Dayton Electric 4Z062A

Permanent-Split Capacitor Gear Motor

Limited Availability
Used and in Excellent Condition

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INSTALLATION INSTRUCTION & PARTS LIST

GEARMOTORS

MODELS 4Z062A THRU 4Z065A

FORM 5S1139 06315

DAYTON ELECTRIC MANUFACTURING CO. CHICAGO 60648

1080/465/5M 2C

ATTENTION: READ CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE DAYTON GEARMOTORS. RETAIN FOR FUTURE REFERENCE!

Description

These units are parallel shaft TENV gearmotors designed for applications requiring continuous duty and high output torque in relation to gearmotor size. Extremely compact, units are constructed of high strength die cast alloy material. Gearhousing and cover are doweled and precision machined with rabbeted joints to provide accurate gear alignment.

Gearing consists of wide faced phenolic helical high speed input stage for smooth, quiet operation. All gears and pinions are heat treated for maximum durability under rated torque. Precision oil impregnated bronze bearing support hardened, ground and polished alloy steel gear pins for long life. Output shaft is supported by anti-friction high strength needle bearings for high overhung and axial load capacities.

Motors are equipped with sealed ball bearings for minimum friction and noise.

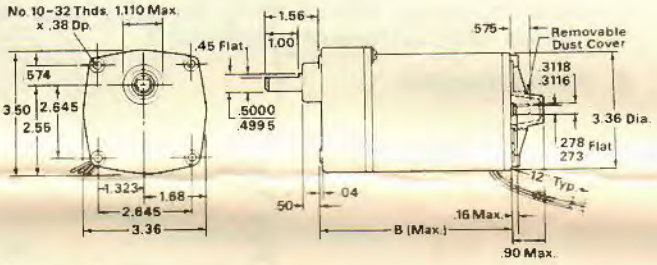


Figure 1

Unpacking

Carefully inspect the unit for any damage that may have occurred during transit. Check that rotor shaft extension cover is intact and not damaged. Check brake hole cover buttons to be sure they are intact. Inspect all leads to insure that the insulation is unchafed.

Specifications & Performance

MODEL	Rated Voltage	Insulation Class	*Input Motor H.P. @ 60 Hz	F/L Torque In. Lbs. @ 50/60 Hz	Rating @ 60 Hz. Operation		Rating @ 50 Hz. Operation		Max. Overhung Load Capacity	Output Shaft Rotation	"B" Dim. Max.
					Full Load RPM	Full Load AMPS	Full Load RPM	Full Load AMPS			
4Z062A	115	A	1/60*	67	14	.36	11	.38	50 lbs.	Reversible	$5^{19}/_{32}$
4Z063A	115	A	1/25*	50	28	.46	23	.51	50 lbs.	Reversible	$6^{3}/_{32}$
4Z064A	115	A	1/25*	30	54	.47	43	.51	50 lbs.	Reversible	$5^{3}/_{4}$
4Z065A	115	A	1/25*	20	95	.52	79	.59	50 lbs.	Reversible	$5^{3}/_{4}$

*Input motor H.P. when operated at 50 Hz. is 5/6 of rated 60 Hz. H.P.
Performance data shown above is based upon using a 5MFD — 370 VAC oil-filled capacitor Dayton brand stock no. 4X427 for 50/60 Hz. operation. Capacitor not included. Must be purchased separately.

General Safety Information

1. Installation and wiring of the enclosed unit must be in accordance with all local electrical and safety codes. The National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA) must also be followed.
2. Motor must be securely and adequately grounded. This can be accomplished by using a separate ground wire connected to the bare metal of the motor frame or other suitable means. Refer to NEC Article 250 (grounding) for additional information.
3. Always disconnect power source before working on or near a motor or its connected load. If the power termination location is unaccessable, lock it in the open position and tag to prevent unexpected resumption of power.
4. Caution should be exercised when touching the exterior of an operating motor — it may be hot enough to be painful or cause serious injury. With modern motors this is normal when the motor is running at its rated torque and voltage.
5. Always check power source to be sure voltage and frequency matches requirements of the motor.
6. When cleaning electrical or electronic equipment, always use a nonflammable cleaning agent that will not attack the finish or insulation.
7. All moving parts should be guarded.
8. Protect the power cable from coming in contact with sharp objects and moving parts.
9. All moving parts should be guarded.

