



OWNER'S MANUAL

FOR

LANCE MASSAGE TUMBLER

LT-15

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MODEL LT 15 MESSAGE TUMBLER
SPECIFICATION SHEET

CONSTRUCTION

All Stainless Steel Construction with USDA approval

PHYSICAL DIMENSIONS

Length	47"
Width	27"
Height	35"
Drum Size	20" diam. x 30" long
Approximate Weight	250#

PRODUCT CAPACITY

Gallons	40
Liters	150
Pounds	200

VACUUM PUMP SYSTEM

Pump capable of delivering 22" Hg (Mercury)
Easily Accessible Liquid Trap

DRUM SPEED

Variable Speed Drive	1 - 9 RPM
*Single Speed Drive	9 RPM

TIMER CONTROLS

Tumbler Timer	8 Hour Timer
* Tumbler Timer	80 Minute Timer
* Intermittent Timer	
On Time	Up to 99 Hr. 59 Min.
Off Time	Up to 99 Hr. 59 Min.

MOTORS

Variable Speed Motor	1/5 HP, 5.0 Amps
*Single Speed Motor	1/4 HP, 4.6 Amps
Vacuum Pump Motor	1/7 HP, 2.0 Amps

ELECTRICAL CONNECTIONS

115 volts, 60 cycle single phase

(See outside cabinet of machine for electrical requirement)

* Optional Equipment

Specifications Subject to change at anytime

INSTALLATION INSTRUCTIONS

A. Unpacking

1. Carefully remove crate from the skid
2. Remove machine from skid
3. Wipe down outside of the machine
4. Clean inside of the drum

B. Checking Control Panel

1. Check outside the cabinet for the required voltage requirement for your machine. Plug the machine into the required outlet.
2. Turn the black knob on the tumbler timer to 1 hour. Press the red arm button in the center of the black knob.
3. Check photoeye for power (The red light on the back side of the photoeye should be on. This can be seen through the observation windows near each photo eye. The light on the photoeye must be on. If they are not, wipe the face of the photoeye and the reflector opposite them to remove all moisture. If still not on see instructions for checking aim of the photoeyes.)

C. Check Vacuum Pump Control

1. Turn the tumbler timer to zero setting (All the way counter clockwise)
2. Turn on the vacuum pump. It should run.
3. With the vacuum pump running, set the tumbler timer to one hour. Press the red arm button on the tumbler timer. The vacuum pump will stop running.

D. Check Tumbler Motor Controls

1. Set variable speed control to 20
2. Set tumbler timer to one hour
3. Press the red arm button in the center of the black knob of the tumbler timer
4. Press the tumbler start button - Drum will now turn
5. Turn the variable speed control up & down
Drum will speed up & slow down
6. Turn the tumbler timer to zero setting (counter clockwise) The drum will stop

OPERATING INSTRUCTIONS

A. Loading and Tumbling

1. Clean the machine drum
2. Put the gasket and drain cap on the drum drain pipe
3. Load the product into the drum
4. Place the gasket over the drum opening
5. Place the cover on the gasket
6. Make sure the gasket is under the cover all the way around by pushing it up and into the opening or by visual inspection
7. Tighten the cover by alternately tightening the knob in a diagonal pattern
8. Plug the machine into the proper voltage receptacle
9. Turn the black knob and press the red arm button in the center of the black knob of the tumbler timer
10. Check for power to the photoeye through observation windows (Red light should be on, If they are not on wipe the photoeye face and reflector to remove moisture)
11. Set tumbler timer to zero setting (counter clockwise)
12. Turn on vacuum pump
13. Open vacuum valve on the drum (next to the drum cover) (Make sure the vacuum passage to the drum is clean and that it is to the top. Pulling vacuum with the fitting not at the top position will result in liquid being drawn into the vacuum pump. THIS WILL DAMAGE THE PUMP!)
14. Push vacuum hose onto drum fitting
15. Run vacuum pump until 15 inches of vacuum is drawn (Higher vacuum can be drawn if you want to)
16. Shut off the valve on the drum
17. Remove the hose
18. Turn off the vacuum pump
19. Set the tumbler timer to the desired time
20. Push in red start button in the center of the black knob on the tumbler timer
21. Set variable speed knob to the desired speed
22. Make sure the vacuum hose is disconnected
23. Press tumbler start button, The drum will now rotate until the tumbler timer runs down to zero
- * It can be stopped at any time by pressing the tumbler stop button or by breaking the beam from the photoeye to the reflector
- * To restart the machine, press the tumbler start button, it will run for the time remaining on the timer

B. Unloading the Drum

a. Manual Unloading

1. Set the speed control to a slow speed
2. Set the tumbler timer to one hour
3. Press the red button on the tumbler timer
4. Press the tumbler start button until
5. When the cover is facing you, at the 2 O'clock position, press the stop button
6. Loosen the cover knobs
7. Open the vacuum valve on the drum to release the vacuum (Loosen cover knobs first)
8. Remove the cover
9. Remove the gasket
10. Unload the drum

CONTROL PANEL WITH ELECTRONIC INTERVAL TIMER AND MECHANICAL TUMBLER TIMER

CONTROL PANEL FUNCTION

TUMBLER PUSH BUTTONS

Starts and stops timers for the tumbling cycle.

VACUUM PUSH BUTTONS

Starts and stops vacuum pump.

TOTAL TIMER

Sets the total amount of time the drum will rotate. During the intermittent tumbling cycle, this timer runs only during the on period of the cycle.

INTERMITTENT TIMER

Setpoint 1 sets amount of time drum rest during off cycle.

Setpoint 2 sets amount of time drum rotates during on cycle.

SETTING THE CONTROL PANEL

Direct start continuous tumbling

1. Turn the black knob on total timer for total tumbling time (time required for the drum to rotate.)
2. Press the red arm button in the center of the black knob on the total timer.
3. Set setpoint 1 to zero time on the intermittent timer.
4. Set setpoint 2 to a time greater than was set on the total timer.
5. Press tumbler start button to begin the cycle.

Direct start intermittent tumbling

1. Turn the black knob on total timer for total tumbling time (time required for the drum to rotate.)
2. Press the red arm button in the center of the black knob on the total timer.
3. Set setpoint 1 to the amount of time you want the timer to rest during it's off cycle.
4. Set setpoint 2 to the amount of time you want the time to run during it's on cycle (the on cycle will start first.)
5. Press tumble start button to begin the cycle.

During the intermittent timing cycle the total timer will only count down when the ON cycle is timing on the intermittent timer.

Stopping the tumbler with tumbler STOP button or photo safety eye

will stop the total timer and maintain it's time. The intermittent timer will reset to the preset time.

Pressing the tumbler START button will restart the intermittent timer. The total timer will restart from where it left off.

CONTINUOUS TUMBLING

Set the tumble timer for total tumbling time (time required for the drum to rotate.)

Set setpoint 1 to zero time on the intermittent timer.

Set setpoint 2 to a time greater than was set on the tumble timer.

ENTERING SETPOINT ON TOTAL TIMER

Turn the black knob on the total timer until the pointer is set to the desired time. Press the red arm button in the middle of the black knob to set the timer. After completion of the cycle the timer resets to its set point.

INTERMITTENT TUMBLING

Set setpoint 1 for rest time.

Set setpoint 2 for tumble time.

Set tumble timer for the total tumbling time (time required for the drum to rotate.)

ENTERING AND DISPLAYING SETPOINTS: ON INTERMITTENT TIMER

When the CX100 unit is powered up for the first time, or after the battery has been cycled off and on, the digit display will show four hyphens. The unit will not operate until it has been provided with ON and OFF time setpoints, clearing the display of hyphens.

To create or change the OFF time setpoint, press the SET1 key. The setpoint, if any is displayed and the panel key pads become active. The operation of the timing function and the output loads are not affected. For setpoint changes, the SET indicator appears on the graphics panel. The setpoint is changed by pressing appropriate UP or DN key pads. Pressing a UP key increments the setpoint digit located above the key. If the key is continually depressed the digit will change every .5 second until the key is released. The display will carry to the digit on the left on the 9 to 0 transitions when using the UP keys. The display will borrow from the digits on the left on the 0 to 9 transitions when using the keys. On second and minute ranges the display will carry on the 59 to 00 transition and borrow on the 00 to 59 transition of the two least significant digits.

When the desired setpoint is displayed, touch the ENT key. The new setpoint is entered, all UP and DN keys become inoperable and "SET" disappears from the graphics panel. If a new setpoint is entered when the unit is timing, the new setpoint will be in effect upon the next reset.

To create or change the ON time setpoint press the SET2 key. The ON time setpoint is changed by pressing the UP or DN keys as noted above. When the desired setpoint is displayed, press the ENT key.

The ON and OFF setpoints may be displayed at any time without disturbing the timing cycle by pressing SET1 or SET2. The actual value is returned by pressing ENT.

KEYPAD LOCK:

A keypad "lock" is provided on the CX100 Timer to prevent unauthorized tampering. To initiate the keypad lock, press the Eagle Signal logo key for 10 seconds. To disable the lock to change setpoints. Disconnect the power cord from it's outlet. Remove the Interval Timer from it's housing, unscrew the screw on the face of the timer and lift up on the lever, slide the timer out. On the back of the timer there is a set of 7 dip switches. Switch #6 turns "on" and "off" the battery in the timer. Flip switch #6 to it's off position and then to it's on position. This will disable the lock on the timer and let you change the setpoints. Slide the timer back into it's housing, push the lever down to secure the timer in place and tighten the screw. Plug the power cord back into the outlet, you should now be able to change the setpoints.

CLEANING PRECAUTIONS

Do not clean photo-eyes and reflectors with abrasive material, this could damage the components.

Do not spray water directly at the control panel, it could damage the components. Use a damp rag to clean the control panel face.

If the knob on the timer begins to turn hard, remove the black knob by loosening the set screw on the knob. Loosen the nut under the black knob.

CLEANING YOUR MACHINE

Fill your machine so warm water goes to top of paddle. Using your standard cleaning solution, put in 1/2 to 1 cup, depending on the strength. Turn machine on and agitate for ten to fifteen minutes. When you stop the machine, make sure the drain plug is on top. Remove the plug and turn the machine on until drain is at the bottom. Remove lid and rinse. (CAUTION: Extremely hot water will cause fat to bake on walls.) Wipe off safety eyes and reflectors after cleaning.

FLUSHING VACUUM VALVE ON DRUM

Open vacuum valve and thoroughly flush with water. This must be done between loads, before pulling vacuum on the drum. If valve is not cleaned properly, food particles will be drawn into the vacuum hose.

CLEANING VACCUM HOSE

To clean food particles from the vacuum hose, remove glass jar (located inside cabinet) from the filter, and flush water through hose. Clean glass jar before replacing.

SAFETY EYES

These are installed for your protection! When the sensor beam is broken, the machine is automatically shut off.

If the machine does not want to start, it is possible either the reflector or sensor eyes are dirty or wet. If you do have a problem with the sensor, it is quickly identified by a red light located on the back of the sensor. Check for power to the photoeyes through observation window. (Red light should be on, if they are not on wipe the photoeye face and reflector to remove moisture.)

RECOMMENDED PROCEDURES FOR TUMBLING PRODUCT

<u>PRODUCT & INSTRUCTION</u>	<u>% OF BRINE GREEN WT.</u>	<u>TOTAL TIME</u>	<u>DRUM LOAD</u>	<u>MOTOR SPEED</u> %
<u>Dried Beef</u> Pump product with normal or recommended % of brine. Put product and excess purge into tumbler.	10%	3 hrs. 2.5 hrs.	1/2 or more 1/2 or less	40
<u>Beef Jerky</u> Get total weight of sliced product to verify % of brine to be added	10%	25 min. 15 min.	1/2 or more 1/2 or less	40
<u>Chunked & Formed</u> Using Ham Meat and Boston Butt parts (90%lean), run product through kidney plate on grinder. Get total weight to verify % of brine to be added. Tumble for stated period of time. Remove from tumbler. Run product through stuffer into large casing. Put into ham press and smoke under normal smoking conditions.	10%	1 hr.		70
<u>Chicken</u> After obtaining total weight of birds, add normal or recommended % of brine and tumble product and brine for required time.	10%	1 hr.	1/2 or more	40
<u>Turkey</u> Obtain total weight of birds. Pump breast, leg and wings on both sides with normal or recommended % of brine. Put product and excess purge in tumbler for recommended time. Then follow normal smoking procedures.	10%	1 hr.	1/2 or more	60

RECOMMENDED PROCEDURES FOR TUMBLING PRODUCT

<u>PRODUCT & INSTRUCTION</u>	<u>% OF BRINE GREEN WT.</u>	<u>TOTAL TIME</u>	<u>DRUM LOAD</u>	<u>MOTOR SPEED</u> %
<u>Bone-In Ham</u> Pump your normal or recommended % of brine per green weight and put product and excess purge in tumbler.	15%	3.5 hrs. 3 hrs.	1/2 or more 1/2 or less	60
<u>Boneless Ham</u> Same process as Bone-In	15%	3 hrs. 2.5 hrs.	1/2 or more 1/2 or less	50
<u>Bacon</u> Obtain total weight of all product. Using your normal or recommended % of brine per green weight, put bellies and brine into tumbler	10%	3 hrs. 2.5 hrs.	1/2 or more 1/2 or less	50
<u>Cottage Bacon</u> Pump product with normal or recommended % of brine per green weight. Put product and excess purge into tumbler.	10%	3 hrs. 2.5 hrs	1/2 or more 1/2 or less	50
<u>Pork Ribs</u> Get total weight of the product to verify % of brine to be added.	10%	.5 hrs.		40
<u>Pork Hocks</u> Get total weight of the product to verify % of brine to be added.	15%	2 hrs. 1.5 hrs.	1/2 or more 1/2 or less	40
<u>Beef or Pork Roast</u> Pump roasts with normal or recommended soluble roast spice.	10%	4 hrs. 3.5 hrs.	1/2 or more 1/2 or less	40

* After tumbling put into cooking bag and bring internal temperature to 150 degrees. Product is now ready for sale.

