

Please read and save these instructions. 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 serious or fatal injury and/or property damage! Retain instructions for future reference.

Dayton® Electric Chain Hoists

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Description

Dayton Electric Chain Hoists, Models 4GU70, 4GU71 and 4ZY98, are designed for light-duty lifting. Use for applications weighing no more than the maximum rated load of hoist. Lift freely suspended (unguided) loads on an intermittent basis only. Not for industrial or production applications requiring continuous operation.

Fully inspected and built in accordance with all applicable design and test requirements of OSHA and ANSI for overhead hoists.

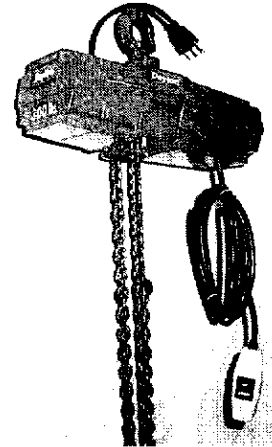


Figure 1

Unpacking

When unpacking the hoist, inspect for any damage that may have occurred during transit. Check for loose, missing or damaged parts.

▲ WARNING Do not use this equipment to lift, support, or transport people. Do not lift loads over people, or leave a suspended load unattended.

Specifications (Models 4GU70/4GU71/4ZY98)

Max. rated load.....300/500/800 lbs.	Full load amp draw.....3	Min. distance between hooks. 14-1/2/16/16-3/4"
Lifting speed.....16/8/8 fpm	Duty cycle.....12 min./hr.	Housing height.....4 5/8"
Max. Lift.....10 ft.	PB cord length.....6 ft.	Housing width.....6"
HP.....1/6/1/6/1/5	Power cord length.....13"	Housing length.....14 1/4"
Power Supply.....115V, 1 phase, 60 Hz	Limit switches.....Upper & Lower	Hoist weight.....22/27/30 lbs.

General Safety Information

Any person who will be operating or maintaining these hoists should carefully read all information contained herein and in the American National Standard (ANSI) B30.16 Safety Standard for Overhead Hoists.

▲ WARNING Do not use hoist outdoors or in hazardous locations where explosive gases or particles are present.

1. Before using hoists operators must be familiar with its controls, operating procedures, and warnings.
2. Test limit switches to be certain they are operating properly.
3. Only use load slings and sling attachments that are properly sized and seated.

4. DO NOT use load chain to wrap around the load or as a sling.
5. Before lifting a load make sure chain is seated in chain wheels or sprockets.
6. Do not use hoist if chain is twisted, kinked, worn or damaged.
7. Do not use when binding causes an unequal load distribution on the supporting chains.
8. Do not attempt to repair a damaged load chain or to lengthen the chain.
9. Use only recommended lubricant when needed.
10. Prevent load chain or hook from contact with a live welding

electrode, weld spatter, or other contaminant.

11. Do not permit chain or hook to be used as a ground when welding.
12. Use hook latches where possible and when using be sure to close the latch.
13. Do not allow weight of load to rest on hook latch or the tip of the hook.
14. When lifting do not exceed the maximum rated load limit of the hoist.

▲ CAUTION Structural supports and load attaching devices must have a load rating equal to or greater than that of the hoist.

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General Safety Information (Continued)

15. When moving a load be certain that the pathway is free of any obstructions.

16. Make certain that all persons are warned of an approaching load and that all persons remain clear of a suspended load.

▲ WARNING *Never lift loads over people or leave a load unattended when suspended.*

17. When operating hoists always maintain a firm footing and keep your attention focused.

18. Keep load centered under hoist to avoid any swinging of load.

19. If slack occurs, take up carefully. Check load balance and lift a few inches. Then check for load holding action before continuing to lift.

20. Limit switches should only be used as an emergency device. Do not use for routine stops unless recommended.

21. Do not use the loading limiting device to measure a load.

22. Always make repairs or adjustments to damaged or malfunctioning hoists before using.

23. Allow qualified persons only to make repairs or adjustments.

24. Make regular inspections, and keep maintenance records.

NOTE: Any damage, malfunction, or unusual change in performance should

be reported promptly.

