Sukup Fans and Heaters



- Axial
- In-Line Centrifugal
- Centrifugal
- Double-Inlet Centrifugal

Axial Fans

Not all fans are alike. Sukup Axial Fans give the highest airflows at low cost. Sukup high performance axial fans are ideal for lower static pressures found in aeration or in-bin drying. Sukup thoroughly tests all fans and heaters prior to shipping and backs their fans with a two-year warranty on components.

Engineered for High Performance

- Cast aluminum blades produce high airflow efficiently and economically.
- 3500 RPM motors have been specially engineered for Sukup's high-performance blades.

High Efficiency

All fan blades are precisionbalanced for vibration-free operation. The large hub on the blade prevents back leakage of air at higher static pressures.



 Blades are secured to the motor shaft with Trantorque bushings to ensure the most secure attachment, as well as serviceability.

Close Blade Tip Clearance

- Unique square end plates maintain accurate roundness of the housing to allow closer clearance between blade tips and housing.
- Close tip clearance increases airflow by preventing air from blowing back between blade and housing.
- Square end plates also give uniform support around the housing by eliminating legs that concentrate stress and distort the housing.

- Patented built-in venturi (air intake) on 24" and 28" fans increases airflow. (Patent #5,615,850)
- Sturdy handles on 24" and 28" fans make them easier to install and move.
- Plated screen guard bolts over air intake for added safety.
- Galvanized housings resist rust.
- Sukup housings are huck bolted together for more solid, secure assembly. Other companies use common nuts and bolts that can work loose over time.



Aeration Fans

- Sukup 12" and 18" fans are ideal for applications where static pressure is less than 2".
- Totally-enclosed motors have been designed for years of trouble-free operation.
- Fans can easily be mounted to push or pull air.
- Trantorque bushings allow easy installation - only one nut to tighten and no keys to put in.
- 12" and 14" fans come wired with cord. 18" is available with or without controls.
- Change wiring easily on the dual-voltage motor, since the connection box is on the end of the motor, rather than on one side.

12"	3/4 or 1 hp
14"	1½ hp
18"	2 or 3 hp



More Airflow for Your Money

Sukup 24" and 28" fans are designed to partner with a Sukup Heater for grain drying at lower static pressures. They may also be used alone for pressure aeration. The 24" and 28" fans have all of the features listed on the previous page as well as:

Maximum airflow at lower static pressures.



- 230 volt 1 or 3 phase or 460 volt 3 phase. 575 or 208 volt also available.
- Heavy-duty motors for dependable operation.
- CSA and CE models available.
- Controls are standard.
- For pressure aeration only. Not for suction aeration.

24"	5-7 hp
24"	7-10 hp
28"	10-15 hp



38" & 44" Low-Speed Fans

- Sukup 38" and 44" fans are ideal for shallow grain depth applications.
- High airflow at low static pressure.
- Quieter than high speed axials.
- Excellent for drying crops such as ear corn, nuts, onions or any other crop dried at shallow grain depths in flat storage facilities



Starfire-type burner provides critical gas and air mixture for high efficiency and even heat distribution.

- Sukup heaters ignite quickly, even at low gas pressures.
- 3-Year warranty on the solid state circuit board.
- Thermostat, humidistat, high-low thermostat or modulating valve available.
- Air straightening vanes provide better heat distribution.
- Galvanized housings resist rust.
- CSA models available.
- Available for use with vapor propane, liquid propane (with vaporizer) or natural gas.
- Two-way adjustment on vaporizer allows operation over a wider range of outside temperatures.
- Exclusive Sukup vaporizer high limit features manual reset, so you can tell if vaporizer needs to be adjusted.

Axial Heaters







Stainless Steel Flame Sensor is more reliable and lasts longer than flame probes.



- Safety features increase reliability.
 - Transition high limit shuts off heater if air entering bin is too hot.
 - Pressure relief valves
 - Vapor high limit
 - Burner high limit
 - Purge delay
 - Spring-loaded solenoids
 - Grounded electrical components
- Optional Differential Controller limits plenum temperature to within 10° of ambient. For super-low temp heaters.
- Optional Deluxe Control Box includes a static pressue gauge and thermometer. Available as single or dual controls.
- Optional Dual Burner Controls are needed if there is more than one heater on a bin, so they cycle on and off together for even heat.

