

**K SERIES DIRECT DRIVE SIDEWALL PROPELLER FANS**

**SPECIFICATIONS**

Fans shall be direct drive propeller type with integral motorside OSHA style guard.

Propeller construction shall be of die formed aluminum blades riveted to steel hub. Propeller assembly shall be statically and dynamically balanced. Hub shall be securely attached to motor shafts with set screws.

Motors shall be permanently lubricated, speed controllable heavy-duty permanent split capacitor type, carefully matched to the fan load and furnished at the specified voltage, phase and enclosure. Motors shall be factory wired to a factory mounted wiring/conduit box. Fan/motor assembly shall be factory run-tested.

The single piece fan panel shall be minimum 16 gauge galvanized steel construction with pre-punched mounting holes, formed flanges and a deep spun venturi. Motorside guard shall be coated with an electrocoat baked enamel to provide a long lasting finish. Motor support/integral motorside guard shall be heavy-gauge welded wire and shall meet OSHA specifications. The motor and guard assembly shall be resiliently mounted to the fan panel with neoprene vibration mounts.

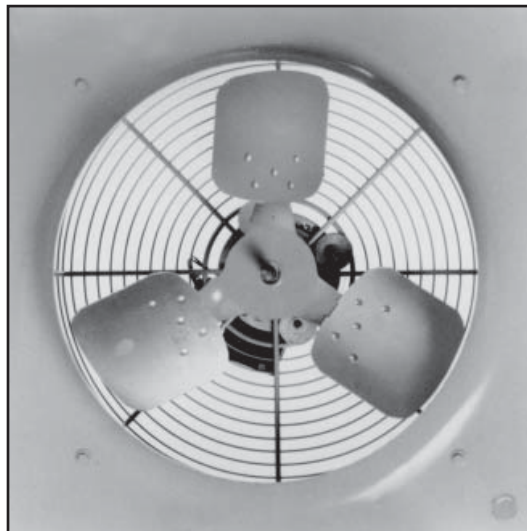
The axial exhaust and supply fan shall bear the AMCA certified ratings seal for air and sound performance.

Fans shall be Model LYDK for exhaust and LZDK for supply by Carnes Company of Verona, Wisconsin.

**CONSTRUCTION & FEATURES**

**Model LYDK/LZDK**

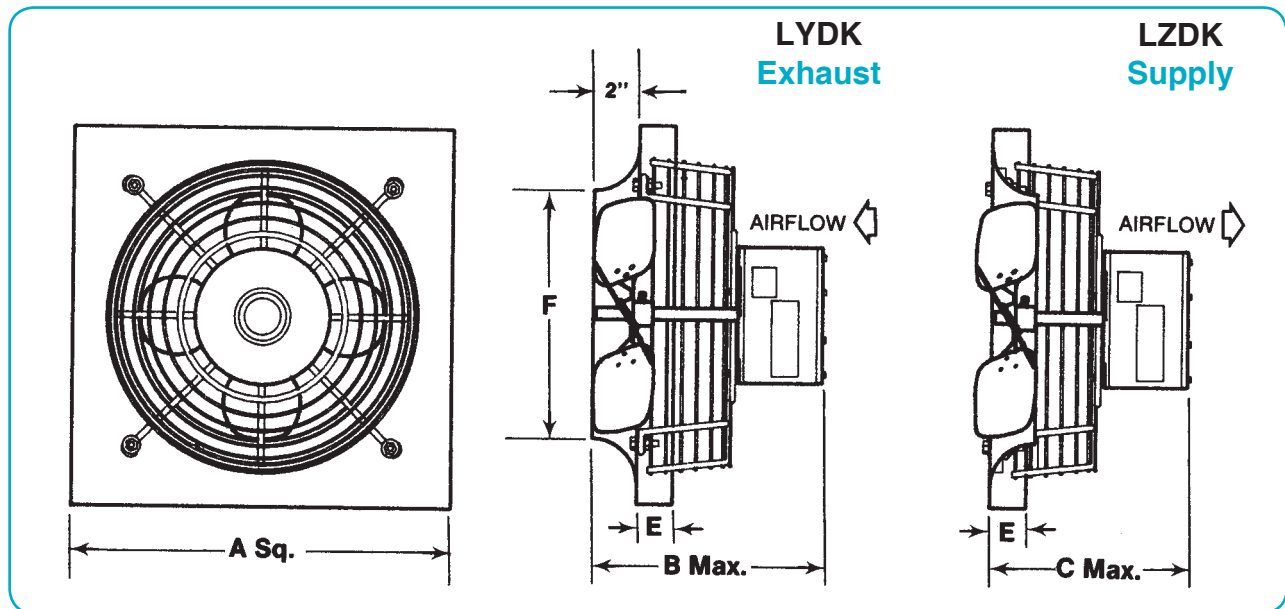
- PANEL**  
16 ga. Galv. Steel  
Single Piece Construction
- RESILIENT MOUNTS**  
For Vibration Isolation
- MOTOR**  
Speed Controllable  
Permanent Split Capacitor  
Open Drip-Proof
- TERMINAL BOX**  
Factory Wired for  
Easy Field Power  
Connection
- CONDUIT KNOCKOUT**  
For Field Wiring  
Damper Motor
- MOTORSIDE GUARD**  
Welded Steel Wire  
Meets OSHA Specifications  
Electrocoat Baked Enamel Finish