MAINTENANCE

WARNING: DISCONNECT POWER BEFORE SERVICING.

NOTE: Lock and tag power disconnect to prevent application of power.

CLEANING

Properly selected and installed electric motors are capable of operating for long periods with minimal maintenance. Periodically clean dirt accumulations from open-type motors, especially in and around vent openings, preferably by vacuuming (avoid imbedding dirt in windings). At the same time check that electrical connections are tight.

LUBRICATION

The motor is equipped with pre-lubricated ball bearings and will not require re-lubrication. Should the gears require lubrication, use type "L-Industrial 30" (American Oil Co.) grease or its equivalent. The following is a list of lubricants which can be used: Mobile UX-EP2, Philube =EP2, Gulf Crown =EP2, Alvania =EP2, or Mutifax =EP2.

IMPORTANT: COMPLETELY CLEAN THE OLD LUBRICANT FROM THE GEAR BOX BEFORE ADDING FRESH LUBRICANT. UNDER NO CIRCUMSTANCES SHOULD DIFFERENT TYPES OF LUBRICANTS BE MIXED!

CHECKING THE AIM OF A PHOTO-EYE

1. Turn the black knob on the timer to 4 and press the red "arm" button in, on the timer. This will supply power to the photo-eyes which will be indicated by a red light on at the back of the timer. (If they won't come on, the photo-eye might be out of alignment.)
2. Take a piece of masking tape and cover up the reflector. Only the one reflector that is opposite of the photo-eye that you are checking.
3. Use a reflector for checking the sensing range of the photo-eye. Take this reflector and hold it over the reflector that you taped up.
 - A. Move the reflector to the left until the red light on the photo-eye goes out, measure this distance (see Figure "A"), which we will call distance "A".
 - B. Move the reflector to the right until the red light on the photo-eye goes out, measure this distance (see Figure "A"), which we will call distance "B".
 - C. Move the reflector up until the red light on the photo-eye goes out, measure this distance (see Figure "A"), which we will call distance "C".
 - D. Move the reflector down until the red light on the photo-eye goes out, measure this distance (see Figure "A"), which we will call Distance "D".
4. Distance "A" & "B" should be about the same and "C" & "D" should be about the same. If measurement "A" & "B" are not equal and "C" & "D" are not equal the photo-eye aim needs to be adjusted (see ADJUSTING THE AIM OF THE PHOTO-EYE). If they are equal repeat this procedure on the second photo-eye (Model LT30 and LT60 only).

FIGURE "A"

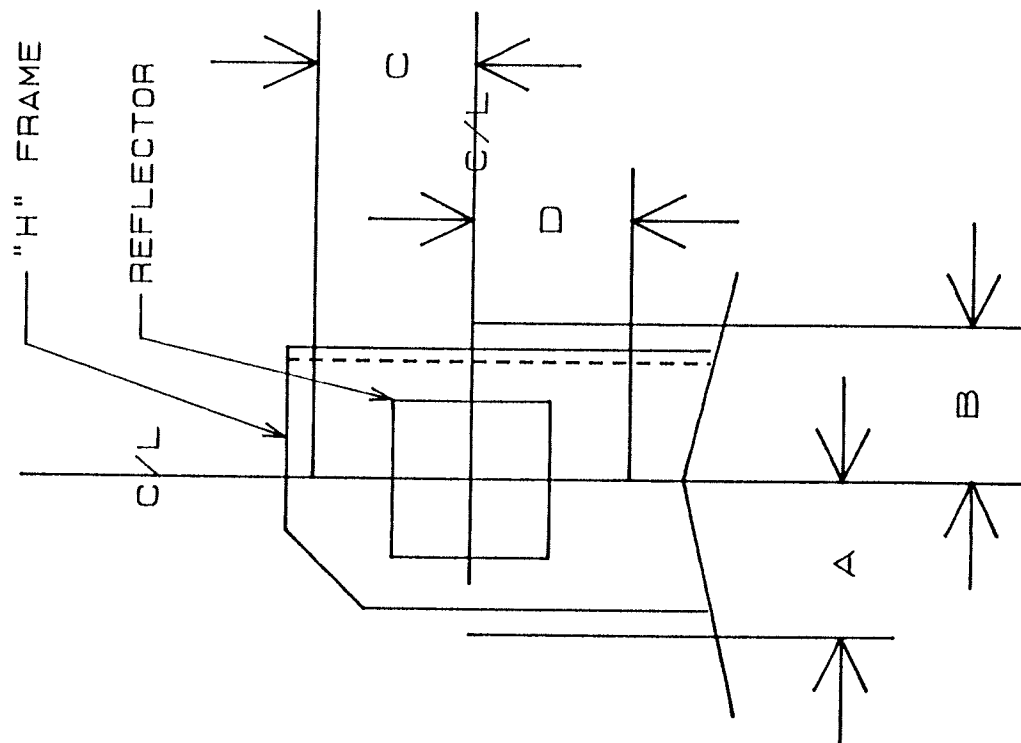
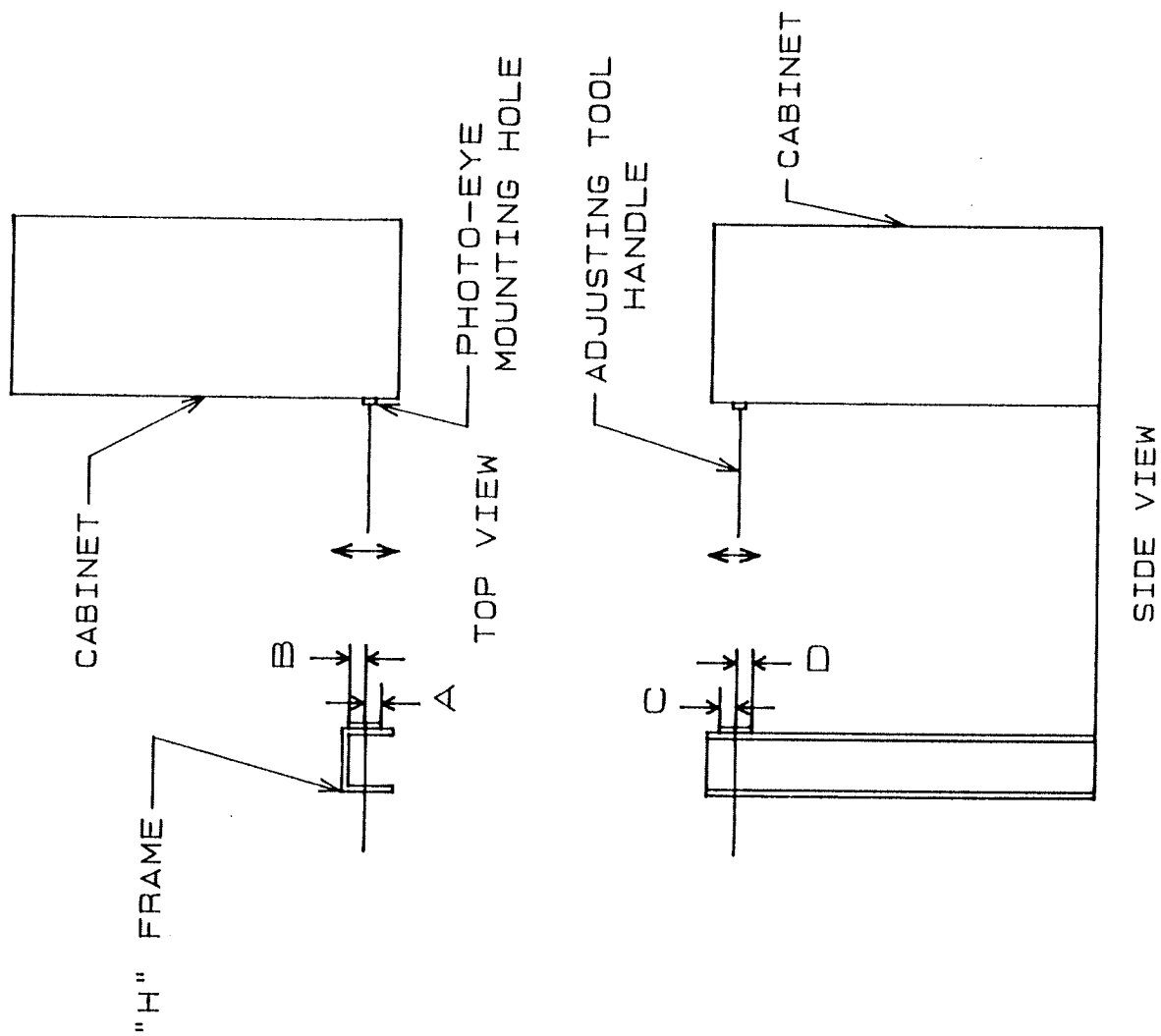


FIGURE "B"



ADJUSTING THE AIM OF A PHOTO-EYE

1. Remove side panel of cabinet.
2. Turn the black knob on the timer to 4 and press the red "arm" button in, on the timer. This will supply power to the photo-eyes which will be indicated by a red light on at the back of the timer. (If they don't come on, the photo-eye might be out of alignment.)
3. For adjusting the mounting hole on the cabinet we have sent along an Adjusting Tool.
 - A. Remove the photo-eye from the cabinet.
 - B. Remove one of the nuts that is threaded onto the Adjusting Tool and insert the threaded end into the hole in the cabinet (from the outside) and thread the nut back on the tool.
 - C. Pull the handle of the Adjusting Tool into the direction of the smaller measurements that you recorded in step #4 (see Figure "B"). You should be able to bend the mounting hole in the cabinet, to align the photo-eye.
4. Install the photo-eye back into the cabinet.
5. Repeat instructions for CHECKING THE AIM OF THE PHOTO-EYE.
Re-adjust again if necessary.
6. Once this is complete remove the tape from the reflector and put the side panel back on the cabinet.
7. Alignment is now complete.

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PART # PHOTOAIM.LI

FIGURE "A"

