

# Venturi Type Air Movers



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Air movers, or air horns, are used wherever there is a need to disperse fumes, move air into confined spaces, cool men working in elevated temperature conditions, or cool machinery or products with a blast of directed air. Common applications are found in refineries, chemical plants, utilities and co-generation units, metal fabrication plants, paper and pulp plants, shipyards, the marine industry and the steel industry.

**5 Models Available**  
**1182 CFM to 7304 CFM**  
**(at 80 PSIG)**

## Total Air Flow and Consumed Air at Various Inlet Pressures

PERFORMANCE TOTAL OF AIR FLOW EQUALS COMPRESSED AIR CONSUMED PLUS AIR FLOW INDUCED.

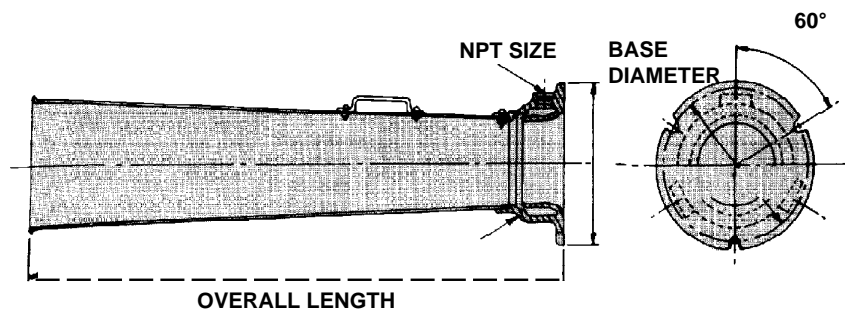
Texas Pneumatic air movers have been tested at an independent laboratory. The free flow ratings listed are based on tests to AMCA Standard 210. Under identical testing situations, Texas Pneumatic air movers equalled or exceeded the air flow of competitively manufactured air movers.

The free air induction ratio is a measure of efficiency of a venturi type air mover. The ratio is determined by dividing the total CFM discharged by the amount of air consumed. The accuracy of the figures of the free air induction ratio depends again on the accuracy of the method of testing. All free flow ratings of Texas Pneumatic air movers are based on tests to AMCA Standard 210.

	INLET PRESSURE		
	40 PSIG	60 PSIG	80 PSIG
	<b>Total Air Flow</b>	<b>Total Air Flow</b>	<b>Total Air Flow</b>
<b>TX3AMS</b>	815 CFM	981 CFM	1182 CFM
<b>TX3AM</b>	1017 CFM	1231 CFM	1462 CFM
<b>TX6AM</b>	2385 CFM	2885 CFM	3347 CFM
<b>TX8AM</b>	3152 CFM	4152 CFM	4929 CFM
<b>TX10AM</b>	4898 CFM	6182 CFM	7304 CFM
	<b>Air Consumed</b>	<b>Air Consumed</b>	<b>Air Consumed</b>
<b>TX3AMS</b>	36 SCFM	50 SCFM	62 SCFM
<b>TX3AM</b>	35 SCFM	45 SCFM	62 SCFM
<b>TX6AM</b>	73 SCFM	98 SCFM	124 SCFM
<b>TX8AM</b>	114 SCFM	152 SCFM	193 SCFM
<b>TX10AM</b>	154 SCFM	209 SCFM	274 SCFM
<b>FREE AIR INDUCTION RATIOS AT VARIOUS INLET PRESSURES</b>			
Dividing total air flow discharged by amount of air consumed			
<b>TX3AMS</b>	22.64	19.62	19.06
<b>TX3AM</b>	29.06	27.36	23.58
<b>TX6AM</b>	32.69	29.44	26.99
<b>TX8AM</b>	27.65	27.32	25.54
<b>TX10AM</b>	31.80	29.58	26.66

# Venturi Type Air Movers

- \* **No moving parts.**
- \* **Used for venting hazardous areas.**
- \* **Maintenance is minimal.**
- \* **Can be used as a blower or exhauster.**
- \* **Operates on compressed air or steam.**
- \* **Connection for ground wire.**
- \* **Tested at an independent laboratory to AMCA Standard 210, equaling or exceeding the air flow of competitively manufactured air movers!**



