

600 HP

MOTOR

TECHNICAL MANUAL



GENERAL DYNAMICS

ELECTRO DYNAMIC DIVISION

AVENEL, NEW JERSEY

MANUFACTURER'S BOOK NUMBER: 6010B01 -0982



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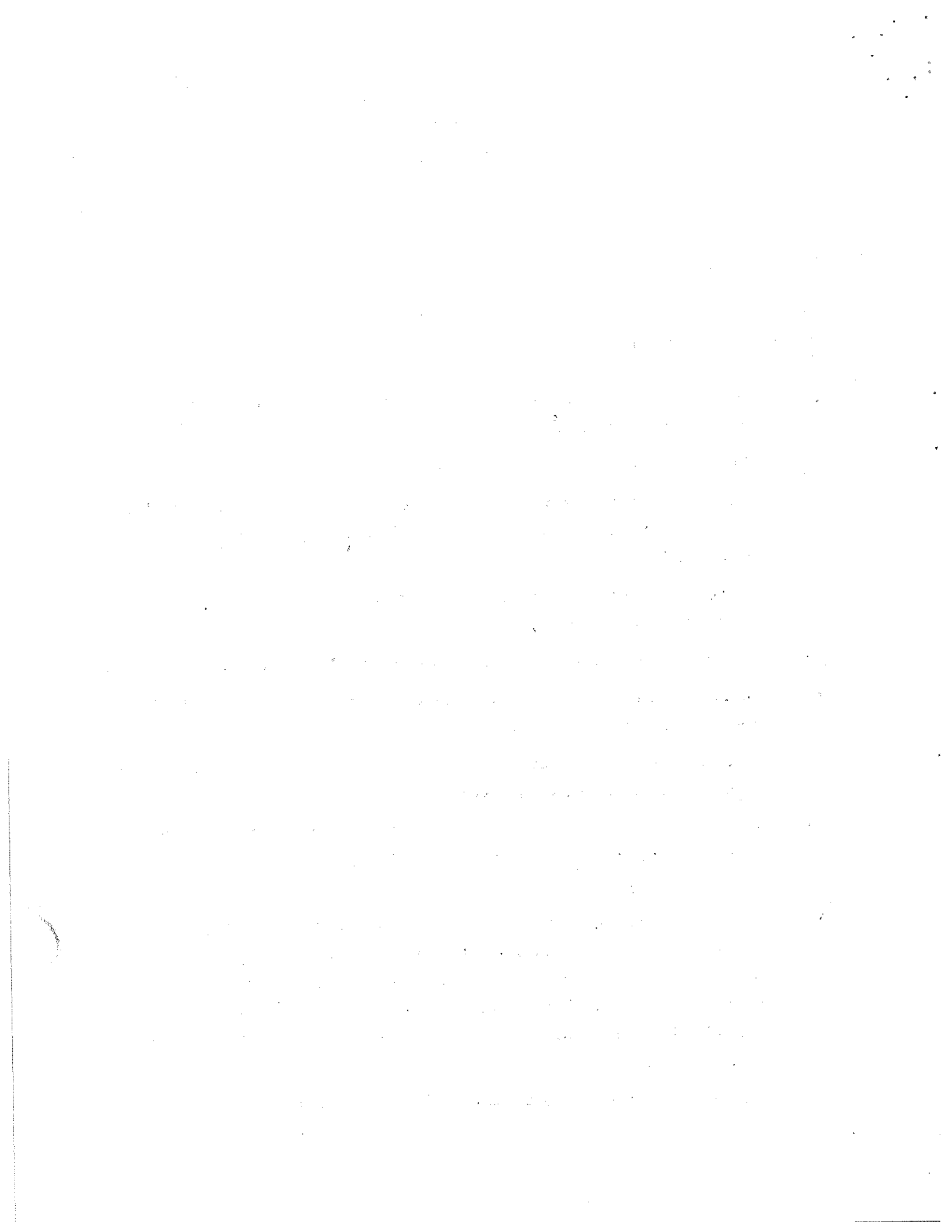
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SECTION 1GENERAL DATASAFETY NOTICE

Before operating this equipment, read the following rules which are to be observed at all times:

- (a) All circuits not known to be "dead" must be considered "live" and dangerous at all times.
- (b) Do not wear loose clothing when working with rotating machines.
- (c) When working near electricity, do not use metal rules, flashlights, metallic pencils, or any other objects having exposed conducting material.
- (d) Be certain you are not grounded whenever you are adjusting equipment or using measuring equipment.
- (e) In general, use only one hand when servicing "live" equipment.
- (f) Be sure to de-energize all equipment before connecting or disconnecting meters or test leads.
- (g) When connecting a meter to terminals for measurement, use a range higher than the expected voltage.
- (h) Before operating this equipment or performing any tests or measurements, make certain that the frame of the generator and control panel are securely grounded.
- (i) If a test meter must be held or adjusted while voltage is applied, ground the case of the meter before starting measurement and do not touch the "live" equipment or personnel working on "live" equipment while you are holding the meter. Some moving-vane type meters should neither be grounded nor should they be held during measurements.
- (j) Do not use test equipment known to be in poor condition.



GENERAL DESCRIPTION:

This motor was manufactured by the Electro Dynamic Division of General Dynamics Corporation, Avenel, New Jersey.