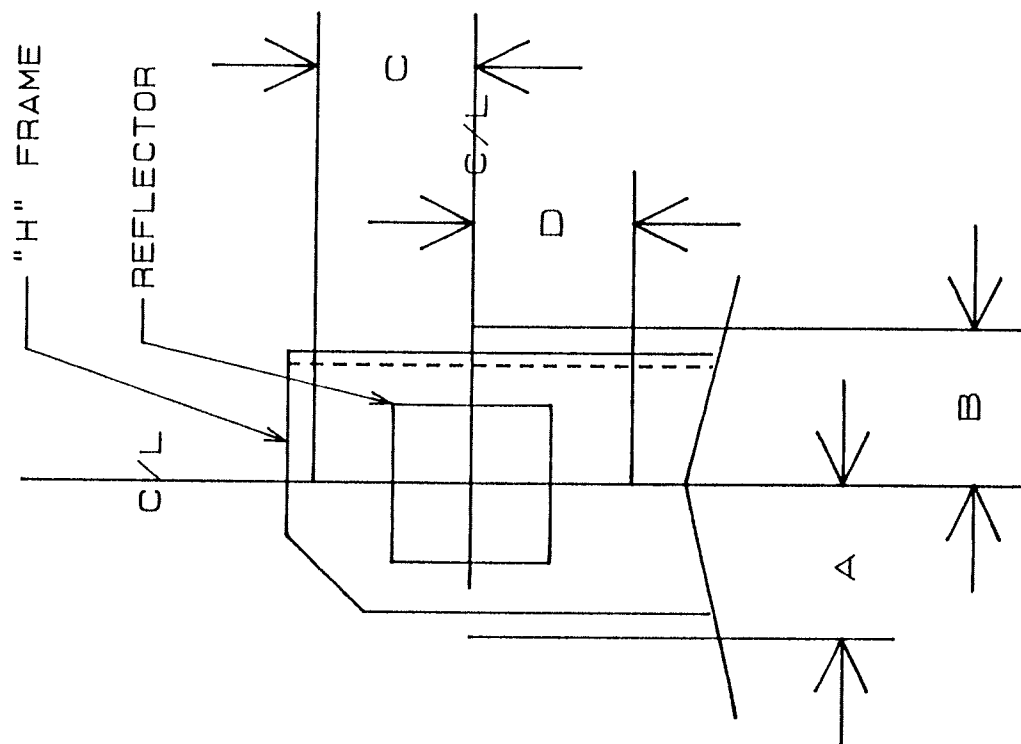
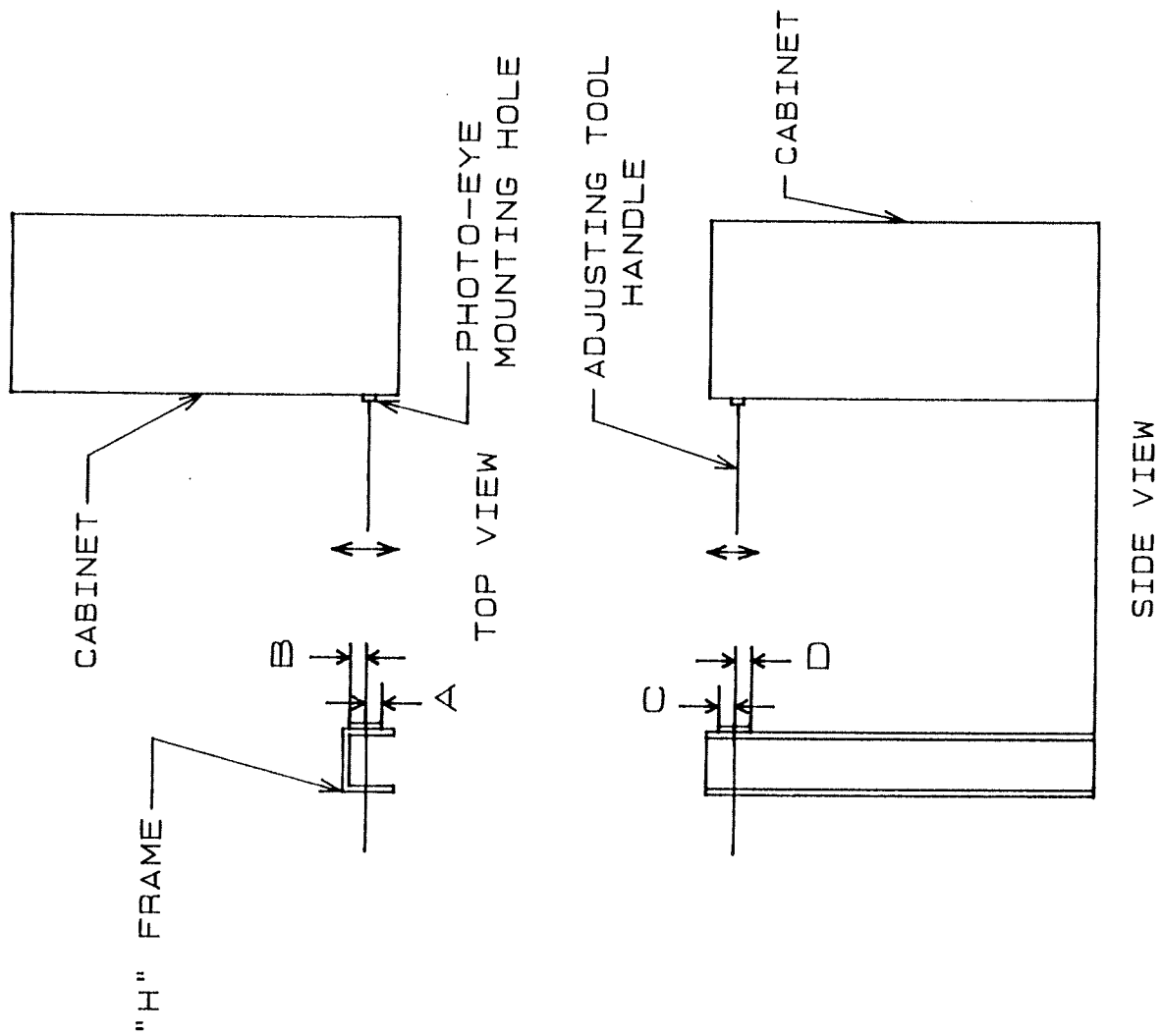


FIGURE "B"

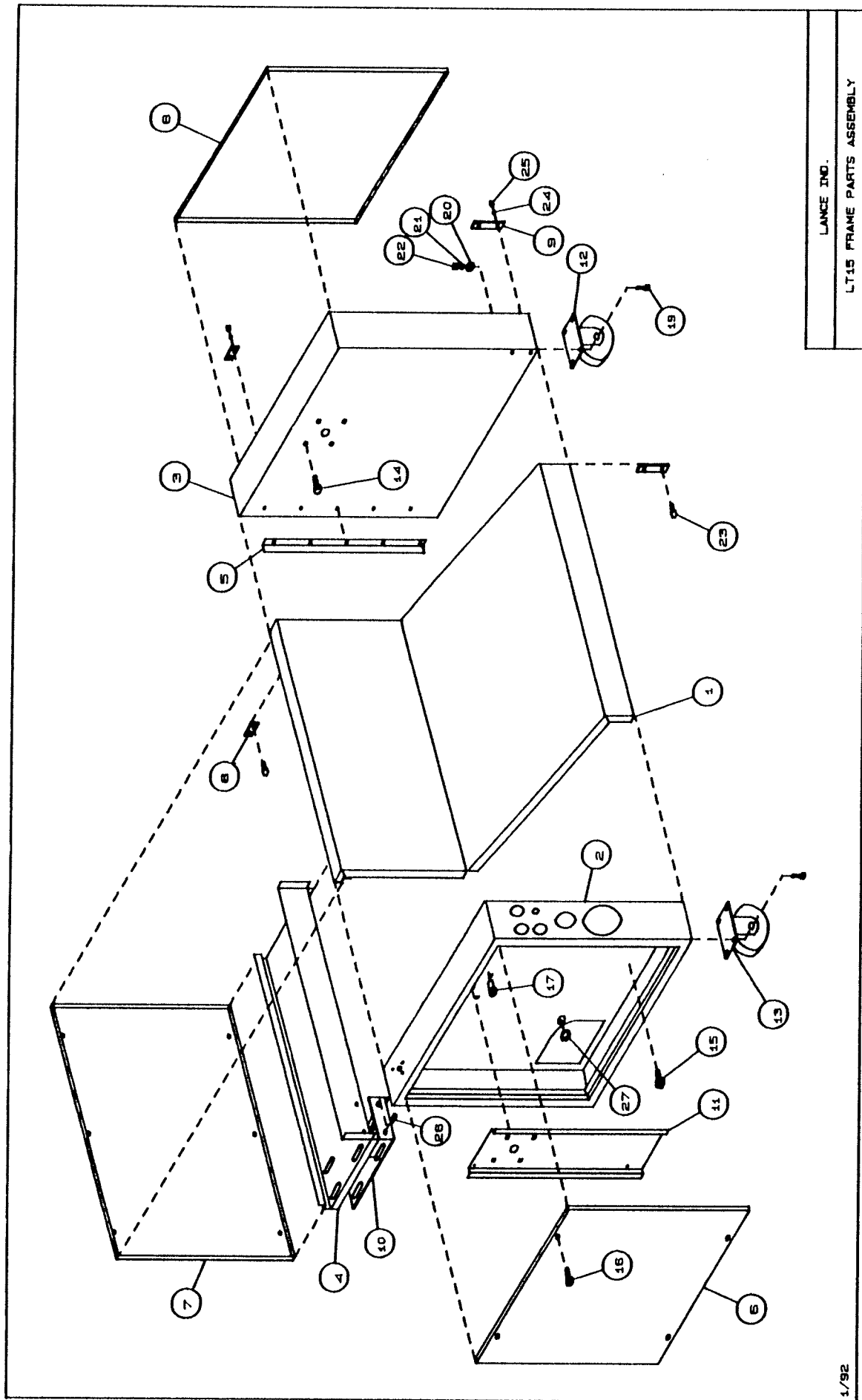


LT 15 FRAME PARTS ASSEMBLY27x46 UNIT

<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	250-1	MAIN WRAP	1
2	250-2	LEFT SIDE PANEL	1
3	250-3	RIGHT SIDE PANEL	1
4	250-4	MOTOR SUPPORT	1
5	250-5	BACK ANGLE	2
6	250-6	SIDE COVER PANEL	2
7	250-7	REAR COVER PANEL	1
8	250-34	REAR BACKING PLATE	4
9	250-35	FRONT BACKING PLATE	4
10	250-37	MOTOR SUPPORT	1
11	250-38	BEARING SUPPORT	2
12@	CS4W890	RIGID CASTER	2
13@	CS4W887	SWIVEL CASTER	2
14	BOS0AB240125	3/8-16x1-1/4" CARR BOLT SS	8
15	BOS0CX160050	10-24x1/2" HSHMS SS	41
16	BOS0AU160125	10-24x1-1/4" PH RHMS SS	17
17	RNA1024A080	10-24 ALUM RIVNUT	10
19	BOS0AH220075	3/8-16x3/4" HHCS SS	16
20	WASGA037	3/8" STD FLAT WASHER SS	16
21	WASGI037	3/8" STD LOCK WASHER SS	16
22	NUS0EA24	3/8-16 HEX NUT SS	16
23	BOS0AA200100	1/4-20x1" HHCS SS	8
24	WASGI025	1/4" STD LOCK WASHER	8

@ SEE CHANGE LIST

<u>REF.</u> <u>NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
25	NUS0EA20	1/4-20 HEX NUT SS	8
26	BOS0AU160050	10-24x1/2" PH RHMS SS	6
27	SB2210	SNAP BUSHING	1



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LT15 FRAME PARTS ASSEMBLY

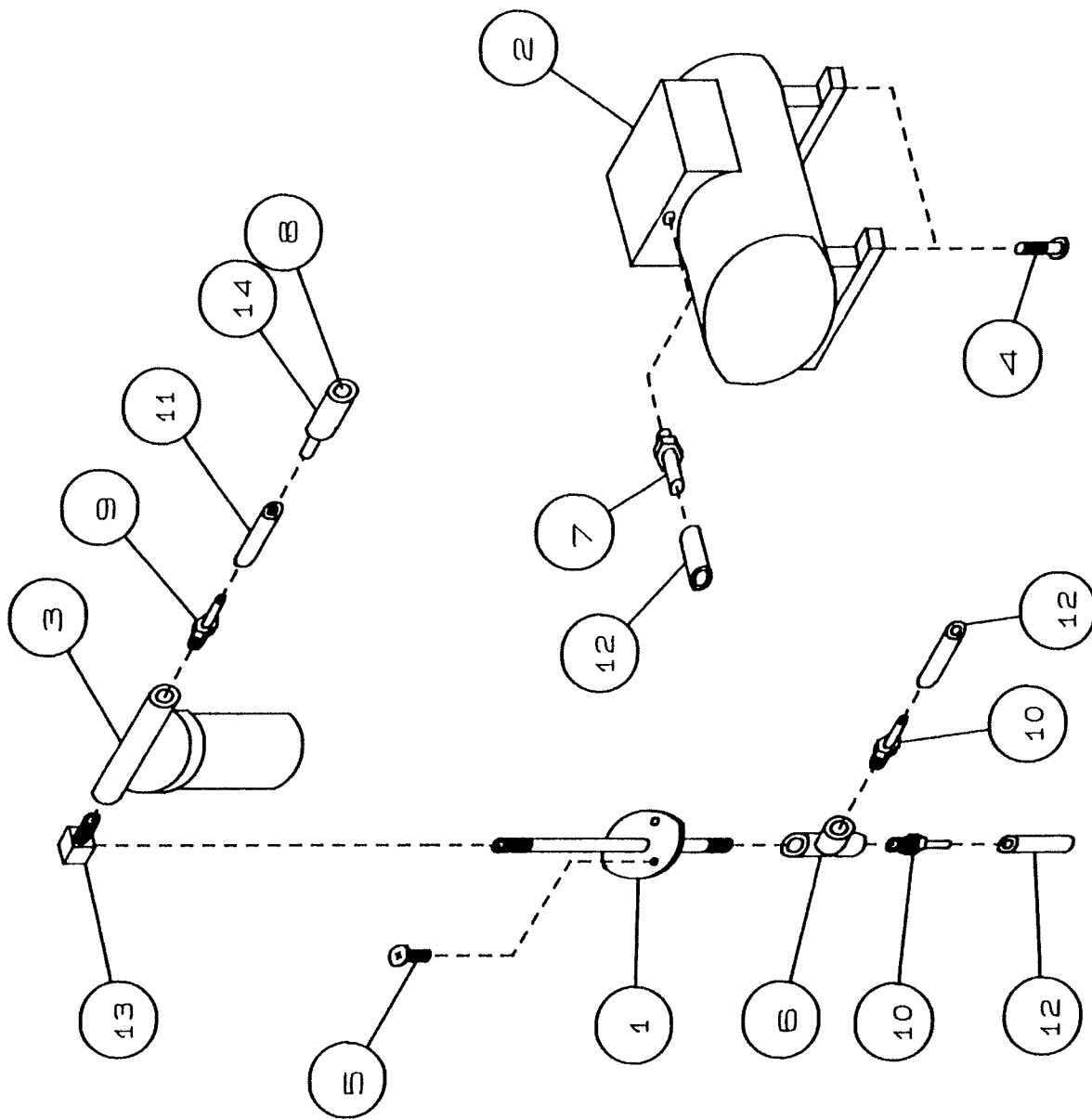
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LT 15 VACUUM PARTS ASSEMBLY27x46UNIT

