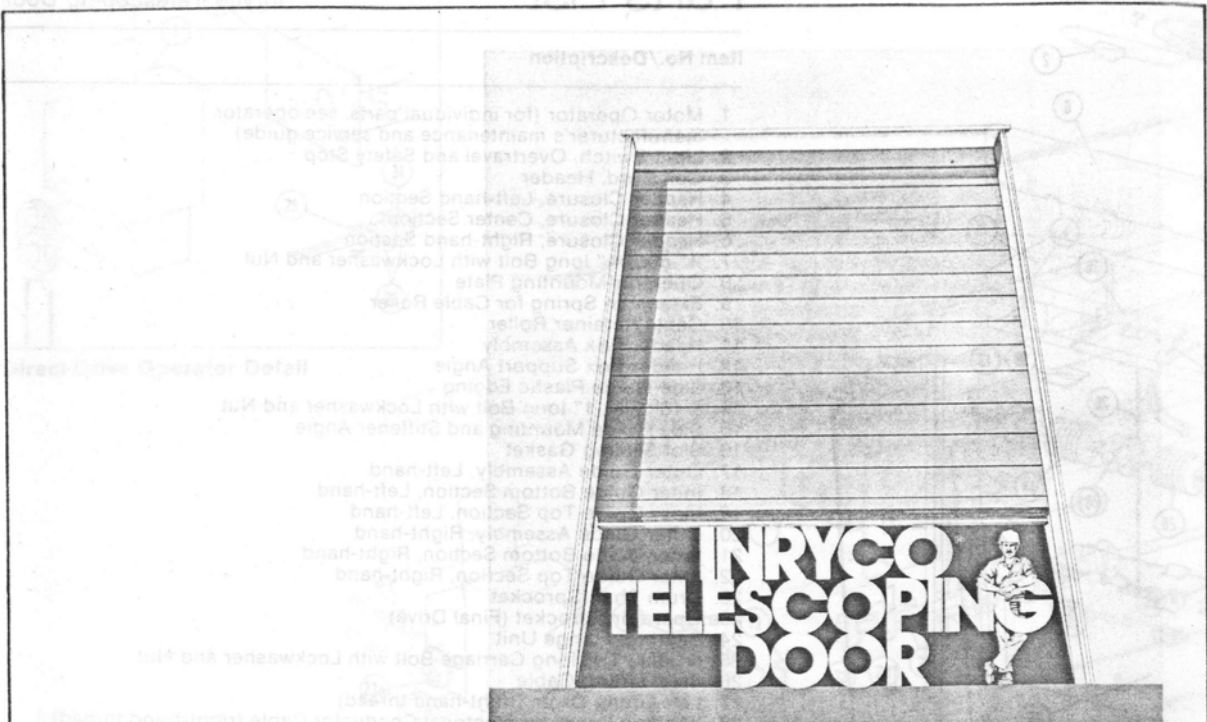


120 INCH TELESCOPING DOOR MAINTENANCE




**INRYCO
TELESCOPING
DOOR**

PARTS LIST

MAINTENANCE INSTRUCTIONS

TROUBLE SHOOTING GUIDE



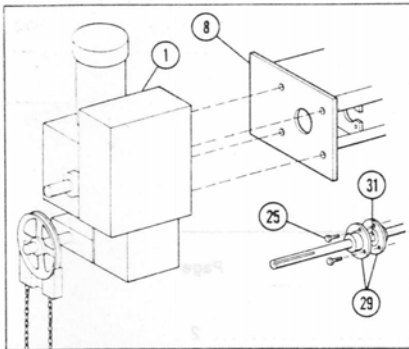
Inryco
an Inland Steel company

120 INCH TELESCOPING DOOR MAINTENANCE

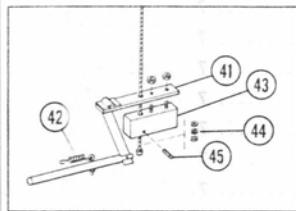
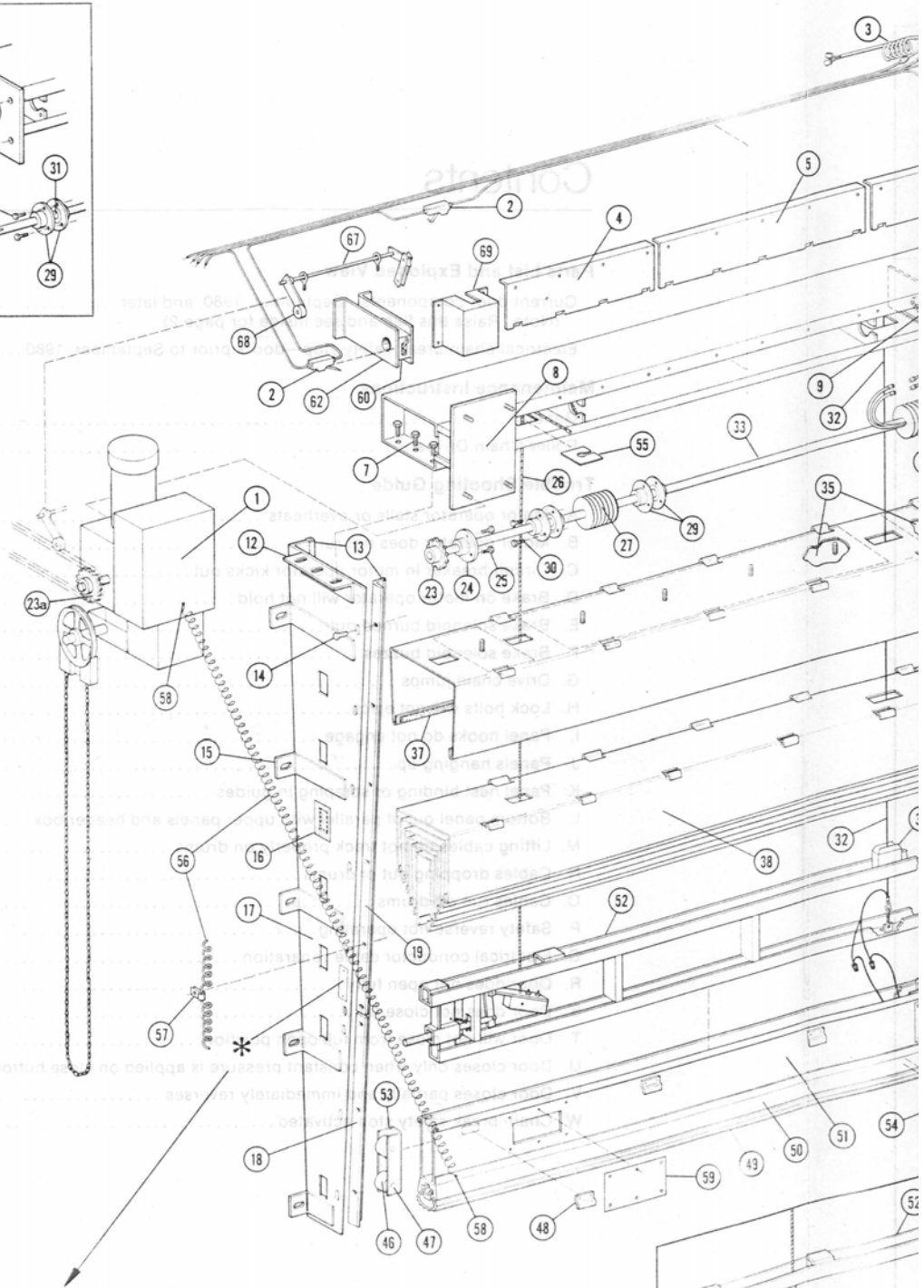