It has the following characteristics:

Purchaser	American-Standard
P. O. Number	MS-1707
Motor Frame Size	HN-689WZ
Horsepower	600
Volts	440
RPM (syn)	514
RPM (F.L.)	* 510
Speed Classification	Constant
Duty	Continuous
Ambient Temperature	40°C
Phase	3
Cycles	60
Class Insulation	B-F
Degree of Enclosure	Dripproof
Cooling	Self
Type of Rotor	Squirrel Cage
Torque Classification	Special
Mounting	Horizontal F-1
Full Load Current Amperes	* 810
Locked Rotor Current Amperes	* 3430
Locked Rotor Power Factor %	* 16
Type of Bearing	Ball
Manufacturer's Drawing	B-151471
Mfrs. Shop Order Number	60100982
Motor Weight Lbs.	6,200 (approx.)

* Test Values



INTRODUCTION:

This alternating current squirrel cage motor is a comparatively common electro-mechanical device to convert available electrical energy into mechanical energy.

When the "start" button of the motor controller is pressed, the line contactor connects the A. C. motor directly to the line. The voltage impressed on the stator winding produces a rotating magnetomotive force (m. m. f.) which, by transformer action, is transferred across the air gap and induces voltage. This induced voltage produces currents that circulate through the squirrel cage winding. The inter-action of the current in the rotor and the rotating field of the stator causes the shaft to turn.

The available electrical power is brought into the motor via cables through the terminal box. The produced mechanical work (as torque) is transmitted to the driven auxiliary by the motor shaft.

DETAILED DESCRIPTION:

A squirrel cage motor consists basically of a shaft, supported by bearings, enclosed in a shell and rotating in an electrical field.

The shaft is the rotating element. It is made of accurately machined steel and is supported by two bearings. These bearings are held in brackets. The brackets are bolted to the frame, thus completing the external shell. The motor shaft supports one part of the electrical circuit, the rotor. It is made of numerous electrical sheet steel laminations, held to the shaft by an interference fit, and secured by a key. The "rotor" windings consist of rotor bars running lengthwise along the rotor and located near the outer periphery. These bars are connected by external end rings, one on each end of the rotor.

The stationary electrical element is the stator. The stator core is composed of electrical sheet steel laminations, keyed to the frame. The stator windings are placed in insulated slots around the inner periphery of the stator core.

SECTION 2

OPERATING INSTRUCTIONS

ADJUSTMENTS AND TESTS:

Before connecting the motor to its power supply, inspect the unit thoroughly. Make sure there is no foreign material in the motor and that the shaft rotates freely.

Test the insulation resistance to ground with an approved "megger". If the cold insulation resistance is less than 25 megohms, the unit should be baked with drying lamps. After drying, recheck the resistance. Keep rebaking and rechecking the insulation as long as it is low, but never operate the machine if the resistance is very low - it would damage the windings.

Once the insulation resistance is all right, start the unit under no load conditions. If the rotation is wrong, recheck the connections.

In starting the motor for the first time, observe the following:

- (1) Check the nameplate of the controller to see that it agrees with the power supply and the motor rating.
- (2) The controller enclosure should be mounted rigidly to a firm foundation or mounting support. If possible, the mounting should be free from vibration.
- (3) All terminals and current-carrying parts should be clean and tight.
- (4) Remove any rust preventative that may have been spread over the ground magnet sealing surface during the shipment or storage.
- (5) Turn the shaft to be sure it rotates freely.
- (6) If not already tested, measure the insulation resistance to ground. If less than 25 megohms, do not start until insulation has been dried out.
- (7) Start unit, and note immediately the direction of rotation.
- (8) Note the temperature of the unit and the bearings during a one hour trial run. Observe the temperature of various parts of the unit and, where excessive temperature exists, determine the actual temperature with a centigrade thermometer placed directly on the part and with the bulb protected from surrounding atmosphere with putty.

ADJUSTMENTS AND TESTS: continued

Temperature should not be in excess of the ambient temperature plus the rated temperature rise.

- (9) At the conclusion of the one hour trial run, while the unit is still at operating temperature, test the insulation resistance of the windings to the ground. In general, this resistance should not be less than 25 megohms.

STARTING:

Before the unit is started for the initial time, make the preliminary "Adjustments and Tests" as outlined in preceding section of this manual.

Once the procedure as outlined in "Adjustments and Tests" has been performed, the connections rechecked and the unit has been found in working condition, installed and coupled to the driven auxiliary properly, the motor may be started.

CAUTION:

Before starting the motor at any time, see that the covers and guards are in place. Make sure that no one is working on the motor or the equipment which it drives.

If the unit has been idle for a period of time, make sure all mechanical fastenings are tight. Be sure that the unit is firmly anchored to its foundation and that it is properly assembled with the driven auxiliary.

The unit is started in accordance with the directions on the controller. If any unusual noise, vibration, temperature rise, or speed develops, stop the motor immediately. The motor should be isolated from the driven auxiliary and tested separately.

Refer to the Trouble Shooting Chart, under "Maintenance".

SECTION 3

INSTALLATION INSTRUCTIONS

(1) CARE DURING STORAGE:

Store the unit in a clean dry location. In order to give additional protection, the unit should be covered to prevent damage and entrance of foreign material. If the units are in a cold or damp location for any period of time, heating elements should be installed within the unit.

The shaft should be rotated at least every two weeks so that the bearings are fully protected during the in-operative period.

(2) INSTALLATION:

Motors weighing more than 150 lbs. are provided with eyebolts to enable ease in handling. Upon actual installation, the outline drawing should be consulted for physical dimensions and mounting dimensions.

Check for wiring connections, and be sure all regulating equipment is properly located within the electrical circuits.

(3) CARE AFTER INSTALLATION:

After mounting the equipment, it should be protected with canvas wrapping or a hood, to prevent entrance of dirt, weld spatter, or any other foreign matter, into exposed parts of the unit.

