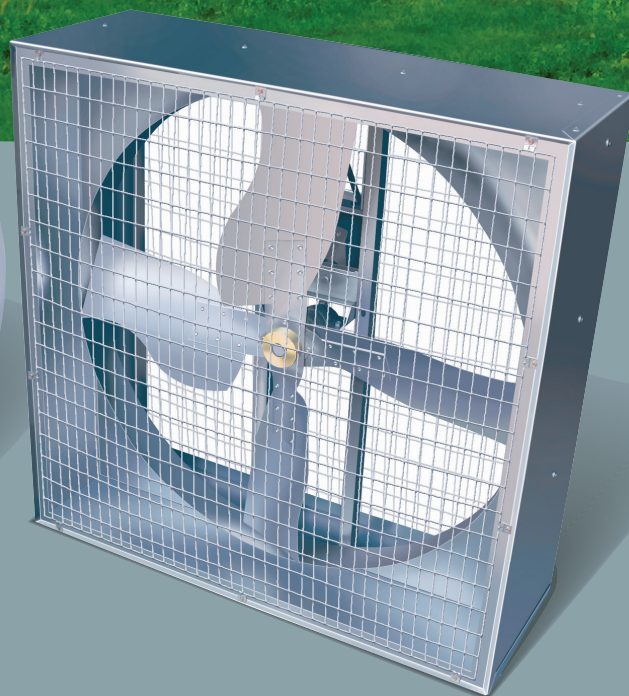


BREEZEMASTER

MODEL BDR

BELT DRIVE PROPELLER FANS



Est. 1938

ACME ENGINEERING & MANUFACTURING CORPORATION
P.O. Box 978 • Muskogee, OK 74402 • (918) 682-7791
AcmeFanGroup.com

MODEL BDR BELT DRIVEN PROPELLER FANS

Acme's BreezeMaster Model BDR exhaust fan provides a healthier environment for animals, which can lead to improved productivity and profitability. The BDR's discharge air diffuser increases air flow without increasing horsepower for energy efficient operation. Available in sizes 36", 48", and 54", the BDR is designed to perform in any agricultural environment and constructed of galvanized steel to last. In addition, the Acme BDR is easy to install and includes a safety guard, brackets and all the hardware for mounting.

The BDR was designed for those agricultural professionals who demand the best in quality, efficiency, performance and reliability at a competitive price. For poultry, swine, dairy, and other confinement applications, Acme's BDR provides the finest quality product for your investment.

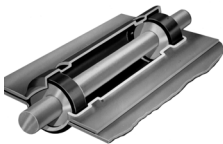
CONSTRUCTION FEATURES

PROPELLER

Wide-cambered galvanized propeller provides maximum airflow and high CFM/Watt for low energy costs. Riveted blades controls critical stresses.

BEARINGS

Permanently lubricated unique captured bearings in strong formed bearing casing remain in perfect alignment after shipment, installation, and subsequent operation. Bearings are resiliently mounted in neoprene rings, providing extra protection and vibration isolation. The bearing assembly is rated at L₅₀ life of 200,000 hours and features Acme's **5 year** limited warranty.