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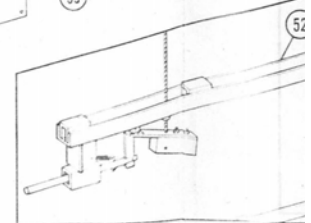
120 INCH TELESCOPING DOOR MAINTENANCE



Direct Drive Operator Detail



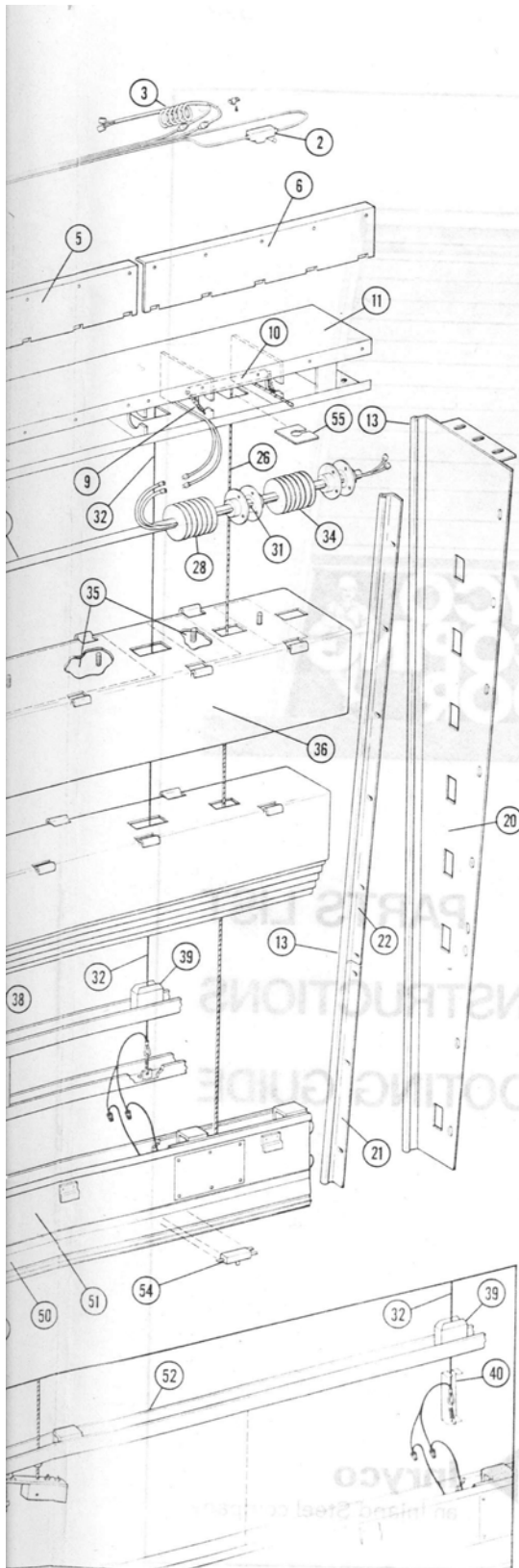
Lockbolt Assembly Detail



Longitudinal Channel Detail

***IMPORTANT**
 When ordering parts, the door serial number must appear on order as shown on tag mounted on left hand outer guide approximately 5-ft. above floor.

