

Norman 4500, 14500, 34500 & 54500 Series Tee-Type Filters

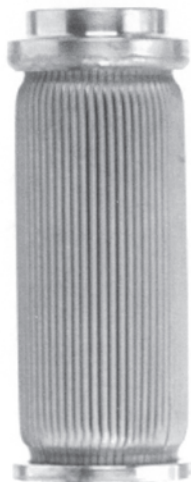
Up to
20,000 PSI

- Aluminum or Stainless Steel Housings
- Single or Dual Stage
- Stainless, Glass Fiber, Sintered or Cellulose Elements



NORMAN FILTER COMPANY, L.L.C.
PHONE: 708-233-5521 • FAX: 708-430-5961
www.normanfilters.com

NORMAN TEE-TYPE FILTERS



Choice of Elements

- Cellulose
- Glass Fiber
- Stainless Steel
- Porous Sintered Stainless



Choice of Housing Material

- Aluminum
- Stainless Steel

• All pressure ratings and seal configurations have been tested with hydraulic fluid any other fluid or gas please consult factory before installation.

FLUID CONDITIONERS

Norman Tee-Type filters are used to condition a wide variety of fluids. Whether your application is hydraulic, pneumatic, chemical processing, compressed gases or industrial fluid clarification, Norman filters will remove particulate contaminants from your system to keep it running longer. Filters increase the life of the pumps, valves, regulators and other components in your system, with pay-backs of longer system life, reduced down-time, and improved productivity. Norman offers the broadest filter line in the industry. This wide variety of sizes, materials, filtration media and optional accessories, all available from stock, allows you to select the model with the best price/performance value for your application.

HOUSINGS

Norman Tee-Type filter housings are made of either aluminum or stainless steel. Aluminum pressure vessels are rated at 5000 PSI (operating), and offer light weight and low cost; our stainless steel housings have higher operating pressures (up to 20,000 PSI) and excellent corrosion resistance. These housings come in five basic sizes, with flow rates up to 50 GPM (with 100 SSU oil), or 4000 SCFM @ 3000 PSI, GN₂). Port sizes range from 1/4" to 1 1/2" female pipe thread (FPT), or 1/2" to 1 1/2" female O-ring thread (SAE). High-pressure portings and weldments are available on 10,000, 15,000 and 20,000 PSI models. NOTE: All pressure ratings are static, for applications calling for pulsating or pressure spikes, consult factory.

ELEMENTS

The replacement element is the heart of the filter. Norman offers four media types in a variety of micron ratings, with both low and high-collapse construction. In addition, six O-ring materials are available, most at no additional charge, to assure compatibility with virtually any fluid.

CELLULOSE: Resin-impregnated cellulose media has low cost and disposable convenience. Being a depth-type filter, it has high dirt-holding capacity for long life. Available in 3, 10 and 25 micron efficiency ratings with collapse pressures of 150 and 300 PSID. All Norman cellulose elements are bonded with epoxy for excellent fluid compatibility.

GLASS FIBER: Multi-layered glass fiber elements use aerospace technology to produce high efficiency silt-control filtration. Available in 1, 3, 5, 10 and 25 micron ratings, absolute ($\beta_{200} = 200$), with collapse ratings of 300 and 3250 PSID. All are epoxy bonded. Its low flow restrictions and extremely long life (200 to 300% greater than cellulose) provide for extended service intervals and reduced maintenance cost.

STAINLESS STEEL: Our precision woven 304 stainless steel wire mesh elements provide absolute size discrimination and freedom from media migration. Available in nine micron ratings from 2X to 200 μ , absolute ($\beta_{75} = 75$), all-welded construction, with collapse rating of 4500 PSID. These elements are most suited to extreme temperature ranges and corrosive conditions. Stainless steel elements are reusable, with proper cleaning they can be reused almost indefinitely.

316 SINTERED METAL: Now available in .5, 1, 3 and 7 micron absolute, 316 sintered metal elements. These elements are perfectly suited for low viscosity fluid and all gas applications.

DUAL ELEMENTS

Norman Tee-Type filters are available in a unique dual-element configuration. The outer element is low-cost disposable cellulose for inexpensive system clean-up, and the inner element is recleanable stainless steel for absolute particulate retention. Dual-element filters combine very high dirt holding capacity and positive non-bypass filtration with the convenience of a low-cost replacement element.

OPTIONAL ACCESSORIES

Norman Tee-Type filters have a number of optional accessories in stock to modify our standard housings to meet your specific application requirements:

Visual Indicator: Signals when the element needs changing. Reduces maintenance costs caused by premature element change-out.

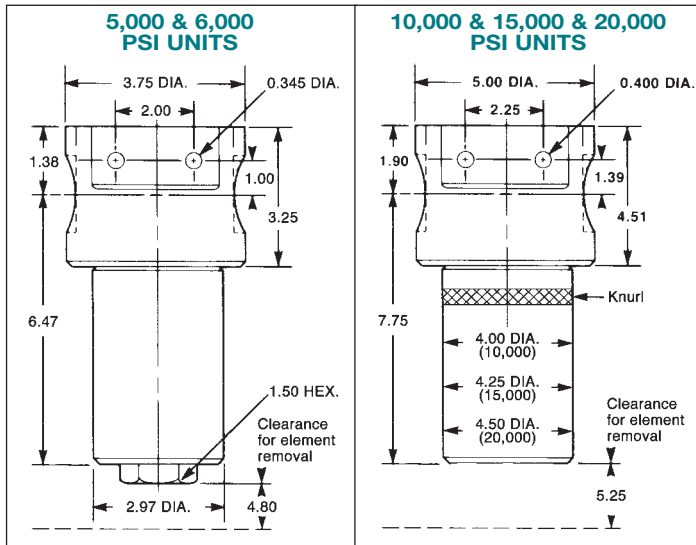
Electrical Switch: Similar to visual indicator, above, but with a microswitch (normally open) and standard conduit connection. Used to actuate warning light, buzzer, etc., to signal element clogging.

