

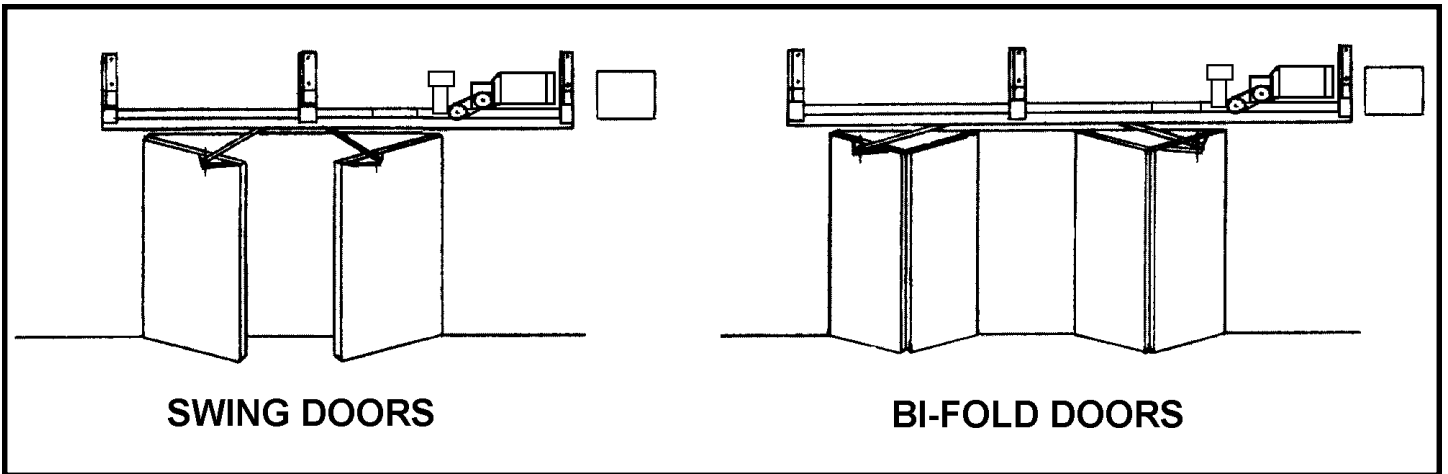
Model GSW

Industrial Gearhead

Swing and Folding Door Operator

Safety, Installation and

Service Manual



OSCO requires use of an electric edge or photoelectric control for pedestrian protection on all automatic or remotely controlled door operators.

OSCO[®]

OPERATOR SPECIALTY CO., INC.
P.O. BOX 128, CASNOVIA, MI 49318

Safety Information and Warnings

Read all of the following before beginning to install the Model GSW operator:

1. Read the green "SAFETY INSTRUCTIONS" sheet provided with the operator information. It's extremely important that the safety warnings and precautions be understood and followed by the installing contractor. Leave all instructions with the end user.
2. Do not attempt to operate the machine unless it is completely installed as instructed.
3. The installation must be made in a neat and professional manner, observing all rules of good workmanship and personal safety.
4. All electrical connections to the power supply must be made by a qualified and licensed electrician. All local and national codes must be observed.
5. A power-disconnect switch should be located within sight of the operator so that primary power can be turned off when necessary.
6. Do not open or remove enclosure covers unless you are qualified to service this equipment and the power is turned off. There are no user-serviceable parts inside.
7. Install enclosed warning signs so as to be visible to all persons passing near or through the door.
8. Operate the door only when it is in full view.
9. Do not permit children to play on or around the door.
10. Never reach through or around a door frame to operate the door controls.
11. Install all recommended safety equipment.

Features

Motor: 1/2, 3/4, 1, and 2 HP in any voltage

Gear Reducer: Heavy-duty worm gearhead motor

Starter: Contactor-type magnetic reversing starter of appropriate size

Control Transformer: Minimum 50VA control transformer reducing primary voltage to 24V

Limit Switch: Rotary-type, positively stops door in open and close direction

Solenoid Brake (Optional): Positive solenoid double C-face disc brake to assure added holding and locking power

Pushbutton: NEMA Type 1 three-button station marked OPEN-CLOSE-STOP

CAUTION

OSCO STRONGLY RECOMMENDS USE OF AN ELECTRIC EDGE OR PHOTOELECTRIC CONTROL FOR PEDESTRIAN PROTECTION ON ALL AUTOMATIC OR REMOTELY CONTROLLED DOOR OPERATORS.

Children should never be allowed to play on, near, or around a motorized door. Any control devices should be placed so as to be inaccessible to small children.

The door should never be operated unless it is in visual sight of the user.

Warning signs must be installed on or near the door.

A pushbutton or keyswitch should not be installed within reach of the door or operator.

LIMITED ONE-YEAR WARRANTY

This electric operator is warranted for a period of one (1) full year from date of installation against defects in materials or workmanship. Any part, parts, or complete unit which fails because of such defects within this period shall, at the manufacturer's option, be repaired or replaced at no charge. The manufacturers will not be responsible for transportation and/or field service charges.

This warranty is in lieu of all other warranties, expressed or implied, and shall be considered void if visible evidence implies recommended installation procedures and maintenance instructions were not followed.

General Information

This OSCO installation, maintenance, and parts manual has been developed to assist you in the installation and maintenance of your electric operator. It will also enable you to use the operator to its maximum efficiency. At the time this manual is issued to you, it covers only Model GSW. The parts lists and prints have been prepared so you can easily determine the parts contained in your operator.

The Model GSW operator is available in 1/2, 3/4, 1, or 1 1/2 HP, in all voltages and phases, with heavy-duty wormgear speed reducer, adjustable torque limiter, fully automatic and adjustable limit switches (rotary type), precision ball bearings permanently lubricated, heavy-duty pull-pin disconnect, and (optional) adjustable magnetic brake.

Operator Installation Instructions

Review the installation drawings included in this manual. They will give you a general idea of how the installation will look when finished. The drawing “**Guide for a Typical Installation,**” on page 4, defines terms used in the following sections. Also see drawing 2700-403 to assemble rail sections.

Check the Door(s)

It is important that the door(s) work smoothly and freely in both directions. The operator has plenty of power, but it is not intended to move a bound door.

Install Front Wall-Mounting Bracket

For a **double swing (DS)** installation, position the front wall-mounting bracket so the front end of the operator is 8 inches beyond the back edge of the door. For a **bi-fold (BF)** installation, position the front wall-mounting bracket so the front end of the operator is 20 inches beyond the back edge of the door. The bottom of the bracket should be approximately either 12 inches above the opening for a GSW-DS or 20 inches above the opening for a GSW-BF. For more information, see Drawings #600-003 and #600-033.

Depending on wall construction, wall-mounting brackets should be installed as securely as possible—by through bolts or weld whenever feasible.