Installation

1. Supporting structure and load attaching devices should have a load rating at least equal to that of the hoist.

▲ CAUTION *Hoists must be installed in locations which provide safe operating conditions. Do not use in areas that contain explosive dust, gases, or vapors. Do not use in or near wet areas or outdoors. Make certain that the operator and other persons have room to stand clear of the load at all times.*

▲ WARNING *Avoid use of hoist in areas or applications where slack chain hanging from hoist may create hazardous conditions.*

2. The power supply to the hoist should be 115V, single phase, 60 Hz. The voltage can range from plus or minus 10% of 115V.

3. The hoist is equipped with a 3-prong, grounding plug. Make sure that it is plugged into a properly grounded and installed receptacle.

4. After hanging the hoist make sure that the hook latch closes.

▲ CAUTION *Before beginning a work shift an operator should test the pushbutton station, limit switches and brake control. If not operating properly, they should be replaced or repaired before putting hoist in service.*

LIMIT SWITCH OPERATION

It is important to check for the proper operation of the limit switches before using the hoist.

1. Press UP button.

2. While hook moves up, raise the limit switch paddle where the chain enters the hoist.

3. Hook should immediately stop.

4. Check DOWN limit switch in similar manner.

▲ CAUTION *Do NOT use hoist when brake is not properly working. If hook does not stop within 1 or 2 inches after pushbutton is released, the brake assembly may need to be replaced.*

Operation

The hoist should be used on an intermittent basis only. Total usage per hour should not exceed twelve minutes. A thermal cut-off protects the motor from overheating and will also automatically reset it once the motor has sufficiently cooled, so that its operation can be resumed.

1. The hoist should be positioned directly over load. Do NOT attempt to side pull.

2. Hoist chain should not be wrapped around load. Use proper slings.

3. Engage hook with load. Before lifting load make sure load is seated properly.

4. After lifting load clear of its supports, stop to check braking action.

5. Avoid jogging the controls or making quick reversals when lifting or lowering a load.

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Operation (Continued)

6. Do not use the limit switch for routine stops during normal operation. It should be used as an emergency device.
7. Stand away from load at all times.

Maintenance

INSPECTION

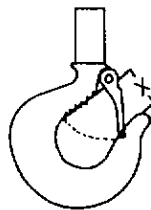
Inspection procedures are listed under three general classifications based upon intervals at which inspection should be performed – daily, quarterly, and annually. Deficiencies should be carefully examined and corrected. The intervals between inspections can vary due to conditions. If the hoist is used under adverse conditions, it should be inspected more often.

⚠ WARNING *Make certain load is removed from hoist before attempting to service. Also, before attempting to service or remove any components, make certain power supply is disconnected. If power disconnect point is out of sight, lock it in the open position and tag to prevent any unexpected application of power. Only a qualified electrician or service person should perform any electrical troubleshooting or maintenance.*

DAILY INSPECTION

1. Inspect the following items every day before operating hoist:
 - a. Check pushbutton station, brake, and limit switches for proper operation.

- b. Check hooks for deformities, cracks, or chemical damage. Hooks having more than 1-inch opening at throat (see Figure 2) should be replaced.



Normal "X"	Reject "X"
7/8" (4GU70 & 4GU71)	1"
1-1/16" (4ZY98)	1-7/32"

Figure 2 — Hook Replacement

- c. Check for open, bent or damaged hook latches.
- d. Check chain for wear or damage.
- e. Check pushbutton cord and power cord for cuts or other damage.

QUARTERLY INSPECTION

2. Inspect the following every 90 days:
 - a. Check items listed under daily inspection.
 - b. Check for loose nuts, bolts, and screws.
 - c. Inspect for worn, corroded, cracked, or distorted parts.
 - d. Check electrical parts, limit switches, and pushbutton station.

ANNUAL INSPECTION

3. Inspect the following items every year:
 - a. Check items listed under daily and quarterly inspection.

- b. Check hooks for cracks by means of a magnetic particle test or other crack detecting test.
- c. Inspect for worn, corroded, cracked, or distorted parts including pins, bearings, shafts, keys, and gears.
- d. Inspect supporting structure and trolley (if used) for ability to support the imposed loads.
- e. Check for worn brake disc by measuring the brake air gap with a feeler gauge. Brake gap larger than the allowable wear limit may cause chatter or failure to release (see Figure 4).

