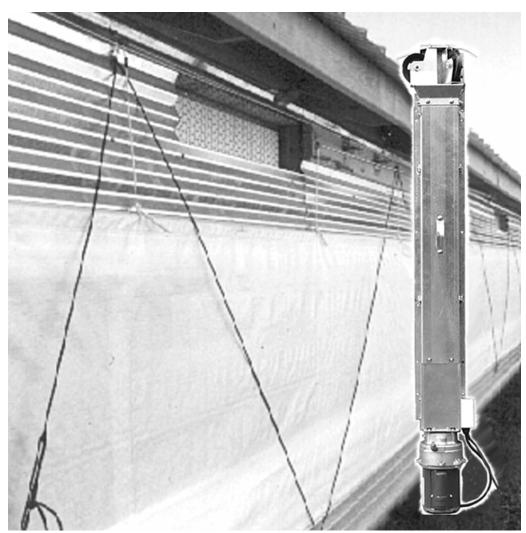


Swivel Top Linear-Lift[™] Installation & Operator's Instruction Manual



Mv1724-011 06/02

March 2006 MV1724D

Chore-Time Warranty Swivel Top Linear-Lift™

Chore-Time Warranty

Chore-Time Equipment ("Chore-Time") warrants each new Chore-Time product manufactured by it to be free from defects in material or workmanship for one year from and after the date of initial installation by or for the original purchaser. If such a defect is found by the Manufacturer to exist within the one-year period, the Manufacturer will, at its option, (a) repair or replace such product free of charge, F.O.B. the factory of manufacture, or (b) refund to the original purchaser the original purchase price, in lieu of such repair or replacement. Labor costs associated with the replacement or repair of the product are not covered by the Manufacturer.

Conditions and Limitations

- 1. The product must be installed by and operated in accordance with the instructions published by the **Manufacturer or Warranty will be void**.
- 2. Warranty is void if **all components** of the Swivel Linear-Lift Unit are not original equipment supplied by the **Manufacturer**.
- 3. This product must be purchased from and installed by an authorized distributor or certified representative thereof or the Warranty will be void.
- 4. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under the Warranty.
- 5. This Warranty applies only to systems for the care of poultry and livestock. Other applications in industry or commerce are not covered by this Warranty.

The **Manufacturer** shall not be liable for any **Consequential or Special Damage** which any purchaser may suffer or claim to suffer as a result of any defect in the product. "**Consequential**" or "**Special Damages**" as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs and operational inefficiencies.

THIS WARRANTY CONSTITUTES THE MANUFACTURER'S ENTIRE AND SOLE WARRANTY AND THIS MANUFACTURER EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSES SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Chore-Time Distributors are not authorized to modify or extend the terms and conditions of this Warranty in any manner or to offer or grant any other warranties for Chore-Time products in addition to those terms expressly stated above. An officer of CTB, Inc. must authorize any exceptions to this Warranty in writing. The Manufacturer reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

Effective: March 2006

CTB Inc.

P.O. Box 2000 • Milford, Indiana 46542-2000 • U.S.A. Phone (574) 658-4101 • Fax (877) 730-8825 E-Mail: ctb@ctbinc.com • Internet: http://www.ctbinc.com

Thank You

The employees of Chore-Time Equipment would like to thank your for your recent Chore-Time purchase. If a problem should arise, your Chore-Time distributor can supply the necessary information to help you.

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General Swivel Top Linear-Lift™

General

Support Information

The Chore-Time Swivel Top Linear-Lift™ is designed to open curtains or inlet doors. Using this equipment for any other purpose or in a way not within the operating recommendations specified in this manual will void the warranty and may cause personal injury.

This manual is designed to provide comprehensive planning, installation, safety, operation, and parts listing information. The Table of Contents provides a convenient overview of the information in this manual. The Table of Contents also specifies which pages contain information for the sales personnel, installer, and consumer (end user).

Distributor and Installer Information

Please fill in the following information about your Product. Keep this manual in a clean, dry place for future reference.		
Distributor's Name		
	Date of Purchase	
Installer's Name		
Installer's Address		
Installer's Phone	Date of Installation	
System Specifications		

Swivel Top Linear-Lift™ About This Manual

About This Manual

The intent of this manual is to help you in two ways. One is to follow step-by-step in the order of assembly of your product. The other way is for easy reference if you have questions in a particular area.

Important!

Read ALL instructions carefully before starting construction.

Important!

Pay particular attention to all SAFETY information.

Metric measurements are shown in millimeters and in brackets, unless otherwise specified. "" equals inches and "' equals feet in English measurements.