Install Rear (Motor) Wall-Mounting Bracket

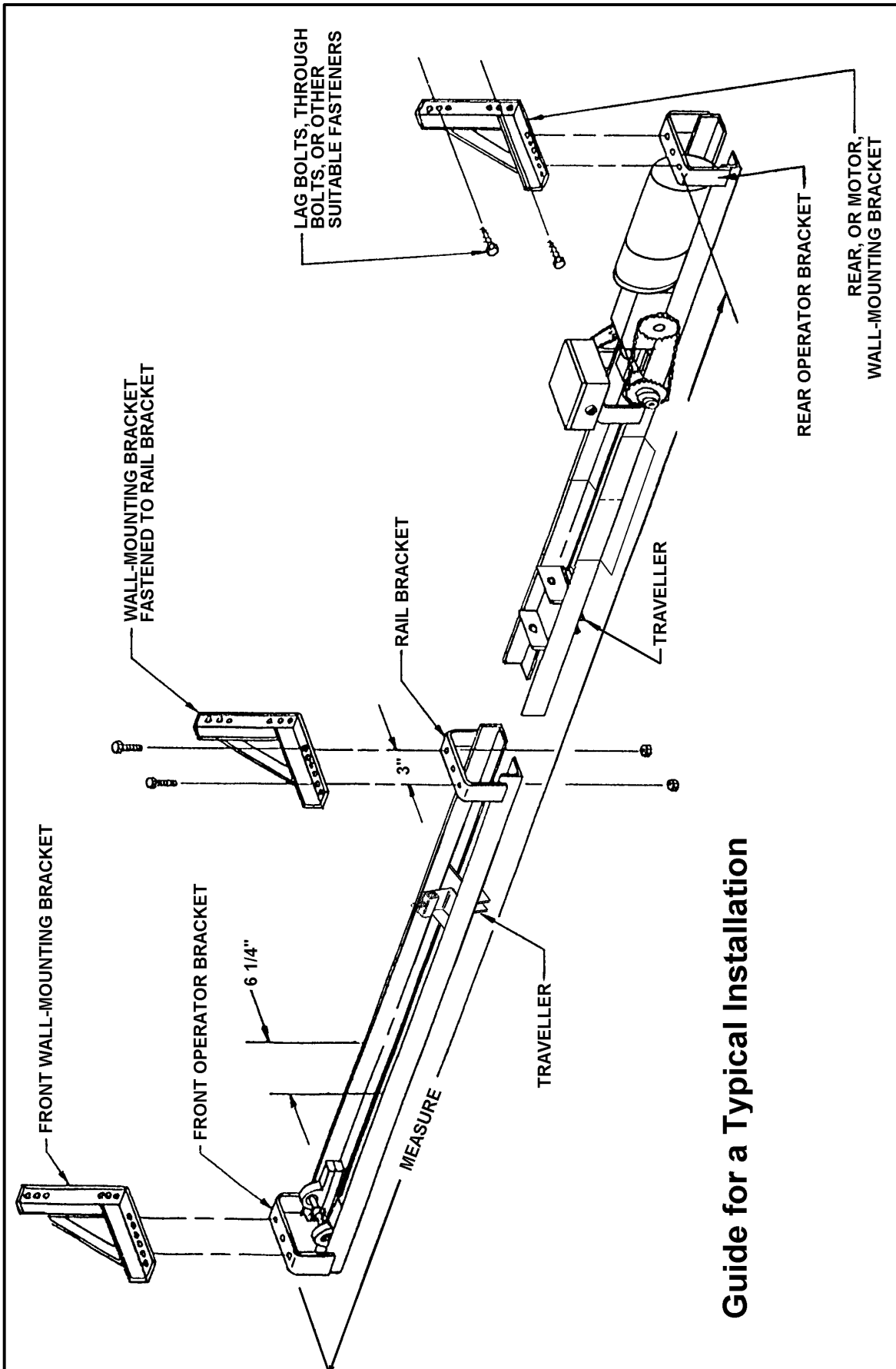
Once the front wall-mounting bracket has been positioned, the rear, or motor-end, wall-mounting bracket can be positioned by one of two methods: (1) measure the distance from the front operator bracket to the rear operator bracket; or (2) lift the operator into place with the rear wall-mounting bracket attached, and mark hole locations on the wall. The operator must be level, which means all wall-mounting brackets should be positioned the same distance above the opening or track.

Install Middle Wall-Mounting Brackets

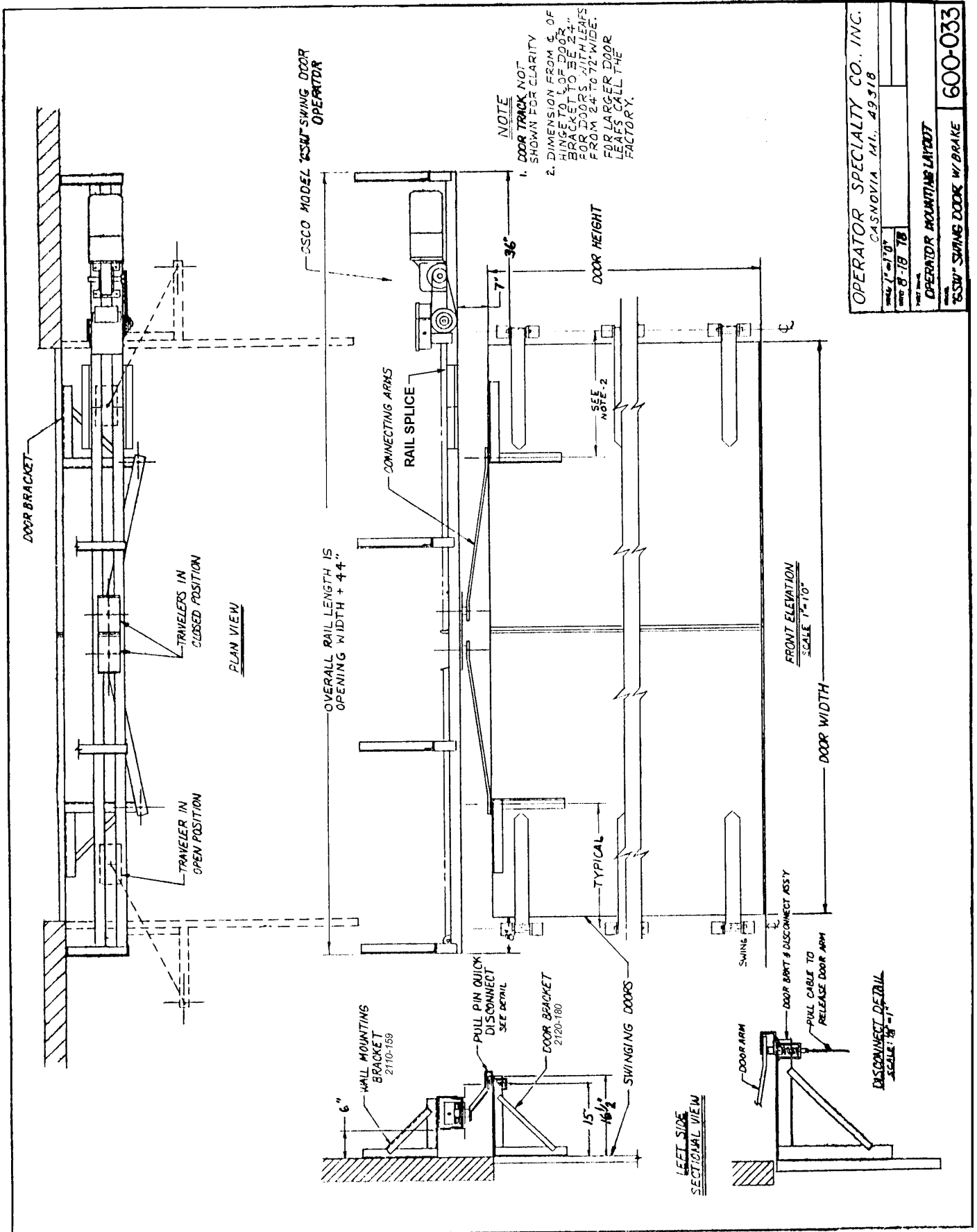
Your operator was shipped with the number of middle wall-mounting brackets necessary for the door width specified in your order. Be sure to install all of the middle wall-mounting brackets supplied.