Installation

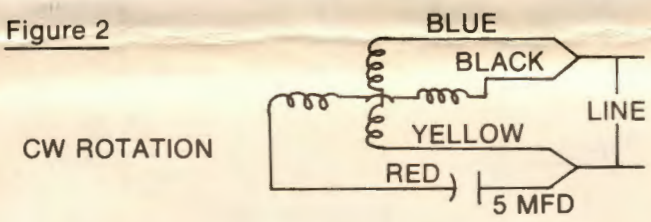
CAUTION: When an installation involves a holding or overhauling application (such as a hoist or a conveyor) a separate magnetic brake or other locking device should be used. DO NOT DEPEND ON GEAR FRICTION TO HOLD THE LOAD.

1. Gearmotor should be located in a clean dry area. If installation is outdoors, make certain the unit is protected from the weather.

   WARNING: DO NOT INSTALL IN AN EXPLOSIVE ATMOSPHERE!

2. Mount gearmotor to a rigid surface, perferably metallic, using #10-32 bolts screwed into (4) tapped holes on face of gearmotor.
3. Wiring diagram:

Figure 2



To reverse rotation interchange red and black leads.

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. (Make sure power source matches requirements of motor.)

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.

Wiring Selection Guide

#16	#14	#12	#10	#8
25 FT.	50 FT.	100 FT.	150 FT.	200 FT.

d. Motor should be grounded by a separate conductor connected to the bare metal of the motor frame. The ground conductor should run to a good electrical ground such as a grounded conduit or water system.

IMPORTANT: Use of a motor run capacitor (oil filled) is necessary for the unit to run at rated speed and torque. See Performance Table for recommended capacitor size and Dayton Part No. See Wiring Diagram for proper location within circuit.

Operation

Application of Load Gearmotor

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 below. Shock loads should be avoided.

LOAD FACTOR CHART

	OPERATING TIME		
NATURE OF LOAD	INTER-MITTENT	NORM. 8 HR. DAY	CONT. 24 HRS.
UNIFORM	1.0	1.0	.9
MOD. SHOCK	1.0	.9	.8

Overhung Load

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. When a sprocket is mounted on the gear reducer output shaft, care must be taken to avoid excess tension on the belt or chain. Maximum overhung load should not exceed 50 pounds at ½ inch from seal end of housing seal boss. If unit is directly coupled to the load, carefully check alignment and coupling runout to avoid over loading of motor and/or bearings.

Overhung Load Calculations

$$\frac{\text{Full Load Torque of speed reducer X 2}}{\text{Pitch dia. of sprocket pulley or pinion in inches}} = \text{Tangential Force in Pounds on center of output shaft of speed reducer.}$$

Multiply tangential force (arrived at from above formula) by the correct pertaining factor below to determine actual overhung load in "Pounds" on center of output shaft.

Drive Factors

Chain (Sprocket) = 1.0 V Belt (Pulley) = 1.5

Pinion (Gear) = 1.25 Flat Belt (Pulley) = 2.5

Locate the centerline of the sprocket, gear or pulley as close to the output shaft 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 ½" away from the oil seal, consult Dayton Electric Mfg. Co. Engineering Department to help determine the overhung load. On direct drive applications, carefully check shaft and coupling alignment as motor is being mounted. Shim motor face as required. Do not depend on a flexible coupling to compensate for misalignment.

Maintentance

CAUTION: Make certain that the power supply is disconnected before attempting to service or remove any components. If the power termination location is inaccessible, lock it in the open position and tag to prevent unexpected resumption of power.

LUBRICATION:

This unit has been lubricated for life at the factory and periodic relubrication should not be required under normal conditions, regardless of mounting position.