	AMERICAN STANDARD MEASUREMENTS						
	Overall Length	Diameter of Base	Diameter Top of horn	NPT Size	Bolt Circle Diameter	Base Slot Diameter	Net Weight
TX3AMS	16.75"	7.31"	6.0"	1/2"	6.56"	0.4	5.5 lb.
TX3AM	30.5"	7.31"	7.0"	1/2"	6.56"	0.4	8.5 lb.
TX6AM	44.25"	11.25"	12.5"	1"	10.5"	0.4	22.3 lb.
TX8AM	46.06"	14.37"	14.25"	1"	13.62"	0.5	36.0 lb.
TX10AM	48.0"	17.0"	15.75"	1"	15.5"	1.0"	42.1 lb.

## Oil removal from the compressed air used to power the venturi type air mover

If this air mover is used in a plant and the air is going back into the atmosphere and will be breathed by the workers, then certain precautions can be taken to improve the breathability of the air.

First, the air in the plant may have a normal 5 ppm oil content. If the compressor is pumping a lot of oil into the compressed air supply, then you have compressed air which is contaminated with high oil content going into the atmosphere.

To remedy that situation, you use a coalescing filter system between the compressor and your air mover inlet:

*Order TSF1/2 filter system for the TX3AMS and TX3AM, TSF1 for the TX6AM, and TSF1-1/2 for the TX8AM, TX10AM. This will ensure an air quality index of .015 ppm from your compressed air supply. That solves the problem. See page 139.*

# Venturi Type Air Movers

## USAGES OF VENTURI TYPE AIR MOVERS

### *Petroleum Processing*

#### \* Refineries and Chemical

Turnarounds or shutdowns are performed periodically to refurbish and overhaul units of both chemical plants and refineries. Fumes must be removed that are sometimes poisonous, explosive or noxious from process towers, tanks, large pipes, etc. before men can work effectively in these areas. Air movers can also be used to cool heavy equipment that may be in danger of overheating or that needs to be cooled in order to be worked on. In super-hot areas, sometimes the air movers are used to cool personnel.

### *Power Plants*

#### \* Utilities and Co-generation Units

Heavy-duty turbines, both steam and gas, induced draft fans and hot furnaces that may require emergency repairs can be cooled quickly with the use of air movers. To cool enclosed machinery, you can exhaust hot air from one side and use another air mover to move cooler air in from the other side.

#### \* Metal Fabrication of Tanks, Towers and Vessels

Welding in confined spaces creates welding gases that have to be removed in order to have a safe, healthy working environment for greater efficiency and productivity.

#### \* Paper and Pulp Plants

Toxic gases in digester rooms can be removed with air movers. Boilers with induced draft fans can be cooled for maintenance of fans with air movers. Fresh air can then be blown to personnel working on them.

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#### \* Shipyards

Air movers are used many times to remove welding fumes from the welder working in a confined area. The TX3AMS is used for this purpose at one of the larger yards on the Gulf Coast. Blowing fresh air into confined areas is another use.

#### \* Marine Industry

Any time you need to exhaust volatile fumes after pumping off cargo, you have to use some type of air moving device. Air movers are used many times for this application. Navy ships can use air movers for removal of welding fumes. If there is ever a fire below deck, smoke and fumes created could be exhausted with air movers.

#### \* Steel Industry

Air movers are used to cool hot iron ladles - faster cooling means less downtime - faster routine cleaning and maintenance. Air movers are used to cool heavy equipment.

#### \* Manhole Operations

Air movers can be used to move fresh air into a manhole or to pull polluted air out from a manhole. Uses of the air movers are not limited to a few industries. Wherever you need to disperse fumes, move air into confined spaces, cool personnel working in elevated temperature conditions, or cool machinery or products with a blast of directed air, then an air mover may find an application.

## Entertainment Venues

While this product was developed for industry, a company in Florida adapted the Venturi Air Horns to CO<sub>2</sub> bottled gas and has placed them around the world to move confetti. They are used for that purpose at Euro-Disney, Disney in Florida, Winter Olympics, NFL Games, Macy's Parade and many more events too numerous to mention.

For your town's parades or events, you might want to consider using the Venturi Air Horns in like manner.

