



# DURATECH

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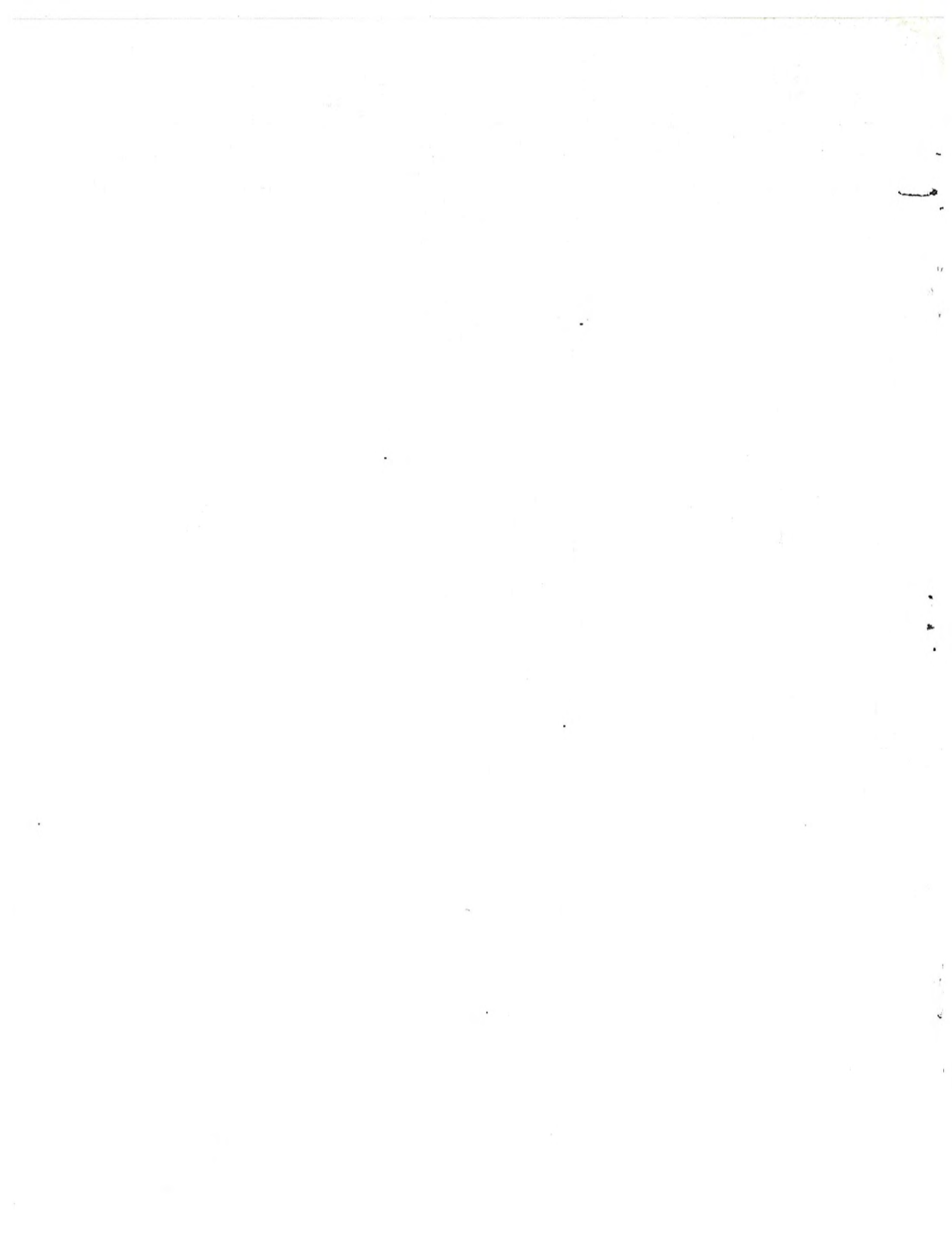


# THE CRUSHER

ALUMINUM DRINK CAN CRUSHER

OPERATORS MANUAL

HAYBUSTER MFG. INC.  
P.O. BOX 1940  
JAMESTOWN, ND  
58402-1940



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## SAFETY INSTRUCTIONS

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The safety of the operator is of great importance to Haybuster Manufacturing Company. We have provided decals, shields and other safety features for your protection. In addition, we ask you to be a careful operator who will properly use and service your Haybuster equipment.

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**WARNING: BEFORE ATTEMPTING TO OPERATE THE CRUSHER, CAREFULLY READ AND FOLLOW INSTRUCTIONS CONTAINED IN THIS MANUAL.**

### Before Operating:

1. Read and follow all instructions contained in:
  - a. this crusher operator's manual
  - b. electric motor instructions manual.
2. Be sure all safety shields and covers are securely in place.
3. Read all warning and instructional decals placed on this machine.
4. Allow only responsible, properly instructed individuals to operate this machine. Carefully supervise inexperienced operators.
5. Make no modifications to this equipment unless specifically requested or recommended by Haybuster Manufacturing Co.
6. Check periodically for breaks or unusual wear and make any necessary repairs.
7. Do not attempt crushing any object which the crusher is not specifically intended to crush.