Examples:
1" [25.4]

4' [1 219]

- Optional equipment contains necessary instructions for assembly or operation.
- Major changes from the last printing will be listed on the back cover.



- This Planning Symbol is used in areas where planning needs to take place before construction continues.
- Very small numbers near an illustration (*i.e.*, 1257-48) are identification of the graphic, not a part number.

Safety Information

Caution, Warning and Danger Decals have been placed on the equipment to warn of potentially dangerous situations. Care should be taken to keep this information intact and easy to read at all times. Replace missing or damaged safety decals immediately.

Using the equipment for purposes other than specified in this manual may cause personal injury and/or damage to the equipment.



Safety-Alert Symbol

This is a safety–alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury. This equipment is designed to be installed and operated as safely as possible...however, hazards do exist.

Understanding Signal Words

Signal words are used in conjunction with the safety–alert symbol to identify the severity of the warning.



DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, MAY result in minor or moderate injury.

Safety Information Swivel Top Linear-Lift™

Safety Information

Follow Safety Instructions

Carefully read all safety messages in this manual and on your equipment safety signs. Follow recommended precautions and safe operating practices.

Keep safety signs in good condition. Replace missing or damaged safety signs.

Decal Descriptions

DANGER: Electrical Hazard

Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically state otherwise.

Ground all electrical equipment for safety.

All electrical wiring must be done by a qualified electrician in accordance with local and national electric codes.

Ground all non-current carrying metal parts to guard against electrical shock.

With the exception of motor overload protection, electrical disconnects and over current protection are not supplied with the equipment



DANGER: Moving Parts

Disconnect electrical power before working on system, equipment may start automatically. Otherwise personal injury will result.

Severe personal injury will result if the equipment is operated without covers properly installed.



Introduction and Layout Diagrams

The Swivel Top **Linear-Lift** is designed to open and close Inlet Curtains or Baffle Boards. It may be wired into the ventilation control (i.e. Static Pressure Inlet Control, Chore-Tronics, Super Selector, etc.)

Tools Required

- 1 5/16" Nut Driver
- 2 Drive Ratchet and 1/2" Socket
- 3 Wire Cutters

- 4 Wire Strippers
- 5 Electrical Wire
- 6 3/32" Allen Wrench

Cable/Pulley Combinations

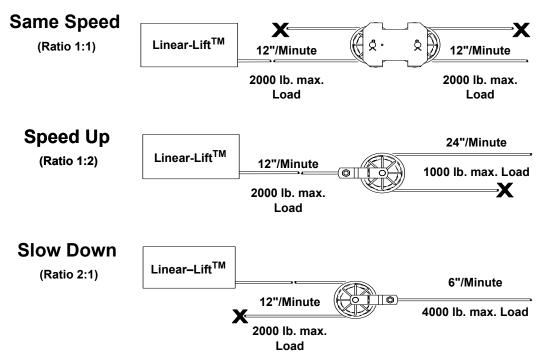


Figure 1. Cable/Pulley Combination

Available Sizes and Speed of Operation

• The Swivel Top Linear-Lift is available in 22", 32", 44", and 62" stroke.

Standard Swivel Top Linear-Lift- (47859-Series) Part Numbers

62 RPM Version

31 RPM Version

	230 Volt	115 Volt
22" Stroke	47859-2260	47859-2160
32" Stroke	47859-3260	47859-3160
44" Stroke	47859-4260	47859-4160
62" Stroke	47859-6260	47859-6160

-	230 Volt
22" Stroke	47859-2230
32" Stroke	47859-3230
44" Stroke	47859-4230
62" Stroke	47859-6230

Chain Drive Swivel Top Linear-Lift- (48028-Series) Part Numbers

62 RPM Version

31 RPM Version

	230 Volt	115 Volt
22" Stroke	48028-2260	48028-2160
32" Stroke	48028-3260	48028-3160

	230 Volt
22" Stroke	48028-2230
32" Stroke	48028-3230

Potentiometer Part Numbers

If a Potentiometer is desired, order the Potentiometer Kit (Part No. 48233)

Swivel Top Linear-Lift Installation

Swivel Top Pulley/Sprocket Angle Adjustment (Cable Version Shown)

The Swivel Top Linear-Lift offers a variety of system cable routing options, and can be located in building corners where the system cables are routed directly away from the front of the Linear-Lift (See Figure 2 below). Loosen the Nuts (Item 3, Figure 2), to adjust for Pulley angle, then retighten once the desired angle has been achieved.

