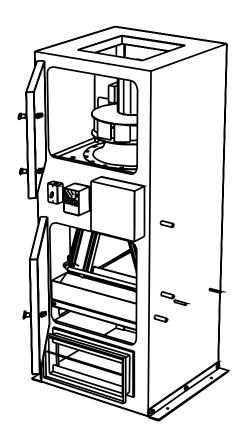


NOTE! READ AND SAVE THIS MANUAL — IMPORTANT SAFETY INSTRUCTIONS

USE AND CARE INFORMATION FOR VERTICAL AIR HANDLING UNITS

The following information includes sections on installation, start-up and regular maintenance.



For field support and installation assistance, or to obtain a printed copy of these instructions, please contact Customer Service at:

T 480-968-9550 F 480-968-9555 service@unitedmetal.com



SAFETY

Caution: DISCONNECT ALL POWER TO THE UNIT BEFORE ATTEMPTING TO INSTALL, OPEN, OR SERVICE YOUR UNIT. IF THE UNIT IS THERMOSTATICALLY CONTROLLED,

THE THERMOSTAT IS NOT TO BE USED AS A DISCONNECT AS IT MAY RESET AND START THE UNIT UNEXPECTEDLY.

For future reference, record Model and Serial Numbers from your unit here (numbers are located on the outside of the u	ınit):
--	--------

Model No.____ Serial No.



RECEIVING, SETTING IN PLACE AND START-UP PROCEDURE

RECEIVING

Inspect the complete unit for shipping damage. If damage is present, you have the right to either accept or reject the shipment. If the receiving contractor or the receiving agent for the contractor elects to receive the equipment in a damaged condition, it then becomes the contractor's responsibility to note the extent of the damage on the delivering freight bill of lading in the presence of the delivering agent (driver) of the delivering freight carrier in accordance with the ICC regulations. It also then becomes the responsibility of the receiving contractor to work with the delivering carrier to have the equipment repaired to the satisfaction of United Metal Products, Inc., so the warranty may remain valid. United Metal Products must also be notified of shipping damage immediately. Be sure to read the warranty for further information. United Metal Products will in no way be responsible for any unauthorized back charges due to events or circumstances out of their control which may cause shipping delays.

INSPECTION OF EQUIPMENT - VISUAL

The equipment type and arrangement should be verified as ordered at once when it arrives at the jobsite. When a discrepancy is found, the local United Metal Products Sales Representative must be notified immediately so that corrective action may be investigated. Also verify that electrical components are in conformance with specifications. Unauthorized alterations and unauthorized back charges will not be recognized by United Metal Products, Inc.

LONG-TERM STORAGE

If equipment is not set in its permanent position and is stored on the ground or other un-level area, proper provisions must be taken for supporting and protecting the equipment. Indoor units that are stored outside must be covered and protected from any ingress of moisture.

There is a time limit of one year from date of shipment that any unit may be kept in long-term storage. During this time, rotate the wheel by hand every two weeks to redistribute grease on internal bearing parts. At the end of the one year period, the unit must be in operation.

NOTE: Failure to perform the long-term storage requirements past 60 days from shipment and properly log these required procedures will void the warranty.

RIGGING INSTRUCTIONS

- 1. Avoid unnecessary jarring or rough handling.
- 2. Support the assembled unit and lift from below.
- 3. Care must be taken to keep the unit in the upright position during rigging.
- 4. Only use trained professional riggers when moving equipment.
- 5. Before installation it is important to be certain the mounting surface will bear the operating weight of the
- 6. For proper unit operation, it is also important that it be operated in a completely level position.

RIGGING

Proper handling of the equipment is mandatory during unloading and setting it into position.

It is mandatory that an experienced and reliable rigger be selected to handle unloading and final placement of the equipment. The rigger must be advised that the unit contains delicate components and that it be handled in an upright position. Care must be exercised to avoid twisting the structure.

NOTE: It is the responsibility of the installing contractor to mount the unit in accordance with local codes.



INSTALLATION AND START-UP SAFETY



SAFETY

Caution: DISCONNECT ALL ELECTRICAL POWER TO THE UNIT BEFORE ATTEMPTING TO INSTALL, OPEN, OR SERVICE YOUR UNIT. IF THE UNIT IS THERMOSTATICALLY

CONTROLLED, THE THERMOSTAT IS NOT TO BE USED AS A DISCONNECT AS IT MAY RESET AND START THE UNIT UNEXPECTEDLY.