### During Service and Maintenance:

**CAUTION: ALWAYS TURN OFF MACHINE AND DISCONNECT ELECTRIC POWER BEFORE ATTEMPTING ANY SERVICE OR MAINTENANCE.**

**WARNING: FAILURE TO COMPLY WITH ANY OF THE PRECEDING SAFETY INSTRUCTIONS OR THOSE THAT FOLLOW WITHIN THIS MANUAL MAY RESULT IN SEVERE INJURY OR DEATH.**

**THIS CRUSHER IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS INTENDED AS EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING MATERIALS AND OTHER PERTINENT WRITTEN MATERIAL PREPARED BY HAYBUSTER MANUFACTURING.**

### Safety Decals:

Safety decals located on your machine contain important and useful information that will help you operate your equipment safely. To assure that all decals remain in place and remain in good condition, follow the instructions given below:

1. Keep decals clean. Use soap and water - not mineral spirits, adhesive cleaners, and other similar cleaners that will damage the decal.
2. Replace any damaged or missing decals. When attaching decals, surface temperature of the metal must be at least 40 Fahrenheit. The metal must also be clean and dry.
3. When replacing a machine component to which a decal is attached, be sure to also replace the decal.
4. Replaced decals can be purchased from Haybuster Manufacturing.



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# INTRODUCTION, SPECIFICATIONS, ASSEMBLY, & OPERATION

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## Introduction:

Your Haybuster can crusher was developed from proven experience in crushing aluminum drink cans.

This attractive, compact unit features a stainless steel storage cabinet mounted on casters for easy mobility. A durable, molded plastic hood encloses the crushing mechanism to provide a safe, functional work area.

A welded steel frame supports the crushing mechanism. An 8 inch cast iron crushing rotor is fitted against a 12 inch all steel crushing drum. Cans are flattened by running them between the spring loaded crushing rotor and the roller bearing mounted drum.

With proper maintenance and service the Haybuster Crusher will provide years of trouble free service.

## Specifications:

Cabinet Size: Width: 27 1/2"  
Depth: 16 1/2"  
Height: 52" (to top of can chute)  
40" (to top of hood)

Weight: 150 lbs.

Power: 1/4 HP, 30 rpm gearmotor, 115 volt, 60 Hz, 4.6 Amp

Crushing Drive: 40 pitch chain and sprocket

Capacity: Up to 60 cans per minute.

Crushed Can Storage: 20 gallon Rubbermaid refuse container #2971.

## Assembly:

1. Install ON/OFF switch lense by snapping into switch opening on front of crusher. Make certain the clear plastic portion of the lense is directly over the switch indicator light.
2. Install the door handle as outlined in Figure 1.
3. Fasten the can chute to the hood using the following steps:
  - a. center the chute over the hood inlet and mark the four screw locations,
  - b. drill four 1/8" holes
  - c. fasten the chute with the four TORX head screws using a T-15 driver.

## Operation:

1. Connect machine to suitable 115 volt, 60 cycles, 10 amp electric supply.
2. Ensure can collection container is in position inside the crushing cabinet.
3. Switch on the Can Crusher at the illuminated switch. Your machine is now ready to receive 12 ounce drink cans.
4. Cans can be placed into the charging chute vertically, these will then go through the machine and be deposited into the collection container.
5. After approximately 480 cans have been crushed, the container should be inspected and emptied if full.
6. Do not force distorted cans into the loading chute. If they do not go freely, flatten by alternative methods. Remember a blocked loading chute wastes time, if the loading tube does become blocked then a responsible person with knowledge of the machine must be consulted.
7. For safety reasons, the machine will not run with the hood removed.
8. The machine must always be disconnected from the electrical supply before any internal maintenance is carried out.
9. The top cover must only be removed by authorised persons.
10. Should the machine fail to start, consult the trouble shooting section of this manual.



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## MAINTENANCE & TROUBLE SHOOTING

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**WARNING:** Before servicing machine, read the Service and Maintenance section of the Safety Instructions.

**CAUTION:** Always turn off machine and disconnect electric power before servicing.

### Maintenance and Adjustments:

#### Crushing Drive Motor:

**WARNING: DISCONNECT POWER BEFORE SERVICING**

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

**CLEANING:** Electric motors are capable of running for extended periods of time with minimal maintenance if properly selected and installed. Periodically clean dirt from the motor, especially in and around vent openings on open-type motors. Vacuuming is preferred, it avoids imbedding dirt in the motor windings. When cleaning, also check electrical connections. Make certain they 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: Mobilie UX-EP2, Philube #EP2, Gulf Crown #EP2, Alvania #EP2 or Multifax #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.

#### Compression and Idler Spring Adjustment:

Tighten the spring rod nuts on each end of the compression spring so that you have a compressed spring length of 5 1/2 inches.

With the compression spring tightened to its 5 1/2" length, tighten the idler spring, using the spring rod nuts on the idler spring end, so that its compressed length is 2 1/4 inches.

Proper spring adjustment will mate the drive rotor against the crushing drum, so the drum will turn with the rotor. If the drum does not turn, the idler spring may need to be compressed further. See Figures 2 and 3.

#### Chain Adjustment and Lubrication:

Periodically check the drive chain for tension and lubrication. The chain should flex between 1/4" and 3/8" when adjusted. Adjust chain with tightener if needed.