Bypass Relief Valve: Internal valve relieves pressure during flow surges or cold start-up. Recommended with low-collapse elements.

Pressure Taps: Gauge ports on the inlet and outlet of the filter for external differential pressure sensing devices.

Bowl Drain: Allows liquid to be drained from the bowl to facilitate element change-out.



**SPECIFICATIONS**

Rated Flow @ 10 PSID, clean (max.):
 10 GPM (w/100 SSU oil)
 300 SCFM (@ 3,000 PSI, GN₂)

Housing Material:
 5,000 PSI Units:
 7075T6 Aluminum
 6,000 PSI Units:
 303 & 316 Stainless Steel
 10,000 PSI Units: 17-4 PH, 316LSS
 15,000 PSI Units: 17-4 PH, 316LSS
 20,000 PSI Units: 17-4 PH

Pressure Ratings:
 5,000 PSI Units:
 5,000 PSI Operating
 7,500 PSI Proof
 20,000 PSI Burst
 6,000 PSI Units:
 6,000 PSI Operating
 9,000 PSI Proof
 24,000 PSI Burst

10,000 PSI Units:
 10,000 PSI Operating
 15,000 PSI Proof
 40,000 PSI Burst
 15,000 PSI Units:
 15,000 PSI Operating
 22,500 PSI Proof
 60,000 PSI Burst

Pressure Ratings (continued):
 20,000 PSI Units:
 20,000 PSI Operating
 30,000 PSI Proof
 80,000 PSI Burst

O-Ring Temperature Range:
 Buna-N: -40°F to +250°F
 Viton: -20°F to +350°F
 Ethylene Propylene: -65°F to +300°F
 Teflon*: -320°F to +400°F
 Kalrez*: -40°F to +600°F

Element Temperature Range:
 Cellulose: -65°F to +275°F
 Glass Fiber: -70°F to 350°F
 304 Stainless: -425°F to 1,000°F

Options:
 Relief Valve Setting: 50 PSID
 Visual Indicator Setting: 40 PSID
 Electrical Indicator Setting: 40 PSID
 Electrical Indicator Current Rating:
 0.5 Amps Resistive

Total Assembly Weight:
 Aluminum 4 1/4 Lbs.
 Stainless Steel: 12 Lbs.
 10K, 15K, & 20K Stainless: 39 Lbs.

*T.M. DuPont Corp.

HOW-TO-ORDER

Pressure	Port Size, Type	Housing Material	Element Code	Micron Rating	Collapse Rating	O-Ring Material	Optional Accessories
45 5000 psi	16N 1" NPT	A Aluminum**	A Cellulose	Code Nom. Abs. G A F P	P 150# Cellulose	L Buna-N	DR-1 1/8" NPT Bowl Drain*
45 6000 psi	16S 1" SAE (-16)	G 303 Stainless	D Dual*	.5 .2 .5	R 300# Cellulose	N Viton	DR-2 1/4" NPT Bowl Drain*
145 10000 psi	25 3/4" FPT	T 316 Stainless*	F Glass Fiber	.5 1	A 300# Glass Fiber	E Ethylene Propylene	DR-3 1/8" SAE Bowl Drain*
345 15000 psi	32 1/4" FPT		G Stainless Mesh	2X 2 10	F 2000# PSS	M Teflon™	DR-4 1/8" SAE Bowl Drain*
545 20000 psi	35 1/2" FPT		P 316 Sintered	B1 — 1	C 3250# Glass Fiber	K 90 Durometer Nitrile	DRCT4 1/4" MP Bowl Drain
	45 1/2" SAE (-8)			B3 — 3	D 4500# Stainless Mesh	H Kalrez™	DRCT6 3/8" MP Bowl Drain
	75 3/4" SAE (-12)			3 .1 3			40 psid Elec. Switch*
	250 1/4" Medium Pressure*			03 3 10			EE 50 psid Valve
	375 3/8" Medium Pressure*			05 5 18			EER 1/8" NPT DP Ports*
	562 9/16" Medium Pressure*			B5 — 5			S1 1/8" NPT DP Ports*
	750 3/4" Medium Pressure*			7 7			S2 1/4" NPT DP Ports*
	4S 1/4" SAE (-4)			10 10 25			S3 1/8" SAE DP Ports*
	6S 3/8" SAE (-6)			B10 — 10			S4 1/4" SAE DP Ports*
				20 20 40			SCT4 1/4" MP DP Ports
				25 25 40			SCT6 3/8" MP DP Ports
				B25 — 25			V 40 psid Indicator*
				40 40 75			VR Indicator + Valve*
				100 100 200			
				200 200 300			

