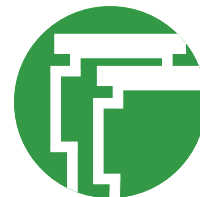


SERIES 530/531 CAST DUPLEX STRAINER



The Series 530/531 Cast Duplex Strainer provides continued and dependable removal of unwanted solids from fluids. This strainer serves to protect valves, pumps, meters, spray nozzles, and various other equipment. It is often used to ensure product purity in such industries as gas, petroleum, paper, biofuels, and power plants. A duplex strainer is used in applications where fluid flow cannot be interrupted when the basket is removed for cleaning. It maintains a continuous flow by utilizing two separate basket chambers with integral valves to direct flow into one of the basket chambers.



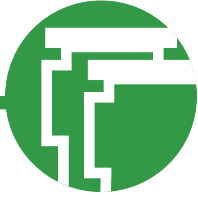
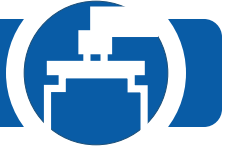
The Series 530/531 is a compact unit, in-line inlet/outlet connections, which enables easy piping and variable strainer placement. Chamber change over is accomplished quickly and easily. A single lever controls the positive sealing butterfly valves, changing the fluid flow.

Built as a standard model unit, the Series 530/531 is also flexible to meet the individual needs of the customer, and varying application requirements. It is available in a cast iron, cast steel, and cast stainless steel and its design is superior for corrosive, hazardous, or low specific gravity fluid applications.



STANDARD DESIGN

- Cast strainer body with quick opening style cover
- 316 stainless steel basket with perforated (1/32", 1/16", 1/8", 5/32" openings)
- Butterfly valve with cast iron body Buna-N seats, ductile iron disc, and stainless steel stem (Series 530 only)
- Check valves (Series 530 only)
- Lever operated valves with interconnected linkage (Series 530 only)
- 3-way Diverter valves (Series 531 only)
- Lever operated valves (Series 531 only)
- Design pressure 150 psig @ 150°F
- Complete package is hydrostatically tested
- Viton O-ring cover seal



SERIES 530/531 CAST DUPLEX STRAINER

STANDARD DESIGN FEATURES

- Compact design allows for low installation cost.
- Efficient design requiring few moving parts and low maintenance costs.
- Simple, easy, and effective switching of flow with positive shut-off.

OPTIONS AVAILABLE

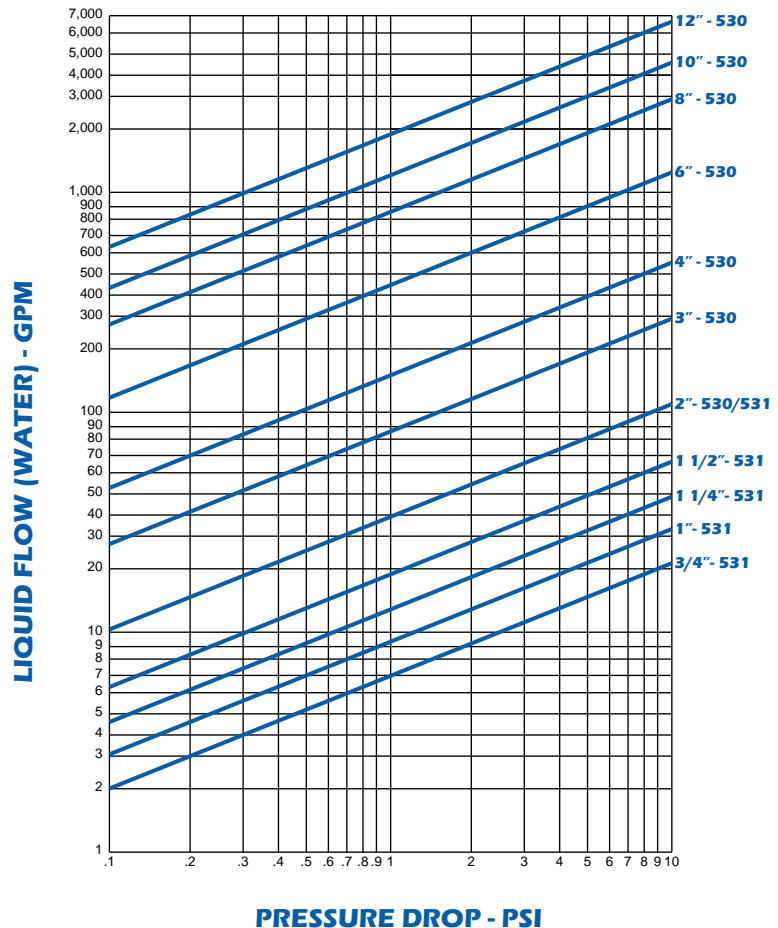
- Variation in flange connection alignment
- ASME Section VIII, Division 1, Code Stamp supplied with complete material traceability
- Special internal and external coating
- Cover lift (davit) assembly (Series 530 only)
- Quick opening hinged covers (Series 530 only)
- Basket material of monel, and others
- Mesh lined baskets
- Vent and drain valves
- Support legs

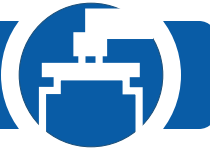
Typical Order Specification

Cast Duplex Strainer Package shall be size _____ Series 530 with 150# flanged connections or size _____ Series 531 with threaded connections as manufactured by Fluid Engineering: Erie, PA.