NOTE: Do not use near flammable liquids or hazardous materials of any kind.

BRAKE REPAIR

When brake does not operate properly as described in installation section, replace entire brake assembly.

⚠ CAUTION *Keep brake surface and brake lining free of grease.*

Check for worn brake disc by measuring the brake air gap with a feeler gauge (see Fig. 4). Brake gap larger than the allowable wear limit may cause chatter or failure to release.

CHAIN INSPECTION

1. Check all links for gouges, nicks, weld spatter, and distortion.
2. Inspect and measure each link for wear to the link diameter. If any are worn to less than 0.175", the chain must be replaced.

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Maintenance (Continued) CHAIN INSPECTION

3. Check overall wear by selecting an unused length of chain and comparing it to a used length.

- a. Let unworn chain hang vertically with a light load on it to remove slack.
- b. Measure outside length of a convenient number of links with large caliper.
- c. Measure same number of links in used section of chain and calculate difference in numbers.
- d. If length of worn chain is more than 1-1/2% longer than unused chain— chain should be replaced.

IMPORTANT: Chain is designed specially for use with hoist.

CAUTION Do not substitute any other make or type. Never attempt to weld or splice hoist load chain.

TO REPLACE CHAIN

1. Remove lower hook block and chain and ball (Fig. 6, Ref. No. 17).
2. Line up end to end — new chain with old chain — so link welds match. (Welds toward outside of sheave).
3. Use a piece of string or small wire to tie chains together so ends are exactly 9/32" apart. This enables the chain to pass smoothly through hoist.
4. Operate enough to pull new chain into hoist. Refit springs (Ref. No. 6), lower hook (Ref. No. 86), and end ball (Ref. No. 59).

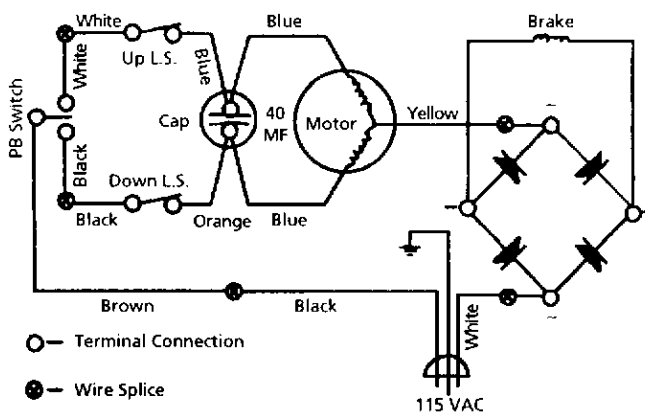


Figure 3 — Wiring Diagram

LUBRICATION

1. At assembly the gear housing is adequately lubricated with 1/3 pound of grease. If relubrication becomes necessary, use approximately 3/4 cup of a light semifluid NLGI #1 grease.
2. Apply a small amount of grease to the bore of the idler sheave. (Fig. 5, Ref. No. 4) in the bottom block.
3. Wipe chain clean with a cloth periodically and apply a coat of 90 weight gear oil.

IMPORTANT: Do not use grease.

CAUTION Keep brake surface and lining free of grease.

BRAKE CHECKING PROCEDURE

1. Remove load and disconnect all AC input power to the hoist.
2. Remove brake cover (Fig. 5, Ref. No. 70).

3. Check for worn brake disc by measuring the brake air gap with a feeler gauge (See Figure 4). Brake gap larger than the allowable wear limit may cause chatter or failure to release.

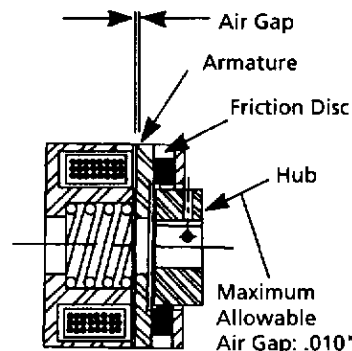


Figure 4 — Checking Brake Gap

BRAKE REPAIR

When the brake is not operating properly, replace the entire brake assembly (Fig. 5, Ref. No. 69).

