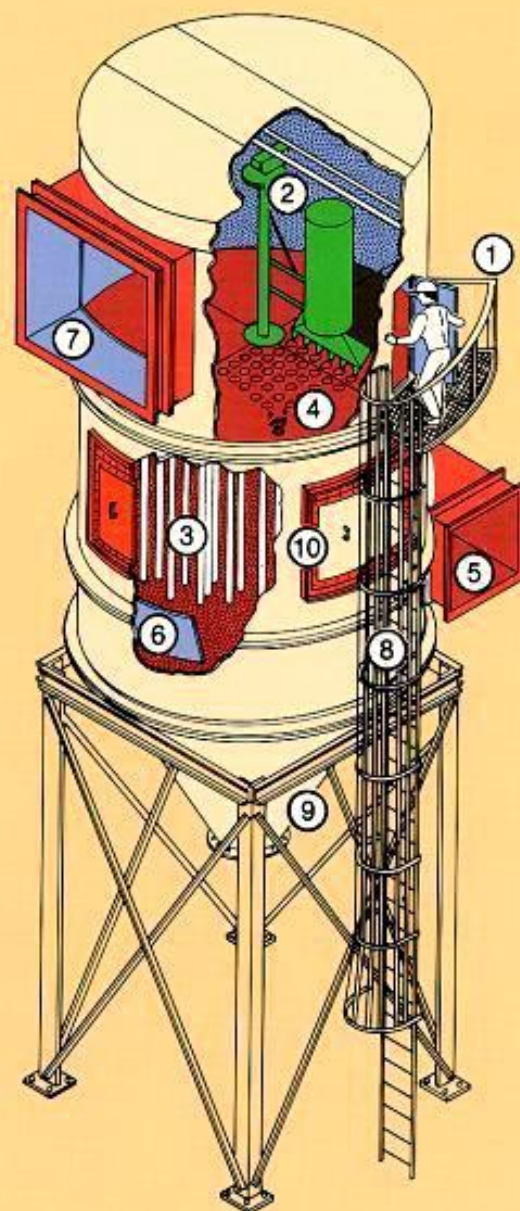


# Pneumafil's unique construction features

There are distinctive design features about a Pneumafil Straight Fire Filter that set it apart from other filters. These features translate to direct benefits making a strong case for selecting Pneumafil.

Pneumafil is dedicated to manufacturing a superior product for their customers by using the very best materials, exercising the highest standards in workmanship and employing the latest in applied technology. This dedication is reflected in the attention to details, simplicity of construction and economical cost of operation.

1. Walk-in clean air compartment for inspection, maintenance and filter bag cleaning. Top removal filter bags eliminates personnel from entering the dirty side of the filter.
2. Straight Fire Filter bag cleaning mechanism consists of a rotating cleaning manifold with an air accumulator that is mounted atop to eliminate pressure loss resulting in stronger cleaning pulses.
3. Fabric filter bags — 16 oz. polyester felt, nylon scrim reinforcement with 2" wear strips on bottom for long life and abrasion resistance. Bags are "snap-in"; no tools required. Other filter media available upon request.
4. Sectional tube sheet for precision alignment of cleaning manifold for cleaning of filter bags.
5. Large, low involute air inlet for lower pressure drop and cyclonic cleaning action.
6. Built-in particle deflector with vortex breakers for abrasion protection of filter bags; thus longer bag life and lower maintenance.
7. Large clean air outlet for lower pressure drop resulting in energy savings.
8. Support steel, ladder and access platform conforms to all applicable building codes.
9. 60° conical hopper for dust collection.
10. Explosion relief panels for safety.
11. Hot rolled, pickled and oiled mild steel with a unique surface preparation for superior corrosion resistant finish, insuring longer filter life and substantial maintenance savings. (Meets SSPC-SP6 Standard)
12. Epoxy primed interior and exterior (2.0 - 2.5 mils), polyester epoxy exterior (2.0 - 2.5 mils). Total paint finish of 3.5 - 5.5 mils passed 500 hour salt spray test.
13. Filters constructed to withstand  $\pm 20"$  W.G.
14. Components factory assembled and tested.
15. Highest quality control standards in the industry.
16. All filters meet EPA and OSHA regulations.