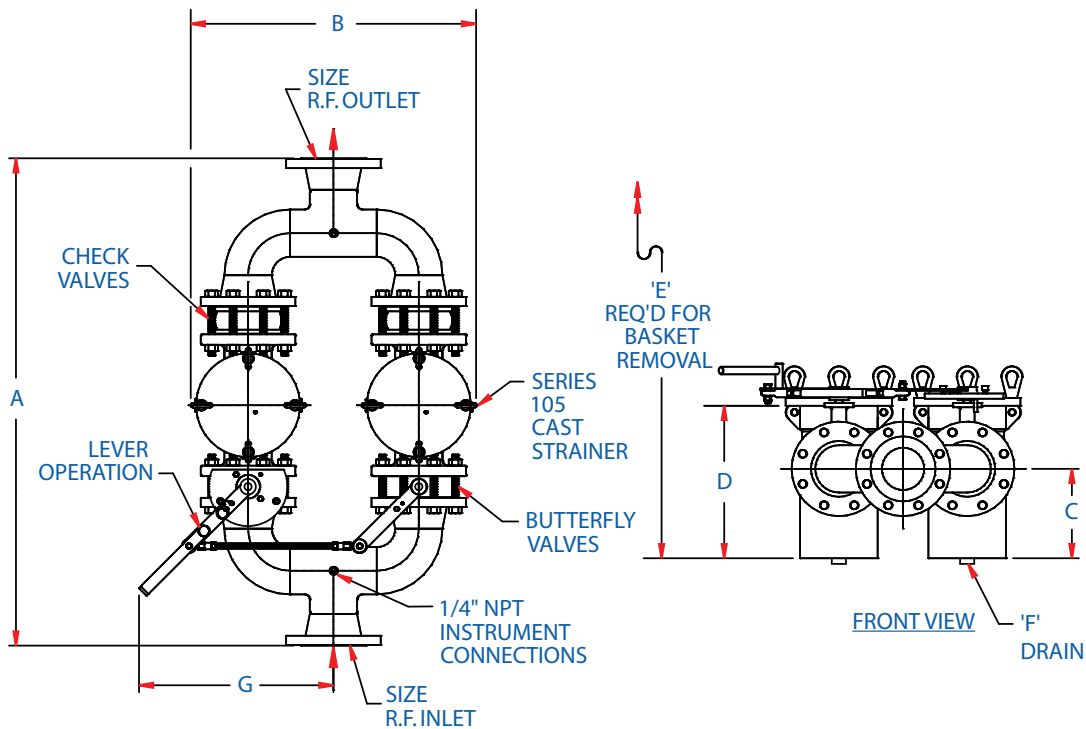
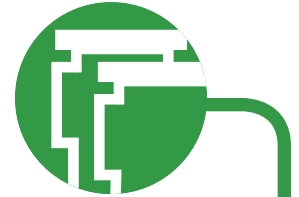
Strainer body shall be cast with quick opening style cover closure. Complete vessel will be suitable for a design pressure of (150 psig) at (100°F). Baskets shall be (304 stainless steel) with (1/32", 1/16", 1/8", or 5/32") perforated openings.

Operating capacity shall be _____ GPM at _____ psig pressure loss with clean baskets.



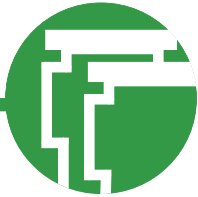
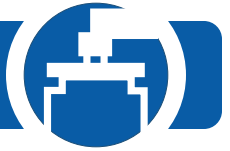