Read and complete the checklist on the following page as part of this start-up procedure.

- Electrical wiring must be installed a safe distance away from any sharp or moving parts (blower wheels, pulleys, sheaves, belts, etc.).
- All guards and/or interlocks, mechanical or electrical, provided by manufacturer must always remain in place to provide needed protection against moving parts.
- Guards must be installed when fan or discharge is within personnel or within seven (7) feet of working level or when deemed advisable for safety.
- All safety devices, panels, and doors of the unit must be installed and remounted as previously mounted before startup, servicing, or cleaning. NOTE: A key is needed for fan cabinet access.
- Remove shipping blocks.
- Check fan rotation and inlet cone alignment.
- Install filters.
- Check doors seal tight.
- Start up fan and set VFD to turn fan at design fan speed (see unit nameplate inside supply fan access door).
- Check for leaks.

IMPORTANT! There may be other start-up and safety information included with other components not addressed in this manual.

Please read and follow all start-up and maintenance information carefully.

See separate Start-up and Stafety Information regarding:

- Actuators
- Coils
- Fans
- Filters

Vertical AHU Recommended Control Requirements

The sequence of operations (by others) will suit individual site requirements. The unit controller (by others) must be capable of the following basic functions:

- 1). Operate dampers when fitted, the dampers must be set to ensure the airway is "open" before starting the fan
- 2). When stopping the "cooling" mode the unit controller (by others) must close off the cooling coil control valve and continue to run the fan for a minimum of 5 minutes before signaling the VFD to stop the fan.
- 3). The VFD must be programmed with a ramp-up time of 30 seconds and a ramp-down time of 60 seconds.

Important: Shut down from cooling mode:

When operating in cooling mode, care must be taken to ensure that condensation formed on the cooling coil can migrate down the coil face and into the drain tray. Under normal operating conditions the velocity of the air passing over the coil will hold condensate droplets within the coil bundle as they migrate towards the drain tray. When the airflow is suddenly stopped, there is a possibility for the condensate droplets to fall vertically down onto the heating coil, filter and bottom of the AHU. To avoid this situation the control logic steps #2 and #3 above should be followed.

Site conditions will be the determining factor for how much condensate is produced and therefore the length of time the unit controller should run the fan at full speed before signaling the VFD to stop the fan as well as the VFD ramp-down period required. The objective is to dry out the coil and slowly reduce the air velocity over the coil face so that the condensate droplets will migrate to the drain tray. The unit controller and VFD should allow these two time periods to be adjusted on site to achieve this objective.



VAHU PRE-START CHECKLIST

(Responsibility of Installing Contractor)

NOTE: Please complete & return fax to United Metal Products within 30 days of start-up for warranty validation. Fax: 480-968-9555

INSTALLER	COMPANY		DATE
MODEL NUMBE	R SERIAL NUMBER	₹	TAG NUMBER
Before connecti	ing modules together check all internal components fo	or damage.	
Y N NA	FAN MODULE	Y N NA	FILTER MODULE
1. 🗆 🗆 🗆	Check fan wheel is secured to the motor shaft.	9. 🗆 🗆 🗆	Check filters are installed correctly (airflow).
2. 🗆 🗆 🗆	Remove shipping blocks above motor base.		
3. 🗆 🗆 🗆	Adjust the motor mount to acheive	COIL MODULE	
	uniform clearance between the fan wheel and	10. 🗆 🗎 🗖	Tighten all coil and drain connections and
	inlet cone. When spun, the fan should not touch		check for leaks.
	the inlet cone.		
4. 🗆 🗆 🗆	Check that motor mounting bolts are tight.		
5. 🗆 🗆 🗆	Check that electrical connections and covers		
	are tight.		<u>OPERATION</u>
6. 🗆 🗆 🗆	Set the fan speed with the VFD when supplied.	11. 🗆 🗎 🗖	Amp draw
	The operating fan speed is listed on the unit name	12. 🗆 🔲 🗖	Fan noise
	plate located inside the supply fan module	13. 🗆 🗎 🗖	Fan rotation
	access door.	14. 🗆 🔲 🗆	Air capacity
		15. 🗆 🗎 🗖	Vibration
	<u>DAMPERS</u>	16. 🗆 🗖 🗖	All safety devices installed and secure
7. 🗆 🗆 🗆	Check dampers freely rotate.	17. 🗆 🔲 🔲	Thermal overloads set properly
8. 🗆 🗆 🗆	Where damper actuators are supplied, check		
	that they are secure and set minimum and maximum	n	
	rotation settings.		
	COMMISSION	INIC DECC	חסה
	COMMISSION	IINU NEGO	עחע
SUPPLY FAN	AMPS		VOLTS
L1	L2 L3	11-12	L1-L3 L3-L2
<u>-</u>		L1 L2	
☐ Final O	verload Setting:		
	Nameplate Information: Model#	Volts_	Amps HP
	eed set at commissioning: RPM		
	all Amp and Volt readings meet nameplate data.		
Installer's Acce	ptance Signature: x		Date
NOTES:			