# The Pneumafil Straight Fire Filter

## *How it compares ...*

### *... in energy savings*

A true evaluation of a dust control system should consider energy consumption as it applies to the complete filter system — and not merely to any one component. This is why all Pneumafil dust filters are designed to function as an integral part of the total system in combination with its other exceptional capabilities for reducing overall operating costs.

For example, our Straight Fire Filters are cleaned by either a 2, 3, 5, 7½ or 10 hp motor and cost very little to operate. But more important, each bag is cleaned once every 120 seconds in a precise sequence utilizing the medium pressure air (7 to 9 psig). This complete and systematic cleaning dramatically reduces the pressure drop across the media as well as the load demands on the complete dust collection system fan. The result is energy savings! Conversely, a system that employs a random air pump cleaning sequence may only require the same amount of horsepower in driving the air pump — however, this type of system *does not* clean the bags every 120 seconds. The cleaning air discharge is regulated by whenever and wherever the pressure build up activates the air jets. Because of this random firing, some bags could remain uncleaned indefinitely. This means higher pressure drops across the media, increased demands on the total fan system and ultimately higher energy costs.

Our standard involute air entry utilizes less overall energy than filters with a high air inlet. The low involute entry with a built-in vortex breaker allows heavy dust particles to "drop out" into the filter hopper. This *cyclonic* action causes an initial sorting out of larger dust particles which results in greater energy savings and less wear and tear on filter bags. Each contributes to lower operating costs.

Additional energy savings are obtained by recycling plant air previously heated or cooled. With the short contact time of air passing through the filter, the cleaned air is not affected by outside temperatures — and no additional energy is expended to heat or cool make-up air.

### *... with filter maintenance*



All filter bag inspection and removal operations were designed to simplify maintenance procedures and keep maintenance costs down.

With a Pneumafil dust filter, bag inspection can be accomplished without entering the walk-in, clean air plenum. A viewing port and lighted plenum allows the operator to visually inspect the bag cleaning mechanism from outside the filter.

Our walk-in plenum permits top bag removal from the clean air side. This operation simply requires extracting the drop-in cage from the snap-in bag.

Pneumafil bags are designed and constructed to deliver maximum collection efficiency and a consistent high level of performance. Bags are made of 16 oz. polyester felt with a special scrim reinforcement, triple thickness of media at the top to seal the bags and a 2" wear strip at the bottom to protect against abrasion. All bags can be washed or dry cleaned.

### *... in special features*

Wear against the tube sheet by the cleaning mechanism is non-existent. The cleaning manifold and air accumulator are suspended precisely above the tube sheet for a maximum burst of cleaning air.

The Pneumafil Straight Fire bag cleaning operation is accomplished by effectively using *all* of the cleaning power. When the cleaning manifold is positioned precisely over the filter bag centers, a burst of medium pressure air is pulsed. This air and induced air from the clean air plenum dislodges the dust from the filter bags which falls into the hopper for disposal.

#### **Hopper Design**

Our hopper design eliminates the need for any additional and expensive auger discharge. Any bridging of collected dust is prevented by the use of a conical hopper with a 60° slope. Each hopper is equipped with a large, bolted access door and flanged outlets.

## *... in general construction and painting*

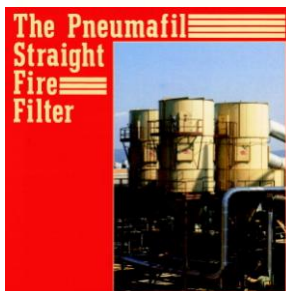
The filter is constructed of hot rolled, pickled and oiled mild steel. Our unique standing seam design provides considerable reinforcement and rigidity to the overall structural integrity, making the filter ideally suited for any environment. All filters are constructed to withstand  $\pm 20$  in. water gauge.

Each filter is equipped with relief panels in accordance with NFPA standards. The doors are secured with safety chains of uneven lengths to reduce the possibility of the door becoming a projectile. Another example of how Pneumafil pays attention to details.