If subjected to extreme humidity and rapid changes in temperature, tube or rod type heater should be installed under the canvas covering and kept "on" at all times until the unit is ready to be connected and operated. The cover should have ventilation holes. At periodic intervals, during this time, the shaft should be rotated by hand.

SECTION 4
MAINTENANCE

(1) GENERAL

The interior and exterior of the machines should be kept clean. Dirt and oil must not be allowed to accumulate, either inside or outside of the machines.

It is necessary that surface inspection of the machines be made daily. Insulation resistance should also be checked periodically. Whenever insulation resistance drops to 25 megohms, it is recommended that a complete check be made of the machine. All parts should be wiped down with clean rags; cheesecloth being preferred for the windings. A material that might deposit lint should never be used.

If insulation resistance is still low, the windings should be cleaned with an approved solvent for several hours, or even longer, until insulation resistance becomes constant, then coat windings and adjacent parts with high grade air drying varnish. Also, do not depend on insulating varnish alone to increase the insulation resistance. Clean all parts and repair any defects first, then apply the varnish.

For drying windings, it is recommended that complete machine be covered with canvas, and that lamps or heating units be used. These should be distributed so that the temperature of all parts will be uniform.

Do not continue drying after insulation resistance becomes constant. If insulation resistance is still low, determine which parts of the machines are defective and make necessary repair.

Do not use lead or zinc paints inside machines. Use air drying insulating varnish. All studs, nuts and bolts should be inspected regularly and should be kept tight.

IN CASE OF FIRE, SHUT DOWN MACHINES IMMEDIATELY.
Use Carbon Dioxide, not Soda, extinguisher. If it is possible to get near the machines, cover with canvas and turn on smothering steam if it is available.

Compressed air may be used for cleaning inaccessible parts, but its use is not recommended inasmuch as it has a tendency to drive the dirt between the coils rather than out of the machine.

SECTION 4
MAINTENANCE

(2) ROTOR:

The rotor is an indestructible squirrel cage and, therefore, requires no maintenance.

(3) STATOR WINDINGS:

Stator coils should be cleaned regularly and should occasionally be thoroughly dried and varnished, in accordance with general instructions. A vacuum cleaner with small inlet is effective in cleaning between the coils and is more desirable than the compressed air.

(4) LUBRICATION:

For the bearings used on these units, relubrication at intervals is necessary.

Determination of the relubrication intervals depends wholly on the operating conditions. In light service, bearings can sometimes go for 6 to 9 months and, in some cases, can be left entirely alone except for yearly cleaning and relubrication.

On heavier duty service where conditions are less favorable, such as high speeds and high temperatures, bearings may require to be lubricated much more frequently. It is good practice, where operating temperatures are about 80°C., to add fresh lubricant weekly in limited quantities depending upon the size of the bearing.

Constant high heat will evaporate part of the oil from the lubricant and frequent reapplications of new lubricant will keep the oil replenished. For recommended lubricants, see table at the end of this section.

(5) LUBRICATION PROCEDURE:

CAUTION: Do not fill the chambers more than half full.

Lubrication is accomplished by oil which "bleeds" from the grease into the bearing surfaces. Too much grease will cause churning and overheating of the bearing. Units with standard bearings are

SECTION 4
MAINTENANCE

(5) LUBRICATION PROCEDURE: (continued)

provided with grease fitting. Before greasing, wipe fittings carefully to remove all dirt and foreign matter.

Remove the relief plugs from bottom of bearing housings and clean out drain of hard grease. With motor running, add the recommended quantity of grease.

(6) CLEANING BALL BEARINGS:

For cleaning bearings without disassembling unit, remove drain plug from fitting or housing and remove grease fitting or grease cup. Clean out grease in both drain and input to bearing chamber with a long-small screw driver or similar tool. Flush hot-light oil (Symbol 2135) or equivalent through chamber and rotate motor slowly by hand while flushing. Be sure that drain is open properly and do not flush too rapidly as the oil may enter inside of motor.

Bearings which are unmounted or have first been removed from a unit, may be cleaned by immersion in a light mineral solvent. Place the bearings in basket and suspend in solution and allow to soak, preferably overnight. Cleaning may be speeded up by using hot-light oil in place of solvent, and by agitating the bearings in the solution.

After soaking and cleaning, the bearings should be rinsed in a clean light mineral solvent and agitated vigorously to remove all loosened hard grease and dirt.

As a final treatment, dip in clean-light oil and spin by hand to determine that all foreign matter has been removed and pack in corrosion resistant wax paper until ready to reinstall.

After cleaning, or when reinstalling bearings, pack with not more than the proper amount of approved ball bearing grease. Special care should always be taken to see that no dirt, grit or other foreign matter enters the bearing chamber.

All associated parts, bearing bore in housing, bearing caps, nuts, lockwashers, etc., should be thoroughly cleaned.

SECTION 4
MAINTENANCE

(7) DISASSEMBLY AND ASSEMBLY OF MOTOR:

Before disassembly of this unit, refer to "Safety Notice", Page 1, Section 1.

