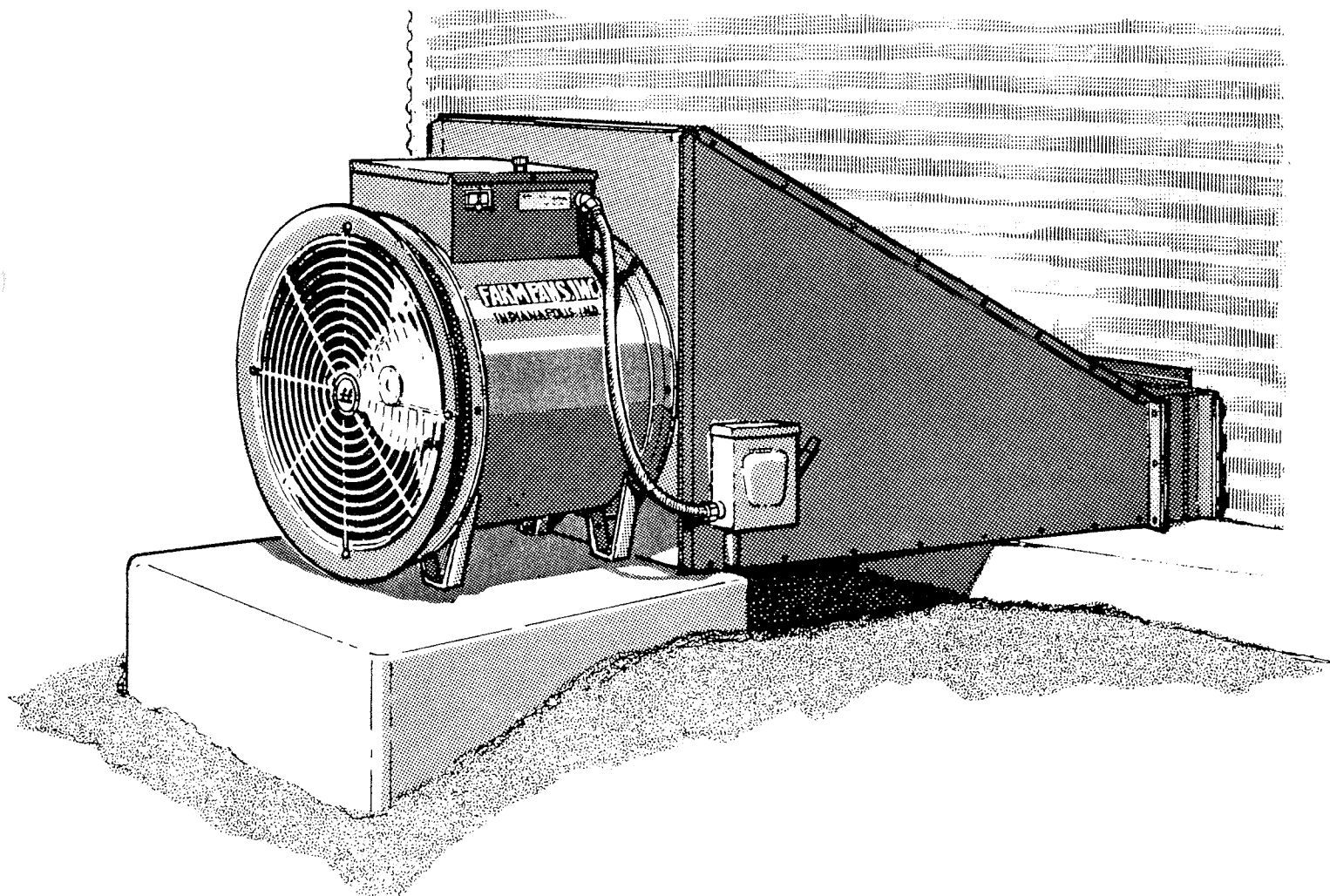


OPERATOR'S MANUAL

524SH, 724SH AND 1028SH AERATION AND GRAIN DRYING FANS

1982 AND LATER PRODUCTION - U.S. MODELS



Note: For Earlier Fan Models See Bulletin SH/AF-01-3



FARM FANS, INC.

5900 ELMWOOD AVENUE • INDIANAPOLIS, INDIANA 46203

Printed in U.S.A.

READ THESE INSTRUCTIONS BEFORE INSTALLATION AND OPERATION. SAVE FOR FUTURE REFERENCE.

This manual contains operating instructions and parts lists for 1982 and later U.S. production 524SH, 724SH, and 1028SH model fans.

These fans are designed for aeration and natural air grain drying, or may be used with either SH-H heaters or SH-E electric heaters for heated air grain drying.

Fan power supply is available in single phase 230 volts, or three phase 230 or 460 volts.

All fan models are equipped with a control box and are available either with motor control (W/C), or less motor control (L/C).

For additional information concerning the heaters used with these fans, refer to appropriate heater publication.

USE CAUTION IN THE OPERATION OF THIS EQUIPMENT.

The design and manufacture of this equipment is directed toward operator safety. However, the very nature of any equipment having high voltage electrical equipment and high speed rotating parts presents hazards to personnel which cannot be completely safeguarded against without interfering with efficient operation and reasonable access to components.

Continued safe, dependable operation of this equipment depends to a great extent upon the operator. For a safe and dependable system, follow the recommendations within this manual...make it a practice to regularly inspect the operation of the equipment for any unsafe conditions, or developing problems.

TAKE SPECIAL NOTE OF THE OPERATING PRECAUTIONS LISTED ON PAGE 1, BEFORE ATTEMPTING TO OPERATE THE FAN.



Look for this symbol to point out important safety precautions. It means - ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

WARRANTY

Farm Fans, Inc. warrants its products to be free of defects in material and workmanship. The only obligation of the manufacturer is to repair or replace products which have been submitted and found to be defective within 12 months after installation. If so found defective, the products will be repaired or replaced without charge, this constituting and entirely fulfilling the warranty obligation. Farm Fans, Inc. assumes no liability for expenses incurred without written authorization; in no event shall its liability include special or consequential damages, or exceed the selling price of the product.

This warranty does not cover products or parts which have been damaged by negligent use, misuse, alteration, or accident. Electric motors, tires, and other components supplied by manufacturers are warranted separately by those suppliers. This warranty is exclusive and in lieu of all other warranties, expressed or implied. Farm Fans, Inc. reserves the right to make design or specification changes at any time, without any contingent obligation to purchasers of products already sold.

All instructions shall be construed as recommendations only; because of the many variable conditions in actual installation, Farm Fans, Inc. assumes no liability for results arising from the use of such recommendations.

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OPERATING PRECAUTIONS



Look for this symbol to point out important safety precautions. It means - ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED.

1. Read and understand this operation manual before attempting operation.
2. Always open the main power supply disconnect switch and lock it in the open position with a padlock when performing any service, or maintenance on the equipment.
3. Use extreme caution when making voltage tests with "live" circuits and performing other procedures where the power must be turned ON...follow all established safety practices.
4. Electrical repairs should be performed by trained, qualified personnel only. Failure to follow safe electrical procedures can result in serious injury.
5. Keep ALL guards, access doors, covers, safety decals, and safety devices in place and securely fastened. DO NOT operate with guards removed.
6. DO NOT attempt to operate by jumping, or otherwise bypassing any safety devices.
7. Use caution when working around high speed fans, which may start without warning when operating on automatic control.
8. Before attempting to remove and reinstall the propellor, read and follow the recommended procedures listed within the "SERVICING" section of this manual.
9. Keep visitors, children and all untrained personnel away from the equipment at all times.

SPECIFICATIONS

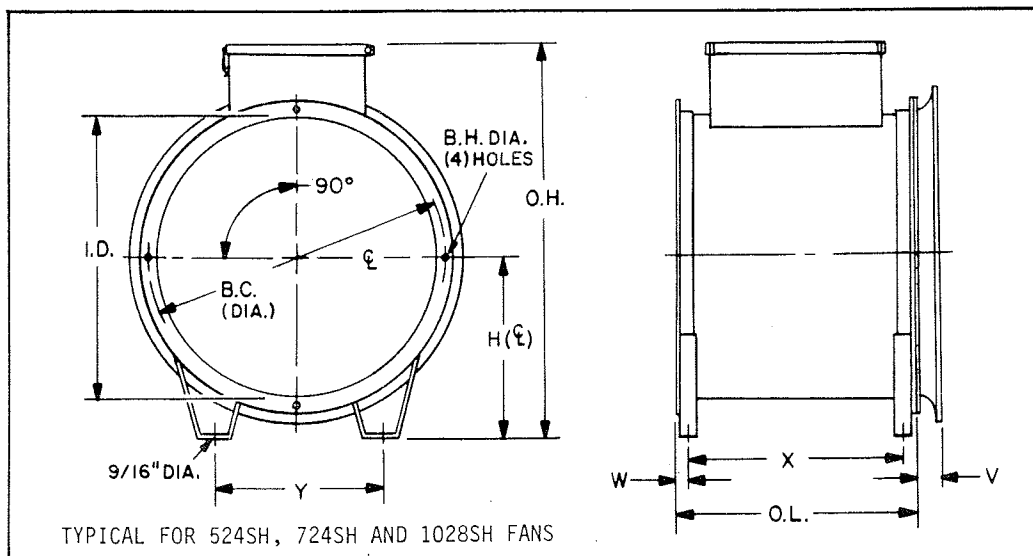
FAN PERFORMANCE

Model Number	Air Volume (Cfm) at Indicated Static Pressure								
	HP	Dia.	1"	1.5"	2.0"	2.5"	3.0"	4.0"	5.0"
524SH	5	24"	11050	10450	9600	8550	7500	5200	--
724SH	7-1/2	24"	13200	12300	11650	10800	9800	7200	--
1028SH	10	28"	19400	18400	17300	16300	15100	12800	9500

FAN MOTOR SPECIFICATIONS

	524SH		724SH		1028SH	
	1-Phase 230V.	3-Phase 230V./460V.	1-Phase 230V.	3-Phase 230V./460V.	1-Phase 230V.	3-Phase 230V./460V.
Fan HP	5	5	7-1/2	7-1/2	10	10
Motor Speed	3450 RPM	3450 RPM	3450 RPM	3450 RPM	3450 RPM	3450 RPM
Max. Full Load Amps.	31	18/9	42	28/14	58	34/17
Minimum Wiring Conductor Size *						
100 Ft. Run	8	12/12	6	10/12	4	3/12
200 Ft. Run	6	10/12	4	8/12	4	6/12
300 Ft. Run	4	8/12	4	6/12	2	4/10
Fuse Size for Motor Branch Circuit Protection (Time Delay Type)	60 Amp	35A./17½	80 Amp	50A./25	110 Amp	60A./30

* Listed sizes are for copper wire types R, T, and TW in cable, conduit, or earth.



FAN DIMENSIONS CHART

MODELS	DIMENSIONS (INCHES - NOMINAL)									
	I.D.	O.L.	O.H.	H(℄)	B.C.(Dia.)	B.H.(Dia.)	V	W	X	Y
524SH & 724SH	24 3/8"	24"	32 3/8"	15 1/4"	26"	3/8"	4"	1 1/8"	17 3/4"	14"
1028SH	28 1/16"	26 3/4"	38 3/8"	18 1/4"	29 3/4"	7/16"	2 3/4"	1 1/8"	21 3/4"	15"

INSTALLATION INSTRUCTIONS

When installing the fan, consideration is to be given to the physical positioning of the unit and providing adequate electrical power supply. After installation of fan has been completed, perform initial checks and adjustments, as described under the "Operation" section of this manual.



CAUTION: The electrical wiring **MUST COMPLY** with all applicable local, state, or provincial and National ordinances and codes. Be certain that insurance requirements are also met.

FAN INSTALLATION

1. Refer to Fig. 1 for a view of a suggested installation, showing position of fan and layout of system.
2. Perform physical installation of the fan and transition to the bin wall, while observing the following important points:
 - A. Make certain that all joints and seams around the lower part of the bin are well sealed to prevent air leakage from the air space under the perforated drying floor. The connecting air duct must be reasonably airtight. Air leakage wastes fan efficiency.
 - B. The connecting air duct or "transition duct" and connector should be all metal construction, with a gradual angle to the rectangular opening through the bin wall.
 - C. Avoid abrupt angles or any type of connecting air duct that would restrict airflow. The cross-sectional area of the connecting duct should gradually increase to about 1½ times the fan area where it enters the air chamber through the bin wall.
 - D. Keep the air entrance as clear as possible from obstruction by floor supports.
 - E. Adequate exhaust air openings in roof are required to prevent any additional back pressure (2 to 3 times fan outlet cross-sectional area).

ELECTRICAL INSTALLATION

An adequate power supply and proper wiring are important for maximum performance and long life of the fan motor. Electrical service must be of adequate size to prevent low voltage damage to the unit. The fan motor may be either 1-PH. 230V., 3-PH. 230V., or 3-PH. 460V., DEPENDING UPON FAN MODEL being installed.



CAUTION: Observe all applicable local, state, or provincial and National electrical codes and ordinances.