Every unit is epoxy primed (2.0-2.5 mils) inside and outside and finished outside with polyester epoxy paint (2.0-3.5 mils). Pneumafil offers many standard colors to choose from. Special colors are available to meet customer specifications. Unlike units that have only a single coat of paint, Pneumafil's painting method means additional savings in maintenance costs over the life of the filter. Our paint surface preparation meets the SSPC-SP6 standard and passed a 500 hour salt spray test.

## *... with options*

1. Support structure
2. Maintenance platform with OSHA approved handrails and access ladder
3. Customer color preference
4. Non-sparking air entry wear plates
5. 70° hopper
6. Sprinkler heads
7. Explosion proof motor for Class II-G and F applications
8. Additional bracing for higher pressures
9. Factory insulation
10. High level and high temperature sensors
11. Rotary air locks
12. Modified to customer specifications
13. Special media available

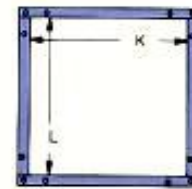
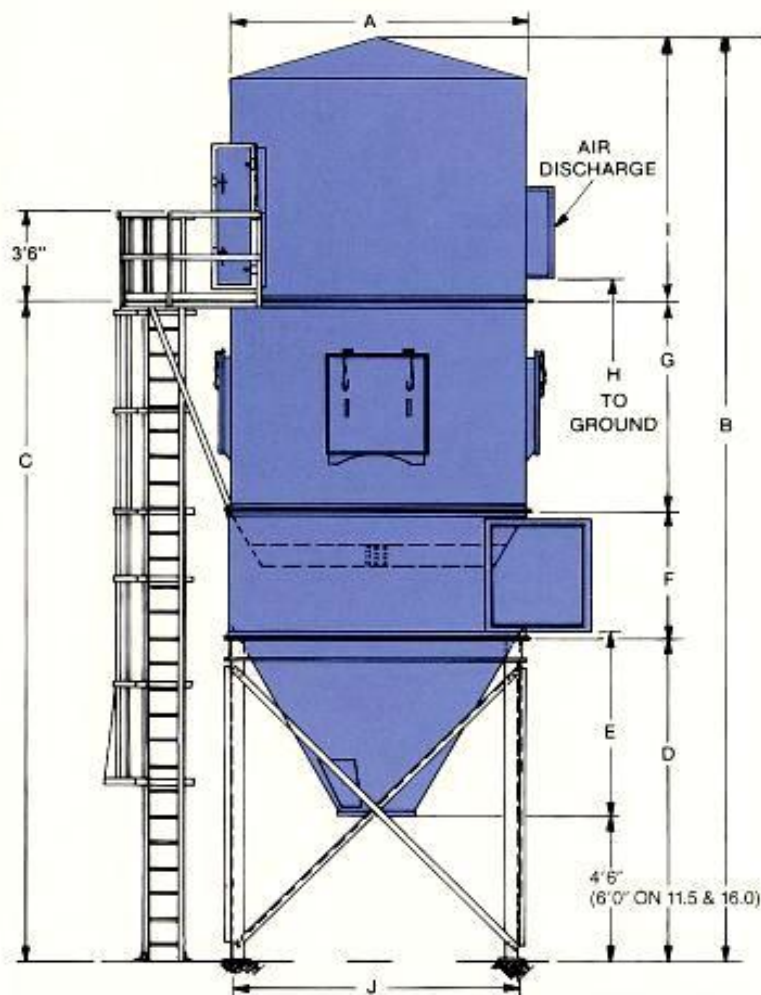


# Specifications

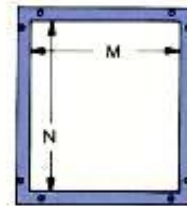
## Notes

1. Standard height from hopper to grade is 4' 6" except on the 11.5 and 16.0 models. Optional heights are available upon request. Dimensions B,C,D and H change accordingly.
2. Entry section may be rotated 360° except where it would interfere with ladder.
3. Discharge section and ladder may be rotated together 360° in approximately 6° increments except where they would interfere with the entry elbow.
4. Counterclockwise shown, clockwise opposite.
5. Structural supports are designed for 25 P.S.I. when loading and 50 P.C.F. dust loading unless otherwise specified.
6. Filters are available as bin vents.
7. All units have a 360° mounting ring.
8. 4.5' and 5.5' units are not walk-in filters.