Models 4GU70, 4GU71 and 4ZY98

Maintenance (Continued)

Troubleshooting Chart

Symptom	Possible Cause(s)	Corrective Action
Hoist turns off after several minutes of operation, but then restarts several minutes later	Thermal protector opens due to excessive operation	Reduce number of operating cycles
Brake does not hold and load drifts down	Brake worn out or brake contaminated	Replace brake assembly
Brake chatters	<ol style="list-style-type: none">1. Check for greater than allowable air gap2. If brake still chatters after being replaced check rectifier for proper operation (to be performed by a qualified electrician or service person)	<ol style="list-style-type: none">1. Replace brake assembly2. Replace rectifier

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For Repair Parts, call 1-800-323-0620

24 hours a day - 365 days a year

Please provide the following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

Address parts correspondence to:

Grainger Parts
 P. O. Box 3074
 1657 Shermer Road
 Northbrook, IL 60065-3074 U.S.A.

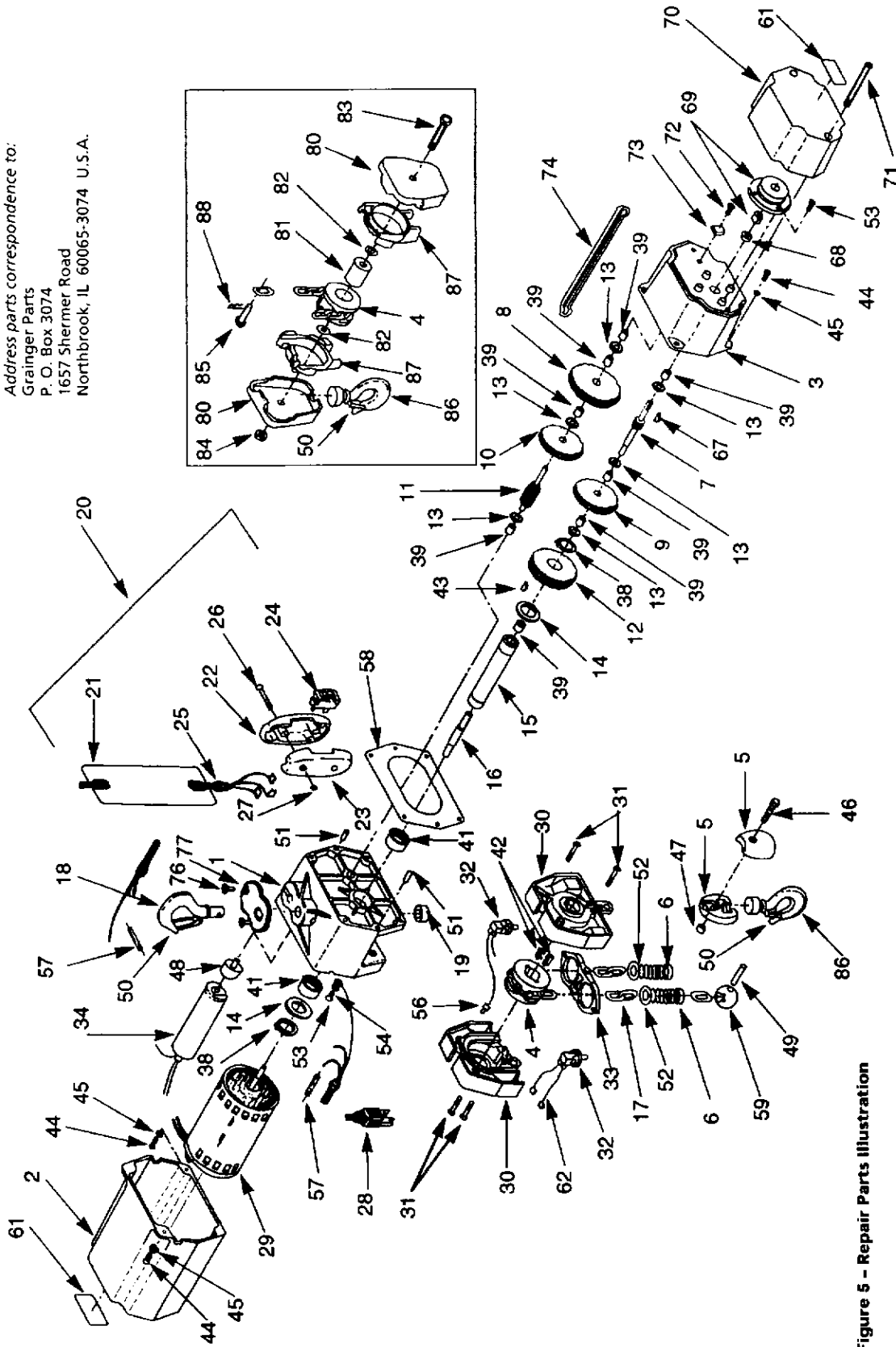


Figure 5 - Repair Parts Illustration

Repair Parts List for Chain Hoists

Ref. No.	Description	4ZY98 Part No.	4GU70 4GU71 Part No.	Qty.
1	Suspension Frame	EC-01	EC-01	1
2	Control Cover	EC-02	EC-02	1
3	Transmission Cover	EC-03	EC-03	1
4	Drive Sheave	EC-04a	EC-04	1
	Idle sheave (N/A for 4GU70)	● EC-04	▲ EC-04	1
5	Swivel Frame (N/A for 4GU71)	△ EC-05	△ EC-05	2
6	Limit Spring	◇ EC-06	◇ EC-06	2
7	High Speed pinion	EC-07	EC-07	1