Install Door Brackets and Disconnect Mechanisms

Dimensional information for location of these brackets can be found in Drawings #600-003 and #600-033.



Guide for a Typical Installation



OPERATOR SPECIALTY CO., INC.
 CASNOVIA, MI., 49318

DATE: 8-18-78

OPERATOR MOUNTING LAYOUT

OSCO SWING DOOR W/ BRAKE

600-033

IMPORTANT

A. Power supply must be of correct voltage and phase.
B. Always disconnect power from the operator before servicing.
C. Keep clear of the door during operation.

Electrical Instructions

A complete wiring diagram can be found inside the operator’s controller cover. Voltage supplied should correspond to the voltage specified on the operator name plate, and power should be brought into the operator with no smaller than No. 12 wire. For proper wire gauge, refer to “**Wiring Specifications**,” on Page 13. Electrical power must be ample and not taken from an overloaded line, as faulty operation will result.

This operator is supplied with a 3-button control station (OPEN–CLOSE–STOP) accompanied by a precautionary sign warning against starting the doors in motion unless the doorway is cleared. It is vital that the 3-button station be mounted within sight but out of reach of the door and that the warning sign be mounted adjacent to the 3-button station.

<p>The 3-button station must be connected so the STOP circuit between terminals #2 & #4 is not bypassed. Also, if additional 3-button stations are to be connected, the STOP buttons must be wired in series.</p> <p>NOTE: A STOP button must be used when the installation has radio controls or a single button.</p>	<p><u>Desired Function</u></p> <p>OPENING DEVICE</p> <p>STOP</p> <p>CLOSE</p> <p>OPEN & CLOSE</p> <p>SAFETY TO REVERSE</p> <p>24VAC POWER</p>	<p><u>Connecting Terminals</u></p> <p>#1 & #4</p> <p>#2 & #4</p> <p>#3 & #4</p> <p>#4 & #5</p> <p>#1 & #6</p> <p>#2 & #10</p>
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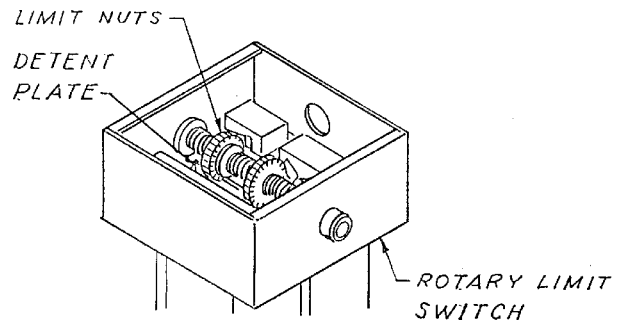
Important Notice for NEMA 12 Operators

1. The NEMA 12 control panel, if supplied with this operator, must be wired to the operator junction box in accordance with local and national electrical codes.
2. Two conduits will be required between the NEMA 12 control panel and the operator junction box. One must be provided for low-voltage control wires, and the second box for high-voltage wires.
3. Incoming power supply (double-check circuit drawing for proper voltage and phase) connects to wire leads provided inside a special junction box within the NEMA 12 control panel.
4. **Grounding Requirement.** The green grounding leads in the operator junction box and the NEMA 12 control panel must be tied together. Then the tied-together leads are to be connected to earth ground.

Adjustments

Limit Switch Adjustment

1. Secure all electrical power connections L1 and L2 on single phase and L1, L2, and L3 on three phase. Turn power on.
2. With the door in halfway position, touch the OPEN button. If the door closes, depress the STOP button immediately. On three-phase operators, reverse any two of the three power connections (L1 and L2).
3. Depress the CLOSE button. If the door closes, the operator should stop when the close limit nut engages the close limit switch. Press the STOP button and reverse the limit switch wires.
4. Adjust limit nuts by releasing the detent plate and turning the nuts in the desired direction (Figure 7). A complete turn allows the door to move 4–6 inches. Be sure the detent plate is properly locked into both limit nuts when adjustment is complete.



REMOVE COVER. DEPRESS THE DETENT PLATE, AND ROTATE THE LIMIT NUTS IN THE DESIRED DIRECTION. BE SURE THE DETENT PLATE IS PROPERLY LOCKED INTO BOTH LIMIT NUTS AFTER ADJUSTMENT IS COMPLETED. REPLACE THE COVER.

Torque Limiter Adjustment

Before adjusting the torque limiter, make sure the gate is in good working condition. One person should be able to move the gate by hand. Be certain the gate moves freely and without binding throughout its entire travel.

The torque limiter is set light at the factory. **It must be adjusted during installation and checked on a regular basis.**

NOTE: The torque limiter should be set tight enough so that when the operator starts the torque limiter does not slip, but loose enough to slip if the gate is obstructed.

TURN OFF POWER TO THE OPERATOR BEFORE MAKING ADJUSTMENTS!

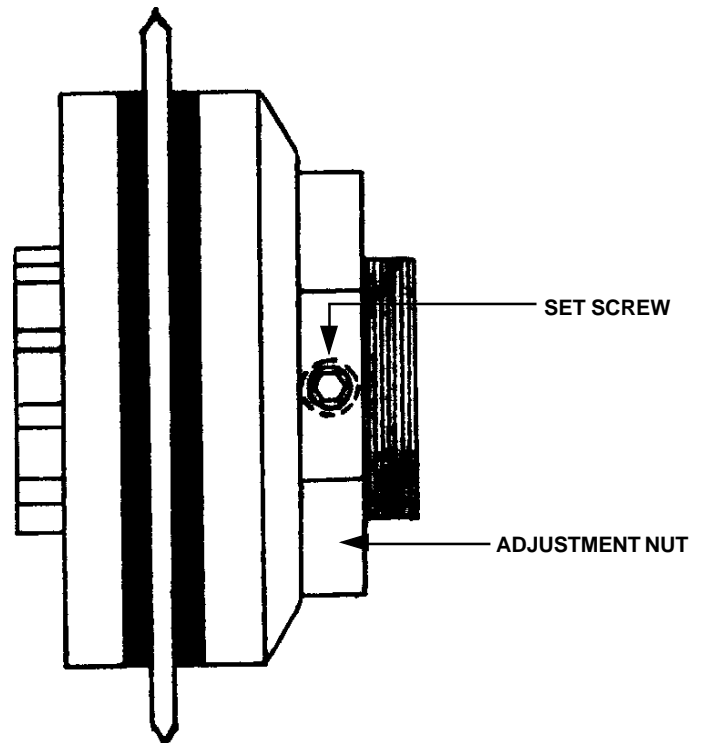
1. Loosen the set screw on the the adjustment nut.
2. **To increase the output**, turn the adjustment nut clockwise one flat, or 1/6 turn, at a time until desired output is obtained.

