

Cool Blast, Utility, and HartKool® Fans

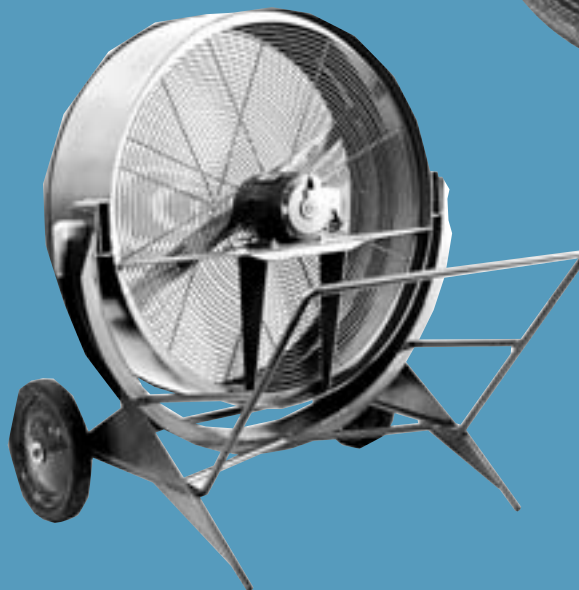
Series 20

Series 21

Series 22

Series 23

HKA



HARTZELL®

Hartzell Fan, Inc., Piqua, Ohio 45356
www.hartzellfan.com

Index

Model Code Explanation Page 2
Cool Blast Fans – Series 20 & 21 .. Page 3
Utility Fans – Series 22 & 23 Page 4

Spread and Throw of a Fan Page 5
HartKool® Fans – Series HKA Page 6
HartKool® Fan Accessories Page 7

Fan Selection

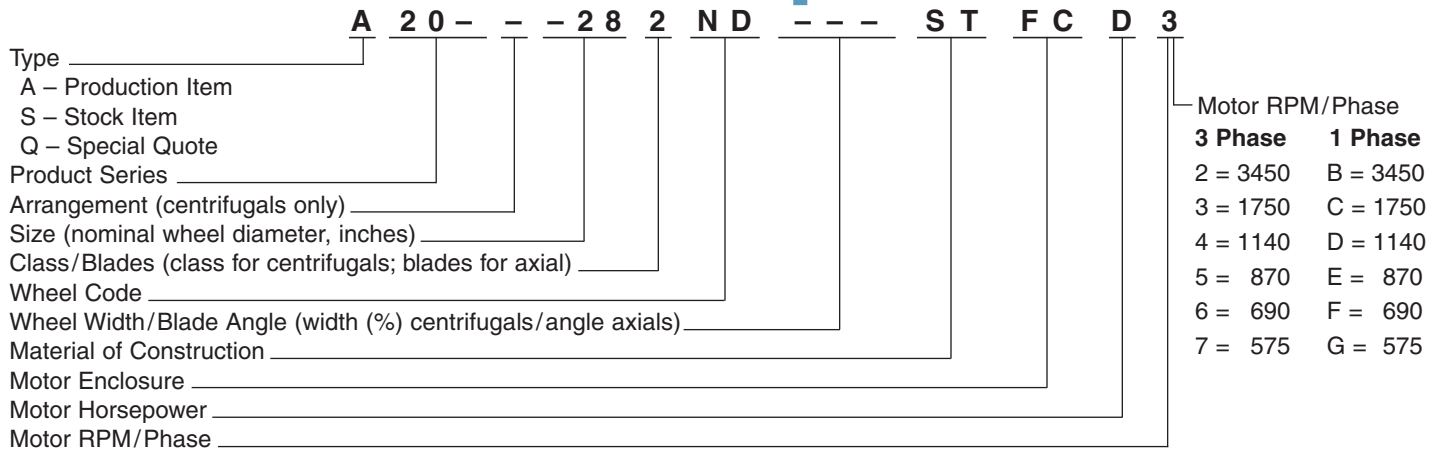
The Hartzell Cool Blast, Utility, and HartKool® Fan performances on the following pages are based on standard air conditions (sea level, 70°F, and 29.92 inches barometric pressure).