- (1) Disconnect coupling of motor to driven auxiliary.
- (2) Loosen and remove screws in bearing cap. Inner bearing cap will then be loose on shaft inside motor. Remove outer cap.
- (3) Loosen and remove bracket bolts.
- (4) Tap shoulder on bracket with mallet, or lead hammer, to loosen from recess in stator frame.
- (5) Remove bracket over outer race of ball bearing. Take care to keep bracket straight so that outer race will not jam in bracket bearing hub.
- (6) Remove rotor through one end. If bracket has been left assembled on one end, remove rotor with assembled bearing and bracket.
- (7) If ball bearings are not to be replaced, immediately reassemble bracket in place on shaft of rotor and replace bearing cap screws. (This is a precautionary measure to protect bearings from dirt and grit during temporary storage). If one or both brackets are left off, replace bearing caps and fasten in place with cap screws or wrap exposed bearings with clean waxed paper and cloth or canvas.
- (8) To remove bearings, place rotor-shaft-assembly in a vise or other-wise secure firmly on bench.
- (9) If bearing is secured to shaft by a locknut and lockwasher, lift lug on lockwasher out of slot in the nut and remove this nut from shaft.
- (10) To remove bearing from shaft, use bearing puller on inner race of bearing.

TO REASSEMBLE:

- (11) Press bearing on shaft squarely against shoulder. Make sure that inner cap and grease slinger, if used, are in place. To insure ease of application, pre-heat bearing in an oven to a temperature of 80° to 90° C.

SECTION 4
MAINTENANCE

TO REASSEMBLE: (continued)

- (12) Reassemble balance of parts in reverse procedure. Take care in seating of shoulder and recess in brackets and bearing caps to prevent misalignment.
- (13) Refer to page 17 for grease specification. Pack the bearing chamber with clean grease of approved grade, one-half full.
- (14) Locate position of inner caps by probing through hole in bracket with cap screw. Rotate shaft slowly and engage tapped holes with screw. Draw cap against inside of bracket, remove screws carefully and then install outer cap in place.
- (15) After complete assembly, rotate shaft by hand to determine that the alignment is correct. Shaft should turn freely.

MAINTENANCE

(8) TROUBLE SHOOTING

When trouble is experienced, the motor should be isolated from the driven auxiliary and tested separately in order to isolate the cause of trouble.

TROUBLE	CAUSE	REMEDY
Motor will not start	No Input Power	Check connections to controller at controller, and in terminal box. Check fuses, or circuit breakers, in controller cabinet, or in input circuit. Check terminals at source of power input.
	Improper Voltage	Check voltage at motor terminals
	Short Circuit	Check motor insulation resistance to ground. Check resistance between phases.
	Motor Overloaded	Disconnect auxiliary unit, or remove all load from driven auxiliary, then start motor. Apply load in accordance with nameplate rating.
	Mechanical Obstruction that prevents rotor from turning.	Examine and clean unit thoroughly. Check for bearing failure or misalignment. Check if shaft bent.
Motor Overheats	Unit if Overloaded	Check current in each phase. Compare with nameplate rating. If current exceeds that shown on rating, unit is overloaded.
	Unit Operating at Improper Terminal Voltage	If current in any one of three phases exceeds nameplate value, check terminal voltage.

MAINTENANCE

(8) TROUBLE SHOOTING - continued:

TROUBLE	CAUSE	REMEDY
Motor Overheats (continued)	Short Circuit	If voltage in each phase is the same as the nameplate, check stator resistance in each phase.
	Obstruction in Air Gap	Clean unit thoroughly. Check for any mechanical failure that would prevent proper rotation.
	Obstruction in Ventilation	Check ventilation openings of motor. Keep clean and clear of obstructions at all times.
	Insufficient Cooling Medium	Check room temperature. Temperature should not exceed the ambient temperature plus the rated temperature rise of unit.
	Overgreased Bearings	Check amount of lubricant in bearing chamber. If overloaded, remove drain plug and remove grease until proper amount is in unit.
	Improper Grease	Be sure proper grease is used. Use only grease as indicated on page 17.
	Misalignment	Bearing failure. Replace bearings. Shaft bent.
Operating at Wrong Speed	Improper Line Voltage or Frequency	Check nameplate data.
	Overload	Check nameplate rating.
	Short Circuit	Check rotor. Check for loose or open connections.

MAINTENANCE

(8) TROUBLE SHOOTING - continued

TROUBLE	CAUSE	REMEDY
Vibration	Misalignment	Bearing failure possible. Replace bearings.
	Sprung Shaft	Mechanical failure. Shaft must be removed and replaced.
	Short Circuits	Check resistance between phases. Check rotor.
	Unbalanced Current	Check terminal voltage. Check terminal voltage and current at motor controller.
	Improper Mounting	Check mounting bolts of motor. Tighten all mounting bolts. Check alignment of motor and driven auxiliary. Tighten any loose bolts. Align units - shim if necessary.
Insulation Failure	Oil Soaked Windings	Open Motor. Clean and dry. See "Maintenance, General".
	Water Soaked Windings	Open Motor. Clean and dry. See "Maintenance, General."
	Excessive Vibration	See "Trouble Shooting, Vibration".
	Wrong Voltage	Check terminal voltage with nameplate data.
	Mechanical Abrasion	Check air gap for misalignment. Abrasion could be caused by bearing failure, bent or "Sprung" shaft, misalignment between driven auxiliary and motor, or air obstruction in the air gap. Note: High potential test for a repaired motor should be one-half that of a new machine.

BEARING LUBRICANTS

Use any of the following grease lubricants:

LUBRICANT	MANUFACTURED BY
Alvania #2	Shell Oil Company
W-56	New York and New Jersey Lubricant Company
Andok "B"	Humble Oil and Refining Company Houston, Texas
Lubriko M-24-M	Master Lubricants Company Philadelphia, Pennsylvania
Chevron OHT Grease	Standard Oil Company of California, San Francisco, California
Mobilplex EP No. 2 or XTR-20	Socony Mobil Oil Company, Inc., New York, New York

SECTION 5

PARTS LIST

The only item recommended as a repair part for this motor is the bearing. Refer to Parts List, Section 6, of this part of this manual, for all bearing data.