WARNING: Do not overtighten. The torque limiter must slip if the gate is obstructed.

To reduce the output, turn the adjustment nut counterclockwise one flat, or 1/6 turn, at a time until desired output is obtained.

NOTE: A properly adjusted torque limiter will not slip during normal operation.

3. Retighten the set screw on the adjustment nut.



Drive Chain Adjustment

The main drive chain is the chain attached to the travellers in the rail assembly. It is attached to the lower chain traveller with chain-adjustment pins. The slack in the chain should be taken up as normal chain stretch occurs. While it is important that chain slack not be excessive, it is equally important that the drive chain not be so taut that premature wear occurs. If the chain jumps and clicks as it goes around the drive sprocket, it is probably too tight.

DISCONNECT POWER FROM THE OPERATOR BEFORE SERVICING.

Maintenance

General

OSCO door operators are designed for many years of trouble-free operation and, under normal operating conditions, will require only minimal maintenance.

To ensure that your unit is ready for operation at all times—and to preclude serious damage or failure—inspect the unit systematically. Proper adjustments and lubrication should be made as recommended below.

DISCONNECT POWER FROM THE OPERATOR BEFORE SERVICING!

Maintenance (Cont'd)

Lubrication

Bearings. All bearings are oiltite and are permanently lubricated.

Motor. Motors have sealed ball bearings and do not require further lubrication. If bearing noise develops after several years of operation, bearings should be replaced.

Drive Chain and Sprocket. Drive chains and sprockets should never be greased or heavily oiled. However, drive chains should occasionally be wiped down with an oily cloth.

Rails. Rails do not require lubrication, but wiping them occasionally with an oily cloth will help increase their life.

12-Month Preventive Maintenance

1. Check torque limiter for correct tension every 12 months.
2. Inspect torque limiter disc for wear every 12 months.
3. Check limit switches for adjustment and wear.
4. See that all nuts and bolts are tight.
5. If your unit has the optional magnetic brake, check brake for proper setting. Do not overtighten. Brake disc must run free when brake is engaged.

Troubleshooting

Operator fails to work:

1. Overload kicked out. Disconnect power before opening control box. Reset overload.
2. Main power disconnected at master distribution panel. Reconnect power.
3. (Optional) Secondary fuse blown. Replace!

2. Make sure that torque limiter is adjusted properly. (Factory settings are very light.)
3. Be sure that chain is not broken.
4. Make sure that track is not covered with oil or grease.
5. Check for broken or disconnected drive chain.
6. Check for burned out brake solenoid. (Remove inspection cover.)

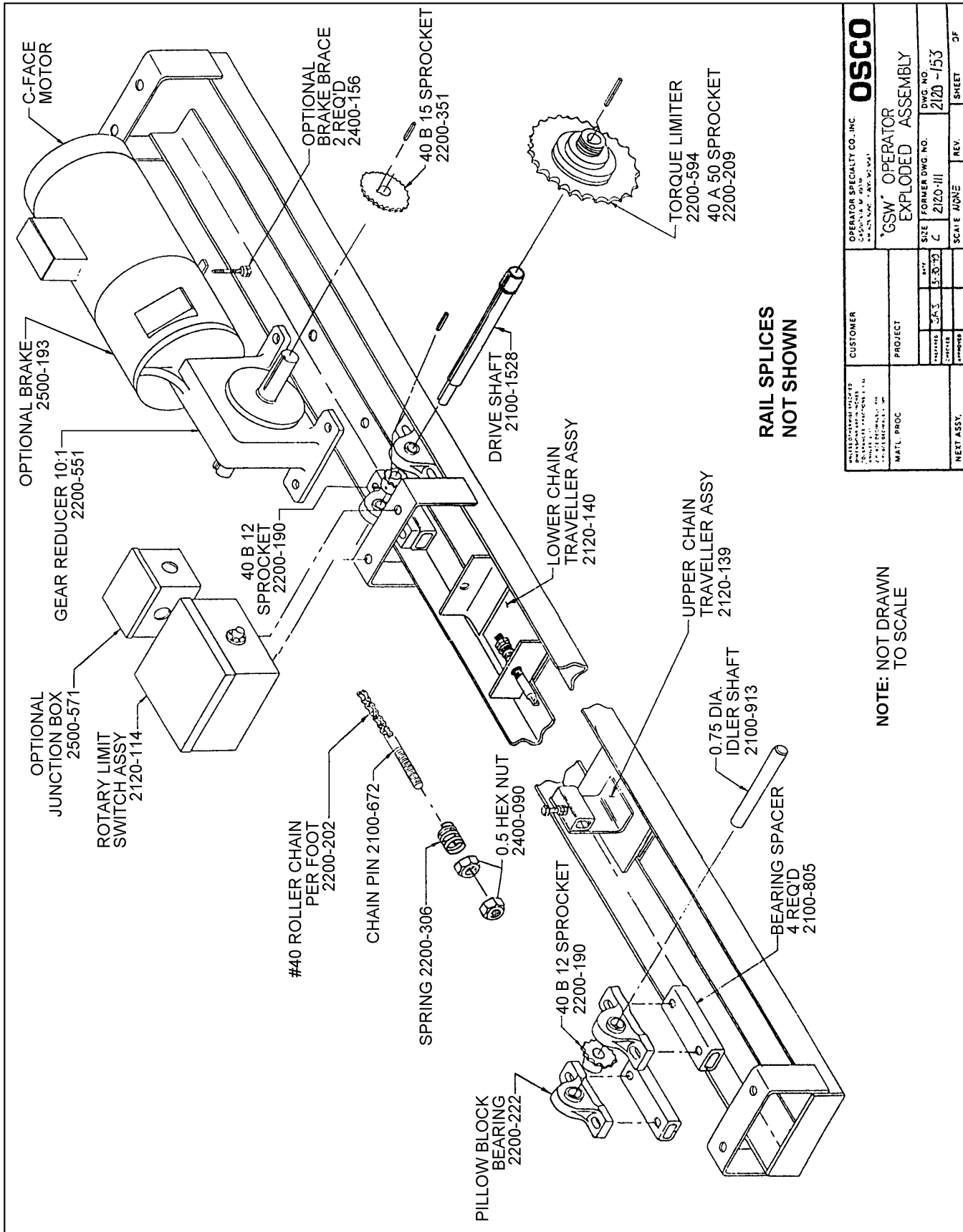
Motor operates but the door does not move:

1. Check to see that torque limiter is engaged.
7. Check for stuck limit switch.

Ordering Replacement Parts

Use the numbers shown in the lists on the following pages to order all replacement parts.