SERIES 530 CAST DUPLEX STRAINER

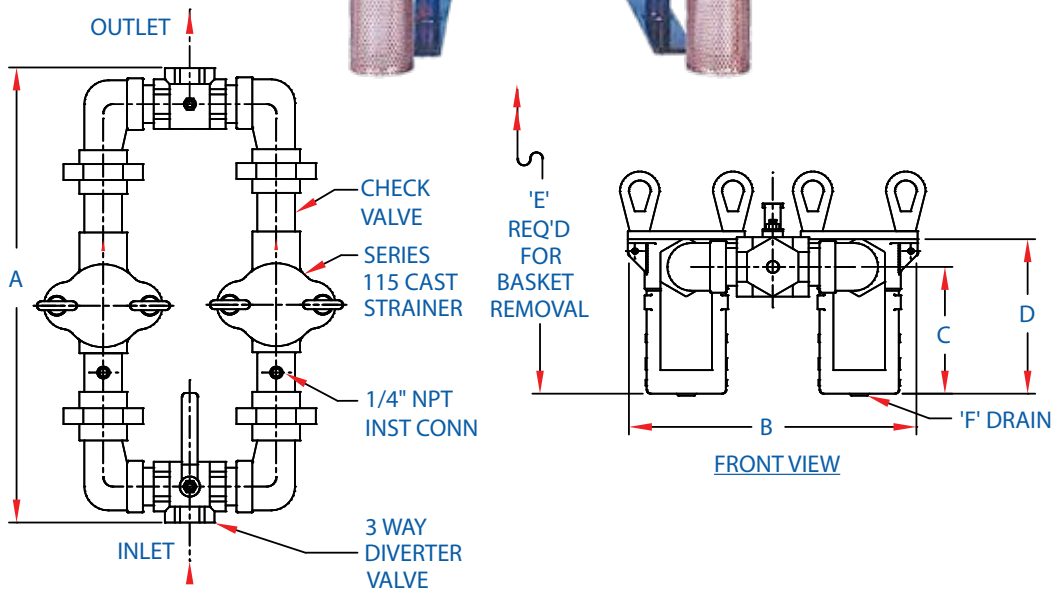


| SIZE ¹ | A | B | C | D | E | F | G | WEIGHT ² |
|-------------------|-----------|-----------|----------|----------|-----------|----------|----------|---------------------|
| 2" | 36-1/2" | 19" | 8" | 12" | 18-3/4" | 1/4" NPT | 17-1/2" | 190 lbs. |
| 50 mm | 927.1 mm | 482.6 mm | 203.2 mm | 304.8 mm | 476.3 mm | Bottom | 444.5 mm | 86.1 kg. |
| 2-1/2" | 42-1/2" | 24" | 8-1/2" | 16-1/2" | 27" | 1/2" NPT | 19" | 310 lbs. |
| 65 mm | 1079.5 mm | 609.6 mm | 215.9 mm | 419.1 mm | 685.8 mm | Bottom | 482.6 mm | 140.5 kg. |
| 3" | 44-1/2" | 26-1/2" | 8-1/2" | 16-1/2" | 27" | 1/2" NPT | 18-1/2" | 360 lbs. |
| 80 mm | 1130.3 mm | 673.1 mm | 215.9 mm | 419.1 mm | 685.8 mm | Bottom | 469.9 mm | 163.2 kg. |
| 4" | 47" | 27-1/2" | 8-1/2" | 16-1/2" | 27" | 1/2" NPT | 20-1/4" | 450 lbs. |
| 100 mm | 1193.8 mm | 698.5 mm | 215.9 mm | 419.1 mm | 685.8 mm | Bottom | 514.4 mm | 203.9 kg. |
| 5" | 55" | 34-1/2" | 9-3/8" | 18-1/4" | 30" | 1/2" NPT | 22" | 615 lbs. |
| 125 mm | 1397.0 mm | 876.3 mm | 238.1 mm | 463.6 mm | 762.0 mm | Side | 558.8 mm | 278.7 kg. |
| 6" | 60-1/2" | 38" | 10-1/4" | 19-1/2" | 32" | 1/2" NPT | 23-1/2" | 795 lbs. |
| 150 mm | 1536.7 mm | 965.2 mm | 260.4 mm | 495.3 mm | 812.8 mm | Side | 596.9 mm | 360.3 kg. |
| 8" | 75" | 47-1/2" | 13-1/4" | 24" | 41" | 1/2" NPT | 27" | 1290 lbs. |
| 200 mm | 1905.0 mm | 1206.5 mm | 336.6 mm | 609.6 mm | 1041.4 mm | Side | 685.8 mm | 584.6 kg. |
| 10" | 86-1/2" | 57-3/4" | 17" | 29" | 50" | 1/2" NPT | 30-1/2" | 2090 lbs. |
| 250 mm | 2197.1 mm | 1466.9 mm | 431.8 mm | 736.6 mm | 1270.0 mm | Side | 774.7 mm | 947.2 kg. |
| 12" | 90-1/2" | 68-1/4" | 19-3/4" | 33" | 58" | 1/2" NPT | 34" | 3250 lbs. |
| 300 mm | 2298.7 mm | 1733.6 mm | 501.7 mm | 838.2 mm | 1473.2 mm | Side | 863.6 mm | 1472.9 kg. |

Note: (1) Larger models use handwheel in place of lever arm. (2) Weights are approximate. Dimensions subject to change without notice, apply for certified drawings. Please consult the FE Sales Department or your local sales representative.



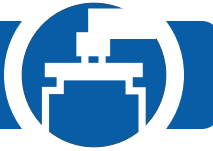
SERIES 531 CAST DUPLEX STRAINER



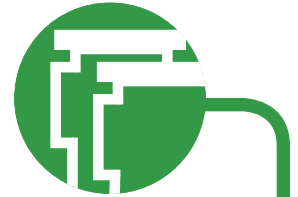
| SIZE | A | B | C | D | E | F | WEIGHT ¹ |
|-----------------|---------------------|---------------------|----------------|--------------------|---------------------|----------|----------------------|
| 3/4" 20 mm | 22-1/2" 571.5 mm | 11-5/8" 295.3 mm | 5" 127.0 mm | 8-3/4" 222.3 mm | 12" 304.8 mm | 1/4" NPT | 45 lbs. 20.4 kg. |
| 1" 25 mm | 21-1/2" 546.1 mm | 12" 304.8 mm | 5" 127.0 mm | 8-3/4" 222.3 mm | 12" 304.8 mm | 1/4" NPT | 55 lbs. 24.9 kg. |
| 1-1/4" 32 mm | 24-3/4" 628.7 mm | 15-3/4" 400.1 mm | 8" 203.2 mm | 12" 304.8 mm | 18-1/2" 469.9 mm | 1/4" NPT | 85 lbs. 38.5 kg. |
| 1-1/2" 40 mm | 26-3/4" 679.5 mm | 16-1/2" 419.1 mm | 8" 203.2 mm | 12" 304.8 mm | 18-1/2" 469.9 mm | 1/4" NPT | 95 lbs. 43.1 kg. |
| 2" 50 mm | 29-3/4" 755.7 mm | 18-1/4" 463.6 mm | 8" 203.2 mm | 12" 304.8 mm | 18-1/2" 469.9 mm | 1/4" NPT | 110 lbs. 49.9 kg. |

Note: (1) Weights are approximate. Dimensions subject to change without notice, apply for certified drawings. Please consult the FE Sales Department or your local sales representative.

"Engineered Products for Demanding Applications, Performance, and Service"



Series 534/544 Fabricated Duplex Strainer (1 1/2" through 24")



The Series 534/544 Duplex Strainer provides continued and dependable removal of unwanted solids from fluids. This strainer serves to protect valves, pumps, meters, spray nozzles, and various other equipment. It is often used to ensure product purity in such industries as gas, petroleum, biofuels, and power plants. A duplex strainer is used in applications where fluid flow cannot be interrupted when the basket is removed for cleaning. It maintains a continuous flow by utilizing two separate basket chambers with integral valves to direct flow into one of the basket chambers.

