

Chore-Time® Fan Guide

For Tunnel and Other Applications



Let's grow together.



Patented with
Additional Patents Pending

Chore-Time's High-Performance Tunnel Fans

Diameters available through 57 inches (145 cm)

- ENDURA® Fans offer an industry-leading combination of outstanding performance and strategic material selection.
- TURBO® Fans feature a sturdy, reinforced-fiberglass housing, a heavy cast-aluminum blade and corrosion-resistant components.
- CHORE-TIME® Galvanized Fans provide performance at a value price.



ENDURA® Tunnel Fans

Chore-Time's 57-Inch (145-cm) ENDURA® Fan with HYFLO® Shutter features an industry-leading combination of outstanding performance and strategic material selection.

Fan Performance

- Chore-Time's Energy-Efficient, Standard-Mount ENDURA® Fan **could save 14% or more in energy costs** compared to Chore-Time's own great-performing 54-inch High-Capacity Fan, often while using the same number of fans!
- Motors are selected for each fan model to optimize its performance efficiency. Extensive motor testing is completed in our on-site wind tunnel under various operating conditions.
- All components were designed to maximize overall fan efficiency.

Shutter Performance

- Chore-Time's HYFLO® Shutters do not suffer the typical 12-15% loss of efficiency and airspeed typical of dirty louver-style shutters, **so airspeed is maintained to the end of the flock, when you need it most.**
- HYFLO® Shutters improve fan performance by minimizing obstructions during fan operation. They deliver up to 10% more air than traditional shutters, with 75% less opportunity for air to leak through.



Standard Mount

The standard-mount model of Chore-Time's ENDURA® Fan offers the best performance and easiest installation.

Exceptional Materials

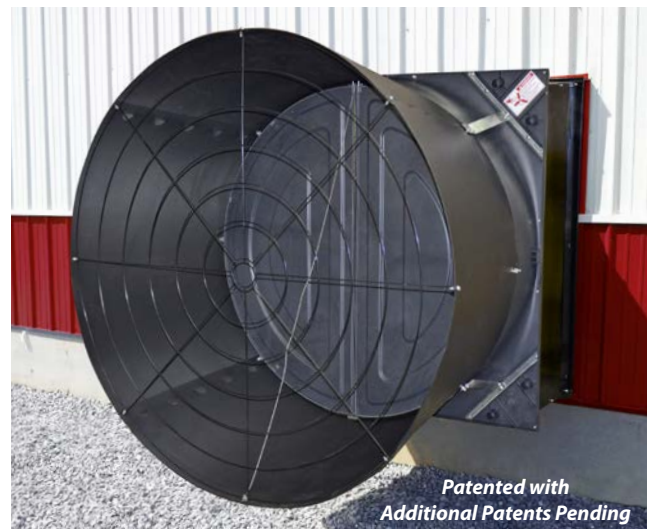
- Durable long glass fiber composite shroud and HYFLO® Shutter Doors contain 35% fiberglass for strength and to limit expansion and contraction.
- Galvanized, powder-coated fan drive, support structures and flush-mount box. Optional stainless steel fan blade and shaft.

Durability

- Extensive durability testing under both extreme high and extreme low temperatures.
- Automatic belt tensioner uses an idler arm and pulley to provide constant belt tension.
- Rugged air-handler bearings are shielded from dust and moisture. They are also self-aligning, prelubricated and include a zerk fitting.
- Aerodynamic three-wing, heavy-duty fan blade.

Adaptability

- Can be installed 60 inches (152.4 cm) on center for new construction and will fit over openings for many 48- through 54-inch (121.9- through 137.2-cm) fans for retrofit.
- Black HDPE (high-density polyethylene) cone aids in light control.
- Capable of variable speed operation with the use of a variable frequency drive.



Flush Mount

The flush-mount ENDURA® fan eliminates obstructions inside the poultry house. Mount over or through the wall.