1. Supply the serial number of your operator.
2. Specify the quantity of pieces needed.
3. Order by part number and name of part.
4. State whether to ship by freight, truck, parcel post, UPS, or air express.
5. State whether transportation charges are to be prepaid or collect.
6. Specify name and address of person or company to whom parts are to be shipped.
7. Specify name and address of person or company to whom the invoice is to be sent.



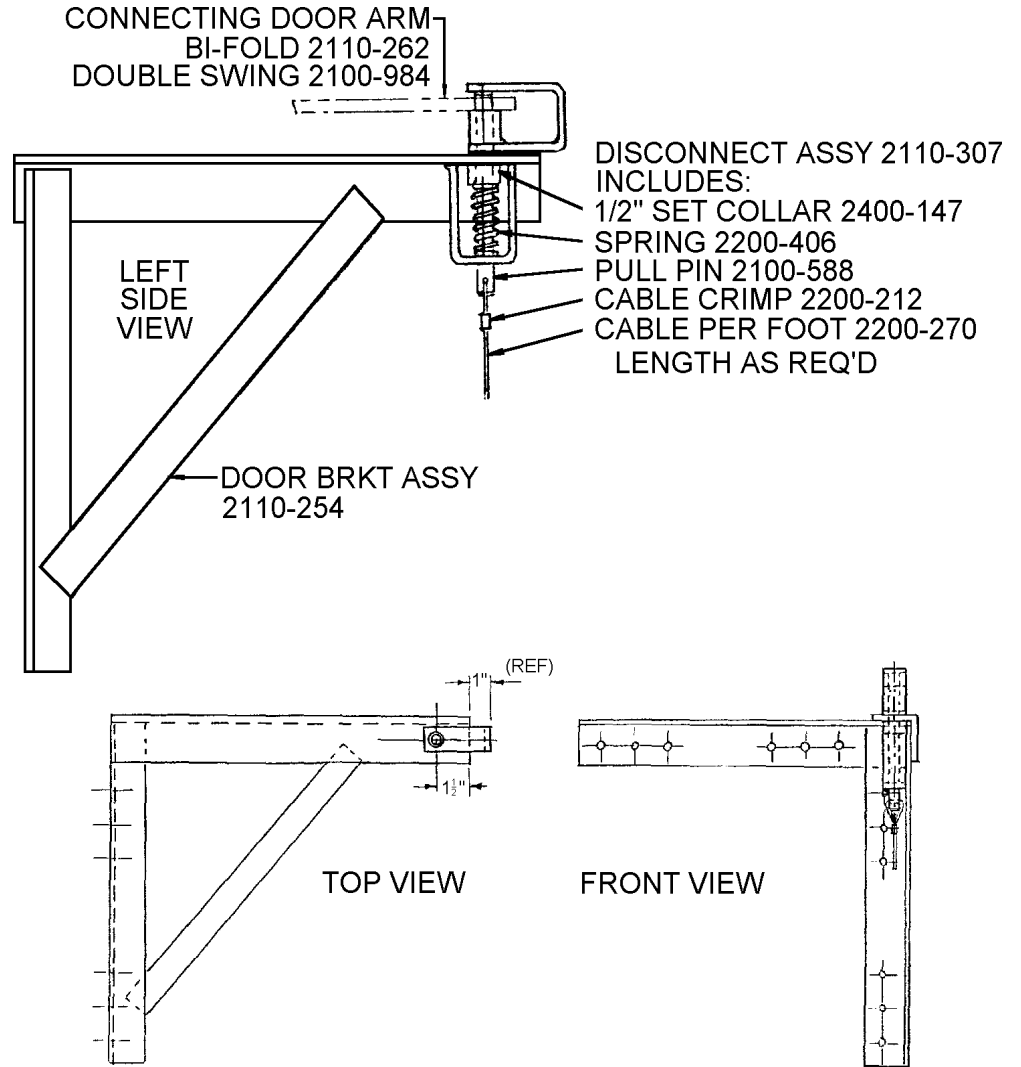
OPERATOR SPECIALTY CO., INC.		OSCO	
OPERATOR SPECIALTY CO., INC. 2550 N.W. 30TH MIAMI, FL 33142		"GSW" OPERATOR EXPLORED ASSEMBLY	
CUSTOMER	PROJECT	FORMER DWG. NO.	DWG. NO.
		2120-III	2120-153
		SCALE	REV.
		A3	1
MATL. PROC.			SHEET
			31

NOTE: NOT DRAWN TO SCALE

**Model GSW
Parts List #131
OSCO Drawing #2120-153**

<u>Part No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Description</u>
2200-551	Gear Reducer, 10:1		<i>Sprockets</i>
2100-1528	Drive Shaft, 3/4"	2200-190	Idler and Drive - 40 B 12, 3/4" Bore
2100-913	Idler Shaft, 3/4"	2200-594	Torque Limiter
2200-594	Torque Limiter, 5"	2200-852	Sprocket - 40 A 50, 3" Bore
2300-381	Pair of Friction Discs for Torque Limiter	2200-782	3" Bearing
2200-222	Pillow Block Bearing, 3/4"	2200-351	Gear Reducer - 40 B 15, 1" Bore
2100-805	Bearing Spacer	2200-350	Drive Shaft Limit Sprocket - 48 B 20, 5/8" Bore
2200-202	#40 Roller Chain, per foot	2200-008	Limit Box - 48 B 10, 1/2" Bore
2200-006	#40 Master Link		
2200-654	#48 Roller Chain, per foot		<i>C-Face Motors</i>
2200-010	#48 Master Link	2500-2157	1/2 HP, 115/230V, 1 Phase
2100-672	Chain Pin	2500-2158	3/4 HP, 115/230V, 1 Phase
2200-306	Spring	2500-2159	1 HP, 115/230V, 1 Phase
2500-033	Standard 3-Button Station	2500-1603	1/2 HP, 208/230/460V, 3 Phase
		2500-1604	3/4 HP, 208/230/460V, 3 Phase
2120-386	Rail Assembly for 14' Door	2500-1605	1 HP, 208/230/460V, 3 Phase
2110-159	Wall-Mounting Bracket		
2120-139	Complete Upper Chain Traveler Assembly	2520-188	Complete Controller, 115V, 1 Phase
2120-140	Complete Lower Chain Traveler Assembly		(WD #2600-218)
2100-1855	Rail Splice	2110-150	Enclosure, NEMA 1
		2500-2084	Contact, 4-Pole
2500-193	Optional C-Face Brake, 115/230V	2500-766	Transformer 115/24V, 75VA
2500-1351	Optional C-Face Brake, 460V	2500-185	Terminal Strip, 13-142
2500-571	Optional NEMA Junction Box	2500-774	Terminal Strip, 3-142
		2500-542	Relay, 120V, 3PDT
2520-114	Rotary Limit Box Assembly	2500-541	Relay, 24VAC, 3PDT
2500-764	Limit Switch		
2100-057	Standard Limit Shaft	2520-195	Complete Controller, 208/230V, 1 Phase
2200-030	Limit Nut		(WD #2600-219)
2100-261	Detent Plate	2500-767	Transformer, 230/24V, 75VA
2110-162	Limit Box Enclosure with Cover	2500-543	Relay, 230V, 3PDT
2100-773	Limit Box Cover only		
2200-029	Flange Bearing, 1/2" ID	2520-223	Complete Controller, 208/230V, 3 Phase
2400-029	Push-On Nut	2520-196	Complete Controller, 460V, 3 Phase
			(WD #2600-220)
2110-262	Bi-Fold Door Arm (1 required per door)	2500-767	Transformer, 230/24V, 75VA (208/230V)
2100-984	Double Swing Door Arm (1 required per door)	2500-768	Transformer, 460/24V, 75VA (460V)
2120-180	Complete Door Bracket and Disconnect Assembly (1 required per door; specify left or right)	2500-541	Relay, 24VAC, 3PDT