**EXHAUST MODEL LYDK SHOWN**

- PROPELLER**  
Die Formed Alum. Blades  
Steel Hub with Set Screws  
Statically & Dynamically  
Balanced 3 or 4 Blade Assembly
- VENTURI**  
Deep Spun for  
High Performance
- FORMED FLANGES**  
For A Strong, Rigid Panel  
Pre-Punched Mounting Holes  
Formed Toward Motor Side for  
Easy Mounting
- AMCA LICENSED**  
Ratings Seal for  
Air Performance and Sound
- FACTORY RUN TESTED**  
For Dependable Operation

Size	A Sq.	B	C	D	E	F	Weight (Lbs.)
9-10	16	11	10	2	1-1/2	10-1/4	20
11-12	16	11	10	2	1-1/2	12-1/4	20
13	20	12	11	2	1-1/2	14-1/4	25
15-16	20	13	12	2	1-1/2	16-1/4	30
17-18	24	13	12	2	1-1/2	18-1/4	35
19-21	24	13	12	2	1-1/2	20-1/4	40



- *SPECIAL FINISHES* - epoxy, enamel or heresite.

Performance Ratings

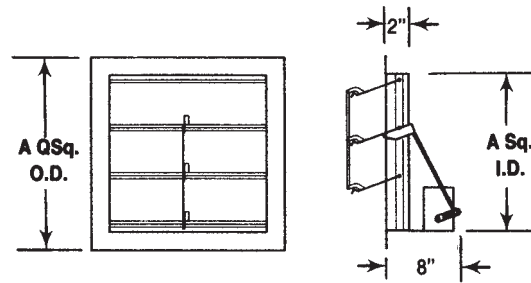


Carnes Company certifies that the Type LYDK and LZDK fans shown herein are licensed to bear the AMCA Seal for Sound and Air. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.

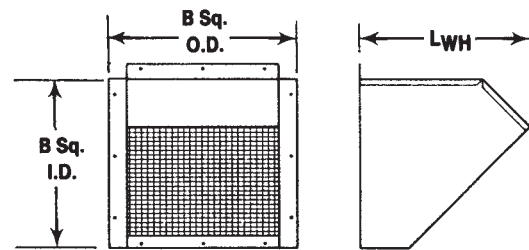


Models LYDK and LZDK are listed to UL Standard 705 and to CSA Standard C22.2 No. 113-12. File Number E27827. UL listing may be optional and must be specified when required.

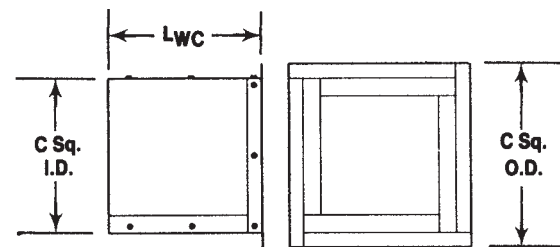
**SHUTTERS** - Flanged frames recess the aluminum damper and optional motor pack into the wall opening for weather protection and a neat, clean appearance that is flush with the exterior wall. Standard construction includes aluminum frame, aluminum blades, polyurethane seal on sill and felt blade seals.



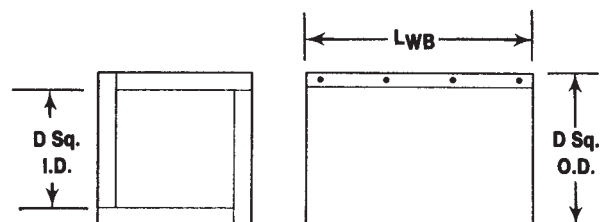
**WEATHER HOOD** - Provides weather protection for supply and exhaust applications (strongly recommended for supply). Flanged and pre-punched for easy mounting. Includes galvanized 1/2" x .042 wire mesh birdscreen. Standard material is 18 ga. galvanized steel (aluminum optional).



**WALL COLLAR** - Allows for the exhaust or supply fan to be mounted within the wall opening flush with exterior wall surface. Pre-punched mounting holes are located for easy attachment of fan panel, shutter and weather hood. Standard material is 18 ga. galvanized steel (aluminum is optional).