<u>REF.</u> <u>NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	250-36TW	TRAP BRACKET	1
2	VU607CA32	VACUUM PUMP	1
3@	VTAA672K	BALL TRAP	1
4	BOS0AU140037	8-32x3/8" PH RHMS SS	3
5	BOS0AU160050	10-24x1/2" PH RHMS SS	3
6	TEE101C	TEE	1
7	HN5346K18 14	MALE HOSE NIPPLE	1
8	OR9464K26	O-RING	1
9	HN5372K11 5346K18	MALE HOSE NIPPLE	1
10	HN5372K12 5346K14	MALE HOSE NIPPLE	2
11	HS26-705AM	3/8" HOSE	16"
12	HS26-702AM	1/4" HOSE	6'
13	EL116SC	90 STREET ELBOW	1
14	0002-49	VACUUM PLUG	1
*15	VT AJ554	TRAP BALL	1
*16	VT AJ473	TRAP FUNNEL	1
*17@	VT AE274	TRAP JAR	1

* Not shown

@ See change list



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LT15 VACUUM PARTS ASSEMBLY

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LT 15 DRIVE-TRAIN PARTS ASSEMBLY27x46 UNIT

<u>REF. NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	LT15DW	DRUM	1
2	LT15CW	COVER	1
**3	250-8 250-37	MOTOR MOUNTING BRACKET VARIABLE SPEED MOTOR MOUNTING BRACKET SINGLE SPEED	1
4	250-14	PADDLE	2
5	600-50	PADDLE NUT	8
6	TR95412A636	PADDLE BOLT	4
7	MO5K941	SINGLE SPEED MOTOR	1
*8	MOGP7408 MO5K941	VARIABLE SPEED MOTOR SINGLE SPEED MOTOR	1
9	SP40B10-3/4	SPROCKET	1
*10	SP40SDS54 SP40SDS42	SPROCKET VARIABLE SPEED SPROCKET SINGLE SPEED	1
11	BUQDSDS-1-1/4	BUSHING	1
12	PBFB220-1-1/4	FLANGED BEARING	2
13	RC4006000	#40 ROLLER CHAIN	6'
14	WASGA037	3/8" STD FLAT WASHER SS	8
15	WASGI037	3/8" STD LOCK WASHER SS	8
16	NUSOEA24	3/8-16 HEX NUT	8
17	WASGA031	5/16" STD FLAT WASHER SS	4
18	WASGI031	5/16" STD LOCK WASHER SS	4
19	NUSOEA22	5/16-18 HEX NUT SS	4
20@	PC63745T81	END CAP	1

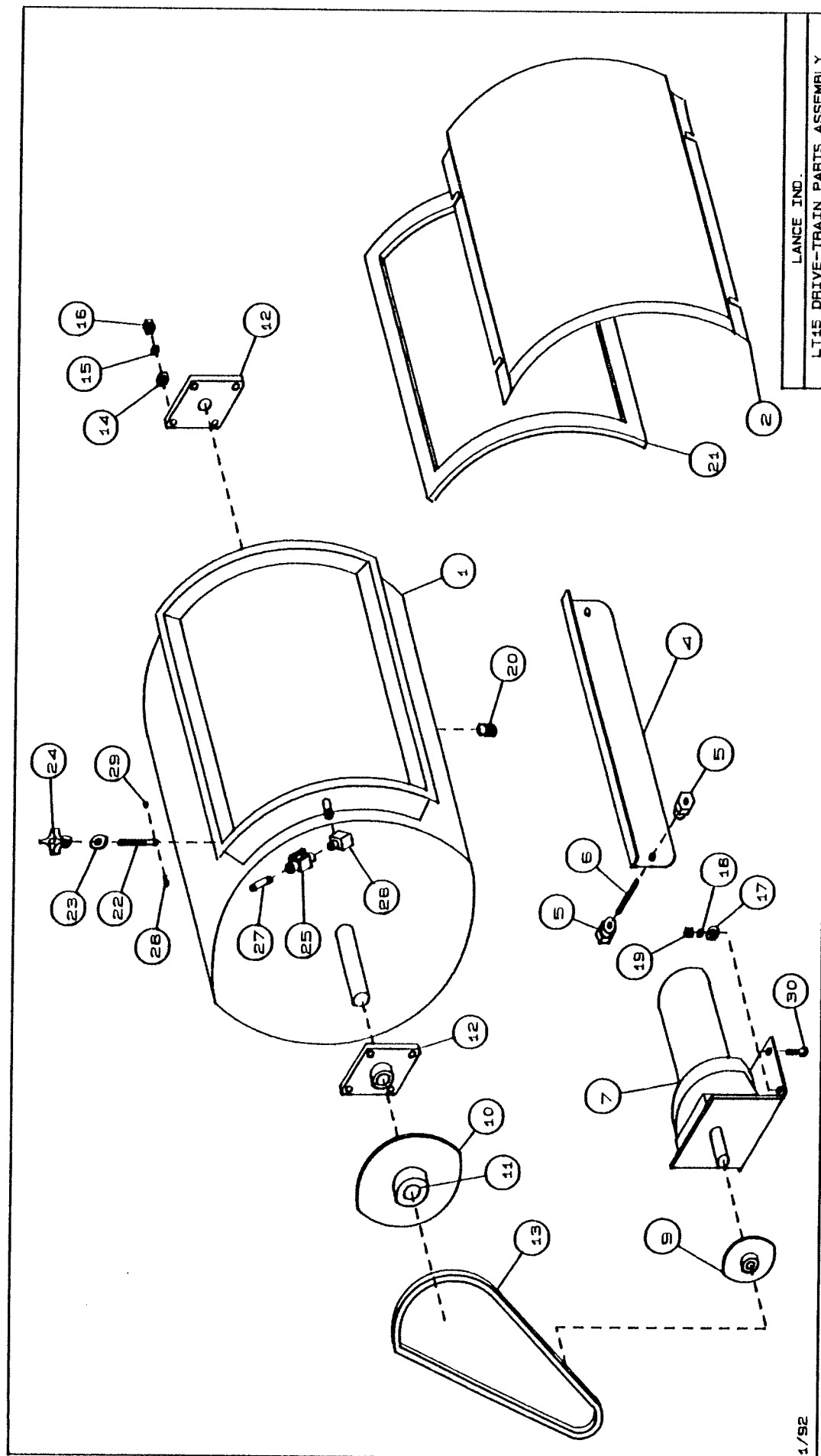
@ SEE CHANGE LIST

* NOT SHOWN

** USED WITH VARIABLE SPEED MOTOR

<u>REF.</u> <u>NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
21@	GALT153060	GASKET	1
22	0002-43	COVER BOLT	4
23	WASGA050	COVER WASHER	4
24	PK5993K33	COVER KNOB	4
25	PV4886K56	BRASS VALVE	1
26	EL116SC	90 STREET ELBOW	1
27	600-56	PIPE NIPPLE	1
28	BOS0BF700062	10-32x5/8" PH TH HD MS SS	4
29	NUSOEN17	10-32 ACORN NUTS SS	4
30	BOS0AB220075	5/16-18x3/4" CARR BOLT SS	4
**31	BBR1079	BRUSH FOR D.C. MOTOR	2
**32	BBR1097	BRUSH HOLDER FOR D.C. MOTOR	2
**33	BBR1094	BRUSH CAP FOR D.C. MOTOR	2
34	PW1041	PLASTIC WASHER	4

@ SEE CHANGE LIST
 * NOT SHOWN
 ** USED WITH VARIABLE SPEED MOTOR



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LT15 DRIVE-TRAIN PARTS ASSEMBLY

LT 15 ELECTRICAL PARTS ASSEMBLY

			<u>27x46 UNIT</u>
<u>REF.</u> <u>NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
1	250-15	ELECTRICAL BOX	1
2	250-15A	COVER	1
3	SW2A922	SELECTOR SWITCH	1
4	PB2A917	PUSH BUTTON-GREEN	1
5	PB2A918	PUSH BUTTON-RED	1
6	CB2A932	CONTACT BLOCK-GREEN	1
7	CB2A933	CONTACT BLOCK-RED	2
8	GATSUGF	VACUUM GAUGE	1
9@	RL2XC20	RELAY	2
10@		SOCKET	2
11	TE2A691	TERMINAL SECTIONS	10
12	TE2A696	END SECTION	1
13	PEATC-7253AR2X3ASX	PHOTOELECTRIC EYE	1
14	BOS0AU140037	8-32x3/8" PH RHMS SS	10
15	TM191-11A6	TIMER	1
**16	BCBC141	D.C. CONTROLLER	1
**17	BCBR0050	D.C. HP. RESISTOR	1
18	LT15FP	FACE PANEL	1
*19	SR1200	5/8" STRAIN RELIEF	3
*20	SR1157	1/2" STRAIN RELIEF	1
21	GM9600K22	GROMMET	1

@ SEE CHANGE LIST

* NOT SHOWN

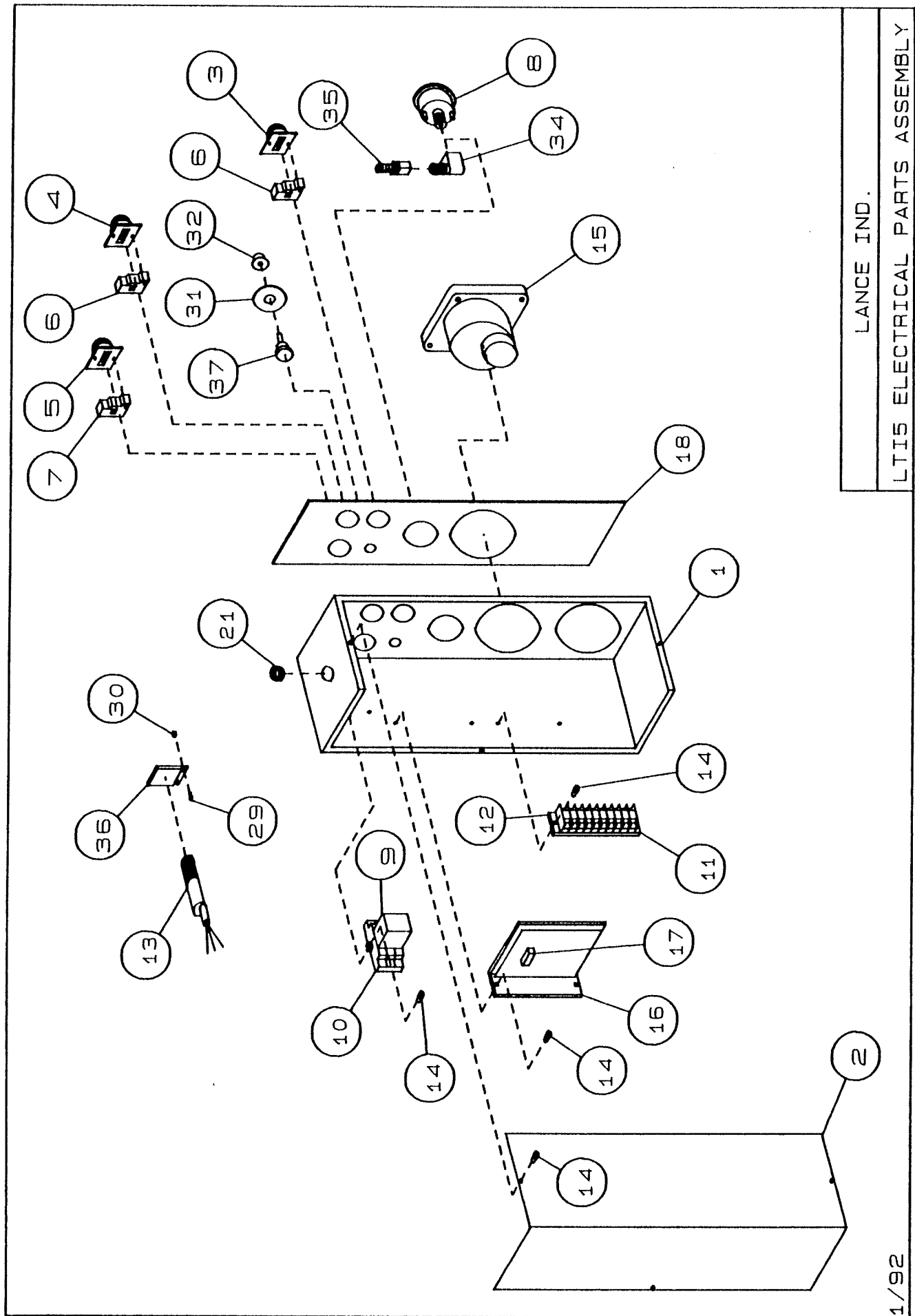
** USED WITH VARIABLE SPEED MOTOR

<u>REF.</u> <u>NO.</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
*22	WI1W661	16/3 WIRE	6'
*23	CR3453	CORD RESTRAINT	1
*24	CT3500	NYLON CABLE TIES	10
*25	CT3503	NYLON CABLE TIES	10
*26	CL3608	CABLE HOLDER	6
*27	CN534-0550	1/4" 90 CONNECTOR	4
*28	CN4X308	RING CONNECTOR	5
29	BOS0CA120037	6-32x3/8" PH RHMS SS	2
30	NUSOEN12	6-32 ACORN NUT SS	2
**31	SD875-8035	SPEED DIAL	1
**32	SK753-2352	SPEED KNOB	1
*33@	CS2W687	POWER CORD 12 FT. LG.	1
34	EL116SC	90 STREET ELBOW	1
35	HN5346K42	FEMALE HOSE NIPPLE	1
36@	00001812300	REFLECTOR	1
**37	SPBC-148	5K SPEED POTENTIOMETER	1
38	FHHTB-36I	FUSE HOLDER	2
39	FU6F019	GGC12-12 AMP FUSE	1
40	FU6F042	GAB4-4 AMP FUSE	1
*41	TM31910241	TIMER KNOB ASSEMBLY	1
*42	TM17020112	TIMER WINDOW	1
*43	TM17020083	TIMER COVER	1
*44	TM15001971	TIMER KNOB SHAFT	1