Centrifugal Fans & Heaters

 Adjustable leveling legs on single inlet fans allow easy leveling and support to accommodate inconsistencies in concrete.



- Special airfoil blades move more air due to a backward-curved, non-overloading design.
- Fan wheels are dynamically balanced for smooth, trouble-free operation.
- Exclusive lip easily connects the fan to the heater or transition to form an airtight seal.



Top Quality Motors, Controls and Performance

All Sukup Fans and Heaters are factory-tested for smoothness, motor performance and general operation to ensure our customers are getting a top quality product that works properly from day one.



- Sukup engineers test motor amperage and temperature under long-term, maximum-load conditions to ensure that the motors will stand up to tough operating environments.
- All Sukup Fans and Heaters carry a 2-year warranty.
- Integral motor mount.

- Controls include:
 - magnetic starter
 - overload relay
 - start-stop buttons
 - 115v circuit to interlock heater with fan (7.5 - 50 hp rpm)
- Direct motor drive for greater efficiency and less maintenance.



- 1 phase, 230 volt
- 3 phase, 230 volt
- 3 phase, 460 volt
- 50 hz and other voltage
- Sukup fan housings are heavy-duty galvanized steel to resist rust and stand up to the elements.
- Control boxes and motor mounts are also galvanized steel to make high-quality, long-lasting fans.
- Single inlet fans from 3 40 hp.
- 2-year warranty on all Sukup fans.
- CSA Models available.
- Plated screen guard over air intake for safe operation.
- Curved spun inlet venturi improves efficiency.
 Finished with powder-coat paint over galvanized steel for ultimate rust prevention.
- Transitions assemble with one wrench thanks to special nutserts.



Options

CSA models available 3-20 hp, 1750 RPM and 3-50 hp, 3500 RPM.

- Engine-driven models available.
- TEFC and Explosion-proof motors
- Counter-balanced fan shutters
 recommended for multiple fan installations.



- Galvanized steel for long life.
- All seams overlap to prevent air leakage.
- Special nutserts are attached directly to the sheet metal, making assembly simple and convenient.
- Transitions that fit between bin stiffeners are available.



#1 in Performance & Quality

Highly Efficient Burning

- Extensive testing results in a heater that allows complete combustion at up to 6" of static pressure.
- Independent tests have shown Sukup heaters burn within the highest efficiency range.
- Coiled vaporizer is available to burn liquid propane

where more heat is required, as in colder climates.

- Two-way adjustment allows operation over a wider range of outside temperatures.
- Exclusive Sukup vaporizer high limit features manual reset, so you can tell if vaporizer needs to be adjusted.



Safety Features

- Sukup heaters have more standard safety features than any others.
- Pressure relief valves on piping.
- 30-second purge delay.
- Stainless steel flame sensor shuts off gas if flame is not present.
- Spring-loaded solenoids automatically close when electricity shuts off.
- Electrical components are grounded.
- Standard divided control box separates gas and electrical components while protecting them from the elements.



Fuel Types

- Liquid propane
- Vapor propane
- Natural Gas regulator not included
 - 3/4" or 11/4" pipe size
- CSA and CE models available.

20% Faster Drying

 Placing the heater downstream, between fan and transition, air goes through the fan and then is heated. Because air expands as it is heated, this design gives up to 20% greater drying capacity than an upstream heater placed

on the fan inlet.

Easy Access Service Door

- Sukup heater housings have a large service door to allow easy access to all heater components.
- A sight glass in the top of the housing allows for easy inspection while burning.



Low-Temp Heater

- Sukup manufactures special downstream, low-temp heaters which operate on propane, rather than electricity.
- For equal cost, propane gives up to 70% more heat than electricity.
- Temperature rise of 25-75°.
- More flexibility than an electric heater.

Reliable controls

Sukup heaters feature a special solid state circuit board for simpler, more trouble-free operation.



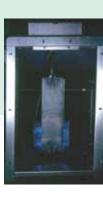
Benefits of Sukup solid state controls include:

- Sukup stainless steel flame sensor is more reliable and will last longer than flame probes.
- Unique, separate transformer produces an aggressive spark for reliable, easy ignition.
- Solid state circuitry allows additional safety features for greater reliability.
- Circuit board carries a 3-year warranty.