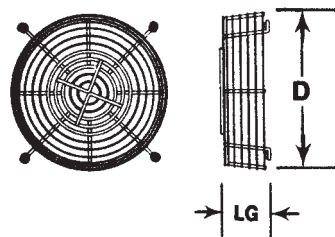
**WALL BOX** - Allows for the exhaust or supply fan to be mounted in the wall opening and extending either into or outside the exterior wall. Pre-punched mounting holes are located for easy attachment of fan panel, shutter and weather hood. Standard material is 18 ga. galvanized steel (aluminum and painted finishes are optional).



Models LYDK and LZDK

**ACCESSORIES**

**PROPELLER GUARD** - In addition to the standard motorside guard, the propeller-side guard provides protection where the propeller side of the fan is exposed. This heavy-gauge welded wire guard is bolted to the fan panel. The standard finish is baked enamel (gray). Meets OSHA specifications.



Sidewall Propeller Fans

**ELECTRONIC SPEED CONTROL** -

Enables continuously variable capacity control from full motor nominal RPM to approximately 50%. 3 sizes available - 3 amp, 6 amp and 10 amp. Compatible with standard 115/1/60 and PSC motors. Ships loose for field installation and wiring.

**DISCONNECT SWITCH** -

NEMA 1 or NEMA 3 (raintight) ships loose for field installation.

**MOUNTING ANGLES** -

Angle flanges cut to length provide a convenient method of attaching wall box to wall. Ships loose for field drilling and installation.

**ALUMINUM CONSTRUCTION** -

For additional corrosion resistance - the fan panel, weather hood, wall box or wall collar can be specified with aluminum construction.

**UL 705 LISTING** -

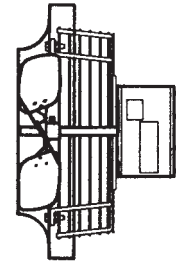
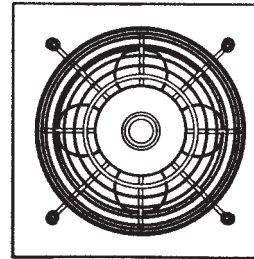
The standard units can be specified with **UL 705** listing for electrical safety and reliability.

**DIMENSIONS AND WEIGHTS**

FAN SIZE	SHUTTER			WEATHER HOOD				WALL COLLAR				WALL BOX				PROP GUARD		
	A SQ. OD	A SQ. ID	WT. LBS.	L <sub>WH</sub>	B SQ. OD	B SQ. ID	WT. LBS.	L <sub>WC</sub>	C SQ. OD	C SQ. ID	WT. LBS.	L <sub>WB</sub>	D SQ. OD	D SQ. ID	WT. LBS.	LG	D	WT. LBS.
9-12	15-1/4	12-1/4	2	14	15-1/2	14	11	16	19-1/4	16-1/4	16	24	16-1/4	13-1/4	20	4	15	2
13,15-16	19-1/4	16-1/4	4	18	19-1/2	18	15	16	23-1/4	20-1/4	19	24	20-1/4	17-1/4	24	4	19	3
17-21	23-1/4	20-1/4	6	20	23-1/2	22	20	16	27-1/4	24-1/4	23	24	24-1/4	21-1/4	29	4	23	4

**LYDK - EXHAUST**  
**LZDK - SUPPLY**

**DIRECT DRIVE**  
**PANEL FAN**



PERFORMANCE DATA WITH SPEED CONTROL

CFM BHP  
SONES

FAN SIZE	MOTOR HP	FAN RPM	TIP SPEED (Ft./Min.)	STATIC PRESSURE (Inches, W.G.)							
				0.000	0.125	0.250	0.375	0.500	0.625	0.750	
9H3	1/12	700	1833	328 2.0							
		800	2094	375 2.6							
		900	2356	421 3.1	89 3.6						
		1000	2618	468 3.7	178 4.2						
		1075*	2814	503 4.1	232 4.6						
10K2	1/6	1050	2749	493 2.1	176 4.3						
		1200	3142	563 3.0	303 4.8						
		1350	3534	634 3.8	369 5.4	108 7.6					
		1500	3927	704 4.7	468 6.0	264 7.9					
		1700*	4451	798 5.9	671 6.9	429 8.6	182 10.7				
11H3	1/12	700	2199	582 2.8							
		800	2513	661 3.5	130 4.7						
		900	2827	756 4.3	314 5.2						
		1000	3142	837 5.0	455 5.7						
		1075*	3377	930 5.5	530 6.0	40 8.2					
12K2	1/6	1050	3299	934 3.8	546 4.6						
		1200	3770	1067 4.9	746 5.1	307 8.0					
		1350	4241	1201 6.1	1036 6.0	534 8.2					
		1500	4712	1334 7.5	1204 7.2	798 8.5	422 11.4				
		1700*	5341	1512 9.5	1398 9.3	1059 9.5	740 11.6	439 14.6			
13K3	1/6	700	2566	1010 3.3	372 5.5						
		800	2932	1155 4.1	637 6.4						
		900	3299	1299 5.0	819 7.9	287 9.4					
		1000	3665	1443 5.9	976 9.3	553 10.6					
		1075*	3940	1551 6.6	1137 10.1	769 11.5	278 12.9				