WIRING INSTRUCTIONS

When wiring the unit from the factory installed electrical box or VFD, ALL grounding, wiring and materials must be installed in accordance with all current N.E.C. and local codes, and must be performed by a qualified licensed technician. Consult the chart below for proper wire, circuit breaker and fusible switch. CAUTION: Improper wiring, installation or maintenance of equipment may cause electric shock, fire or injury to persons.



SAFETY

Caution: DISCONNECT ALL ELECTRICAL POWER TO THE UNIT BEFORE ATTEMPTING TO INSTALL, OPEN, OR SERVICE YOUR UNIT. IF THE UNIT IS THERMOSTATICALLY

CONTROLLED. THE THERMOSTAT IS NOT TO BE USED AS A DISCONNECT AS IT MAY RESET AND START THE UNIT UNEXPECTEDLY.

Caution: Do not exceed the maximum amperage output as stamped on the motor specification plate or motor can overload. Only qualified persons with proper electrical equipment and knowledge should adjust VFD.

Caution: Disconnect all the electrical power to the unit and insure that the fan is not rotating before inspecting it, adjusting the vibration isolators or servicing the motor.

Even while routinely inspecting or servicing the inside, the unit can be accidentally started. Keep children and pets away from the unit and electrical supply when you are working on it.

Do not attempt to perform any part of the installation described in this booklet unless you are FULLY QUALIFIED to do so. All electrical work must meet local codes and must be performed by qualified personnel only.



Full load currents, wire sizes, and switch sizes are based on 1990 NEC. Fuse sizes and circuit breaker trip amperes are appropriate selections, suitable for most installations. Thermal unit selections are not based on NEC currents (see NEC 430-6), but are selected from average full load currents. Thermal units can be more accurately selected using table furnished with starter and full load current marked on motor nameplate.

