

**STANLEY**

®

# **Maintenance and Repair**

## **O-S PNEUMATIC OPERATORS** **( 24 VOLT )**

**STANLEY DOOR OPERATING EQUIPMENT**

DIVISION OF THE STANLEY WORKS **STANLEY** FARMINGTON, CONNECTICUT 06032

MDS-356 (6/74)

# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

### WHAT IS IT?

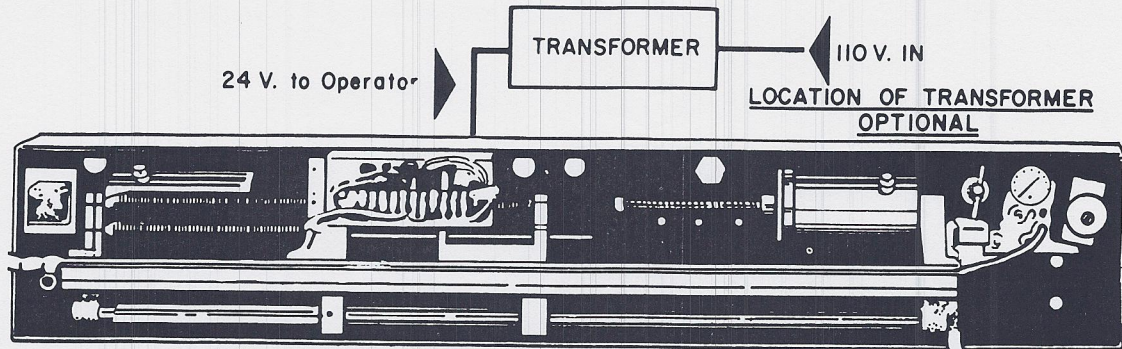
- I. An Operator powered from a central air supply or separate compressor.
  - A. This may be a single or double unit, depending on width and weight of door.
  - B. May be mounted to header above the door.
  - C. May be concealed either above or below the door with special pivots.
- II. Connecting Links from operator to door which permit door movement when operator is actuated.
  - A. Swinging and Bi-Folding doors.
    - 1. Door bracket on door.
    - 2. Door rod which couples door bracket to operator slide.
  - B. Sliding doors.
    - 1. Lever and connecting links coupling door to operator slide.
- III. Opening and Closing Valves (electrically energized) mounted in operator to control opening speed.
  - A. Closing may be by:
    - 1. Springs mounted in Operator.
    - 2. Electrically energized closing valve mounted in operator.
- IV Controls to actuate operator.
  - A. Carpets for Pedestrian Traffic.
  - B. Photoelectric for fully automatic operation.
  - C. Manual switches (Pull Cords, Push Buttons, etc.) for semi-automatic operation.

# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

### HOW THE OPERATOR WORKS



The OPERATOR is basically an air powered cylinder which is plunger actuated when air is introduced into the power cylinder through controlling valves.

When a signal is sent to the operator, the air valve is actuated and compressed air is admitted into the power cylinder. The compressed air drives the power cylinder piston which moves the slide assembly. A door rod and bracket attached to the slide assembly opens the door. As the door comes to a completely open position, a trip rod on the slide assembly actuates the holding Micro Switch. When the door has reached the full open position and the signal is deactivated, the valve is de-energized -- thus shutting off the air power to the cylinder. This action allows the air in the cylinder to exhaust through an adjustable port located on the air valve. The power springs or closing air then return the slide assembly to the closed position, closing the door. Checking cylinders are provided to smooth out the final opening and closing door motions.

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# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

REF. NO.	PART NO.	DESCRIPTION
1	407444	Terminal Assembly
2	305078	Fuse Extractor
3	706542	Fuse
4	706898	Octal Socket
5	304528	Regulator - Pressure
6	705884	Diaphragm and Seat Washer
7	705961	Gauge - Air
10	303243	Air Strainer
11	706294	Petcock
12	307477	Latch Kit - Operator Slide
13	303378	Switch - Trip Rod
14	706162	Trip Rod Switch Assembly RH
14	706163	Trip Rod Switch Assembly LH
15	706362	Trip Rod Assembly RH
15	706363	Trip Rod Assembly LH
16	303209	Trip Rod
18	303208	Trip Rod Spring
19	504540	Bracket LH End
20	705278	Bumper Assembly - End Bracket
21	705225	Tie Rod - 14" Stroke Operator
22	705226	Tie Rod - 18" Stroke Operator
23	705227	Tie Rod - 24" Stroke Operator
24	502431	Slide Assembly
25	406220	Slide Casting - Rear End
26	406219	Slide Casting - Front End
27	306698	Stud - Power Spring (Set of 4)
28	306704	Bushings - Slide (Set of 4)
29	403257	Slide Bar - Universal
30	306708	Ball Stud - Short with screws and washers
31	306707	Ball Stud - Medium with screws and washers
32	306706	Ball Stud - Long with screws and washers
33	306709	Universal Slide Bar screws and washers
35	705865	Spring - Power 14" Stroke Operator
36	705866	Spring - Power 18" Stroke Operator
37	705867	Spring - Power 24" Stroke Operator
38	406142	Checking Cylinder
39	306697	Bumper Assembly - Checking Cylinder
40		
42		
41	605538	Spring Checking Cylinder
44	306720	Cap - Checking Cylinder
45	303621	Bushing - Checking Cylinder Cap
47	310254	Repair Kit Checking Cylinder
48		
49		
50		
51		
52		

# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

REF. NO.	PART NO.	DESCRIPTION
53	306713	Head and Tube Assembly - Checking Cylinder
54	701171	Special Screw - Checking Cylinder
55	705886	Valve Spring - Checking Cylinder
56	303218	Pin Piston Rod
57	706266	Washer - Checking Cylinder Steel
58	407244	Power Cylinder D.A. 14"
59	407245	Power Cylinder D.A. 18"
60	407246	Power Cylinder D.A. 24"
61	406736	Piston Rod 14"
62	407092	Piston Rod 18"
63	407093	Piston Rod 24"
64	407243	Cap D.A. Power Cylinder
65 )	310255	Repair Kit Power Cylinder
66 )		
67 )		
68 )		
69	407239	Head and Tube Assembly 14"
70	407240	Head and Tube Assembly 18"
71	407241	Head and Tube Assembly 24"
72	303210	Pin Power Cylinder
74	705232	Rod - Safety Switch 14"
75	705233	Rod - Safety Switch 18" and 24"
76	306710	Box - Safety Switch
77	304221	Switch - Safety Micro (Roller Type)
79	504541	Bracket - RH Enc
80	701942	Pipe Nipple - Cylinder
81	303376	Gasket
82	605737	Gasket
83	605640	Screw - Special Valve
84	705347	"O" Ring - Metering Assembly
87	706529	Support - Checking Cylinder
88	705277	Extension - Checking Cylinder
89	703932	Screw - Muffler Adjustable
90	380-271499	5/16 - 24 Hex Jam Nut
91	306729	Muffler Assembly
92	701197	Washer - Felt
93	605805	Gasket D.A. Cap
94	304851	Bushing - D.A. Cap
95	705959	Seal
96	706423	Coil - 24 Volt
97	705883	Washer - Coil
98	705832	Sleeve - Assembly
99	705833	Plunger and Spring Assembly
100	705881	"O" Ring - Flange
101	408512	Transformer
102	706924	Fuse - Transformer

# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

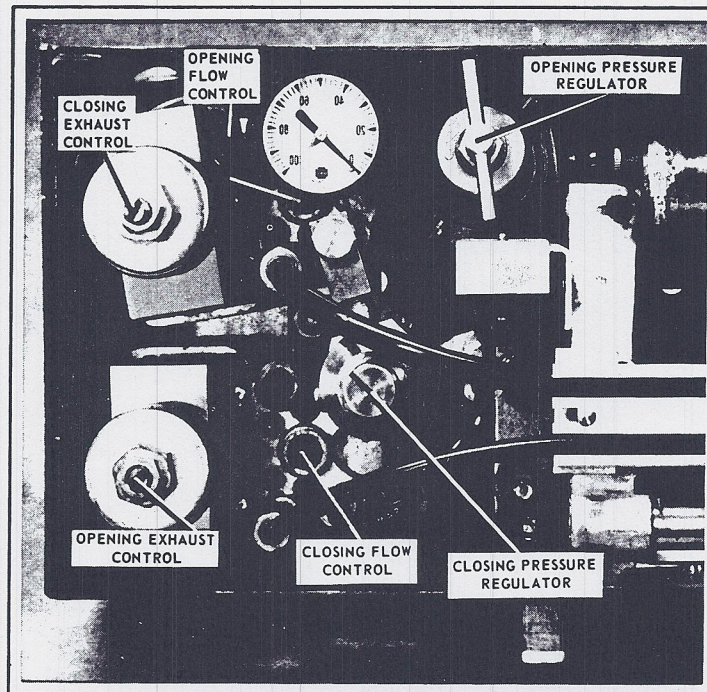
**Tune In  
Valves**

### S. A. OPERATOR OPENING SPEED ADJUSTMENT.

(Power opening spring closing)

1. Opening Valve flow control should be open two full turns.
2. Opening Valve exhaust control should be open one full turn.
3. Adjust pressure regulator for moderate opening speed.
4. Close flow control valve all the way.
5. Increase pressure setting by 10 P. S. I.
6. Adjust opening valve flow control for final opening speed.

NOTE: When necessary, adjustment of exhaust control will give additional closing speed control.



**Double Acting - 24 V., A.C. Pneumatic Operator**

### D. A. OPERATOR ADJUSTMENT.

(Power opening power closing)

#### **OPENING SPEED ADJUSTMENT**

1. Opening Valve flow control should be open two full turns.
2. Closing Valve exhaust control should be open one full turn.
3. Adjust pressure regulator for moderate opening speed.
4. Close flow control valve all the way.
5. Increase pressure setting by 10 P. S. I.
6. Adjust opening valve flow control for final opening speed.

NOTE: When necessary, adjustment of closing valve exhaust control will give additional opening speed control. (Sliding and heavy swinging doors)

#### **CLOSING SPEED ADJUSTMENT**

1. Closing Valve flow control should be open two full turns.
2. Opening Valve exhaust control should be open one full turn.
3. Adjust pressure regulator for moderate closing speed.
4. Close flow control valve all the way.
5. Increase pressure setting by 10 P. S. I. (Approximately 1-1/2 turns on closing pressure regulator).
6. Adjust closing valve flow control for final closing speed.

NOTE: When necessary, adjustment of opening valve exhaust control will give additional closing speed control. (Sliding and heavy swing doors).

# O-S PNEUMATIC OPERATORS

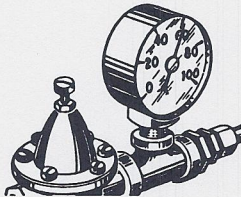
(24 VOLT)

## Maintenance and Repair

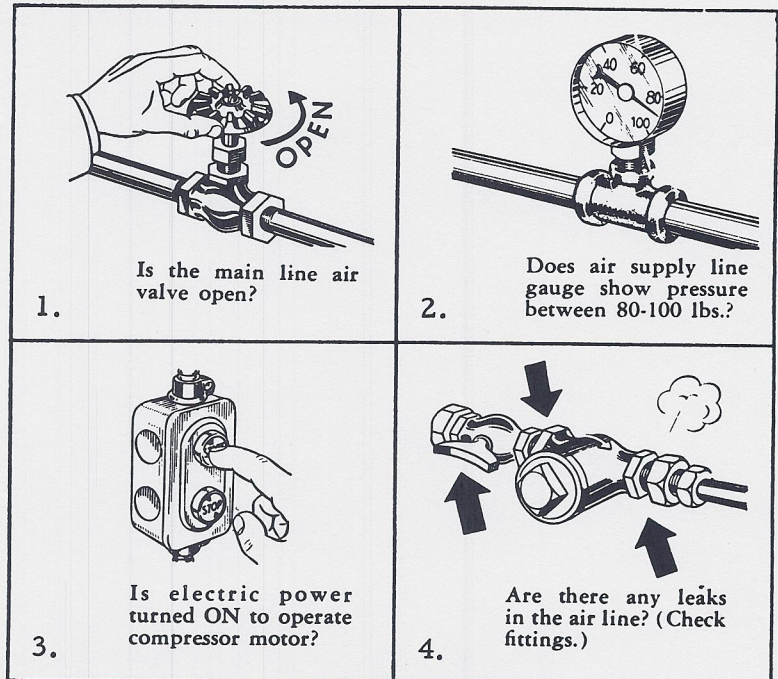
**Trouble  
Shooting**

WHEN TROUBLE OCCURS CHECK THE FOLLOWING FIRST: AIR SUPPLY

### Do you have ample air pressure ?



Does the gauge at the Pressure Regulator in the Operator show a reading of 35 to 65 lbs. pressure for average size doors? If yes, air supply is adequate. If not, check the following:



**RESULT:** If conditions above are satisfactory, air supply should be O.K. If not - Call Your Service Man.

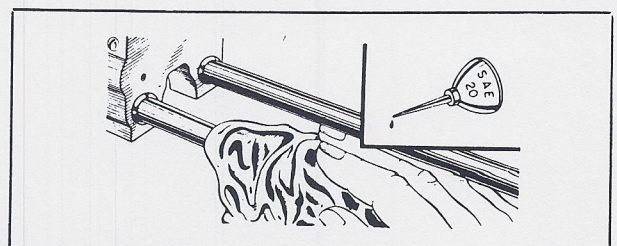
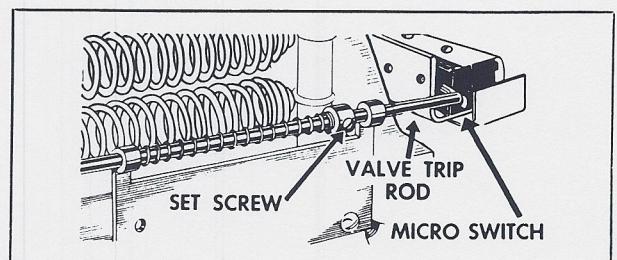
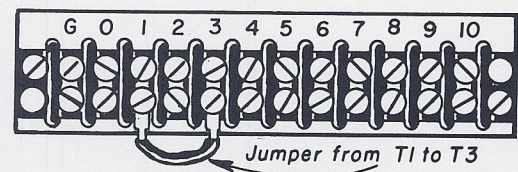
### Is Your Operator O. K. ?

1. Turn Air Supply on. Check to be sure 35-65 lbs. is indicated on pressure gauge in the operator. Turn electric power to operator on - place insulated jumper wire between terminals 1 & 3. (Standard Wiring)

Result - Door should swing full open - then close. If door opens operator is O.K. Check controls. If door remains closed continue check of operator.

NOTE - After each step repeat step 1.

2. Is Valve Trip Rod correctly positioned?  
Trip Rod should actuate the Micro-Switch Leaf when door completes opening stroke.
3. Clean and lubricate Slide Rods.
4. Check Valves - See Page 10 .
5. Is Plug-In Relay functioning? Check for bent or broken contact leaves. Check for open coil. Repair or Replace.



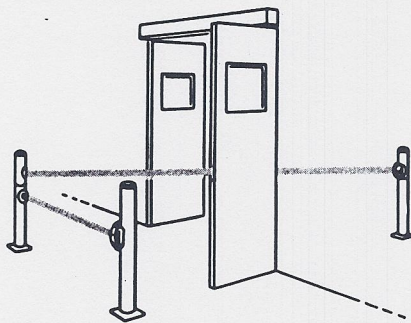
# O-S PNEUMATIC OPERATORS

(24 VOLT)

**Trouble  
Shooting**

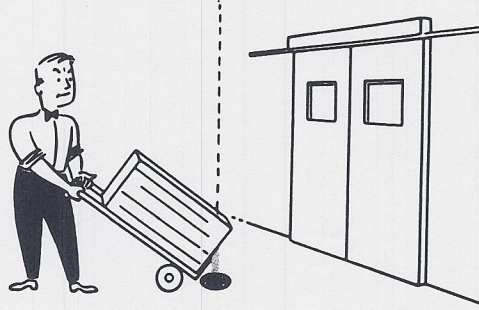
## CONTROLS

## Maintenance and Repair



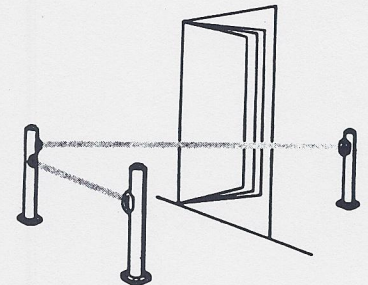
- A** Your electric power is ON.  
No one is intercepting the cross, diagonal or vertical ray,  
yet door still stays open.

CHECK STEPS 1, 2 & 3



- B** Your electric power is ON,  
yet door does NOT OPEN  
when the *opening* ray is in-  
tercepted.

CHECK STEP 3



- C** Your door has no holding or  
safety feature.

CHECK STEPS 1, 2 , 3 & 4

1. Clean all lenses inside and out. Be sure light beams are properly focused. Light source should be focused so light beam is centered on photo-cell receiving lens ( see page 13.

2. Replace all burned out sealed beam light source bulbs.

3. Check Photo-relay - -

a. With POWER ON check 110 volt supply (black and white wires at junction box) with test light or volt meter to be sure power is reaching photo-cell.

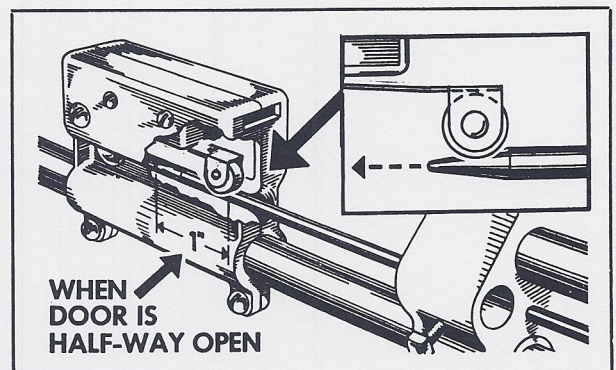
b. Check internal photo-cell circuit with test light orange and red leads at junction box). Intercept beam - test light should go on. If not, proceed with next step.

c. Check alignment of light source on photo-cell (see page 13.

d. If above tests fail, replace photo-cell.

4. (a) The Micro Switch Spring Leaf may be broken or the Micro Switch itself may be defective. If any of the above conditions are found, make proper repairs.

(b) If door swings back and forth from half to full open position, the diagonal ray rod in operator must be adjusted. To adjust this rod, hold door so that door edge just clears the diagonal ray beam. Loosen set screw which holds the diagonal ray rod and push rod into Micro Switch housing until click is heard, plus one inch more.



# O-S PNEUMATIC OPERATORS

(24 VOLT)

Repair  
Operator

## Maintenance and Repair

Preventative maintenance as outlined on page 14 insures maximum efficiency of your MAGIC-DOOR equipment.

A major overhaul of the operator is recommended once a year. Whether the operator is a single or double type, service each unit individually using the exploded view on page 3.

### STEPS IN DISMANTLEING OPERATOR.

- A. Turn OFF electric power.
- B. Turn OFF air supply.
- C. Remove power springs Ref. 35 - 36 - 37.
- D. Remove checking cylinders Ref. 38.
- E. Remove button tip pin Ref. 56.
- F. Disconnect air lines at end of power cylinder.
- G. Remove power cylinder anchor pin. Push slide assembly #24 all the way forward. Lift out power cylinder.