@ SEE CHANGE LIST

* NOT SHOWN

** USED WITH VARIABLE SPEED MOTOR



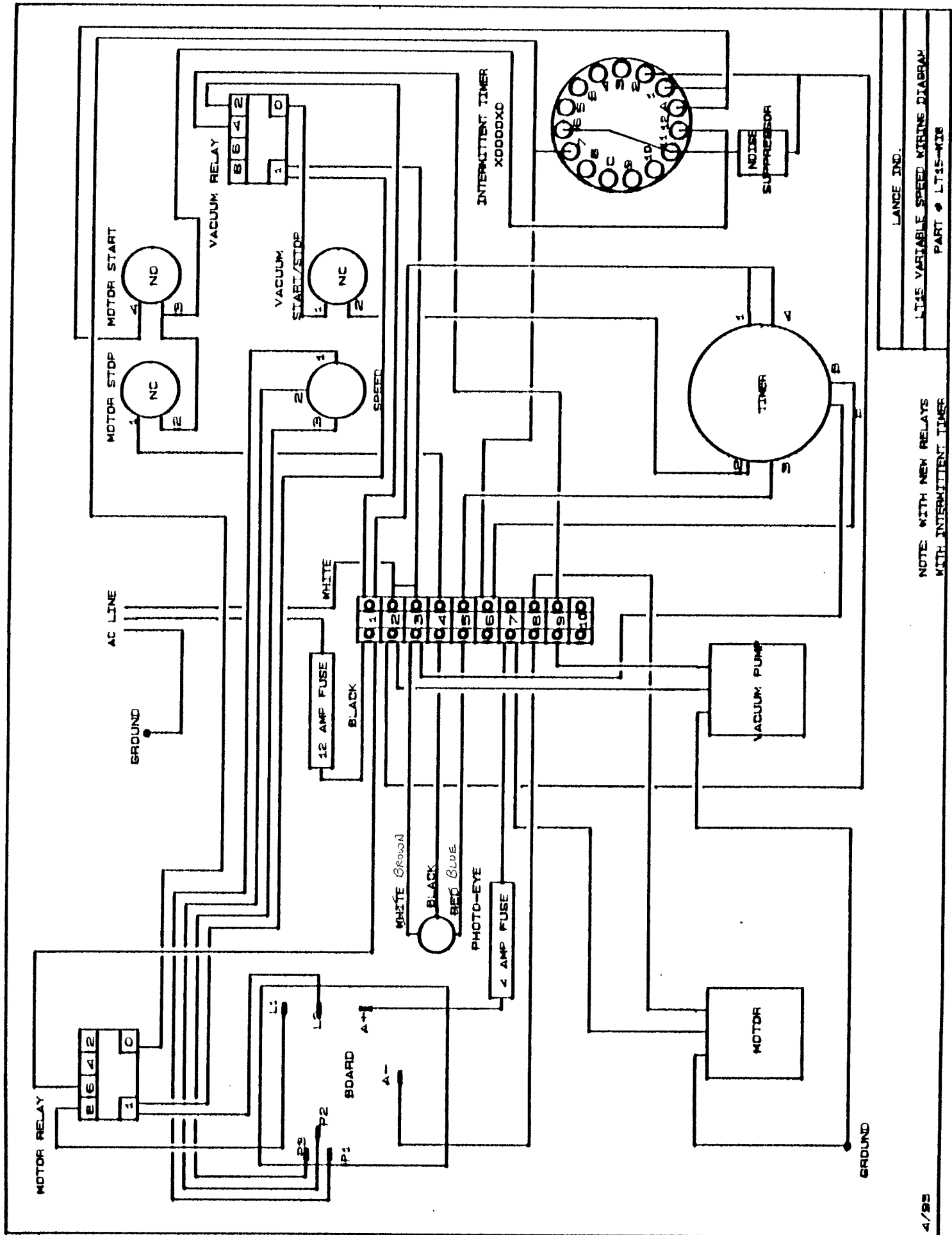
LANCE IND.

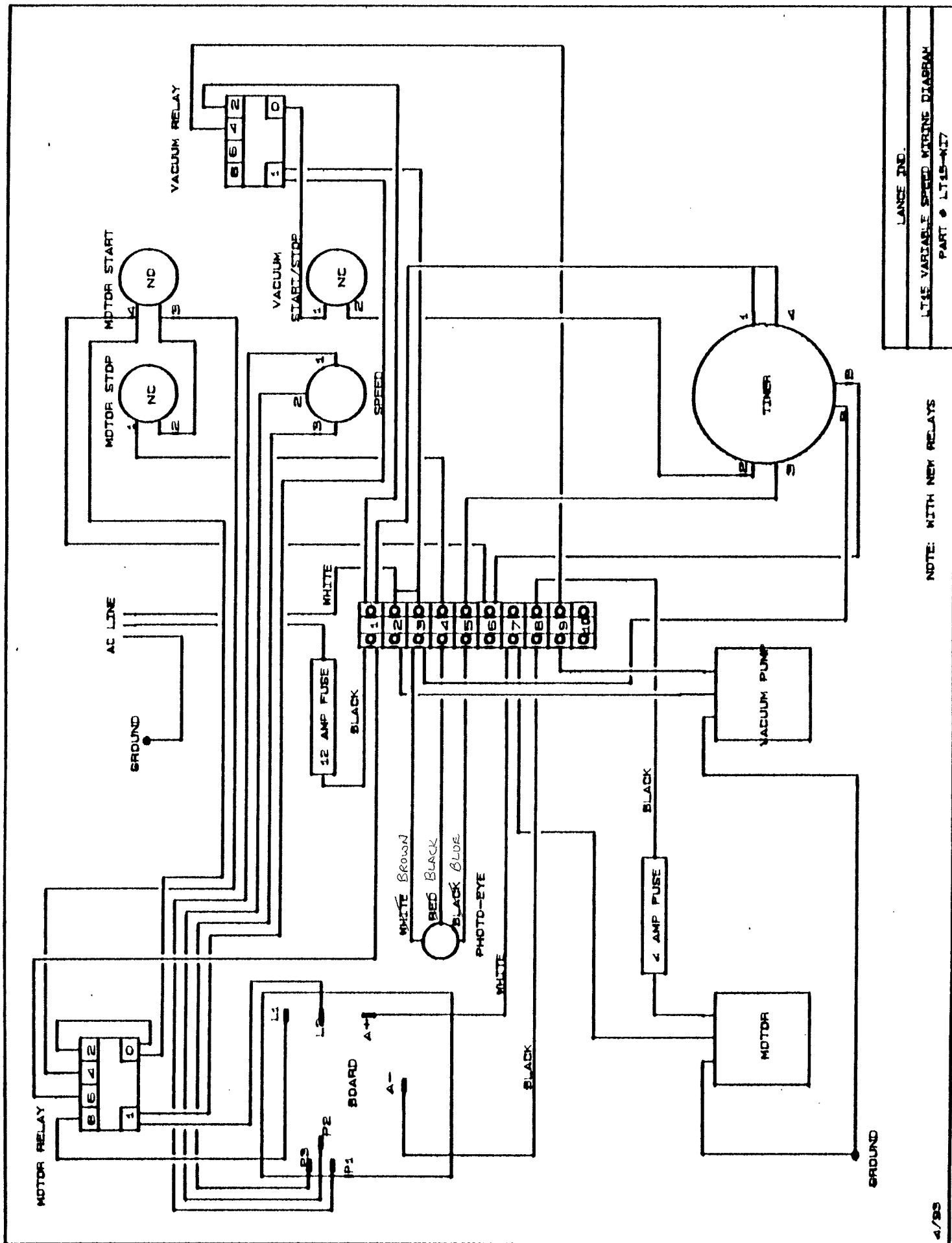
LT15 ELECTRICAL PARTS ASSEMBLY

1/92

LANCE PARTS CHANGE LIST - LT15

<u>DELETED OR OLD PART NO.</u>		<u>NEW PART NO.</u>
<u>DESCRIPTION</u>	<u>PART NO.</u>	
RIGID CASTER	CS4X785	CS4W890
SWIVEL CASTER	CS4X783	CS4W887
VACUUM PUMP	VU5Z346	VU607CA32
MOTOR	MOCDP-3320	MO098000
GASKET	GA251A	GALT153060
END CAP	PCN-800D (YELLOW)	PC63745T81 (BLACK)
RELAY	RL2XC37	RL2XC20
SOCKET	SO4A161	-----
POWER CORD	CS6W687	CS2W687
BALL TRAP	VTAA672D	VTAA672K
TRAP JAR	VTAA125A	VTAE274
REFLECTOR	00001812400	00001812300







THOMAS®

COMPRESSORS & VACUUM PUMPS

First Name in Innovation

1419 Illinois Avenue
Sheboygan, WI 53082
(414) 457-4891

MODEL NUMBER: 607CA32 607CD32

Read and understand the following information and instructions included with this product before using. This information is for your safety and to prevent damage to this product.



CAUTION: To reduce risk of electrical shock . . .

1. Do not disassemble. Disassembly or attempted repairs if accomplished incorrectly can create electrical shock hazard. Refer servicing to qualified service agencies only.
2. If this plug is supplied with a three pronged plug, connect unit to a properly grounded outlet only.



WARNING: To reduce risk of electrocution . . .

1. This product should never be left unattended when plugged in.
2. Always unplug this product immediately after using and store in dry place.
3. Do not use this product in or near area where it can fall or be pulled into water or other liquids.
4. Do not reach for this product if it has fallen into liquid. Unplug immediately.
5. Never operate this product outdoors in the rain or in a wet area.



DANGER: To reduce risk of explosion or fire . . .

1. Do not use this product in or near explosive atmospheres or where aerosol (spray) products are being used.
2. Do not pump anything other than atmospheric air.
3. Do not pump combustible liquids or vapors with this product or use in or near an area where flammable or explosive liquids or vapors may exist.
4. Do not use this product near flames.



CAUTION: To prevent injury . . .

1. Close supervision is necessary when this product is used near children or invalids. Never allow children to operate the unit.
2. Never operate this product if it has a damaged cord or plug. If it is not working properly. If it has been dropped or damaged. Or if it has fallen into water, return the product to a service center for examination and repair.
3. Keep the cord away from heated surfaces.
4. Never block any air openings (inlet) of this product or place it on a soft surface where the openings may be blocked. Keep all air openings free of lint, dirt and other foreign objects.
5. Never use while sleeping or drowsy.
6. Never drop or insert fingers or any other object into any openings.
7. Do not operate this product where oxygen is being administered.
8. This unit may be thermally protected and can automatically restart when the protector resets. Always disconnect power source before servicing.
9. Wear safety glasses or goggles when operating this product.
10. Use only in well ventilated areas.
11. Do not use any tools or attachments without first determining maximum air pressure for that tool or attachment.
12. Never point any air nozzle or air sprayer toward another person or any part of the body.
13. All electrical products generate heat. To avoid serious burns never touch unit during or immediately after operation.

Failure to observe the above safety precautions could result in severe bodily injury, including death in extreme cases.

SAVE THESE INSTRUCTIONS



Warning: Power Air compressors are precision-made, and carefully assembled and wired. Therefore do not disassemble or attempt to repair these products. Only qualified personnel should perform repair service.