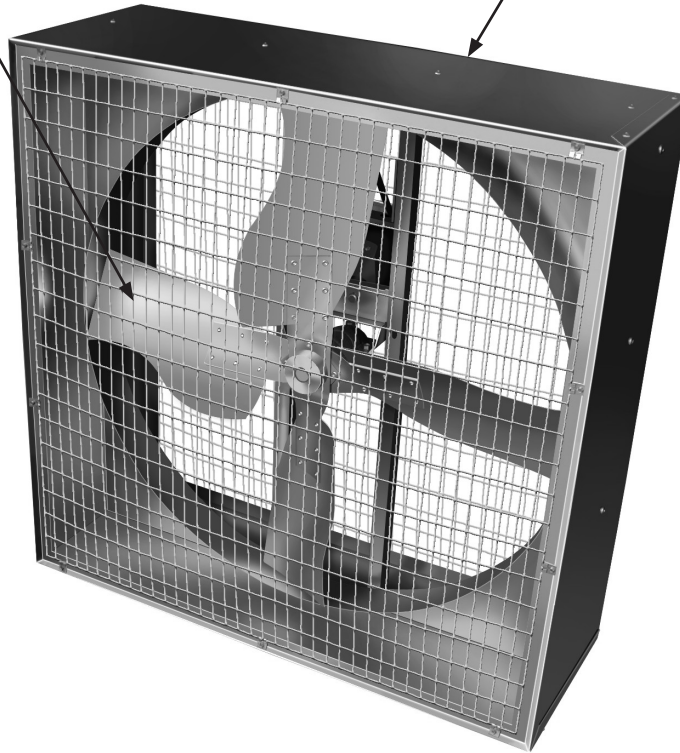


HOUSING

Housing is available with all galvanized construction for corrosion resistance and durability or with economical wood box housing. Frame and motor supported by galvanized steel vertical supports to assist pulley alignment and easy adjustment.

MOTOR

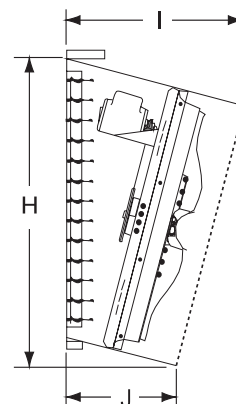
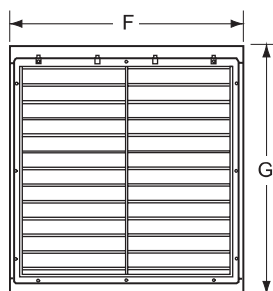
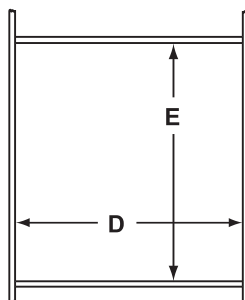
Motors are totally enclosed with sealed ball bearings and are energy efficient, continuous duty type.



CAUTION! Guards are strongly recommended when the fan is installed within (8) feet (2.5 m) of the floor, working level or within reach of personnel. Guards complying with OSHA regulations are available as optional equipment. Review OSHA Codes and obtain a quotation.



BREEZEMASTER CONFIGURATIONS



Fan Model	D	E	F	G	H	I	J
	Framed Opening Width	Framed Opening Height	Width Including Fan Mounting Flange	Height Including Fan Mounting Flange	Overall Height	Top Depth of Housing Only	Bottom Depth of Housing Only
BDR36 W/WSS	40.75	42.75	43.38	45.15	46.00	27.14	17.22
BDR48 W/WSS	54.75	57.25	57.38	58.86	62.64	33.06	19.50
BDR54 W/WSS	60.75	63.50	63.50	66.13	69.33	35.31	19.98

