	0.20 / 0.8	
1"	8.64 / 219	9.63 / 245	11.0 / 279	2.25 / 57	6.75 / 171	4.31 / 109	8.00 / 203	11.64 / 296	10.77 / 274	8.0 / 3.4	9.0 / 4	0.20 / 0.8	
1-1/4"	12.75 / 324	13.38 / 340	13.5 / 343	3.25 / 83	9.5 / 241	6.13 / 156	12.86 / 327	15.63 / 397	10.77 / 274	14.0 / 6.4	16.5 / 7.5	0.70 / 2.7	
1-1/2"	12.69 / 322	13.38 / 340	13.5 / 343	3.25 / 83	9.5 / 241	6.13 / 156	12.86 / 327	15.89 / 404	10.77 / 274	14.0 / 6.4	16.5 / 7.5	0.70 / 2.7	
2"	12.75 / 324	13.38 / 340	13.5 / 343	3.25 / 83	9.5 / 241	6.13 / 156	12.86 / 327	16.29 / 414	10.77 / 274	14.0 / 6.4	16.5 / 7.5	0.70 / 2.7	
2-1/2"	16.52 / 384	19.83 / 504	16.0 / 406	4.83 / 123	14.83 / 377	7.25 / 184	17.25 / 438	21.02 / 534	10.77 / 274	28.0 / 13	33.0 / 15	2.80 / 10.6	
3"	16.40 / 384	19.83 / 504	16.0 / 406	4.83 / 123	14.83 / 377	7.25 / 184	17.25 / 438	20.36 / 517	10.77 / 274	28.0 / 13	33.5 / 15	2.80 / 10.6	
4"	17.27 / 384	19.83 / 504	16.0 / 406	4.83 / 123	14.83 / 377	7.25 / 184	17.25 / 438	22.13 / 562	10.77 / 274	28.0 / 13	37.0 / 17	2.80 / 10.6	
6"	n/a	34.28 / 871	18.0 / 457	10.66 / 271	27.19 / 691	11.75 / 298	21.80 / 554	22.42 / 569	10.77 / 274	n/a	60.0 / 27	6.8 / 25.7	
8"	n/a	34.28 / 871	18.0 / 457	10.66 / 271	27.19 / 691	11.75 / 298	28.75 / 730	25.19 / 640	10.77 / 274	n/a	80.0 / 36	9.0 / 34.1	

Cv Factors

Size	Factor	Size	Factor
1/2"	15	2-1/2"	290
3/4"	18	3"	300
1"	20	4"	350
1-1/4"	55	6"	1000
1-1/2"	58	8"	750
2"	60		

The above Cv Factors were determined using a 1/16" perforated plastic basket in 1/2" through 4" strainers and a 5/32" perforated stainless steel basket in 6" and 8" strainers. For other size basket perforations, multiply by the correction factor in the above Correction Factor charts.

Pressure Drop Calculations

Basket Perforation Correction Factors

For 1/2" to 4" Strainers

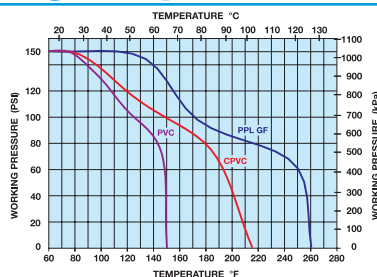
Plastic Baskets		Stainless Steel Baskets	
1/32"	1.05	1/32"	.82
1/16"	1.00	3/64"	.63
1/8"	.58	1/16"	.74
3/16"	.46	5/64"	.50
		7/64"	.51
		1/8"	.58
		5/32"	.37
		3/16"	.46
		1/4"	.58
		3/8"	.45
		1/2"	.48
		20 Mesh	.79
		40 Mesh	1.01
		60 Mesh	1.20
		80 Mesh	1.16
		100 Mesh	1.20
		200 Mesh	1.09
		325 Mesh	1.22

For 6" to 8" Strainers

Plastic Baskets		Stainless Steel Baskets	
1/8"	2.00	1/32"	2.25
3/16"	1.50	3/64"	1.73
		1/16"	2.03
		5/64"	1.37
		7/64"	1.40
		1/8"	1.58
		5/32"	1.00
		3/16"	1.26
		1/4"	1.58
		3/8"	1.24
		1/2"	1.31
		20 Mesh	2.16
		40 Mesh	2.79
		60 Mesh	3.28
		80 Mesh	3.18
		100 Mesh	3.30
		200 Mesh	2.98
		325 Mesh	3.33

The pressure drop across the strainer, for water or fluids with a similar viscosity, can be calculated using the formula at the right: $\Delta P = \left[\frac{Q}{Cv} \right]^2$ Where ΔP = Pressure Drop, Q = Flow in GPM, Cv = Flow Coefficient

Operating Temperature/Pressure



Selection Chart

Size	Material	End Connection	Seal*	Rating
1/2" to 4"	PVC, CPVC	Thd, Skt, Flg	FPM	150 PSI @ 70°F
1/2" to 2"	EASTAR®	Thd, Skt, Flg	FPM	100 PSI @ 70°F
6" to 8"	PVC, CPVC	Flg	FPM	150 PSI @ 70°F

*EPDM seals POA.