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TURBO® Fiberglass Tunnel Fans

Available in 52- and 48-inch (132- and 122-cm) Models

- Sturdy, corrosion-resistant fiberglass housing with heavy cast-aluminum blade, aluminum motor mounts and corrosion-resistant components.
- Motors are selected for each fan model to optimize its performance efficiency. Extensive motor testing is completed in our on-site wind tunnel under various operating conditions.
- One-piece, impact-resistant, polyethylene cone.
- Automatic belt tensioner uses arm and pulley arrangement to provide consistent belt tension.
- Heavy-duty, cast iron, air-handler type bearings are self-aligning, pre-lubricated and include a zerk fitting, as well as being shielded from moisture and dust.
- Fans are shipped fully assembled with shutter attached. At installation, simply attach fan to house sidewall, add one-piece cone and snap grill in place. Unit installs flush on inside of house.
- Chore-Time's 52-inch TURBO® Fans come with HYFLO® Shutter Doors, while the 48-inch model comes with a louver shutter.
- Backed by Chore-Time's generous extended warranty, including limited lifetime coverage for housing and blade, three years on shutter and cone, and two years on motor and bearings. (See Chore-Time's full written warranty for complete warranty details.)

Choose black or white for housing interior and cone. Housing exterior is white.



CHORE-TIME® Galvanized Tunnel Fans

Available in 54-, 52- and 48-inch (137-, 132- and 122-cm) Models

54-Inch (137-cm) Galvanized Tunnel Fans

- Easily replace older, inefficient 48-inch fans with Chore-Time's 54-inch Galvanized Tunnel Fan and get 30-35% more airflow without the need to reframe sidewalls. Mount using existing 48-inch or 52-inch framing.

All Galvanized Tunnel Fans

- Factory assembled using rugged, galvanized steel panels with screw fasteners and a galvanized steel blade.
- Chore-Time specifically selects the motor for each fan model to optimize its performance efficiency. Motors are then extensively tested in our on-site wind tunnel under various operating conditions.
- Automatic belt tensioning system uses an idler arm and pulley to maintain constant optimum belt tension on the fan's easy-to-change belt.
- Heavy-duty, cast iron, air-handler type bearings are self-aligning, pre-lubricated, and include a zerk fitting, as well as being shielded from moisture and dust.



Chore-Time's HYFLO® Shutter improves fan performance by minimizing obstructions during fan operation. Standard on 54-inch galvanized fans. Option of HYFLO® Shutter or louver shutter on 52- and 48-inch models.

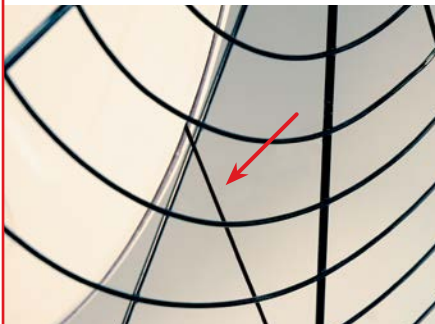


Chore-Time's high-capacity 57-inch (145-cm) diameter ENDURA® Fan with HYFLO® Shutter delivers more air with fewer fans – 30,400 CFM @ 0.10 inches of static pressure in independent wind tunnel tests.

HYFLO® Shutters for Tunnel Fans

Chore-Time's HYFLO® Shutter improves fan performance by minimizing obstructions during fan operation. Available on Chore-Time's Composite, Fiberglass and Galvanized Tunnel Fans and 36-Inch Galvanized Minimum Ventilation Fans.

- Delivers up to **10% more air** than traditional shutters.
- **75% less opportunity for air to leak** through compared to a traditional louver shutter.
- Does not suffer the typical 12-15% loss of efficiency and airspeed typical of dirty louver-style shutters, so **airspeed is maintained over time**.
- The HYFLO Shutter consists of **only two moving parts** for greater reliability and easier cleaning.



Cable attachment allows HYFLO® Doors to float left or right together for maximum efficiency.



Shutter's unique springs draw the doors closed when fan is not in operation.



HYFLO® Shutter doors are pushed open as air is exhausted when fan operates.

Variable Speed Fans Can Replace Minimum Ventilation Fans

Chore-Time's 57" ENDURA® Fan with HYFLO® Shutter at 58%

Typical 36-Inch Minimum Ventilation Fan

13,700 CFM	10,000 CFM
44.5 CFM/Watt	17 CFM/Watt

Running tunnel fans at reduced capacity using Chore-Time's Variable Frequency Drive can save significant energy compared to running small fans continuously.





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Variable Speed Fans

CHORE-TIME® 57-, 54-, 52- and 48-Inch Fans* with HYFLO® Shutters

*Variable speed option available for certain fan models – see table on page 8.