When placing your order, be sure to specify the Hartzell Model Code. The following example demonstrates our coding system. The illustrated Series Number specifies a Hartzell Series 20 Cool Blast Fan.

Be sure to include fan model, performance requirements, operating temperature, and motor data (enclosure, voltage, mounting position, etc.).

Contact your local Hartzell Sales Representative for assistance.

Hartzell Model Code Explanation



Motor Horsepower

Horsepower	1/4	1/3	1/2	3/4	1	1 1/2	2	3	5	7 1/2	10	15	20	25	30	40	50	60	75	100	125	150	200
Code Letter	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

How To Use Model Code Index:

Example –

Assume a required performance of 6730 CFM at Free Air, at standard conditions. Reading the rating table on page 3, we find a Series 20, 28" size, with 6724 CFM at Free Air. This unit has a 2 blade propeller. Required motor horsepower is 1/4.

The model code can be constructed as follows: Type will be a production item (code A), product series for the Cool Blast Fan is 20, size of the wheel is 28", number of blades is 2, blade is ND. Material of construction is steel (code ST), motor is totally enclosed, air over (code AO), motor horsepower is 1/4 (code D), and motor RPM/phase is 1750 RPM/3 Phase (code 3).

Note:

All other informational fields must be filled with hyphens/dashes (–) if they are not applicable to the fan being considered.

This bulletin lists Hartzell's complete line of Cool Blast, Utility, and HartKool® Fans. More than 70 Hartzell offices can provide specific performance and installation data to meet your requirements. Call your Hartzell representative for assistance. Visit our website (www.hartzellfan.com) or call toll-free for the name of your Hartzell representative . . .

1-800-336-3267



Cool Blast Fans – Series 20 & 21



Stationary Series 20

SERIES 20 – STATIONARY

- Sizes 20" – 48"
- Tip-proof base, rugged steel construction
- Tilt head type available through 40"



Portable Series 21

SERIES 21 – PORTABLE

- Sizes 20" – 40"
- Widespread 3-point base
- Hard rubber casters – adjusting screw
- Tilt head type – 45° up, 30° down

Features

Cool Blast Fans

- Designed to withstand heavy industrial use.
- Extra heavy bases and support columns.
- Portable models have casters on two widespread legs with adjusting screw – 40" and smaller only.
- Tilting head design available thru 40" size.

Notes:

- Cool Blast Fans are equipped with TEFC continuous duty, ball bearing motors. Motors extended beyond the OSHA approved guard for easy maintenance.
- Fans are available with switch mounting plates; switches and wiring from switch to fan motor.
- All guards shown on Cool Blast Fans meet the "Occupational Safety and Health Requirement Act" dated May 29, 1971.

Rating Table – Series 20 & 21

Size	Model Code	Motor		CFM	Approx Ship Wt.
		HP	RPM		
20"	A --202NA---STFCD3	¼	1725	4168	224
	A --203-L---STFCF3	½	1725	4905	228
24"	A --242NA---STFCD3	¼	1725	5529	244
	A --242NB---STFCF3	½	1725	7170	250
	A --242NC---STFCG3	¾	1725	7936	260
	A --242NC---STFCD4	¼	1140	5245	255
28"	A --282ND---STFCD3	¼	1725	6724	267
	A --282NA---STFCF3	½	1725	7928	301
	A --282NB---STFCG3	¾	1725	10032	311
	A --282NC---STFCH3	1	1750	10571	331
	A --282NC---STFCD4	¼	1140	6860	301
	A --282-L---STFCG4	¾	1140	8739	334
32"	A --322NB---STFCH3	1	1750	12627	345
	A --322NA---STFCF4	½	1140	10692	340
	A --323-L---STFCI4	1½	1160	13293	375
	A --323-L---STFCF5	½	850	9741	360
36"	A --362ND---STFCH3	1	1750	15418	374
	A --362NA---STFCH4	1	1160	16178	396
	A --363NA---STFCJ4	2	1160	18770	420
	A --363-L---STFCH5	1	870	14170	415
40"	A --402ND---STFCH4	1	1160	17457	425
	A --402NA---STFCJ4	2	1160	22750	456
	A --402NA---STFCH5	1	870	17077	455
	A --403-L---STFCJ5	2	870	20400	470
44"	A --442NB---STFCJ4	2	1160	25400	555
	A --442NA---STFCK4	3	1160	30103	584
	A --446-P---STFCJ5	2	870	23223	580
	A --443-L---STFCK5	3	870	26600	686
48"	A --482NC---STFCJ4	2	1160	27871	615
	A --482NA---STFCJ5	2	870	27400	640
	A --486AA---STFCK5	3	870	32430	746
	A --483-L---STFCL5	5	870	32700	783