120 INCH TELESCOPING DOOR MAINTENANCE



Parts List

Inryco Telescoping Door

Item No./Description

1. Motor Operator (for individual parts, see operator manufacturer's maintenance and service guide)
2. Limit Switch, Overtravel and Safety Stop
3. Coil Cord, Header
4. Header Closure, Left-hand Section
5. Header Closure, Center Section
6. Header Closure, Right-hand Section
7. $\frac{3}{8}$ " dia., $\frac{3}{4}$ " long Bolt with Lockwasher and Nut
8. Operator Mounting Plate
9. Extension Spring for Cable Roller
10. Cable Retainer Roller
11. Header Box Assembly
12. Header Box Support Angle
13. Side Guide Plastic Edging
14. $\frac{5}{16}$ " dia., 1" long Bolt with Lockwasher and Nut
15. Side Guide Mounting and Stiffener Angle
16. Slot Sealing Gasket
17. Outer Guide Assembly, Left-hand
18. Inner Guide Bottom Section, Left-hand
19. Inner Guide Top Section, Left-hand
20. Outer Guide Assembly, Right-hand
21. Inner Guide Bottom Section, Right-hand
22. Inner Guide Top Section, Right-hand
23. Drum Shaft Sprocket
- 23a. Operator Sprocket (Final Drive)
24. Bearing, Flange Unit
25. $\frac{3}{8}$ " dia., $1\frac{1}{2}$ " long Carriage Bolt with Lockwasher and Nut
26. Steel Lifting Cable
27. Left Lifting Drum (right-hand thread)
28. Winding Drum for Electrical Conductor Cable (right-hand thread)
29. Intermediate Bearing Flanges
30. $\frac{3}{8}$ " dia., $\frac{3}{4}$ " long Carriage Bolt with Lockwasher and Nut
31. Intermediate Bearing
32. Electrical Conductor Cable (includes Bottom Spring and Thimble)
33. Drum Shaft Assembly
34. Right Lifting Drum (left-hand thread)
35. Top Panel Mounting Plate with $\frac{1}{2}$ " dia. Mounting Studs
36. Top Panel
37. Pile Weatherstrip for Panel Longitudinal Edges
38. Panel Nest (includes #36 — Top Panel and #51 — Bottom Panel)
39. Panel Alignment Bracket Assembly
40. Support Bracket and Spring Assembly
41. Lockbolt Mechanism
42. Extension Spring for Lockbolt
43. Counterweight for Steel Lifting Cable
44. Cable Adjustment Washer
45. Spring Pin for Steel Cable Counterweight
46. Rubber Guide Roller
47. Spring Pin for Guide Roller
48. Lock Plate for Bottom Panel
49. Bottom Edge Vinyl Weatherseal Insert
50. Aluminum Bottom Edge Assembly
51. Bottom Panel
52. Longitudinal Channel Reinforcement for Bottom Panel Assembly
53. End Channel Reinforcement for Bottom Panel Assembly
54. Safety Edge Limit Switch
55. Lift Cable Retainer
56. External Electrical Coil Cord (Optional)
57. Plastic Cable Clamp
58. Cable Box Connector
59. Cover Plate, Access Panel
60. Ratchet Clutch (Chain Break Safety Stop)**
62. Clutch Mounting Plate (Chain Break Safety Stop)**
67. Mechanical Chain Break Safety Stop Assembly**
68. Roller (Caster)**
69. Enclosure (Mechanical Chain Break Safety Stop)**

**Not furnished with Direct Drive Operator

For Electrical Chain Break Safety Stop — doors prior to September, 1980 — see Parts List on Page 8

Channel Detail — Doors 10'0" Wide and Under

120 INCH TELESCOPING DOOR MAINTENANCE

Maintenance Instructions

Inryco® Telescoping Door

For most users, the telescoping design is an entirely new concept in industrial service type doors. With proper maintenance, it will provide many years of reliable, trouble-free service.

To maintain it properly, those responsible for inspection and maintenance should have a thorough understanding of the basic functioning of the door. Reference to the Inryco Telescoping Door catalog and/or installation instructions is recommended. The exploded view of the door and parts list on page 2 of this booklet will also be helpful.

INITIAL INSPECTION

Immediately after completion of the door installation, all working parts should be checked to insure that proper lubrication has been provided prior to sustained use of the door.

INSPECTION CHECK LIST:

1. Check level of oil in the gear box. Use only oil types specifically formulated for use in bronze gear speed reducers. DO NOT overfill.
2. Check roller chain drives, including timing chain. Lubricate if necessary. (See recommendations on page 4.)
3. Check steel lifting cables for lubrication. Light grease is recommended. Apply with door fully open when cables are wound on drums.
4. Check and, if necessary, grease bearings at gear box if provided with fittings.

PERIODIC IN-SERVICE INSPECTIONS

In addition to the regularly scheduled maintenance of operating mechanisms, the complete door assembly should be thoroughly inspected at regular intervals in accordance with the following suggested inspection schedule. Any minor damage detected should be repaired. Parts showing excessive wear should be replaced immediately.

No. of Cycles* Per Day	Recommended Inspection Frequency	Total Cycles* During Interval (Based on 7 day week)
1 to 10	every 9 months	270 to 2700
11 to 20	every 6 months	1980 to 3600
21 to 50	every 3 months	1890 to 4500
51 to 100	every 1 month	1530 to 3000
101 to 200	every 3 weeks	2100 to 4200
201 to 300	every 2 weeks	2814 to 4200
301 to 400	every 1 week	2100 to 2800
over 400	every 4 to 5 days	1600 to 2000 or more

*A cycle is one complete opening and closing of the door.

MAINTENANCE SCHEDULE

Perform the indicated maintenance operation within the shown time interval or number of opening-closing cycles (whichever comes first).