DISASSEMBLY:

1. Remove (2) #6-32 motor mounting screws from the rear of the motor.
2. Remove motor and endbell from the gear reducer.
3. Carefully disassemble rotor and shaft assembly from the gear reducer by gently rocking assembly back and forth until bearing comes out of reducer. (Caution: Do not hit or strike bearings, or damage to the bearing raceways will result.)
4. Remove (2) #10-32 round head screws and (2) #10-32 flat head screws. Pry adaptor from the gearbox, being careful not to damage the gasket. Gasket can be reused if not damaged, however, it must be replaced if the gasket is damaged.
5. With the gearhousing disassembled, gears can now be removed. If the output shaft and gear assembly has to be removed or an output shaft seal replaced, cover the output shaft with 1½ wraps of paper or thin plastic to guide lip of seal onto shaft to prevent cutting the seal on the flat.
6. Oil seals can be removed by prying out with a screwdriver. Clean the cavity and press new seal squarely in place, lip edge inward towards gearcase cavity until seal bottoms.

REASSEMBLY:

1. After all the gears have been replaced in the proper locations refill the gearcase with LUBRIPLATE #930-AA; LUBRIPLATE #630-AA; SHELL #ALVANIA-2 OR DOW CORNING #44 [about 4 oz. (by weight) will be required]. **Do not mix lubricants.** Clean gearbox completely and replace with new lubricant.
2. Install new gasket if required and reinstall adaptor to housing with (4) #10-32 screws (2) round head and (2) flat head, tightening uniformly all (4) screws.
3. Replace rotor and shaft assembly onto gearhousing assembly being careful not to damage rotor pinion, 1st. gear or bearing. Carefully twist rotor shaft while inserting to ensure engagement and gently push bearing into seat.
4. Replace motor onto gear reducer and tighten (2) screws firmly. (Do not over tighten for screws might twist off when too much torque is applied.)
5. Start and stop motor, gearing should turn freely without binding.

CLEANING:

Properly selected and installed electric motors are capable of operating for long periods of time with minimal care. However, periodically clean open-type motors especially in and around vent openings by vacuuming. This prevents dirt from being imbedded into windings. At the same time check that all electrical connections are tight.

Trouble Shooting Chart

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Unit fails to operate	1. Blown fuse or open circuit breaker. 2. No power 3. Defective motor 4. Defective manual or magnetic control switch.	1. Replace fuse or reset circuit breaker. 2. Contact power company. 3. Replace motor or repair. 4. Repair or replace switch.
Unit operational but no output.	Defective Gears.	Check and replace if necessary.
Intermittent rotation of output shaft.	Damaged intermediate gear assembly possibly caused by shock load.	Replace gear and if possible avoid shock load.
Excessive Noise.	1. Bearings worn. 2. Belt too tight. 3. Overhung load exceeds rating and causes bearing wear.	1. Replace. 2. Adjust tension. 3. Correct load and/or replace bearing.

Replacement Parts List

Ref. No.	Description	Qty.	Model 4Z062A	Model 4Z063A	Model 4Z064A	Model 4Z065A
1	Gearhousing Assembly	1	US-10133-01	US-10133-02	US-10132-02	US-10132-01
2	Adaptor Assembly	1	AT-10131-04	AT-10131-03	AT-10131-02	AT-10131-01
3	Gasket	1	L-1097	L-1097	L-1097	L-1097
4	Oil Seal	1	J-1019	J-1019	J-1019	J-1019
5	RD. HD. Machine Screw	2	#10-32×1 3/8 LG*	#10-32×1 3/8*	#10-32×7/8 LG.*	#10-32×7/8 LG*
6	Flat HD. Machine Screw	2	#10-32×1 3/8 LG*	#10-32×1 3/8*	#10-32×7/8 LG*	#10-32×7/8 LG*
7	OP. SFT. Assembly (Stage 4)	1	E50P-4500-15-1	E50P-4300-28-1	E50P-4300-56-1	E50P-4500-103-1
8	Gear & Pin Assembly (Stage 3)	1	E56P-4715-1	E5GP-5213-2	—	—
9	Gear & Pin Assembly (Stage 2)	1	E5GP-5218-1	E5GP-4723-1	E5GP-5213-1	—
10	Gear & Pin Assembly (Stage 1)	1	E5GP-4818-1	E5GP-3823-1	E5GP-4623-1	E5GP-4611-1
11	Washer	1	W3087	W-2123	W-2123	W3086
12	Retaining Ring	1	—	—	H-1701-13	—
13	Shell & Stator Assembly	1	TMS-4528-1	TMS-6027-1	TMS-6027-2	TMS-6027-SBI
14	Rotor, Shaft & Bearing Assembly	1	TRS-4500-0001	TRS-6000-0007	TRS-6000-0006	TRS-6000-0010
15	Endbell	1	V-1555-01-02	V-1555-01-02	V-1555-01-02	V-1555-01-02
16	Spring Washer	1	H-1495-2	H-1495-2	H-1495-2	H-1495-2
17	RD. HD. Machine Screw	2	#6-32×3 3/8" LG*	#6-32×4" LG*	#6-32×4" LG*	#6-32×4" LG*
18	Lock Washer	2	#6 External*	#6 External*	#6 External*	#6 External*
19	Dust Cap	1	V-1558	V-1558	V-1558	V-1558
20	Plug	2	P-4067	P-4067	P-4067	P-4067