Heater Control Options

- Thermostat cycles burner off and on.
 Not recommended for high temp systems since cool air is blown into bin when burner cycles off.
- Modulating valve automatically adjusts gas pressure to maintain constant drying temperature under the floor.
- High-Low continuous flame cycles between higher and lower gas pressures for more uniform temperature with greater reliability. Not for low temperature systems.
- Dual burner controls with optional gauges control multiple heaters from one control box to ensure they cycle on and off together for even heat.
- Deluxe control box includes a static pressure gauge, thermometer, and temperature controller.





Double Inlet Fans

- Sukup offers 30 hp and larger 1750 RPM Double Inlet Fans.
- Double-blade design is more efficient and gives more airflow than comparable single blade fans. Double air inlet pulls air over the motor, utilizing motor heat.



Sukup High Speed Fans

- Sukup also offers a full line of high speed (3500 RPM) centrifugal fans.
- Ideal for deep grain depths, aerating small grains or where static pressure is high.
- Totally-enclosed motors.
- CSA models available in sizes 3-50 hp.



Engine-driven fans are also available.

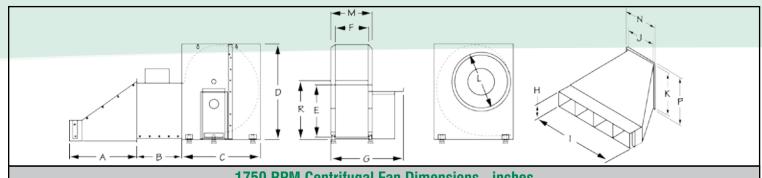
	Certified Airflows* for 1750 RPM Centrifugal Fans - CFM												
1750 RPM					Static Pres	sure - inche	es of water						
HP	0	1	2	3	4	5	6	7	8	9	10		
3	5300	4500	3800	3400	3000	2600	-	-	-	-	-		
5*	9500	8900	7650	6700	6000	5000	-	-	-	-	-		
7 1/2"*	12,000	11,300	10,400	9400	8500	7700	6700	-	-	-	-		
10*	16,000	15,150	14,200	13,200	12,200	11,200	10,100	7800	3300	-	-		
15*	18,000	17,000	16,100	15,200	14,300	12,700	11,700	11,100	8700	-	-		
20*	23,600	22,800	21,750	20,650	19,600	18,500	17,200	15,800	14,500	12,000	-		
25	24,100	23,200	22,300	21,300	20,300	19,300	18,200	17,100	16,000	14,000	-		
30 sng.	24,701	23,787	22,873	21,958	21,044	20,143	19,251	18,359	17,383	16,403	12,100		
30 dbl.	34,000	32,200	30,300	28,600	27,000	25,500	23,500	21,800	19,500	16,700	13,700		
40 sng.	31,300	30,600	29,900	29,000	28,000	26,900	25,700	24,500	23,300	22,000	20,700		
40 dbl.	43,400	41,400	39,300	37,300	34,600	31,800	29,100	27,200	25,000	22,200	19,000		
50 sng.	32,300		30,640		28,975		27,310		25,410		23,275		
50 dbl.	54,000	50,800	47,400	44,000	40,600	37,400	34,000	30,800	28,600	25,800	20,500		

*Sukup Manufacturing Co. certifies that the airflow for designated fan models has been determined by an INDEPENDENT airflow testing laboratory.

	Airflows for 3500 RPM Centrifugal Fans - CFM													
3500 RPM					Static	Pressure -	- inches of	water						
HP	0	2	4	6	8	10	12	14	16	18	20	22		
3	3300	2800	2400	1950	1350	900	-	-	-	-	-	-		
5	4450	4050	3550	3000	2350	1550	-	-	-	-	-	-		
7 1/2	5050	4600	4250	3850	3400	2900	2350	1650	-	-	-	-		
10	7300	6850	6350	5800	5400	4700	3950	2400	-	-	-	-		
15	10,050	9500	8850	8050	7350	6350	4750	2650	-	-	-	-		
20	10,800	10,350	9850	9300	8700	8150	7550	6850	6150	5200	4100	-		
30	14,500	13,800	13,000	12,300	11,600	10,800	10,200	9400	8400	7800	6800	-		
40	19,000	18,300	17,200	16,200	15,300	14,300	13,100	11,700	9500	9000	7800	-		
50	22,400	21,200	20,100	19,300	18,500	17,750	16,500	15,050	14,175	12,950	11,500	-		
60	24,000	23,300	22,600	21,500	20,800	19,500	18,800	17,750	17,000	16,000	15,400	14,500		