Bold type information provided in the Rating Table above is needed when preparing a model code.
See page 2 for the complete Hartzell Model Code explanation and example.

Overall Dimensions

Fan Size	Height	Width*	Depth**	Base Diameter
20	59½	23	18	24
24	61½	27	18	24
28	63½	31	18	24
32	65½	35	21¾	30
36	67½	39	22¾	30
40	69½	43	22¾	30
44	71½	47	26	36
48	73½	51	26	36

- Centerline of fan to floor is 48" on all models.
- * Portable base is 32" wide.
- ** Varies slightly with motor size.



Utility Fans – Series 22F, 22H, 22T & 23



Stationary
Series 22T

SERIES 22T, 22H, 22F – STATIONARY

- Sizes 20" – 36"
- Heavy duty round base
- Flat base-mount on wall, post or ceiling
- Tilt head type – 45° up, 30° down



Flat Base
Series 22F

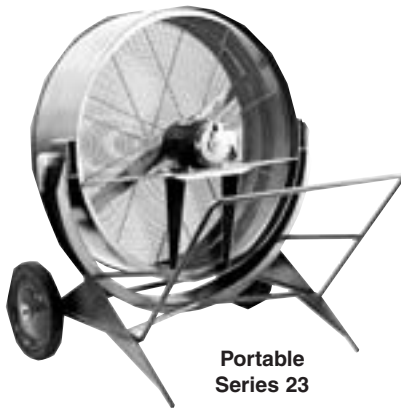
Features

Utility Fans

- Designed to withstand heavy industrial use.
- Compact in design – very versatile.
- Requires limited space.
- Portable wheel model can be moved from area to area very easily.
- Wheel model standard with 14" rubber tire disk wheels; available with 14" steel wheels.
- Flat base model can be mounted on wall, post or ceiling – out of the way, eliminating extension cords.

Notes:

- Utility Fans are equipped with TEFC continuous duty, ball bearing motors. Motors extended beyond the OSHA approved guard for easy maintenance.
- Fans are available with switch mounting plates; switches and wiring from switch to fan motor.
- All guards shown on Utility Fans meet the "Occupational Safety and Health Requirement Act" dated May 29, 1971.



Portable
Series 23

SERIES 23 – PORTABLE

- Sizes 20" – 36"
- Portable wheel base with handle
- Rubber tire disk wheels
- Tilt head type – 45° up, 30° down

Rating Table – Series 22T, 22H, 22F & 23

Size	Model Code	Motor		CFM	Approx Ship Wt.
		HP	RPM		
20"	A --202NA---STFCD3	¼	1725	4168	224
	A --203-L---STFCF3	½	1725	4905	228
24"	A --242NA---STFCD3	¼	1725	5529	244
	A --242NB---STFCF3	½	1725	7170	250
	A --242NC---STFCG3	¾	1725	7936	260
	A --242NC---STFCD4	¼	1140	5245	255
28"	A --282ND---STFCD3	¼	1725	6724	267
	A --282NA---STFCF3	½	1725	7928	301
	A --282NB---STFCG3	¾	1725	10032	311
	A --282NC---STFCH3	1	1750	10571	331
	A --282NC---STFCD4	¼	1140	6860	301
32"	A --283-L---STFCG4	¾	1140	8739	334
	A --322NB---STFCH3	1	1750	12627	345
	A --322NA---STFCF4	½	1140	10692	340
	A --323-L---STFCI4	1½	1160	13293	375
36"	A --323-L---STFCF5	½	850	9741	360
	A --362ND---STFCH3	1	1750	15418	374
	A --362NA---STFCH4	1	1160	16178	396
	A --363-L---STFCJ4	2	1160	18770	420
	A --363-L---STFCH5	1	870	14170	415

Bold type information provided in the Rating Table above is needed when preparing a model code. See page 2 for the complete Hartzell Model Code explanation and example.