The Series 534/544 is a compact unit, with off-set inlet/outlet connections, which enables easy piping and variable strainer placement. Chamber change over is accomplished quickly and easily. A single lever controls the positive sealing butterfly valves, changing the fluid flow.

Built as a standard model unit, the Series 534/544 is also flexible to meet the individual needs of the customer, and varying application requirements. It is available in a variety of materials, and its fabricated design is superior for corrosive, hazardous, or low specific gravity fluid applications.

STANDARD DESIGN

- Fabricated carbon steel strainer body with bolted style cover
- 304 stainless steel basket with perforated (1/32", 1/16", 1/8", 5/32" openings)
- Butterfly valve with cast iron body Buna-'N' seats, ductile iron disc, and stainless steel stem
- Lever operated valves with inter-connected linkage
- Positive seal valving
- Design pressure 150 psig @ 150°F
- Welded to ASME Section IX, certified welders
- Complete package is hydrostatically tested

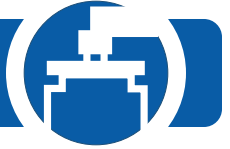
STANDARD DESIGN FEATURES

- Compact design allows for low installation cost.
- Large capacity, heavy duty basket design for a long life.
- Low pressure drop that provides for high flow capacity.
- Efficient design requiring few moving parts and low maintenance costs.
- Simple, easy, and effective switching of flow with positive shut-off.

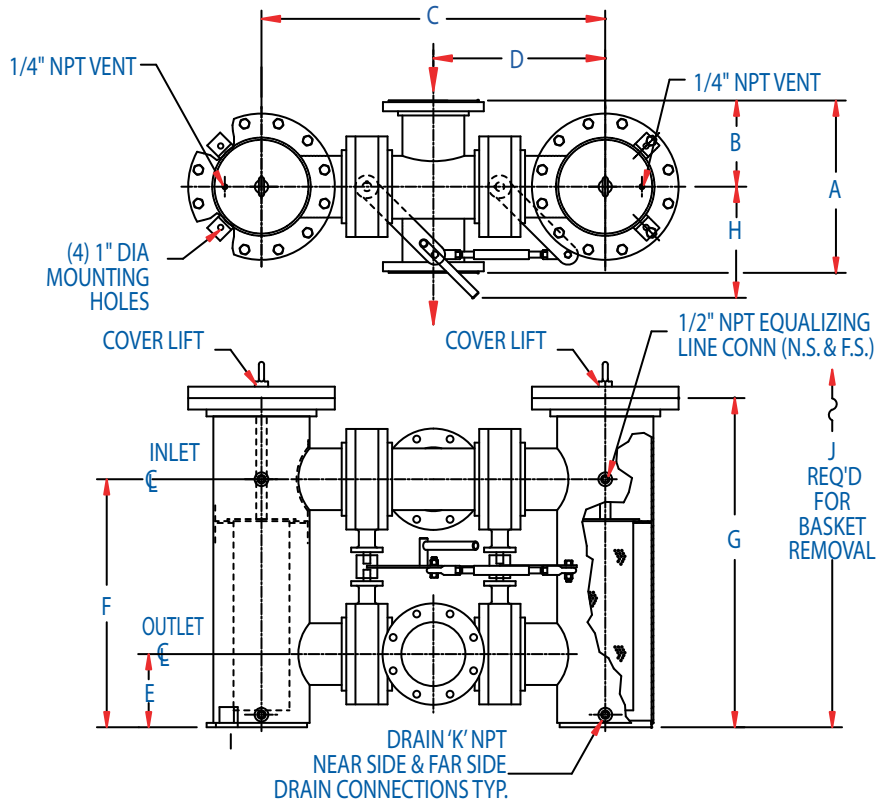


OPTIONS AVAILABLE

- Numerous vessel materials of construction such as stainless steel, copper nickel, monel, and others for corrosive environment
- Variation in flange connection alignment
- ASME Section VIII, Division 1, Code Stamp – supplied with complete material traceability
- Vessels designed for high pressure/temperature applications.
- Special internal and external coatings
- Cover lift (davit) assembly
- Quick opening hinged covers
- Latch bolt closures
- Basket material of 316 stainless steel, brass, monel, and others
- Mesh lined basket – 20 x 20 to 500 x 500 mesh
- In-line connection arrangement – Model 544



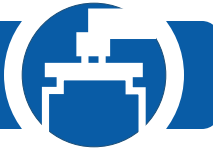
Series 534 Fabricated Duplex Strainer (1 1/2" through 8")