Centri	fugal Heat	er Max L	BTU/HR	
Heater	Temp	Fan	Horsepo	wer
Model	Rise	7.5-15	20	30-50
Hi-Temp	50-180ºF	2.7M	3.7M	5.4M
Lo-Temp	25-75°F	.72M	.72M	1.44M
Super Lo-Temp	10-30°F	.3M	.5M	1M

Sukup Manufacturing Co. provides this information to assist you in choosing the optimal equipment for your situation. Sukup specifications should only be used as estimates, and not as a warranty, express or implied, of how a particular Sukup unit will perform under your operating conditions. Because we are continuously improving Sukup products, changes may occur that may not be reflected in the specifications.



					1750	RPM C	entrifug	al Fan	Dimens	ions - i	nches					
HP	A	В	C	D	E	F	G	Н	- 1	J	K	L	M	N	P	R
3	36		31¾	365⁄8	19¾	12	29½	11	45	24	34¾	26	161/8	28	38¾	24¾
5	36		421/4	50¾	271/8	15%	32½	11	45	24	34¾	26	20	28	38¾	30%
7½ Std.	36	24	421/4	50¾	291/8	18	38½	101/4	55¾	18½	29	29	221/8	22	311/4	325/8
7½ HD*								11	45	24	34¾			28	38¾	
10 Std.	36	24	421/4	50¾	291/8	181/4	39½	101/4	55¾	181/2	29	31½	223/8	22	311/4	325/8
10 HD*								11	45	24	34¾			28	383/8	
15 Std.	36	24	421/4	50¾	291/8	191/4	421/4	101/4	55¾	181/2	29	31½	23½	22	311/4	325/8
15 HD*								11	45	24	34¾			28	38¾	
20 Std.	33	24	481/4	591/4	343/4	20	43	101/4	68¾	201/4	34	351/8	241/4	231/4	361/2	37¾
20 HD*								11	45	24	34¾			28	383/8	
25 Std.	33	24	481/4	591/4	343/4	21	46	101/4	68¾	201/4	34	351/8	251/4	231/4	36½	37¾
25 HD*								11	45	24	34¾			28	38¾	
30 Std.	36	28	481/4	591/4	343/4	24	48	101/4	68¾	201/4	34	351/8	281/8	231/4	36½	37¾
30 HD*								11	45	24	34¾			28	38¾	
30 Dbl.	48	24	491/4	591/4	341/8	42	80	141/4	1001/4	42	341/2	351//8	461/8	47	37	37¾
40 sng.			483/8	59 ³ / ₁₆	341/2	251/8	55 ¹³ / ₁₆	103/4	4411/16	26	347/8	351/8	301/16	30	381/8	37¾
40 dbl.	48	24	491/4	591/4	341/8	42	80	141/4	1001/4	42	341/2	351/8	461/8	47	37	37¾
50 sng.			55¾	6811/32	38¾	229/16	523/4		Call for	Details		423/8	261/16	C	all	421/4
50 dbl.	48	24	491/4	591/4	341/8	44	84	141/4	1001/4	42	34½	351//8	481/8	47	37	373/4

					3500	RPM C	entrifug	al Fan	Dimens	ions - i	nches					
HP	A	В	C	D	E	F	G	Н	- 1	J	K	L	M	N	P	R
3	36		291/4	311/4	16¾	73/8	26½	11	45	24	34¾	18	1111/4	28	38¾	19%
5	36		291/4	311/4	16¾	9	28	11	45	24	34¾	18	131/8	28	38¾	19¾
71/2	36		30	35¾	19	93/8	30	11	45	24	34¾	21¾	131/2	28	38¾	22½
10	36		30	35¾	19	1111/4	32	11	45	24	34¾	21¾	15½	28	38¾	22½
15	36		30	35¾	19	123/8	33	11	45	24	34¾	21¾	16¾	28	38¾	22½
20	33		31¾	36%	201/8	11%	363/8	11	45	24	34¾	26	15¾	28	38¾	24¾
30	36		31¾	36%	201/8	13¾	431/2	11	45	24	34¾	26	185⁄8	28	38¾	24¾
40	36		421/4	503/4	271/8	15%	451/4	11	45	24	34¾	26	20	28	383/8	30¾
50	36		421/4	503/4	291/8	15%	451/2	11	45	24	34¾	29	20	28	38¾	325/8
60	36		421/4	50¾	291/8	161//8	47%	11	45	24	34¾	29	201/4	28	38¾	33