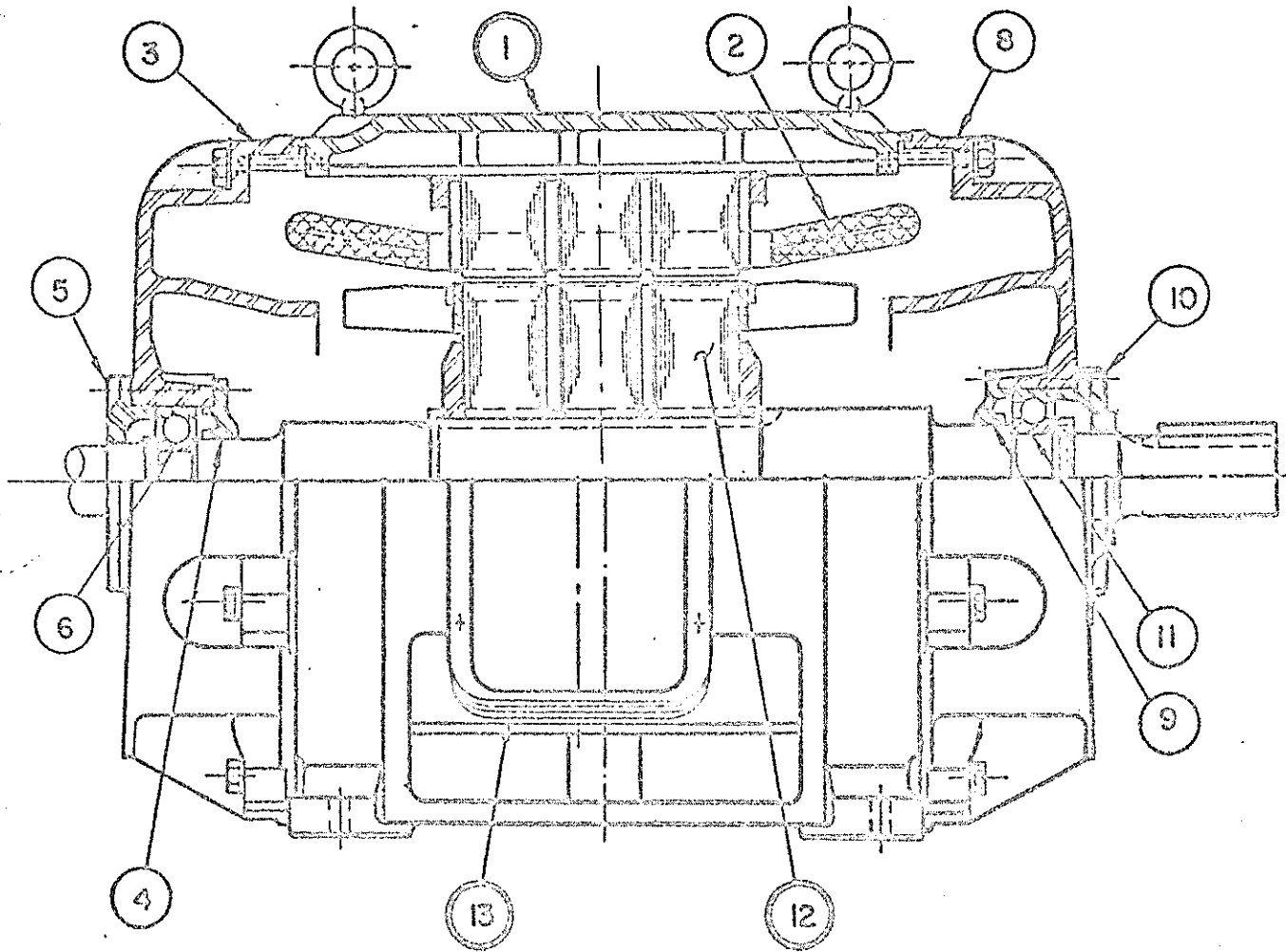
All spare parts orders should be sent to:

Electro Dynamic Division of
General Dynamics Corporation
150 Avenel Street
Avenel, New Jersey

DRAWINGS

SECTION 6

DRAWINGS



LIST OF MATERIAL

ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	REMARKS
1	STATOR FRAME COMPLETE	768110-0-51	
2	STATOR COILS	ES689-231-008	CONN. DIAG. A-160174
3	FRONT END BRACKET	79579-F	
4	FRONT END INSIDE CAP	79515-B	
5	FRONT END OUTSIDE CAP	901907-0-03	
6	FRONT END BALL BEARING	#319 ABEC 5	STEEL RET.
7	CONDUIT BOX		
8	BACK END BRACKET	79580-F	
9	BACK END INSIDE CAP	79574-A	
10	BACK END OUTSIDE CAP	902402-0-01	
11	BACK END BALL BEARING	#324 ABEC 5	STEEL RET.
12	ROTOR AND SHAFT ASSEMBLY	DL689-23-3203	ES689-231-008
13	CONDUIT BOX	801175-0-54	3-1/2" CONDUIT
14	CONDUIT BOX		
15			
16			
17			
18			