Dimensions shown in inches

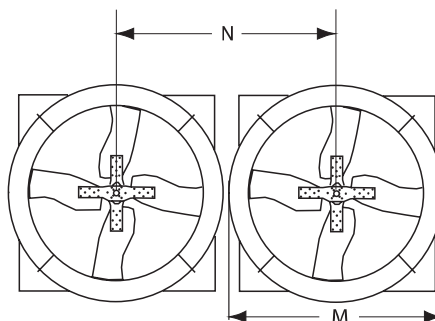
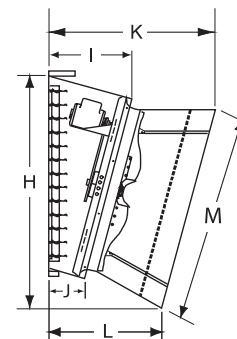
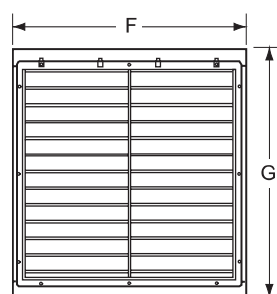
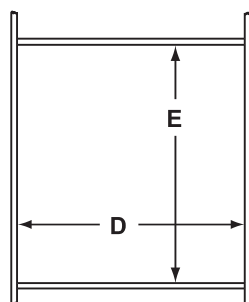
PERFORMANCE DATA										
Galvanized Steel Slant Housing WSS, Inlet Shutter & Outlet Guard										
Fan Model	RPM	HP	CFM vs. Static Pressure							
			0.00		0.05		0.10		0.15	
			CFM	C/W	CFM	C/W	CFM	C/W	CFM	C/W
BDR36G-A	635	0.5	11500	18.0	10930	16.8	10330	15.4	9650	14.1
BDR48J-AL	442	1.0	19000	23.4	17700	21.0	16500	19.0	15000	16.9
BDR48J-A	469	1.0	21500	19.2	20400	17.7	19300	16.5	18100	15.2
BDR48K-A	533	1.5	24100	15.2	23200	14.4	22300	13.5	21200	12.6
BDR54J-A	420	1.0	24800	24.1	23400	22.1	22100	20.2	20500	18.2
BDR54J1-A	450	1.0	26400	21.2	25200	19.5	23800	17.8	22400	16.4
BDR54JL-A	356	1.0	21000	30.8	19500	26.8	17600	23.5	15400	20.4
BDR54K-A	483	1.5	28600	17.6	27300	16.4	26000	15.2	24700	14.0

Performance shown for all fans except BDR54K-A from tests performed at Bess Labs, University of Illinois.

Performance shown for BDR54K-A from test performed by AMCA. Data shown at 0.00 static pressure is interpolated.



BREEZEMASTER CONFIGURATIONS



Fan Model	D Framed Opening Width	E Framed Opening Height	F Width Including Mounting Flange	G Height Including Mounting Flange	H Overall Height	I Top Depth Of Housing Only	J Bottom Depth Of Housing Only	K Top Depth With Cone	L Bottom Depth With Cone	M Cone O.D.	N Cone Fan Minimum Center Distance
BDR36 W/WSSC	40.75	42.75	43.38	45.15	51.82	20.73	10.71	33.75	22.25	45.13	45.13
BDR48 W/WSSC	54.75	57.25	57.38	58.86	67.50	23.20	9.44	48.24	32.98	59.45	59.45
BDR48J2 W/WSSC	54.75	57.25	57.38	58.86	70.43	23.20	9.44	53.36	38.27	62.38	62.38
BDR54 W/WSSC	60.75	63.50	63.50	66.16	76.84	24.66	9.30	52.33	34.82	67.00	67.00

Dimensions shown in inches.

PERFORMANCE DATA										
Galvanized Steel Slant Housing, WSSC, Inlet Shutter, Outlet Guard & Discharge Cone										
Fan Model	RPM	HP	CFM vs. Static Pressure							
			0.00		0.05		0.10		0.15	
			CFM	C/W	CFM	C/W	CFM	C/W	CFM	C/W
Single Phase										
BDR36G-C	634	0.5	12360	20.2	11800	18.7	11200	17.1	10560	15.7
BDR48J-C	473	1.0	23800	22.5	22700	20.6	21600	19.0	20300	17.2
BDR48J2-C	528	1.0	24300	22.6	23400	20.8	22300	19.0	21100	17.1
BDR48JL-C	422	1.0	19800	31.0	18500	27.0	17100	23.8	15300	20.5
BDR48K-C	535	1.5	26500	17.9	25600	16.6	24600	15.5	23500	14.3
BDR54J-C	425	1.0	27500	27.5	26100	24.2	24500	21.4	22700	18.9
BDR54J1-C	451	1.0	28558	28.4	27376	25.4	25863	22.7	24134	20.1
BDR54JL-C	325	1.0	21300	39.2	19400	33.0	17100	27.4	13500	20.5
BDR54K-C	484	1.5	30000	20.4	29300	19.5	28600	18.6	27300	17.0
Three Phase										
BDR48J-C	455	1.0	22700	23.6	21600	21.5	20300	19.4	18900	17.6
BDR48JL-C	402	1.0	20200	29.4	18900	26.1	17400	23.4	15500	20.3
BDR48K-C	530	1.5	26000	18.8	25000	17.5	24100	16.2	23000	15.1
BDR54J-5	475	1.0	30500	23.8	29300	21.8	28200	20.1	26600	18.0