The Energy-Efficient Way to Smooth House Temperature and Airflow Changes

- Have you ever noticed excessive fan cycling?
- Have your young birds experienced chilling or increased mortality from excess airflow?
- Are you concerned about energy efficiency on your small minimum ventilation fans?

Chore-Time's variable speed fan option offers a solution to these problems and an improved environment for your birds.

Features and Benefits

- Improve the environment for your birds by using Chore-Time's Variable Speed Fan to smooth the house's airflow and temperature curves.
- Gain efficiency with impressive CFM/watt during ramp-up and ramp-down periods.
- Reduce framing costs for new construction or retrofitting by adding a Variable Speed Kit to a tunnel fan instead of installing a small fan.
- Inexpensively add variable speed capability to existing houses by converting existing tunnel fans to variable speed.

Get Better Temperature Control and Energy Savings with Chore-Time's Variable Speed Fans

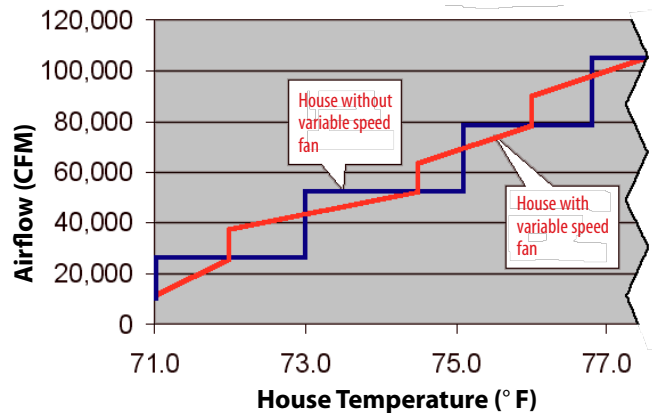
Control Setting	Fan Performance at .10" Static Pressure	
67% (40 Hz)	12,800 CFM	27.4 CFM/Watt
83% (50 Hz)	20,900 CFM	26.4 CFM/Watt
100% (60 Hz)	26,400 CFM	22.0 CFM/Watt

Example features Chore-Time's 57-Inch ENDURA® Fan with HYFLO® Shutter, Part No. 53464-42. Contact Chore-Time for performance data for additional fan models.

Bess Labs Test No. 12620



Airflow CFM with & without Variable Speed Fan



Using Chore-Time's Variable Speed Fans smooths airflow and temperature efficiently and creates a better bird environment.

Chore-Time's Variable Speed Fans Smooth the Airflow and Temperature in the House

1. Using your CHORE-TRONICS® 3 Control and a Variable Frequency Drive, the fan equipped with variable speed capability comes on briefly at 100% to open the shutter, then drops back to the minimum speed setting.
2. The fan gradually accelerates to 100% (based on house temperature) until the first tunnel fan comes on. It then drops back to the minimum speed setting again and begins ramping up as the house temperature increases. This process can be repeated until all tunnel fans are on.
3. By increasing (and decreasing) its airflow gradually, Chore-Time's Variable Speed Fan helps smooth out both airflow and temperature during the period before and after full tunnel operation.

Chore-Tronics® 3 Control



Chore-Time® Variable Frequency Drive



Air Circulating Fans, Louvers and Fan Accessories

Air Circulating Basket Fan

- Mixes air for more even house temperatures.
- Direct-drive motor.
- Sealed ball bearings.
- Automatic thermal overload protection.
- Polyvinyl-coated heavy-duty guard for superior corrosion resistance.
- "L"-shaped ceiling mount bracket provided with fan.



20-Inch (51-cm) Diameter Basket Fan with Ceiling Mount Bracket

Basket Fan Specifications Chart

Part No.	Diameter	Motor	Electricity
51702	20 inch (51 cm)	1/10 HP 1725 RPM	115/230V 1 Ph
50576	24 inch (61 cm)	1/2 HP 1725 RPM	115V 1 Ph
50576-230	24 inch (61 cm)	1/2 HP 1725 RPM	230V 1 Ph

Box and Panel Fans

Box fans are available in 24-, 36- and 48-inch diameters with metal framing in direct drive. Wood framing is available for the 24- and 36-inch fans. Belt drive is available for the 36-inch fans.