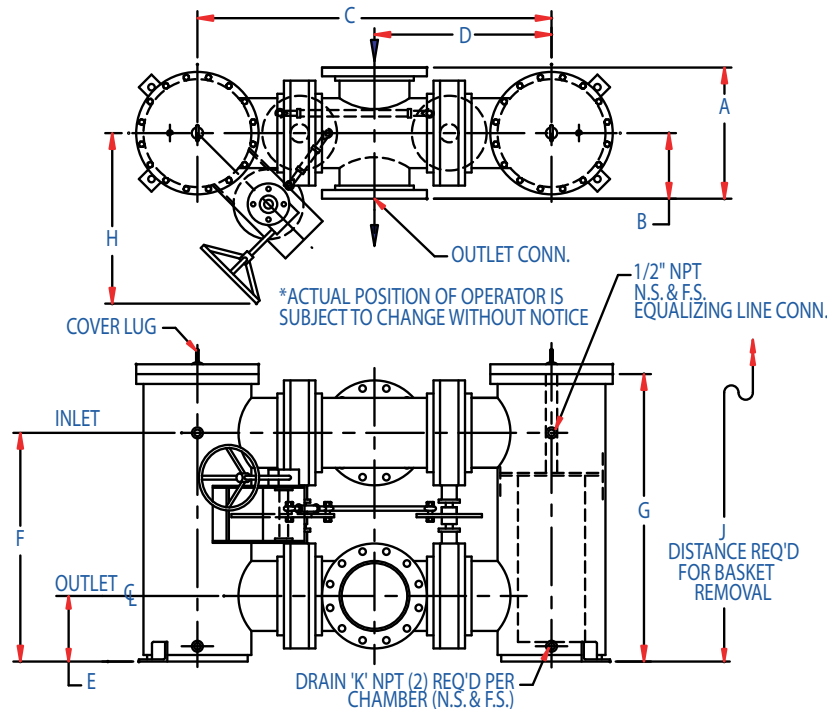
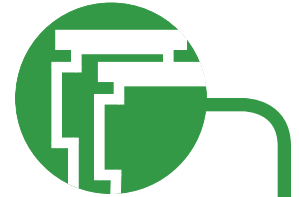
| MODEL NO. | SIZE | A | B | C | D | E | F | G | H | J | K | DRY | WET | COVER |
|-----------|------------|----------|----------|-----------|-----------|----------|----------|-----------|----------|-----------|---------|-----------|-----------|----------|
| 015-514 | 1-1/2" NPT | -- | -- | 21-3/8" | 10-11/16" | 5" | 18-3/8" | 22-1/2" | 12" | 32" | 1/2" | 245 lbs. | 270 lbs. | 17 lbs. |
| | 40 mm | | | 542.9 mm | 271.5 mm | 127.0 mm | 466.7 mm | 571.5 mm | 304.8 mm | 812.8 mm | 12.7 mm | 111.1 kg. | 122.5 kg. | 7.7 kg. |
| 020-514 | 2" NPT | -- | -- | 21-3/8" | 10-11/16" | 5" | 18-3/8" | 22-1/2" | 12" | 32" | 1/2" | 245 lbs. | 270 lbs. | 17 lbs. |
| | 50 mm | | | 542.9 mm | 271.5 mm | 127.0 mm | 466.7 mm | 571.5 mm | 304.8 mm | 812.8 mm | 12.7 mm | 111.1 kg. | 122.5 kg. | 7.7 kg. |
| 020-534 | 2"-150 | 10-1/4" | 5-1/8" | 21-3/8" | 10-11/16" | 5" | 18-3/8" | 22-1/2" | 12" | 32" | 1/2" | 232 lbs. | 256 lbs. | 17 lbs. |
| | 65 mm | 260.4 mm | 130.2 mm | 542.9 mm | 271.5 mm | 127.0 mm | 466.7 mm | 571.5 mm | 304.8 mm | 812.8 mm | 12.7 mm | 105.2 kg. | 116.1 kg. | 7.7 kg. |
| 030-534 | 3"-150 | 12-1/2" | 6-1/4" | 28" | 14" | 6-7/8" | 21-3/8" | 27" | 13" | 44" | 1/2" | 462 lbs. | 574 lbs. | 47 lbs. |
| | 80 mm | 317.5 mm | 158.8 mm | 711.2 mm | 355.6 mm | 174.6 mm | 542.9 mm | 685.8 mm | 330.2 mm | 1117.6 mm | 12.7 mm | 209.6 kg. | 260.4 kg. | 21.3 kg. |
| 040-534 | 4"-150 | 14-1/2" | 7-1/4" | 30" | 15" | 6-7/8" | 24-3/8" | 31-1/2" | 13" | 51" | 1/2" | 570 lbs. | 708 lbs. | 47 lbs. |
| | 100 mm | 368.3 mm | 184.2 mm | 762.0 mm | 381.0 mm | 174.6 mm | 619.1 mm | 800.1 mm | 330.2 mm | 1295.4 mm | 12.7 mm | 258.6 kg. | 321.1 kg. | 21.3 kg. |
| 060-534 | 6"-150 | 18-1/2" | 9-1/4" | 38" | 19" | 8" | 27-1/8" | 34" | 17" | 55" | 1/2" | 832 lbs. | 1085 lbs. | 69 lbs. |
| | 150 mm | 469.9 mm | 235.0 mm | 965.2 mm | 482.6 mm | 203.2 mm | 689.0 mm | 863.6 mm | 431.8 mm | 1397.0 mm | 12.7 mm | 377.4 kg. | 492.2 kg. | 31.3 kg. |
| 080-534 | 8"-150 | 22-1/4" | 11-1/8" | 44-1/2" | 22-1/4" | 9" | 31-3/8" | 39-1/2" | 34" | 63" | 1/2" | 1306 lbs. | 1756 lbs. | 102 lbs. |
| | 200 mm | 565.2 mm | 282.6 mm | 1130.3 mm | 565.2 mm | 228.6 mm | 98.4 mm | 1003.3 mm | 863.6 mm | 1600.2 mm | 12.7 mm | 592.4 kg. | 796.5 kg. | 46.3 kg. |

Note: Weights are approximate. Dimensions subject to change without notice, apply for certified drawings. Custom designs are available, please consult the FE Sales Department or your local sales representative.