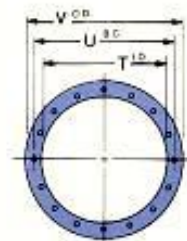




**AIR DISCHARGE**

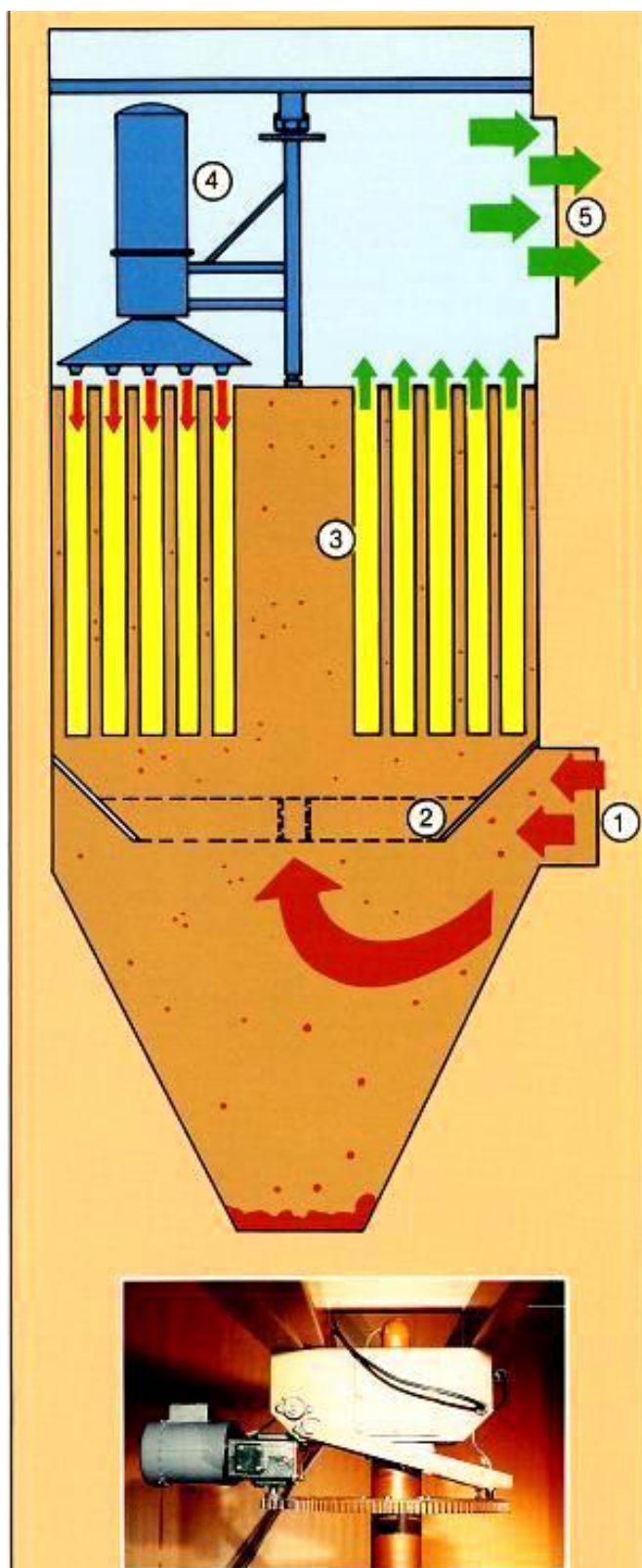


**AIR ENTRY**



**HOPPER OUTLET**

DIMENSIONS												
MODEL	A	B	C	D	E	F	G	H	I	J	K	L
4.5-40-8	4'6"	20'5 1/4"	16'3 1/4"	6'3 1/4"	2'1 1/4"	2'1"	7'11"	17'3 1/4"	4'2 1/4"	4'4 1/4"	1'6"	1'6"
4.5-40-10	4'6"	22'5 1/4"	18'3 1/4"	6'3 1/4"	2'1 1/4"	2'1"	9'11"	19'3 1/4"	4'2 1/4"	4'4 1/4"	1'6"	1'6"
5.5-60-8	5'6"	28'11"	19'6 1/4"	8'0"	3'4 1/4"	3'6"	8'0"	20'5"	6'7"	5'6"	2'8"	2'8"
5.5-60-10	5'6"	32'0"	21'6 1/4"	8'0"	3'4 1/4"	3'6"	10'0"	22'5"	10'7"	5'6"	2'8"	2'8"
6.5-96-8	6'6"	30'0"	19'6 1/4"	8'0"	3'9 1/4"	3'6"	8'0"	20'5"	10'6"	6'4"	3'6"	3'6"
6.5-96-10	6'6"	32'0"	21'6 1/4"	8'0"	3'9 1/4"	3'6"	10'0"	22'5"	10'6"	6'4"	3'6"	3'6"
8.5-162-8	8'6"	31'8 1/4"	21'3 1/4"	9'8 1/4"	5'6 1/4"	3'6"	8'0"	22'1 1/4"	10'6"	8'3 1/4"	3'6"	3'6"
8.5-162-10	8'6"	33'8 1/4"	23'3 1/4"	9'8 1/4"	5'6 1/4"	3'6"	10'0"	24'1 1/4"	10'6"	8'3 1/4"	3'6"	3'6"
8.5-162-12	8'6"	37'8 1/4"	25'3 1/4"	9'8 1/4"	5'6 1/4"	3'6"	12'0"	26'1 1/4"	12'6"	8'3 1/4"	3'6"	3'6"