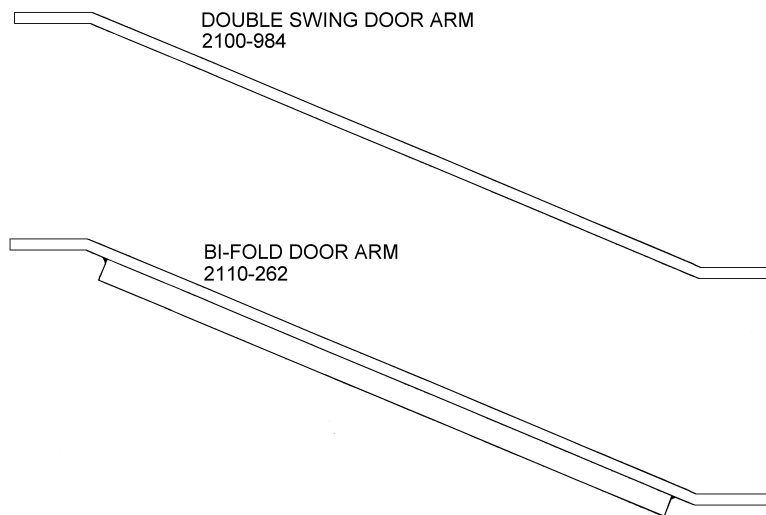
**Complete Door Bracket
and Pull-Pin Disconnect
Assembly 2120-180
(1 Req'd Per Door; Specify
Left or Right)**



**Connecting
Door Arms
(1 Req'd Per Door)**

End with flange bearing fastens to traveler with (1) 1/2"-13 hex nut and (1) 1/2" lock washer.

Hole in other end fits around pull pin in door bracket disconnect assembly.



Wiring Specifications

1. Select from the chart at right the section corresponding to the phase, voltage, and horsepower of your operator.
2. The distance shown on the chart is measured in feet from the operator to the power source. **DO NOT EXCEED THE MAXIMUM DISTANCE.**
3. When large-gauge wire is used, a separate junction box (not supplied) may be needed for the operator power connection.
4. Select the gauge for control wiring from the top chart below. If a greater distance is required, our remote station interface is suggested. Call the factory.
5. Wire run calculations are based on the National Electrical Code, Article 430, allowing 5 percent voltage drop.
6. Supply voltage must be within 10 percent of the operator rating under load conditions.
7. Connect power in accordance with local codes.
8. The wire tables are based on standard copper wire. Wire insulation must be suitable to the application.

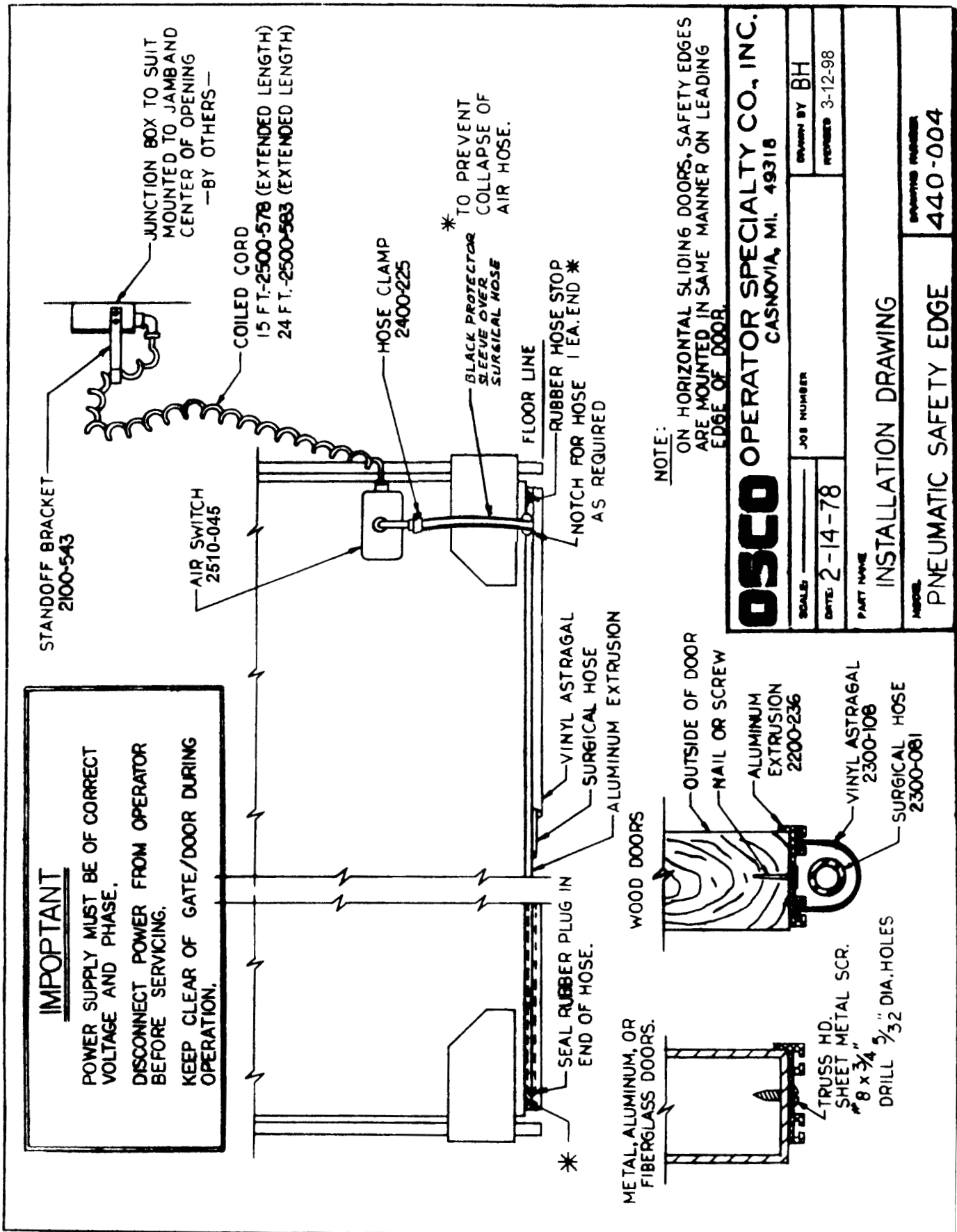
NOTE: If the power run is over 500 feet, consult your power utility company about possible power drops overhead or underground.