# Venturi Type Air Movers

**1** *Texas Pneumatic manufactures air movers, and it is our responsibility to supply the best product we can supply. We make every attempt to do just that and after reading our catalog and using our product, we hope you will agree.*

As a cautionary note, strict precautions may be required involving the use of any air mover in gas freeing, prevention of tank collapse, tank entry and tank cleaning where any volatile or poisonous fumes are present. For informational purposes only, you are advised to consult API Publications 2015, 2015A, and 2015B prior to participating in the above activities. These publications can be obtained from the American Petroleum Institute, 1220 L Street, Northwest, Washington, D.C. 20005, Telephone (202) 682-8000.

## OPERATION

Compressed air or saturated steam is the power source for this air mover. It operates on the venturi principle whereby you take small volumes of high velocity air (from the compressed air source) through the casting and out the nozzle jets, creating a venturi action or pulling action that induces large volumes of low velocity air through the venturi and out the air diffuser.

A 1" hose is recommended from your air supply source to the side inlet connection. The compressor size required can be determined by checking the chart on air consumed at various inlet pressures. Operate this air mover on air or steam lines limited to 140 psi.

## SAFETY PRECAUTIONS

An electric ground or static ground is attached to the base of all air movers. Any time you are using this air mover in a volatile atmosphere, attach a ground wire to discharge any static electricity, preventing a buildup of static electricity.

Texas Pneumatic air movers have no moving parts and are ideal for venting hazardous areas. The bases are made from a high quality aluminum alloy. Aluminum scraped across rusty steel can sometimes cause a smear. A heavy smear of aluminum on steel (being struck with some object) can cause an incendiary spark. Take precautions not to drag the base on steel tanks, etc.

While there are no moving parts to the air mover, all of the performance ratings in this brochure are based on a unit that had a clean air reservoir and nozzle jets that are of the proper diameter and not plugged up in any way. Care should be taken to prevent clogging of the nozzle jets and a periodic cleaning with a steam cleaner would be appropriate maintenance. Secure the air mover in place prior to turning on the air supply or it will tend to move from its intended position.

Texas Pneumatic air movers have been tested at an independent laboratory. Total air flow or free flow ratings are based on tests to AMCA Standard 210. Under identical testing situations, Texas Pneumatic air movers equalled or exceeded the air flow of competitively manufactured air movers.

**\* Due to UPS regulations, shipping weight is considered oversized; therefore TX6AM equals 30lbs. TX10AM equals 70 lbs.**

### BOXED SHIPPING DIMENSIONS

	Length	Height	Width	Net Shipping Weight
<b>TX3AMS</b>	18.62"	8"	7.62"	7.0 lb.
<b>TX3AM</b>	32.12"	8"	7.62"	10.0 lb.
<b>TX6AM</b>	45"	12.62"	12.5"	27.0 lb.*
<b>TX8AM</b>	47"	15"	15"	42.0 lb.*
<b>TX10AM</b>	49.25"	18"	18"	50.0 lb.*

# Venturi Type Air Movers

## Performance Graphs

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Engineering data showing performance of venturi air movers used with various sizes of ducting, i.e., operation against resistance. All data and examples prepared by Frank P. Bleier, P.E., Industrial Physicist. Mr. Bleier is the author of the "Fan Handbook" published by McGraw Hill and is the foremost expert in the world when it involves fans or air movement. Texas Pneumatic is indeed honored to be associated with Mr. Frank Bleier, graduate of the University of Vienna. Mr. Bleier is honored in the "Who's Who in Engineering" and has received more honors than we can elaborate.

All examples prepared by Mr. Frank P. Bleier, P.E.

### **"HOW TO USE THE GRAPHS WITH EXAMPLES"**

**(1)** Suppose a customer wants to use our 8" air mover, powered by compressed air of 80 PSI, and he wants to use a 12" i.d. duct, 80 ft. long. We look at the graph G-6887 which is for the 8" air mover and for 12" i.d. ducts of various lengths. We select the parabola for the 80 ft. long duct. It intersects the 80 PSI performance curve at exactly 3000 CFM, so this is the air volume the customer will get.

**(2)** Suppose another customer wants to use our 6" air mover, powered by 60 PSI, and he wants to use an 8" duct, 22 ft. long. The graph G-6884 does not show a parabola for 22 ft., but by interpolating between 20 and 30 ft., we find that our air mover will deliver 1650 CFM.