10.5-270-8	10'6"	37'0"	26'6 1/4"	11'6"	7'3 1/4"	5'0"	10'0"	26'11"	10'6"	10'3"	4'0"	4'10"
10.5-270-10	10'6"	37'0"	26'6 1/4"	11'6"	7'3 1/4"	5'0"	10'0"	26'11"	10'6"	10'3"	4'0"	4'10"
10.5-270-12	10'6"	41'0"	28'6 1/4"	11'6"	7'3 1/4"	5'0"	12'0"	28'11"	12'6"	10'3"	4'0"	4'10"
11.5-312-8	11'6"	38'6"	28'0 1/4"	13'0"	7'3 1/4"	5'0"	10'0"	28'5"	10'6"	11'3"	4'0"	4'10"
11.5-312-10	11'6"	38'6"	28'0 1/4"	13'0"	7'3 1/4"	5'0"	10'0"	28'5"	10'6"	11'3"	4'0"	4'10"
11.5-312-12	11'6"	42'6"	30'0 1/4"	13'0"	7'3 1/4"	5'0"	12'0"	30'5"	12'6"	11'3"	4'0"	4'10"
13.5-456-8	13'6"	40'11 1/2"	30'5 1/4"	14'5 1/4"	10'3"	6'0"	10'0"	30'10 1/2"	10'6"	13'2 1/4"	5'2"	4'10"
13.5-456-10	13'6"	40'11 1/2"	30'5 1/4"	14'5 1/4"	10'3"	6'0"	10'0"	30'10 1/2"	10'6"	13'2 1/4"	5'2"	4'10"
13.5-456-12	13'6"	44'11 1/2"	32'5 1/4"	14'5 1/4"	10'3"	6'0"	12'0"	32'10 1/2"	12'6"	13'2 1/4"	5'2"	4'10"
16.0-648-10	16'0"	46'5"	35'5 1/4"	16'11 1/2"	12'0"	7'5"	10'0"	35'9 1/2"	11'0"	17'1"	7'0"	7'0"
16.0-648-12	16'0"	49'11"	37'5 1/4"	16'11 1/2"	12'0"	7'5"	12'0"	37'9 1/2"	12'6"	17'1"	7'0"	7'0"