Panel fans are available without framing in 36-inch diameter in belt or direct drive, and in 48-inch diameter direct drive.

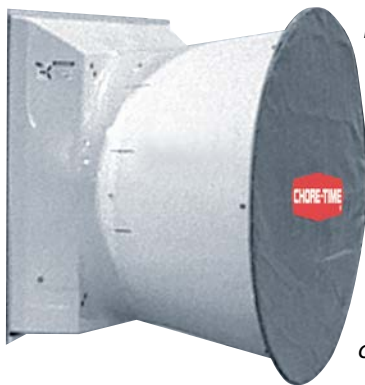


Chore-Time's 36-inch Direct-Drive Box Fans deliver 10,980 CFM and 16.4 CFM/Watt at 0.00 static pressure.

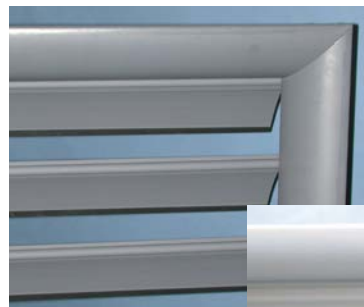
Louver Shutters

Chore-Time's Louver Shutters are offered on its 52-inch (132-cm) and smaller fans. Some models come with a more aerodynamic "belled" frame (shown below), while others come with a flat frame. Louver shutters are available in white or gray.

Cone Covers



Help seal out drafts during cold weather with optional cone covers made of vinyl-coated, ultraviolet-resistant fabric. Available for all sizes of Chore-Time cone fans.



Flexible louver edge helps seal the fan's opening.



Belled shutter has a curved, aerodynamic frame.



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Fan Selection and Maintenance Recommendations

The materials from which today's poultry house equipment is made have not changed, but the poultry house environment has. Proper equipment selection and maintenance has never been more important.

Poultry houses tend to have more moisture, ammonia and chemicals than in years past.

- Houses are more air tight.
- Rising fuel costs lead to underventilation.
- Advanced litter treatments permit more dampness and ammonia on floors.

Without curtains, all moisture must be removed by power ventilation.

- Using tunnel fans to exhaust air from the brood chamber introduces hot humid air in the grow-out area.
- Increased amounts of ammonia exhausted through fans can cause extensive damage.

During cool weather, the combination of hot, humid air and cold surfaces can lead to condensation.

- Condensation on galvanized metal can result in corrosion and serious damage.
- The problem of corrosive chemicals in the house is compounded if chemicals are allowed to come into contact with wet equipment.



Best Practices for Bird Health and Equipment Life

Reduce Moisture in the House

- Follow minimum ventilation standards based on birds' age.
- Maintain relative humidity in the house below 70%.

Limit the Effects of Corrosive Elements

- Maintain fans properly.
- Remove surface dust and dirt from fans between flocks.
- When cleaning fans, don't leave standing water on metal surfaces.
- Avoid direct contact of chemicals with equipment.

Choose Fans Wisely

- Consider whether the fan is made of heavy-duty, corrosion-resistant materials.
- Evaluate the warranty and the company behind it.
- Contrast the fan's performance and energy usage with its cost and life expectancy.

Fan Selection Comparison

Chore-Time® Fans	52-Inch Fiberglass	54-Inch Galvanized	57-Inch Composite
CFM	Good	Better	Best
CFM/Watt	Good	Better	Best
Corrosion Resistance	Best	Good	Best
Warranty	Best	Good	Better



Chore-Time® Belt-Drive Cone Fans for Tunnel Ventilation

Fans are arranged in descending order by fan capacity at 0.10 static pressure.

Chore-Time recommends considering both capacity (CFM) and performance (CFM/Watt) when selecting a fan.