Time Interval	Number of Opening-Closing Cycles*	Maintenance Operation
—	100	Check brake function. Open door fully, then press close button and stop at ¾ open. If panel nest drifts more than 3 inches, brake needs adjustment — see instructions furnished with motor operator.
Daily	—	Check safety edge function. Hand pressure on bottom edge as door is closing should cause curtain to reverse and return to open position. (See "Trouble Shooting" section — Problem "P" — for malfunction cause and correction.)
2 months	3,000	<ol style="list-style-type: none"> 1. Check brake (as noted above). 2. Check all drive and timing chains and sprockets for wear or misalignment. Replace or adjust as necessary. Lubricate per instructions on page 4 of this booklet. 3. Check all shafts in operator for wear and dislocation. Replace or adjust as necessary. 4. Check gear box oil level and check seals for leaks. Replace seals and add oil as necessary per motor operator manufacturer's instructions.
6 months	40,000	<ol style="list-style-type: none"> 1. Check all bearings on door and motor operator for wear. Replace as necessary. Lubricate when fittings are present. 2. Check steel lifting cables for signs of wear. Replace as necessary. Lubricate with light grease when door is in fully open position. 3. Check plastic edging on side guides for wear. Replace as necessary. 4. Check roller on limit switch sensor at drive chain for wear. Replace as necessary. 5. Check spring at chain break clutch for tension. Replace as necessary. 6. Lubricate chain break ratchet clutch at grease fitting provided.
Yearly	100,000	<ol style="list-style-type: none"> 1. Check all header box and side guide attachments to structure. Tighten or re-secure as necessary. 2. Check all mechanical attachments at header box, side guide and motor operator mountings. Tighten as necessary. 3. Check all electrical relays and contactor points in motor operator starter panel. Replace as necessary. 4. Check for wear on lifting drums in header box. Replace as necessary.

*A cycle is one complete opening and closing of the door.

120 INCH TELESCOPING DOOR MAINTENANCE

Trouble Shooting Guide

Inryco® Telescoping Door

Problem	Possible Cause	Solution
A. Motor operator stalls or overheats.	<ol style="list-style-type: none"> 1. Low voltage power input. 2. Power leads undersize. 3. Fuse blown in main power lines. 4. Brake disc(s) dragging or solenoid not fully engaged. 5. No oil in gear box. 	<ol style="list-style-type: none"> 1. Increase source voltage. 2. Increase wire size. 3. Replace fuse. 4. Readjust brake per manufacturer's instructions. 5. Check seals and replace if necessary. Add oil per operator manufacturer's instructions.
B. Motor operator does not run.	<ol style="list-style-type: none"> 1. No electrical power to operator. 2. Circuit breaker tripped (motor overloaded). 3. Manual disconnect engaged. 4. Low voltage control circuit open. 5. Overtravel limit switch in header box activated. 6. Open circuit at push button station. 7. Switch at ratchet clutch deactivated. 	<ol style="list-style-type: none"> 1. Check power supply. 2. See Problem "C" below. 3. Disengage. 4. Check circuit with circuit tester. 5. Check travel of nest and reset upper limit control if necessary. 6. Check for loose wire or broken switch. 7. Check for open circuit at the switch.
C. Circuit breaker in motor operator kicks out.	<ol style="list-style-type: none"> 1. High amperage draw as result of motor stalling or overheating. 2. Reversing contactor shorted out. 3. Single phasing (one leg of three phase power dropped out). 4. Low voltage control circuit shorted out. 	<ol style="list-style-type: none"> 1. Check source voltage and wire size of line leads. 2. Check for signs of short-circuit. 3. Check for blown fuse in main line. 4. Check for bad connection or short in control circuit.
D. Brake on motor operator will not hold.	<ol style="list-style-type: none"> 1. Brake disc(s) worn and in need of adjustment or replacement. 2. Key sheared on brake input or output shafts. 3. Brake spring broken or displaced. ④ Solenoid malfunction is preventing solenoid from disengaging. 5. Gear box oil seals leaking oil on brake disc or drum (¾ hp only). 	<ol style="list-style-type: none"> 1. Readjust or replace per brake manufacturer's instructions. 2. Replace key and any other damaged components. 3. Replace spring. 4. Adjust solenoid (magnet coil) mechanism or replace. 5. Replace oil seals.
E. Brake solenoid burned out.	<ol style="list-style-type: none"> 1. Wrong voltage input. 2. Solenoid did not fully engage (usually due to low voltage). 	<ol style="list-style-type: none"> 1. Replace solenoid. Check voltage. 2. Check voltage. Replace solenoid.
F. Brake solenoid buzzes.	<ol style="list-style-type: none"> 1. Contact surfaces dirty or corroded. 2. Low voltage input preventing full engagement (contact). 3. Contact surfaces not properly aligned. 	<ol style="list-style-type: none"> 1. Clean contact surfaces or replace magnet coil assembly. 2. Increase voltage to acceptable level. 3. Adjust per brake manufacturer's recommendations.
G. Drive chain jumps.	<ol style="list-style-type: none"> 1. Chain loose. With door fully open, chain should have ¾" maximum total movement on slack side. 2. Sprockets out of proper alignment. 3. Operator mounting flexing. 4. Operator shaft dislocated or bent. 	<ol style="list-style-type: none"> 1. Adjust chain tension. 2. Realign sprockets. Replace if severely worn. 3. Anchor mounting to wall or side guide. 4. Reposition or replace shaft.

MANUAL CHAIN ENGAGED WHEN OPERATOR IS ENGAGED

① MAN. LIMIT SWITCH CONNECTED TO N.C. SHOULD BE CONNECTED N.C.

① limit switch to BE N.C.