8	High Speed Cluster Gear	EC-08	EC-08	1
9	Intermediate Cluster Gear	EC-09	EC-09	1
10	Intermediate Gear	EC-10	EC-10	1
11	Output Pinion	EC-11	EC-11	1
12	Output Gear	EC-12	EC-12	1
13	Thrust Washer A	EC-13	EC-13	6
14	Thrust Washer B	EC-14	EC-14	2
15	Drive Sheave Shaft	■ EC-15	■ EC-15	1
16	Drive Coupling	EC-16	EC-16	1
17	Load Chain	◇ EC-17	◇ EC-17	1
	Load Chain (4GU71 and 4ZY98)	◆ EC-17a	◆ EC-17a	1
18	Upper Hook with Latch	○ EC-18a	○ EC-18	1
19	Upper Hook With Latch	○ EC-19	○ EC-19	1
20	Hook Collar	EC-20	EC-20	1
21	Push Button Assembly	EC-21	EC-21	1
22	Warning Label	EC-22	EC-22	1
23	Pushbutton Housing Right	EC-23	EC-23	1
24	Pushbutton Housing Left	EC-24	EC-24	1
25	Rocker Switch	EC-25	EC-25	1
26	Pushbutton Cord Assembly	EC-26	EC-26	1
27	Cross Slot Machine Screw	EC-27	EC-27	2
28	Hex Nut	EC-28	EC-28	2
29	Power Cord Assembly	EC-29	EC-29	1
30	Motor	EC-29a	EC-29	1
31	Motor (4ZY98)	EC-30	EC-30	2
32	Chain Guide	EC-31	EC-31	4
33	Chain Guide Plate Screw	EC-32	EC-32	2
34	Limit Switch	EC-33	EC-33	1
35	Limit Paddle	EC-34	EC-34	1
36	Capacitor	EW-35	EW-35	2
37	Spring Retaining Ring	EW-36	EW-36	8
38	Load Bearing	EW-37	EW-37	2
39	Flat Key (Sheave)	EW-38	EW-38	2
40	Flat Key (Output Gear)	EW-39	EW-39	1
41	Cross Slotted Machine Screw	EW-40	EW-40	6
42	Lock Washer	EW-41	EW-41	8
43	Screw (Bottom Block N/A for 4GU71)	△ EC-46	△ EC-46	1
44	Hex Locknut (N/A for 4GU71)	△ EC-47	△ EC-47	1
45	Capacitor Base	EW-57	EW-57	1
46	Roll Pin	◆ EC-49	◆ EC-49	1
47	Latch Kit	● EC-46	▲ EC-46	1
48	Dowel Pin	EW-47	EW-47	2