If the chain appears to be dry oil with a quality grade motor oil, use your own best judgement. Because of the speed at which it moves the chain should need infrequent lubrications. See Figures 2 and 3.

#### Trouble Shooting:

**Problem:** Drive motor will not run.

**Cause #1:** Hood not properly aligned.

**Solution #1:** Remove hood and align safety switch activator peg with safety switch.

**Cause #2:** Safety switch activator peg not contacting safety switch.

**Solution #2:** Adjust activator peg by turning ccw.

**Cause #3:** Faulty safety switch.

**Solution #3:** Replace switch.

**Cause #4:** No electrical power or loose electrical connections.

**Solution #4:** Check power supply.

**Cause #5:** Faulty drive motor.

**Solution #5:** Replace drive motor.

**Cause #6:** Faulty ON/OFF switch.

**Solution #6:** Replace switch.

**Problem:** Cans do not feed into crusher.

**Cause #1:** Can plugging hood chute.

**Solution #1:** Remove problem can.

**Cause #2:** Upper can guide needs to be adjusted.

**Solution #2:** Adjust upper can guide up and forward.

**Problem:** Crushing drum does not turn with rotor running.

**Cause #1:** Foreign material in drum bearing groove.

**Solution #1:** Clean groove. See Figure 3.

**Cause #2:** Idler spring not properly adjusted.

**Solution #2:** Adjust compression and idler springs.

**Cause #3:** Drum bearing seized.

**Solution #3:** Replace problem bearing.

#### Figure 2 Legend

1. Drive Motor
2. Drive Chain
3. Chain Tightener
4. Lower Can Guide
5. Upper Can Guide
6. Drum Bearing
7. Crushing Drum
8. Drive Rotor
9. Compression Spring
10. Idler Spring
11. Safety Switch
12. Frame
13. Pivot Arm