120 INCH TELESCOPING DOOR MAINTENANCE

Inryco® Telescoping Door

Trouble Shooting Guide

Problem	Possible Cause	Solution
H. Lock bolts will not eject.	<ol style="list-style-type: none"> 1. Lock bolt retainer at ends of bottom panel not removed. 2. Bottom (close) limit switch set too high. 3. Lock bolt missing slot in side guide. 4. Lock bolts bent and binding in pipe sleeves. 5. Ejection spring disconnected in bottom panel. 	<ol style="list-style-type: none"> 1. Remove set screw as per installation instructions. 2. Readjust traveling nut. 3. Readjust removable inner guide or enlarge slot in outer guide. 4. Straighten bolts. 5. Open bottom panel and reconnect spring.
I. Panel hooks do not engage.	<ol style="list-style-type: none"> 1. Top intermittent hooks flattened or corners bent in. 2. Panel nest is not properly aligned with side guides and header box. 3. Header box bowed upward at center. (Should be level or have slight bow downward.) 4. Nest top panel bolted to header box in wrong sequence. 5. Panels are bent or kinked. 	<ol style="list-style-type: none"> 1. Straighten hooks. 2. Realign nest (see installation instructions). 3. Adjust header. 4. Loosen bolts and rebolt in proper sequence — starting at center and working outward towards ends. 5. Repair or replace panels.
J. Panels hanging up.	<ol style="list-style-type: none"> 1. Side guides too tight to curtain. 2. Panel hooks deformed and biting into panel above. 3. Panel bent or formed incorrectly. 4. Rolled edge on panel bent outward. 5. Foreign substance on panel surface preventing free movement. 	<ol style="list-style-type: none"> 1. Adjust guide positioning. 2. Straighten hooks. 3. Straighten or replace panel. 4. Inspect and bend inward as required. 5. Remove foreign matter.
K. Panel nest binding or scraping in guides.	<ol style="list-style-type: none"> 1. Side guides installed too close together across opening, leaving insufficient end clearance for panels. 2. Panel alignment bracket on bottom panel broken or bent. 3. Side guides out of plumb and/or not perpendicular to header box. 	<ol style="list-style-type: none"> 1. Reposition guides (see installation instructions). 2. Repair or straighten bracket. 3. Plumb side guides or shim header box to bring it perpendicular with both guides.
L. Bottom panel out of parallel with upper panels and header box.	<ol style="list-style-type: none"> 1. Cables tracking unevenly on drums. 2. Ferrules (end stops) on cables not fully engaged in drum slots. 3. Cable not positioned between drum and retention roller. 4. Cable entangled in bottom panel lock mechanism. 5. Cables of unequal length. 	<ol style="list-style-type: none"> 1. Check cables and adjust. 2. Check engagement of cables and reinstall if necessary. 3. Restring cable properly. 4. Open bottom panel and untangle cable. 5. Adjust by transferring adjustment washers in counterweights at cable ends (see installation instructions).
M. Lifting cables do not track properly on drums.	<ol style="list-style-type: none"> 1. Cables were not installed between drum and retention roller. 2. Roller springs disconnected. 3. Cables twisted at time of installation. 	<ol style="list-style-type: none"> 1. Reinstall cable correctly. 2. Connect springs. 3. Remove cables to straighten them and reinstall.
N. Cables dropping out of drums.	<ol style="list-style-type: none"> 1. Plastic lift cable retainers not installed at header per instructions. 2. Traveling nut contacting bottom (close) limit switch too late. 3. Door lowered too far manually; lock bolts extended more than two inches beyond guides. 	<ol style="list-style-type: none"> 1. Locate and install retainers. 2. Readjust traveling nut. 3. Instruct people responsible on proper use of manual operator.

120 INCH TELESCOPING DOOR MAINTENANCE

Trouble Shooting Guide

Inryco® Telescoping Door

Problem	Possible Cause	Solution
O. Cables run off drums.	<ol style="list-style-type: none"> 1. Cables too long for size and length of drums. 2. Cables are not tracking properly on drums. 3. Drum threaded opposite hand. 	<ol style="list-style-type: none"> 1. Replace with proper length cables. 2. See Problem "M" for possible cause and solution. 3. Replace drum or drum shaft assembly.
P. Safety reverse not operating.	<ol style="list-style-type: none"> 1. Wiring not connected. 2. Wires connected to wrong terminals in starter panel. 3. Break in circuit continuity in header box or panels (electrical conductor cable). 4. Safety edge shut-off switch activated. 5. Loose connections in wiring. 	<ol style="list-style-type: none"> 1. Connect wires per wiring diagram (see installation instructions). 2. Check wiring diagram. 3. Check with continuity tester and reconnect or replace wires as necessary. 4. Check and readjust switch. 5. Check with continuity tester and reconnect.
Q. Electrical conductor cable separation.	<ol style="list-style-type: none"> 1. Improper installation — usually tension applied to cable with lockbolts extended rather than retracted per instructions. 2. Panel nest drifting on close cycle due to faulty or improperly adjusted brake on motor operator. 	<ol style="list-style-type: none"> 1. Replace and reinstall properly in accordance with installation instructions. 2. Readjust brake.
R. Door does not open fully.	<ol style="list-style-type: none"> 1. Upper (open) limit control activates too soon. 2. Operator timing chain sprocket ratio incorrect for door height and curtain speed. 3. Motor stalling. 	<ol style="list-style-type: none"> 1. Readjust traveling nut. 2. Replace sprockets. 3. Check motor voltage, etc. (see Problem "A").
S. Door does not close fully.	<ol style="list-style-type: none"> 1. Lower (close) limit control activates too soon. 2. Operator timing chain sprocket ratio incorrect for door height and curtain speed. 3. Removable inner guides installed too tight to curtain. 4. Bottom panel hanging up in panel above. 	<ol style="list-style-type: none"> 1. Readjust traveling nut. 2. Replace sprockets. 3. Reposition inner guides. 4. Check for foreign substance on panels; or second panel may be too tight and should be spread outward slightly by hand.
T. Door will not close from full open position.	<ol style="list-style-type: none"> 1. Overtravel circuit in header box activated because: <ol style="list-style-type: none"> a. Upper (open) limit control is set too high. b. Traveling nut broken. c. Timing chain slipping due to broken sprocket or loose sprocket shaft. d. Chain break safety device activated. 2. Safety edge circuit activated. 3. Motor does not operate. 	<ol style="list-style-type: none"> a. Readjust traveling nut. b. Replace traveling nut. c. Replace sprocket and secure shaft; then tighten chain. d. See Problem "W" on page 8. <ol style="list-style-type: none"> 2. Check for short in safety circuit. 3. Check power supply and control circuit (see Problem "B").
U. Door closes only when constant pressure is applied on close button	<ol style="list-style-type: none"> 1. "Holding" circuit on close side has malfunctioned. 2. Motor operator is wired for constant pressure on close button. 	<ol style="list-style-type: none"> 1. Check for open circuit. See wiring diagram. 2. Normal operation.