^{*}Heavy-Duty (HD) transitions are made of 14 gauge galvanized steel. They are narrower to fit between stiffeners on stiffened bins and for aeration tunnels.

Warning! To prevent serious injury or death:

- Keep all shields and service doors in place.
- Keep away from moving parts or hot surfaces.
- Frequently inspect mechanical & electrical components.
- Lock out all power and have another person present whenever servicing equipment.
- Check for gas leaks before servicing.

- Never operate heater without airflow. Heater must be electrically interlocked with fan. When this is not possible, an air switch kit must be added to the heater.
- Maintain equal heat distribution throughout plenum area and check frequently.
- Clean under floor build-up of fines may cause a bin fire.
- Follow applicable safety regulations.

In-Line Centrifugal Fans

Sukup In-Line Centrifugal Fans are ideal for almost any high static pressure application, such as aerating small grains, aerating tall bins, or cooling grains in roof dryer bins. In-Line Fans provide excellent airflow beyond the range of a standard axial, without the noise of an axial fan.

- Unique square end plates maintain the accurate roundness of the housing, give uniform support all around and eliminate the need for extra legs that concentrate stress and distort the housing.
- Rounded venturi makes airflow into the blade more efficient.
- Heavy-gauge, galvanized housings resist rust and ensure long life.
- 3500 RPM motor is speciallyengineered for high-performance Sukup blades to ensure maximum airflow and long life. 1 or 3 phase available.

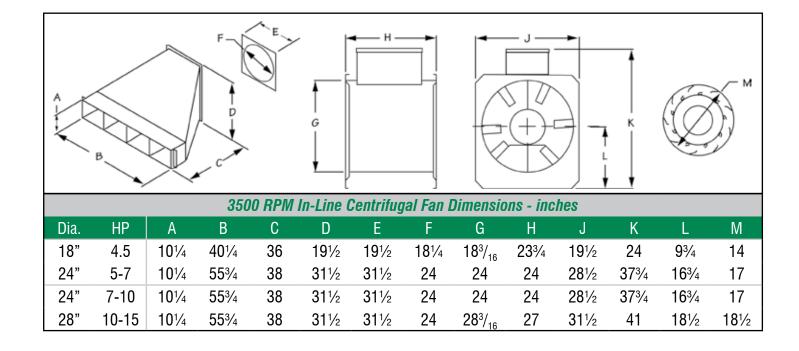




Sukup In-Line Fans also cost less than a standard centrifugal fan, so they're practical, as well as efficient. When you add to that the quality that's built into every Sukup fan, you can rest assured that you're getting positively the best value for your money.

- Sukup In-Line Fans are more compact than standard centrifugal fans. This compact design makes them ideal for aerating hopper bottom tanks.
- Sealed control box with start/stop buttons, magnetic starters, and overload is standard on fans 4.5 hp or larger.
- Precision-balanced blades ensure smooth operation.
- Two-year warranty. Sukup warrants fans for two years from the date of purchase.
- CSA (Canadian Standards Association) units available.

			Airflov	vs for In-L	ine Centrif	ugal Fans	- CFM						
			Static Pressure - inches of water										
Dia.	HP	0	1	2	3	4	5	6	7	8			
18"	4.5	4450	3970	3480	3060	2630	1890	1075					
24"	5-7	6370	6100	5815	5480	5150	4935	4715	4375	3935			
24"	7-10	7645	7240	6830	6540	6245	5835	5440	5170	4470			
28"	10-15	9440	8850	8320	7850	7450	7110	6810	6540	6260			



Different types of fans are designed for different operating situations. It is important to match the fan to your system. The chart below is designed to help in the decision making process by comparing different fan types at various static pressures.

Your dealer can also help you make the right choice with their knowledge and the assistance of the Sukup Airflow and Drying Rates Program.