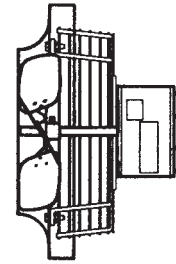
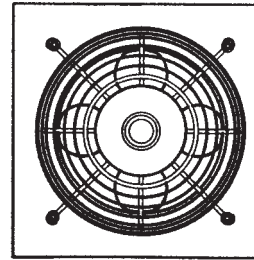
- NOTES:**
1. Performance certified is for installation type A - Free inlet, Free outlet.
  2. Performance ratings include the effects of the motorside guard in the airstream.
  3. \*Indicates motor RPM without speed control.
  4. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A: free inlet hemispherical sone levels.

**COMPUTERIZED FAN SELECTION:** Make the right choice with CARNES FAN-C-LECT™. The Models LYDK and LZDK, as well as the comprehensive offering of CARNES powered ventilators, are included in CARNES user friendly fan selection program.

Sidewall Propeller Fans

**LYDK - EXHAUST**  
**LZDK - SUPPLY**

**DIRECT DRIVE**  
**PANEL FAN**



PERFORMANCE DATA WITH SPEED CONTROL

CFM BHP  
SONES

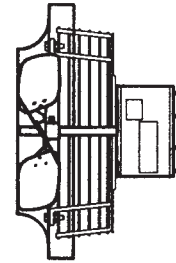
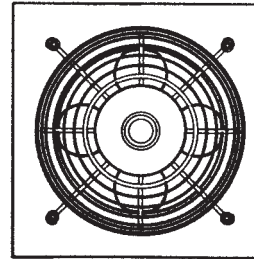
FAN SIZE	MOTOR HP	FAN RPM	TIP SPEED (Ft./Min.)	STATIC PRESSURE (Inches, W.G.)							
				0.000	0.125	0.250	0.375	0.500	0.625	0.750	
15K3	1/6	700	2932	1498 0.03 3.9	459 0.05 4.9						
		800	3351	1711 0.05 4.9	902 0.06 6.0						
		900	4189	2139 0.10 7.3	1660 0.11 8.1	694 0.14 9.2					
		1000	4490	2293 0.12 8.3	1880 0.14 9.0	1014 0.16 10.3					
		1075*	4503	2300 0.12 8.3	1888 0.14 9.0	1027 0.16 10.3					
16R2	3/4	1050	4398	2282 0.12 8.0	1873 0.13 8.8	916 0.15 11.6					
		1200	5027	2608 0.18 10.2	2269 0.19 10.6	1567 0.19 13.0	758 0.24 15.9				
		1350	5655	2934 0.25 12.4	2645 0.27 12.8	2069 0.26 14.6	1366 0.30 17.2	708 0.35 20			
		1500	6283	3260 0.35 14.6	3000 0.36 15.0	2689 0.38 16.2	2021 0.37 18.5	1357 0.43 21	747 0.48 24		
		1700*	7121	3694 0.50 17.9	3465 0.52 18.3	3216 0.54 18.8	2759 0.53 21	2226 0.55 23	1604 0.62 25	1085 0.67 28	
17L3	1/4	700	3299	1940 0.05 4.3	1039 0.06 5.6						
		800	3770	2217 0.07 5.5	1523 0.08 6.3	555 0.10 9.2					
		900	4241	2494 0.10 6.7	1965 0.11 7.5	1113 0.13 9.6					
		1000	4712	2771 0.14 8.1	2306 0.15 8.9	1507 0.16 10.4	790 0.20 13.1				
		1075*	5066	2771 0.18 9.1	2552 0.19 9.9	1793 0.19 11.1	1247 0.22 13.6				
18R2	3/4	1050	4948	3039 0.18 9.4	2546 0.20 9.9	1865 0.21 12.2	825 0.26 15.5				
		1200	5655	3473 0.26 11.8	3098 0.29 12.3	2409 0.28 13.7	1782 0.33 16.4				
		1350	6362	3907 0.38 14.3	3574 0.40 14.8	3205 0.43 15.2	2521 0.42 17.7	1861 0.48 20	1026 0.55 24		
		1500	7069	4341 0.52 16.8	4041 0.54 17.3	3722 0.57 17.7	3076 0.55 19.1	2693 0.60 22	2029 0.67 24	1271 0.74 27	
		1700*	8011	4920 0.75 20	4655 0.78 21	4390 0.82 21	4088 0.85 22	3417 0.81 23	3097 0.86 26	2538 0.94 28	

- NOTES:
1. Performance certified is for installation type A - Free inlet, Free outlet.
  2. Performance ratings include the effects of the motorside guard in the airstream.
  3. \*Indicates motor RPM without speed control.
  4. The sound ratings shown are loudness values in fan sones at 5 ft (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for installation Type A: free inlet hemispherical sone level.