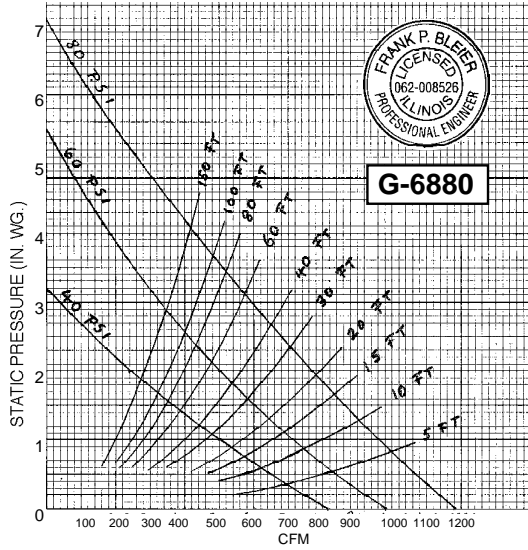
**(3)** Suppose we have a customer in Europe who is used to the metric system where the duct i.d.'s are measured in millimeters and go in steps of 25 mm. The duct lengths are measured in meters. Suppose this customer wants to use our 3" air mover, powered by compressed air of 5.6 kg/cm<sup>2</sup> and he wants to use a 150 mm i.d. duct, 20 m long. The graph G-6891 shows that for these conditions our air mover will give him 1400 m<sup>3</sup>/h. If he wants to use compressed air of only 4.2 kg/cm<sup>2</sup>, he will get only 1180 m<sup>3</sup>/h.

Included in our catalog with admiration and respect for the American entrepreneurial spirit and for men like Mr. Frank Bleier, who helped build America.