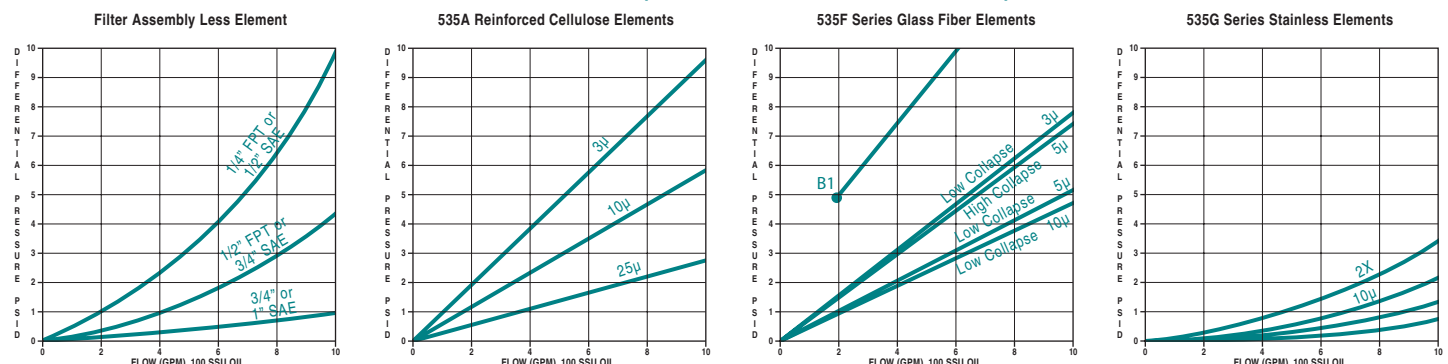
** 5K Only
 * 6K, 10K, 15K

Teflon and Kalrez are registered trademarks of DuPont.

* Not available on 20K

ASSEMBLY: [Diagram showing assembly components]

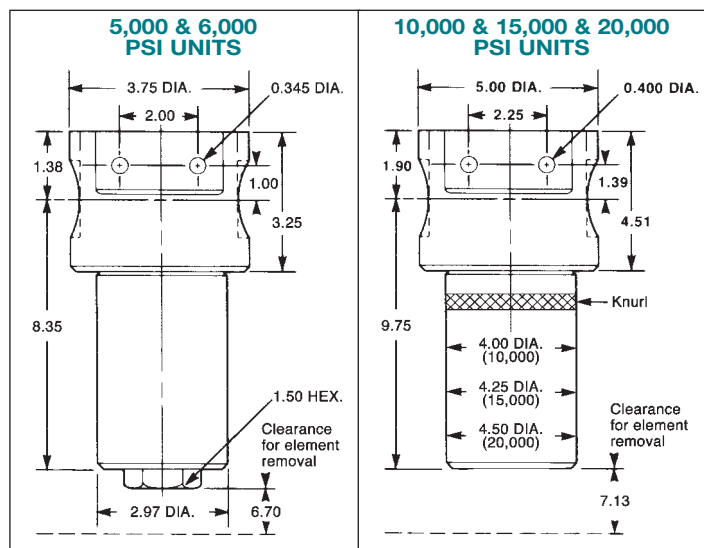
REPLACEMENT ELEMENT: **535** [Diagram showing replacement element]

FLOW DATA (PRESSURE DROP vs. FLOW)

NOTE: Add pressure drop of the housing to that of the element to obtain total initial clean pressure drop of the assembly. To determine pressure drop for a different viscosity and density fluid, use the following conversion factor:

$$\text{New } \Delta P = \Delta P @ 100 \text{ SSU} \times \frac{\text{new viscosity, SSU}}{100 \text{ SSU}} \times \frac{\text{new spec. gravity}}{0.9}$$





SPECIFICATIONS

Rated Flow @ 10 PSID, clean (max.):
16 GPM (w/100 SSU oil)
600 SCFM @ 3,000 PSI, GN₂

Housing Material:

5,000 PSI Units:
7075T6 Aluminum
6,000 PSI Units:
303 & 316 Stainless Steel
10,000 PSI Units: 17-4 PH, 316LSS
15,000 PSI Units: 17-4 PH, 316LSS
20,000 PSI Units: 17-4 PH

Pressure Ratings:

5,000 PSI Units:
5,000 PSI Operating
7,500 PSI Proof
20,000 PSI Burst
6,000 PSI Units:
6,000 PSI Operating
9,000 PSI Proof
24,000 PSI Burst
10,000 PSI Units:
10,000 PSI Operating
15,000 PSI Proof
40,000 PSI Burst
15,000 PSI Units:
15,000 PSI Operating
22,500 PSI Proof
60,000 PSI Burst

Pressure Ratings (continued):

20,000 PSI Units:
20,000 PSI Operating
30,000 PSI Proof
80,000 PSI Burst

O-Ring Temperature Range:

Buna-N: -40°F to +250°F
Viton: -20°F to +350°F
Ethylene Propylene: -65°F to +300°F
Teflon*: -320°F to +400°F
Kalrez*: -40°F to +600°F

Element Temperature Range:

Cellulose: -65°F to +275°F
Glass Fiber: -70°F to 350°F
304 Stainless: -425°F to 1,000°F

Options:

Relief Valve Setting: 50 PSID
Visual Indicator Setting: 40 PSID
Electrical Indicator Setting: 40 PSID
Electrical Indicator Current Rating:
0.5 Amps Resistive

Total Assembly Weight:

Aluminum 5.0 Lbs.
Stainless Steel: 13.5 Lbs.
10K, 15K, & 20K Stainless: 43 Lbs.

*T.M. DuPont Corp.