FAN POWER SUPPLY

1. Motor branch wiring and circuit protection devices must be field provided (by owner), and **MUST BE CORRECTLY SIZED AND CONNECTED TO ALLOW PROPER MOTOR OPERATION.** Refer to "Electrical System Specifications" for information concerning motor amperage and suggested fuse size.
2. Contact the service representative of the power supplier to advise of the additional load to be placed on the line. Check KVA rating of transformer, while considering total horsepower load. The power supply wiring and transformers must be capable of providing adequate motor starting and operating voltage. Refer to motor nameplate and "Fan Motor Specifications".
3. The entire electrical installation must be in accordance with any applicable electrical wiring code and should be installed by a competent electrician who is experienced in heavy-duty power wiring.
4. The fan power supply circuit should be an independent circuit, equipped with a fused disconnect switch. Locate this switch near the unit, as the power should be shut-off before opening the control box cover, or performing any service.
5. Use electrical conductors of adequate size. Undersized wiring causes low voltage at the motor and ultimate motor failure. Wire size required depends upon motor current, length of wire run and type of conductors. The full load current is listed within "Specifications" and is stamped on the motor nameplate.
6. The voltage at the fan terminal box during fan operation should be within 10% of the nominal line voltage. **DURING STARTING, THE VOLTAGE SHOULD NOT FALL BELOW 200 VOLTS ON 230 VOLT, 3-PH. MOTORS.**

REFER TO CHART FOR FAN DIMENSIONS AND APPROX. ANCHOR BOLT LOCATIONS.

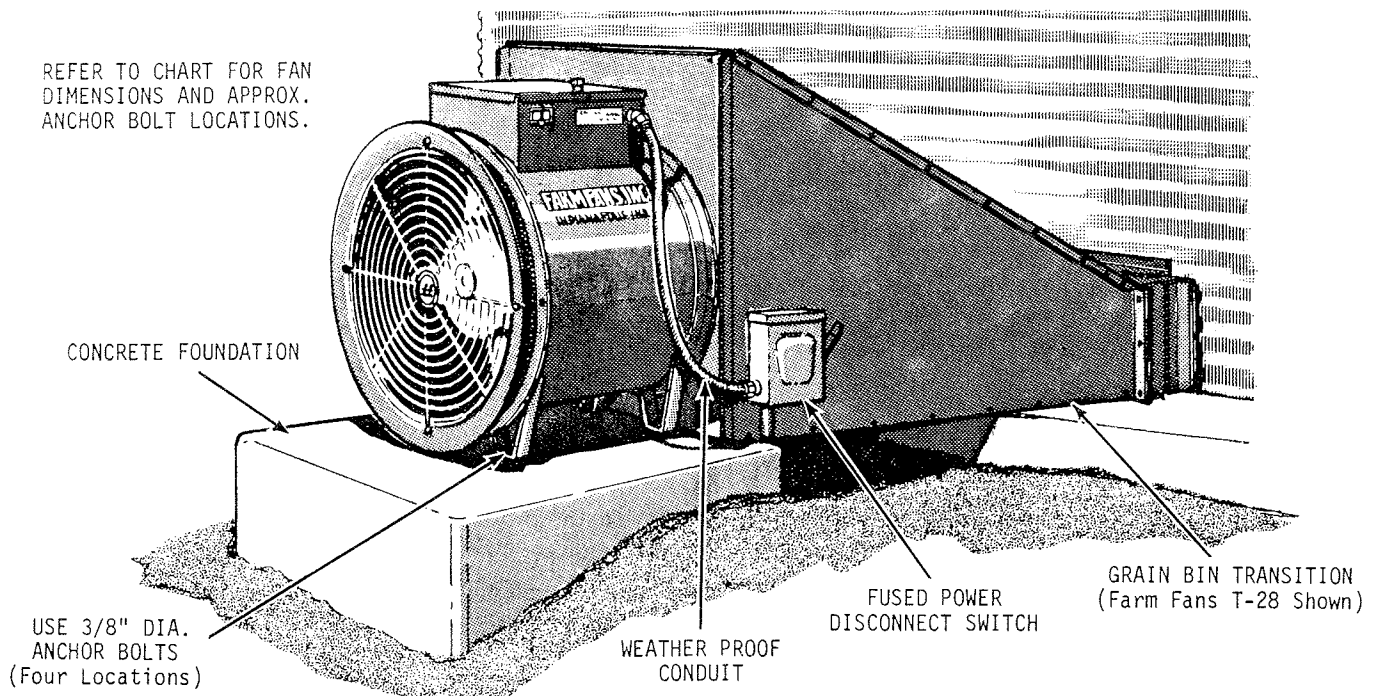


FIG. 1 - SUGGESTED FAN INSTALLATION - PRESSURE FLOW SYSTEM SHOWN

CONNECTING FANS EQUIPPED WITH MOTOR STARTER CONTROLS

1. Fan models with optional motor controls are fully equipped with a magnetic motor starter, motor overload protection and a start-stop switch. In wiring these models for use, the power supply leads must be connected to the starter input terminals (marked "L"), as shown in Figures 2 thru 5. Also refer to Figures 6 and 7. Connect power supply wires to appropriate terminals.

NOTE: On single phase models, motor overload protection is provided by an internal motor winding thermostat in conjunction with an external locked rotor (supplementary) overload relay. Both of these devices are of the automatic reset type and are non-adjustable.

Three phase motors are protected by a thermal compensated overload relay. The overload relay may be factory set in either the MANUAL or AUTOMATIC reset mode of operation, and is adjustable from 85 to 115% of the heater element rating.

2. Connect a grounding wire from the main power supply electrical grounding system to the ground lug located within the control box. See wiring diagrams.
3. After electrical installation is complete and with electrical power ON, check fan motor direction of rotation to ensure that correct wiring connections have been made.

NOTE: On three phase motors, it is very important to check direction of motor rotation. To reverse the rotation of the 3-phase motors, it is only necessary to interchange any two power leads.

4. FANS W/HEATERS ONLY - If fan is to be used with heater, remove plug from rear side of fan control box and connect heater power cord wires to the two position terminal strip. See appropriate heater installation and operation manual for other important information.

NOTE: 3-PH. 460V. MODELS ONLY - Make certain that fan is equipped with a stepdown transformer. Unless specially ordered, standard 460V. models (with controls) are not equipped to provide the 230V. circuit required for SH heaters.

If a heater is used with the standard 460V. fan, install accessory stepdown transformer kit (No. 440-9) to provide 230V. power at the terminal strip for heater operation. Fig. 5 wiring diagram shows the transformer and its connections.

CONNECTING FANS WITHOUT MOTOR CONTROLS

For fan models which have been ordered without motor controls, IT IS THE RESPONSIBILITY OF THE OWNER TO PROVIDE PROPER OVERLOAD PROTECTION FOR THE MOTOR. Refer to motor nameplate and "Fan Motor Specifications" for running load amperage and motor lead connections.