"Engineered Products for Demanding Applications, Performance, and Service"

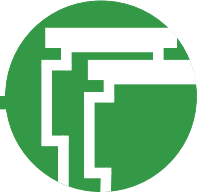
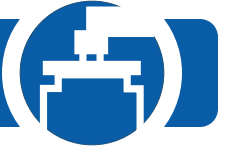


Series 534 Fabricated Duplex Strainer (10" through 24")



| MODEL NO. | SIZE | A | B | C | D | E | F | G | H | J | K | DRY | WET | COVER |
|-----------|-------------------|------------------|-----------------|-----------------------|----------------------|-----------------|----------------------|----------------------|---------------------|-----------------------|-------------------|-------------------------|-------------------------|----------------------|
| 100-534 | 10"-150 250 mm | 20" 508.0 mm | 10" 254.0 mm | 54" 1371.6 mm | 27" 685.8 mm | 10" 254.0 mm | 34-7/8" 885.8 mm | 43-5/8" 1108.1 mm | 28-5/8" 650.9 mm | 84" 2133.6 mm | 1" 25.4 mm | 2328 lbs. 1056.0 kg | 3126 lbs. 1418.0 kg | 147 lbs. 66.7 kg |
| 120-534 | 12"-150 300 mm | 24" 609.6 mm | 12" 304.8 mm | 60-1/2" 1536.7 mm | 30-1/4" 768.4 mm | 12" 304.8 mm | 40" 1016.0 mm | 50-1/4" 1276.4 mm | 28" 711.2 mm | 95" 2413.0 mm | 1-1/2" 38.1 mm | 2979 lbs. 1351.3 kg | 4174 lbs. 1893.3 kg | 176 lbs. 79.8 kg |
| 140-534 | 14"-150 350 mm | 26" 660.4 mm | 13" 330.2 mm | 65-1/2" 1663.7 mm | 32-3/4" 831.9 mm | 14" 355.6 mm | 45-1/4" 1149.4 mm | 58-3/4" 1492.3 mm | 30" 762.0 mm | 113" 2870.2 mm | 1-1/2" 38.1 mm | 3938 lbs. 1786.3 kg | 5637 lbs. 2556.9 kg | 213 lbs. 96.6 kg |
| 160-534 | 16"-150 400 mm | 28" 711.2 mm | 14" 355.6 mm | 70-1/2" 1790.7 mm | 35-1/4" 895.4 mm | 16" 406.4 mm | 51-1/2" 1308.1 mm | 65-1/2" 1663.7 mm | 30" 762.0 mm | 125" 3175.0 mm | 1-1/2" 38.1 mm | 5240 lbs. 2376.9 kg | 7575 lbs. 3436.0 kg | 316 lbs. 143.3 kg |
| 180-534 | 18"-150 450 mm | 32" 812.8 mm | 16" 406.4 mm | 77-1/2" 1968.5 mm | 38-3/4" 984.3 mm | 18" 457.2 mm | 56-1/2" 1435.1 mm | 71-1/2" 1816.1 mm | 31" 787.4 mm | 136" 3454.4 mm | 2" 50.8 mm | 5743 lbs. 2605.0 kg | 8806 lbs. 3994.4 kg | 306 lbs. 138.8 kg |
| 200-534 | 20"-150 500 mm | 34" 863.6 mm | 17" 431.8 mm | 86-1/2" 2197.1 mm | 43-1/4" 1098.6 mm | 20" 508.0 mm | 61-1/2" 1562.1 mm | 77-1/2" 1968.5 mm | 34" 863.6 mm | 163" 4140.2 mm | 2" 50.8 mm | 8030 lbs. 3642.4 kg | 12857 lbs. 5831.9 kg | 523 lbs. 237.2 kg |
| 240-534 | 24"-150 600 mm | 40" 1016.0 mm | 20" 508.0 mm | 102-1/2" 2603.5 mm | 51-1/4" 1301.8 mm | 22" 558.8 mm | 68-1/2" 1739.9 mm | 87-1/2" 2222.5 mm | 47" 1193.8 mm | 154-1/2" 3924.3 mm | 2" 50.8 mm | 11797 lbs. 5351.1 kg | 19851 lbs. 9004.4 kg | 888 lbs. 402.8 kg |

Note: Weights are approximate. Dimensions subject to change without notice, apply for certified drawings. Custom designs are available, please consult the FE Sales Department or your local sales representative.



Series 544 Fabricated Duplex Strainer (1 1/2" through 24")

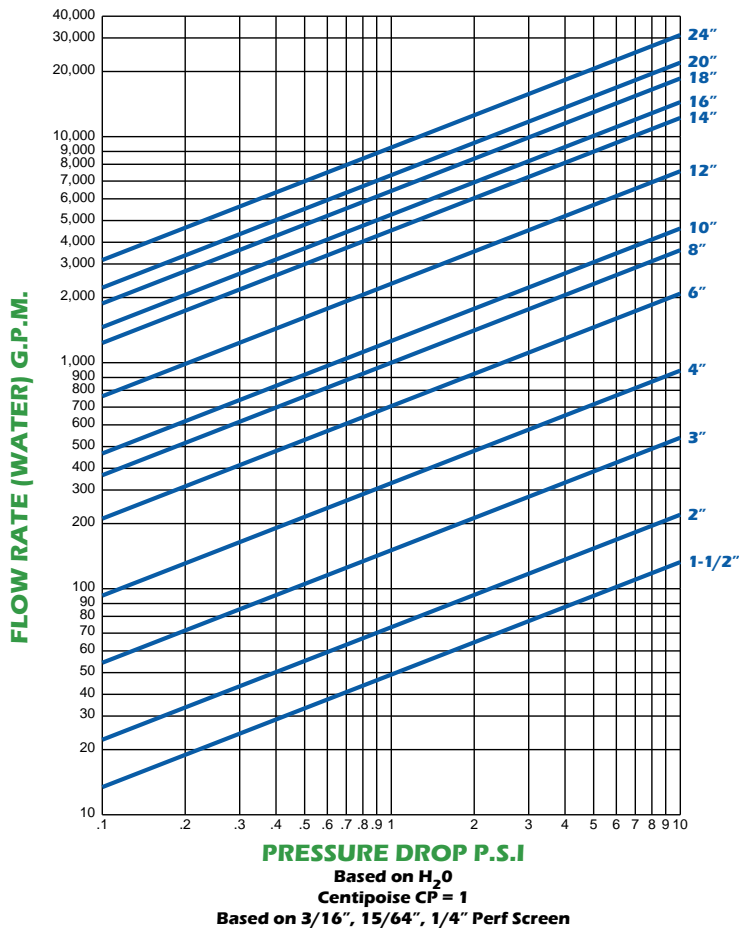
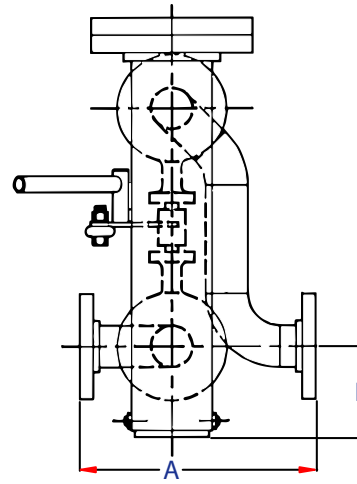
Typical Order Specification