HOW-TO-ORDER

Pressure	Port Size, Type	Housing Material	Element Code	Micron Rating	Collapse Rating	O-Ring Material	Optional Accessories
45 5000 psi	26N 1" NPT	A Aluminum**	A Cellulose	Code Nom. Abs. G A F P	R 300# Cellulose	L Buna-N	DR-1 1/8" NPT Bowl Drain*
45 6000 psi	26S 1" SAE (-16)	G 303 Stainless	D Dual*	.5 .2 .5	A 300# Glass Fiber	N Viton	DR-2 1/4" NPT Bowl Drain*
146 10000 psi	36 3/4" FPT	T 316 Stainless*	F Glass Fiber	1 .5 1	F 2000# PSS	E Ethylene Propylene	DR-3 1/8" SAE Bowl Drain*
346 15000 psi	46 1/2" SAE (-8)		G Stainless Mesh	2X — 10	C 3250# Glass Fiber	M Teflon™	DR-4 1/8" SAE Bowl Drain*
546 20000 psi	82 1/4" FPT		P 316 Sintered	B3 — 3	D 4500# Stainless Mesh	K 90 Durometer Nitrile	DRCT4 1/4" MP Bowl Drain
	85 1/2" FPT			3 .1 3		H Kalrez™	DRCT6 3/8" MP Bowl Drain
	95 3/4" SAE (-12)			03 3 10			EE 40 psid Elec. Switch*
	250 1/4" Medium Pressure*			05 5 18			EER 50 psid Valve
	375 3/8" Medium Pressure*			B5 — 5			R 1/8" NPT DP Ports*
	562 9/16" Medium Pressure*			7 .5 7			S2 1/4" NPT DP Ports*
	750 3/4" Medium Pressure*			10 10 25			S3 1/8" SAE DP Ports*
	42S 1/4" SAE (-4)			B10 — 10			S4 1/4" SAE DP Ports*
	62S 3/8" SAE (-6)			20 20 40			SCT4 1/4" MP DP Ports
				25 25 40			SCT6 3/8" MP DP Ports
				40 40 75			V 40 psid Indicator*
				100 100 200			VR Indicator + Valve*
				200 200 300			

** 5K Only
* 6K, 10K, 15K

*10K, 15K & 20K Only
Note: SAE port not recommended over 6000 psi.
Socket weld ports available on special order.

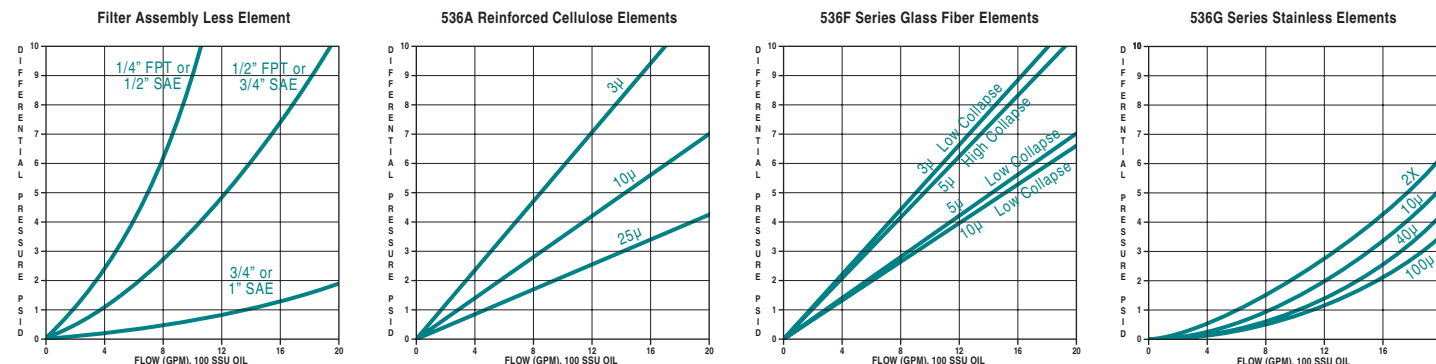
Teflon and Kalrez are registered trademarks of DuPont.

* Not available on 20K

ASSEMBLY: [Diagram showing assembly components]

REPLACEMENT ELEMENT: **536** [Diagram showing replacement element]

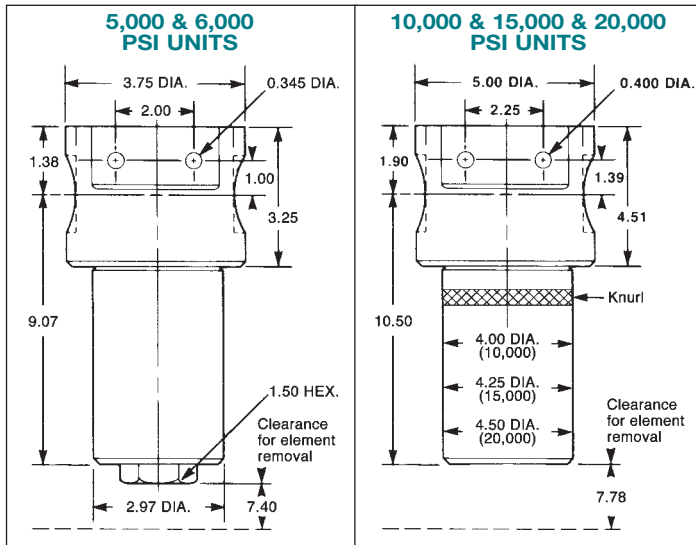
FLOW DATA (PRESSURE DROP vs. FLOW)