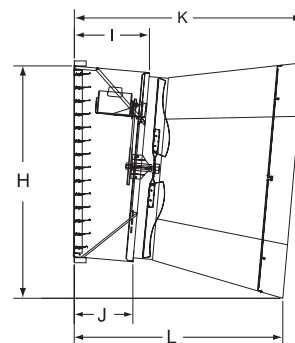
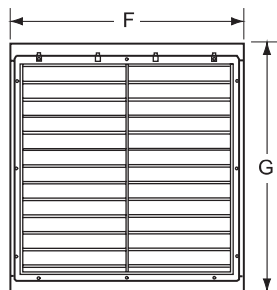
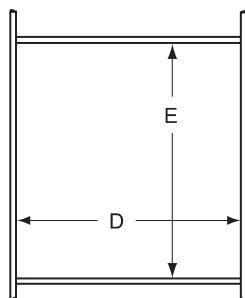
Performance shown for all fans except BDR54K-C from tests performed at Bess Labs, University of Illinois.

Performance shown for BDR54K-C from test performed by AMCA. Data shown at 0.00 static pressure is interpolated.

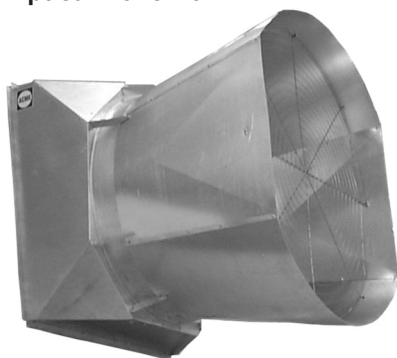


BREEZEMASTER CONFIGURATIONS

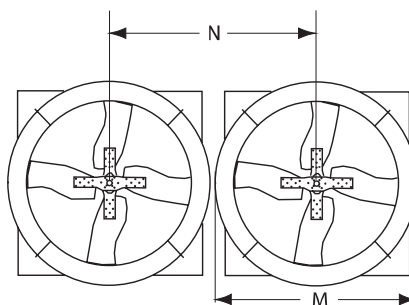
Round Cone C2



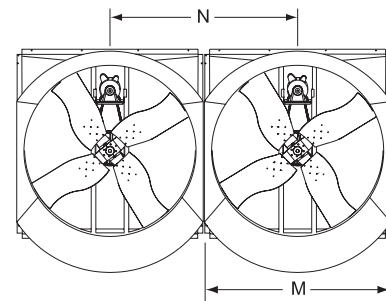
Elliptical Cone C3



Round Cone
BDRV54-C2



Elliptical Cone
BDRV5C3



Fan Model	D	E	F	G	H	I	J	K	L	M	N
	Framed Opening Width	Framed Opening Height	Width Including Mounting Flange	Height Including Mounting Flange	Overall Height	Top Depth Of Housing Only	Bottom Depth Of Housing Only	Top Depth With Cone	Bottom Depth With Cone	Cone O.D.	Cone Fan Minimum Center Distance
BDRV54-C2 W/WSSC	56.50	57.75	59.26	60.47	68.52	22.53	17.60	59.66	53.59	70.00	70.00
BDRV54-C3 W/WSSC	56.50	57.75	59.26	60.47	69.78	22.53	17.60	68.78	62.63	59.5 x 71	60.00

Dimensions shown in inches.