Duplex Strainer Package shall be size _____
 Series 534/544 with (150#) flanged connection as
 manufactured by Fluid Engineering: Erie, PA.

Strainer body shall be fabricated (carbon steel) with bolted
 style cover closure. Strainer package to be complete with
 inlet and outlet headers, butterfly valves with lever operation.
 Complete vessel will be suitable for a design pressure of
 (150 psig) at (100°F). Baskets shall be (304 stainless steel)
 with (1/32", 1/16", 1/8", or 5/32") perforated openings.

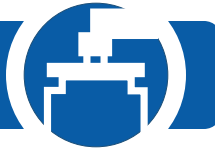
Operating capacity shall be _____ GPM at
 _____ psig pressure loss with clean baskets.

All other dimensions same as 534

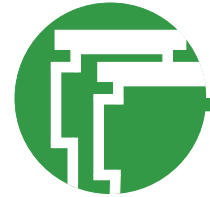


| SIZE | A | F |
|--------|-----------|----------|
| 1-1/2" | 12" | 5" |
| 40 mm | 304.8 mm | 127.0 mm |
| 2" | 12" | 5" |
| 50 mm | 304.8 mm | 127.0 mm |
| 3" | 18" | 6-7/8" |
| 80 mm | 457.2 mm | 174.6 mm |
| 4" | 18" | 6-7/8" |
| 100 mm | 457.2 mm | 174.6 mm |
| 6" | 24" | 8" |
| 150 mm | 609.6 mm | 203.2 mm |
| 8" | 30" | 9" |
| 200 mm | 762.0 mm | 228.6 mm |
| 10" | 40" | 10" |
| 250 mm | 1016.0 mm | 254.0 mm |
| 12" | 48" | 12" |
| 300 mm | 1219.2 mm | 304.8 mm |
| 14" | 52" | 14" |
| 350 mm | 1320.8 mm | 355.6 mm |
| 16" | 56" | 16" |
| 400 mm | 1422.4 mm | 406.4 mm |
| 18" | 64" | 18" |
| 450 mm | 1625.6 mm | 457.2 mm |
| 20" | 68" | 20" |
| 500 mm | 1727.2 mm | 508.0 mm |
| 24" | 80" | 22" |
| 600 mm | 2032.0 mm | 558.8 mm |

Note: Dimensions subject to change without notice,
 apply for certified drawings. Custom designs are
 available, please consult the FE Sales Department or
 your local sales representative.



Model 538/538E High Performance Slurry Duplex Strainer



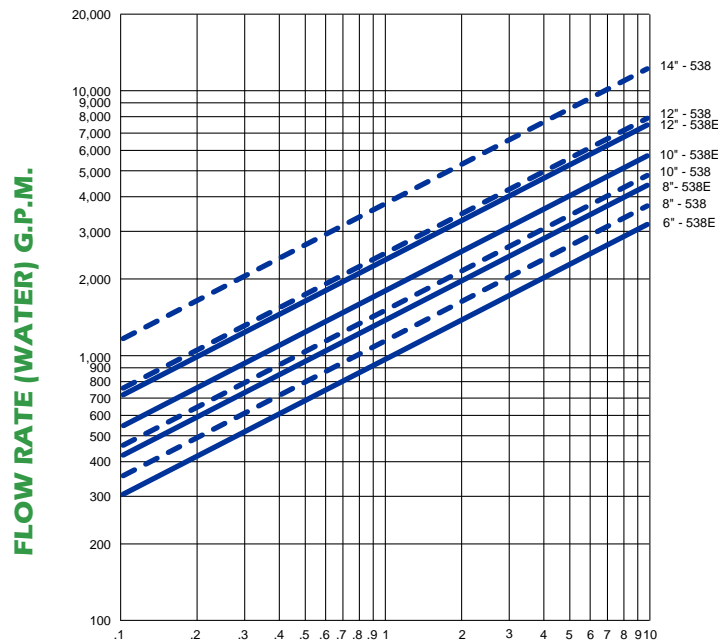
Note: Pictured is Model 538E-060 with black valve lever arms. All larger sizes utilize a hand wheel.