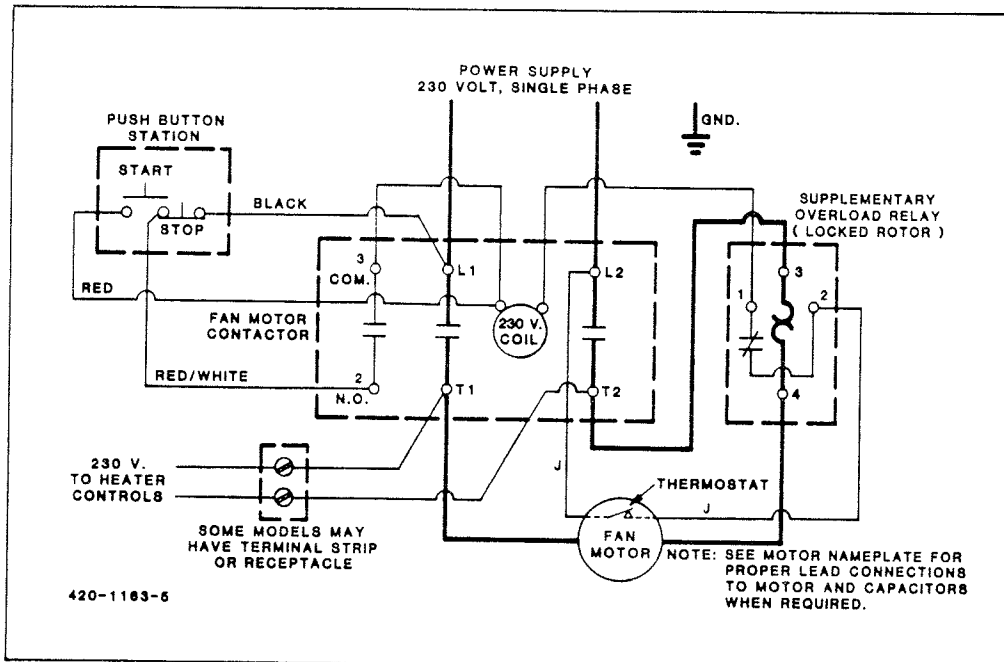


FIG. 2 - MOTOR CONTROL WIRING DIAGRAM - 1-PHASE 230 VOLT
524SH, 724SH AND 1028SH MODELS

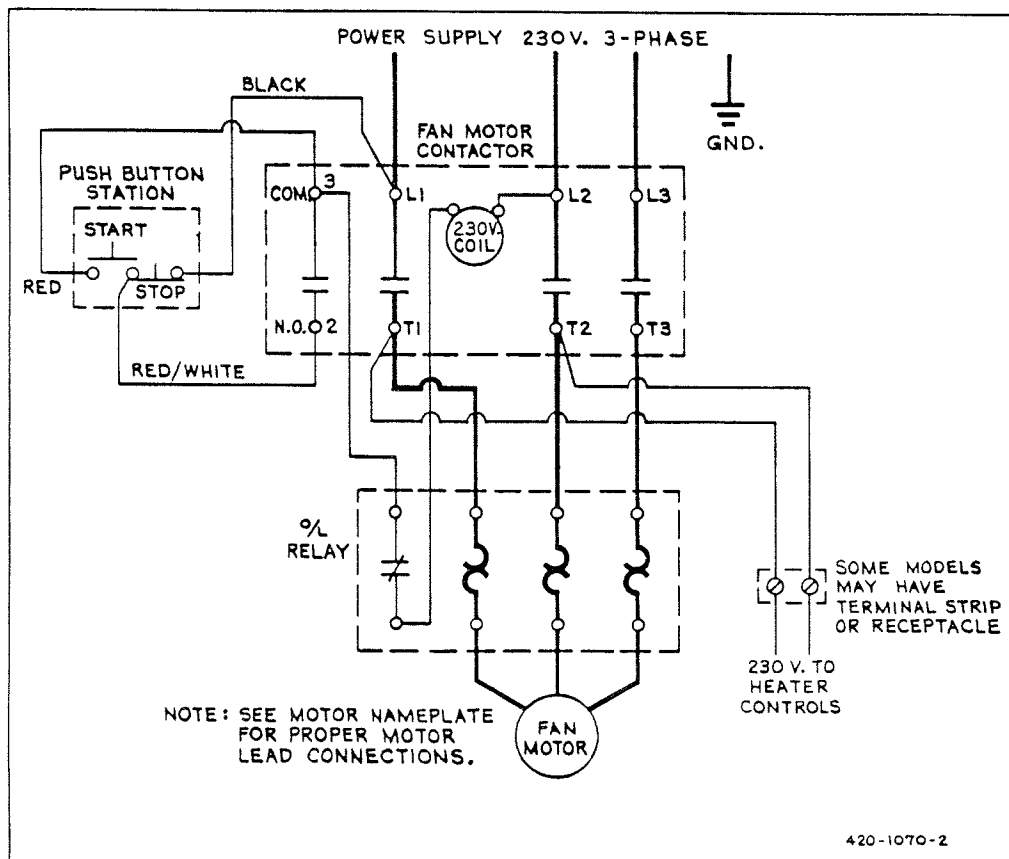


FIG. 3 - MOTOR CONTROL WIRING DIAGRAM - 3-PHASE 230 VOLT
524SH, 724SH AND 1028SH MODELS

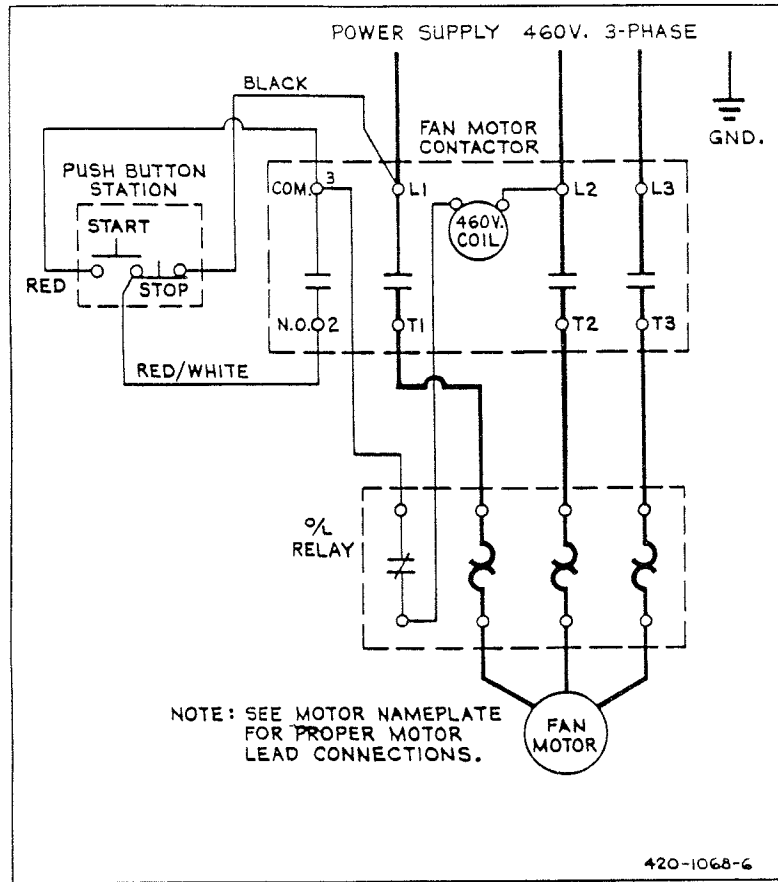


FIG. 4 - MOTOR CONTROL WIRING DIAGRAM - 3-PHASE 460 VOLT
524SH, 724SH AND 1028SH MODELS - WITHOUT HEATER TRANSFORMER

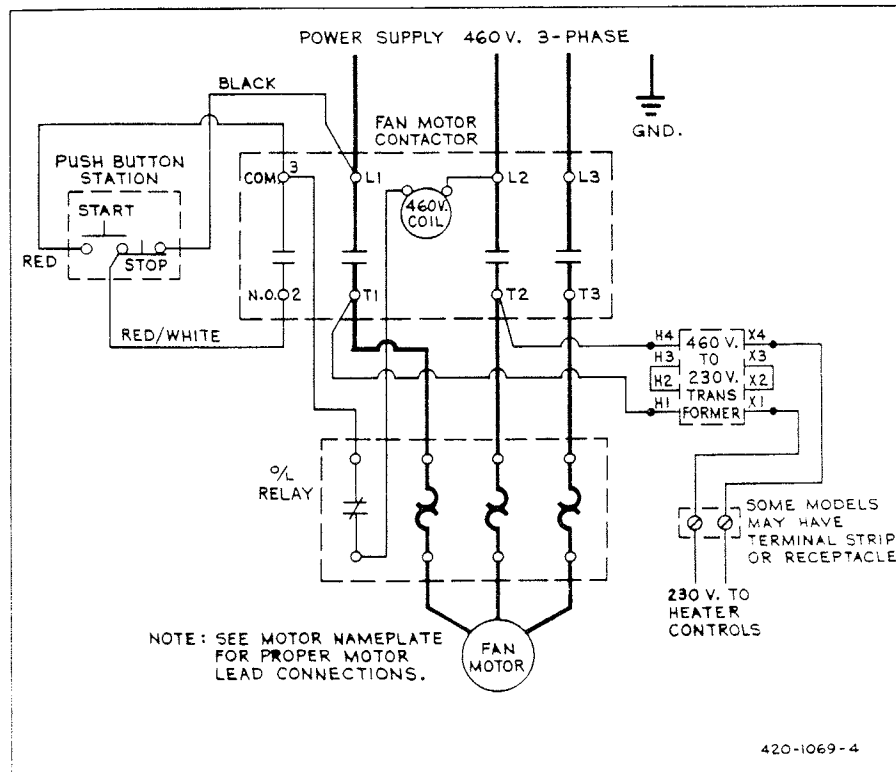


FIG. 5 - MOTOR CONTROL WIRING DIAGRAM - 3-PHASE 460 VOLT
524SH, 724SH AND 1028SH MODELS - WITH HEATER TRANSFORMER

OPERATION

After initial installation and also prior to using the unit each season, check the operation to insure proper functioning, adjustment and reliability.

FAN OPERATION

1. Make certain that unit is properly installed and connected, as described within the installation instructions. All air passage joints and seams must be well sealed.
2. With main power supply turned "Off", rotate the fan propellor by hand to make certain it turns freely without contacting the housing.
3. Open roof doors to allow airflow at all times when the fan is operating.
4. Turn "On" main power disconnect switch.



CAUTION: Make certain all guards and covers are securely in place.

5. Press the fan "Start" button and check the following:
 - A. Check direction of propellor rotation. THIS IS A VERY IMPORTANT CHECK ON INITIAL START-UP OF 3-PH. MODELS. The propellor must rotate in the same direction as indicated by the arrow on the hub.

NOTE: 3-Phase motors may be reversed by interchanging any two power leads.

- B. Check to make sure the propellor comes to full operating speed in less than 10 seconds. If there is any doubt as to proper operation, check the current draw of the motor. The motor amperage should not exceed the maximum full load amps listed within the "Specifications" section of this manual.

NOTE: For additional information concerning fan airflow rate charts and grain aeration fundamentals, refer to Bulletin A-03-1.

If aeration system utilizes an accessory automatic control device, also follow recommendations which accompanied the special equipment.

FAN SHUT-DOWN

1. Press the fan "Stop" button on units equipped with motor controls.
2. Shut-off electrical power at main and at disconnect.
3. Close the roof openings and cover fan inlet to prevent harmful back-draft air currents from passing through the grain and to avoid grain infestation from rodents and insects.

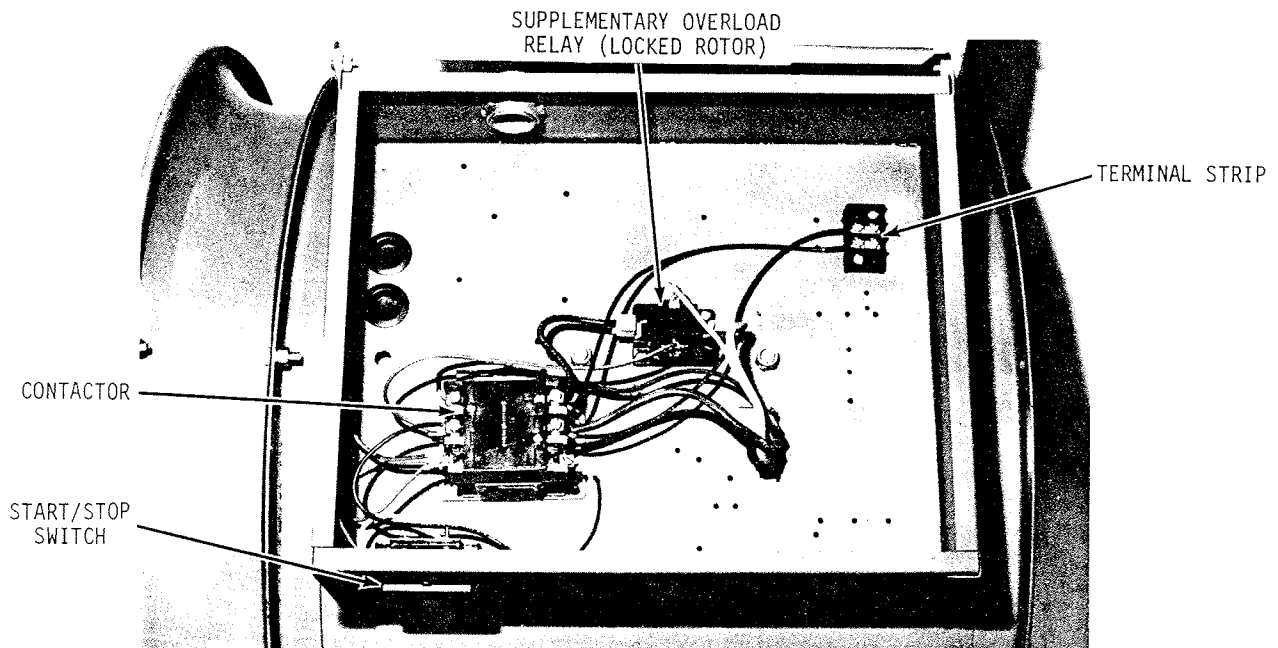


FIG. 6 - TYPICAL 524SH AND 724SH CONTROL BOX - 1-PHASE 230 VOLT

GRAIN DRYING SYSTEMS

The 524SH, 724SH and 1028SH fans are also designed for drying grain with either the SH-H Series gas heaters to provide continuous drying, independent of weather conditions, or with the SH-E Electricon II Series electric heaters for low temperature drying.

If a supplemental heater is to be used with the fan, refer to the appropriate heater installation and operation manual, to obtain other important information.

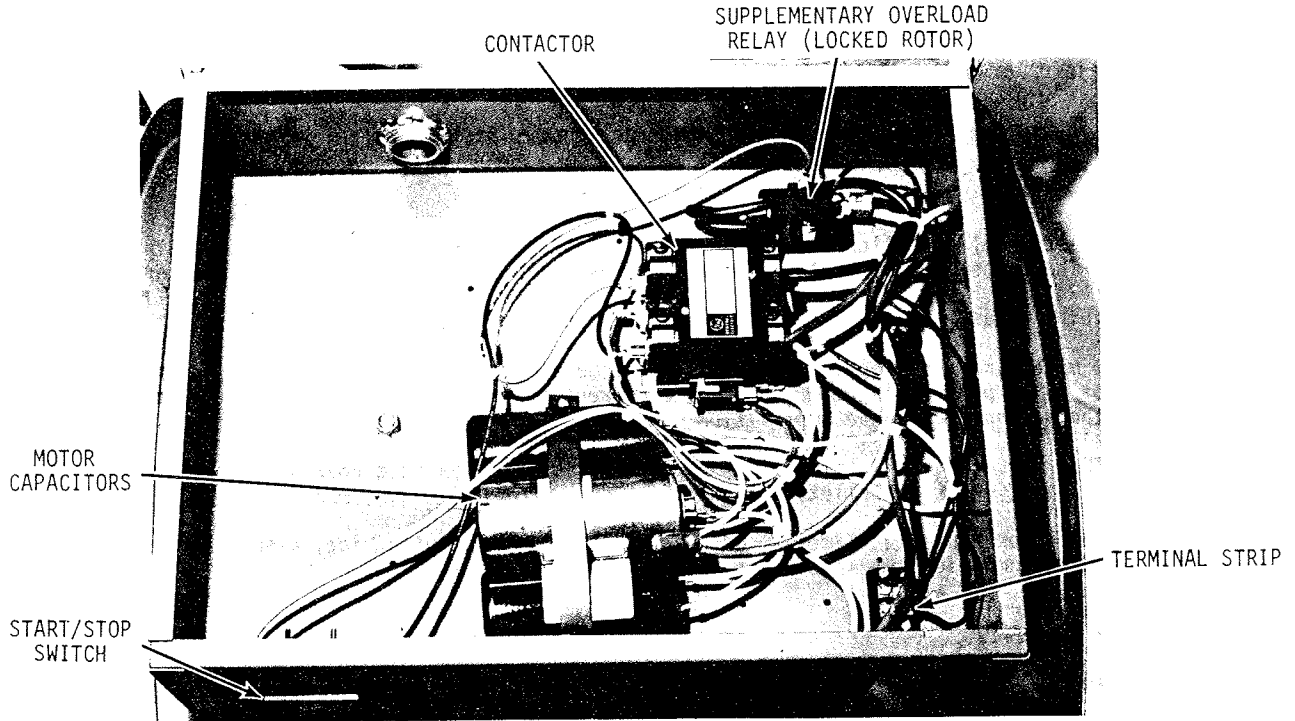


FIG. 7 - TYPICAL 1028SH CONTROL BOX - 1-PHASE 230 VOLT

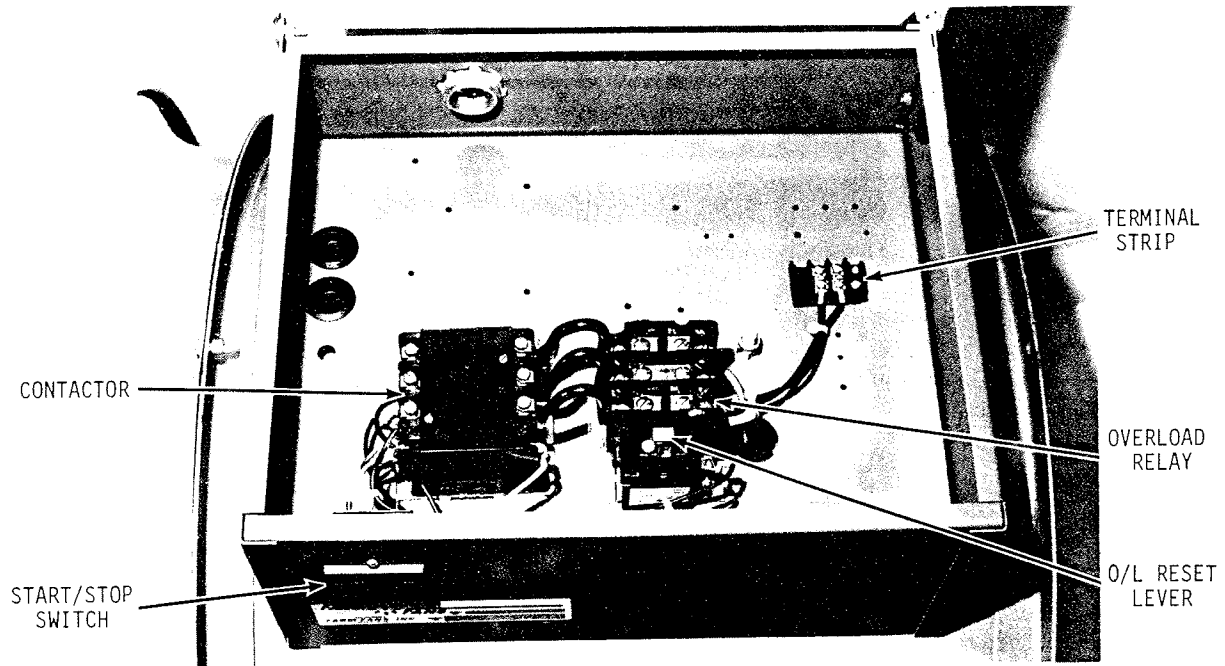


FIG. 8 - TYPICAL 524SH, 724SH AND 1028SH CONTROL BOX - 3-PHASE 230 VOLT

SERVICE



CAUTION: Shut-off electrical power at the independent power supply disconnect switch and lock it in the open position before opening the control box cover, or attempting servicing of equipment. Electrical repairs should be performed by trained, qualified personnel only.