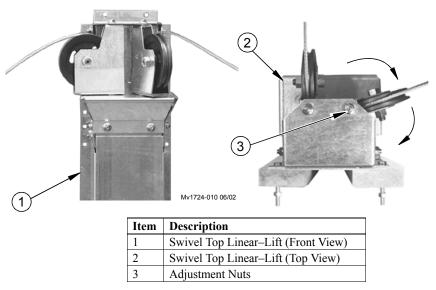


Figure 2. Swivel Top Pulley/Sprocket Angle Adjustment (Cable Version Shown)

Bronze Nut Attachment Detail (Chain Version)

To adjust the Chain-Drive Version, loosen the Nuts, (Item 2, Figure 3), then loosen the Adjustment Bolts on the bottom of the Bronze Nut (Item 5, Figure 3). After you swivel to the angle you desire, retighten the Adjustment Bolts on the bottom of the bronze nut, (Item 5, Figure 3), and the Nuts on the top of the lift (Item 3, Figure 3). A 3/16 Allen wrench is required.

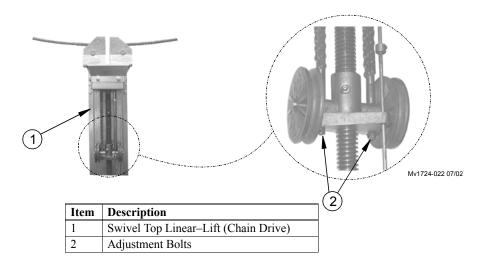


Figure 3. Bronze Nut Attachment Detail (Chain Drive)

"To the Side" Cable/Chain Routing Systems

If your cables/chains are routed "to the sides", as opposed to straight away from the Lift, use the Lag Screws provided for mounting. (Figure 4 below). All Lag Screw Locations are shown in detail in Figure 4.

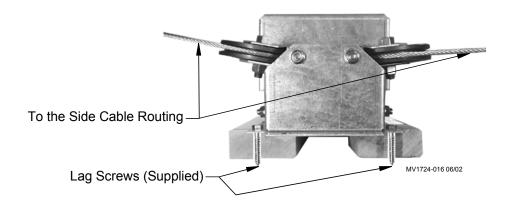


Figure 4. Adjusting Swivel Angle (Cable Version Shown)

"Straight-Off" Cable/Chain Routing Systems

If both cables are to be routed "straight off" of the front of the unit, (Figure 5), consider using Through-Bolts to secure the top of the LIFT to the supporting wall. Use the top 8 mounting holes, minimum. See Figure 6 on the next page, for all mounting hole locations.

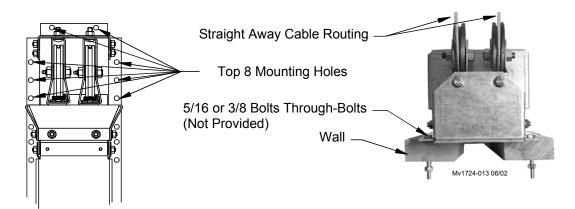
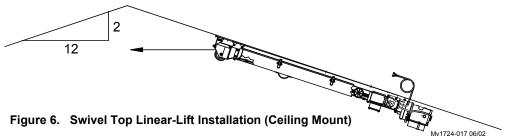


Figure 5. Swivel Top Linear-Lift Installation (vertical wall view of Cable Version Shown)

Ceiling Installations

The Swivel Top Linear-Lift is designed to be mounted on any ceiling where the slope of the ceiling is 2:12 or steeper (See Figure 6 below). This allows the cable to be routed off the end of the unit for systems where whole house control of both sides of the house with one unit is needed. Use (8) 3/8" Lag Screws, (included in Hardware Package), to attach the unit to the ceiling.



If the LIFT is to be installed on the ceiling, the vent plug must be installed next to the ceiling (upward) once mounted. Replace the vent plug with the solid steel plug from the opposite side of the gear housing. Refill oil in the gear housing before operating. (See Figure 7) For additional information, See Figure 13, on Page 15.

It may be necessary to provide a recess in the mounting surface for clearance of the 90° Elbow and vent plug, or by mounting the Swivel Top Linear-Lift on 2 x 10 lumber as shown for vent plug clearance (Figure 7 below).