IMPORTANT NOTICE TO PURCHASER: WARRANTY AND EXCLUSIVE REMEDIES

Power Air's finished OEM products, when properly installed and under normal conditions of use, are warranted by Power Air to be free from defects in material and workmanship at time of shipment. Warranty claims regarding OEM limited products must be asserted within 13 months (the "warranty period") from date of manufacture encoded on the product (unless otherwise agreed in writing or specified in a Power Air OEM Quotation). The customer's exclusive remedy against Power Air for a warranty claim or otherwise, shall be limited to repair or replacement of the subject OEM finished product if it is shown to have been defective in material and workmanship at time of shipment, and then only if the claim is asserted during the warranty period. Power Air's maximum liability under this exclusive remedy shall never exceed the cost of the subject product and Power Air reserves the right, at its sole discretion, to refund the purchase price in lieu of repair or replacement. Except for such warranty and exclusive remedy as stated (and except for the express warranty of title) POWER AIR DISCLAIMS ALL OTHER WARRANTIES WITH RESPECT TO ITS OEM FINISHED PRODUCTS, WHETHER IMPLIED, AND SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FIT-

NESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL POWER AIR BE LIABLE TO CUSTOMER OR THIRD PARTIES IN WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE, FOR ANY DAMAGES, WHETHER INCIDENTAL OR CONSEQUENTIAL, WHICH ARE ALLEGED TO HAVE BEEN CAUSED BY ONE OR MORE OF OUR PRODUCTS BEYOND THE COST TO THE CUSTOMER OF THE SUBJECT PRODUCT OR PRODUCTS. THE EXCLUSIVE REMEDY FOR ANY CLAIM HAVING BEEN LIMITED TO REPAIR OR REPLACEMENT AS AFORESAID.

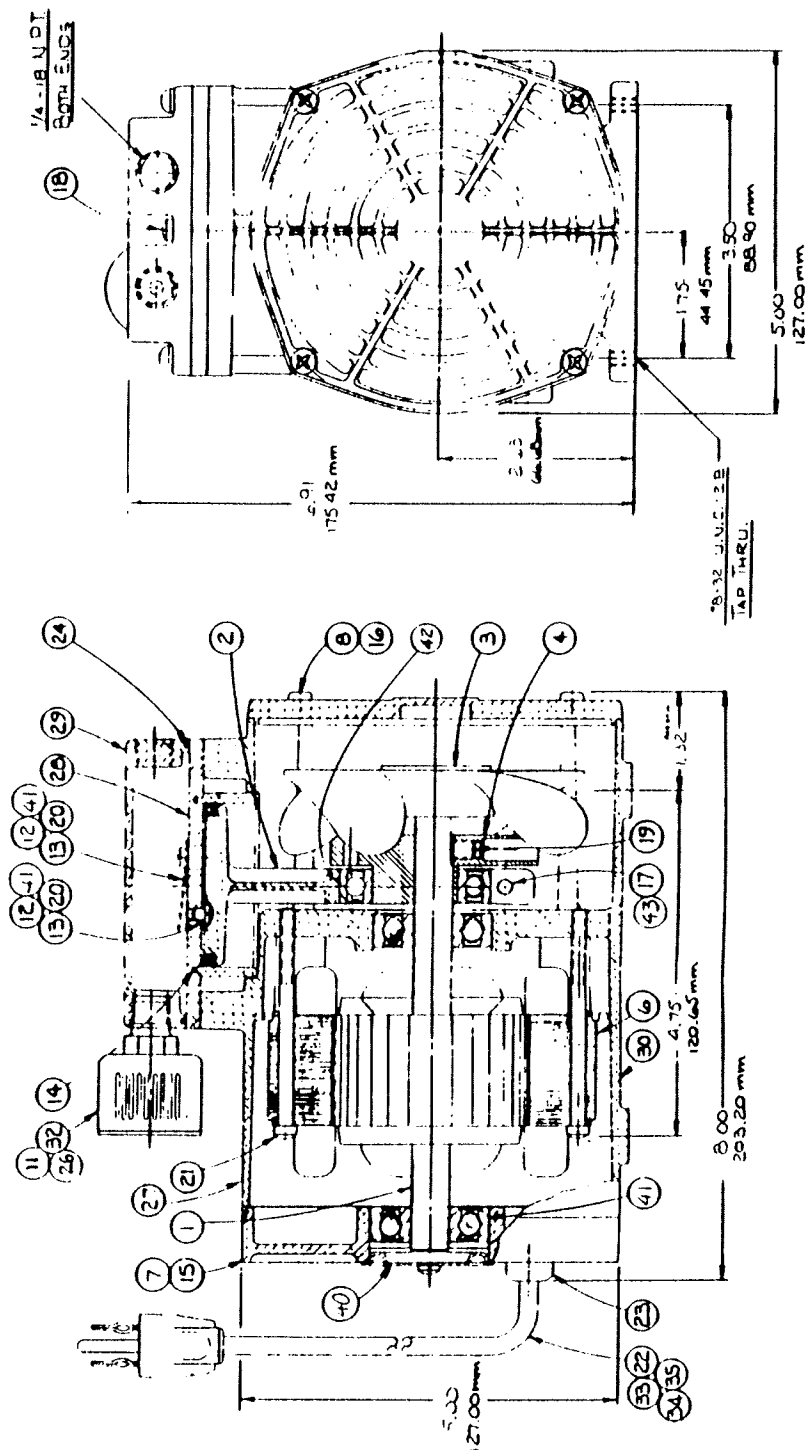
Because Power Air's OEM warranties and remedies extend only to our direct customers, the customer is not authorized to extend warranties on our behalf to anyone. Unauthorized extensions of warranties by the customer shall remain customer's responsibility.

CUSTOMER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF OUR PRODUCTS FOR CUSTOMER'S USE OR RESALE, OR FOR INCORPORATING THEM INTO OBJECTS OR FOR APPLICATIONS WHICH CUSTOMER DESIGNS, ASSEMBLES, CONSTRUCTS OR MANUFACTURES.

PARTS LIST & DRAWING

Key No.	Part No.	Description	Qty.
1	663785	Shaft, Rotor & Bearing Assv.	1
2	607587	Connecting Rod Assembly	1
3	633572	Fan Assembly	1
4	645572	Eccentric & Bearing Assembly	1
5	607034	Insulating Connector (N.S.)	2
6	608869	Stator (115V 60Hz)	1
7	614463-504	Motor End Cap	1
8	614464	Front Cover	1
11	641034	Filter	1
12	617045	Valve Keeper Srip	2
13	621102	Valve Flapper	2
14	623539	"O" Ring Sleeve	1
15	625330	Screw - M.E.C.	2
16	625660	Screw - Front Cover	4
17	625114	Screw - Connecting Rod	1
18	625646	Screw - Head	6
19	625244	Set Screw - Eccentric	1
20	625307	Screw - Valve Flapper	2
21	625329	Screw - Stator	2
22	633328	Cord 18 - 3 SJT	1
23	633222	Strain Relief	1
24	633629	"O" Ring Gasket - Head	1
25	634022	Tyrap Tie (Not Shown)	1
26	660710	Filter Body	1
28	662124-504	Valve Plate	1
29	661146-504	Head	1
30	660765-504	Housing	1
31	634530	Label - Exhaust (Not Shown)	1
32	660767	Filter Body Cap	1
33	605018	Grounding Screw	1
34	626328	Nut - Grounded	2
35	626537	Washer - Ground	2
39	626509	Lockwasher - Stator	2
40	614551	Bearing Cover	1
41	631519	Locite #290	A/R
42	631525	Locite #680	A/R
43	631510	Locite #242	A/R
44	638111	Plug Snap-In (Not Shown)	1

MODEL 607 CD 32 (230V / 50Hz)		
Delete:	Description:	Add:
608869	Stator 230V 50Hz	608849





THOMAS
INDUSTRIES INC.

POWER AIR DIVISION

1419 Illinois Avenue, Sheboygan, WI 53082
(414) 457-4891

MODEL NUMBER: 107CAB18

Read and understand the following information and instructions included with this product before using.

This information is for your safety and to prevent damage to this product.

⚠ CAUTION: To reduce risk of electrical shock . . .

1. Do not disassemble. Disassembly or attempted repairs if accomplished incorrectly can create electrical shock hazard. Refer servicing to qualified service agencies only.
2. If this plug is supplied with a three pronged plug, connect unit to a properly grounded outlet only.

⚠ WARNING: To reduce risk of electrocution . . .

1. This product should never be left unattended when plugged in.
2. Always unplug this product immediately after using and store in dry place.
3. Do not use this product in or near area where it can fall or be pulled into water or other liquids.
4. Do not reach for this product if it has fallen into liquid. Unplug immediately.
5. Never operate this product outdoors in the rain or in a wet area.

⚠ DANGER: To reduce risk of explosion or fire . . .

1. Do not use this product in or near explosive atmospheres or where aerosol (spray) products are being used.
2. Do not pump anything other than atmospheric air.
3. Do not pump combustible liquids or vapors with this product or use in or near an area where flammable or explosive liquids or vapors may exist.
4. Do not use this product near flames.

⚠ CAUTION: To prevent injury . . .

1. Close supervision is necessary when this product is used near children or invalids. Never allow children to operate the unit.
2. Never operate this product if it has a damaged cord or plug. If it is not working properly. If it has been dropped or damaged. Or if it has fallen into water, return the product to a service center for examination and repair.
3. Keep the cord away from heated surfaces.
4. Never block any air openings (inlet) of this product or place it on a soft surface where the openings may be blocked. Keep all air openings free of lint, dirt and other foreign objects.
5. Never use while sleeping or drowsy.
6. Never drop or insert fingers or any other object into any openings.
7. Do not operate this product where oxygen is being administered.
8. This unit may be thermally protected and can automatically restart when the protector resets. Always disconnect power source before servicing.
9. Wear safety glasses or goggles when operating this product.
10. Use only in well ventilated areas.
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SAVE THESE INSTRUCTIONS



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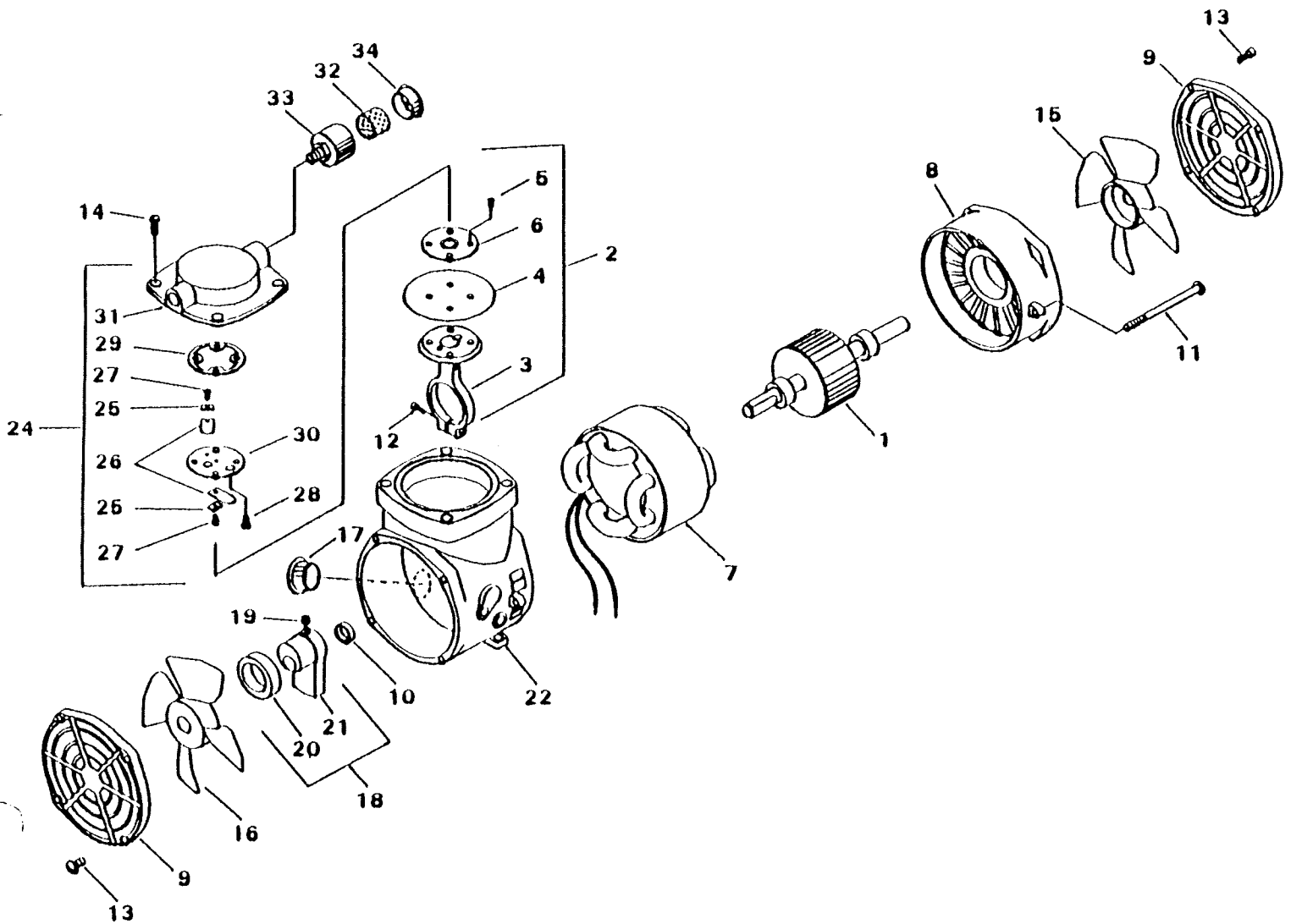
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DRAWING AND PARTS LIST