THREE PHASE MOTOR DATA

MAGNETIC STARTER	FUSIBLE	BREAKER	MINIMUM	MAGNETIC STARTER	FUSIBLE	BREAKER	MINIMUM	MAGNETIC STARTER	FUSIBLE	BREAKER	MINIMUM	MAGNETIC STARTER	FUSIBLE	CIRCUIT	MINIMUM	FOR 60 H: STANDAR	
c NEMA 1 ENCL.—CLASS 8536 TYPE SGG: WITH THREE MELTING ALLOY THERMAL UNITS—NO DD255	HEAVY DUTY SWITCH-NEMA 1 ENCL:-CAT. NO WITH DUAL ELEMENT TIME DELAY FUSE—AMPS	INDUSTRIAL BREAKER-CAT. NO. (breaker only, LAL3625)	MINIMUM COPPER WIRE SIZE-(75) THW, THHN-THWN, XHHW-SIZE	C NEMA 1 ENCL.—CLASS 8536 TYPE WITH THREE MELTING ALLOY THERMAL UNITS—NO	HEAVY DUTY SWITCH-NEMA 1 ENCL:-CAT. NO WITH DUAL ELEMENT TIME DELAY FUSE.—AMPS	INDUSTRIAL BREAKER-CAT. NO. (breaker only) LAL36350	FULL LOAD CUBRENT (NEC)—AMPS MINIMUM COPPER WIRE SIZE-(75) THW, THIN THINN, XHHW-SIZE THERMAN MACANETIC STRANGER OF THE DATAMA AMOS	c NEMA 1 ENCL.—CLASS 8536 TYPE SHG-2 WITH THREE MELTING ALLOY THERMAL UNITS—NO B4/85	HEAVY DUTY SWITCH-NEMA 1 ENCLCAT. NO WITH DUAL ELEMENT TIME DELAY FUSE—AMPS	R INDUSTRIAL BREAKER-CAT. NO. (breaker only)MAL36800	FULL LOAD CURRENT (NEC)—AMPS MINIMUM COPPER WIRE SIZE-(75) THW, THHN-THWN, XHHW-SIZE	C NEMA 1 ENCL.—CLASS 8536 TYPE WITH THREE MELTING ALLOY THERMAL UNITS—NO	HEAVY DUTY SWITCH-NEMA 1 ENCLCAT. NO WITH DUAL ELEMENT TIME DELAY FUSE.—AMPS	THERMAL-MAGNETIC BREAKER TRIP RATING—AMPS 800 600 INDUSTRIAL BREAKER—CAT. NO. (breaker only) MAL36800 MAL36600	FULL LOAD CURRENT (NEC)—AMPS MINIMUM COPPER WIRE SIZE-(75) THW, THHN-THWN, XHHW-SIZE	FOR 60 Hz. 1800 RPM STANDARD SQUIRREL CAGE MOTORS (non Design E)	
0	3065 300	-		0 -	350 350	=	350 350		H326	MAL36800 M	+	SJG-2 S	11	800 MAL36800 M	552 2-500	200	
SGG-1 9 DD160 [H364 200	AL36200 K	3/0	SGG-1 9 DD240 [H365 250	AL36250 L	180 4/0	0	H326 500	MAL36600 N	_	SHG-2 S B4.15	H326 600		414 2-300	150	
SGG-1 DD150	H364 175	XAL36200 K	2/0 2/0	SGG-1 DD185	H364 200	AL36225 K	3/0 3/0	010	H325 400	450 MAL36450 L	312 2-3/0	SHG-2 9 B3.30	500 500	600 MAL36600 L	359 2-4/0	125	
SFG-1 SFG-7 CC156 CC112	1364 150	150 KAL36150	-99	SFG-1 CC196	H364 175	KAL36200	124 2/0	10-	H325 350	350 LAL36350	350 350	SHG-2 B2.65	H325 400	400 LAL36400	500 500	100	
_	1363 100	(AL36110	ω7	SFG-1 CC156	H364 150	KAL36125	196	SGG-1 DD240	300 300	AL36250	192 250	SGG-1 DD280	300 300	300 LAL36300	300 300	75	
SFG-1 CC877	H363 90	FAL36100	462	SFG-1 CC112	1363 100	KAL36110	37	SGG-1 DD185	H324N 200	ZZ5 LAL36225	3/0	SGG-1 DD220	H325 250	250 LAL36250	177 4/0	60	
SEG-1 SEG-1 SEG-1 CC81.5CC64.3CC46.6	H363 80	90 FAL36090	652	SEG-1 CC103	1363 100	FAL34100	465	SFG-1 CC208	H324N 200	AL36225 KAL36200 KAL36150	130 2/0	SGG-1 DD160	H324N 200	200 175 125 110 LAL36200 KAL36175 KAL36125 KAL36110	3/0	50	
SEG-1 CC64.3	H362 60	FAL36080	641	SEG-1 CC81 5	H363 80	FAL34090	8 6 5 2	SFG-1 CC167	H324N 150		104	SFG-1 CC180	H324N 175	175 KAL36175	120 1/0	40	
SEG-1 CC46.6	H362	FAL36060	జన	11 SEG-1 15 CC59 4	H362	FAL34080	86	SEG-1 CC156	H323N 100	KAL36110 FAL32100	ω8	SFG-1 CC143	H324N 125	125 KAL36125	292	30	
SDG-1 B45	H362 40	FAL36060	27 10	SDG-1 B62	H362	FAL34070	84	SEG-1 CC112	H323N 100	FAL32100	48	SEG-1 CC143	H323N 100	110 KAL36110	78.2 3	25	
SDG-1 B36	H361 30	45 FAL36045	1022	SDG-1 B45	H362 40	FAL34060	27 10	SEG-1 CC87.7	H323N 80	90 80 FAL32090 FAL32080	242	SEG-1 CC94.0	H323N 90	100 FAL32100	62.1 4	20	NIC
SDG-1 B25	H361 25	35 FAL36035	12	SDG-1 B32	361 30	FAL34040	10	SDG-1 B79	H322N 60	FAL32080	642	SEG-1 CC74.6	H322N 60	100 90 FAL32100 FAL32090	48.3 6	15	NO OF THE
SCG-3 B17.5	H361 20	FAL36020	2 1 1	SCG-3 B25	H361 20	FAL34025	14	SDG-1 B45	H322N 40	5U FAL32060	28 10	SDG-1 B56	H322N 50	60 FAL32060	32.2 8	10	
SCG-3 B12.8	H361 15	15 FAL36015	9.0	SCG-3 B17-5	H361 20	FAL34020	148	SCG-3 B36	H321N 30	45 FAL32045	1022	SCG-3 B45	H322N 40	50 FAL32050	25.3 10	7 1/2	
SBG-2 B9.10	H361 10	FAL36015	14.1	SBG-2 B11.5	H361	FAL34015	7.6 14	SCG-3 B25	H321N 25	3U FAL32030		SCG-3 B28.0	H321N 25	35 FAL32035	17.5 12	51	
SBG-2 B4.85	H361 6.25	15 FAL36015	3.9	SBG-2 B6.90	H361	FAL34015	14.8	SBG-2 B14	H321N 15	20 FAL3202	9.6	SBG-2 B15.5	H321N 17.5	20 FAL32020	11.0 14	ဒ	
SAG-1 B3.70	H361	_	2.7	SAG-12 B4.85	H361 6.25	FAL34015	3.4	SBG-2 B10.2	H321N	FAL32015	148	SBG-2 B11.5	H321N 10	15 FAL32015	7.8 14	2	
2 SAG-1 B3.30	H361 4	15 FAL3601		2 SAG-12 B4 15	H361	5 FAL34015	3.0	SAG-1 B9 10	H321 10	15 FAL32015			1 H3211		6.9 14	1 ½	
SAG-12SAG-12SAG-12 B3.70 B3.30 B2.40	3.2 3.2	15 FAL36015	17	2 SAG-1 B3 00	H361 4		2.1	2 SAG-1 B6.25	N H3211	5 FAL32015		2 SAG-1	N H3211	15 FAL3201	4.8 14		
12 SAG-12 SAG-1 0 B1 88 B1 30	H361 2.5	15 5 FAL36015	13	2 SAG-1 B2 40	H361 3.2	5 FAL34015	1.6	12SAG-12SAG-12SAG-12 B6.25 B4.15 B3.30	H321N H321N 8 5.6	5 FAL32015		SAG-12SAG-12SAG-12 B10.2 B6.90 B4.85 B3.30	H321N H321N H321N 10 8 6.25	15 15 FAL32015 FAL32015	3.7 14	3/4	
2SAG-1 B1.30	H361 1.8	15 FAL36015	0.9	SAG-12 SAG-12 B2 40 B1 45	H361 2	5 FAL34015		2 SAG-1 B3 30	N H321N	5 FAL32015		2 SAG-1 B3 30	V H321N	15 5 FAL32015	2.5 14	1/2	
2000		SYSTEM		- 2 V		5 460	MOTOR	- 2	(240)	SYSTEM 230	MOTOR	2 VOL. 0	(208)	SYSTEM 200	MOTOR		