Control PANEL
TRANSFORMER

(D) READING 1V

(D) BROKEN WIRES. +FACE WITH AMP.

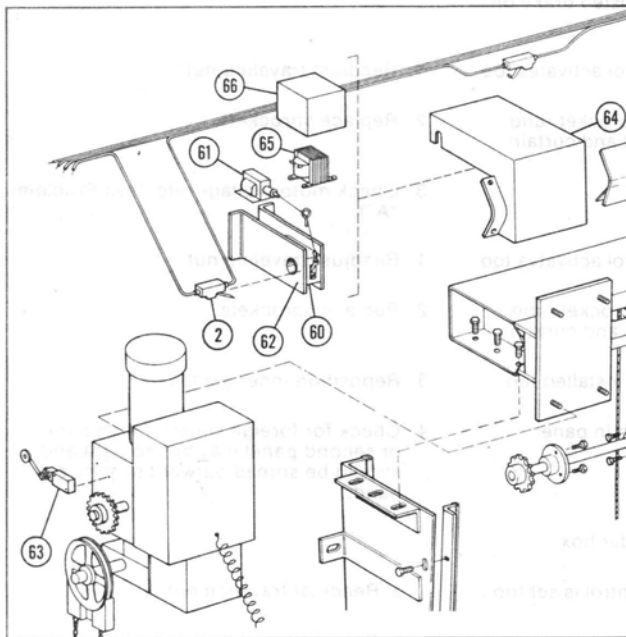
120 INCH TELESCOPING DOOR MAINTENANCE

Trouble Shooting Guide

Inryco® Telescoping Door

Problem	Possible Cause	Solution
V. Door closes partially and immediately reverses.	<ol style="list-style-type: none"> 1. Obstruction in opening is activating safety edge. 2. Safety edge circuit is shorted out. 3. Safety edge switch in bottom panel is activated. 4. Incompatible radio controls. 	<ol style="list-style-type: none"> 1. Remove obstruction. 2. Check circuit. 3. Check that floating bar is not depressing switch. Check for N.O. wiring at switch. 4. Check with radio control and motor operator manufacturers.
W. Chain break safety stop activated.	<ol style="list-style-type: none"> 1. Drive chain broken. 2. Solenoid disengaged due to power outage. 3. Limit switch at drive chain activated. 4. Transformer shorted or burned out. 	<ol style="list-style-type: none"> 1. Normal operation. Replace drive chain and reset safety stop. 2. Restore power to solenoid or temporarily disengage ratchet clutch until power is restored. See instructions. 3. Replace or repair as necessary. 4. Replace as necessary.

NOTE: Items 2 thru 4 are NOT applicable to mechanical safety stop.



Parts List

Electrical Chain Break Safety Stop (Doors prior to September, 1980)**

Item No./Description

- 2. Limit Switch (at Clutch)
- 60. Ratchet Clutch
- 61. Solenoid
- 62. Clutch Mounting Plate
- 63. Limit Switch (at Drive Chain)
- 64. Enclosure for Solenoid and Clutch
- 65. Transformer—Primary to 110/120 Volt
- 66. Enclosure for Transformer

**Not furnished with Direct Drive Operator.



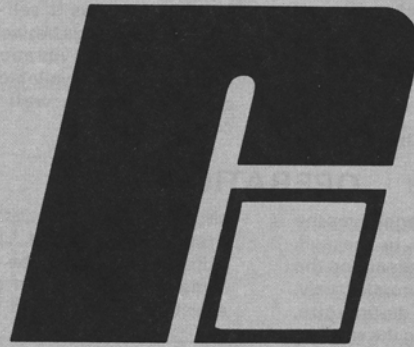
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INRYCO, Inc.
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120 INCH TELESCOPING DOOR MAINTENANCE

OCTOBER, 1983

INSTRUCTION MANUAL N-3000-12



OPERATION AND MAINTENANCE

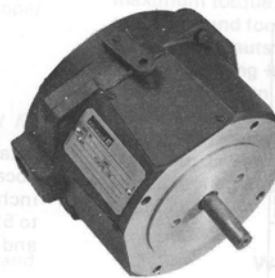
DUTY MASTER UNIBRAKES®

TYPE U — SIZE 40
TYPE F — SIZE 50

F50 — STANDARD (TE)
DOUBLE NEMA 'C' FACE

IMPORTANT

It is important that these instructions be studied by the personnel installing and operating the unit. Read thoroughly before starting. Keep these instructions for future reference.



**RELIANCE
ELECTRIC**

120 INCH TELESCOPING DOOR MAINTENANCE

GENERAL

WARNING
DUTY MASTER UNIBRAKES ARE NOT A FAIL SAFE DEVICE. WHERE HOLDING LOAD REPRESENTS A RISK OF PROPERTY DAMAGE, AND/OR PERSONAL INJURY, AN INDEPENDENT FAIL SAFE DEVICE MUST BE SUPPLIED INDEPENDENT OF THE UNIBRAKE. THESE SAFETY DEVICES ARE NEITHER PROVIDED NOR ARE THEY THE RESPONSIBILITY OF RELIANCE ELECTRIC COMPANY.