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**LYDK - EXHAUST  
LZDK - SUPPLY**

**DIRECT DRIVE  
PANEL FAN**



PERFORMANCE DATA WITH SPEED CONTROL

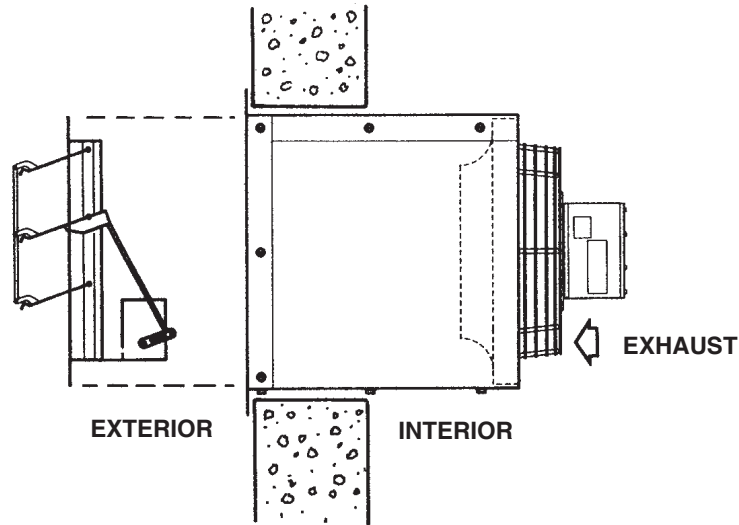
CFM BHP  
SONES

FAN SIZE	MOTOR HP	FAN RPM	TIP SPEED (Ft./Min.)	STATIC PRESSURE (Inches, W.G.)							
				0.000	0.125	0.250	0.375	0.500	0.625	0.750	
19L3	1/4	700	3665	2122 0.04 3.9	1118 0.05 5.8						
		800	4189	2425 0.06 5.1	1784 0.08 6.6	525 0.10 8.8					
		900	4712	2728 0.08 6.3	2266 0.11 7.5	1069 0.13 9.9					
		1000	5236	3032 0.11 7.6	2629 0.14 8.4	1628 0.20 10.6	756 0.16 12.8				
		1075*	5629	3259 0.14 8.5	2894 0.17 9.2	1984 0.18 11.3	1165 0.23 13.8	418 0.27 14.4			
20R2	3/4	1050	5498	3183 0.13 8.2	2806 0.16 8.9	1855 0.17 11.1	1030 0.22 13.7				
		1200	6283	3638 0.19 10.2	3319 0.23 10.6	2934 0.26 12.5	1878 0.28 14.7	1121 0.33 17.3			
		1350	7069	4093 0.28 12.4	3809 0.31 12.7	3487 0.35 14.1	2823 0.36 16.1	1979 0.41 18.4	1299 0.46 21	707 0.52 21	
		1500	7854	4547 0.38 14.6	4292 0.42 15.0	4022 0.46 16.1	3707 0.50 17.8	2690 0.49 19.7	2154 0.56 22	1538 0.62 24	
		1700*	8901	5154 0.55 18.1	4928 0.60 18.4	4704 0.64 19.0	4438 0.69 20	4161 0.73 22	3140 0.70 24	2670 0.78 26	
21P3	1/2	700	3665	2598 0.11 6.2	1778 0.12 7.6						
		800	4189	2969 0.16 7.7	2366 0.18 8.5	1410 0.19 11.9					
		900	4712	3340 0.23 9.4	2834 0.25 9.7	1885 0.25 12.7					
		1000	5236	3712 0.32 11.3	3279 0.34 11.5	2638 0.36 13.9	1871 0.37 17.3				
		1075*	5629	3990 0.40 12.9	3605 0.42 13.0	3047 0.44 14.9	2196 0.44 18.0	1584 0.48 22			