NOTE: Add pressure drop of the housing to that of the element to obtain total initial clean pressure drop of the assembly. To determine pressure drop for a different viscosity and density fluid, use the following conversion factor:

$$\text{New } \Delta P = \Delta P @ 100 \text{ SSU} \times \frac{\text{new viscosity, SSU}}{100 \text{ SSU}} \times \frac{\text{new spec. gravity}}{0.9}$$



**SPECIFICATIONS**

Rated Flow @ 10 PSID, clean (max.):
 24 GPM (w/100 SSU oil)
 1200 SCFM @ 3,000 PSI, GN₂

Housing Material:

5,000 PSI Units:
 7075T6 Aluminum
 6,000 PSI Units:
 303 & 316 Stainless Steel
 10,000 PSI Units: 17-4 PH, 316LSS
 15,000 PSI Units: 17-4 PH, 316LSS
 20,000 PSI Units: 17-4 PH

Pressure Ratings:

5,000 PSI Units:
 5,000 PSI Operating
 7,500 PSI Proof
 20,000 PSI Burst

6,000 PSI Units:
 6,000 PSI Operating
 9,000 PSI Proof
 24,000 PSI Burst

10,000 PSI Units:
 10,000 PSI Operating
 15,000 PSI Proof
 40,000 PSI Burst

15,000 PSI Units:
 15,000 PSI Operating
 22,500 PSI Proof
 60,000 PSI Burst

Pressure Ratings (continued):

20,000 PSI Units:
 20,000 PSI Operating
 30,000 PSI Proof
 80,000 PSI Burst

O-Ring Temperature Range:

Buna-N: -40°F to +250°F
 Viton: -20°F to +350°F
 Ethylene Propylene: -65°F to +300°F
 Teflon*: -320°F to +400°F
 Kalrez*: -40°F to +600°F

Element Temperature Range:

Cellulose: -65°F to +275°F
 Glass Fiber: -70°F to 350°F
 304 Stainless: -425°F to 1,000°F

Options:

Relief Valve Setting: 50 PSID
 Visual Indicator Setting: 40 PSID
 Electrical Indicator Setting: 40 PSID
 Electrical Indicator Current Rating:
 0.5 Amps Resistive

Total Assembly Weight:

Aluminum 6.0 Lbs.
 Stainless Steel: 15 Lbs.
 10K, 15K, & 20K Stainless: 45 Lbs.

*T.M. DuPont Corp.

HOW-TO-ORDER

Pressure	Port Size, Type	Housing Material	Element Code	Micron Rating	Collapse Rating	O-Ring Material	Optional Accessories
45 5000 psi	37 1" NPT	A Aluminum**	A Cellulose	Code Nom. Abs. G A F P	P 150# Cellulose	L Buna-N	DR-1 1/8" NPT Bowl Drain*
45 6000 psi	47 1/2" SAE (-8)	G 303 Stainless	D Dual*	.5 .2 .5 1	R 300# Cellulose	N Viton	DR-2 1/4" NPT Bowl Drain*
147 10000 psi	76 1" SAE (-16)	T 316 Stainless*	F Glass Fiber	1 .5 1 1	A 300# Glass Fiber	E Ethylene Propylene	DR-3 1/8" SAE Bowl Drain*
347 15000 psi	86 3/4" FPT		G Stainless Mesh	2X 2 10 •	F 2000# PSS	M Teflon™	DR-4 1/8" SAE Bowl Drain*
547 20000 psi	90 1/2" FPT		P 316 Sintered	B1 — 1	C 3250# Glass Fiber	K 90 Durometer Nitrile	DRCT4 1/4" MP Bowl Drain
	92 1/4" FPT			B3 — 3	D 4500# Stainless Mesh	H Kalrez™	DRCT6 3/8" MP Bowl Drain
	96 3/4" SAE (-12)			3 .1 3			40 psid Elec. Switch*
	250 1/4" Medium Pressure*			03 3 10 •			50 psid Valve
	375 3/8" Medium Pressure*			05 5 18 •			1/8" NPT DP Ports*
	562 9/16" Medium Pressure*			B5 — 5			1/8" NPT DP Ports*
	750 3/4" Medium Pressure*			7 7			1/8" SAE DP Ports*
	43S 1/4" SAE (-4)			10 10 25 •			1/4" SAE DP Ports*
	63S 3/8" SAE (-6)			B10 — 10			1/4" MP DP Ports
				20 20 40 •			3/8" MP DP Ports
				25 25 40 •			40 psid Indicator*
				B25 — 25			Indicator + Valve*
				40 40 75 •			
				100 100 200 •			
				200 200 300 •			