		Fan C	omparis	ons			
			Stat	ic Pressı	ıre - inc	hes of w	ater
Fan Type	HP	RPM	0	2	4	6	8
Axial	5-7	3500	12,800	10,300	6250		
Centrifugal	71/2	1750	12,000	10,400	8500	6700	
High-Speed Centrifugal	71/2	3500	5005	4600	4250	3850	3400
In-Line Centrifugal	5-7	3500	6370	5815	5150	4715	3935

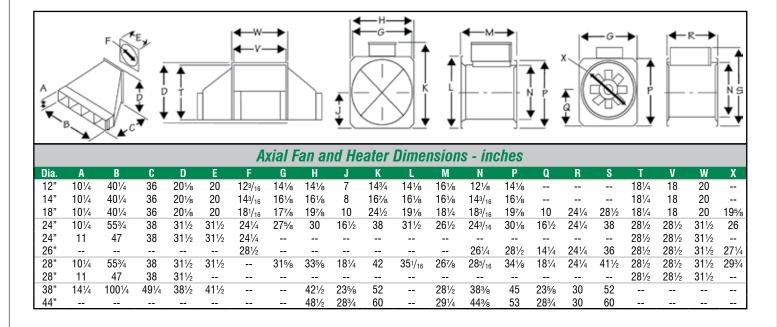


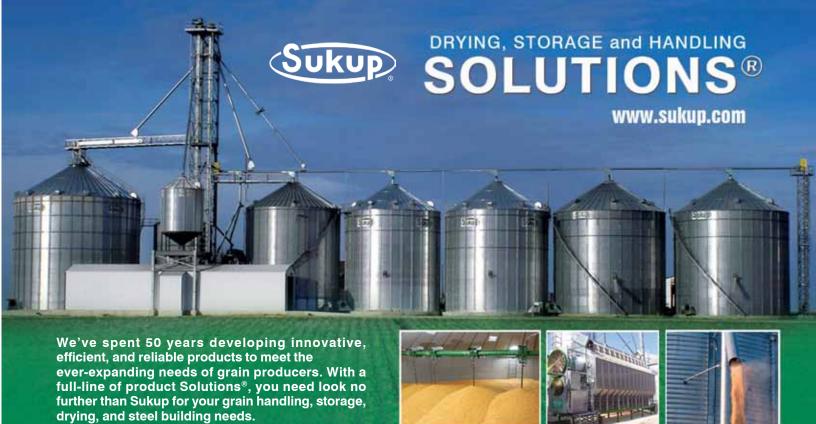
				Airflows	s for Aera	ation Ap	plication	s - CFM							
	Model Static Pressure - inches of water														
Dia.	HP	0	<u>0.5 1 1.5 2 2.5 3 3.5 4 4.5 5</u>												
12"	3∕₄ hp	1900	1675	1290	815	550	325	100							
12"	1 hp	2308	1963	1460	876	595	305								
14"	1½ hp	3132	2852	2526	2126	1511	1040	720							
18"	1½-2 hp	5450													
18"	3 hp	7000	6600	6150	5575	4850	3950	3100	2400	1900	1700	1300			

			Certi	fied Airflow	vs* for Axia	al Fans - Ci	FM			
	Model			St	atic Pressu	re - inches	of water			
Dia.	HP	0	1	2	3	4	5	6	7	8
24"	5-7 hp	12,800	11,750	10,300	8600	6250	3350	1900	600	
24"	7-10 hp	15,200	13,750	12,250	10,500	7600	3900	2100	400	
28"	10-15 hp	19,050	17,300	15,600	13,600	11,100	7350	4800	2800	700

^{*}Sukup Manufacturing Co. certifies that the airflow for the fan models above has been determined by an INDEPENDENT airflow testing laboratory.

	Airflows for Low Speed Axial Fans - CFM											
١	/lodel			Stati	c Pressure -	- inches of v	vater					
Dia.	HP	0	0.5	1	1.5	2	2.5	3	3.5			
38"	15 hp	28,000	26,000	24,000	22,300	21,800	19,000	16,500	13,500			
44"	15 hp	42,000	40,000	36,000	32,000	27,500	22,300	14,300				
44"	30 hp	46,000	43,900	41,400	38,800	36,300	33,600	30,600	27,000			

















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