SEASONAL INSPECTION AND MAINTENANCE

Although the equipment has been designed to require a minimum of regular maintenance, it is recommended that the following checks and service be performed at the beginning of each season before placing unit in use. Replace any damaged or questionable parts. THESE CHECKS WILL HELP ELIMINATE POSSIBLE MINOR FAILURES AND ASSURE DEPENDABLE OPERATION OF THE EQUIPMENT WHEN IT IS NEEDED.

1. With main electrical power shut-off, open control box cover. Inspect for moisture, rodent damage, accumulated foreign material and loose terminal connections. Remove foreign material present and tighten all loose terminal connections. Replace any damaged or deteriorated wiring. See Figures 6 thru 8.
2. Remove cover on top of magnetic contactors. Check condition and for foreign material within the area of the contact points. Use compressed air to blow out any particles present. If points are badly pitted (due to arcing) they should be replaced. Clean magnet face to eliminate excessive contactor noise and reinstall cover on top of magnetic contactors.
3. Remove fan guard and check that mounting bolts for motor and propellor are all in place and properly tightened. Refer to parts list for a view of the attaching hardware items.
4. Check propellor for freedom of rotation and uniform tip clearance. Also, inspect for accumulated dirt and grain dust...ESPECIALLY INSIDE THE HUB, as any additional weight can seriously affect balance, resulting in harmful vibrations and shortened bearing life. Keep the inside of housing free of dirt buildup for efficient fan performance.
5. Check propellor for free side play. Any side play is an indication of defective motor bearings, which should be replaced to prevent a complete motor failure. MAKE SURE MOTOR MOUNT BOLTS ARE TIGHT.
6. Motor bearings should be relubricated periodically, depending upon usage and operating conditions. Under conditions of normal usage, it is desirable to have the motor cleaned, checked and the bearings repacked by an Authorized Service Station every two to three seasons. If the unit is operating continuously through most of the year, this service should be performed each year.

NOTE: If on-site bearing relubrication is to be performed, use CHEVRON SR1-2 high temperature grease or a compatible equivalent product.

To keep motor bearings properly lubricated and dispel any accumulation of moisture within the windings, the fan motor should be operated for 15 to 30 minutes each month, during the off season.

The motor manufacturers' Authorized Service Station list is packed with all units and should be saved for reference and identification of service stations.

7. Reinstall fan guard and test operate the unit, while following the procedures listed under "Operation" section...INCLUDING OPENING OF ROOF DOORS.

FAN PROPELLOR REMOVAL AND INSTALLATION

The fan propellor is secured to the motor shaft by the use of a taper-lock bushing, motor shaft key, and capscrews. Figure 9 shows a cutaway sketch of the propellor and bushing installation.



CAUTION: Although the taper-lock method of retaining the propellor onto the motor shaft is very simple and obvious, IT IS ESSENTIAL THAT THE FOLLOWING POINTS BE READ CAREFULLY AND FULLY UNDERSTOOD, AS IMPROPER INSTALLATION CAN RESULT IN SERIOUS OR FATAL INJURY CAUSED BY A LOOSE, FLYING PROPELLOR.

THREADED BUSHING HOLES - THE THREADED HOLES WITHIN THE BUSHING ARE PROVIDED FOR DISASSEMBLY PURPOSES ONLY. See Figure 10. DO NOT ATTEMPT TO USE THESE HOLES FOR REASSEMBLY, AS THEY WILL NOT ALLOW THE PARTS TO BECOME LOCKED ONTO THE SHAFT, THEREBY CAUSING A HAZARDOUS OPERATING CONDITION.

CLEARANCE HOLES - When reassembling parts, the capscrews must be installed through the UNTAPPED CLEARANCE HOLES, as shown in Figure 11, to cause the propellor to be pulled forward onto the tapered bushing, thus locking the parts securely onto the motor shaft. Refer to text for assembly details.

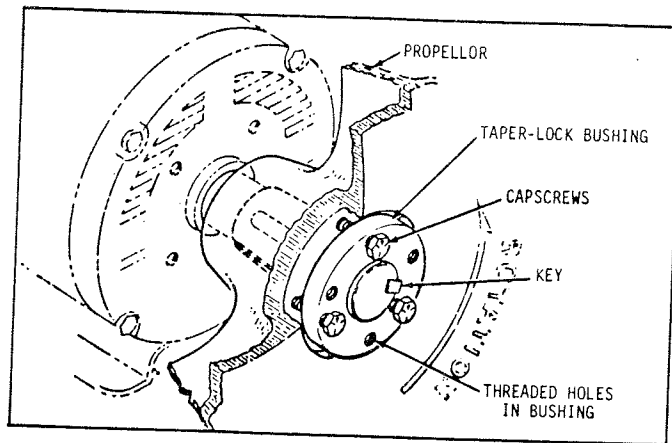


FIG. 9 - CUTAWAY VIEW OF TYPICAL PROPELLOR INSTALLATION

When any servicing is to be performed which requires removal and installation of the propeller, make sure propeller is removed and installed properly. The recommended procedure is as follows:

REMOVAL

1. LOCK-OUT THE MAIN POWER SUPPLY and remove the fan guard; also the venturi, as required on some models of equipment.
2. Remove the cap screws from the clearance holes in the taper-lock bushing.
3. Install GRADE 5 CAPSCREWS into the THREADED HOLES in the bushing and turn them in by hand until they bottom against the front surface of the propeller.

NOTE: DO NOT ATTEMPT TO USE LOW STRENGTH (UNMARKED) BOLTS TO REMOVE THE BUSHING, AS THE BOLTS MAY BREAK OFF.

4. Block propeller to prevent it from turning, and GRADUALLY TURN IN THE CAPSCREWS (up to 1/4 turn at a time), as shown in Figure 10, until the propeller breaks loose from the bushing and motor shaft. Carefully remove bushing and propeller. With the propeller free from the bushing, a wheel puller can be used to pull the bushing off of the motor shaft, if required. Reattach bushing onto propeller to prevent the loss of parts.

NOTE: During manufacture, the propeller and bushing are balanced together and both parts are marked with a small dot to identify their original alignment position. Observe bushing and propeller to make sure they have alignment marks. Mark the alignment of the propeller and bushing, if required.

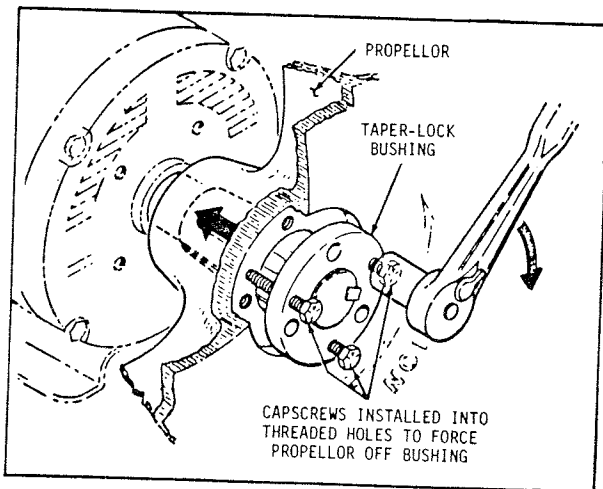


FIG. 10 - CAPSCREW ARRANGEMENT FOR DISASSEMBLY

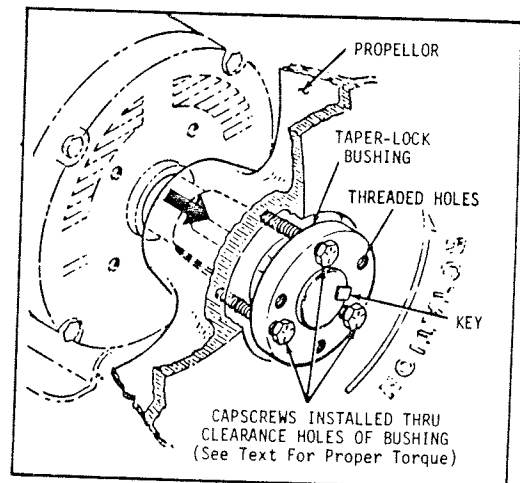


FIG. 11 - CAPSCREW ARRANGEMENT FOR REASSEMBLY

INSTALLATION

1. Carefully clean motor shaft, key, bushing and bore of propellor. MAKE SURE MAIN POWER IS LOCKED OUT, and that shaft and key are completely free of rust and burrs. Do not lubricate the bushing or capscrews.

NOTE: CHECK AND MAKE SURE ALL MOTOR MOUNT BOLTS ARE PROPERLY TIGHTENED.

2. Slide propellor over motor shaft and locate it against the motor.
3. Align the keyway in the bushing with the key and SLIDE bushing onto motor shaft. Do not attempt to drive the bushing onto the shaft, as it may damage the motor bearings.
4. Rotate the bushing and propellor so their alignment marks are in line and loosely attach the propellor to the bushing. MAKE SURE THE CAPSCREWS ARE INSERTED INTO THE UNTHREADED CLEARANCE HOLES IN THE BUSHING. Refer to previous CAUTION note. Locate the bushing so it is approximately flush with end of motor shaft.

NOTE: The bushing must be located far enough forward so the inside web portion of the propellor will not contact the motor. If motor make has a short shaft, it may be necessary to position bushing slightly beyond end of shaft.

5. Slide the propellor forward onto the taper-lock bushing and turn the capscrews in by hand as far as possible.
6. Use an INCH-POUNDS wrench and GRADUALLY TIGHTEN the capscrews (up to 1/4 turn at a time) until the taper bushing becomes fully seated. Refer to the following chart for recommended bolt tightening torques. DO NOT EXCESSIVELY OVERTIGHTEN THE BUSHING. See Figure 11.

BROWNING TAPER-LOCK BUSHING BOLT TIGHTENING TORQUES

Bushing Size	Bolt Dia.	Torque (Inch-Lbs.)
H	1/4"	95 In.-Lbs.
P	5/16"	180 In.-Lbs.
Q	3/8"	348 In.-Lbs.

7. Turn propellor by hand and check it for freedom of rotation and uniform tip clearance before reinstalling the fan guard.

FAN MOTOR REMOVAL AND INSTALLATION

In the event of motor failure, remove the motor, as described, and take it to the nearest Authorized Service Station. AUTHORIZED SERVICE STATIONS ARE THE ONLY PLACES THAT CAN PROVIDE POSSIBLE MOTOR WARRANTY. Motor service and repair at other places will be at owners expense.

If service station determines motor failure to be caused by faulty material or workmanship, repair will be under warranty when within the warranty period. Motor failure because of external causes will result in a charge to the owner for repair.

1. Make certain power is shut-off and locked out, then remove fan guard and propellor, as outlined earlier.
2. Open control box cover and disconnect the motor lead wires from within the box.

NOTE: Tag, or otherwise identify wires for ease of reassembly.

3. Remove motor mount bolts. If there are any shims between the motor and its base, note their location so they can be properly installed during reassembly.
4. Disconnect the upper end of the motor conduit, if required, then carefully pull conduit and wires through hole in fan housing.

Remove motor with conduit still attached from unit. If motor requires service, take it to an Authorized Service Station.

5. To reinstall motor, slide onto motor base plate and replace shims (if required) between motor and base plate. Reinstall motor mount bolts and washers, BUT DO NOT FULLY TIGHTEN THEM AT THIS TIME.

Reinstall conduit and wires through hole in fan housing and carefully remake all electrical wiring connections.