PERFORMANCE DATA										
Galvanized Steel Slant Housing, Inlet Shutter, Outlet Guard, & Discharge Cone										
Fan Model	RPM	HP	CFM vs. Static Pressure							
			0.00		0.05		0.10		0.15	
			CFM	C/W	CFM	C/W	CFM	C/W	CFM	C/W
Single Phase										
BDRV54J2-C2	435	1	28629	28.4	27414	25.5	25757	22.5	24043	19.9
BDRV54J1-C2	435	1	28488	27.1	27142	24.0	25503	21.1	23388	18.3
BDRV54J-C2	420	1	27555	29.1	26106	25.8	24396	22.4	22365	19.5
BDRV54JL-C2	375	1	24758	35.4	22975	30.1	21039	25.8	18370	21.1
BDRV54J2-C3	435	1	28239	28.2	27114	25.2	25386	22.2	23500	19.5
BDRV54J1-C3	430	1	28550	26.7	27023	23.8	24981	20.7	23338	18.7
BDRV54J-C3	420	1	27496	28.9	25901	25.3	24201	22.2	22209	19.3
BDRV54JL-C3	375	1	24622	35.0	22760	29.3	20729	25.2	18163	20.9

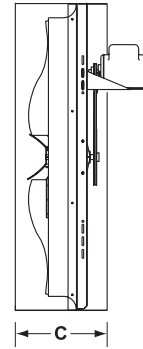
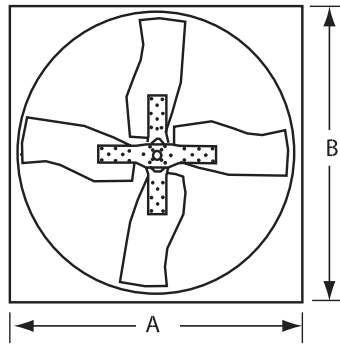
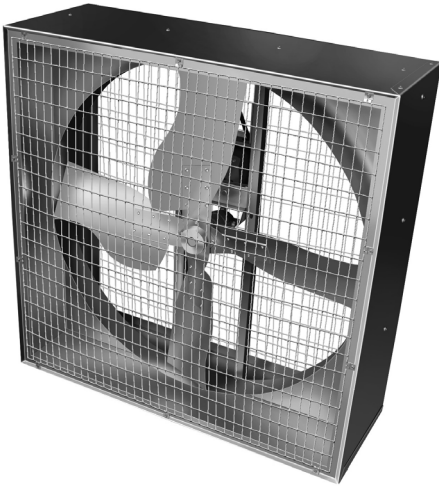
BDRV-C2 - Diffuser is round - will not fit between 60 centers.

BDRV-C3 - Diffuser is elliptical - will fit between 60" centers.

Performance shown for all fans from tests performed at Bess Labs, University of Illinois.



BREEZEMASTER CONFIGURATIONS



Fan Model	A	B	C
	Actual Width O.D.	Actual Height O.D.	Depth
BDR36 W/WOOD BOX	41.00	41.00	14.50
BDR36 W/METAL BOX	40.17	40.17	14.55
BDR48 W/WOOD BOX	54.87	54.87	15.91
BDR48 W/METAL BOX	54.05	54.05	16.02
BDR54 W/WOOD BOX	61.00	61.00	18.00
BDR54 W/METAL BOX	60.15	60.15	17.88

Dimensions shown in inches.

PERFORMANCE DATA										
Metal or Wood Box Housing with 2 Guards										
Fan Model	RPM	HP	CFM vs. Static Pressure							
			0.00		0.05		0.10		0.15	
			CFM	C/W	CFM	C/W	CFM	C/W	CFM	C/W
BDR36G-E	614	0.5	11590	21.7	11060	20.2	10410	18.1	9690	16.5
BDR48J-E	476	1.0	22000	19.6	21000	18.2	19900	16.8	18700	15.6
BDR48K-E	535	1.5	24400	14.0	23600	13.2	22700	12.6	21600	12.0

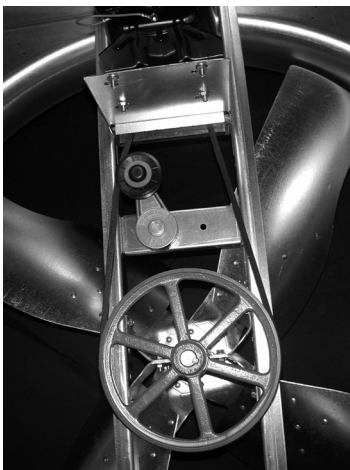
Performance shown for all fans from tests performed at Bess Labs, University of Illinois.