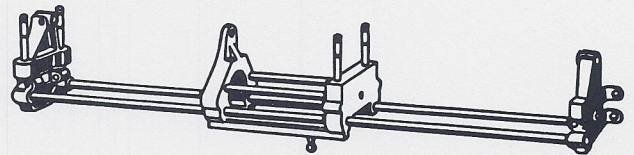
### OVERHAUL AND PARTS REPLACEMENT

To replace the slide bushings or any of the castings, it will be necessary to completely remove the frame assembly from the operator case. Remove the four 5/16 - 18 standard nuts, - also remove lock washers, These are used to fasten the end castings to the back of the operator case. Then remove

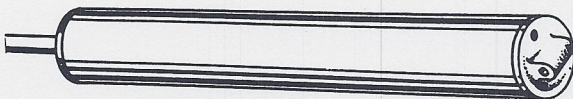
the two screws, from the bottom part of the case. On 24-1/2" stroke operators only, remove the flathead machine screw to release cylinder support bracket, The complete operator frame assembly is now ready to be removed.

#### Operator Frame Assembly

Examine all castings. Make certain that there are no cracks in these units. Replace all cracked or bent castings. Make certain that all bolts and machine screws are in place and are tight.



#### The Double Acting Power Cylinder



This is the prime mover which opens your door. To dismantle and service the power cylinder, Ref. Nos. 58, 59 or 60 proceed as follows:

- a. Remove power cylinder cap, Ref. No. 64 by inserting cylinder in vise and loosen cap with a Spanner Wrench. **CAUTION: DO NOT TIGHTEN VISE SO AS TO DISTORT CYLINDER.**
- b. Remove cylinder piston rod assembly, Ref. Nos. 61 through 68.
- c. Remove elastic stop nut, Ref. No. 52 and dismantle parts, Ref. Nos. 65 through 68 from piston rod.
- d. Clean all parts. Check cap Rod Seal Ref. No. 95 for wear. Replace if necessary.
- e. Inspect inner wall of power cylinder tube and clean.
- f. Inspect piston rod and power cylinder cap for wear
- g. Check power cylinder cup packing Ref. No. 66 for wear. Replace if necessary.
- h. Reassemble piston rod assembly.

Replace, if necessary. **NOTE:** Where the hole in the power cylinder cap has elongated, this indicates misalignment of the cylinder in the frame assembly. To correct this, file down the height of the cylinder support stud, Ref. No. 8. This will prevent binding of the piston rod in the power cylinder cap.

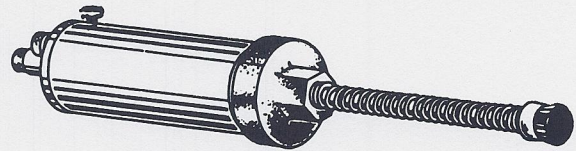
# O-S PNEUMATIC OPERATORS

(24 VOLT)

Repair  
Operator Cont.

## Maintenance and Repair

### SUBJECT: CHECKING CYLINDERS



Checking Cylinders are used to smooth out final opening and closing door motion. Both checking cylinders are two stage pneumatic type. The initial check is regulated by the adjustment on the side of the cylinder. The final check is regulated by adjustment at the end of cylinder. Turn in for move check out for less check. When the slide moves away from the cylinder the spring returns piston rod to its normal position.

## SERVICE REQUIREMENTS

### LEATHER CUP PACKING

Dismantle checking Cylinder (Refer to Page 3 for parts identification.

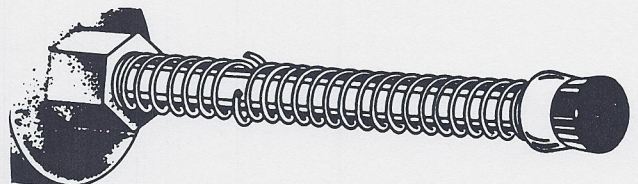
- a. Remove Cylinder Cap ref. #44 together with piston rod assembly ref. #39 through #52.
- b. Remove Elastic Stop Nut ref. #52 and dismantle Leather Cup Packing Assembly.

CAUTION: Keep Checking Cylinder Spring from scattering parts.

- c. Clean all parts. Be sure to clean exhaust ports in Checking Cylinder Tube.
- d. Inspect inner wall of Checking Cylinder Tube. If scored replace Cylinder Tube and Head Assembly 306713 .
- e. Replace Leather Cup Packing. The new packing must be soaked in #20 oil for 10 minutes and flexed until leather is soft and pliable.
- f. Reassemble Piston Rod Assembly.
- g. Apply a few drops of oil to lubricate inner wall of Checking Cylinder and re-assemble.

### CHECKING CYLINDER SPRING

Retract broken portion of spring which will allow stud pin and rubber bumper to be removed. When replacing broken spring with a new unit, be sure to install spring retainer, Ref. #40. Failure to do this will allow rubber bumper steel pin to fall out causing spring and rubber bumper assembly to come apart.



# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

**Repair  
Valves**

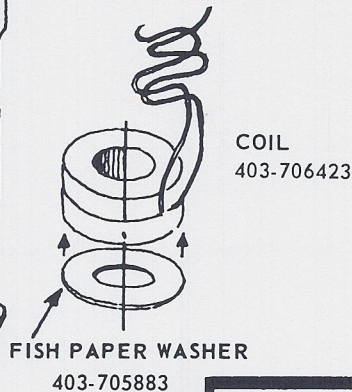
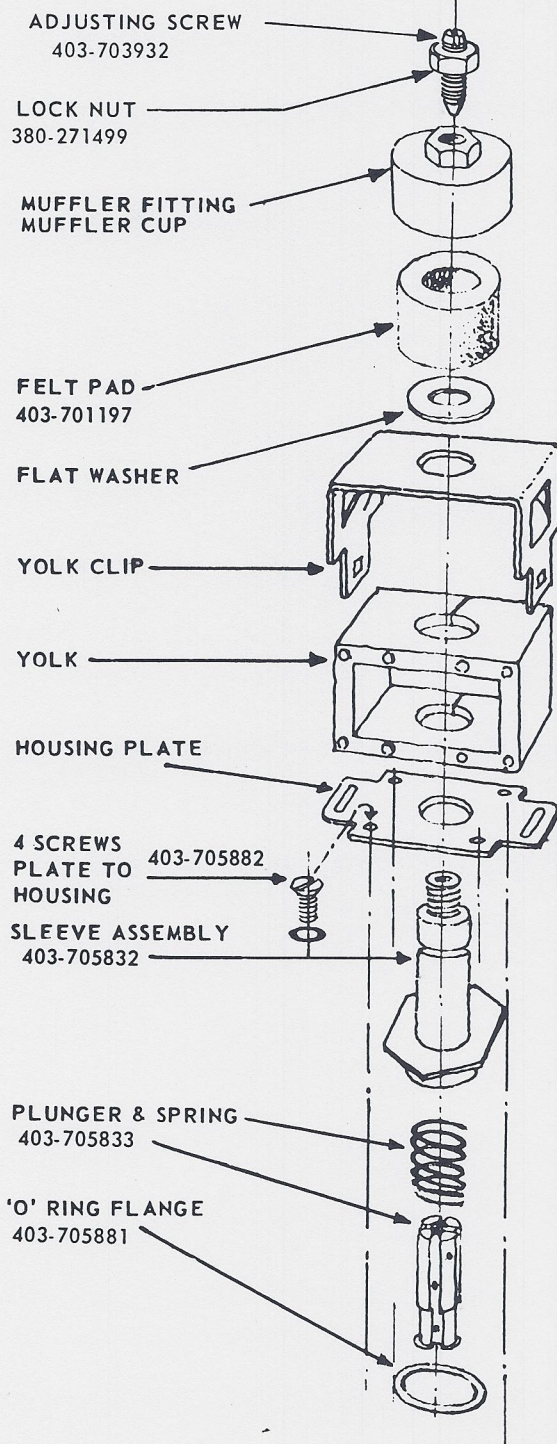
### AIR VALVE