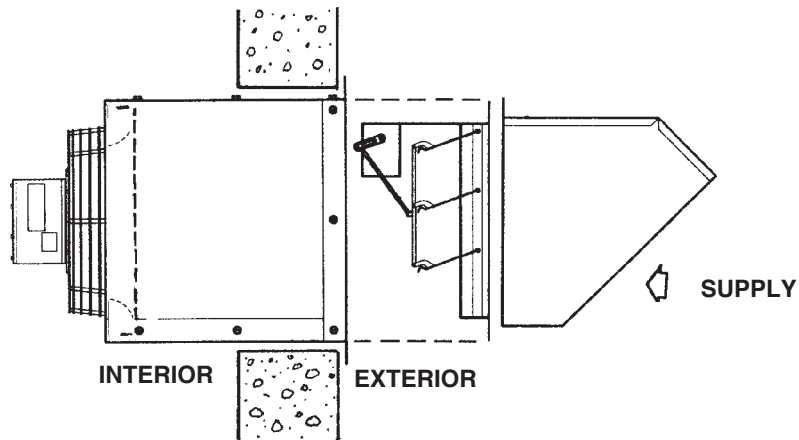
- NOTES:**
1. Performance certified is for installation type A - Free inlet, Free outlet.
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  3. \*Indicates motor RPM without speed control.
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**TYPICAL INSTALLATION** \_\_\_\_\_ **Models LYDK and LZDK**



**Model LYDK** - Exhaust fan is shown mounted in an exterior wall opening. The fan panel is fastened from the motorside, to an optional wall mounting collar. The optional shutter (gravity or motorized) is fastened to the wall mounting collar and is recessed into the wall opening, flush with the exterior wall surface. An optional weather hood can be added for additional weather protection.



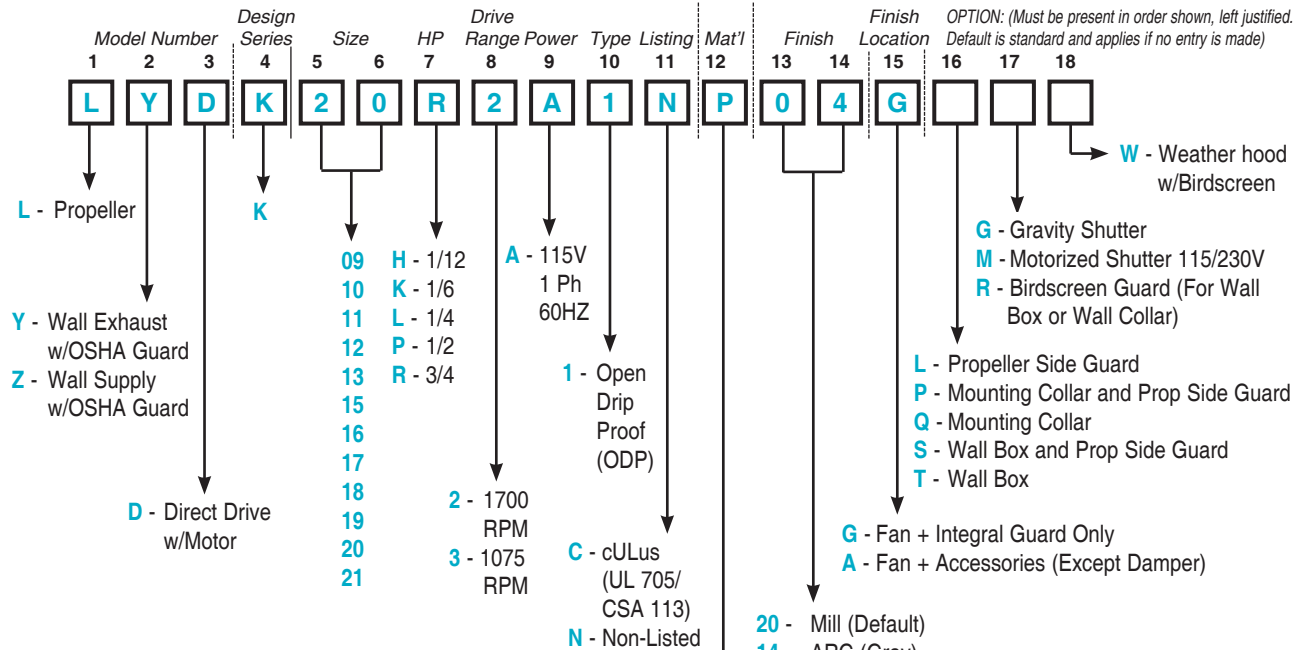
**Model LZDK** - Supply fan is shown mounted in an exterior wall opening. The fan panel is fastened from the motor side, to an optional wall mounting collar. The optional shutter (gravity or motorized) is fastened to the wall mounting collar and is recessed into the wall opening, flush with the exterior wall surface. An optional weather hood is recommended for all supply applications.