Formulae for Determining the Spread and Throw of a Fan

We have been asked many times for information on the velocity from a fan and also the width of the stream at a specific distance. While these values are influenced greatly by the presence or absence of walls, floors and obstructions, the following formulae will give a good approximation for most cases.

It should be noted that the spread and throw formulae are unique to Hartzell and specifically the Hartzell Utility and Cool Blast Models. The equations were developed based upon tests performed with Hartzell Utility and Cool Blast fans in the Hartzell research and development testing facility. The equations will not work for fans manufactured by others.

SPREAD:

$$W = 0.36L + \frac{d}{12}$$

W = Maximum width in feet of airstream perpendicular to axis of rotation of the fan.

L = Distance from fan in feet.

d = Fan diameter in inches.

VELOCITY (Not less than 10 feet from fan):

$$(1) k = 5 \left(\frac{2.5 \times \text{CFM}}{d} \right)^2$$

$$(2) v_{La} = 1.15 \sqrt{\frac{k}{L}}$$

$$(3) v_{\max} = \left(\frac{d}{73} + 1 \right) v_{La}$$

k = Fan constant.

v_{La} = Average velocity across the width of the spread L feet from the fan (Feet per minute).

v_{\max} = Maximum velocity L feet from the fan (Feet per minute).

CFM = Free Air Delivery of fan.



HartKool® – Series HKA

Features

- Venturi orifice ring provides rigidity to the fan housing as well as the Hartzell exclusive propeller “Tip Seal” for lowered horse-power requirements and improved airflow.
- More usable air/kWh.
- Fewer fans for same effect.
- More rugged construction than basket-type fans.
- Reliable performance ratings. All HartKool® fans are performance tested in an AMCA accredited test facility in accordance with AMCA Standard 230 (Laboratory Methods of Testing Air Circulator Fans for Rating).
- Efficient cast aluminum, airfoil propeller.
- Front and rear, OSHA approved removable guards.
- Available in black or safety yellow. 18" and 24" available in black; 32" and 36" available in safety yellow.
- Large, predictable volume of air.
- Quiet operation.
- Available in 115/230 single phase, dual voltage motors. Thermal overload; totally enclosed, air over construction, 6' grounded cord, two-year warranty on motor.



Series HKA

Product Uses:

- Spot cooling
- Air circulation – eliminate dead spots, break up stagnation, reduce condensation
- Heat stress relief

Rating Table – Series HKA

Size	Model	Motor		Amps @ 115/60/1	CFM @ 0" S.P.	Approx. dB _A @ 5'
		HP	RPM			
18	_HKAB-182NB---PLYAEC	1/3	1700	3.0	4236	71
24	_HKAB-242NB---PLYAFC	1/2	1700	7.0	8480	77
32	_HKAY-322NA---PLYAFD	1/2	1100	6.0	11187	71
36	_HKAY-362NC---PLYAFD	1/2	1100	6.0	13450	74

(File note: dBA values are Q=1.)

Available in HRS Stock Program.

Principal Dimensions – Series HKA

Fan Size/Item	Length	Width	Depth	Ship Wt.
18	22 ³ / ₈	22 ³ / ₈	11 ¹ / ₂	33 lbs.
24	29	29	12 ³ / ₁₆	47 lbs.
32	37	37	13 ¹ / ₂	86 lbs.
36	42 ³ / ₈	42 ³ / ₈	14 ⁷ / ₁₆	100 lbs.
Mounting Hook - Small (18" & 24")	12	2	3	2 lbs.
Mounting Hook - Large (32" & 36")	23	2	3	3 lbs.
Wall/Ceiling Bracket	24	1 ¹ / ₂	16	12 lbs.
Wheeled Cart*	42	24	29	45 lbs.
Low Pressure Mist Kit				1 lb.