OPTIONAL ACCESSORIES

BELT TIGHTENER

Maintains proper belt tension, keeping RPM at the designed level for efficient operation and peak airflow.



SHUTTERS

Unique design lowers resistance while preventing back drafts. Available in galvanized frame with aluminum blades (Model WAG), all aluminum (Model WAA) or all plastic (Model APS) construction. Model APS uses UV stabilized PVC ABS frame and blades for corrosion resistance.



WAG



WAA



APS

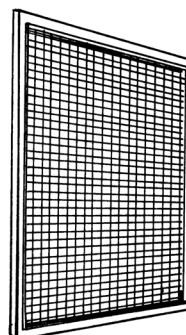
WALL HOUSING

Galvanized slant housing with flanges for mounting to exterior wall for exhaust applications in tunnel ventilated and cooled buildings. The slant arrangement protects the components from weather, incorporates wiring knockout, provides convenient shutter mounting with quick release clips, includes outlet screen and enhances air flow through velocity regain. Housings are available knocked down, crated with fan and shutters; motors shipped separately. Housing may be ordered assembled at additional charge with shutter and motor shipped separately.



Fan Size	Aluminum Shutter	Plastic Shutter	Steel
36"	WAA3939	APS3939	WAG3939
48"	WAA5454	APS5454	WAG5454
54"	WAA6060	APS6060	WAG6060
V54"	WAAN57	APS57	WAGN57

Fan	Housing Model
36"	WSS36
48"	WSS48
54"	WSS54



GUARDS

Guards are galvanized heavy gauge welded wire.



ACCEPTANCE All orders and sales are subject to written approval and acceptance by an executive officer of Acme Engineering & Manufacturing Corporation at Muskogee, Oklahoma, (the "Company") and are not binding on the Company until so approved.

DELIVERY All shipping and delivery dates are estimated only. No delays in delivery will subject the Company to any costs, damages or fees for late delivery. Delivery of the products herein specified shall be made F.O.B. point of shipment, unless otherwise stated. The Company shall not be liable for delay due to causes beyond its reasonable control, such as Acts of God, acts of the purchaser, acts of civil or military authorities, priorities, fires, strikes, floods, epidemics, war, riots, delays in transportation, car shortages, and inability, due to reasons beyond its reasonable control, to obtain necessary labor, material, or manufacturing facilities. In the event of such a delay, the date of delivery shall be extended for a period equal to the time lost by reason of the delay.

TERMS OF PAYMENT If, in the judgment of the Company, the financial condition of the purchaser at any time does not justify continuation of manufacture or shipment on the terms of payment specified, the Company may require full or partial payment in advance.

Pro rata payments shall become due as shipments are made. Each shipment or delivery shall constitute a separate sale, and the default of any shipment or delivery shall constitute a separate sale, and the default of any shipment or delivery shall not vitiate the contract as to other shipments or deliveries.

SALES AND SIMILAR TAXES The Company's prices do not include sales, use, excise, or similar taxes. Consequently, in addition to the price specified herein, the amount of any present or future sales, use, excise, or other similar tax applicable to the sale of the product

TERMS AND CONDITIONS OF SALE

herein shall be paid by the Purchaser, or in lieu thereof the Purchaser shall provide the Company with a tax exemption certificate acceptable to the taxing authorities.

CANCELLATION Any contract resulting from the Purchaser's order may be canceled by the Purchaser only by negotiations and upon payments of reasonable cancellation charges which will take into account expenses already incurred and commitments made by the Company.

DESIGN CHANGES The Company reserves the right to make changes in design, improvements and additions in and to its products any time without imposing any liability or obligations to itself to apply or install the same in any product manufactured by it.

TITLE The title and right of possession of the products sold herein shall remain with the Company and such products shall remain personal property until all payments herein (including deferred payments whether evidenced by notes or otherwise) shall have been made in full in cash and the Purchaser agrees to do all acts necessary to perfect and maintain such right and title in the Company.