The Air Valve is a normally closed three-way solenoid valve which is electrically actuated. It has an intake flow adjustment for speed, and an exhaust flow adjustment.

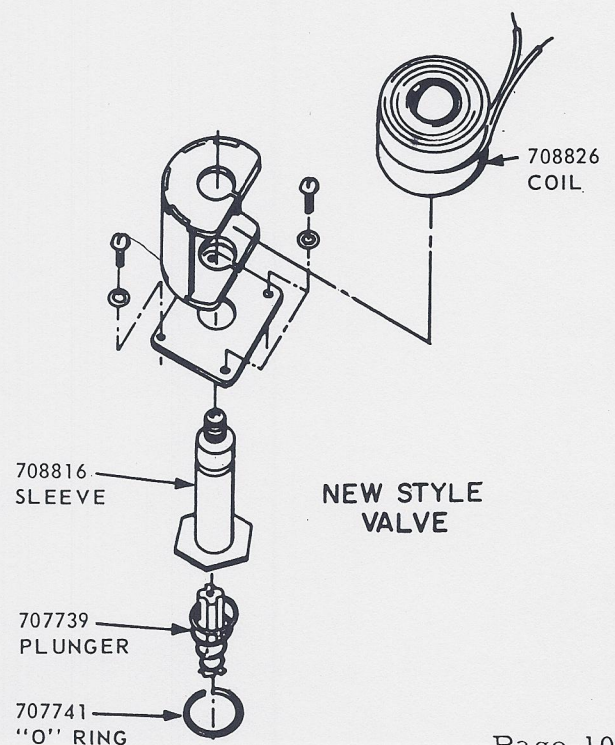
#### VALVES MAY REQUIRE SERVICE DUE TO:

1. Dirt in Unit.
2. Defective seat on Valve Plunger.
3. Defective Solenoid Coil.

Dismantle and clean Valve, check seats of Valve Plunger. Replace complete Plunger if defective, check Solenoid Coil and replace if necessary.



**THE PARTS SHOWN HERE ARE ONLY  
SUPPLIED WITH NEW STYLE VALVES**



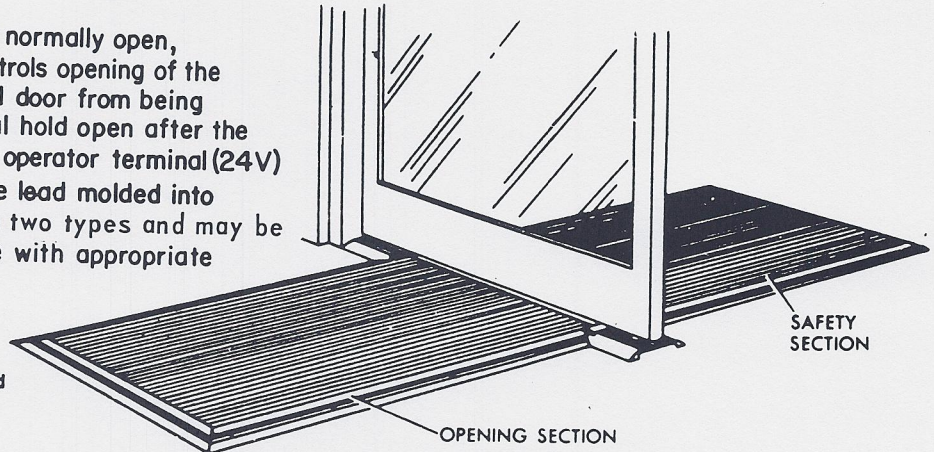
# O-S PNEUMATIC OPERATORS

(24 VOLT)

CONTROLS  
CARPETS

## Maintenance and Repair

The STANLEY MAGIC DOOR Carpet is a normally open, electrical switch. The "opening" section controls opening of the door. The safety section prevents a closed door from being opened. It also functions as an electrical hold open after the door has been actuated. Connections to operator terminal (24V) or hydraulic power pack is by a two wire lead molded into dovetail edge of carpet. It is available in two types and may be recessed in floor or mounted on surface with appropriate molding (SEE BELOW).



### SC CARPETS

OPENING CARPET			SAFETY CARPET			TOTAL LENGTH WITH 2-3/4" DOVETAIL		TOTAL LENGTH WITH 1" DOVETAIL	
CARPET	WIDTH	LENGTH	CARPET	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH	LENGTH
SC2835	28-1/2"	36-3/4"	SC2835	28-1/2"	36-3/4"	28-1/2"	76-1/4"	28-1/2"	74-1/2"
SC3635	36-1/2"	36-3/4"	SC3635	36-1/2"	36-3/4"	36-1/2"	76-1/4"	36-1/2"	74-1/2"
SC2845	28-1/2"	45-3/4"	SC2845	28-1/2"	45-3/4"	28-1/2"	94-1/4"	28-1/2"	92-1/2"
SC3645	36-1/2"	45-3/4"	SC3645	36-1/2"	45-3/4"	36-1/2"	94-1/4"	36-1/2"	92-1/2"
SC2860	28-1/2"	59-3/4"	SC2860	28-1/2"	59-3/4"	28-1/2"	122-1/4"	28-1/2"	120-1/2"
SC3660	36-1/2"	59-3/4"	SC3660	36-1/2"	59-3/4"	36-1/2"	122-1/4"	36-1/2"	120-1/2"

FLOOR RECESS FOR CARPET ONLY: Provide 3/8" deep recess 1/4" wider and 1/4" longer than total width and length of carpet as given in table.