Size	Mat.	Mount	Shutter	Type	Fan P/N	.10 Static Pressure		Air Flow	Bess Labs	230 V
						CFM	CFM/Watt	Ratio	Test No.	Power
57 inch (145 cm)	Comp.	Standard	HYFLO®	High-Cap.	53464-21*	30,400	20.4	0.80	12615	60 Hz 1 Ph
57 inch (145 cm)	Comp.	Standard	HYFLO®	High-Cap.	53464-41*	30,000	20.9	0.79	12616	60 Hz 3 Ph
57 inch (145 cm)	Comp.	Flush Mount	HYFLO®	High-Cap.	54659-21*	29,600	19.2	0.79	13592	60 Hz 1 Ph
57 inch (145 cm)	Comp.	Flush Mount	HYFLO®	High-Cap.	54659-41*	29,200	19.6	0.78	13566	60 Hz 3 Ph
54 inch (137 cm)	Galv.	Standard	HYFLO®	High-Cap.	52157-21	28,900	19.4	0.80	09080	60 Hz 1 Ph
52 inch (132 cm)	Fiber.	Standard	HYFLO®	High-Cap.	49740-21	27,700	18.3	0.79	04312	60 Hz 1 Ph
52 inch (132 cm)	Galv.	Standard	HYFLO®	High-Cap.	49519-21	27,300	18.0	0.78	05188	60 Hz 1 Ph
57 inch (145 cm)	Comp.	Standard	HYFLO®	Energy-Eff.	53464-22*	27,100	23.0	0.78	12614	60 Hz 1 Ph
57 inch (145 cm)	Comp.	Standard	HYFLO®	Energy-Eff.	53464-42*	26,900	23.3	0.78	12619	60 Hz 3 Ph
57 inch (145 cm)	Comp.	Flush Mount	HYFLO®	Energy-Eff.	54659-22*	26,400	21.7	0.77	13591	60 Hz 1 Ph
52 inch (132 cm)	Galv.	Slant-Wall	Bell Louver	High-Cap.	48319-215	26,300	17.1	0.80	05197	60 Hz 1 Ph
57 inch (145 cm)	Comp.	Flush Mount	HYFLO®	Energy-Eff.	54659-42*	26,300	22.2	0.77	13569	60 Hz 3 Ph
54 inch (137 cm)	Galv.	Standard	HYFLO®	Energy-Eff.	52157-22	25,800	22.0	0.78	09081	60 Hz 1 Ph
48 inch (122 cm)	Fiber.	Standard	Bell Louver	High-Cap.	47898-4825	25,000	16.3	0.83	02473	60 Hz 1 Ph
48 inch (122 cm)	Galv.	Standard	HYFLO®	High-Cap.	49515-21	22,700	18.0	0.76	04327	60 Hz 1 Ph

*Add an "S" to the part number for a stainless steel blade and shaft.

KEY: Mat.=Material; Comp.=Composite; Galv.=Galvanized; Fiber.=Fiberglass

Other Chore-Time® Cone-Style Exhaust Fans (60 Hz 1 Phase)

Fans are arranged in descending order by fan capacity at 0.10 static pressure.

Chore-Time recommends considering both capacity (CFM) and performance (CFM/Watt) when selecting a fan.

Size	Mat.	Mount	Shutter	Drive	Fan P/N	.10 Static Pressure		Air Flow	Bess Labs
						CFM	CFM/Watt	Ratio	Test No.
36 inch (91 cm)	Fiber.	Standard	Flat Louver	BD	38589-3622	11,190	17.0	0.79	96199
36 inch (91 cm)	Galv.	Slant-Wall	Flat Louver	BD	46130-3622	10,200	15.5	0.75	00174
36 inch (91 cm)	Fiber.	Standard	Flat Louver	DD	38265-3622	10,200	16.8	0.73	96159
36 inch (91 cm)	Galv.	Slant-Wall	Flat Louver	DD	44860-3622	9,460	15.9	0.75	99217
36 inch (91 cm)	Galv.	Standard	HYFLO®	DD	50372-22	9,160	18.9	0.76	06241
24 inch (61 cm)	Fiber.	Standard	Flat Louver	DD	40452-2422	5,550	15.0	0.73	98012

KEY: Mat.=Material; Comp.=Composite; Galv.=Galvanized; Fiber.=Fiberglass; BD=Belt Drive; DD=Direct Drive

A variable frequency drive option is available for the following 3-phase fan models:

- 57-inch composite energy-efficient fans
- 52-inch fiberglass energy-efficient and high-capacity fans
- 54-inch and 52-inch galvanized energy-efficient fans
- 48-inch fiberglass energy-efficient fan with special motor



This is a sampling of the many fan sizes, models and configurations that Chore-Time offers. Additional electrical specifications also available. Contact your local authorized Chore-Time distributor for details on any fans not shown here.



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