PRICE ADJUSTMENTS Prices are subject to change upon notice by the Company. Prices on existing orders are subject to surcharges in the event of cost increases of metals and transportation. All complete component accessory material manufactured by others and furnished with the Company's products such as motors, drives, vibration equipment, controls or other completely assembled component structures, are subject to adjustment to the price at time of shipment regardless of the date of original order entry.

SAFETY ACCESSORIES The Company manufactures products designed to serve multiple applications and offers a wide range of safety equipment, including guards

and other devices, as may be required to meet customer specifications. Without exception, the Company recommends that all orders include applicable safety devices. Products ordered without applicable safety devices is clearly the responsibility of the Purchaser. Further, the Purchaser warrants that it has determined and acquired any and all safety devices required for products sold by the Company. Weather covers and guards for motor and V-belt drives, couplings, shafts and bearings, along with inlet and outlet screens, are optional accessories noted in the price list.

GOVERNING LAW The rights, obligations and remedies of Purchaser and the Company, the interpretation of these terms and conditions and the sale of products by the Company shall be governed by Oklahoma law, without regard to any principles of conflict of laws.

ARBITRATION Any dispute arising under or in connection with these terms and conditions or the sale of products shall be settled by binding arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules, and judgment on the award rendered by the arbitrator may be entered in any court having jurisdiction thereof. The dispute shall be resolved by one neutral arbitrator who shall have no affiliation with either Purchaser or the Company and shall be selected by the American Arbitration Association office in Dallas, Texas. The arbitration proceedings shall be held in Muskogee, Oklahoma.

APPLICABLE DOCUMENTS The agreement between the Company and the Purchaser relating to the products includes these terms and conditions of sale, any applicable installation and maintenance instructions provided by the Company and any terms appearing on the Company's quotation, sales order acknowledgment and invoice.

WARNING Acme products are designed and manufactured to provide reliable performance but they are not guaranteed to be 100% free of defects. Even reliable products will experience occasional failures and this possibility should be recognized by the Purchaser and all End Users. If these products are used in a life support ventilation system where failure could result in loss or injury, the Purchaser and all End Users should provide adequate back-up ventilation, supplementary natural ventilation or failure alarm system, or acknowledge willingness to accept the risk of such loss or injury.

WARNING DO NOT use in HAZARDOUS ENVIRONMENTS where fan's electrical system could provide ignition to combustible or flammable materials unless unit is specifically built for hazardous environments. Comply with all local and national safety codes including the National Electrical Code (NEC) and National Fire Protection Act (NFPA).

CAUTION Guards must be installed when fan is within reach of personnel or within eight (8) feet (2.5 m) of working level or when deemed advisable for safety.

DISCLAIMER The Company has made a diligent effort to illustrate and describe the products accurately in all Company literature; however such illustrations and descriptions are for the sole purpose of identification and do not express or imply any warranty.

LIMITED WARRANTY

WARRANTY AND DISCLAIMER: the Company extends this limited warranty to the original purchaser and warrants that products supplied by the Company, shall be free from original defects in workmanship and materials for two years from date of shipment (except for the warranty periods noted for products listed below), provided same have been properly handled, stored, installed, serviced, maintained and operated. This warranty shall not apply to products which have been altered or repaired without the Company's express authorization, or altered or repaired in any way so as, in the Company's judgment, to affect its performance or reliability, nor which have been improperly installed or subjected to misuse, negligence, or accident, or incorrectly used in combination with other substances. The Purchaser assumes all risks and liability for results of use of all products.

Evaporative cooling pads are warranted to be free of defects in materials and workmanship for a period of two years from date of shipment provided same have been properly handled, stored, installed, serviced, maintained and operated; and further, not subjected to excessive heat, corrosive agents or chemicals, or mechanical abuse that may cause tearing, crushing or undue deterioration, nor used on a system or in a manner other than that for which it was designed as explained in the product literature.