Item	Description	Part No.
1	Power Unit	Varies (See Page 21, and 23)
2	Swivel Top Linear-Lift	Varies
3	1-1/2" Lumber	
4	90° Elbow	15405
5	Vent Plug	3523

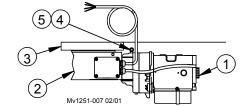


Figure 7. Swivel Top Linear-Lift Installation (ceiling mount)

Mounting Hole Locations

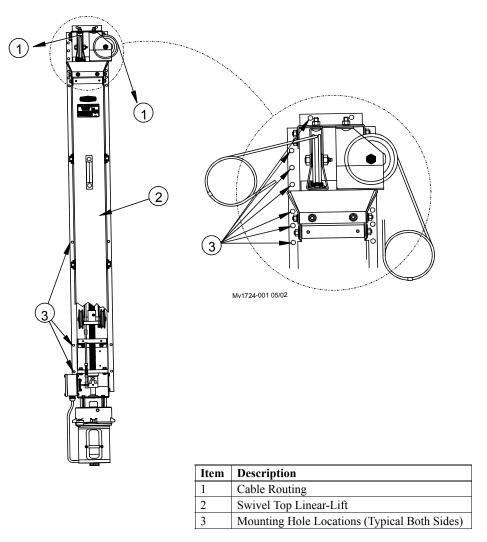
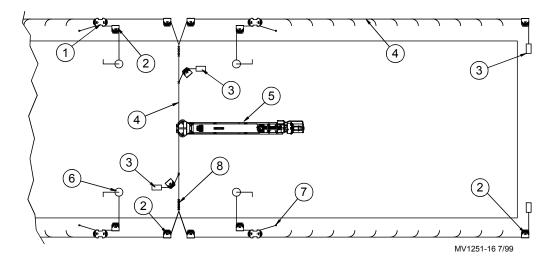


Figure 8. Swivel Top Linear-Lift Mounting Hole Locations

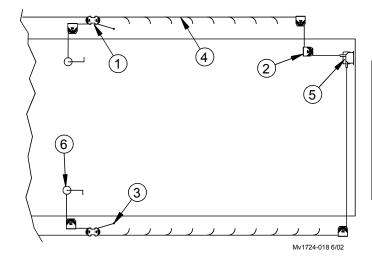
Ceiling Mount Swivel Top Linear-Lift Installation



Item	Description	Part No.
1	Pulley Assembly NY 3.5	27772
2	Single Pulley Assembly	27301
3	Anti-Slack Weight or Spring	41143
4	Curtain Cable (7 * 19-3/16" Dia.) Recommended	13976
5	Swivel Top Linear-Lift	Varies
6	Hand Winch Winch Mounting Assembly	1212 1193
7	Tie Down	
8	(3) Cable Clamp	732

Figure 9. Ceiling Mounted Swivel Top Linear–Lift pulling (2) curtains (top view) with a 1:1 double-back cable arrangement

Two-Side Tunnel Curtain Application



Item	Description	Part No.
1	Pulley Assembly NY 3.5	27772
2	Single Pulley Assembly	27301
3	Tie Down	
4	Curtain Cable (7 * 19-3/16" Dia.) Recommended	13976
5	Swivel Top Linear-Lift	Varies
6	Hand Winch Winch Mounting Assembly	1212 1193

Figure 10. Wall Mounted (Corner) Swivel Top Linear-Lift pulling (2) curtains (top view)

Side Wall Swivel Top Linear-Lift Installation

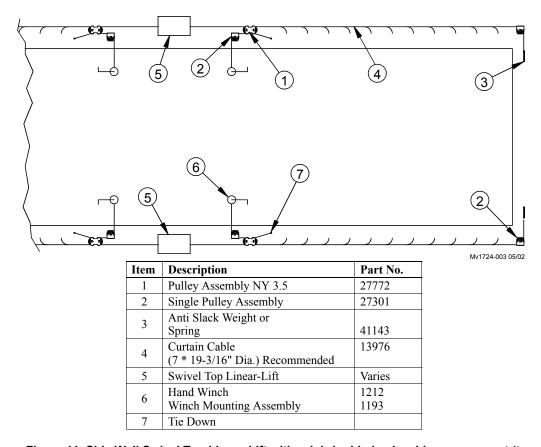


Figure 11. Side Wall Swivel Top Linear-Lift with a 1:1 double-back cable arrangement (top view)