# Venturi Type Air Movers

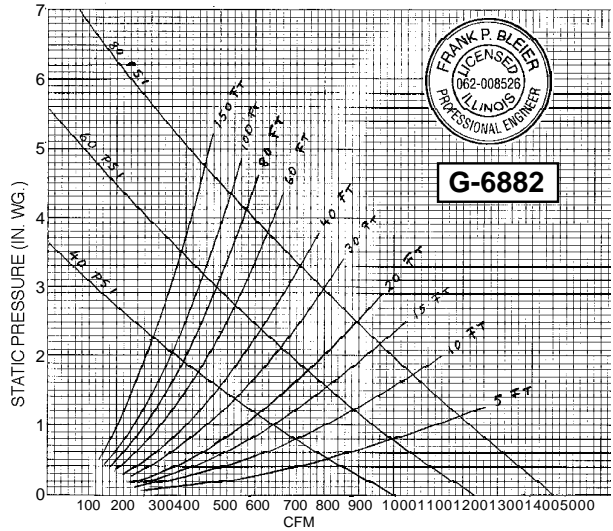
## TEXAS AIR MOVER SIZE 3S

with 5" I.D. Ducts of Various Lengths



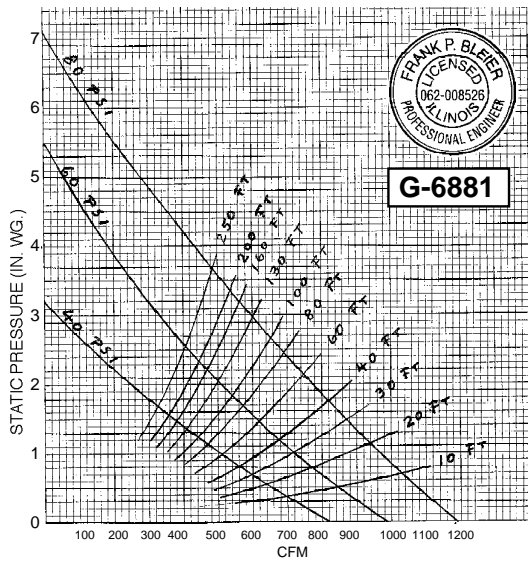
## TEXAS 3" AIR MOVER

with 5" I.D. Ducts of Various Lengths



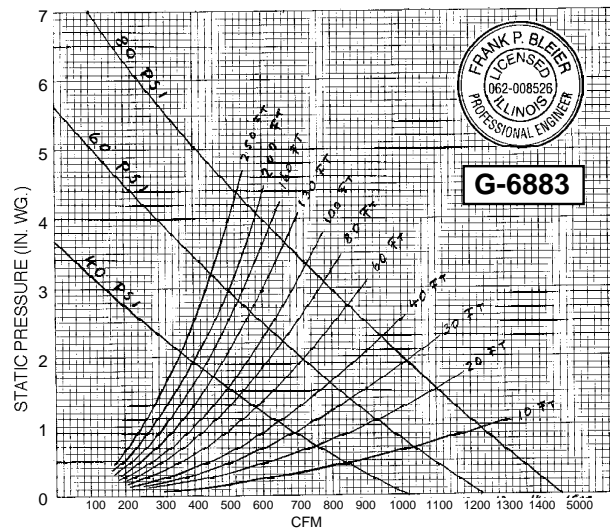
## TEXAS AIR MOVER SIZE 3S

with 6" I.D. Ducts of Various Lengths



## TEXAS 3" AIR MOVER

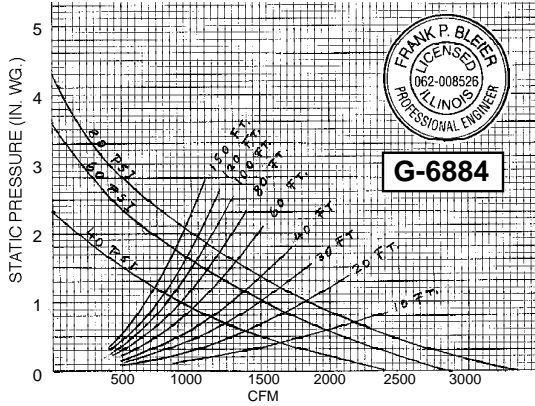
with 6" I.D. Ducts of Various Lengths



# Venturi Type Air Movers

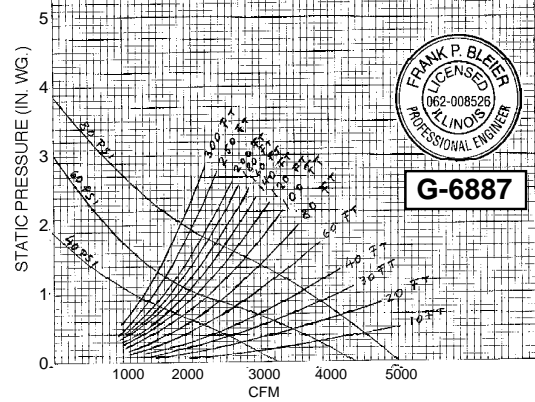
## TEXAS 6" AIR MOVER

with 8" I.D. Ducts of Various Lengths