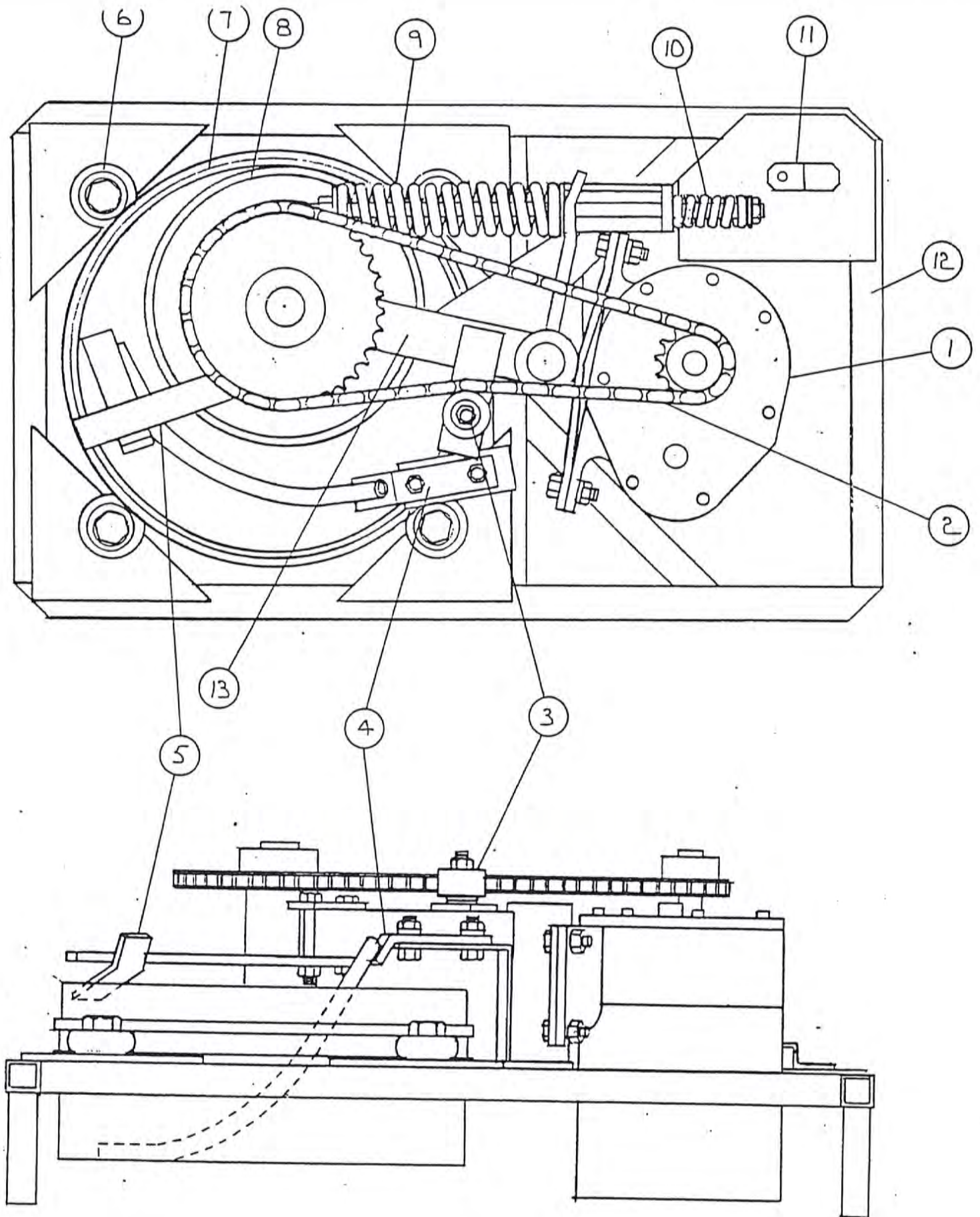


FIGURE 2



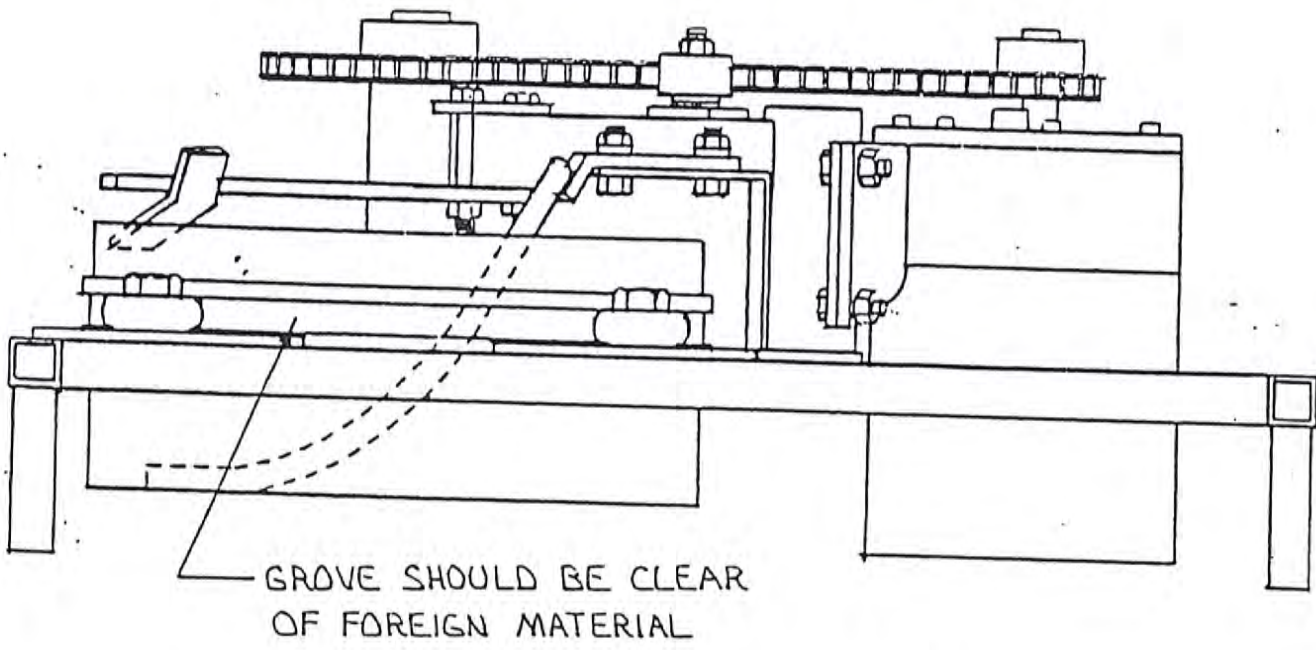