E: service@unitedmetal.com

VAHU 0&M (Rev. 01-15-2015)



TROUBLESHOOTING GUIDE

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
EXCESSIVE MECHANICAL NOISE AND/OR VIBRATION	 Defective motor bearing. Fan wheel loose on shaft. Fan wheel out of balance. Fan wheel rubing on inlet cone. Worn vibration isolators. Fan rotating at a natural frequency that is not absorbed by the vibration isolators. 	 Replace. Tighten set screw. Re-balance or replace fan wheel. Re-align fan wheeel and cone. Replace vibration isolators. Use VFD to increase or decrease fan RPM to skip over that natural frequency.
FAN DOES NOT ROTATE	 Blown fuse or open circuit breaker. Electricity turned off. Defective motor. VFD not set up correctly. Defective VFD. 	 Replace fuse or reset circuit breaker. Contact local power company. Replace. Replace VFD handbook. Replace.
INSUFFICIENT AIR FLOW	 Duct static pressure too high. Fan RPM too low. Clogged filters. 	Check duct system for closed dampers and other blockages. Increase the fan speed with VFD. Do not exceed the maximum safe fan RPM - see MAHU nameplate. Replace.
HIGH PITCHED NOISE HEARD WHEN RUNNING	1. VFD.	Set VFD to skip over that natural frequency.
DAMPER BLADES DO NOT TURN	Damper blades are jammed. Defective actuator.	 Free up damper blades and/or linkages. Replace.
COIL PAN DOES NOT DRAIN	Blocked drain. Incorrectly sized trap.	1. Unblock drain. 2. Re-size trap.
AIR LEAKAGE	Doors not sealing. Module joins are not sealing.	Check and adjust door latches. Check seams. Tighten bolts and/or seal with caulking.