*All asterisked items can be obtained locally.

ORDER REPLACEMENT PARTS THROUGH DEALER FROM WHOM PRODUCT WAS PURCHASED

Please provide following information:

- Model Number
- Serial Number (if any)
- Part Description and Number as shown in Parts List.

If dealer cannot supply order from:
Dayton Electric Mfg. Co.
CUSTOMER SERVICE DEPT.
5959 W. Howard St.
Chicago, Illinois 60648

LIMITED WARRANTY

Dayton gearmotors, Models 4Z062A thru 4Z065A, are warranted by Dayton Electric Mfg. Co. (Dayton) to the original user against defects in workmanship or materials under normal use (rental use excluded), for one year after date of purchase. Any part which is determined to be defective in material or workmanship and returned to an authorized service location, as Dayton designates, shipping costs prepaid, will be repaired or replaced at Dayton's option. For warranty claim procedures, see "Prompt Disposition" below. This warranty gives purchasers specific legal rights, and purchasers may also have other rights which vary from state to state.

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 description.

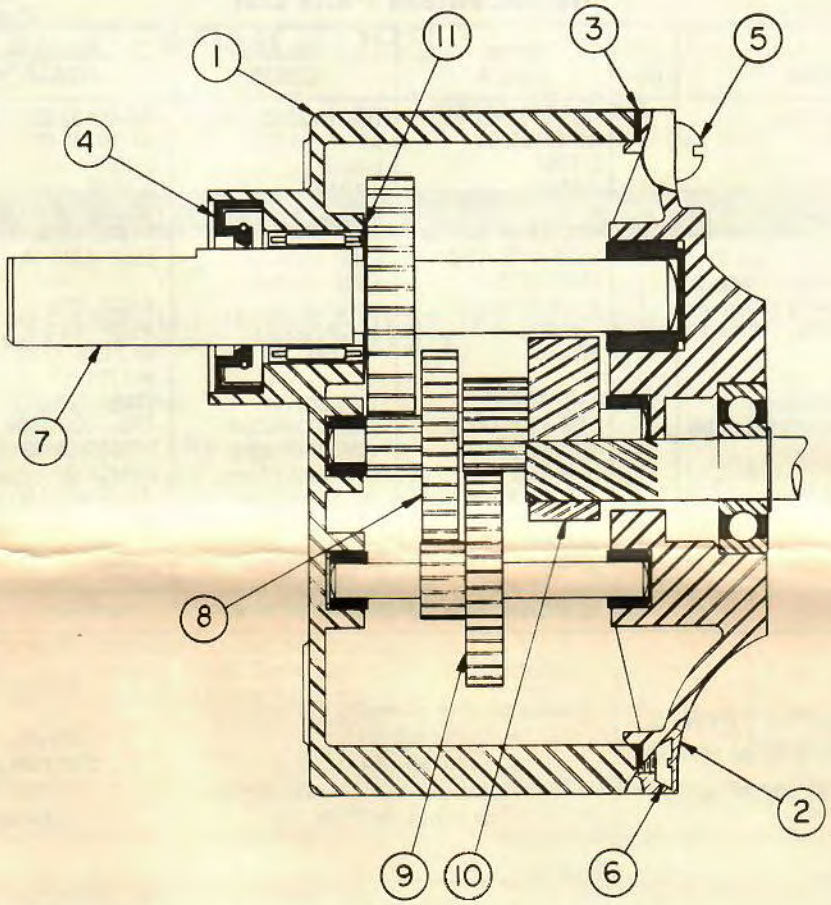
Except as provided below, no warranty or affirmation of fact, express or implied, other than as stated in "LIMITED WARRANTY" above is made or authorized by Dayton, and Dayton's liability in all events is limited to the purchase price paid.