### HD CARPETS

OPENING CARPET			SAFETY CARPET			TOTAL LENGTH WITH 2-3/4" DOVETAIL		TOTAL LENGTH WITH 1" DOVETAIL	
CARPET	WIDTH	LENGTH	CARPET	WIDTH	LENGTH	WIDTH	LENGTH	WIDTH	LENGTH
HD2835	28-1/2"	36-3/4"	SC2835	28-1/2"	36-3/4"	28-1/2"	76-1/4"	28-1/2"	74-1/2"
HD3635	36-1/2"	36-3/4"	SC3635	36-1/2"	36-3/4"	36-1/2"	76-1/4"	36-1/2"	74-1/2"
HD2845	28-1/2"	45-3/4"	SC2845	28-1/2"	45-3/4"	28-1/2"	94-1/4"	28-1/2"	92-1/2"
HD3645	36-1/2"	45-3/4"	SC3645	36-1/2"	45-3/4"	36-1/2"	94-1/4"	36-1/2"	92-1/2"
HD2860	28-1/2"	59-3/4"	SC2860	28-1/2"	59-3/4"	28-1/2"	122-1/4"	28-1/2"	120-1/2"
HD3660	36-1/2"	59-3/4"	SC3660	36-1/2"	59-3/4"	36-1/2"	122-1/4"	36-1/2"	120-1/2"

FLOOR RECESS FOR CARPET ONLY: Provide 3/8" deep recess 1/4" wider and 1/4" longer than total width and length of carpet as given in table.

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(24 VOLT)

## Maintenance and Repair

Controls  
Photo-Electric

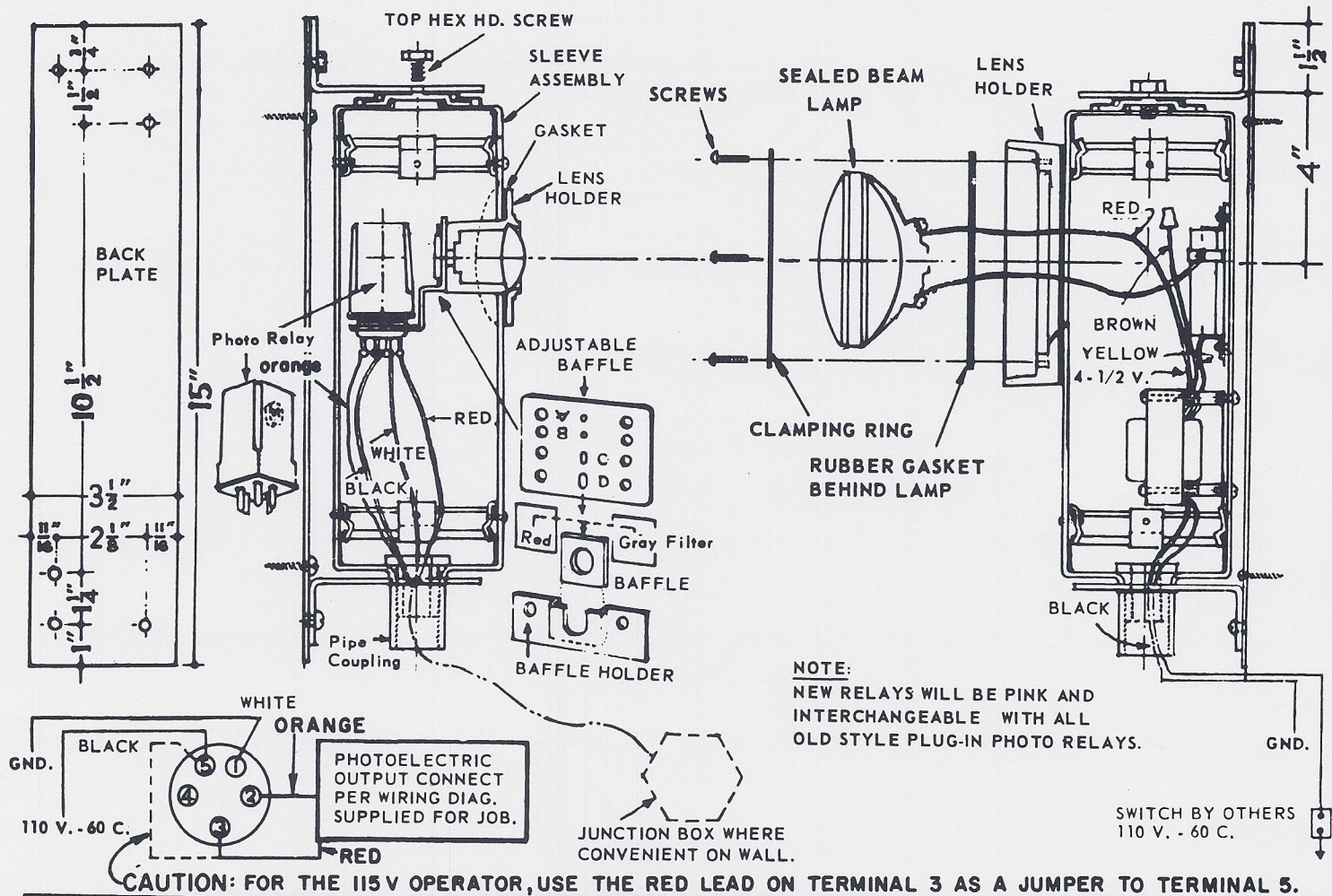


TABLE 1 - SEALED BEAM LIGHT SOURCE

BEAM LENGTH	LT. SOURCE VOLTAGE	APERTURE	FILTER	APPROX. RESISTANCE SETTING
5 Ft.	4-1/2	B 1/16	Red	1.3 OHMS
20 Ft.	4-1/2	B 1/16	Red	1.1 OHMS
40 Ft.	4-1/2	B 1/16	Red	0 OHMS

TABLE 2

VARIATIONS IN LIGHT ADJUSTMENTS AT RECEIVING UNIT.