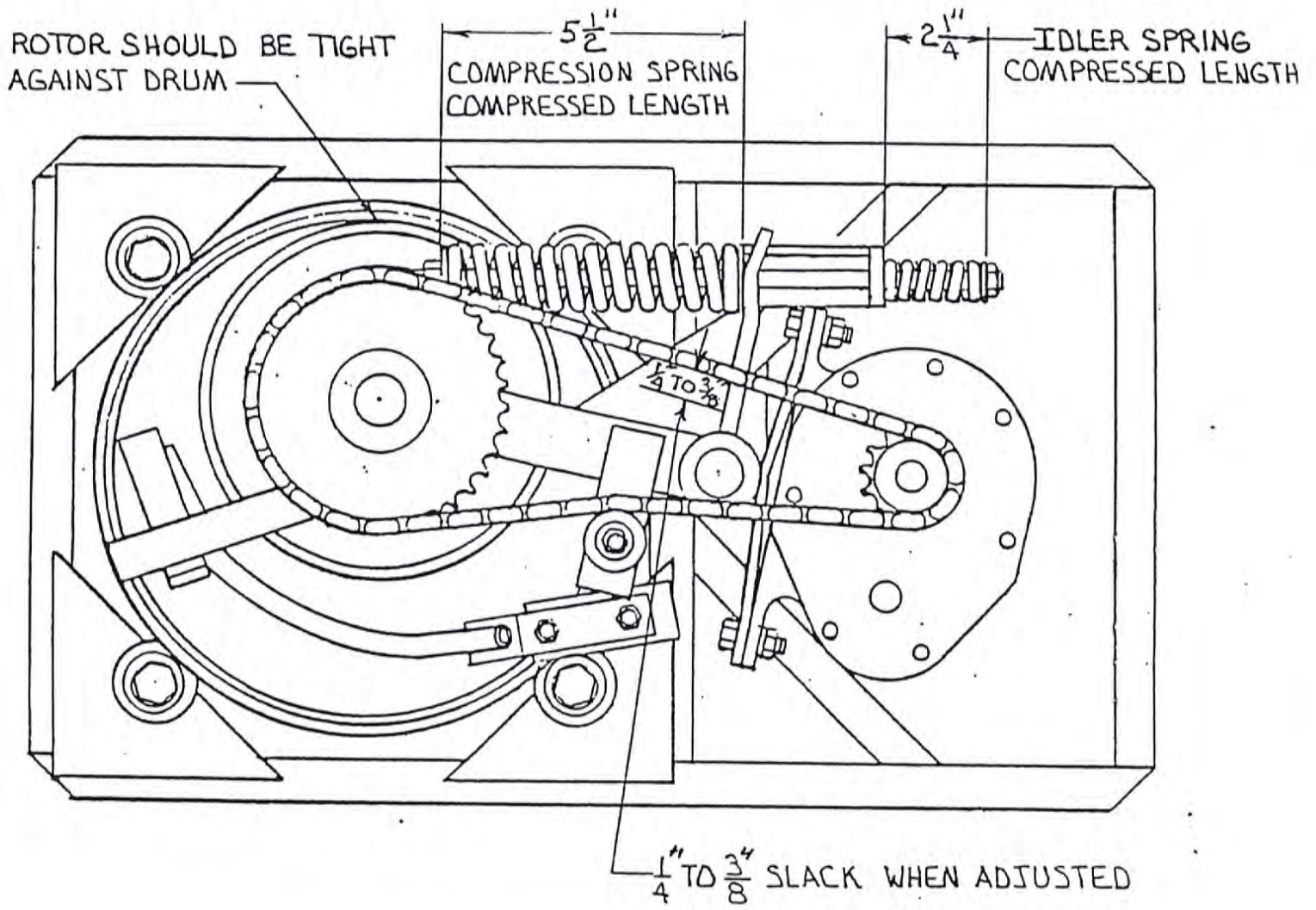
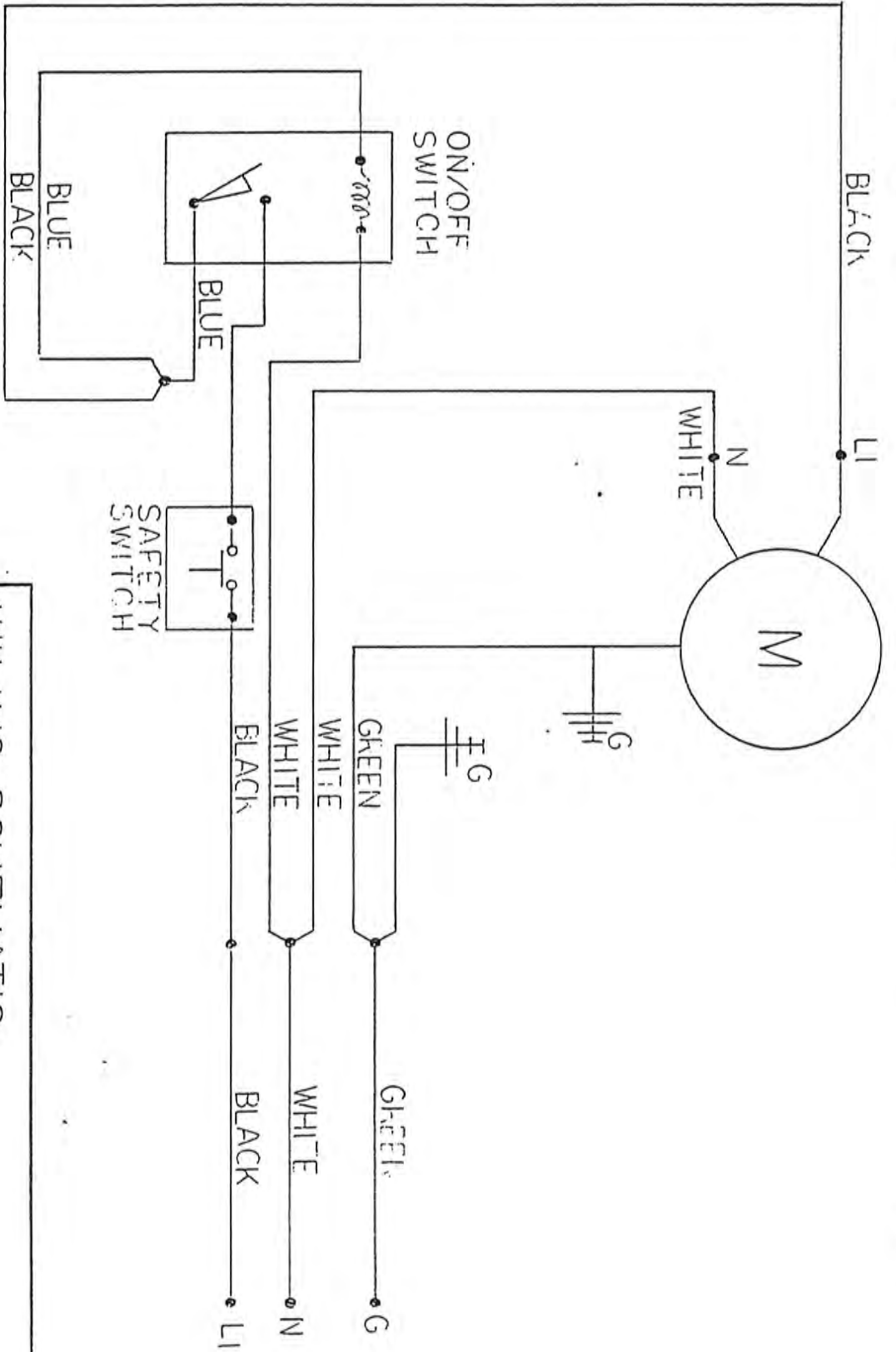