REGULAR MAINTENANCE

- Change filters.
- Re-grease motor bearing as required.
- Check fan and inlet cone alignment.
- Check dampers oprate smoothly.
- For units fitted with GFCI, press TEST/RESET buttons to assure proper operation on a monthly basis.



LIMITED WARRANTY

UNITED METAL PRODUCTS, INCORPORATED extends this limited warranty to the original buyer and warrants that products manufactured by United Metal Products shall be free from original defects in workmanship and materials for 12 months from start-up or 18 months from date of shipment (whichever is sooner), provided same have been properly stored, installed, serviced, maintained and operated with bleedoff system properly installed. This warranty shall not apply to products which have been altered or repaired without United Metal Products' express authorization, or altered or repaired in any way so as, in United Metal Products' 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. Warranties on purchased parts, such as electric motors, pumps and pads, are limited to the terms of warranty extended by our supplier (usually one year duration).

LIMITATION OF REMEDY AND DAMAGES: All claims under this warranty must be made in writing and delivered to United Metal Products, Inc., 1920 East Broadway Road, Tempe, Arizona 85282, within 15 days after the date of shipment by United Metal Products of the product claimed defective, and buyer shall be barred from any remedy if buyer fails to make such claim within such period.

Within 30 days after receipt of a timely claim, United Metal Products shall have the option either to inspect the product while in buyer's possession or to request buyer to return the product to United Metal Products at buyer's expense for inspection by United Metal Products. United Metal Products 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 buyer FOB. point of shipment; provided, however, if circumstances are such as in United Metal Products' judgment to prohibit repair or replacement to remedy the warranted defects, the buyer's sole and exclusive remedy shall be a refund to the buyer of any part of the invoice price, paid to United Metal Products, for the defective product or part.

United Metal Products 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 United Metal Products plant, or the installation of the repaired or replaced product or part.

Implied warranties, when applicable, shall commence upon the same date as the express warranty provided above, and shall, except for warranties of title, extend only for the duration of the express warranty. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. The only remedy provided to you under an applicable implied warranty and the express warranty shall be the remedy provided under the express warranty, subject to the terms and conditions contained therein, United Metal Products shall not be liable for incidental and consequential losses and damages under the express warranty, any applicable implied warranty, or claims for negligence, except to the extent that this limitation is found to be unenforceable under applicable state law. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

No employee, agent, dealer, or other person is authorized to give any warranties on behalf of United Metal Products or to assume for United Metal Products any other liability in connection with any of its products except in writing and signed by an officer of United Metal Products. Liability shall in no case exceed the unit price of the defect product or part.

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 United Metal Products' sole option.

WARNING

Our products are designed and manufactured to provide performance, but they are not guaranteed to be 100% free of defects. Even reliable products will experience occasional failure, and this possibility should be recognized by the user. If these products are used in a life support ventilation system where failure could result in loss or injury, the use 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.

DO NOT USE IN HAZARDOUS ENVIRONMENTS where fan's electrical system could provide ignition to combustible or flammable materials.

NOTE

If any assistance from the factory is needed to check, test, or start-up any UMP equipment, a prevalent rate per day,

per person plus travel, lodging, food, etc., will be paid by the buyer/contractor.

CAUTION

Guards must be installed when fan is within reach of personnel or within seven (7) feet of working level or when deemed advisable for safety.

DISCLAIMER

United Metal Products, Inc. had made a diligent effort to illustrate and describe the products in this literature accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions or dimension.

All information in this literature is subject to change without notice.