APERTURES	FILTER	
NONE	NONE	Max. Light
D	"	
C	"	
B	"	
A	"	
NONE	GREY	
D	"	
C	"	
B	"	
A	"	
NONE	DK. RED	Min. Light
D	"	
C	"	
B	"	
A	"	
NONE	Dk. Red & Grey	
D	"	
C	"	
B	"	
A	"	

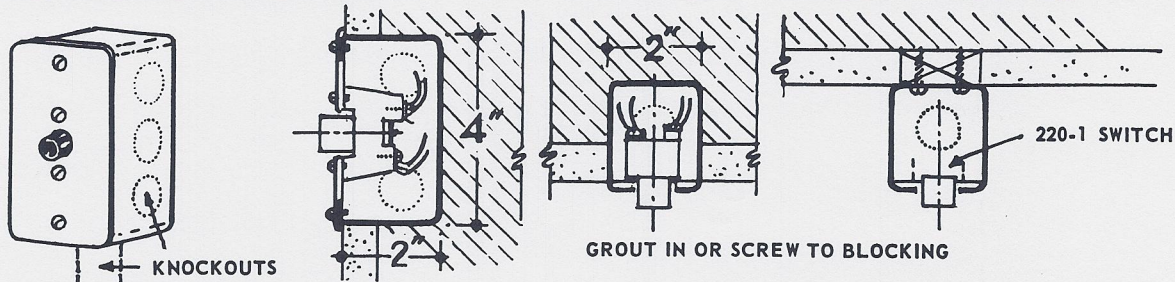
# O-S PNEUMATIC OPERATORS

(24 VOLT)

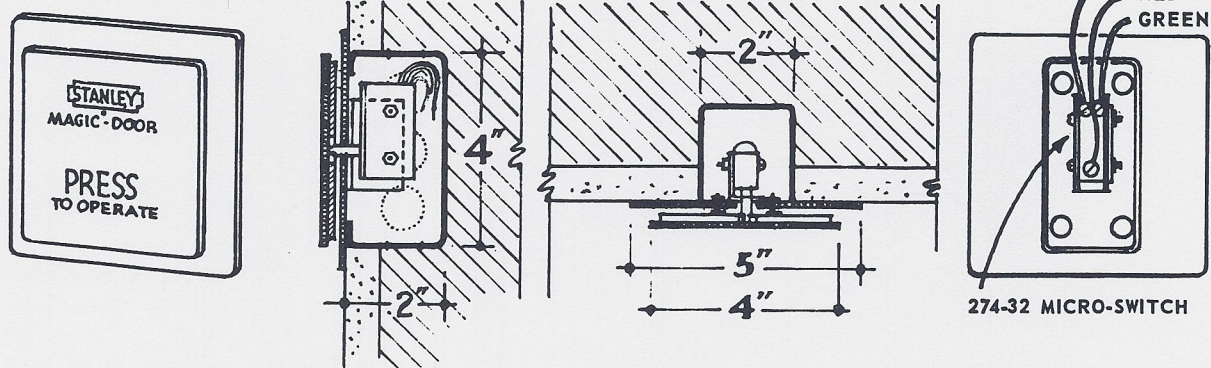
Manual  
Controls

## Maintenance and Repair

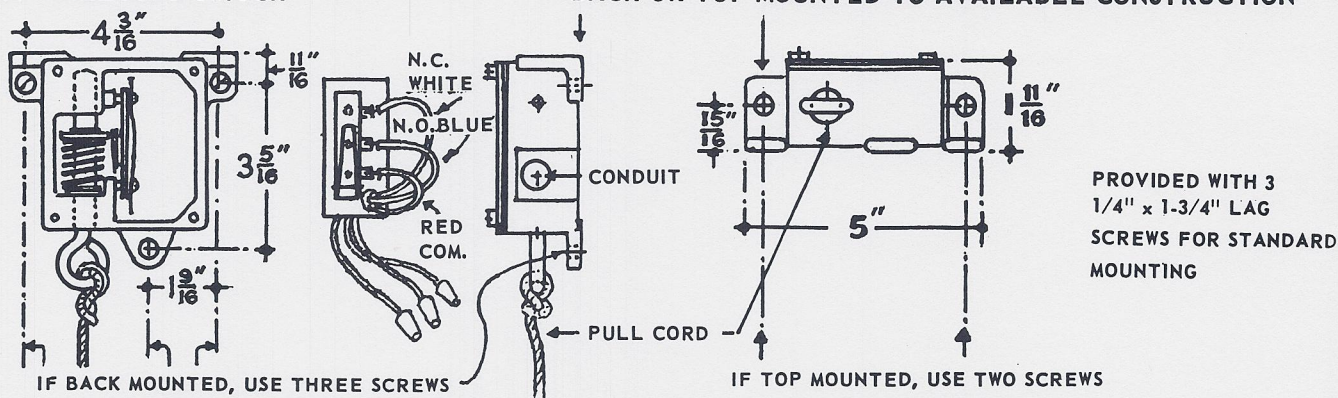
C-7 PUSH-BUTTON SWITCH AND BOX



C-8 PUSH-PLATE SWITCH AND BOX

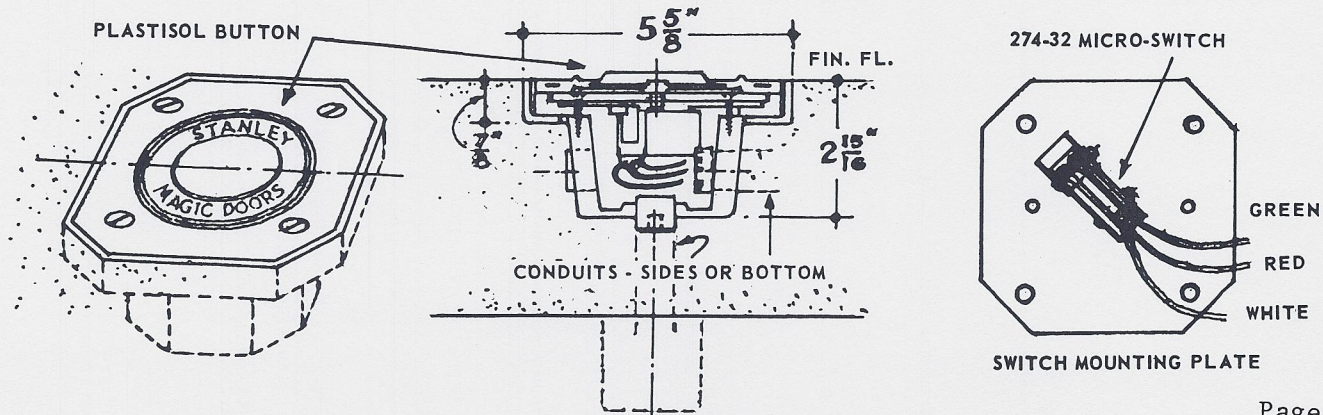


C-14 PULLCORD SWITCH



C-11-A FLOOR-BUTTON SWITCH

GROUTED IN FLOOR SLAB (or Conc. Insert Cast in Wood Const.)