Item No.	Part No.	Component No.	Description	Qty.
1	602919		Shaft, Rotor & Brg. Assy.	1
2	607180		Connecting Rod Assy	1
3		607139	Connecting Rod	1
4		608148	Diaphragm	1
5		625141	Screw - Hold Down Plate	4
6		654649	Diaphragm Hold Down Plate	1
7	608102		Stator	1
8	614425 504		Motor End Cap	1
9	614609		Vented Cover - Front & Rear	2
10	615403		Spacer - Eccentric	1
11	625107		Stator Screw	2
12	625114		Connecting Rod Screw	1
13	625268		Front Cover Screw	8
14	625444		Head Screw	4
15	633544		Fan - CW White	1
16	633545		Fan - CCW Gray	1
17	633500		Bushing	1

Item No.	Part No.	Component No.	Description	Qty.
18	645373		Eccentric & Bearing Assy.	1
19		625244	Eccentric Set Screw	1
20		646069	Bearing	1
21		645216	Eccentric	1
22	660227 504		Housing	1
23	Not Used			
24	660873 504		Head & Valve Plate Assy.	1
25		617045	Valve Keeper Strip	1
26		621102	Valve Flapper	2
27		625160	Valve Flapper Screw	2
28		625606	Screw - Valve Plate	4
29		633439	Valve Plate Gasket	4
30		654129	Valve Plate	1
31		660131 504	Head	1
32	641034		Filter - Foam	1
33	660763		Filter Body	1
34	660767		Filter Cap	1





THOMAS
INDUSTRIES INC.

POWER AIR DIVISION

1419 Illinois Avenue, Sheboygan, WI 53082
(414) 457-4891

MODEL NUMBERS:

917CA18 917CA20 917CA22 917CB18 917CD18 917CD20 917CD22

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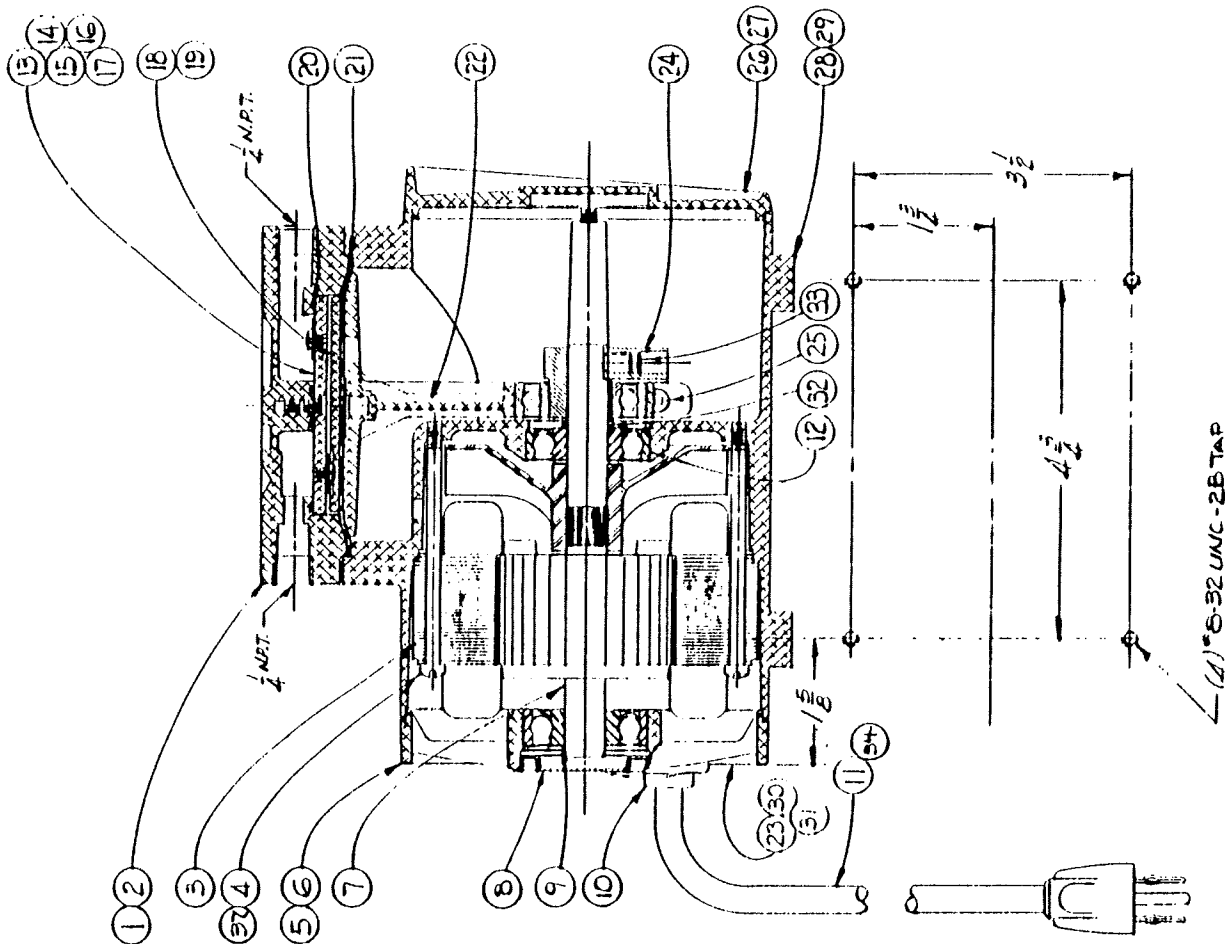
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PARIS LIST



Item No.	Part No.	Description	Qty.
1	660446	Head	1
2	625444	Head Screw	6
3	606019	Stator	1
4	625107	Stator Screw	2
5	614728	Motor End Cap	1
6	625106	End Cap Screw	2
7	602775	Shaft, Rotor & Fan Brg. Assy.	1
8	614551	Bearing Cover	1
9	646124	End Cap Bearing	1
10	633222	Strain Relief	1
11	633328	Cord #18-3 6 ft. lg.	1
12	646124	Housing Bearing	1
13	621102	Valve Flapper	2
14	617045	Valve Keeper Strip	2
15	654963	Valve Plate	1
16	625223	Valve Plate Screw	5
17	625160	Valve Flapper Screw	2
18	654966	Diap. Hold Down Plate	1
19	625141	Hold Down Plate Screw	4
20	633560	Gasket "O" Ring	1
21	606144	Diaphragm	1
22	607112	Connecting Rod	1
23	605018	Grid. Screw	1
24	645483	Eccentric & Bearing Assy.	1
25	625114	Conn. Rod Screw	1
26	614156	Front Cover	1
27	625337	Front Cover Screw	2
28	661801-504	Housing	1
29	638111	Plug Button - Hsp.	1
30	626328	Grid. Nut	1
31	626328	Grid. Washer	1
32	615415	Spacer - Ecc.	1
33	625244	Eccentric Screw	1
34	607034	Insulated Connector	2
36	631519	Loctite #290 (Not Shown)	As. Req.
37	626509	Lockwasher	2
38	634530	Decal "Exhaust" (Not Shown)	1

917CD20				917CA20				917CA22			
Delete	Stator	Ec. Brg. Assy.	Conn. Rod	Add	Delete	Ec. Brg. Assy.	Conn. Rod	Add	Delete	Ec. Brg. Assy.	Conn. Rod
608019	Stator	645483	Ec. Brg. Assy.	608038	645483	645483	645483	645479	608019	645483	645479
636495	Label	607153	Conn. Rod	607153	607153	607153	607153	607153	607153	607153	607153
645483	Ec. Brg. Assy.	645483	Diaphragm	608150	608150	608150	608150	608150	608150	608150	608150
607112	Conn. Rod	607153	Diaphragm	608150	608150	608150	608150	608150	608150	608150	608150
608144	Diaphragm	608150	Diaphragm	608150	608150	608150	608150	608150	608150	608150	608150

917CB18 115V 50Hz				917CD18 230V 50Hz				917CD22			
Delete	Stator	Label	Add	Delete	Stator	Label	Add	Delete	Stator	Label	Add
608019	Stator	636495	608061	608019	Stator	636495	608038	608019	Stator	636495	608038
636495	Label	636495	636495	636495	Label	636495	636495	636495	Label	636495	636495
645483	Ec. Brg. Assy.	645483	645483	645483	Ec. Brg. Assy.	645483	645483	645483	Ec. Brg. Assy.	645483	645479
607112	Conn. Rod	607153	607112	607112	Conn. Rod	607153	607112	607112	Conn. Rod	607153	607153
608144	Diaphragm	608150	608144	608144	Diaphragm	608150	608144	608144	Diaphragm	608150	608150



OPERATING INSTRUCTIONS & PARTS MANUAL

1/4 HP GEARMOTORS

MODELS 5K939C, 5K940C, 5K941B, 5K942C
AND 6K993B

FORM 5S1066

09090

1290/410/1.5M

READ CAREFULLY BEFORE ATTEMPTING TO ASSEMBLE, INSTALL, OPERATE OR MAINTAIN THE PRODUCT DESCRIBED. PROTECT YOURSELF AND OTHERS BY OBSERVING ALL SAFETY INFORMATION. FAILURE TO COMPLY WITH INSTRUCTIONS COULD RESULT IN PERSONAL INJURY AND/OR PROPERTY DAMAGE! RETAIN INSTRUCTIONS FOR FUTURE REFERENCE.

Description

The Dayton gearmotor is designed for direct-coupled and belt-driven use on conveyors, pin setters, ice vending machines, machine tools, chemical feeders, packaging machines, and other similar low-speed applications. It is suitable for all position mounting.

The first stage gearing is helical cut phenolic, to reduce high speed noise. The second stage gearing includes a steel spur pinion and cast iron spur output gear to withstand rated loads.

For additional information on your particular model, consult the specifications below.

Specifications

Rotation (facing output shaft)	Reversible by electrical connection
Power supply required	115V, 60Hz
Weight (approximate)	23 lbs
Motor	1/4 HP, 40°C ambient, continuous (8 hour-day) duty, Class "A" insulation, 1.0 service factor, open dripproof enclosure, split-phase
Full load amperes	4.6
Rated output torque (inch-pounds)	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 10px;">{</div> <div> 400 (5K939C) 330 (5K941B) 200 (5K940C) 150 (6K993B) 100 (5K942C) </div> </div>
Ratio	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 10px;">{</div> <div> 58:1 (5K939C) 42:1 (5K941B) 29:1 (5K940C) 19.2:1 (6K993B) 14.4:1 (5K942C) </div> </div>
Full load output RPM	<div style="display: flex; align-items: center;"> <div style="font-size: 3em; margin-right: 10px;">{</div> <div> 30 (5K939C) 40 (5K941B) 60 (5K940C) 90 (6K993B) 120 (5K942C) </div> </div>

General Safety Information

1. Follow all local electrical safety codes, the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
2. Motor must be securely and adequately grounded. This can be accomplished by wiring with a grounded, metal-clad raceway system, by using a separate ground wire connected to the base

metal of the motor frame, or other suitable means. Refer to NEC Article 250 (Grounding) for additional information.

3. Do not depend on a motor control device (motor starter, for example) to prevent unexpected motor start-ups. Always disconnect power source before working on or near a motor or its connected load. If the power disconnect point is out-of-sight, lock it in the open position and tag it to prevent application of power.
4. All moving parts should be guarded. Do not energize an uninstalled gearmotor with key in keyway without first removing the shaft key. Do not insert any object into motor.
5. Be careful when touching the exterior of an operating motor — it may be hot enough to be painful or cause injury. With modern motors this condition is normal if operated at rated load and voltage — modern motors are built to operate at higher temperatures.
6. Protect the power cable from coming in contact with sharp objects and moving parts.
7. Make certain that the power source conforms to the requirements of your equipment.
8. When cleaning electrical or electronic equipment, always use a non-flammable cleaning agent that will not attack the finish or insulation.
9. Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.