Side Wall Swivel Top Linear-Lift Installation

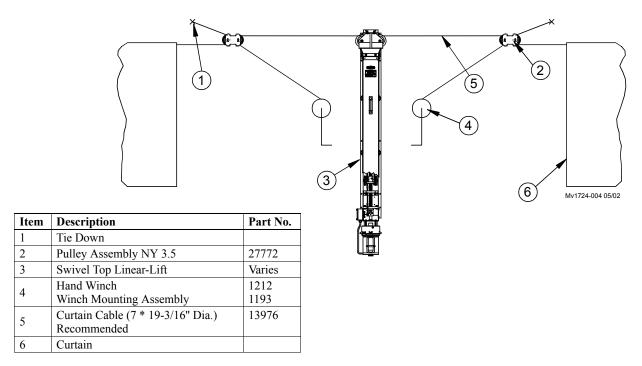
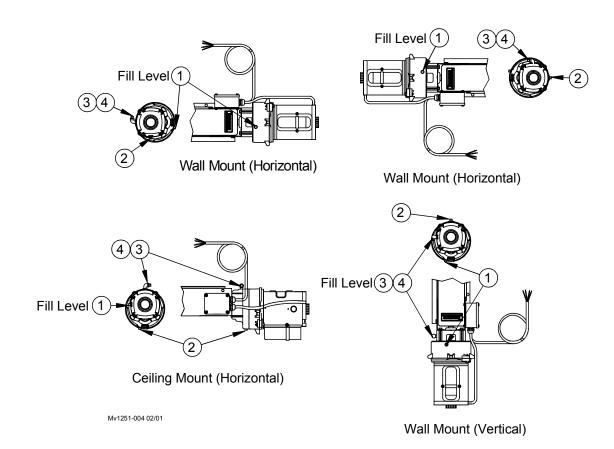


Figure 12. Side Wall Swivel Top Linear-Lift with a 1:1 double-back cable arrangement (front-view)

Alternative Vent Plug Locations for Various Swivel Top Linear-Lift Mountings

Refer to the four mounting diagrams shown (Figure 13) to determine the correct Vent Plug location.



Item	Description	Part No.
1	1/4 Solid Pipe Plug	2755
2	1/4 Pipe Plug (Magnetic)	30160
3	1/4 Vent Plug	3523
4	90° Elbow	15405

Figure 13. Vent Plug and Fill Level Locations

Oil Recommendation

The gearhead contains 13.5 oz. of SAE 40 oil.

For horizontal and ceiling mounted Swivel Top Linear–Lifts, fill the oil to the fill hole. For vertical mounted Swivel Top Linear–Lifts fill the oil to approximately 2 ounces above the fill hole. **See Figure 13** for oil fill locations.

Grease Recommendation

The Swivel Top Linear-Lift is fully greased at the factory. However, for maximum life, Chore-Time strongly recommends greasing the Swivel Top Linear-Lift at each grease fitting monthly.

Recommended Grease: Sunoco Construction Grease, Mobile CMP Grease, or similar water-resistant with molybdenum, extreme pressure (E.P.) grease. (See Figure 14)

Important! Grease Fittings on the Bronze Machined Nut and Pulleys are not

labrynth sealed. Apply grease liberally. Also apply grease to Threaded

Rod across full length.

Important! Grease every 30 days for maximum life.

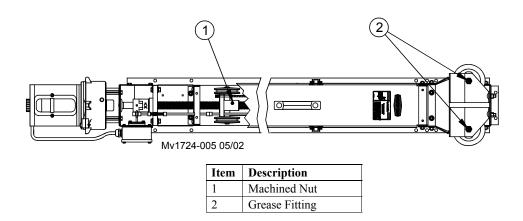


Figure 14. Swivel Top Linear-Lift Critical Grease Fitting Locations (horizontal wall mount view)

Swivel Top Linear-Lift Stop Switch Adjustment

The Swivel Top Linear-Lift has two adjustable stops (Set Collars) that may be moved to accommodate a variety of curtain opening sizes.

A 3/32" Allen wrench is required to loosen the set screw on the Set Collar (Items 2 and 3, Figure 15). Slide the Set Collar(s) on the Switch Rod to the desired limits of Inlet operation or Curtain travel (Figure 15). Two Collars are supplied for each limit of travel for best grip and shut off.

Important! Do not adjust the four Collars on the rod nearest the Motor. These are set at the factory for switch operation and do not require moving.