FIGURE 3





WIRING SCHEMATIC  
CAN CRUSHER

SCALE

DRAWN BY VJV  
REVISED

DATE

4-18-51

APPROVED BY

DRAWING NUMBER





# INSTALLATION INSTRUCTIONS & PARTS LIST

## 1/4 HP GEARMOTORS

MODELS 5K939A, 5K940A, & 5K942A

FORM 5S1066 09090

**DAYTON ELECTRIC MANUFACTURING CO. CHICAGO 60648**

0382/120/25C

**READ INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THE DAYTON GEARMOTOR. 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.

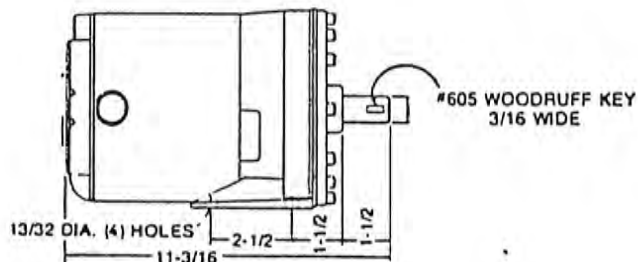
The first stage gearing is helical cut phenolic, to reduce high speed noise. The second stage gearing includes a steel pinion and cast iron output gear to withstand rated loads.

For additional information on your particular model, consult the Specifications.

### Specifications

Dimensions.....	See Figure 1.
Rotation (facing output shaft) .....	Reversible by electrical connection
Power Supply Req'd. ....	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 .....	
Rated Output Torque (Inch-pounds) .....	{ 400 (5K939A) { 200 (5K940A) { 100 (5K942A)
Ratio .....	{ 58:1 (5K939A) { 29:1 (5K940A) { 14.4:1 (5K942A)
Full Load Output RPM ...	{ 30 (5K939A) { 60 (5K940A) { 120 (5K942A)

- 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 unexpected application of power.
- 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.
- 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.
- Protect the power cable from coming in contact with sharp objects and moving parts.
- Make certain that the power source conforms to the requirements of your equipment.
- When cleaning electrical or electronic equipment, always use a non-flammable cleaning agent that will not attack the finish or insulation.
- Do not kink power cable and never allow the cable to come in contact with oil, grease, hot surfaces, or chemicals.



### General Safety Information

- Follow all local electrical safety codes, the National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).
- 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.