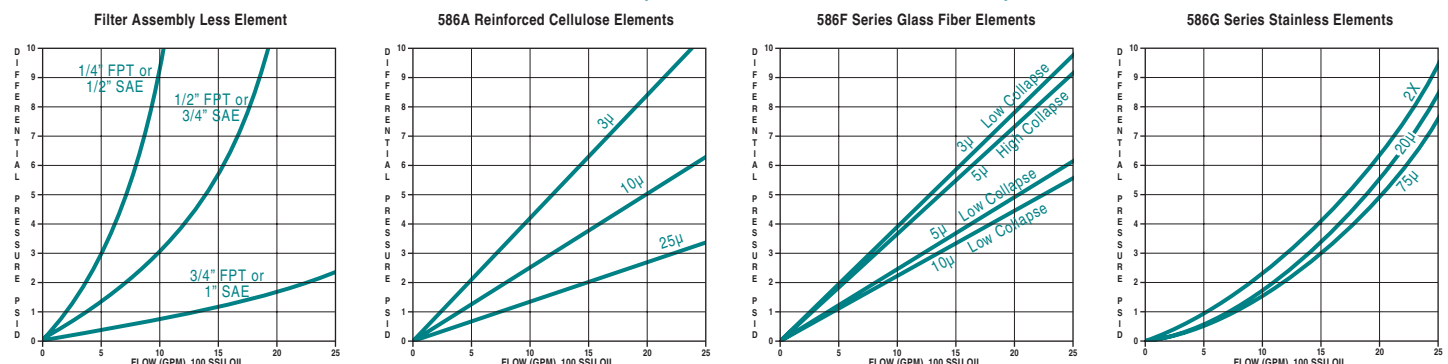
** 5K Only
 * 6K, 10K, 15K

Teflon and Kalrez are registered trademarks of DuPont.

* Not available on 20K

ASSEMBLY: [Diagram showing assembly components]

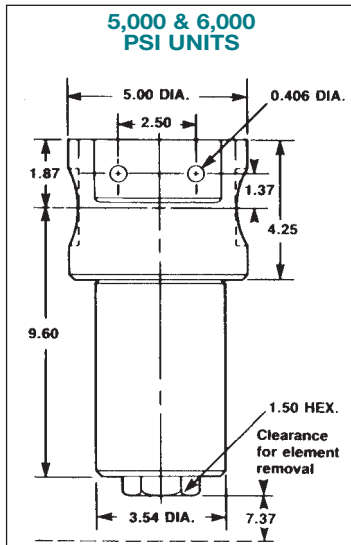
REPLACEMENT ELEMENT: **586** [Diagram showing replacement element]

FLOW DATA (PRESSURE DROP vs. FLOW)

NOTE: Add pressure drop of the housing to that of the element to obtain total initial clean pressure drop of the assembly. To determine pressure drop for a different viscosity and density fluid, use the following conversion factor:

$$\text{New } \Delta P = \Delta P @ 100 \text{ SSU} \times \frac{\text{new viscosity, SSU}}{100 \text{ SSU}} \times \frac{\text{new spec. gravity}}{0.9}$$





SPECIFICATIONS

Rated Flow @ 10 PSID, clean (max.): 35 GPM (w/100 SSU oil)
2500 SCFM (@ 3,000 PSI, GN₂)

Housing Material: 5,000 PSI Units: 7075T6 Aluminum
6,000 PSI Units: 303 & 316 Stainless Steel

Pressure Ratings: 5,000 PSI Units: 5,000 PSI Operating
7,500 PSI Proof
20,000 PSI Burst

6,000 PSI Units: 6,000 PSI Operating
9,000 PSI Proof
24,000 PSI Burst

O-Ring Temperature Range: Buna-N: -40°F to +250°F
Viton: -20°F to +350°F
Ethylene Propylene: -65°F to +300°F
Teflon*: -320°F to +400°F
Kalrez*: -40°F to +600°F

Element Temperature Range: Cellulose: -65°F to +275°F
Glass Fiber: -70°F to 350°F
304 Stainless: -425°F to 1,000°F

Options: Relief Valve Setting: 50 PSID
Visual Indicator Setting: 40 PSID
Electrical Indicator Setting: 40 PSID
Electrical Indicator Current Rating: 0.5 Amps Resistive

Total Assembly Weight: Aluminum 11.5 Lbs.
Stainless Steel: 29 Lbs.

*T.M. DuPont Corp.

HOW-TO-ORDER

Port Size, Type		Housing Material	Element Code	Micron Rating							Collapse Rating				O-Ring Material	Optional Accessories		
23	1-1/2" NPT	A Aluminum**	A Cellulose	Code	Nom.	Abs.	G	A	F	P	R	300# Cellulose	L	Buna-N	DR-1	1/8" NPT Bowl Drain		
68	1-1/2" SAE (-24)	G 303 Stainless	D Dual*	.5	.2	.5					A	300# Glass Fiber	N	Viton	DR-2	1/4" NPT Bowl Drain		
77	1-1/4" SAE (-20)	T 316 Stainless*	F Glass Fiber	1	.5	1					F	2000# PSS	E	Ethylene Propylene	DR-3	1/8" SAE Bowl Drain		
79	1" SAE (-16)		G Stainless Mesh	2X	2	10	•				C	3250# Glass Fiber	M	Teflon™	DR-4	1/8" SAE Bowl Drain		
87	1" FPT		P 316 Sintered	B3	—	3					D	4500# Stainless Mesh	K	90 Durometer Nitrile	EE	40 psid Elec. Switch		
97	1-1/4" NPT			3	.1	3							H	Kalrez™	EER	50 psid Valve		
				03	3	10							Teflon and Kalrez are registered trademarks of DuPont.				R	50 psid Valve
				05	5	18	•										S1	1/8" NPT DP Ports
				B5	—	5											S2	1/4" NPT DP Ports
				7	.5	7											S3	1/8" SAE DP Ports
				10	10	25	•										S4	1/4" SAE DP Ports
				B10	—	10											V	40 psid Indicator
				20	20	40	•										VR	Indicator + Valve
				25	25	40	•											
				40	40	75	•											
				100	100	200	•											
				200	200	300	•											