Unibrakes are spring set, magnetic release, direct acting, disc brakes for the controlled stopping and holding of a load. They have single phase magnet coils in standard voltages and frequencies and are factory set for rated retarding torque.

CONSTRUCTION

F50 series brakes utilize one or more asbestos friction discs

mounted on a metal hub which is fastened to a rotating shaft. The F50 uses a two ball pivot design for its armature plate. It also has a self-resetting manual release lever. Anti-rattle springs between the rotating disc and hub help reduce torsional vibration and pulsation noise. The F50 Unibrakes are available in the standard TE and SXT constructions as well as TE Double Nema 'C' Face construction.

OPERATION

When properly connected, starting the motor energizes the brake magnet coil, attracting the armature to the coil, compressing the torque springs, releasing pressure on the stationary plates, permitting the brake discs to rotate freely. When the motor and the brake magnet coil de-energize, this de-compresses the torque springs, forcing the rotating disc(s) and stationary plate(s) together, stopping and holding the motor shaft and load.

When the motor is 'off,' to move the driven load without energizing the motor, rotating the manual release lever 90 degrees clockwise removes the retarding torque from the motor shaft letting the load be hand-moved. The lever returns to the normal "set" position when the brake is re-energized.

should take place, i.e., after 20,000 to 50,000 cycles for the first inspection and 150,000 to 200,000, thereafter. Adjustments should be made to the air gap between the armature and magnet poles to effect continuing brake effectiveness.

WARNING
DISCONNECT POWER BEFORE TOUCHING ANY INTERNAL PART.

INSTALLATION: (TE - Figure 1) (SXT*)

*For installation instructions on SXT brake, refer to instruction label 87002-04 located on inside of brake cover.

WARNING
ANY MECHANISM OR LOAD HELD IN POSITION BY THE BRAKE SHOULD BE CHECKED TO AVOID POSSIBLE DAMAGE OR INJURY TO PERSONNEL BEFORE BRAKE IS RELEASED MANUALLY.

Unibrake magnet coils (AC) are always single phase and usually dual voltage. Direct current brake coils must be separately operated. Switch contacts to control the brake must be different from those used to control the motor. Normally, motor and brake contacts must be interlocked.

WIRING CONNECTIONS

DUAL VOLTAGE 4 LEAD BRAKE		
MOTOR	Volt	Connect
3 Phase Dual Voltage	Low	B1, B3, T1 & T7 B2, B4, T2 & T8
	High	B1 and T1 B2 and B3 B4 and T2
2 Phase Dual Voltage	Low	B1, B3, T1 & T7 B2, B4, T3 & T5
	High	B1 and T1 B2 and B3 B4 and T3
1 Phase Dual Voltage	Low	B1, B3, T1 & T3 B2, B4, T2 & T4
	High	B1 and T1 B2 and B3 B4 and T4
Separately Connected Brake	Low	B1, B3 and L1 B2, B4 and L2
	High	B1 and L1 B2 and B3 B4 and L2

Unibrake discs require periodic adjustment due to expected wear. On rapid cycling applications, regular inspections

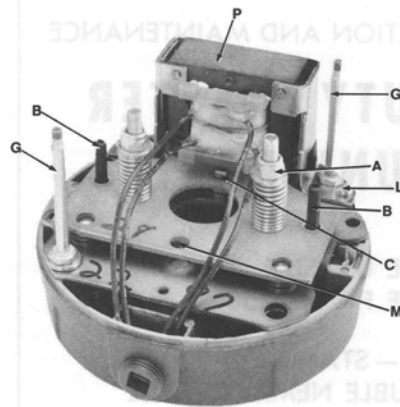


FIGURE 1

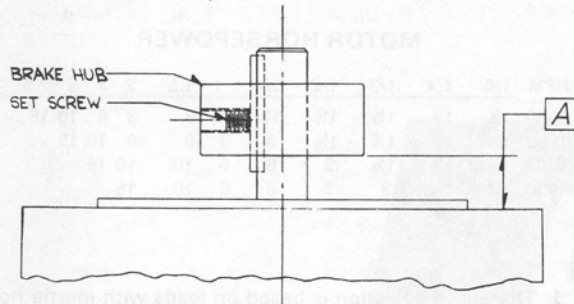
Attach hub to shaft using key and set screw provided. Locate hub 5/16 inch from mounting face of motor (1/2 inch for SXT brakes) as shown in Fig. 2. Tighten set screws to 55-100 in. lbs. of torque. Slip brake onto mounting face and fasten with 3/8 inch socket head cap screws.

TORQUE ADJUSTMENTS (Figure 1)

The Unibrake is factory set for rated torque which is maximum torque. To increase stopping time on 3, 6, 10, and 15 ft. lb., turn two lock nuts (A) an equal amount

120 INCH TELESCOPING DOOR MAINTENANCE

counterclockwise to increase spring length. For the 6, 10, and 15 ft. lb. brakes, one full turn will reduce torque by about 12-1/2%. The three ft. lb. brake will be reduced in retarding torque by about 8%. Torque should not be reduced by less than 1/2 of the rated torque. Torque on the 1-1/2 ft. lb. brake cannot be reduced.



BRAKE	A
ALUMINUM	.31
CAST IRON	.50

FIGURE 2

WEAR ADJUSTMENT (Figure 1)

If an increase in stopping time is noted, adjust brake as follows:

Turn both screws (B) equally in clockwise direction until air gap (C) (measured at approximate center of magnet) of .075 to .090 is obtained. Measurement of air gap should be made with thumb pressure applied at point M to assure plate is seated on pivot balls. Failure to adjust for wear will result in loss of braking torque.

NOTE: Unequal adjustment of screws (B) will result in unequal pivot action on balls.