Check and adjust position of motor by temporarily mounting fan blade on motor shaft, and rotate it by hand, making the necessary adjustments so that the tip clearance between blade and housing is uniform. Remove the fan blade, if required, and FULLY TIGHTEN ALL FOUR MOTOR MOUNTING BOLTS.

NOTE: Make sure to install and tighten the propellor in accordance with earlier instructions.

TROUBLE-ANALYSIS AND CHECK-OUT PROCEDURE

Refer to appropriate wiring diagram and parts list for identification of parts and electrical terminals. The electrical control circuit for the fan motor is 230 volts for all U.S. production fans, except for 3-PH. 460 volt models. These special fans have a 460V. motor control circuit.

A voltmeter is required for the following check-out procedure. Turn power ON for testing only.



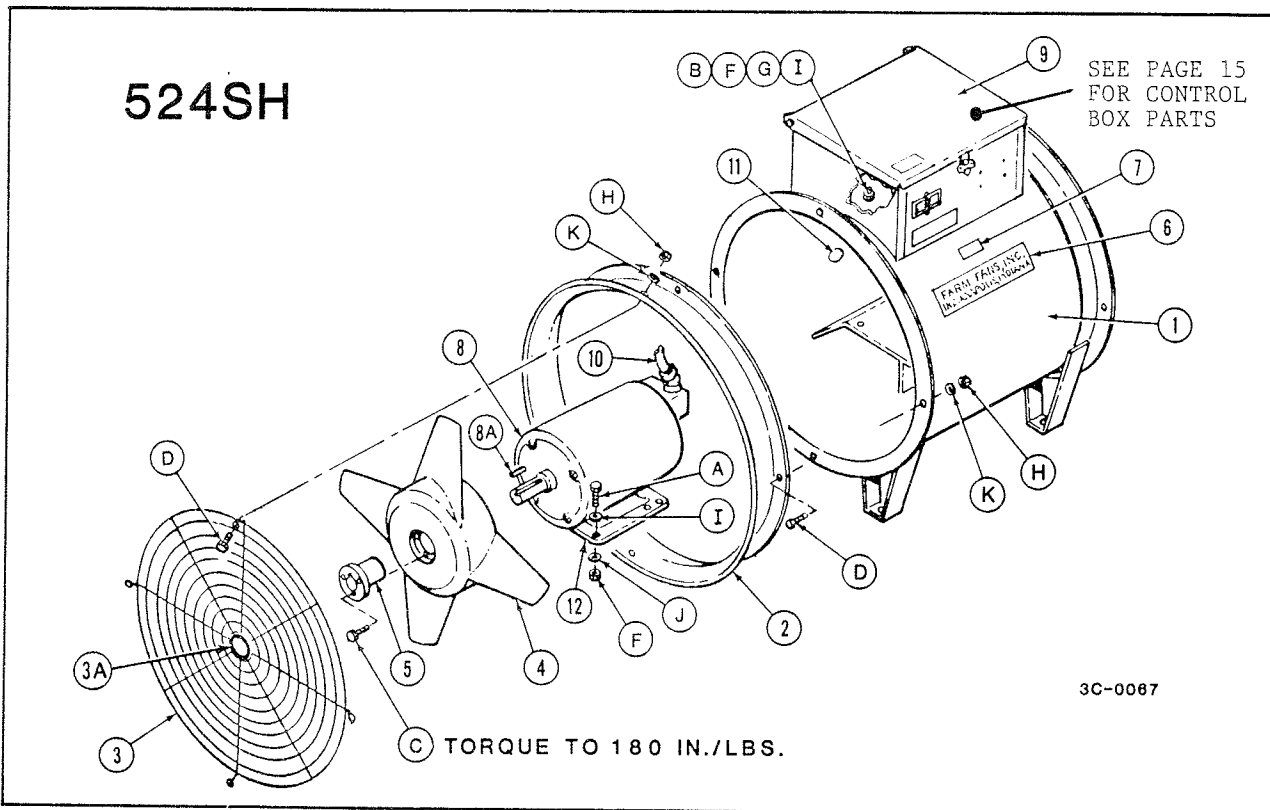
CAUTION: When making high voltage tests with "live" circuits, be extremely careful... follow established safety practices. DO NOT ATTEMPT TO MAKE THE EQUIPMENT OPERATE BY USING A JUMPER WIRE TO BY-PASS A DEFECTIVE COMPONENT.

TROUBLE	CHECK-OUT PROCEDURE AND CORRECTION
Motor Starter Chatters, or Does Not Close	1. POWER SUPPLY - Check power supply voltage between L ₁ , L ₂ , (and L ₃ on three phase models). Voltage should be within 10% of that shown on the motor nameplate. Make sure main power switch is fully ON, and check for a possible tripped circuit breaker, or blown fuse (if installed) within the main power supply.
	2. TRIPPED OVERLOAD RELAY (3-PH. MODELS) - Depress the reset button and re-attempt to start motor.
	3. STOP SWITCH AND WIRING CONNECTIONS - Check for proper voltage between L ₂ line terminal of contactor and terminal No. 2 (or N.O.) on interlock contacts of motor starter. If there is no voltage, check for improper connections or a defective stop switch.
	4. MOTOR START SWITCH - Check for proper voltage between L ₂ line and terminal No. 3 (or COM) on interlock contacts of contactor WHILE HOLDING THE MOTOR START BUTTON DEPRESSED. If there is no voltage, check for a defective start switch or improper connections.
	5. MOTOR STARTER COIL - If proper voltage was present at the previous test, check for voltage between the two coil terminals WHILE HOLDING THE MOTOR START BUTTON DEPRESSED. Replace coil if there is proper voltage and the contactor does not pull in.
	6. OVERLOAD PROTECTION DEVICE(S) - Use a voltmeter and locate problem as described: A. 1-PH. MODELS ONLY - Hold test lead on L ₁ terminal and with the other test lead, trace voltage from L ₂ terminal through (1) motor "J" wires (motor protection thermostat), (2) supplementary overload (locked rotor overload), (3) to contactor coil. Replace defective parts or wires, as required. If thermostat in motor is faulty, a standard overload relay can be installed by your local Farm Fans dealer. B. 3-PH MODELS ONLY - Hold test lead on L ₂ and with other test lead ("Start" button depressed) trace circuit from No. 3 interlock terminal through overload relay control switch to contactor coil terminal. Replace defective parts or wires, as required.
Starter Closes, but Fan Runs Slow and Blows Fuses, or Will Not Run	1. POWER SUPPLY - If fuses continue to blow during starting, check size and type. Use time-delay type fuses. See "Specifications" for fuse size.
	2. POWER SUPPLY - Check voltage across terminals T ₁ , T ₂ , (and T ₃ on three phase) after pushing start button. It should be within 10% of that shown on nameplate. Check wiring to unit to insure adequate voltage during starting.
	3. CONTACTS OR COMPLETE CONTACTOR - If voltage is not as specified, but checks all right on line side, trouble is probably in contacts of contactor. Replace contacts or complete contactor.
	4. MOTOR LEAD CONNECTIONS - Check motor lead connections with that shown on the motor nameplate. Correct lead connection.
	5. CAPACITORS (On 1-Phase Motors) - Check for evidence of capacitor overheating. Replace capacitors, if required. Check for adequate starting voltage.
	6. MOTOR - Check for freedom of rotation and excessive bearing noise by turning fan blade by hand. Take motor to Authorized Service Station.
Fan Runs Backwards	1. WIRING - Compare rotation with arrow on fan blade. On 3-phase motors only, interchange any two power leads to change rotation.

FAN PARTS

Replacement parts can be obtained from the local FARM FANS Representative or by contacting FARM FANS, INC., Indianapolis, Indiana 46203. SPECIFY COMPLETE MODEL NUMBER AND SERIAL NUMBER, WITH THE PART NUMBER.

Any parts or equipment sent to the factory must be shipped freight prepaid and be accompanied with Form RMF-03-5 fully completed.