The following products are warranted to be free of defects in materials and workmanship for the periods shown from date of shipment: Acme's exclusive duplex split pillow block bearings and shaft five years, belts one year, Polyethylene tubing 90 days, and DDP fan lifetime warranty on its stainless steel propeller, cone, and housing.

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be made in writing and delivered to P. O. Box 978, Muskogee, Oklahoma, 74402, within 15 days after discovery of the defect and prior to the expiration of two years from the date of shipment by the Company of the product claimed defective, and Pur-

chaser shall be barred from any remedy if Purchaser fails to make such claim within such period.

Within 30 days after receipt of a timely claim, the Company shall have the option either to inspect the product while in Purchaser's possession or to request Purchaser to return the product to the Company at Purchaser's expense for inspection by the Company. The Company shall replace, or at its option repair, free of charge, any product it determines to be defective, and it shall ship the repaired or replacement product to Purchaser F.O.B. point of shipment; provided, however, if circumstances are such as in the Company's judgment to prohibit repair or replacement to remedy the warranted defects, the Purchaser's sole and exclusive remedy shall be a refund to the Purchaser of any part of the invoice price, paid to the Company, for the defective product or part.

The Company is not responsible for the cost of removal of the defective product or part, damages due to removal, or any expenses incurred in shipping the product or part to or from the Company's plant, or the installation of the repaired or replaced product or part.

The warranties set forth above do not apply to any components, accessories, parts or attachments manufactured by other manufacturers; such being subject to the manufacturer's warranty, if any. To the extent not prohibited by the manufacturer's warranty, the Company shall pass through to Purchaser such manufacturer's warranty.

THE COMPANY'S WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED AND WAIVED. THIS WARRANTY CONSTITUTES THE COMPANY'S SOLE AND EXCLUSIVE WARRANTY FOR DEFECTIVE GOODS AND PURCHASER'S SOLE AND EXCLUSIVE REMEDY FOR DEFECTIVE PRODUCTS.

No employee, agent, dealer, or other person is authorized to give any warranties on behalf of the Company or to assume for the Company any other liability in connection with any of its products except in writing and signed by an officer of the Company.

REPLACEMENT PARTS If replacement parts are ordered, purchaser warrants that the original components in which these replacement parts will be placed are in

satisfactory working condition, and when said replacement parts are installed, the resultant installation will operate in a safe manner, at speeds and temperatures for which the original product was purchased.

TECHNICAL ADVICE AND RECOMMENDATIONS, DISCLAIMER: Notwithstanding any past practice or dealings or any custom of the trade, sales shall not include the furnishing of technical advice or assistance or system design. Any such assistance shall be at the Company's sole option and may be subject to additional charge.

The Company assumes no obligation or liability on account of any recommendations, opinions or advice as to the choice, installation or use of products. Any such recommendations, opinions or advice are given and shall be accepted at Purchaser's and End User's risk and shall not constitute any warranty or guarantee of such products or their performance.

LIMITATION OF LIABILITY The cumulative liability of the Company to the Purchaser and any other persons for all claims in any way relating to or arising out of the products, including, but not limited to, any cause of action sounding in contract, tort, or strict liability, shall not exceed the total amount of the purchase price paid for those products which are the subject of any such claim. This limitation of liability is intended to apply without regard to whether other provisions of this agreement have been breached or have proven ineffective even if the Company has been advised of the possibility of such claims or demands. In no event shall the Company be liable to the Purchaser or any other person for any loss of profits or any incidental, special, exemplary, or consequential damages for any claims or demands brought by the Purchaser or such other persons.

INDEMNITY The Company's maximum liability to Purchaser and to any end user is as set forth above. The Company makes no warranty to anyone for any products not manufactured by the Company and shall have no liability for any use or installation of any products (whether manufactured by the Company or other manufacturers) not specifically authorized by this sale. Purchaser acknowledges various warnings by the Company regarding the products and its installation and use. If the Company incurs any claims, lawsuits, settlements, or expenses (including attorney fees) for any loss, injury, death or property damage including, but not limited to, claims arising out of the Purchaser's or any end user's installation or use of the products, the Purchaser shall indemnify and hold the Company harmless.



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