Control Wiring		
Volts	Max Distance (ft)	Wire Gauge
24V	250	14
	350	12
Over 350 ft, see interface chart.		

Control Wiring w/ Interface		
Volts	Distance Over (ft)	Wire Gauge
24V	350	14

USE COPPER WIRE ONLY

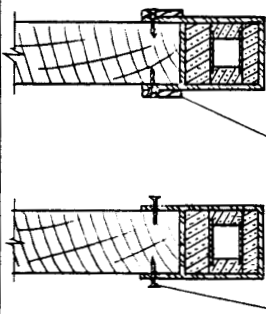
Power Wiring										
Volts & HP	Max Distance (ft)		Wire Gauge	Volts & HP	Max Distance (ft)		Wire Gauge			
	Single Unit	Dual Unit			Single Unit	Dual Unit				
Single Phase	115V	120	60	12	208V	475	240			
		190	95			10	230V	760	380	
		305	150			8		1200	600	
	485	240	6	1915	960					
	1/3HP	115V	125	60	12	208V	370	185		
			200	100			10	230V	585	295
			315	160			8		935	465
	500	250	6	1485	740					
	1/2HP	115V	65	30	12	208V	260	130		
			105	50			10	230V	415	205
			165	80			8		665	330
	265	130	6	1055	600					
3/4HP	115V	55	30	12	208V	225	115			
		85	45			10	230V	360	180	
		140	70			8		570	285	
225	115	6	910	455						
1HP	115V	55	30	12	208V	225	115			
		85	45			10	230V	360	180	
		140	70			8		570	285	
225	115	6	910	455						
Three Phase	208V	650	325	12	460V	2850	1425			
		1035	515			10	230V	4535	2265	
		1645	825			8		7210	3605	
	2615	1310	6	11465	5730					
	1/3HP	208V	620	305	12	460V	2705	1350		
			985	490			10	230V	4305	2150
			1565	780			8		6850	3425
	2485	1240	6	10895	5445					
	1/2HP	208V	440	220	12	460V	1935	965		
			700	350			10	230V	3075	1540
			1115	558			8		4890	2445
	1775	885	6	7780	3890					
3/4HP	208V	345	170	12	460V	1595	795			
		545	275			10	230V	2535	1265	
		870	435			8		4030	2015	
1380	690	6	6405	3205						
1HP	208V	235	120	12	460V	1040	520			
		380	190			10	230V	1655	825	
		600	300			8		2635	1315	
955	480	6	4190	2095						
1 1/2 HP	208V	180	90	12	460V	795	400			
		290	145			10	230V	1265	635	
		460	230			8		2015	1005	
730	365	6	3205	1600						
2HP	208V	180	90	12	460V	795	400			
		290	145			10	230V	1265	635	
		460	230			8		2015	1005	
730	365	6	3205	1600						



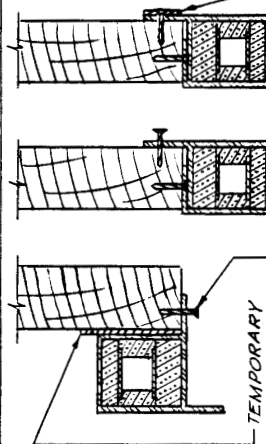
MOUNTING INSTRUCTIONS FOR ELECTRICALLY OPERATED REVERSING EDGE

DO NOT PAINT ANY PART OF THE REVERSING EDGE

LEADING EDGE OF WOODEN DOORS - 2 METHODS :



DRIVE SCREWS OR SCREWS - DECORATIVE STRIP - IF DESIRED - BY OTHERS



TEMPORARY SPACER STRIP OF CORRECT THICKNESS - BY OTHERS

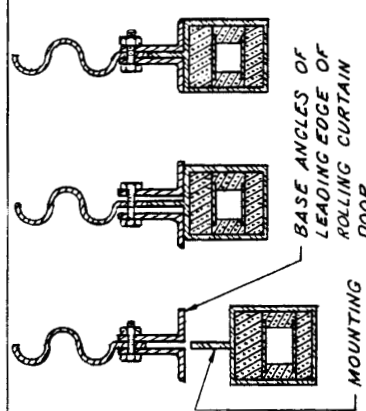
"U" SHAPED REVERSING EDGE METHOD "A"

- 1 CENTER REVERSING EDGE ON CENTER LINE OF DOOR, WITH CONNECTIONS AT PROPER END.
- 2 STAPLES, OR CARPET TACKS, ARE USED TO HOLD BOTH SIDE TABS IN PLACE.
- 3 STARTING ON CENTER LINE, & WORKING TOWARD BOTH ENDS, ON BOTH SIDES, SPACE TACKS ABOUT 2" APART.
- 4 IF DECORATIVE STRIPS ARE TO BE USED, USE EXTERIOR GRADE PLYWOOD - 1/4" x 1 1/2". ATTACH THESE STRIPS WITH #6 x 1" WOOD SCREWS, OR DRIVE SCREWS, SPACED ABOUT 8" APART.
- 6 OTHERWISE, ATTACH TABS PERMANENTLY, USING #6 x 1" WOOD, OR DRIVE, SCREWS, SPACED 8" APART, APPROXIMATELY.

"U" SHAPED REVERSING EDGE METHOD "B"

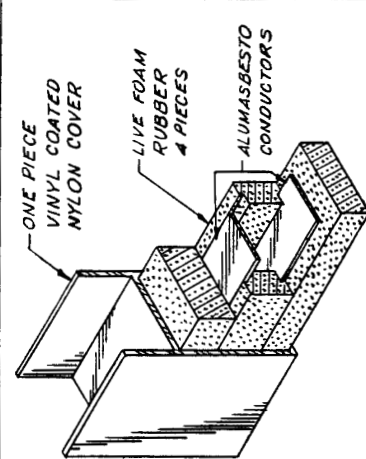
- 1 TEMPORARILY ATTACH THE SPACER STRIP TO THE OUTSIDE FACE OF THE DOOR LEAF.
- 2 CENTER THE REVERSING EDGE ON CENTER LINE OF DOOR WITH CONNECTIONS AT THE PROPER END.
- 3 STAPLES, OR CARPET TACKS, ARE USED TO HOLD THE SIDE TAB IN PLACE.
- 4 TAKE PARTICULAR CARE TO KEEP THE ENTIRE LENGTH OF DOOR EDGE EXCESS TENSION ON TAB, AND UNEVEN TENSION, WILL CAUSE TAB TO WRINKLE.
- 5 USE #6 x 1" WOOD SCREWS, OR DRIVE SCREWS, SPACING THEM ABOUT 8" APART.
- 6 REMOVE SPACER STRIP AND CARPET TACKS.
- 7 FOLD REVERSING EDGE TO BOTTOM OF DOOR LEAF.
- 8 STARTING AT THE CENTER LINE, TACK, OR STAPLE, INSIDE TAB IN PLACE, ON 2" CENTERS.
- 9 IF DECORATIVE STRIP IS TO BE USED, USE EXTERIOR GRADE PLYWOOD - 1/4" x 1 1/2". ATTACH THIS STRIP WITH #6 x 1" WOOD SCREWS, OR DRIVE SCREWS, SPACED ABOUT 8" APART.
- 11 OTHERWISE, ATTACH TAB TO INTERIOR FACE OF DOOR LEAF WITH THESE SCREWS, 8" APART.