FRICTION DISC REPLACEMENT (Figure 2)

When it is necessary to replace disc(s), do as follows: Remove 2 cover support studs (G) and lift off brake mechanism assembly. Remove stationary plate(s) and brake disc(s). Replace with new stationary plate(s) and disc(s). Reassemble brake mechanism assembly. Set air gap as for Wear Adjustment.

MAGNET COIL REPLACEMENT (Figure 2)

Remove stud (G) adjacent to coil, 2 round head screws (L), and disconnect magnet coil leads. Lift off complete coil assembly (P) and replace with new coil assembly of proper electrical rating. Set air gap as for Wear Adjustment.

DOUBLE NEMA 'C' FACE (Figure 3)

NOTE: Must be direct coupled; not recommended for belted or other overhung load applications.

INSTALLATION

Remove 4 hex head screws (G) and lift off brake cover and shaft assembly (D). Remove brake hub (J) and attach it to the motor shaft using key and set screws. Locate hub 1-5/16 of an inch away from mounting face of motor as shown in Figure 4. Tighten set screws to 55-100 in. lbs. of torque. Slip brake head and mechanism assembly onto brake hub and mounting face. Fasten with four 3/8 - 16

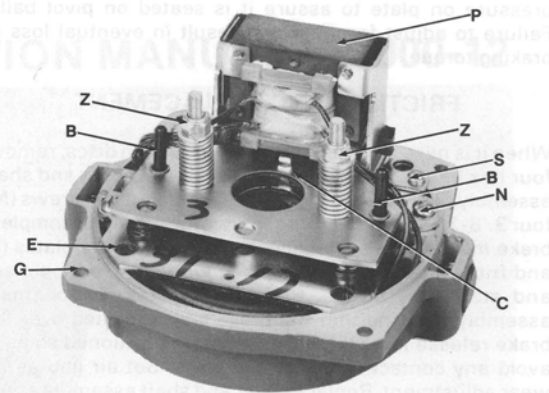
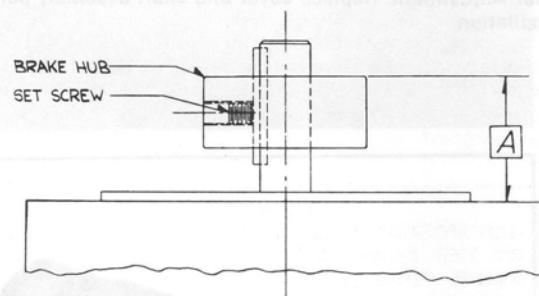


FIGURE 3

socket head cap screws (E). Leads must be routed behind coil to avoid contact with rotating parts. Replace brake cover and shaft assembly (D) by inserting keyed shaft into the brake hub extension and guiding cover over the brake mechanism assembly, insuring that center window is located over brake release lever (L). Secure with four hex head screws (G).



BRAKE	A
DOUBLE 'C' FACE	1.31

FIGURE 4

TORQUE ADJUSTMENT

The Unibrake is factory set for rated torque which is maximum torque. For increased stopping time on 3, 6, 10 and 15 pound foot brakes, remove window covers (W) and turn two locknuts (Z) an equal amount counter-clockwise to increase spring length. For the 6, 10 and 15 pound foot brakes, one turn will decrease torque approximately 12-1/2%. For the 3 pound foot brake, torque will be reduced by approximately 8 percent. Torque should not be reduced to less than 1/2 of the rated torque. The torque of a 1-1/2 pound foot brake cannot be reduced.

WEAR ADJUSTMENT

If an increase in stopping time is noted, adjust brake as follows. Remove the three window covers (W), turn both screws (B) equal amounts in a clockwise direction until air gap (C) of .075 to .090 is obtained. Measurement should be made at approximate center of magnet and with sufficient

120 INCH TELESCOPING DOOR MAINTENANCE

pressure on plate to assure it is seated on pivot balls. Failure to adjust for wear will result in eventual loss of braking torque.

FRICITION DISC REPLACEMENT

When it is necessary to replace worn friction discs, remove four hex head screws (G) and lift off brake cover and shaft assembly (D). Remove two 1/4-20 round head screws (N), four 3/8-16 socket head cap screws (E) and lift off complete brake mechanism assembly. Remove stationary plates (K) and friction discs (R) and replace with new friction discs and stationary plates. Reassemble brake mechanism assembly insuring that the brake coil is located over the brake release lever (L). Leads must be positioned so as to avoid any contact with rotating parts. Set air gap as for wear adjustment. Replace cover and shaft assembly as per installation.

MAGNET COIL REPLACEMENT

Remove four hex head screws (G) and lift off brake cover and shaft assembly (D). Remove two 3/8-16 socket head cap screws (E) adjacent to coil, two 10-32 round head screws (S) and disconnect magnet coil leads. Lift off complete coil assembly (P) and replace with new coil assembly of the proper electrical rating. Position leads so as to avoid contact with rotating parts. Set air gap as for Wear Adjustment. Replace cover and shaft assembly per installation.

GENERAL BRAKE RATING SELECTION GUIDE

The following chart shows recommended nominal brake torque in foot pounds as it relates to motor rpm and horsepower:

MOTOR HORSEPOWER

RPM	1/6	1/4	1/3	1/2	3/4	1	1.5	2	3	5	7.5	10
3600	1½	1½	1½	1½	1½	1½	3	3	6	10	15	15
1800	1½	1½	1½	1½	3	3	6	6	10	15		
1200	1½	1½	1½	3	6	6	10	10	15			
900	1½	1½	3	3	6	6	10	15				

1. The above selection is based on loads with inertia not more than twice that of the motor plus brake and not overhauling.
2. This brake selection will give brake torques between 100% and 150% of rated load motor torques and will stop the load in about the same time in which the motor will start it.
3. Select brakes with the least amount of torque which will stop the load within the required distance and hold the load.

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