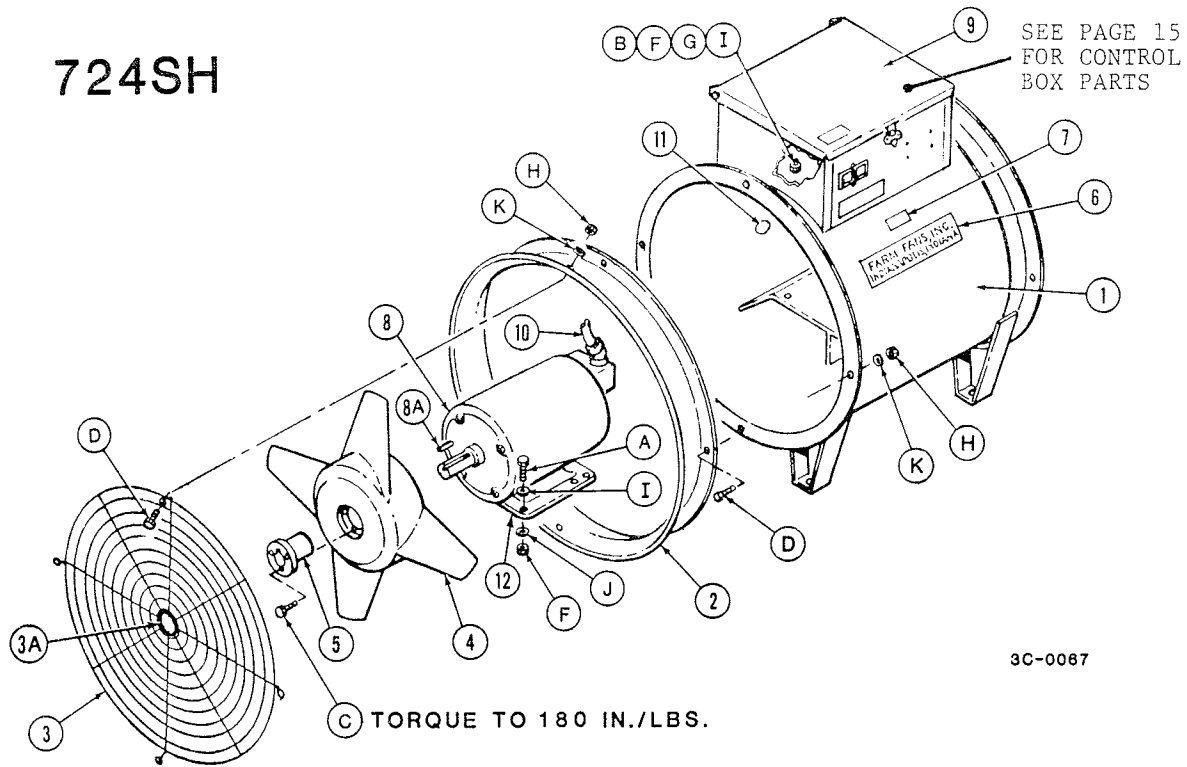
524SH FAN ASSEMBLY PARTS

ITEM	NEW FF NO.	EARLY FF NO.	DESCRIPTION	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
	----	----	524SHO 1-PH LESS CONTROLS.....	X	-	-	-	-	-	-	-	-	-
	----	----	524SHO 3-PH LESS CONTROLS.....	-	X	-	-	-	-	-	-	-	-
	----	----	524SHO 1-PH 230V WITH CONTROLS.....	-	-	X	-	-	-	-	-	-	-
	----	----	524SHO 3-PH 230V WITH CONTROLS.....	-	-	-	X	-	-	-	-	-	-
	----	----	524SHO 3-PH 460V WITH CONTROLS.....	-	-	-	-	X	-	-	-	-	-
	----	----	524SHO 3-PH 460V W/CONTROLS & TRANS...	-	-	-	-	-	X	-	-	-	-
	----	----	524SHE 3-PH LESS CONTROLS.....	-	-	-	-	-	-	X	-	-	-
	----	----	524SHE 3-PH 230V WITH CONTROLS.....	-	-	-	-	-	-	-	X	-	-
	----	----	524SHE 3-PH 460V WITH CONTROLS.....	-	-	-	-	-	-	-	-	X	-
	----	----	524SHE 3-PH 460V W/CONTROLS & TRANS...	-	-	-	-	-	-	-	-	-	X
1	001-1028-8	457-1	FAN HOUSING ASSEMBLY.....	1	1	1	1	1	1	1	1	1	1
2	004-1010-0	04-006	VENTURI.....	1	1	1	1	1	1	1	1	1	1
3	014-1042-2	14-027	GUARD (REPLACES 467-14).....	1	1	1	1	1	1	1	1	1	1
3A	401-1659-2	----	CENTER CAP (FOR 014-1042-2).....	1	1	1	1	1	1	1	1	1	1
4	003-1010-2	467-3	PROPELLOR & BUSHING ASSY.....	1	1	1	1	1	1	1	1	1	1
5	019-1030-6	19-P29	REPLACEMENT BUSHING 1-1/8".....	1	1	1	1	1	1	1	1	1	1
6	029-1174-1	29-175	DECAL - FARM FANS INC.....	2	2	2	2	2	2	2	2	2	2
7	420-1110-6	----	DECAL - AIRFLOW.....	1	1	1	1	1	1	1	1	1	1
(2) 8	002-1046-8	02-050-12FO-1	MOTOR - 5 HP 1-PH 230V.....	1	-	1	-	-	-	-	-	-	-
(2) 8	002-1102-9	02-050-32FO-1	MOTOR - 5HP 3-PH 230/460V.....	-	1	-	1	1	1	-	-	-	-
8	002-1057-5	02-050-32FE-1	MOTOR - 5 HP 230/460V (ENCLOSED).....	-	-	-	-	-	-	1	1	1	1
8A	----	----	KEY - 1/4 x 1/4 x 2-3/4 (W/ MOTOR).....	1	1	1	1	1	1	1	1	1	1
9	415-1360-7	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	1	-	-	-	-	-	-	-	-	-
9	415-1361-5	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	1	-	-	-	-	1	-	-	-
9	415-1363-1	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	1	-	-	-	-	-	-	-
9	415-1364-9	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	-	1	-	-	-	1	-	-
9	415-1365-6	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	-	-	1	-	-	-	1	-
9	415-1366-4	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	-	-	-	1	-	-	-	1
10	----	66-013	MOTOR CONDUIT ASSEMBLY.....	1	1	1	1	1	1	1	1	1	1
11	048-1032-1	48-008	PLUG.....	1	1	1	1	1	1	1	1	1	1
12	062-1008-2	510-40	MOTOR SHIM.....	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
STANDARD HARDWARE - PURCHASE LOCALLY													
A	----	----	3/8-16 X 1-1/2 HEX HD BOLT.....	4	4	4	4	4	4	4	4	4	4
B	----	----	3/8-16 X 1-3/4 HEX HD BOLT FULL THD....	2	2	2	2	2	2	2	2	2	2
C	----	----	5/16-18 X 1-1/2 HEX HD BOLT.....	3	3	3	3	3	3	3	3	3	3
D	----	----	5/16-18 X 3/4 HEX HD BOLT.....	4	4	4	4	4	4	4	4	4	4
E	----	----	3/8-16 X 1 RD HD SCREW.....	4	4	4	4	4	4	4	4	4	4
F	----	----	3/8-16 LOCKNUT.....	6	6	6	6	6	6	6	6	6	6
G	----	----	3/8-16 HEX NUT.....	6	6	6	6	6	6	6	6	6	6
H	----	----	5/16-18 HEX NUT.....	4	4	4	4	4	4	4	4	4	4
I	----	----	3/8 FLATWASHER.....	6	6	6	6	6	6	6	6	6	6
J	----	----	3/8 SPLIT LOCKWASHER.....	8	8	8	8	8	8	8	8	8	8
K	----	----	5/16 SPLIT LOCKWASHER.....	4	4	4	4	4	4	4	4	4	4

(1) THESE MODELS ARE FACTORY EQUIPPED WITH A VOLTAGE STEPDOWN TRANSFORMER FOR USE WITH SH-H & SH-E SERIES HEATERS.

(2) REPLACEMENT MOTORS WITH 184 FRAMES REQUIRE TWO 62-008 MOTOR RAILS (NOT SHOWN).

724SH



3C-0087

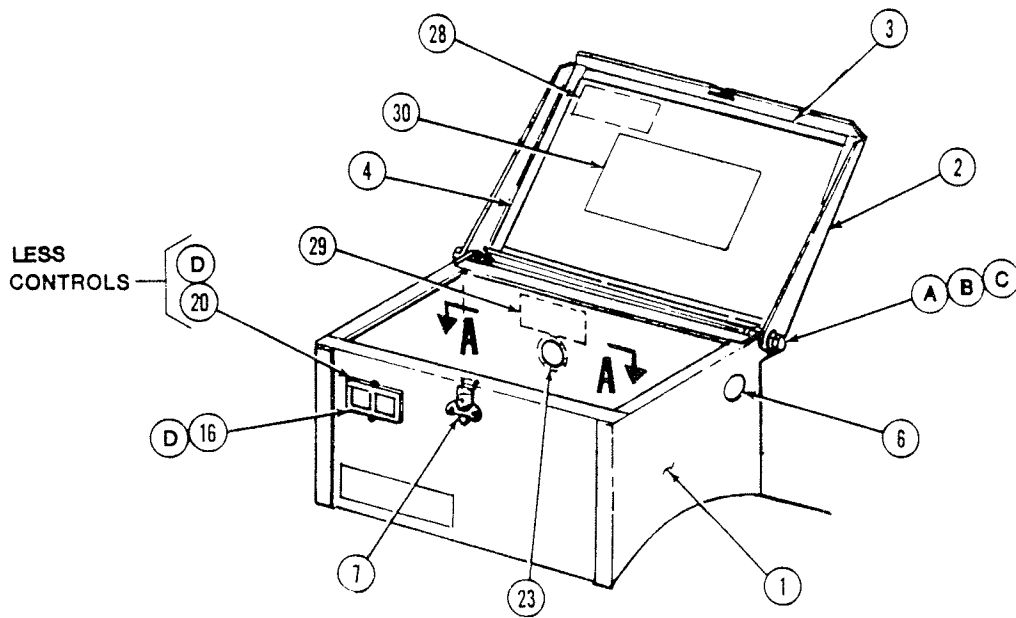
724SH FAN ASSEMBLY PARTS

ITEM	NEW FF NO.	EARLY FF NO.	DESCRIPTION	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
(1)	----	----	724SHO 1-PH LESS CONTROLS.....	X	-	-	-	-	-	-	-	-	-
	----	----	724SHO 3-PH LESS CONTROLS.....	-	X	-	-	-	-	-	-	-	-
	----	----	724SHO 1-PH 230V WITH CONTROLS.....	-	-	X	-	-	-	-	-	-	-
	----	----	724SHO 3-PH 230V WITH CONTROLS.....	-	-	-	X	-	-	-	-	-	-
	----	----	724SHO 3-PH 460V WITH CONTROLS.....	-	-	-	-	X	-	-	-	-	-
	----	----	724SHO 3-PH 460V W/CONTROLS & TRANS...	-	-	-	-	-	X	-	-	-	-
	----	----	724SHE 3-PH LESS CONTROLS.....	-	-	-	-	-	-	X	-	-	-
	----	----	724SHE 3-PH 230V WITH CONTROLS.....	-	-	-	-	-	-	-	X	-	-
	----	----	724SHE 3-PH 460V WITH CONTROLS.....	-	-	-	-	-	-	-	-	X	-
(1)	----	----	724SHE 3-PH 460V W/CONTROLS & TRANS...	-	-	-	-	-	-	-	-	-	X
1	001-1028-8	457-1	FAN HOUSING ASSEMBLY.....	1	1	1	1	1	1	1	1	1	1
2	004-1010-0	04-006	VENTURI.....	1	1	1	1	1	1	1	1	1	1
3	014-1042-2	14-027	GUARD (REPLACES 467-14).....	1	1	1	1	1	1	1	1	1	1
3A	401-1659-2	----	CENTER CAP (FOR 014-1042-2).....	1	1	1	1	1	1	1	1	1	1
4	----	469-3	PROPELLOR & BUSHING ASSY.....	1	1	1	1	1	1	1	1	1	1
5	019-1030-6	19-P29	REPLACEMENT BUSHING 1-1/8".....	1	1	1	1	1	1	1	1	1	1
6	029-1174-1	29-175	DECAL - FARM FANS INC.....	2	2	2	2	2	2	2	2	2	2
7	420-1110-6	----	DECAL - AIRFLOW.....	1	1	1	1	1	1	1	1	1	1
(2)	002-1050-0	02-075-12FO-1	MOTOR - 7-1/2 HP 1-PH 230V.....	1	-	1	-	-	-	-	-	-	-
8	002-1060-9	02-075-32FO-1	MOTOR - 7-1/2 HP 3-PH 230/460V.....	-	1	-	1	1	-	-	-	-	-
8	002-1061-7	02-075-32FE-1	MOTOR - 7-1/2 HP 230/460V (ENCLOSED).....	-	-	-	-	-	-	1	1	1	1
8A	-----	-----	KEY - 1/4 x 1/4 x 2-3/4 (W/ MOTOR).....	1	1	1	1	1	1	1	1	1	1
9	415-1360-7	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	1	-	-	-	-	-	-	-	-	-
9	415-1361-5	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	1	-	-	-	-	1	-	-	-
9	415-1362-3	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	1	-	-	-	-	-	-	-
9	415-1364-9	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	-	1	-	-	-	1	-	-
9	415-1365-6	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	-	-	1	-	-	-	1	-
9	415-1366-4	----	CONTROL BOX ASSEMBLY (SEE PAGE 15).....	-	-	-	-	1	-	-	-	-	1
10	----	66-013	MOTOR CONDUIT ASSEMBLY.....	1	1	1	1	1	1	1	1	1	1
11	048-1032-1	48-008	PLUG.....	1	1	1	1	1	1	1	1	1	1
12	062-1008-2	510-40	MOTOR SHIM.....	AR	AR	AR	AR	AR	AR	AR	AR	AR	AR
STANDARD HARDWARE - PURCHASE LOCALLY													
A	----	----	3/8-16 X 1-1/2 HEX HD BOLT.....	4	4	4	4	4	4	4	4	4	4
B	----	----	3/8-16 X 1-3/4 HEX HD BOLT FULL THD...	2	2	2	2	2	2	2	2	2	2
C	----	----	5/16-18 X 1-1/2 HEX HD BOLT.....	3	3	3	3	3	3	3	3	3	3
D	----	----	5/16-18 X 3/4 HEX HD BOLT.....	4	4	4	4	4	4	4	4	4	4
E	----	----	3/8-16 X 1 RD HD SCREW.....	4	4	4	4	4	4	4	4	4	4
F	----	----	3/8-16 LOCKNUT.....	6	6	6	6	6	6	6	6	6	6
G	----	----	3/8-16 HEX NUT.....	6	6	6	6	6	6	6	6	6	6
H	----	----	5/16-18 HEX NUT.....	4	4	4	4	4	4	4	4	4	4
I	----	----	3/8 FLATWASHER.....	6	6	6	6	6	6	6	6	6	6
J	----	----	3/8 SPLIT LOCKWASHER.....	8	8	8	8	8	8	8	8	8	8
K	----	----	5/16 SPLIT LOCKWASHER.....	4	4	4	4	4	4	4	4	4	4

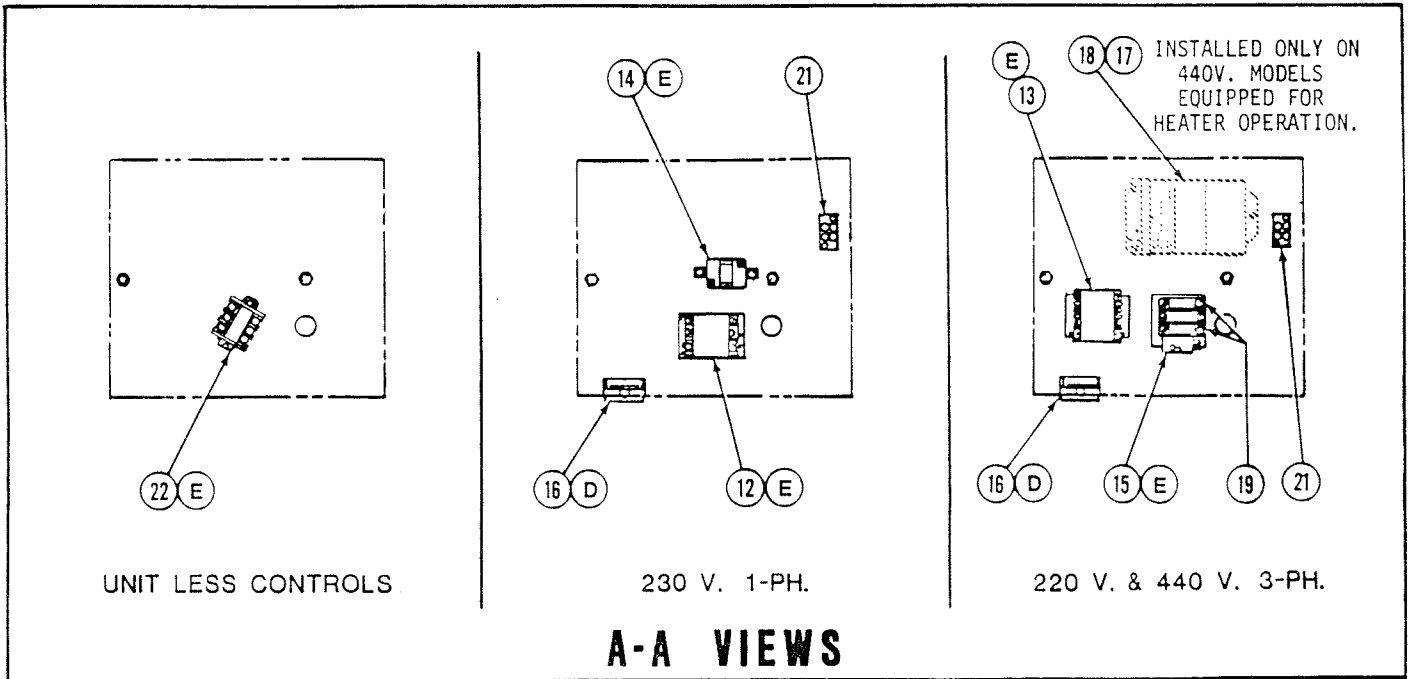
(1) THESE MODELS ARE FACTORY EQUIPPED WITH A VOLTAGE STEPDOWN TRANSFORMER FOR USE WITH SH-H & SH-E SERIES HEATERS.