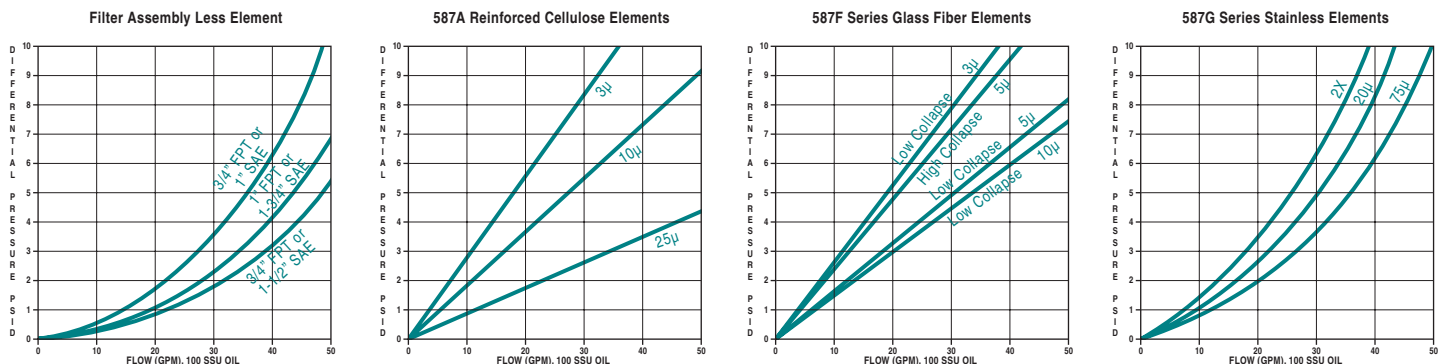
Socket weld ports available on special order.

** 5K Only
* 6K, 10K, 15K
Consult factory for pressure ratings.

ASSEMBLY: 4 5

REPLACEMENT ELEMENT: 587

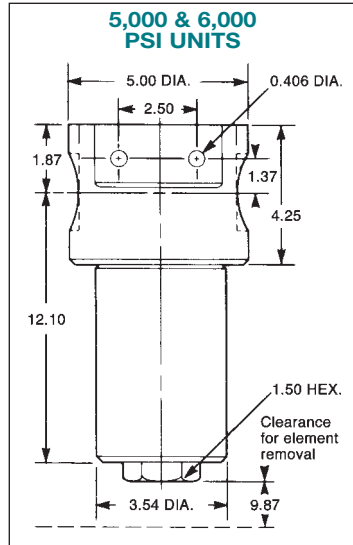
FLOW DATA (PRESSURE DROP vs. FLOW)



NOTE: Add pressure drop of the housing to that of the element to obtain total initial clean pressure drop of the assembly. To determine pressure drop for a different viscosity and density fluid, use the following conversion factor:

$$\text{New } \Delta P = \Delta P @ 100 \text{ SSU} \times \frac{\text{new viscosity, SSU}}{100 \text{ SSU}} \times \frac{\text{new spec. gravity}}{0.9}$$





SPECIFICATIONS

Rated Flow @ 10 PSID, clean (max.): 50 GPM (w/100 SSU oil)
4000 SCFM (@ 3,000 PSI, GN₂)

Housing Material: 5,000 PSI Units: 7075T6 Aluminum
6,000 PSI Units: 303 & 316 Stainless Steel

Pressure Ratings: 5,000 PSI Units: 5,000 PSI Operating
7,500 PSI Proof
20,000 PSI Burst

6,000 PSI Units: 6,000 PSI Operating
9,000 PSI Proof
24,000 PSI Burst

O-Ring Temperature Range: Buna-N: -40°F to +250°F
Viton: -20°F to +350°F
Ethylene Propylene: -65°F to +300°F
Teflon*: -320°F to +400°F
Kalrez*: -40°F to +600°F

Element Temperature Range: Cellulose: -65°F to +275°F
Glass Fiber: -70°F to 350°F
304 Stainless: -425°F to 1,000°F

Options: Relief Valve Setting: 50 PSID
Visual Indicator Setting: 40 PSID
Electrical Indicator Setting: 40 PSID
Electrical Indicator Current Rating: 0.5 Amps Resistive

Total Assembly Weight: Aluminum 12.5 Lbs.
Stainless Steel: 30.5 Lbs.

*T.M. DuPont Corp.