*Ships unassembled.



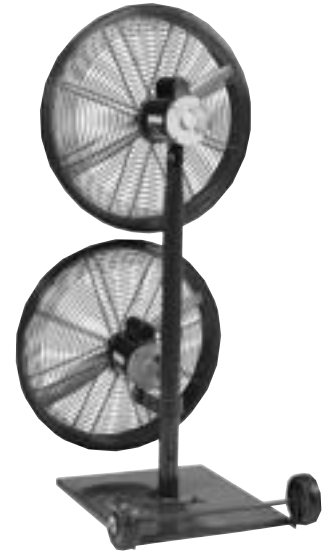
HartKool® Accessories



Wall/Ceiling Bracket
Permanently mount the HartKool® from posts, walls, and ceilings.



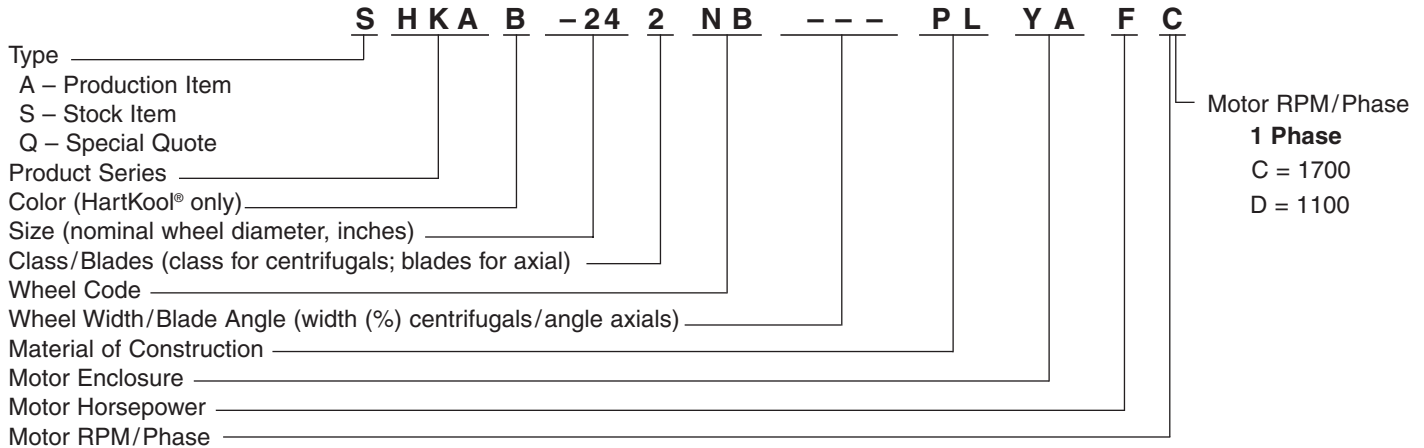
Low Pressure Mist Kit with Optional Ground Fault Interrupter
For evaporative cooling. Female coupling attaches to tap or garden hose. Ring has brass and stainless steel nozzles with a 5 ft. lead line. Available for 18", 24", 32" and 36" fans.



Wheeled Cart*
Makes the HartKool® a truly port-able fan, ready to go where you need it most. Holds one fan (any size) or two 18" or 24" fans.

*Ships unassembled.

Model Code Example – HartKool® Fans



Motor Horsepower

Horsepower	1/3	1/2
Code Letter	E	F

Colors:

B – Black	Y – Safety Yellow
------------------	--------------------------

Material of Construction:

PL – Polyethylene (all sizes)

How To Use Model Code Index:

Example –

Assume a required performance of 8480 CFM at Free Air, at standard conditions. Reading the rating table on page 6, we find a HartKool® Fan, 24" size, with 8480 CFM at Free Air. This unit has a 2 blade propeller. Required motor horsepower is 1/2.

The model code can be constructed as follows: Type will be a stock item (code S), product series for the HartKool® Fan is HKA (color is black), size of the wheel is 24", number of blades is 2, blade is NB. material of construction is plastic (code PL), motor is totally enclosed, air over yoke mount (code YA), motor horsepower is 1/2 (code F), and motor RPM/phase is 1100 RPM/1 Phase (code C).