Ref. No.	Description	4ZY98 Part No.	4GU70 4GU71 Part No.	Qty.
52	Limit Washer	◆ EC-52	◇ EC-52	2
53	Cross Slotted Machine Screw	EW-49	EW-49	1
54	Washer	EW-50	EW-50	1
55	Pigtail Splice	EC-56	EC-56	2
56	Splice Connector	EW-52	EW-52	2
57	Gasket	EW-53	EW-53	1
58	End Ball	◇ EC-59	◇ EC-59	1
59	Capacity Label	300 lb.	EC-61	2
		500 lb.	EW-56	2
		800 lb.	EW-63	2
62	Jumper Wires	EC-61a	EW-73	1
63	Woodruff Key	EW-60	EW-70	1
64	Oil Seal	EW-61	EW-61	1
65	Brake with Hub Kit (includes brake, hardware and instructions to fit square or round brake)	EW-62	EW-62	1
66	Brake Cover	EW-63	EW-63	1
67	Cross Slotted Screw	EW-64	EW-64	2
68	Cross Slotted Screw	EW-65	EW-65	1
69	Rectifier	EW-66	EW-66	1
70	Wire Channel	EW-67	EW-67	1
71	Cross Slotted Machine Screw	EW-68	EW-68	4
72	Cross Slot Screw	○ EW-71	○ EW-71	1
73	Lock Plate	○ EW-70	○ EW-70	2
74	Rear Chain Assembly (Not Shown)	EC-78	EC-78	1
75	Machine Screw (Not Shown)	EC-79	EC-79	1
76	Bottom Block (N/A for 4GU70)	▲ EC-80	▲ EC-80	2
77	Bottom Block (4ZY98)	● EC-80a	▲ EC-81	2
78	Idler Shaft	▲ EC-81	▲ EC-83	1
79	Hex Head Screw	● EC-83	▲ EC-84	1
80	Lock Nut	● EC-84	▲ EC-44	1
81	Clevis Pin	● EW-44	▲ EC-86	1
82	Hook with Latch	△ EC-86	▲ EC-87	1
83	Hook with Latch 800 lb.	● EC-86a	▲ EC-87	2
84	Idler Guide	● EC-87	▲ EW-45	2
85	Hairpin Clip	● EW-45	3KR20	1
86	Optional Chain Container (Not Shown)	3KR20	EC-89	1
87	Drive Sheave Shaft Assembly	(Includes Ref. Nos. 15, 39, 41 thru 43)	EC-90	1
88	Bottom Hook Assembly for 4GU70	(Includes Ref. Nos. 5, 46, 47, 50, 86)	EC-91	1
	Bottom Hook Assembly for 4GU71	(Includes Ref. Nos. 4, 50, 80, 81, 83 thru 88)	EC-91a	1
	Bottom Hook Assm. for 4ZY98	(Incl Ref. Nos. 4, 50, 80, 81, 83 thru 88)	EC-92	1
	Upper Hook Assembly (Incl. Ref. Nos. 18, 19, 76, 77)	18, 19, 76, 77	EC-93	1
	Upper Hook Assembly for 4ZY98 (Includes Ref. Nos. 6, 17, 49, 52, 59)	EC-92a	EC-93a	1
	Chain Assembly (Includes Ref. Nos. 6, 17, 49, 52, 59)	EC-93a	EC-93a	1
	Chain Assembly for 4GU71 & 4ZY98 (Includes Ref. Nos. 6, 17, 49, 52, 59)	EC-93a	EC-93a	1

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LIMITED WARRANTY

DAYTON ONE-YEAR LIMITED WARRANTY. Dayton® Electric Chain Hoists, Models covered in this manual, 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 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 jurisdiction to jurisdiction.

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 provide product information and illustrate the products in this literature accurately; however, such information and illustrations 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 the "LIMITED WARRANTY" above is made or authorized by Dayton.

PRODUCT SUITABILITY. Many jurisdictions 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, review the product applications, and all applicable 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 jurisdictions 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 jurisdictions do not allow a limitation on how long an implied warranty lasts, consequentially the above limitation may not apply to you; and (c) by law, during the period of this Limited Warranty, any implied warranties of implied 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 the 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., Niles, Illinois 60714 U.S.A.