**NOTES FOR ACCESSORIES - Models LYDK/LZDK**

- A. UL-705** listing for electrical safety and reliability and **CUL-710** listing mark for Canada.
- B. Speed controls** ship loose for field installation and wiring. Includes control, J-box and cover plate.
- C. Disconnect switches** ship loose for field installation and wiring. Includes 2-pole switch, J-box and cover plate.
- D. Shutters** and motor kits ship separate for field installation. Flanged frame styles recess the damper body into the wall opening. Motor kits are 115/230 VAC standard. Other voltages (24V, 460V and 575V) are available at an additional cost.
- E. Transformer** ships loose for field installation and wiring. Primary 460V, secondary 115V, size 120 VA. For use with the standard damper motor kits.
- F. Propeller side guard** - OSHA style guard attaches to the panel opposite the standard motorside guard. Recommended when the propeller side of the fan is exposed. Construction and finish are the same as the motorside guard.
- G. Mounting collar** - ships knocked down (with fasteners) for field assembly. Standard finish is gray enamel. (Birdscreen/guard is recommended when no damper or weather hood is used.) Allows installation flush with the exterior wall and convenient attachment of accessories.
- H. Wall box** - ships knocked down (with fasteners) for field assembly. Allows installation (of fan and accessories) extending into or outside of the building, and convenient attachment of accessories.
- I. Weather hood** - ships knocked down (with fasteners) for field assembly. Attaches to the mounting collar or wall box. Provides weather protection and is recommended for supply applications. Inlet birdscreen (1/2" x .041 galvanized wire mesh) is standard.
- J. Mounting angles** are cut to length but require field drilling for installation. Provides a convenient method of attaching wall box to wall.
- K. Birdscreen** 1/2" x .041 galvanized wire mesh may be used with mounting collar or wall box when no damper or rainhood is used. Ships loose for field installation.
- L. Aluminum construction** - ADD this price to the standard unit price or standard accessory price.
- M. Finish** prices include prime coat plus one finish coat. **No special finishes are applied to motor, damper or birdscreen.**  
**ARC** - Acid Resistant Coating - Gray air dry epoxy.  
**HERESITE** - Air dry phenolic - Gray.  
**PAINT TO MATCH ENAMEL** - Enamel finish, to match a color sample.
- N. Factory assembly** - Add this to the base price of each accessory (but not the fan). Accessories are factory assembled (in lieu of knocked down). Components are then attached together and shipped as a "packaged" unit. When a motorized damper is ordered, the damper and motor kit are installed and the wiring is extended through the fan panel knockout for easy field power connection. Mounting angles and all electrical accessories ship loose.

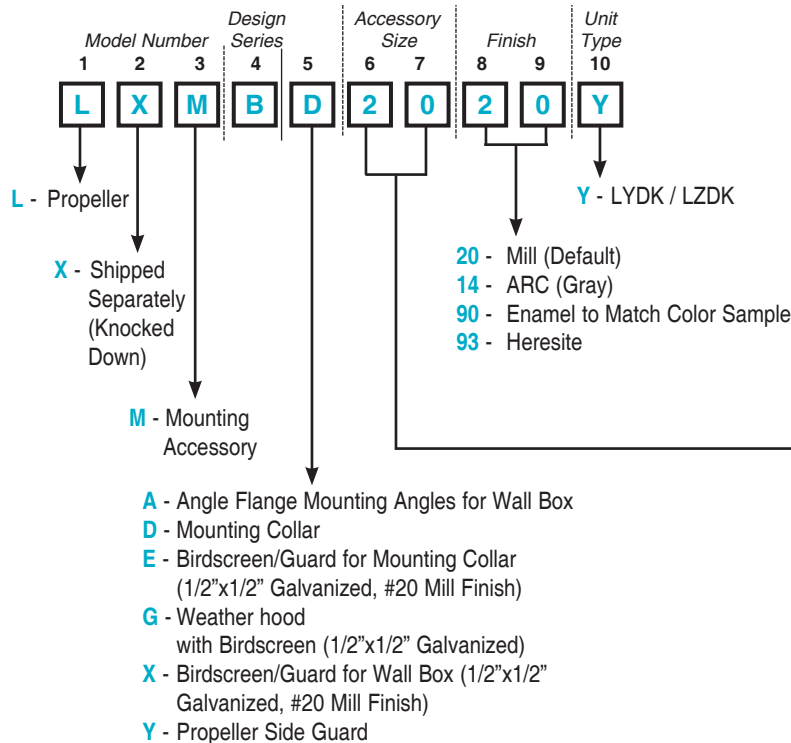
▼ Propeller Wall Fans and Factory Assembled Accessories



**NOTE:** Include ONLY factory assembled accessories in the PID. For accessories knocked down (KD) or shipped loose, order them separately as shown below. Mounting collar (Q) or wall box (T) is required when options 17 or 18 are ordered.