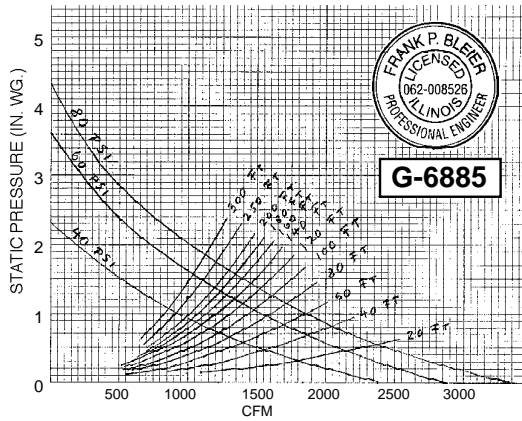
## TEXAS 8" AIR MOVER

with 12" I.D. Ducts of Various Lengths



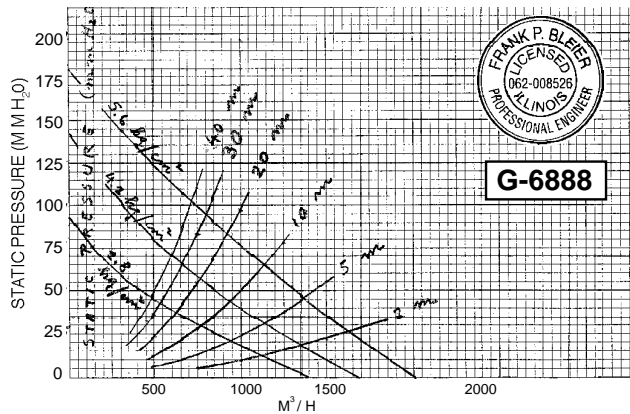
## TEXAS 6" AIR MOVER

with 10" I.D. Ducts of Various Lengths



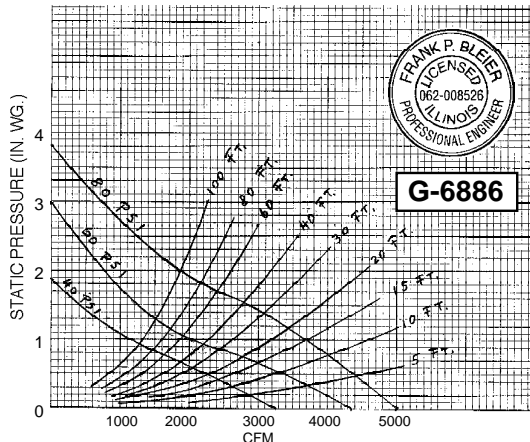
## TEXAS AIR MOVER SIZE 3S

with 125 mm I.D. Ducts of Various Lengths



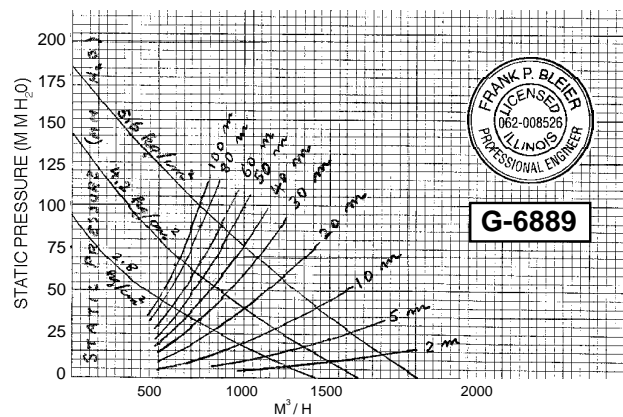
## TEXAS 8" AIR MOVER

with 10" I.D. Ducts of Various Lengths



## TEXAS AIR MOVER SIZE 3S

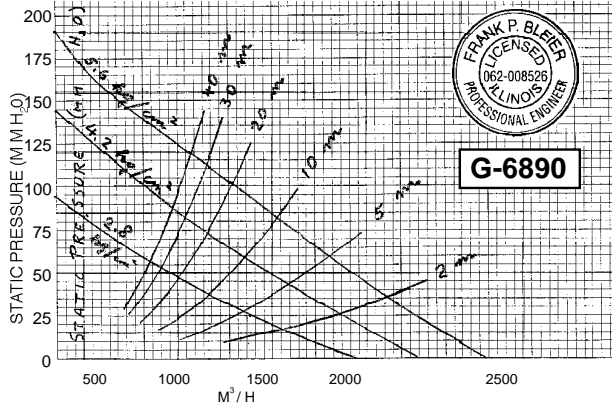
with 150 mm I.D. Ducts of Various Lengths