Basket Selection

- The 1/2" to 1" strainers can be ordered with either a 1/32" or 1/16" perf plastic basket.
- The 1 1/2" and 2" with a 1/32", 1/16", 1/8", or 3/16" perf plastic basket.
- The 3" and 4" with a 1/16", 1/8" or 3/16" perf plastic basket.
- The 6" and 8" with a 1/8" or 3/16" perf plastic basket.
- Stainless steel baskets for all size strainers are available in these perfs: 1/32", 3/64", 1/16", 5/64", 7/64", 1/8", 5/32", 3/16", 1/4", 3/8", 1/2"; and in mesh sizes: 20, 40, 60, 80, 100, 200, 325



Basket Strainer Technical Information

Selection Criteria

The first consideration when selecting a Hayward basket strainer is the amount of free open area. This is the ratio of the open area through the strainer basket to the cross sectional area of the pipe. A well-designed basket strainer should have an open area ratio of at least 4 to 1. Anything less may cause excessive pressure drop. The area is calculated with a clean basket – and as the basket begins to clog, the ratio will drop. Unless there is a wide safety margin, the area through the basket may quickly become smaller than the pipe area. This will reduce flow through the strainer and necessitate very frequent cleaning. A small open area ratio also means the holding capacity of the basket is small (an important consideration if there is a lot of solid material to be removed.)

Second, is ease of basket removal. Since a basket strainer is used where cleaning may occur often, it stands to reason that the basket should be able to be removed and replaced as simply as possible. Hayward simplex and duplex strainers feature hand removable, precision machined, threaded covers which can be quickly loosened or tightened by hand without the use of tools.

Another item to look for in selecting a strainer is compactness of design. Is the strainer unnecessarily bulky or tall? In many industrial areas, space is at a premium and the less room a strainer takes the better.

Lastly, a wide variety of basket perforation sizes should be available. This is necessary to cope with the great range of particle sizes which the strainer may be called upon to remove.

Selection and Sizing

Selecting the proper size basket strainer for a particular application is extremely important for optimum performance of the strainer. Factors such as viscosity, specific gravity, and mesh lining size all influence pressure drop of flow through the strainer. As a general rule of thumb, a pressure of greater than 2 PSI through a clean strainer usually indicates the strainer selected is too small for the intended application.

In some cases, the strainer size may not always be the same size as the pipe diameter. For example, the pressure drop of highly viscous liquids passing through a mesh basket can cut flow considerably making it necessary to use a strainer several times larger than pipeline to ensure adequate flow.

Likewise, if an unusually large amount of material needs to be taken out of the process flows, a larger strainer or multiple strainer should be specified. By using two strainers in a series, the first with large openings designed to catch larger particles and the second with a fine mesh lining to trap smaller material, the load is spread over two strainers and time between maintenance for cleaning is also extended.

While the initial investment is slightly more for a larger strainer or multiple strainers, there are no added long term operating costs since basket strainers have no parts to wear out and last indefinitely.

Proper Basket Selection

The question of which perforation or mesh lining size to use comes up regularly. Here again, the basic rule is to use the coarsest size which will strain out the product to be removed. Using a finer mesh than needed will only result in premature clogging. When in doubt about which of two basket screens to use, it is best to choose the larger. As a rule of thumb, size the baskets for one half the particle size to be removed.

Basket Sizes Offered for Hayward Simplex and Duplex Plastic Basket Strainers

Pressure Drop Correction Factors for Various Size Basket Screens

PLASTIC		STAINLESS STEEL		STAINLESS STEEL	
Perforation	Correction Factor	Perforation	Correction Factor	Mesh	Correction Factor
1/32"	1.05	1/32"	0.82	20	0.79
1/16"	1.00	3/64"	0.63	40	1.01
1/8"	0.58	1/16"	0.74	60	1.20
3/16"	0.46	5/64"	0.50	80	1.16
		7/64"	0.51	100	1.20
		1/8"	0.58	200	1.09
		5/32"	0.37	325	1.22
		3/16"	0.46		
		1/4"	0.58		
		3/8"	0.45		
		1/2"	0.48		

Comparative Particle Size

Mesh	Inches	Microns	Mesh	Inches	Microns	Mesh	Inches	Microns
3250	0.0002	6	130	0.0043	110	24	0.028	718
1600	0.0005	14	120	0.0046	118	20	0.034	872
750	0.0010	25	110	0.0051	131	18	0.039	1000
325	0.0016	40	100	0.0055	149	16	0.045	1154
250	0.0024	62	90	0.0061	156	14	0.051	1308
200	0.0029	74	80	0.0070	179	12	0.060	1538
180	0.0033	85	70	0.0078	200	10	0.075	1923
170	0.0035	90	60	0.0092	238	8	0.097	2488
160	0.0038	97	50	0.0117	300	6	0.132	3385
150	0.0041	100	40	0.015	385	5	0.159	4077
140	0.0042	108	30	0.020	513	4	0.203	5205

Note: Pressure Drop Correction Factors for various size basket screens may be applied to data for 1/16" perforation plastic baskets. Simply multiply the pressure drop shown in the 1/16" basket chart by the appropriate correction factor.

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