MODEL NO. 668930083203

FRAME HN-689 WZ

OUTLINE DIMENSION B-151471

GENERAL DYNAMICS
ELECTRO DYNAMIC DIVISION
AVENEL, NEW JERSEY

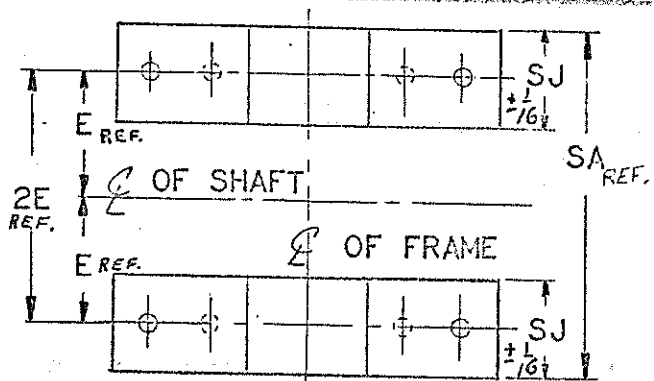
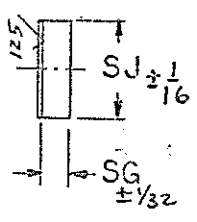
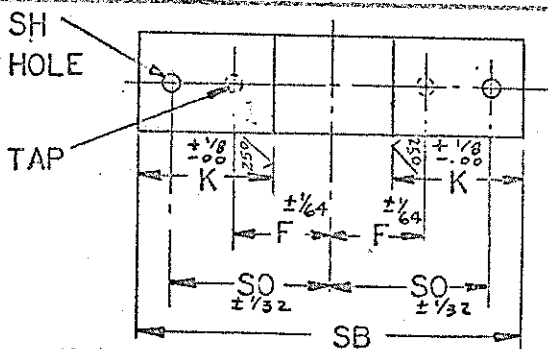
LIST OF MATERIAL (ACCESSORIES)

ITEM NO.	NOMENCLATURE OR DESCRIPTION	PART OR IDENTIFYING NO.	REMARKS
1	SOLE PLATES	803284-0-51	REF. E.D. DWG. 800826-0-29

S.O. 60100982

GENERAL DYNAMICS
ELECTRO DYNAMIC DIVISION
AVENEL, NEW JERSEY





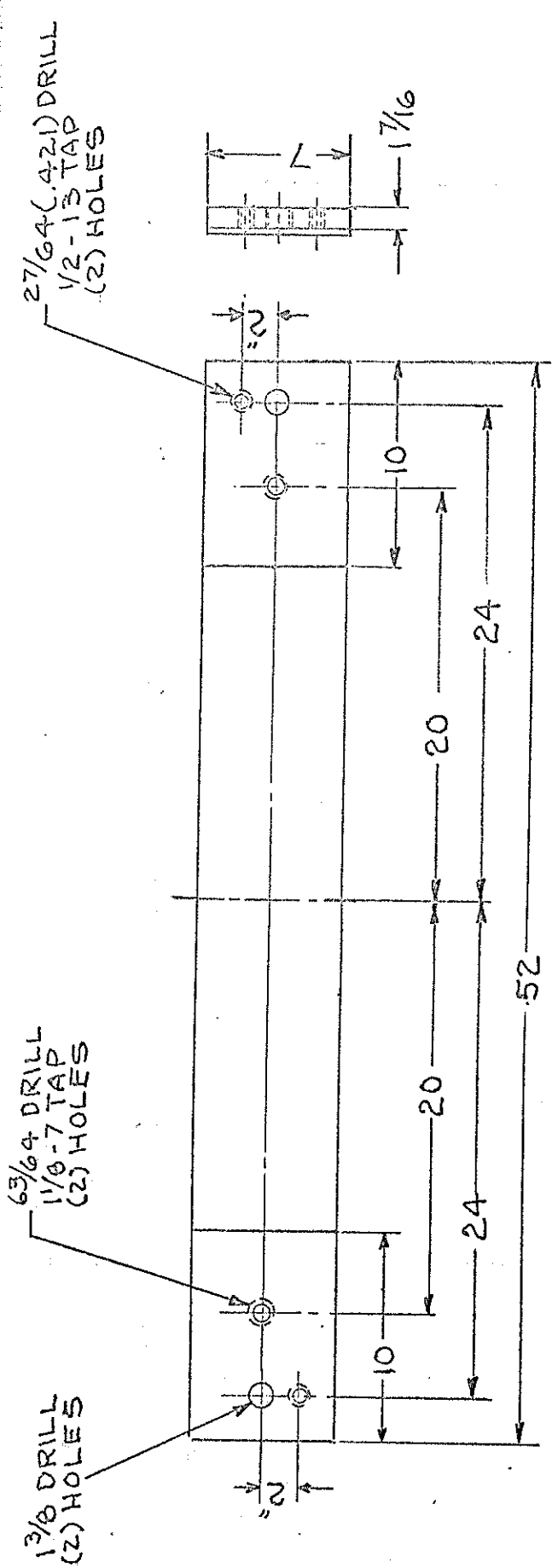
MATERIAL: H.R.S.