HOW-TO-ORDER

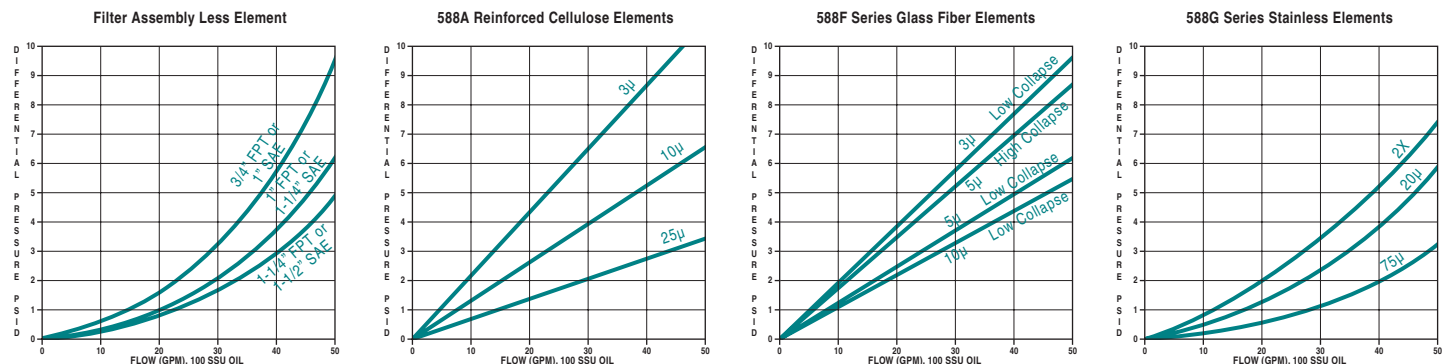
Port Size, Type	Housing Material	Element Code	Micron Rating	Collapse Rating	O-Ring Material	Optional Accessories
24 1-1/2" NPT	A Aluminum**	A Cellulose	Code Nom. Abs. G A F P	R 300# Cellulose	L Buna-N	DR-1 1/8" NPT Bowl Drain
78 1-1/2" SAE (-24)	G 303 Stainless	D Dual*	.5 .2 .5	A 300# Glass Fiber	N Viton	DR-2 1/4" NPT Bowl Drain
80 1" SAE (-16)	T 316 Stainless*	F Glass Fiber	1 .5 1	F 2000# PSS	E Ethylene Propylene	DR-3 1/8" SAE Bowl Drain
88 1-1/4" NPT		G Stainless Mesh	2X 2 10	C 3250# Glass Fiber	M Teflon™	DR-4 1/8" SAE Bowl Drain
98 1" NPT		P 316 Sintered	B1 — 1	D 4500# Stainless Mesh	K 90 Durometer Nitrile	EE 40 psid Elec. Switch
99 1-1/4" SAE (-20)			B3 — 3		H Kalrez™	EER Switch + Valve
	** 5K Only * 6K, 10K, 15K Consult factory for pressure ratings.		3 .1 3			R 50 psid Valve
			03 3 10			S1 1/8" NPT DP Ports
			05 5 18			S2 1/4" NPT DP Ports
			B5 — 5			S3 1/8" SAE DP Ports
			7 7			S4 1/4" SAE DP Ports
			10 10 25			V 40 psid Indicator
			20 20 40			VR Indicator + Valve
			25 25 40			
			B25 — 25			
			40 40 75			
			100 100 200			
			200 200 300			

Socket weld ports available on special order.

ASSEMBLY: 4 5

REPLACEMENT ELEMENT: 588

FLOW DATA (PRESSURE DROP vs. FLOW)

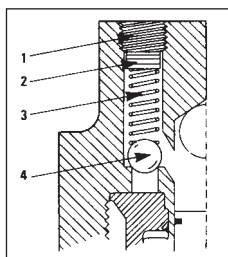


NOTE: Add pressure drop of the housing to that of the element to obtain total initial clean pressure drop of the assembly. To determine pressure drop for a different viscosity and density fluid, use the following conversion factor:

$$\text{New } \Delta P = \Delta P @ 100 \text{ SSU} \times \frac{\text{new viscosity, SSU}}{100 \text{ SSU}} \times \frac{\text{new spec. gravity}}{0.9}$$



T-TYPE FILTER – OPTIONAL ACCESSORIES



CODE R

Relief Valve

1. Flush mounting SAE plug
2. Aluminum or stainless spacers
3. Stainless Spring
4. Teflon ball or poppet

*T.M. DuPont Corp.



ByPass Relief Valve At a predetermined setting, the system fluid bypasses the element assembly until the element either is cleaned or replaced. Standard setting 50 psi craking pressure. Other settings from 15-150 psid available on special order.

Visual Differential Pressure Indicator Enables operator to read contaminated build up before the element is plugged. Indicator is mounted on head of filter unit. Automatic reset. Aluminum is anodized for corrosion. Also available in Stainless Steel. Standard setting is 40 psid. Other settings form 15-100 psid available on special order.

Electrical Differential Pressure Indicator Ideal for applications where visual inspections are difficult due to location or where centralized process equipment monitoring is desired. By wiring the indicator into a central control panel, filter may be remotely monitored quickly and easily. The indicator, made of anodized corrosion resistant aluminum or 303 stainless steel, is mounted on top of the filter unit. An adjustable electric, normally open, reed switch dP indicator operated signal devices. Contacts closed when dP increases, and automatically resets when dP decreases. 3/4" male pipe connection for electrical hook-up. Voltage requirements: 10W – DC resistive 10 VA – AC resistive. Switch current 0.5 amps. Relay required for heavier loads.

CODE DR

Bowl Drain:

1/4" MP DRCT4	1/8" NPT DR-1	1/8" SAE DR-3
3/8" MP DRCT6	1/4" NPT DR-2	1/4" SAE DR-4

CODE VR

Visual dP Indicator and Bypass Relief Valve

Enables the operator to see red indicator before relief valve opens, providing ample time to change the element before dirty fluid bypasses the filter.

CODE S

Differential Pressure Ports:

1/4" MP SCT4	1/8" NPT S-1	1/8" SAE S-3
3/8" MP SCT6	1/4" NPT S-2	1/4" SAE S-4

CODE EER

EE dP Indicator and Bypass Relief Valve This combination enables monitor to receive signal in advance of bypass relief valve actuation.

NORMAN FILTER COMPANY

Continuous Product Improvement

Manufactured in Bridgeview, Illinois by Norman Filter Company, the redesigned **15,000 psi** filter housing offers five new exciting options:

- **316SS**
- **Bypass**
- **Visual indicator**
- **Explosion Proof Electrical Indicator**
- **Electrical Indicator**



NORMAN FILTER COMPANY, L.L.C.

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