**FAN PANEL**  
 P - Painted Steel (Default for Fan & Guard Only)  
 A - Aluminum

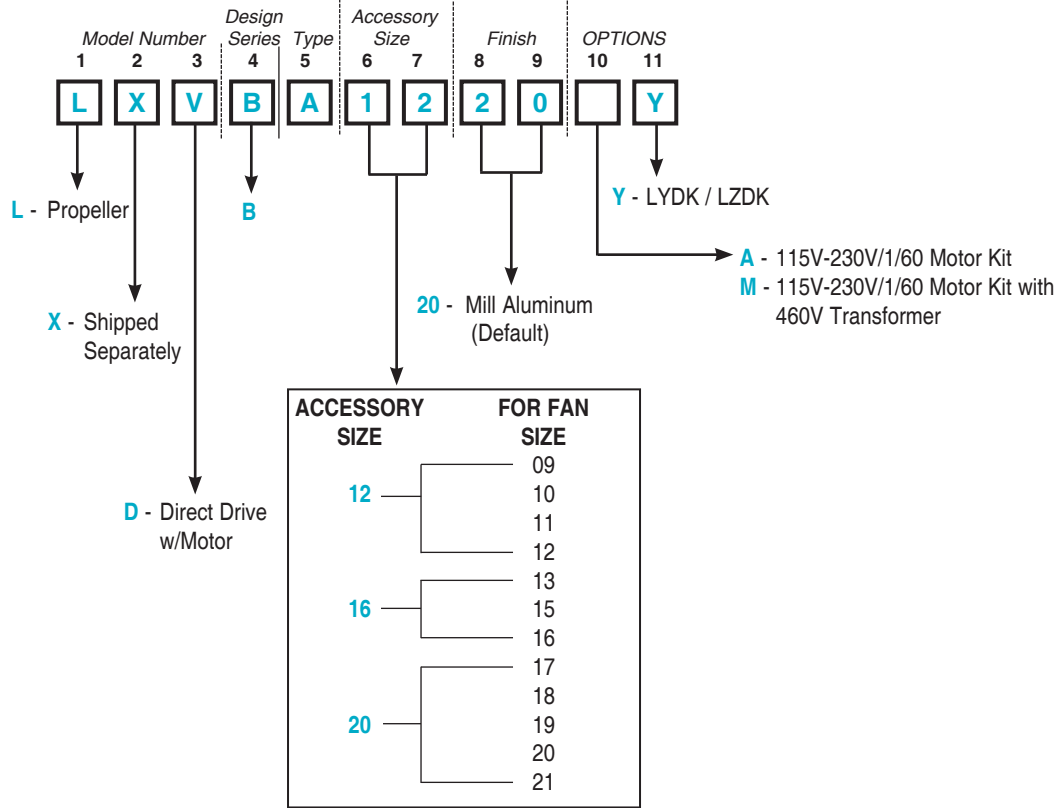
▼ Mounting Accessories (Ship Loose)



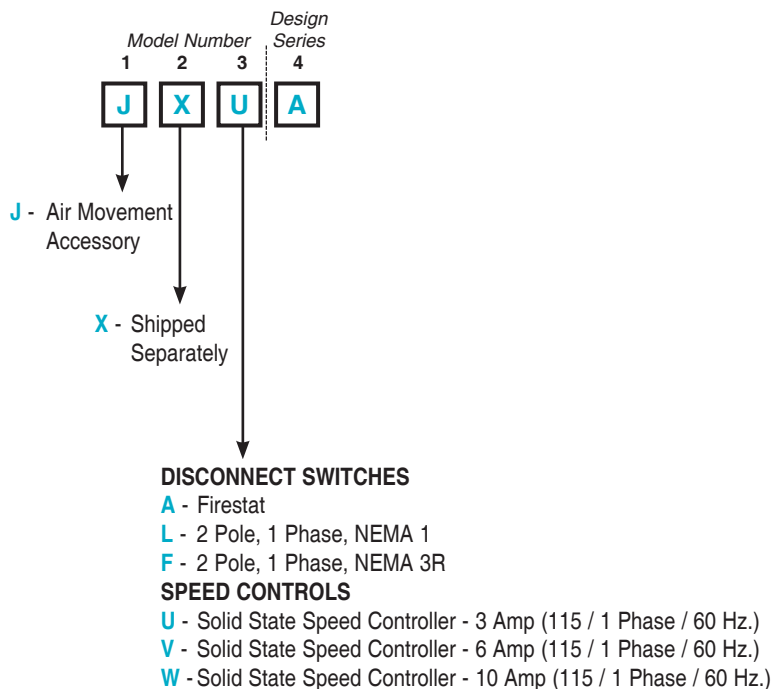
ACCESSORY SIZE	FOR FAN SIZE
12	09
	10
	11
	12
16	13
	15
	16
	17
20	18
	19
	20
	21

Note: Birdscreens are available with Mill Finish only.

▼ **Backdraft Dampers (Ship Loose)**



▼ **Electrical Accessories (Ship Loose)**



Sidewall Propeller Fans