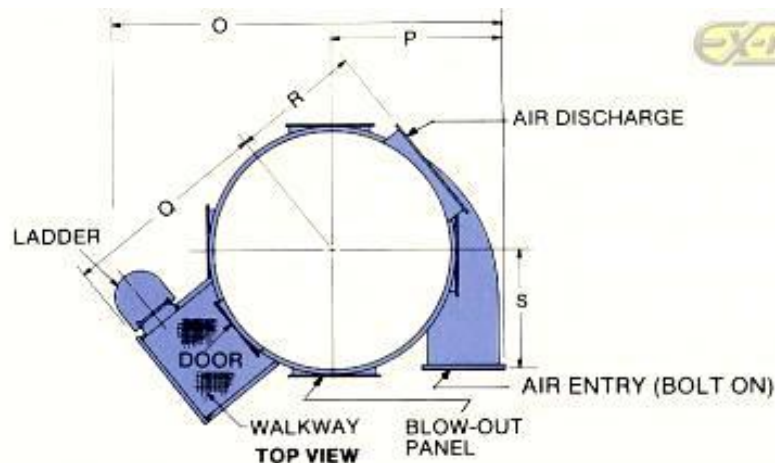
# How the filter works

EX-FACTORY

1. Contaminated air enters the Straight Fire Filter through an involute air inlet. Its large size slows down the air stream, minimizes entrance pressure loss and reduces power requirements.
2. The combination of the involute air inlet and deep particle deflection with a built-in vortex breaker results in the cyclonic downward deflection of the larger particles to the hopper. This allows heavier loading, less abrasion to the filter bags, higher collection efficiencies and less energy to remove the remaining particles from the air stream.
3. The filter bags remove dust particles from the air stream. Clean air passes upward through the filter bags and into the walk-in clean air plenum.
4. The Straight Fire Filter uses medium pressure (7 - 9 psig) air to clean collected dust from the filter bags. Air is stored in the accumulator tank that is rotated over the filter grid plate. An electronic sensor opens a diaphragm valve and releases the stored air into the cleaning manifold. The cleaning manifold is equipped with nozzles designed to maximize the pulse of cleaning air and induce additional cleaning air from the clean air plenum. There are no losses in cleaning pressure or energy because the accumulator tank is positioned directly atop the cleaning manifold. When the cleaning pulse is activated, dust is dislodged from the filter bags and is collected in the conical hopper. The Straight Fire pulses keep the filter bags clean, maintaining a constant porosity and low pressure drop across the filter, resulting in an extremely high collection efficiency with low energy usage.
5. The clean, dust-free air is exhausted through the large air outlet to be either vented to the atmosphere or recycled to the plant. Because of the short contact time required for the air to pass through the Straight Fire Filter, no additional energy is required to either heat or cool the air stream.







**EX-FACTORY**

### Filter Nomenclature



#### Note:

Initial specifications can call for less than the maximum number of bags; however, filter dimensions remain unchanged. Additional bags may be added as filtering demands increase.

MODEL	MEDIA AREA (SQ. FT.)	BLOWER MOTOR (H.P.)	DRIVE MOTOR (H.P.)	5:1 CFM	10:1 CFM
4.5-40-8	412	1½	½	2060	4120
4.5-40-10	515	1½	½	2575	5150
5.5-60-8	618	1½	½	3090	6180
5.5-60-10	772	1½	½	3860	7720
6.5-96-8	989	2	½	4740	9480
6.5-96-10	1236	2	½	5920	11840
8.5-162-8	1699	3	½	8035	16070
8.5-162-10	2085	3	½	10040	20080
8.5-162-12	2503	3	½	12048	24096
10.5-270-8	2781	5	½	13905	27810
10.5-270-10	3475	5	½	17375	34750
10.5-270-12	4172	5	½	20860	41720
11.5-312-8	3214	5	½	16070	32140
11.5-312-10	4015	5	½	20075	40150
11.5-312-12	4820	5	½	24100	48200
13.5-456-8	4697	7½	½	23485	46970
13.5-456-10	5869	7½	½	29345	58690
13.5-456-12	7045	7½	½	35225	70450
16.0-648-10	8346	10	½	41730	83460
16.0-648-12	10015	10	½	50075	100150