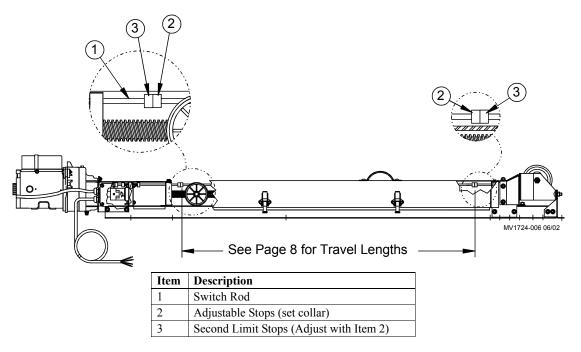


Figure 15. LINEAR-LIFT Adjustment (side view)

Wiring Diagrams

Limit Switch and Schematic Diagram for Standard & Chain Models

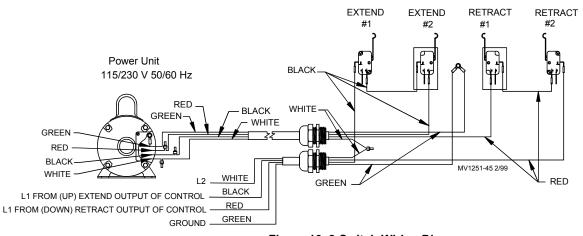
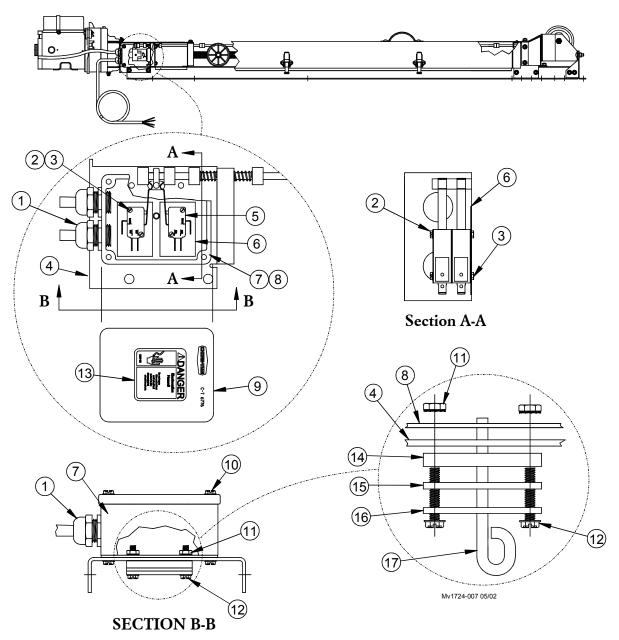


Figure 16. 2-Switch Wiring Diagram

Swivel Top Linear-Lift Switch Assemblies

Swivel Top Linear-Lift Switch Assembly #47875

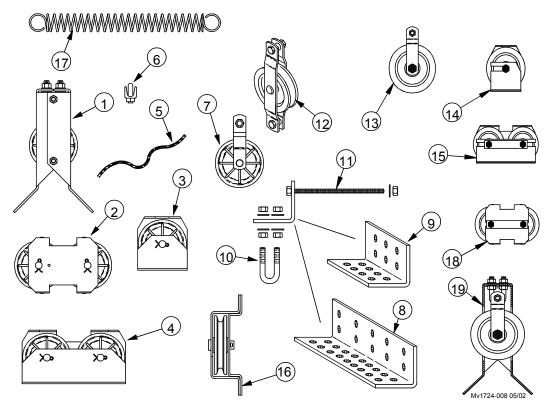


Item	Description	Part No.
1	Liquid Tight Connector	23779
2	Pan Head Screw 4-40x1	41822
3	Hex Nut 4-40	3511
4	Swivel Top Linear-Lift Motor Brkt Rh	47761
5	Switch, Micro	46324
6	Switch Insulation	1907-8
7	Terminal Box	36334
8	Gasket	6777
9	Switch Box Cover	6776

Item	Description	Part No.
10	Twin Helix Screw #10x.75	6980
11	Kepnut #10-24	27725
12	Hex Screw Sltd. #10-24	4416-6
13	Danger Decal	2527-35
14	Poly Switch Plate	38802
15	Neoprene Switch Plate	38801
16	Switch Plate	38803
17	Switch Hook	38804

Figure 17. Switch Assembly

Optional Pulleys and Accessories



Item	Description	Part No.
1	3.5" Corner Pulley Assembly	35597
2	3.5" Double Pulley Assembly	27772
3	3.5" Pulley Kit	27301
4	3.5" Center Pulley Assembly	27302
5	3/16" Cable (150')—7 * 19 Weave	13976
6	3/16" Cable Clamp	732
7	3.5" Pulley Assembly	2500
8	Double Pulley Mounting Brkt.	35404
9	Single Pulley Mounting Brkt.	35405
10	3/8-16 x 2.5" U Bolt with Nuts	35602
11	5/16-18x7" Bolt	4412-20
12	3.5" Double Eye Pulley	2501
13	4.5" Steel Pulley Assembly	43005
14	4.5" Steel Single Pulley Assembly	43128
15	4.5" Steel Double Pulley Assembly	43129
16	3.5" Pulley Assembly	28429
17	Inlet Spring	41143
18	4.5" Steel Double Pulley Assembly	43130
19	4.5" Steel Corner Pulley Assembly	43131