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 warrangies 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 warranty. For any product believed to be defective within 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. If product was damaged in transit to you, file claim with carrier.

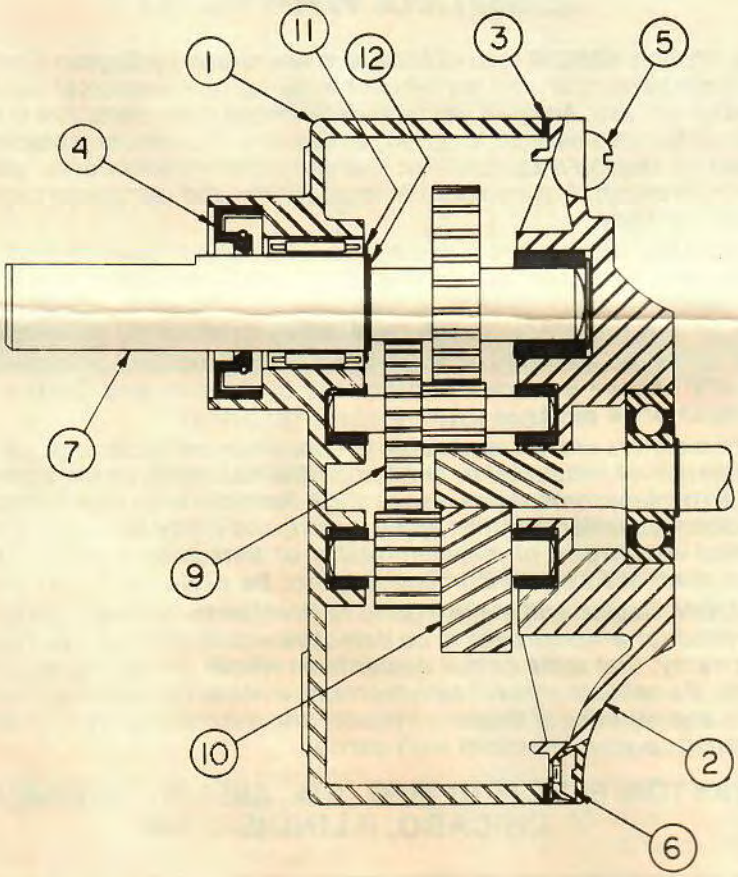
DAYTON ELECTRIC MFG. CO., 5959 W. HOWARD ST.
CHICAGO, ILLINOIS 60648

Figure 3



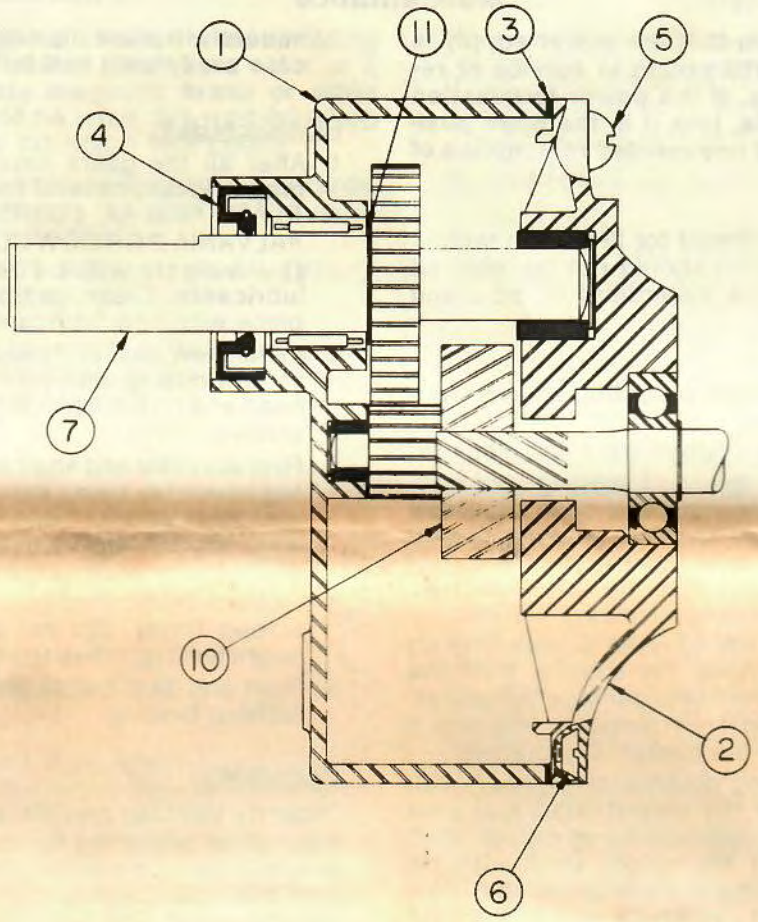
MODELS 4Z062A AND 4Z063A ONLY

Figure 4



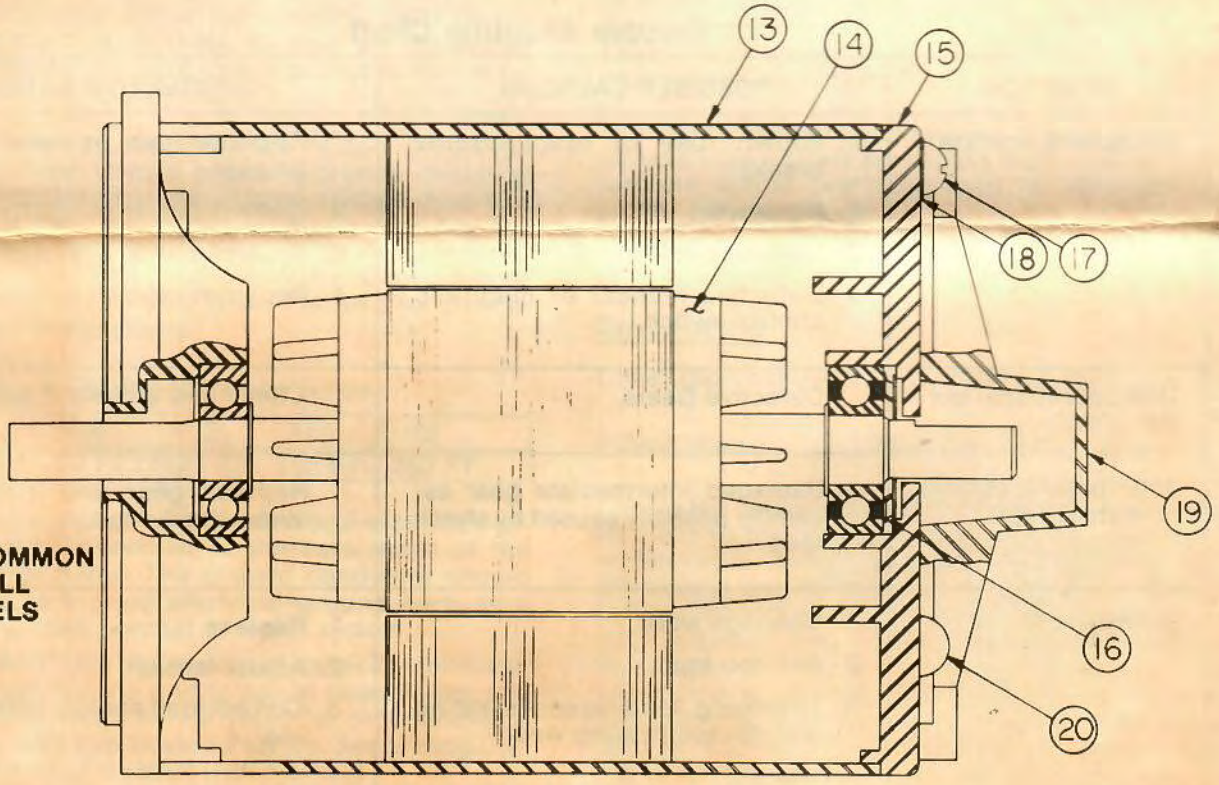
MODEL 4Z064A ONLY

Figure 5



MODEL 4Z065A ONLY

Figure 6



PARTS COMMON TO ALL MODELS