FR.	PART NO.	SA	SB	E	F	SG	SH	SJ	K	SO	TAP	
182	800826-0-01											
184	800826-0-02											
213	800826-0-03											
215	800826-0-04											
254U	800826-0-05											
256U	800826-0-06											
284U	800826-0-07											
286U	800826-0-08											
324U	800826-0-09											
326U	800826-0-10											
364U	800826-0-11											
365U	800826-0-12											
404U	800826-0-13											
405U	800826-0-14											
444U	800826-0-15	22	24	9	7 1/4	1-1/16	15/16	4	8	10-1/2	3/4-10	1-1/8X4
445U	800826-0-16	22	26	9	8 1/4	1-1/16	15/16	4	8	11-1/2	5/4-10	1-1/8X4
504W	800826-0-17	25	26	10	8	1-3/16	1-1/16	5	8-1/8	11-1/2	7/8-9	1-1/4X5
505W	800826-0-18	25	28	10	9	1-3/16	1-1/16	5	8-1/8	12-1/2	7/8-9	1-1/4X5
507W	800826-0-19	25	32	10	11	1-3/16	1-1/16	5	8-1/8	14-1/2	7/8-9	1-1/4X5
584W	800826-0-20	29	30	11-1/2	9	1-7/16	1-3/8	6	9-1/2	13	1-1/8-7	1-1/2X6
585W	800826-0-21	29	32	11-1/2	10	1-7/16	1-3/8	6	9-1/2	14	1-1/8-7	1-1/2X6
586W	800826-0-22	29	34	11-1/2	11	1-7/16	1-3/8	6	9-1/2	15	1-1/8-7	1-1/2X6
588W	800826-0-23	29	40	11-1/2	14	1-7/16	1-3/8	6	9-1/2	18	1-1/8-7	1-1/2X6
684W	800826-0-24	34	34	13-1/2	11	1-7/16	1-3/8	7	10	15	1-1/8-7	1-1/2X7
685W	800826-0-25	34	37	13-1/2	12 1/2	1-7/16	1-3/8	7	10	16-1/2	1-1/8-7	1-1/2X7
686W	800826-0-26	34	40	13-1/2	14	1-7/16	1-3/8	7	10	18	1-1/8-7	1-1/2X7
687W	800826-0-27	34	44	13-1/2	16	1-7/16	1-3/8	7	10	20	1-1/8-7	1-1/2X7
688W	800826-0-28	34	48	13-1/2	18	1-7/16	1-3/8	7	10	22	1-1/8-7	1-1/2X7
689W	800826-0-29	34	52	13-1/2	20	1-7/16	1-3/8	7	10	24	1-1/8-7	1-1/2X7
804W	800826-0-30	44	73	18-1/2	27	1-15/16	1-1/2	7	14 1/2	34-1/2	1-1/4-7	2X7
806W	800826-0-31	44	80	18-1/2	30 1/2	1-15/16	1-1/2	7	14 1/2	38	1-1/4-7	2X7
808W	800826-0-32	44	87	18-1/2	34	1-15/16	1-1/2	7	14 1/2	41-1/2	1-1/4-7	2X7
1004	800826-0-33	53	64	22-1/2	22	1-15/16	1-5/8	8	15 3/4	29-1/2	1-1/2-6	2X8
1006	800826-0-34	53	72	22-1/2	26	1-15/16	1-5/8	8	15 3/4	33-1/2	1-1/2-6	2X8
1008	800826-0-35	53	80	22-1/2	30	1-15/16	1-5/8	8	15 3/4	37-1/2	1-1/2-6	2X8