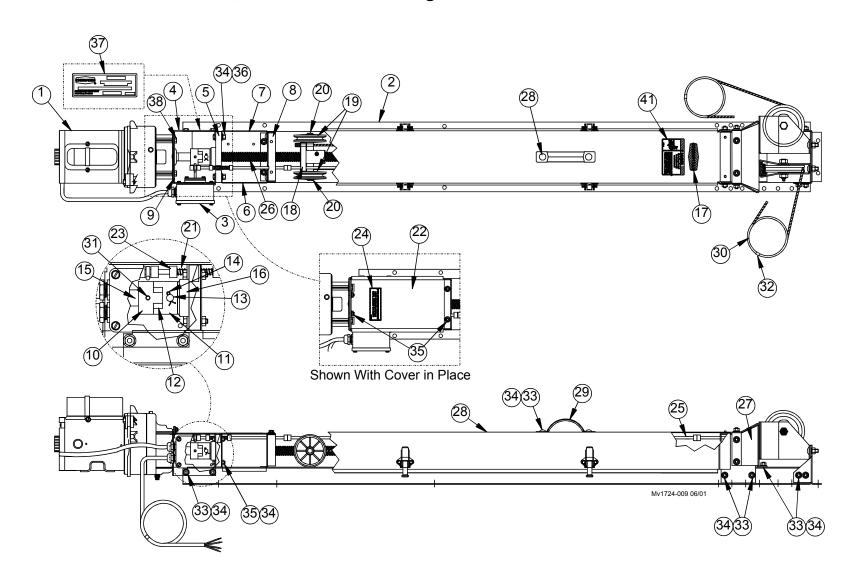
Figure 18. Pulley Options

Items 7, 8, 10, & 11—may be ordered as a Double Pulley Bracket Kit. Part No. 35600.

Items 7, 9, 10, & 11—may be ordered as a Single Pulley Bracket Kit. Part No. 35598.

Swivel Top Linear-Lift Drawings and Parts Listings

Standard, 47859-Series Drawing



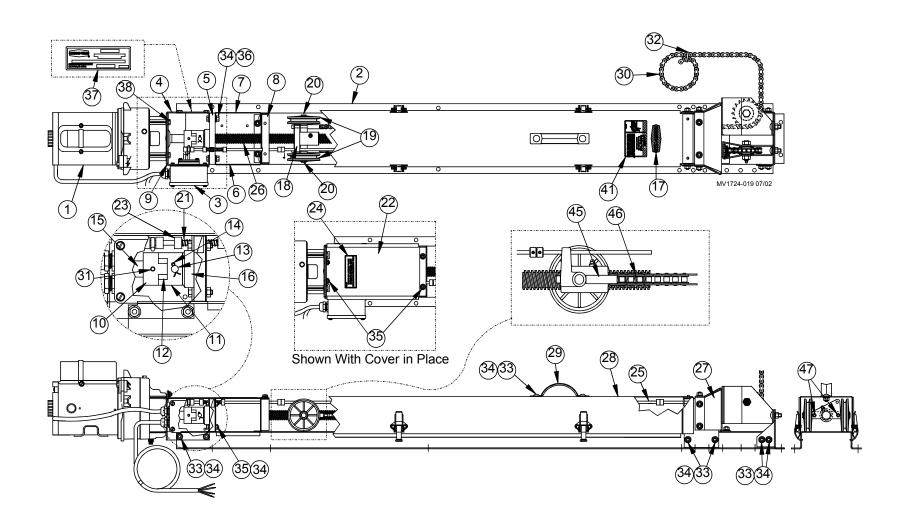
Standard, 47859-Series Parts Listing

Item	Description	Part No.
1	115 Volt Motor	42780
	230 Volt Motor	36370
2	Swivel Top Linear-Lift Base	
	26"	47836-26
	36"	47836-36
	48" 66"	47836-48 47836-66
3*	Linear-Lift Switch	
		47875
4	L.H. Linear-Lift Motor Bracket	47762
5	Linear-Lift Thrust Bracket	47763
6	R.H Linear-Lift Panel	47771-2
7	L.H Linear-Lift Panel	47771-1
8	Linear-Lift Swivel Partition	47772
9	Linear-Lift Cover Bracket	47834
10	Flexible Type L Coupling	36363-2
11	Flexible (Mach.) Coupling	35944
12	"SOX" Spider Spacer	36333
13	5/16 x 2 Clevis Pin	36466-1
14	.125 x .75 Cotter Pin	2663
15	3/16 x 1 Square Key	2112-1
16	Industrial Thrust Bearing	36397
17	Chore-Time Decal	2525-4
18	Machined Linear-Lift Nut	47759
19	Red Pulley Wheel	2503
20	Retainer Ring	41525
21	Compression Spring	49813
22	Lower Linear-Lift Cover	47835-1
23	Set Collar	41857
24	Grease Decal	2529-634