MODEL											TOTAL WEIGHT	
	M	N	O	P	Q	R	S	T	U	V	FILTER UNIT	COMPLETE STRUCTURE
4.5-40-8	1'4"	1'4"	10'0 1/2"	3'8 1/2"	6'5"	2'6"	2'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	2842	3637
4.5-40-10	1'4"	1'4"	10'0 1/2"	3'8 1/2"	6'5"	2'6"	2'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	3126	4220
5.5-60-8	2'6"	2'6"	13'4 1/2"	5'8 1/2"	7'8"	3'8 1/2"	3'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	5859	7594
5.5-60-10	2'6"	2'6"	13'4 1/2"	5'8 1/2"	7'8"	3'8 1/2"	3'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	6738	8733
6.5-96-8	2'6"	2'6"	13'4 1/2"	5'8 1/2"	7'8"	3'5 1/2"	3'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	5859	7594
6.5-96-10	2'6"	2'6"	13'4 1/2"	5'8 1/2"	7'8"	3'5 1/2"	3'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	6738	8733
8.5-162-8	3'0"	2'6"	15'4 1/2"	6'8 1/2"	8'8"	4'6 1/2"	4'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	7992	10217
8.5-162-10	3'0"	2'6"	15'4 1/2"	6'8 1/2"	8'8"	4'6 1/2"	4'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	9190	11750
8.5-162-12	3'0"	2'6"	15'4 1/2"	6'8 1/2"	8'8"	4'6 1/2"	4'3"	2'0 1/2"	2'1 1/2"	2'3 1/4"	10388	13283
10.5-270-8	3'6"	4'0"	17'4 1/2"	7'8 1/2"	9'8"	5'5 1/2"	5'3"	2'0"	2'2"	2'4"	11250	15150
10.5-270-10	3'6"	4'0"	17'4 1/2"	7'8 1/2"	9'8"	5'5 1/2"	5'3"	2'0"	2'2"	2'4"	13100	17585
10.5-270-12	3'6"	4'0"	17'4 1/2"	7'8 1/2"	9'8"	5'5 1/2"	5'3"	2'0"	2'2"	2'4"	14925	19995
11.5-312-8	3'6"	4'0"	18'4 1/2"	8'2 1/2"	10'2"	5'11 1/2"	5'9"	3'0 1/2"	3'2 1/2"	3'4 1/4"	12521	16421
11.5-312-10	3'6"	4'0"	18'4 1/2"	8'2 1/2"	10'2"	5'11 1/2"	5'9"	3'0 1/2"	3'2 1/2"	3'4 1/4"	14399	18884
11.5-312-12	3'6"	4'0"	18'4 1/2"	8'2 1/2"	10'2"	5'11 1/2"	5'9"	3'0 1/2"	3'2 1/2"	3'4 1/4"	16277	21347
13.5-456-8	5'0"	5'0"	21'4 1/2"	10'2 1/2"	11'2"	6'11 1/2"	6'9"	2'0"	2'2"	2'4"	16811	20686
13.5-456-10	5'0"	5'0"	21'4 1/2"	10'2 1/2"	11'2"	6'11 1/2"	6'9"	2'0"	2'2"	2'4"	19333	23789
13.5-456-12	5'0"	5'0"	21'4 1/2"	10'2 1/2"	11'2"	6'11 1/2"	6'9"	2'0"	2'2"	2'4"	20672	26759
16.0-648-10	5'11 1/2"	6'11 1/2"	24'7 1/2"	12'2 1/2"	12'5"	8'2 1/2"	8'0"	3'0 1/2"	3'2 1/2"	3'4 1/4"	26648	33600
16.0-648-12	5'11 1/2"	6'11 1/2"	24'7 1/2"	12'2 1/2"	12'5"	8'2 1/2"	8'0"	3'0 1/2"	3'2 1/2"	3'4 1/4"	28902	36405