LEADING EDGE OF ROLLING CURTAIN DOORS :



MOUNTING TAB

CUT-AWAY VIEW OF REVERSING EDGE



REVERSING EDGE CONSTRUCTION "U" SHAPED CONFIGURATION SHOWN

CONTACT STRIPS ARE ON OPPOSITE FACES OF THE CENTER CHANNEL. AN EVEN, LATERAL PRESSURE ON THE REVERSING EDGE MAKES AN ABSOLUTE CONTACT FOR A STOP AND REVERSING ACTION

- 1 LOOSEN FASTENERS OF ANGLES OF LEADING EDGE OF ROLLING CURTAIN DOOR.
- 2 PLACE "T" MOUNTING TAB OF REVERSING EDGE BETWEEN ANGLES
- 3 TAKE CARE NOT TO GET TAB TOO HIGH & PINCH THE HEAT SEALED PORTION, TO CAUSE PUNCTURE, OR PERMANENT CONTACT OF CONDUCTORS.
- 4 TIGHTEN ANGLES AT ELECTRICAL CONNECTIONS FIRST, THEN OPPOSITE END.
- 5 THEN WORK FROM CENTER, IN BOTH DIRECTIONS

OPERATOR SPECIALTY CO., INC.
 CASNOVIA, MI., 49318

SCALE: NONE APPROVED BY: _____
 DATE: 1-21-80 DRAWN BY: H.S.B.
 REVISION: _____

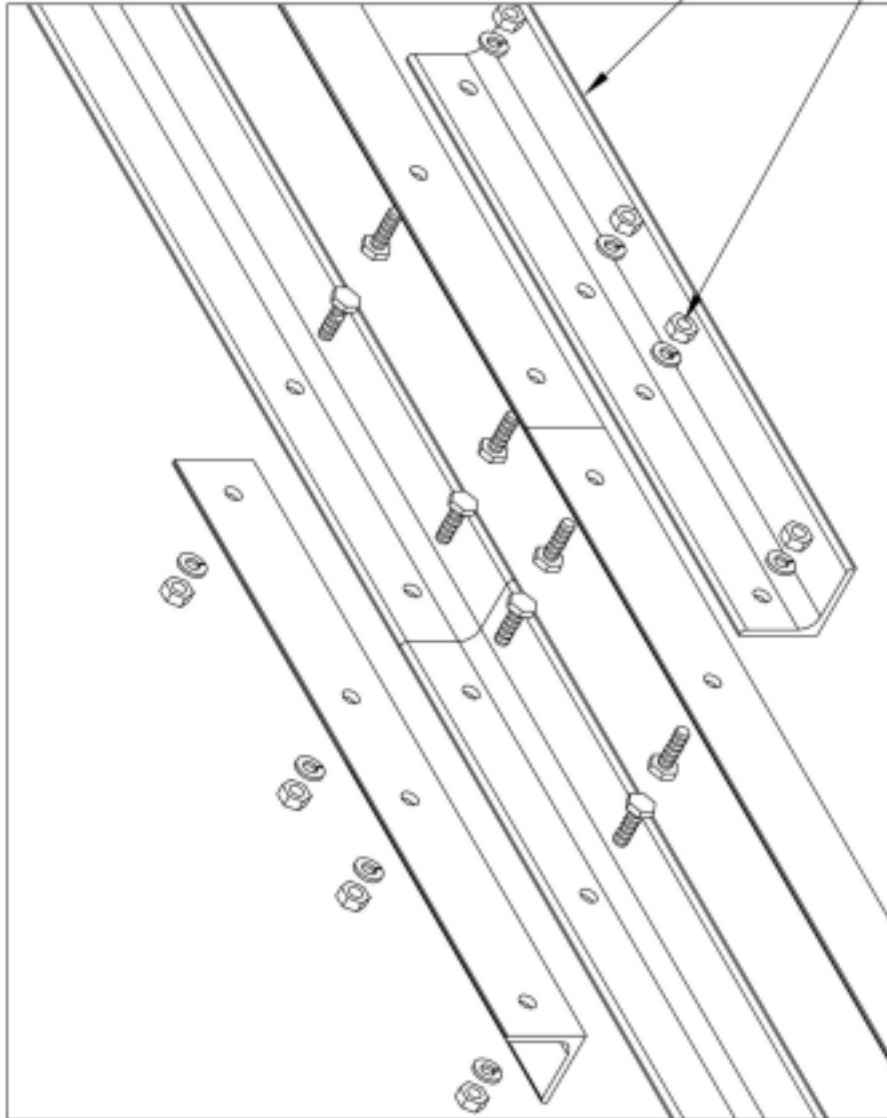
MOUNTING INSTRUCTIONS FOR ELECTRICALLY OPERATED REVERSING EDGE
 DRAWING NUMBER: 154-003

ASSEMBLY INSTRUCTIONS

1. ASSEMBLE RAIL SPLICES ENDS OF ONE SECTION OF RAIL ASSEMBLIES. ATTACH WITH 3/8" HARDWARE PROVIDED WITH HEADS OF SCREWS ON INSIDE OF RAILS.
2. ATTACH SECOND SECTION OF RAIL ASSEMBLY TO SPLICES. RAIL SECTIONS SHOULD BE END TO END WITH SPLICES AS SHOWN AT LEFT.

RAIL SPLICE
2100-1855, 2 REQ'D

3/8" HARDWARE
ASSEMBLE WITH
BOLT HEADS TO
INSIDE OF RAILS



3/8" HARDWARE CONSISTS OF:
8 2400-016 3/8" LOCKWASHERS
8 2400-015 3/8-16 HEXNUTS
8 2400-014 3/8-16 X 1" HEX HD SCREWS

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES FRACTIONS ± 1/32 ANGLES ° 3 PLACE DECIMALS ± .015 5 PLACE DECIMALS ± .005		CUSTOMER		OPERATOR SPECIALTY CO., INC CASNOVIA, MI 49318 1-800-333-1717 / 616-675-5050	
MATERIAL: PRDLC		PROJECT		OSCO	
BY	DATE	SIZE	FORMER ENG. NO.	DWG. NO.	
PREPARED	PR 6/7/02	A		2700-403	
CHECKED		SCALE	REV.	SHEET	OF
APPROVED					
NEXT ASSY.		INSTRUCTIONS FOR ATTACHING RAIL SPLICES TO MULTI-SECTION RAIL ASSEMBLIES			