SOLE PLATE | ELECTRO DYNAMIC | DIV. OF GENERAL DYNAMICS CORP AVENEL N.J. | A-800826-0

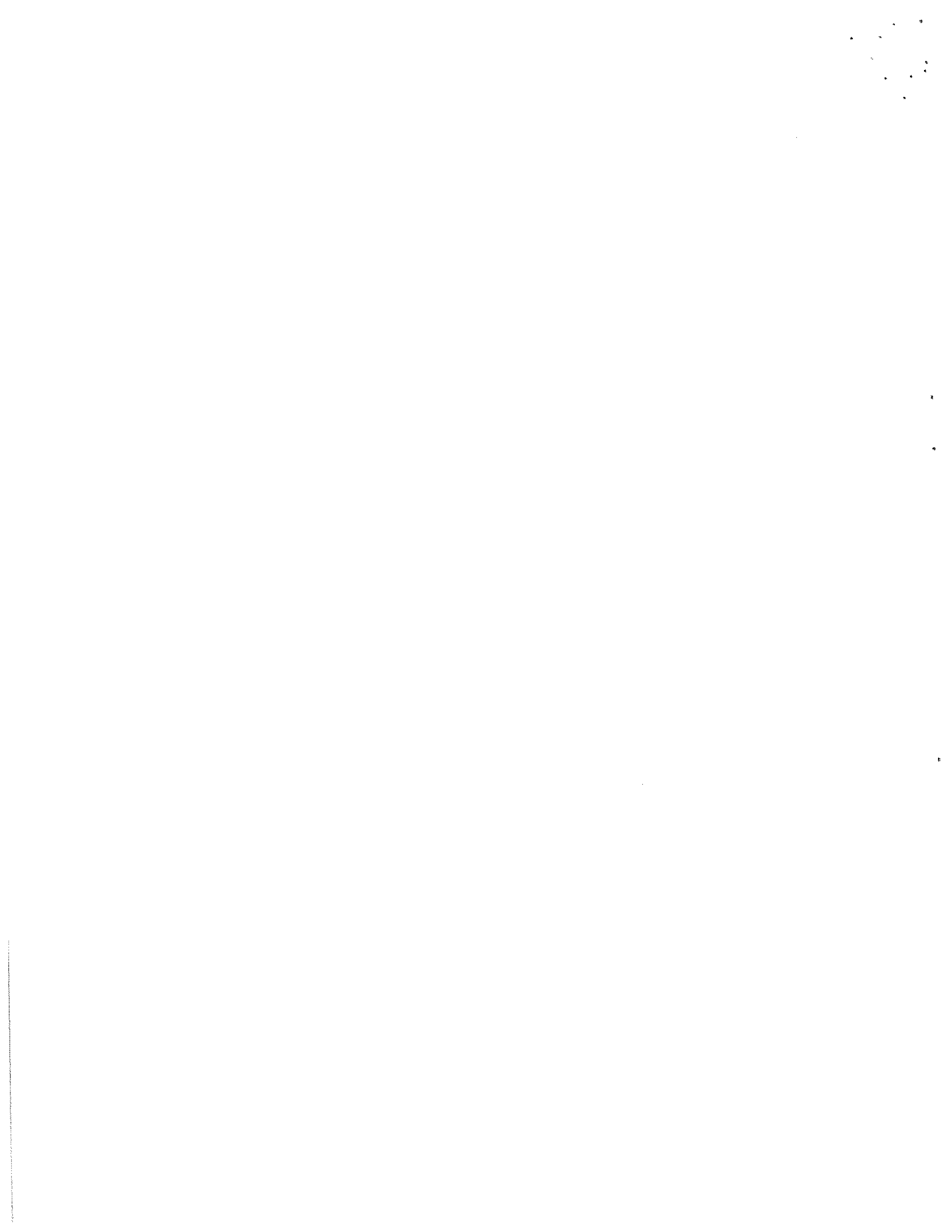
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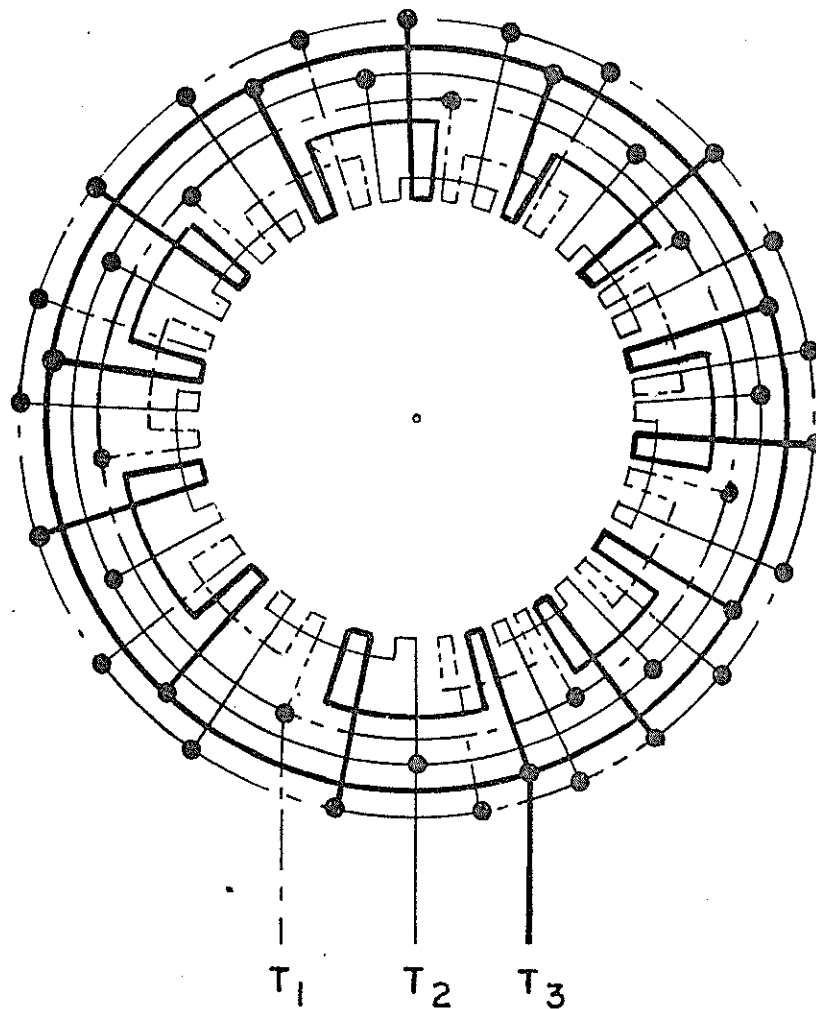




NOTE #1. MAKE FROM E.D. DRAWING A-800826-0-29 BY DRILLING & TAPPING (2) 1/2-13 HOLES

ALL OTHER FINISHED FRACTIONAL DIMENSIONS ±.010" ALL OTHER FINISHED DECIMAL DIMENSIONS ±.005" UNLESS OTHERWISE SPECIFIED	1	SILICON BRONZE	3	POSITIVE LOCK WASHER (1/2-13)
	1	SILICON BRONZE	2	1/2-13 x 3/4 LG. HEX. HD. CAP SCR.
	1	SEE #1	1	SOLE PLATE
Q S	Q S	PART NO.	803284-0-01	MAT. NO.
		SOLE PLATE (WITH GROUND CONNECTION)		
		TYPE H		
		FR. 689		
		SCALE 1/8" = 1"		
		DATE 1-14-69		
		CHECKED BY W.S.		
		DRAWN BY J.B.		
		FIRST MADE FOR 60100982		
		A-803284		





GENERAL DYNAMICS

Electro Dynamic Division
 AVENEL, NEW JERSEY U.S.A

A.C. CONNECTION DIAGRAM
 14 POLE 3 PHASE SEVEN CIRCUIT STAR

DRAWN BY R.M. DATE 7/25/69
 APPD. BY F.V.M. DATE 7/25/69

ELECT. CODE

A-1437-Y

SIZE DWG. NO.

A

160174



General Dynamics
Electro Dynamic Division
Avenel, New Jersey
Manufacturer's Book Number 6010B01-0982
Revision Number I
December 10, 1969

A. Section # 1 Page # 3 Now Reads:

Mounting - Horizontal
8 Motors - F1
8 Motors - F2

B. Section # 6 Drawing # A 800826-0 Now Shows:

1/2"-13 tapped hole in each plate
as shown below. A 1/2"-13X3/4"
lg. hex head silicon bronze cap
screw and lock washer now provided
for grounding purposes on each plate