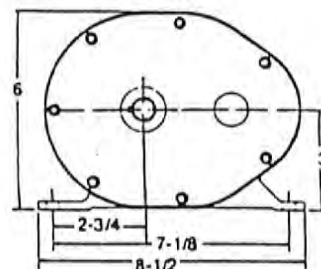
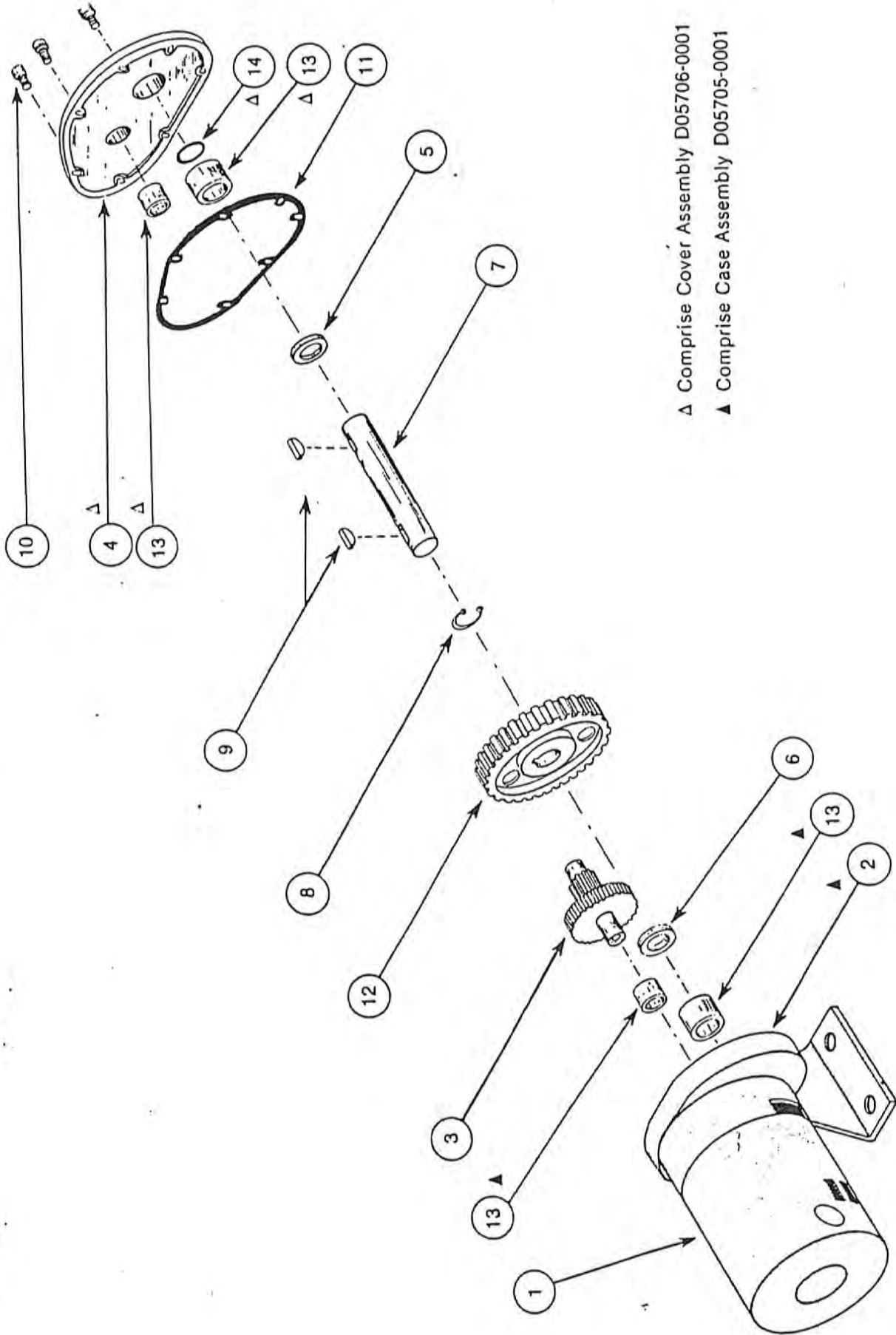


Figure 1 — Dimensions







△ Comprise Cover Assembly D05706-0001

▲ Comprise Case Assembly D05705-0001

Figure 2 — Replacement Parts Illustration



**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.

**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

- cable 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 100 lbs., at 1" from the bearing nose.

**DETAILED OVERHUNG LOAD CALCULATIONS:**

$$\frac{\text{Full Load Torque of Speed Reducer} \times 2}{\text{Pitch Diameter}} = \text{Pounds of Load on Center of Speed Reducer Output Shaft}$$

Multiply pounds of load (obtained from above formula) by the correct factor listed below to determine actual overhung load in "pounds" on center of speed reducer 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. Engineering Dept. to help determine the overhung load.

- b. On direct-coupled installations, carefully check shaft and coupling alignment as motor 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 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 Multifax #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!**



Replacement Parts List

Ref. No.	Description	Qty.	Part No. for Model	
			5K939A	5K940A
1	Motor with case	1	V00212BM10	V00212BM10
2	Case assembly with bearings	1	D05705-0001	D05705-0001
3	Intermediate gear (Fibre)	1	A00461-0001	A02894-0001
4	Steel gear (optional)	1	A00461-0002	A02895-0002
5	Cover assembly with bearings	1	D05706-0001	D05706-0001
6	Outer washer	1	L01669-0006	L01669-0006
7	Inner washer	1	L01669-0020	L01669-0020
8	Output shaft	1	J00463-0015	J00463-0015
9	Snap ring	1	R01477-0001	R01477-0001
10	Woodruff key	2	P00464-0001	P00464-0001
11	Cap screw, 1/4-20x3/4"	7		
12	Gasket	1	P05620-0001	P05620-0001
13	Output gear	1	H00414-0001	H00414-0004
14	Bushings (set of 4)	1	V00212AEAJ	V00212AEAJ
	"O" ring (output shaft)	1	P00788-0001	P00788-0001
	Motor cover plate (not shown)	1	K07922-0001	K07922-0001

\*Standard hardware item, available locally.

Trouble Shooting Chart

SYMPTOM	POSSIBLE CAUSES	CORRECTIVE ACTION
Unit fails to operate	<ol style="list-style-type: none"> <li>Blown fuse or open circuit breaker</li> <li>No power</li> <li>Defective motor</li> <li>Defective manual or magnetic control switch</li> </ol>	<ol style="list-style-type: none"> <li>Replace fuse or reset circuit breaker.</li> <li>Contact power company.</li> <li>Repair or replace.</li> <li>Repair or replace.</li> </ol>
Unit operational, but no output	<ol style="list-style-type: none"> <li>Defective gear(s)</li> <li>Output gear key (Woodruff) stripped</li> </ol>	<ol style="list-style-type: none"> <li>Check and replace if necessary.</li> <li>Replace.</li> </ol>
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"> <li>Bearings worn</li> <li>Belt too tight</li> <li>Overhung Load — exceeds rating and causes bearing wear</li> </ol>	<ol style="list-style-type: none"> <li>Replace.</li> <li>Adjust tension.</li> <li>Correct load and/or replace bearing.</li> </ol>