Item	Description	Part No.
25	Linear-Lift Switch Rod	
	26"	E1401-36.50
	36"	E1401-46.50
	48"	E1401-58.50
	66"	E1401-76.50
26	1-5 Threaded Acme Shaft	
	26"	47856-26
	36"	47856-36
	48"	47856-48
	66"	47856-66
27	Swivel Top Pulley Assembly	47876
28	Linear-Lift Cover Assembly	
	26"	47873-26
	36"	47873-36
	48"	47873-48
	66"	47873-66
29	Handle	3-12194
30	25' Linear-Lift Cable	47658
31	8-32 Set Screw	42728
32	Cable Tie	6635
33	5/16-18 x .625 Carriage Bolt	8282
34	5/16-18 Hex Flange Nut	8490
35	1/4-20 Hex Flange Nut	24208
36	5/16 x 18 x 1.25 Bolt	2150
37	Linear-Lift Decal	Varies
38	5/16 -18 x .50 Bolt	1839
39		
40		
41	Danger (Rotating Parts) Decal	2527-10

^{*}See Figure 16 for exploded view of parts.

Chain Drive, 48028-Series Drawing



Chain Drive, 48028-Series Parts Listing

Item	Description	Part No.
1	115 Volt Motor	42780
	230 Volt Motor	36370
2	Swivel Top Linear-Lift Base	
	26"	47836-26
	36"	47836-36
	48" 66"	47836-48 47836-66
3*	Linear-Lift Switch	47875
4	L.H. Linear-Lift Motor Bracket	47762
5	Linear-Lift Thrust Bracket	47763
6	R.H Linear-Lift Panel	47771-2
7	L.H Linear-Lift Panel	47771-1
8	Linear-Lift Swivel Partition	47772
9	Linear-Lift Cover Bracket	47772
10		36363-2
11	Flexible Type L Coupling Flexible (Mach.) Coupling	35944
12	` / 1 0	36333
13	"SOX" Spider Spacer 5/16 x 2 Clevis Pin	36466-1
13	.125 x .75 Cotter Pin	
		2663
15	3/16 x 1 Square Key	2112-1
16	Industrial Thrust Bearing	36397
17	Chore-Time Decal	2525-4
18	Machined Linear-Lift Nut	47759
19	Red Pulley Wheel	2503
20	Retainer Ring	41525
21	Compression Spring	49813
22	Lower Linear-Lift Cover	47835-1
23	Set Collar	41857
24	Grease Decal	2529-634
25	Linear-Lift Switch Rod	
	26"	E1401-36.50
	36"	E1401-46.50
	48"	E1401-58.50
	66"	E1401-76.50

Item	Description	Part No.
26	1-5 Threaded Acme Shaft	
	26"	47856-26
	36"	47856-36
	48"	47856-48
	66"	47856-66
27	Swivel Top Pulley Assembly	47876
28	Linear-Lift Cover Assembly	
	26"	47873-26
	36"	47873-36
	48"	47873-48
	66"	47873-66
29	Handle	3-12194
30	Drive Chain	
	26"	21045-14
	36"	21045-15
31	8-32 Set Screw	42728
32	Cable Tie	6635
33	5/16-18 x .625 Carriage Bolt	8282
34	5/16-18 Hex Flange Nut	8490
35	1/4-20 Hex Flange Nut	24208
36	5/16 x 18 x 1.25 Bolt	2150
37	Linear-Lift Decal	Varies
38	5/16 -18 x .50 Bolt	1839
41	Danger (Rotating Parts) Decal	2527-10
45	Chain Connecting Rod	44417
46	Connecting Link (#40)	20017
47	1/4-20 x 2-1/4 SH Cap Screw	5083-2

^{*}See Figure 16 for exploded view of parts.



Made to work. Built to last.

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Revisions to this Manual

Page No. Description of Change

8 Updated Part Numbers & added Potentiometer Kit information

Contact your nearby Chore-Time distributor or representative for additional parts and information.

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Printed in the U.S.A.