STANDARDS

- Material:**
Fabricated Carbon Steel or 304/304L
Stainless Steel
- Davit Arm & Sleeve:**
Carbon Steel Painted Yellow
- Design:**
150 PSIG @ 210° F
- Straining Basket:**
Heavy Duty 15/64" Perforated 316/316L SS

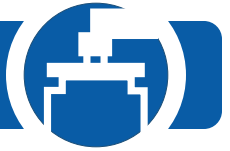
OPTIONS

- Material:**
Other Materials Available Upon Request
- Drain Valves:**
1" Threaded 316 SS Ball & Stem, Full Port, Teflon Seats, Lever
- Vent Valves:**
1" NPT 316 SS
- D.P. Assembly:**
Diaphragm & Armored Capillary Tube Backfilled with 25S Silicone Filled
- Straining Basket:**
Other perforated sizes and materials available upon request

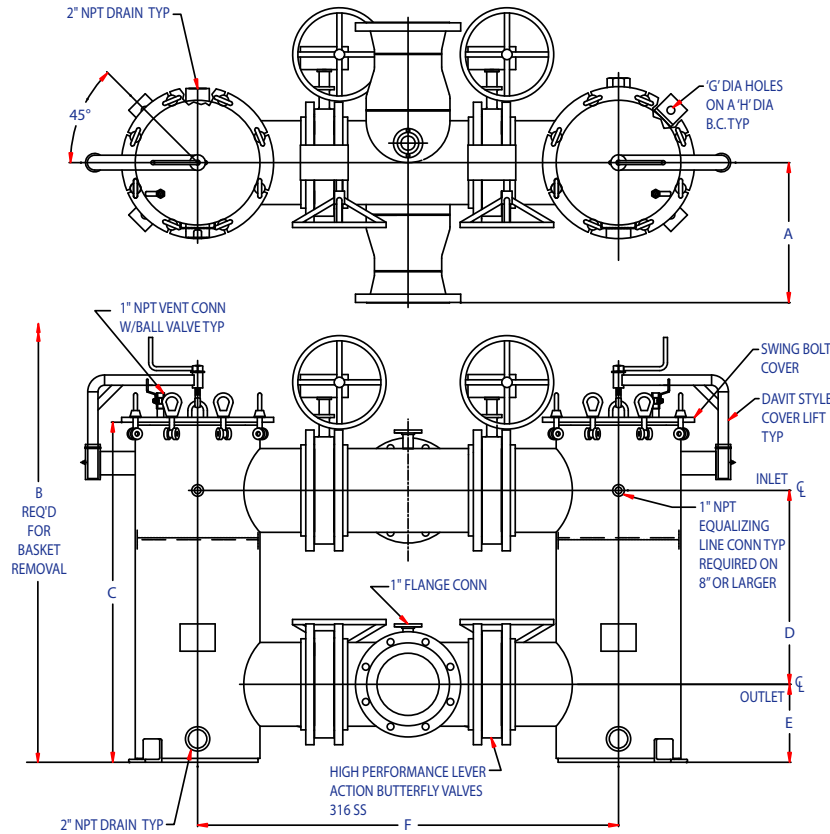


PRESSURE DROP P.S.I.

Based on H₂O
Centipose CP = 1
Based on 3/16", 15/64", 1/4" Perf Screen



Model 538/538E High Performance Slurry Duplex Strainer



| MODEL NO. | INLET | OUTLET | A | B | C | D | E | F | G | H |
|-----------------------|--------------------|--------------------|---------------|-----------------|--------------------|-------------------|---------------|--------------------|---------------|-------------------|
| 538E-060 ¹ | 6"-150# 152 mm | 6"-150# 152 mm | 16" 406 mm | 77" 1956 mm | 39 1/2" 1003 mm | 22 3/8" 568 mm | 9" 229 mm | 44 1/2" 1130 mm | 5/8" 16 mm | 14 3/4" 375 mm |
| 538-080 ¹ | 8"-150# 203 mm | 8"-150# 203 mm | 16" 406 mm | 77" 1956 mm | 39 1/2" 1003 mm | 22 3/8" 568 mm | 9" 229 mm | 44 1/2" 1130 mm | 5/8" 16 mm | 14 3/4" 375 mm |
| 538E-080 | 8"-150# 203 mm | 8"-150# 203 mm | 18" 457 mm | 84" 2134 mm | 43 5/8" 1108 mm | 24 7/8" 733 mm | 10" 254 mm | 44 1/2" 1130 mm | 1" 25 mm | 19" 483 mm |
| 538-100 | 10"-150# 254 mm | 10"-150# 254 mm | 18" 457 mm | 84" 2134 mm | 43 5/8" 1108 mm | 24 7/8" 733 mm | 10" 254 mm | 44 1/2" 1130 mm | 1" 25 mm | 19" 483 mm |
| 538E-100 | 10"-150# 254 mm | 10"-150# 254 mm | 20" 508 mm | 95" 2413 mm | 50 1/4" 1276 mm | 28" 711 mm | 12" 305 mm | 60 1/2" 1537 mm | 1" 25 mm | 21" 533 mm |
| 538-120 | 12"-150# 305 mm | 12"-150# 305 mm | 20" 508 mm | 95" 2413 mm | 50 1/4" 1276 mm | 28" 711 mm | 12" 305 mm | 60 1/2" 1537 mm | 1" 25 mm | 21" 533 mm |
| 538E-120 | 12"-150# 305 mm | 12"-150# 305 mm | 26" 660 mm | 113" 2870 mm | 58 3/4" 1492 mm | 31 1/4" 794 mm | 14" 356 mm | 65 1/2" 1664 mm | 1" 25 mm | 23" 584 mm |
| 538-140 | 14"-150# 356 mm | 14"-150# 356 mm | 26" 660 mm | 113" 2870 mm | 58 3/4" 1492 mm | 31 1/4" 794 mm | 14" 356 mm | 65 1/2" 1664 mm | 1" 25 mm | 23" 584 mm |

Note: (1) 538E-060 & 538-080 utilize lever arm instead of shown hand wheel. Dimensions subject to change without notice, apply for certified drawings. Custom designs are available, please consult the FE Sales Department or your local sales representative.