Note:

All other informational fields must be filled with hyphens/dashes (–) if they are not applicable to the fan being considered.



Hartzell Warranty

LIMITED WARRANTIES

Hartzell represents to Buyer that any goods to be delivered hereunder will be produced in compliance with the requirements of the Fair Labor Standards Act of 1938 as amended.

Hartzell also warrants to Buyer its goods to be free from defects in workmanship and material under normal use and service for one (1) year after tender of delivery by Hartzell, plus six (6) months allowance for shipment to approved stocking dealers & distributors. No warranty extends to future performance of goods and any claims for breach of warranty or otherwise accrues upon tender of delivery. The foregoing constitute Hartzell's sole and exclusive warranties in lieu of all other warranties, whether written, oral, express, implied or statutory.

LIMITATION OF LIABILITY FOR BREACH OF WARRANTY

Hartzell's obligation for any breach of warranty is limited to repairing or replacing, at its option, without cost to Buyer at its factory any goods which shall, within such a warranty period, be returned to it with transportation charges prepaid, and which its examination shall disclose to its satisfaction to have been defective. Any request for repair or replacement should be directed to Hartzell Fan, Inc., P.O. Box 919, Piqua, Ohio 45356. Hartzell will not pay for any repairs made outside its factory without its prior written consent. This does not apply to any such Hartzell goods which have failed as a result of faulty installation or abuse, or incorrect electrical connections or alterations, made by others, or use under abnormal operating conditions or misapplication of the goods.

LIMITATION OF LIABILITY

To the extent the above limitation of liability for breach of warranty is not applicable, the liability of Hartzell on any claim of any kind, including negligence, for any loss or damage arising out of or connected with, or resulting from the sale and purchase of the goods or services covered by these Terms and Conditions of Sale or from the performance or breach of any contract pertaining to such sale or purchase or from the design manufacture, sale, delivery, resale, installation, technical direction installation, inspection repair, operation or use of any goods or services covered by these Terms and Conditions shall, in no case exceed the price allocable to the goods or services which gave rise to the claim and shall terminate one year after tender of delivery of said goods or services.

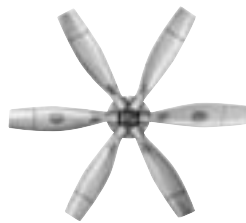
In no event whether as a result of breach of contract, or warranty or alleged negligence, defects incorrect advice or other causes, shall Hartzell be liable for special or consequential damages, including, but not limited to, loss of profits or revenue, loss of use of the equipment or any associated equipment, cost of substitute equipment, facilities or services, down time costs, or claims of customers of the Buyer for such damages. Hartzell neither assumes nor authorizes any person to assume for it any other liability in connection with the sale of its goods or services.

NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS.

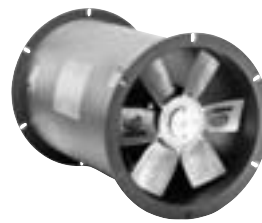
HARTZELL DOES NOT WARRANT THAT SAID GOODS ARE OF MERCHANTABLE QUALITY OR THAT THEY ARE FIT FOR ANY PARTICULAR PURPOSE. THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY AND THERE IS NO IMPLIED WARRANTY OF FITNESS.



Propeller Fans



Cooling Tower & Heat Exchanger Fans



Duct Fans



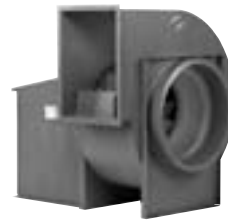
Duct Axial Fans



Vaneaxial Blowers



Cool Blast & Utility Fans



Steel Centrifugal Blowers



Roof Ventilators - Steel & Fiberglass



Heating Equipment - Gas & Steam



Fiberglass Axial Flow Fans



Fiberglass Centrifugal Blowers



Marine - Mine Duty Blowers

Hartzell Fan, Inc., Piqua, Ohio 45356 • Plants in Piqua, Ohio and Portland, Indiana.