LIMITED WARRANTY

Dayton gearmotors, Models 5K939A, 5K940A, 5K942A, 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 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, 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 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 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 STREET  
CHICAGO, ILLINOIS 60648

ORDER REPLACEMENT PARTS  
THROUGH DEALER FROM WHOM  
PRODUCT WAS PURCHASED

Please provide following information:

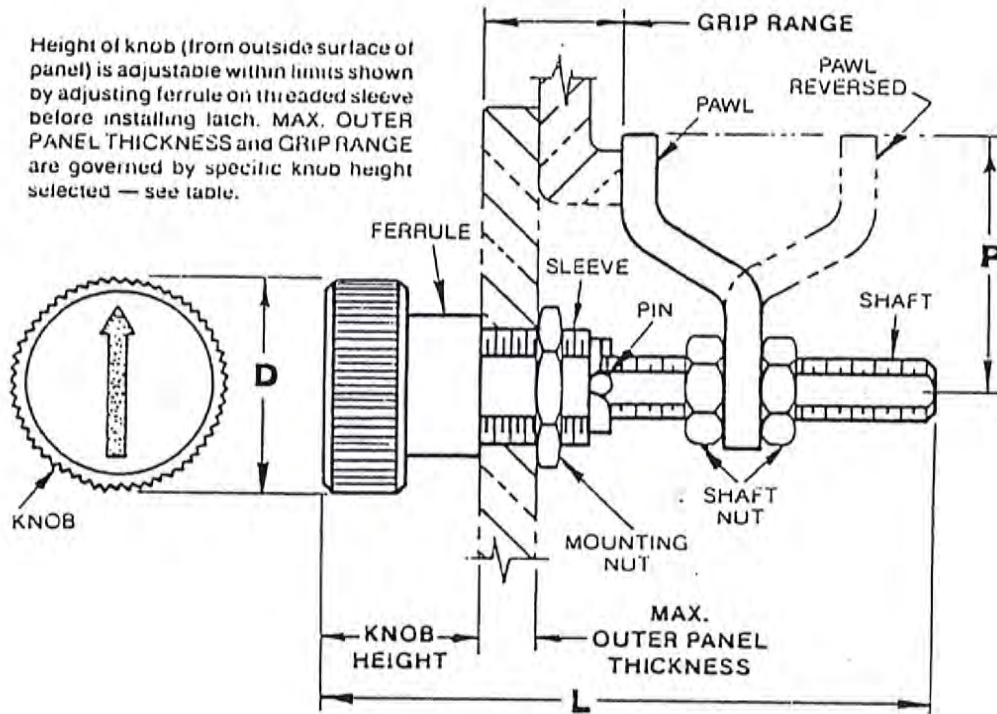
- Model Number
- Serial Number (if any)
- Part Description and Number as shown in Parts List.

If dealer cannot supply order from:

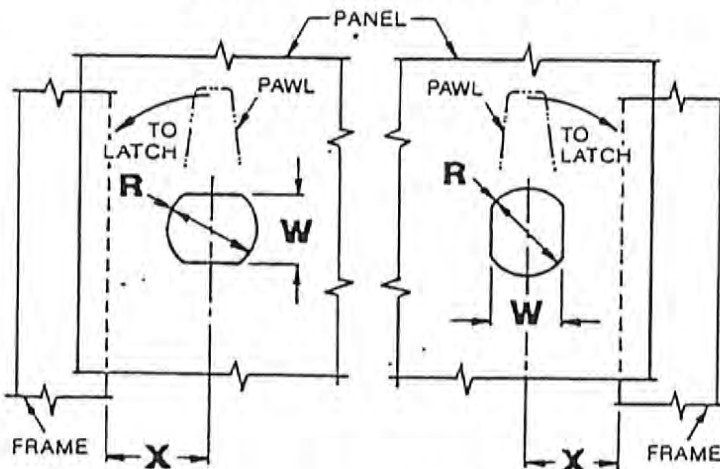
Dayton Electric Mfg. Co.  
Customer Service Dept.  
5959 W. Howard St.  
Chicago, Illinois 60648



Height of knob (from outside surface of panel) is adjustable within limits shown by adjusting ferrule on threaded sleeve before installing latch. MAX. OUTER PANEL THICKNESS and GRIP RANGE are governed by specific knob height selected — see table.



## PANEL PREPARATION



LEFT HAND ASSEMBLIES  
turn counterclockwise to latch

RIGHT HAND ASSEMBLIES  
turn clockwise to latch

## INSTALLATION

Latch operates through 90° rotation in direction shown with a positive click stop at both extremes. Pawl pulls up at both extremes.

1. Adjust ferrule to desired knob height (see table).
2. Remove shaft nuts, pawl and mounting nut (if assembled).
3. Insert shaft through hole in panel to engage flats of sleeve with shaped hole.
4. Check arrow orientation.
5. Apply and tighten mounting nut.
6. Install pawl and shaft nuts as shown, position pawl for desired grip and use two wrenches to tighten nuts hard against pawl

FIGURE 1