(2) REPLACEMENT MOTORS WITH 184 FRAMES REQUIRE TWO 62-008 MOTOR RAILS (NOT SHOWN).

CONTROL BOX PARTS



3C-0066



524SH AND 724SH CONTROL BOX PARTS

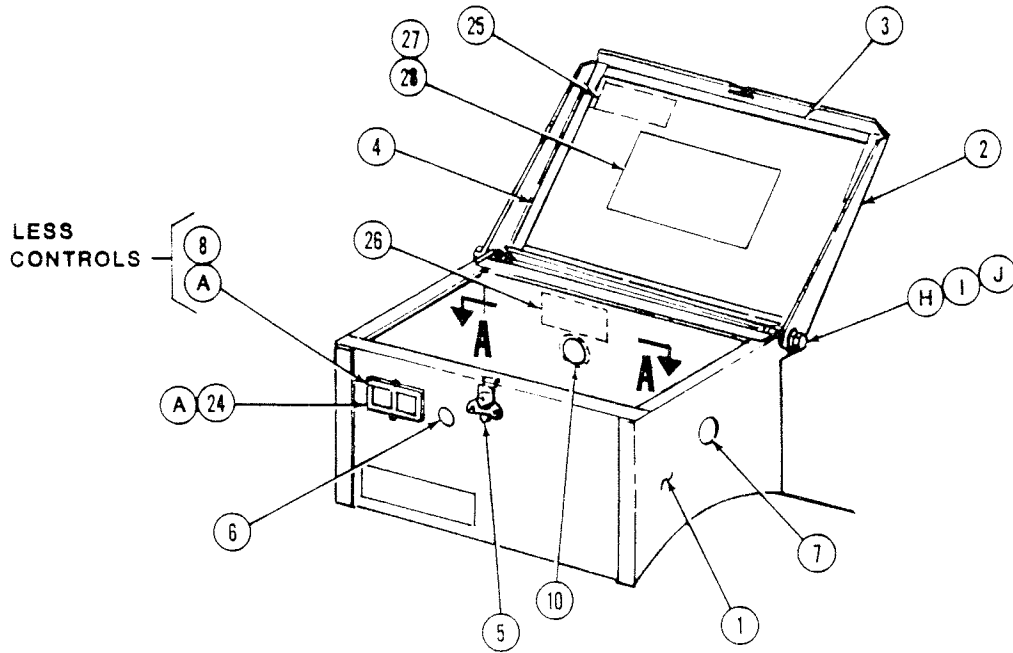
524SH AND 724SH CONTROL BOX PARTS

ITEM	NEW FF NO.	EARLY FF NO.	DESCRIPTION	QTY	QTY	QTY	QTY	QTY	QTY	QTY
	415-1360-7	----	524SHO & 724SHO 1-PH LESS CONTROLS.....	X	-	-	-	-	-	-
	415-1361-5	----	524SHO & 524SHE 3-PH LESS CONTROLS.....	-	X	-	-	-	-	-
	415-1361-5	----	724SHO & 724SHE 3-PH LESS CONTROLS.....	-	X	-	-	-	-	-
	415-1362-3	----	724SHO 1-PH 230V WITH CONTROLS.....	-	-	X	-	-	-	-
	415-1363-1	----	524SHO 1-PH 230V WITH CONTROLS.....	-	-	-	X	-	-	-
	415-1364-9	----	524SHO & 524SHE 3-PH 230V WITH CONTROLS...	-	-	-	-	X	-	-
	415-1364-9	----	724SHO & 724SHE 3-PH 230V WITH CONTROLS...	-	-	-	-	X	-	-
	415-1365-6	----	524SHO & 524SHE 3-PH 460V WITH CONTROLS...	-	-	-	-	-	X	-
	415-1365-6	----	724SHO & 724SHE 3-PH 460V WITH CONTROLS...	-	-	-	-	-	X	-
(1)	415-1366-4	----	524SHO & 524SHE 3-PH 460V WITH CONTROLS...	-	-	-	-	-	-	X
(1)	415-1366-4	----	724SHO & 724SHE 3-PH 460V WITH CONTROLS...	-	-	-	-	-	-	X
1	036-1260-3	36-101	CONTROL BOX WELDMENT.....	1	1	1	1	1	1	1
2	011-1149-1	11-100	CONTROL BOX COVER.....	1	1	1	1	1	1	1
3	-----	22-018-147/8	COVER GASKET (FRONT & REAR).....	2	2	2	2	2	2	2
4	-----	22-018-131/4	COVER GASKET (SIDES).....	2	2	2	2	2	2	2
6	048-1032-1	48-008	HOLE PLUG - 7/8".....	1	1	1	1	1	1	1
7	023-1029-0	23-022	LINK LOCK FASTENER.....	1	1	1	1	1	1	1
8	-----	56-6020	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	-	-	-	X	-	-	-
9	-----	56-6021	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	-	-	-	-	-	-	-
10	056-1228-8	56-6034	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	-	-	-	-	X	-	-
11	056-1229-6	56-6035	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	-	-	-	-	-	X	X
12	-----	56-027	CONTACTOR 40A 2PL.....	-	-	1	1	-	-	-
13	-----	56-030	CONTACTOR 40A 3PL.....	-	-	-	-	1	-	-
13	-----	56-030-2	CONTACTOR 40A 3PL.....	-	-	-	-	-	1	1
14	056-1017-5	56-019	OVERLOAD RELAY.....	-	-	-	1	-	-	-
14	056-1018-3	56-020	OVERLOAD RELAY.....	-	-	1	-	-	-	-
15	056-1226-2	56-097	OVERLOAD RELAY.....	-	-	-	-	1	1	1
16	056-1075-3	56-074	START/STOP SWITCH.....	-	-	1	1	1	1	1
17	043-1004-1	43-002	TRANSFORMER (VOLTAGE STEPDOWN).....	-	-	-	-	-	-	1
18	016-1002-1	406-16	GROMMET.....	-	-	-	-	-	-	1
(2)	19	-----	HEATER ELEMENT TYPE 'G'.....	-	-	-	-	2	2	2
20	011-1104-6	11-066	COVER - START/STOP SWITCH.....	1	1	-	-	-	-	-
21	045-1068-1	45-036	TERMINAL STRIP - 2 POLE.....	-	-	1	1	1	1	1
22	045-1015-2	45-014	TERMINAL BLOCK - 3 POLE.....	1	1	-	-	-	-	-
23	-----	-----	2-SCREW CONNECTOR 1IN.....	1	1	1	1	1	1	1
28	029-1087-5	29-082	DECAL - WARNING.....	1	1	1	1	1	1	1
29	029-1088-3	29-083	DECAL - 230V 1-PH.....	1	-	1	1	-	-	-
29	029-1089-1	29-084	DECAL - 230V 3-PH.....	-	1	-	-	1	-	-
29	029-1067-7	29-062	DECAL - 460V 3-PH.....	-	-	-	-	-	1	1
30	420-1163-5	----	DECAL - WIRING DIAGRAM 1-PH W/C.....	-	-	1	1	-	-	-
30	420-1068-6	----	DECAL - WIRING DIAGRAM 3-PH 460V.....	-	-	-	-	-	1	-
30	420-1069-4	----	DECAL - WIRING DIAGRAM 3-PH 460V W/TRANS..	-	-	-	-	-	-	1
30	420-1070-2	----	DECAL - WIRING DIAGRAM 3-PH 230V.....	-	-	-	-	1	-	-
STANDARD HARDWARE - PURCHASE LOCALLY										
A	-----	----	1/4-20 X 3/4 HEX HD BOLT.....	2	2	2	2	2	2	2
B	-----	----	1/4-20 LOCKNUT.....	2	2	2	2	2	2	2
C	-----	----	1/4 FLATWASHER.....	6	6	6	6	6	6	6
D	-----	----	#6 X 3/8 PAN HD TYPE 'B'.....	2	2	2	2	2	2	2
E	-----	----	#8 X 1/8 PAN HD TYPE 'B'.....	2	2	8	8	8	8	12

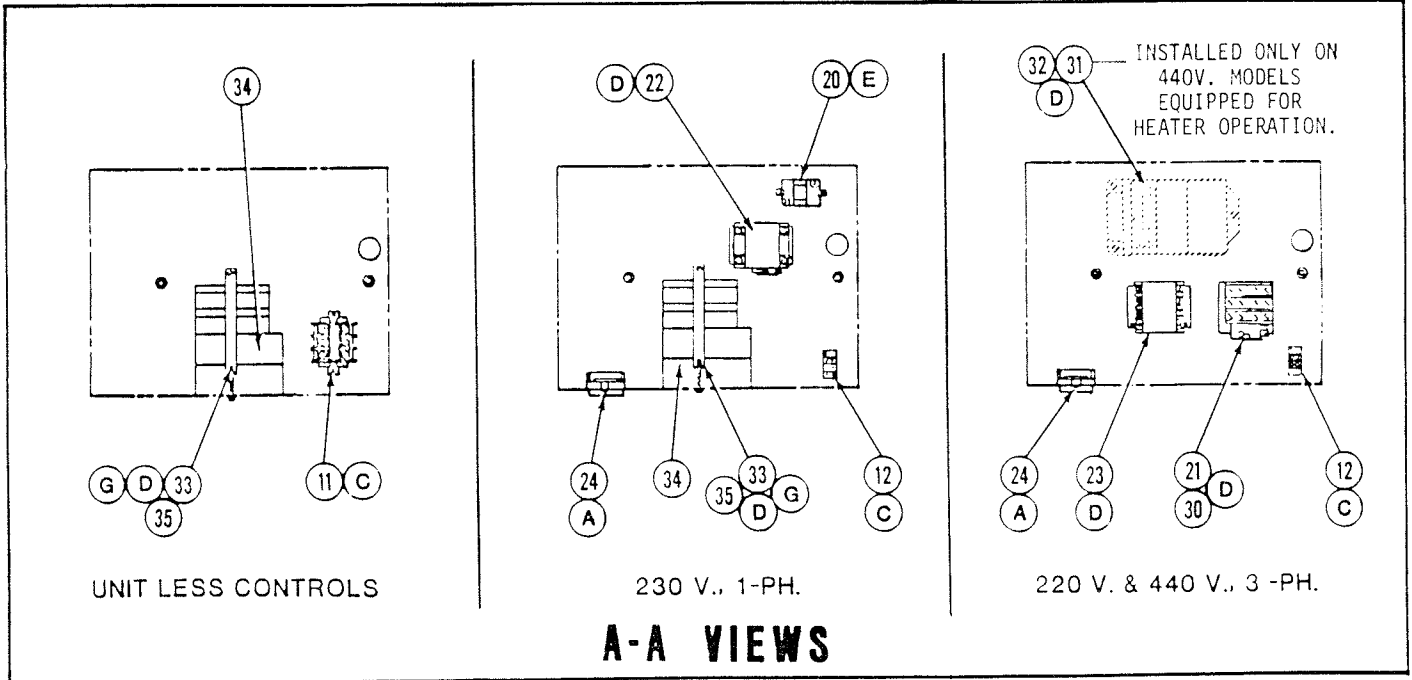
(1) THESE MODELS ARE FACTORY EQUIPPED WITH A VOLTAGE STEPDOWN TRANSFORMER FOR USE WITH SH-H & SH-E SERIES HEATERS.

(2) SPECIFY RATING OR FULL DETAILS OF MOTOR MAKE, HP & VOLTAGE.