# Venturi Type Air Movers

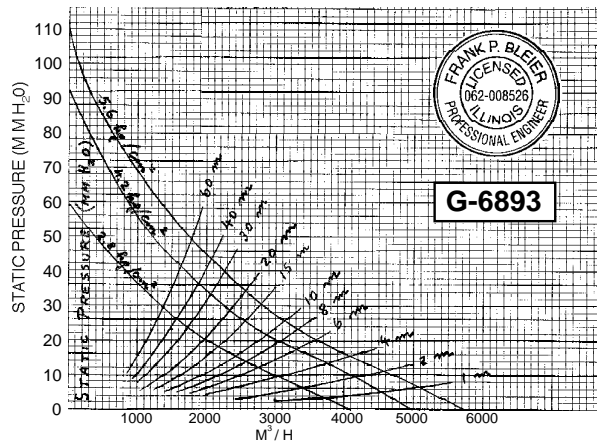
## TEXAS 3" AIR MOVER

with 125 mm I.D. Ducts of Various Lengths



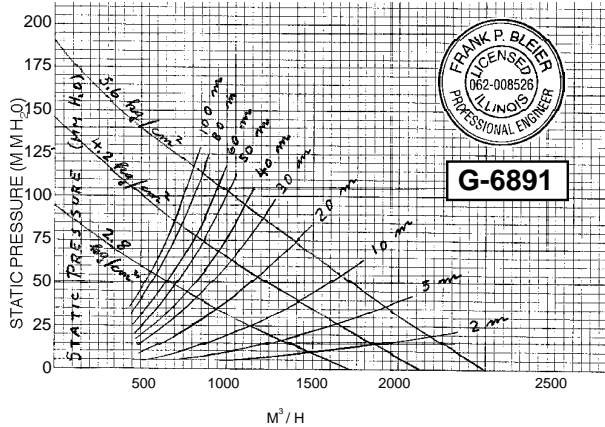
## TEXAS 6" AIR MOVER

with 225 mm I.D. Ducts of Various Lengths



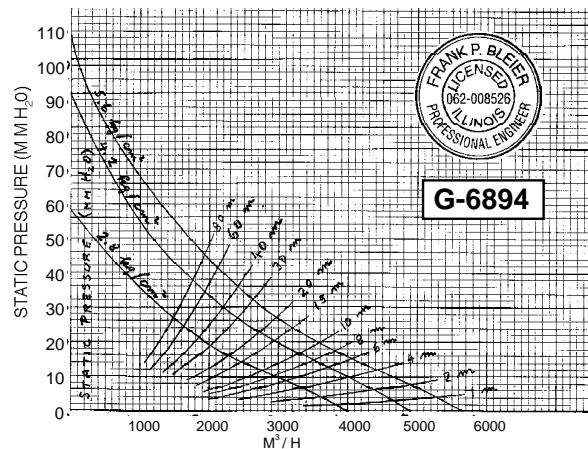
## TEXAS 3" AIR MOVER

with 150 mm I.D. Ducts of Various Lengths



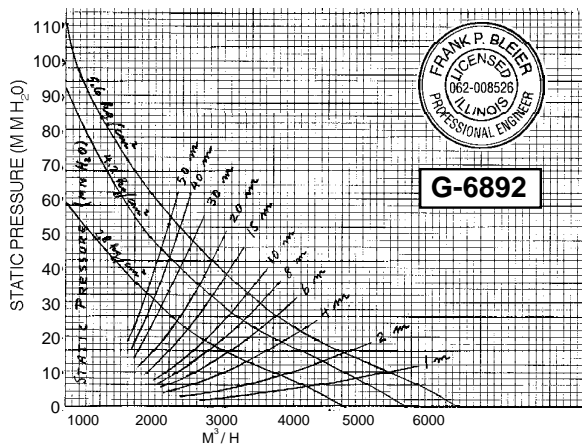
## TEXAS 6" AIR MOVER

with 250 mm I.D. Ducts of Various Lengths



## TEXAS 6" AIR MOVER

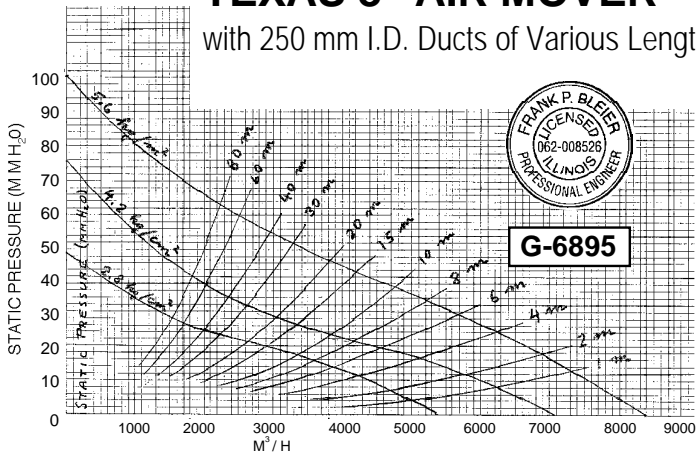
with 200 mm I.D. Ducts of Various Lengths





# Venturi Type Air Movers

## TEXAS 8" AIR MOVER with 250 mm I.D. Ducts of Various Lengths



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## TEXAS 8" AIR MOVER with 275 mm I.D. Ducts of Various Lengths