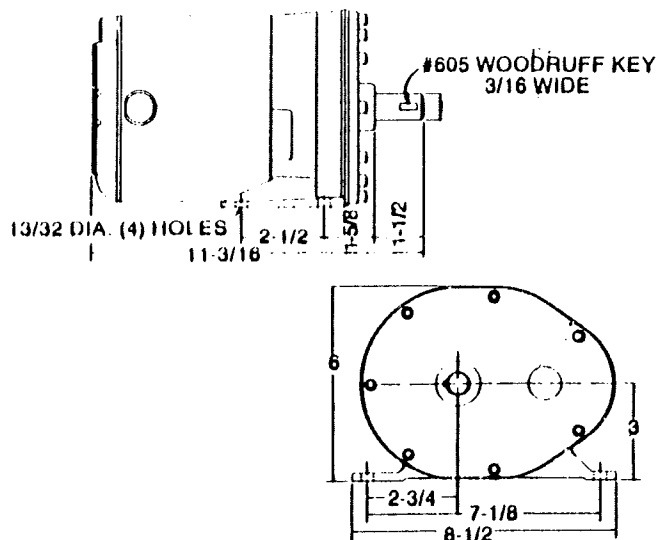


Figure 1 — Dimensions (in inches)

Installation

CAUTION: When an installation involves a holding or overhauling application (such as a hoist or conveyor), a separate magnetic brake or other locking device should be used. Do not depend on gear friction to hold the load.

1. Gearmotor should be located in a clean and dry area with access to adequate cooling air supply. If installation is outdoors, make certain that the unit is protected from the weather by a cover that does not block air flow to and around motor.

WARNING: DO NOT INSTALL IN AN EXPLOSIVE ATMOSPHERE!

2. Mount gearmotor to a rigid surface, preferably metallic, using largest bolts that will fit through the base holes.
3. **Wiring Connections:**
 - a. All wiring and electrical connections must comply with the National Electrical Code, and local electrical codes in effect. In particular, refer to Article 430 (Motors, Motor Circuits and Controllers) of the NEC.
 - b. For proper motor connections, refer to the connection diagram located on the nameplate or inside the terminal box. Make sure connections are correct for the voltage being supplied the motor.

NOTE: Motor is factory-wired for clockwise (CW) rotation facing output shaft; should counterclockwise (CCW) rotation be required, consult the connection diagrams (mentioned above) for proper connections.

- c. Whenever possible, the motor should be powered from a separate branch circuit of adequate capacity to keep voltage drop to a minimum during starting and running. For longer runs, increase wire size in accordance with the wire selection guide shown below. Never use smaller than #14 AWG for permanent installations.

WIRE SELECTION GUIDE

#14	#12	#8	#6	#6
25 ft	50 ft	100 ft	150 ft	200 ft

- d. Motor should be grounded by use of a separate grounding conductor, connected to the motor frame. Verify that the ground wire runs to a good electrical ground such as a grounded conduit or water system.

NOTE: Use of a motor starter, either manual or magnetic, incorporating thermal protection, is advisable and may be required by local electrical codes. Follow motor starter manufacturer's recommendations on thermal overload relay heater selection. Do not oversize heaters. Do not use automatic reset starting devices in applications where unexpected motor startups could harm personnel or equipment.

4. Attaching (coupling) the load:

NOTE: To determine output torque capacity for operating conditions other than a normal 8 hour day and shock-free operation, multiply the rated output torque (see Specifications) by the applicable load factor listed in the Load Factor Chart. Shock loads should be avoided.

- a. When connecting a load to the gearmotor output shaft, care should be taken to avoid excessive tension when either belt or chains with chain sprocket are used. Overhung load should not exceed 190 lbs. for 5K939C, 5K940C and 5K941B, 150 lbs. for 6K993B, and 110 lbs. for 5K942C, at 1" from the bearing nose.

LOAD FACTOR CHART

TYPE OF LOAD	LOAD FACTOR
8 to 10 hr. day, with moderate shock loads.	0.8
24 hr. service, with no shock load involved.	0.8
24 hr. service, with moderate shock loads.	0.5

DETAILED OVERHUNG LOAD CALCULATIONS:

$$\frac{\text{Full Load Torque of Gearmotor} \times 2}{\text{Pitch Diameter of Sprocket, Pulley or Gear}} = \text{Pounds of Load on Center of Gearmotor Output Shaft}$$

Multiply pounds of load (obtained from above formula) by the correct factor listed below to determine actual overhung load in "pounds" on center of gearmotor output shaft.

DRIVE FACTORS

Sprocket	1.0
Pulley	1.5
Gear	1.25

Locate the center line of the sprocket, pulley or gear as close to the oil seal as practical to minimize overhung load and increase bearing life.

If the center line of the sprocket, pulley or gear is located more than 1" away from the oil seal, consult Dayton Electric Mfg. Co. to help determine the overhung load.

- b. On direct-coupled installations, carefully check shaft and coupling alignment as gearmotor is being bolted down. Shim as required. Do not depend on a flexible coupling to compensate for misalignment.

Maintenance

WARNING: DISCONNECT POWER BEFORE SERVICING.

NOTE: Lock and tag power disconnect to prevent application of power.

CLEANING

Properly selected and installed electric motors are capable of operating for long periods with minimal maintenance. Periodically clean dirt accumulations from open-type motors, especially in and around vent openings, preferably by vacuuming (avoids imbedding dirt in windings). At the same time, check that electrical connections are tight.

LUBRICATION

The motor is equipped with pre-lubricated ball bearings and will not require re-lubrication.

Should the gears require lubrication, use 2 oz. of DuBols TPG lubricant or its equivalent.

IMPORTANT: COMPLETELY CLEAN THE OLD LUBRICANT FROM THE GEAR BOX BEFORE ADDING FRESH LUBRICANT. UNDER NO CIRCUMSTANCES SHOULD DIFFERENT TYPES OF LUBRICANTS BE MIXED!

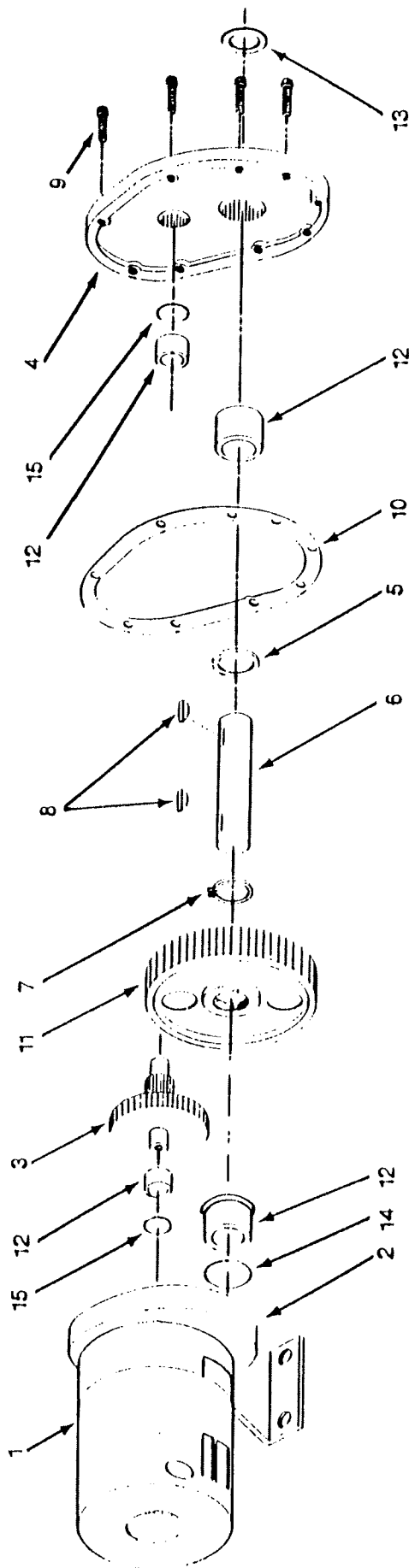


Figure 2 — Replacement Parts Illustration

Replacement Parts List

REF. NO.	DESCRIPTION	PART NO. FOR MODEL:					QTY.
		5K939C	5K940C	5K941B	5K942C	6K993B	
1	Motor with case	V00212BM10	V00212BM10	V00212BM10	V00212BM10	V00212BM10	1
2	Case assembly with bushings (Includes Ref. Nos. 15 & 16)	D05705-0002	D05705-0002	D05705-0002	D05705-0002	D05705-0002	1
3	High speed gear assy. (fibre)	A00461-0001	A02894-0001	A08667-0001	A02895-0001	A04430-0001	1
	High speed gear assy. (steel) — opt.	A00461-0002	A02894-0002	A08667-0002	A02895-0002	A04430-0002	1
4	Cover assembly with bushings	D06378-0003	D06378-0003	D06378-0003	D06378-0003	D06378-0003	1
5	Outer washer	L01669-0006	L01669-0006	L01669-0006	L01669-0006	L01669-0006	1
6	Output shaft	J00463-0015	J00463-0015	J00463-0015	J00463-0015	J00463-0015	1
7	Snap ring	R01477-0001	R01477-0001	R01477-0001	R01477-0001	R01477-0001	1
8	Woodruff key	P00464-0001	P00464-0001	P00464-0001	P00464-0001	P00464-0001	2
9	Capscrew, 1/4-20 x 3/4"	* P05620-0001	* P05620-0001	* P05620-0001	* P05620-0001	* P05620-0001	7
10	Gasket	H00414-0001	H00414-0004	H00414-0009	H00414-0005	H00414-0012	1
11	Output gear	D12522-0012	D12522-0012	D12522-0012	D12522-0012	D12522-0012	1
12	Bushings (set of 4)	P01694-0048	P01694-0048	P01694-0048	P01694-0048	P01694-0048	1
13	Seal (output-shaft)	P00790-0001	P00790-0001	P00790-0001	P00790-0001	P00790-0001	1
14	Oil retainer	P00787-0001	P00787-0001	P00787-0001	P00787-0001	P00787-0001	1
15	Oil retainer	K07922-0001	K07922-0001	K07922-0001	K07922-0001	K07922-0001	2
△	Motor cover plate						1

(*) Standard hardware item, available locally. (△) Not Shown.

ORDER REPLACEMENT PARTS
BY CALLING TOLL FREE

1-800-323-0620

Please provide the following information:

• Model Number

• Serial Number (if any)

• Parts Description and Number
as shown in Parts List

Address parts correspondence to:

Dayton Electric Mfg. Co.
1250 Busch Parkway
Buffalo Grove, IL 60089

Troubleshooting Chart

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Unit fails to operate	<ol style="list-style-type: none"> 1. Blown fuse or open circuit breaker 2. No power 3. Defective motor 4. Defective manual or magnetic control switch 	<ol style="list-style-type: none"> 1. Replace fuse or reset circuit breaker 2. Contact power company 3. Repair or replace 4. Repair or replace
Unit operational but no output	<ol style="list-style-type: none"> 1. Defective gear(s) 2. Output gear key (Woodruff) stripped 	<ol style="list-style-type: none"> 1. Check and replace if necessary 2. Replace
Intermittent rotation of output shaft	Damaged Intermediate gear assembly possibly caused by shock load	Replace gear and if possible, avoid shock load
Excessive noise	<ol style="list-style-type: none"> 1. Bearings worn 2. Belt or chain too tight 3. Overhung Load — exceeds rating and causes bearing wear 	<ol style="list-style-type: none"> 1. Replace 2. Adjust tension 3. Correct load and/or replace bearing

LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. Gearmotors, Models 5K939C, 5K940C, 5K941B, 5K942C, & 6K993B, are warranted by Dayton Electric Mfg. Co. (Dayton) to the original user against defects in workmanship or materials under normal use for one year after date of purchase. Any part which is determined by Dayton to be defective in material or workmanship and returned to an authorized service location, as Dayton designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at Dayton's option. For limited warranty claim procedures, see **PROMPT DISPOSITION** below. This limited warranty gives purchasers specific legal rights which vary from state to state.

LIMITATION OF LIABILITY. To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to, and shall not exceed, the purchase price paid.

WARRANTY DISCLAIMER. Dayton has 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.

Except as provided below, no warranty or affirmation of fact, expressed or implied, other than as stated in "LIMITED WARRANTY" above is made or authorized by Dayton.

PRODUCT SUITABILITY. Many states and localities have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Dayton attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, please review the product application, and national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Certain aspects of disclaimers are not applicable to consumer products; e.g., (a) 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; (b) also, some states do not allow limitations on how long an implied warranty lasts, consequently the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of merchantability or fitness for a particular purpose applicable to consumer products purchased by consumers, may not be excluded or otherwise disclaimed.

PROMPT DISPOSITION. Dayton will make a good faith effort for prompt correction or other adjustment with respect to any product which proves to be defective within limited warranty. For any product believed to be defective within limited warranty, first write or call dealer from whom product was purchased. Dealer will give additional directions. If unable to resolve satisfactorily, write to Dayton at address below, giving dealer's name, address, date and number of dealer's invoice, and describing the nature of the defect. Title and risk of loss pass to buyer on delivery to common carrier. If product was damaged in transit to you, file claim with carrier.

Manufactured for Dayton Electric Mfg. Co., 5959 W. Howard St., Chicago, IL 60648