CONTROL BOX PARTS

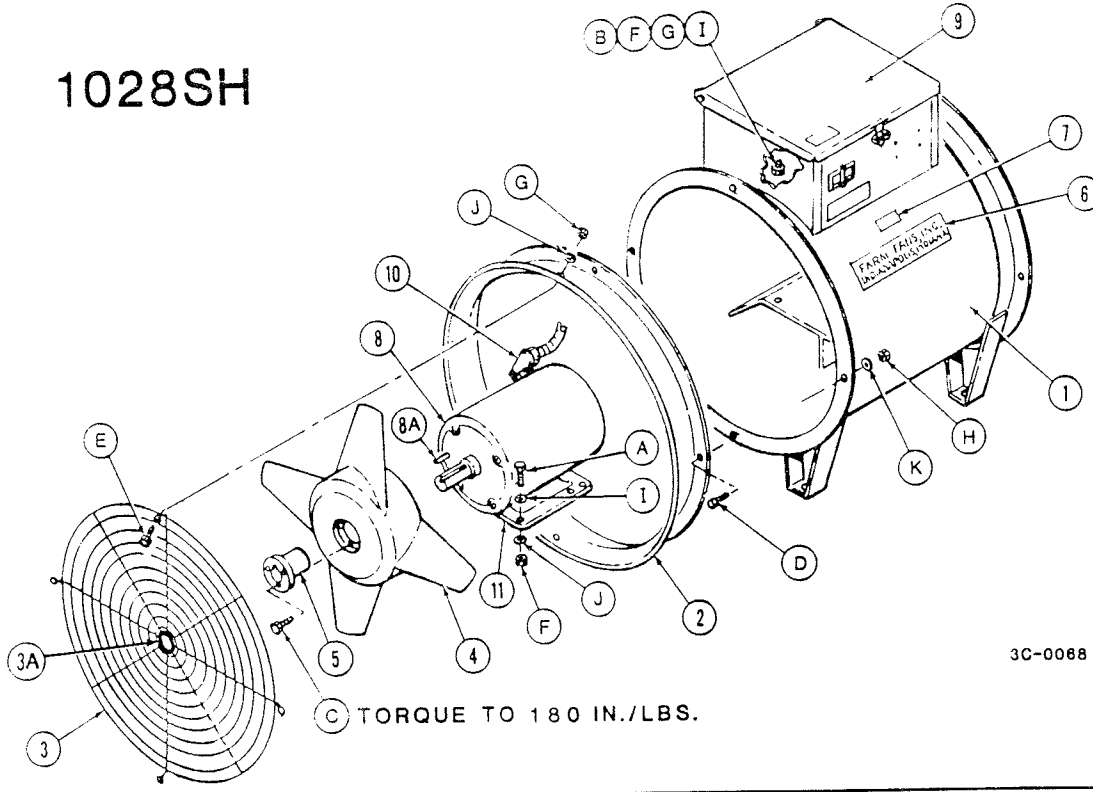


3C-0069



1028SH CONTROL BOX PARTS

1028SH



3C-0088

1028SH FAN ASSEMBLY PARTS

ITEM	NEW FF NO.	EARLY FF NO.	DESCRIPTION	QTY	QTY	QTY	QTY	QTY	QTY	QTY
	----	----	1028SHO 1-PH WITH CONTROLS.....	X	-	-	-	-	-	-
	----	----	1028SHO 3-PH 230V WITH CONTROLS.....	-	X	-	-	-	-	-
	----	----	1028SHO 3-PH 460V WITH CONTROLS.....	-	-	X	-	-	-	-
	----	----	1028SHO 1-PH LESS CONTROLS.....	-	-	-	X	-	-	-
	----	----	1028SHO 3-PH 230V LESS CONTROLS.....	-	-	-	-	X	-	-
	----	----	1028SHO 3-PH 460V LESS CONTROLS.....	-	-	-	-	-	X	-
	----	----	1028SHO 3-PH 460V WITH CONTROLS & TRANS...	-	-	-	-	-	-	X
(1)										
1	001-1243-3	01-010	HOUSING WELDMENT.....	1	1	1	1	1	1	1
2	004-1005-0	04-001	VENTURI.....	1	1	1	1	1	1	1
3	014-1043-0	14-028	GUARD (REPLACES 14-001).....	1	1	1	1	1	1	1
3A	401-1659-2	----	CENTER CAP (FOR 014-1043-0).....	1	1	1	1	1	1	1
4	003-1033-4	03-008	PROPELLOR & BUSHING ASSY.....	1	1	1	1	1	1	1
5	019-1030-6	19-P29	REPLACEMENT BUSHING 1-1/8".....	1	1	1	1	1	1	1
6	029-1174-1	29-175	DECAL - FARM FANS, INC.....	2	2	2	2	2	2	2
7	420-1110-6	----	DECAL - AIRFLOW.....	1	1	1	1	1	1	1
8	----	02-100-12F0-1	MOTOR 10 HP 1-PH 230V.....	1	-	-	1	-	-	-
8	----	02-100-32F0-1	MOTOR 10 HP 3-PH 230/460V.....	-	1	1	-	1	1	1
8A	----	----	KEY - 1/4 X 1/4 X 2-3/4 (W/ MOTOR).....	1	1	1	1	1	1	1
9	415-1367-2	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	1	-	-	-	-	-	-
9	415-1368-0	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	-	1	-	-	-	-	-
9	415-1369-8	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	-	-	1	-	-	-	-
9	415-1370-6	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	-	-	-	1	-	-	-
9	415-1371-4	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	-	-	-	-	1	-	-
9	415-1372-2	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	-	-	-	-	-	1	-
9	415-1373-0	----	CONTROL BOX ASSEMBLY (SEE PAGES 16 & 17)...	-	-	-	-	-	-	1
10	----	66-014	MOTOR CONDUIT ASSEMBLY.....	1	1	1	1	1	1	1
11	062-1008-2	510-40	MOTOR SHIM.....	A/R	A/R	A/R	A/R	A/R	A/R	A/R
STANDARD HARDWARE - PURCHASE LOCALLY										
A	----	----	HEX HD. BOLT - 3/8-16 NC X 1-1/2".....	4	4	4	4	4	4	4
B	----	----	HEX HD. BOLT - 3/8-16 NC X 1-3/4".....	2	2	2	2	2	2	2
C	----	----	HEX HD. BOLT - 5/16-18 NC X 1-1/2".....	3	3	3	3	3	3	3
D	----	----	HEX HD. BOLT - 5/16-18 NC X 3/4".....	4	4	4	4	4	4	4
E	----	----	RD. HD. SCREW - 3/8-16 NC X 1".....	4	4	4	4	4	4	4
F	----	----	LOCK NUT - 3/8-16 NC.....	6	6	6	6	6	6	6
G	----	----	HEX NUT - 3/8-16 NC.....	6	6	6	6	6	6	6
H	----	----	HEX NUT - 5/16-18 NC.....	4	4	4	4	4	4	4
I	----	----	FLAT WASHER - 3/8".....	6	6	6	6	6	6	6
J	----	----	SPLIT LOCK WASHER - 3/8".....	8	8	8	8	8	8	8
K	----	----	SPLIT LOCK WASHER - 5/16".....	4	4	4	4	4	4	4

(1) THESE MODELS ARE FACTORY EQUIPPED WITH A VOLTAGE STEPDOWN TRANSFORMER FOR USE WITH SH-H & SH-E SERIES HEATERS.

1028SH CONTROL BOX PARTS

ITEM	NEW FF NO.	EARLY FF NO.	DESCRIPTION	QTY	QTY	QTY	QTY	QTY	QTY	QTY	QTY
(1)	415-1367-2	----	1028SHO 1-PH WITH CONTROLS.....	X	-	-	-	-	-	-	-
	415-1368-0	----	1028SHO 3-PH 230V WITH CONTROLS.....	-	X	-	-	-	-	-	-
	415-1369-8	----	1028SHO 3-PH 460V WITH CONTROLS.....	-	-	X	-	-	-	-	-
	415-1370-6	----	1028SHO 1-PH LESS CONTROLS.....	-	-	-	X	-	-	-	-
	415-1371-4	----	1028SHO 3-PH 230V LESS CONTROLS.....	-	-	-	-	X	-	-	-
	415-1372-2	----	1028SHO 3-PH 460V LESS CONTROLS.....	-	-	-	-	-	X	-	-
	415-1373-0	----	1028SHO 3-PH 460V WITH CONTROLS & TRANS...	-	-	-	-	-	-	X	X
1	036-1216-5	36-098	CONTROL BOX WELDMENT.....	1	1	1	1	1	1	1	1
2	011-1146-7	11-102	CONTROL BOX COVER.....	1	1	1	1	1	1	1	1
3	-----	22-018-811/16	GASKET (SIDES).....	2	2	2	2	2	2	2	2
4	-----	22-018-141/4	GASKET (ENDS).....	2	2	2	2	2	2	2	2
5	023-1029-0	23-022	LINK-LOCK FASTENER.....	1	1	1	1	1	1	1	1
6	048-1004-0	48-003	PLUG.....	1	1	1	1	1	1	1	1
7	048-1032-1	48-008	PLUG.....	1	1	1	1	1	1	1	1
8	011-1104-6	11-066	COVER - START/STOP SWITCH.....	-	-	-	1	1	1	1	1
10	-----	-----	CONNECTOR - 2 SCREW, 1".....	1	1	1	1	1	1	1	1
11	045-1016-0	45-015	TERMINAL BLOCK - 3 POLE.....	-	-	-	1	1	1	1	1
12	045-1068-1	45-036	TERMINAL STRIP - 2 POLE.....	1	1	1	-	-	-	-	1
17	056-1227-0	56-6033	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	X	-	-	-	-	-	-	-
18	056-1228-8	56-6034	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	-	X	-	-	-	-	-	-
19	056-1229-6	56-6035	MOTOR CONTROL ASSEMBLY (REF. ONLY).....	-	-	X	-	-	-	-	X
20	056-1018-3	56-020	OVERLOAD RELAY - SUPPLEMENTARY.....	1	-	-	-	-	-	-	-
21	056-1226-2	56-097	OVERLOAD RELAY - 50A AMB. COMP.....	-	1	1	-	-	-	-	1
22	056-1215-5	56-089	CONTACTOR - 60A 220V 2-POLE.....	1	-	-	-	-	-	-	-
23	-----	56-030	CONTACTOR - 40A 220V COIL.....	-	1	-	-	-	-	-	-
23	056-1031-6	56-030-2	CONTACTOR - 40A 440V COIL.....	-	1	-	-	-	-	-	1
24	056-1075-3	56-074	SWITCH - START/STOP.....	1	1	1	-	-	-	-	1
25	029-1087-5	29-082	DECAL - WARNING.....	1	1	1	1	1	1	1	1
26	029-1088-3	29-083	DECAL - IMPORTANT 230V 1-PH.....	1	-	-	1	-	-	-	-
26	029-1089-1	29-084	DECAL - IMPORTANT 230V 3-PH.....	-	1	-	-	1	-	-	-
26	029-1067-7	29-062	DECAL - IMPORTANT 460V 3-PH.....	-	-	1	-	-	-	1	1
27	420-1068-6	-----	DECAL - WIRING DIAGRAM 3-PH 460V.....	-	-	1	-	-	-	-	-
27	420-1069-4	-----	DECAL - WIRING DIAGRAM 3-PH 460V W/TRANS.....	-	-	1	-	-	-	-	1
27	420-1070-2	-----	DECAL - WIRING DIAGRAM 3-PH 230V.....	-	1	-	-	-	-	-	-
28	420-1163-5	-----	DECAL - WIRING DIAGRAM 1-PH 230V.....	1	-	-	-	-	-	-	-
(2) 30	-----	-----	HEATER ELEMENT TYPE 'C'.....	-	2	2	-	-	-	-	2
31	043-1004-1	43-002	TRANSFORMER .2KVA (VOLTAGE STEPDOWN).....	-	-	-	-	-	-	-	1
32	016-1002-1	406-16	GROMMET.....	-	-	-	-	-	-	-	1
33	401-1641-0	09-017	CAPACITOR BAND (MARATHON).....	1AR	-	-	1AR	-	-	-	-
33	401-1642-8	09-018	CAPACITOR BAND (BALDOR).....	1AR	-	-	1AR	-	-	-	-
34	-----	-----	CAPACITOR PACK - SUPPLIED W/MOTOR (REF. ONLY).....	1	-	-	1	-	-	-	-
(3) 34A	-----	-----	REPLACEMENT ELECTROLYTIC CAPACITOR.....	A/R	-	-	A/R	-	-	-	-
(3) 34B	-----	-----	REPLACEMENT OIL CAPACITOR.....	A/R	-	-	A/R	-	-	-	-
35	-----	22-019-10	CAPACITOR CUSHION.....	2	-	-	2	-	-	-	-
STANDARD HARDWARE - PURCHASE LOCALLY											
A	-----	-----	#6 X 3/8 PAN HD TYPE 'B'.....	2	2	2	2	2	2	2	2
C	-----	-----	#6-32 X 1/2 RD HD TYPE 'F'.....	2	2	2	2	2	2	2	2
D	-----	-----	#8 X 3/8 PAN HD TYPE 'F'.....	4	5	5	3	2	2	2	8
E	-----	-----	#8-32 X 1/2 PAN HD TYPE 'F'.....	2	-	-	-	-	-	-	-
G	-----	-----	#12 X 2-1/2 PAN HD TYPE 'A'.....	1	-	-	1	-	-	-	-
H	-----	-----	1/4-20 X 1/2 HEX HD BOLT.....	2	2	2	2	2	2	2	2
I	-----	-----	1/4-20 ESNA LOCK NUT.....	2	2	2	2	2	2	2	2
J	-----	-----	1/4 FLATWASHER.....	6	6	6	6	6	6	6	6

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(2) SPECIFY RATING OR FULL DETAILS OF MOTOR MAKE, HP & VOLTAGE.

(3) SPECIFY RATING OR MAKE & SPECIFICATION NO. OF MOTOR.



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