# O-S PNEUMATIC OPERATORS

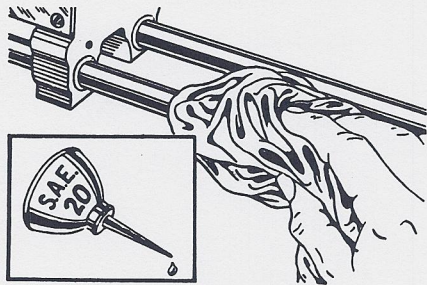
(24 VOLT)

**Preventative  
Maintenance**

## Maintenance and Repair

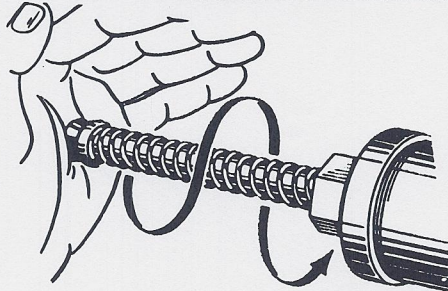
### ONCE A MONTH

1. Tighten all loose bolts, screws and nuts in operator and door hardware.

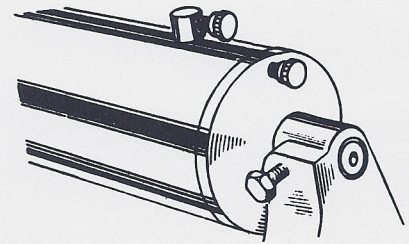


2. Wipe all dirt off both slide rods. Re-oil with a few drops of No. 20 oil.

#### OPERATOR

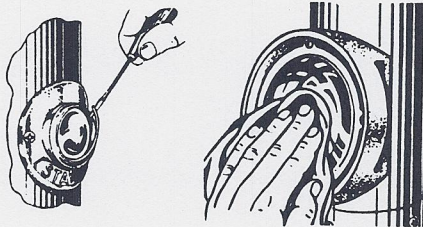


3. Push in checking cylinder piston rod and rotate to work oil up from bottom of cylinder.

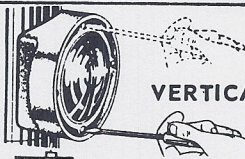


4. Adjust opening and closing checks by turning screw of each cylinder. For MORE check turn IN, for LESS turn OUT

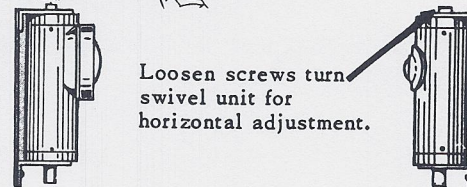
#### CONTROLS



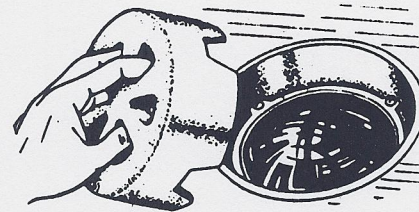
5. On sealed beam units, clean out side only. Clean lenses inside and out. Lenses can be removed by taking out spring retainer ring on relay receiving lens.



#### VERTICAL ADJUSTMENT

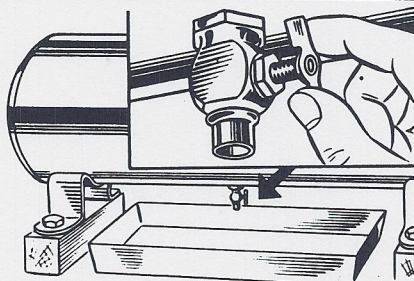


6. Check the focus of all light sources. Refocus if necessary to insure maximum efficiency of the photoelectric control.



7. Vertical Light Source - see that dirt is not obscuring the vertical light beam.

#### AIR SUPPLY



8. Slightly open drain valve of compressor tank and drain water. Air pressure forces water out. Do not open valve too wide. If separate compressor is used, check oil in compressor crank case. Keep full.

9. Clean pressure regulator and air strainer. Check regulator diaphragm and seat washer for wear. Replace if necessary.

#### HARDWARE

10. Hardware such as hinges, levers and brackets, should be checked since it influences the operation of MAGIC-DOOR equipment. Hangers, track and stay rollers require inspection for excessive wear and strain due to misalignment.

### ONCE A YEAR

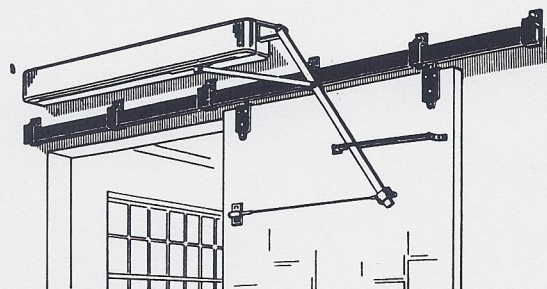
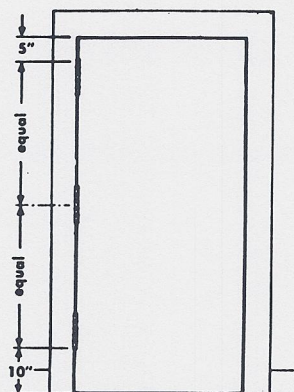
1. A complete overhaul of the operator should be made. (See Pages 9 and 10).
2. Check power cylinder cup packing (Ref. 66, Page 3) for excessive wear. Replace if necessary. Thoroughly clean cylinder walls.
3. Checking Cylinder cup packings may either wear or dry out and should be replaced once a year. In Hot or Dry areas they may need more frequent replacement.

# O-S PNEUMATIC OPERATORS

(24 VOLT)

## Maintenance and Repair

Hardware  
Recommendations



### HINGE HUNG DOORS

Be sure proper door clearances are maintained at all times.  
1/8" at top and lead edge of door 3/16" at threshold.

Hinge reinforcement plates should be used on doors and jambs of hollow metal construction. Jambs and headers must be anchored to building structure.

### RECOMMENDED HINGES

STANLEY Full Jeweled Hinges -

5" x 4" Hinges for 1-3/4" Doors.

5" x 5" Hinges for 2" or 2 1/4" Doors

### NUMBER OF HINGES PER DOOR

90" High Doors 3

91" to 120" High Doors 4

Over 121" High Doors 5

On outside doors use non-ferrous metal or stainless steel hinges.

On inside doors use steel hinges plated or prime coated.

Use non-template hinges on wood doors and frames.

Use template hinges on wood doors with metal jambs and hollow metal doors with pressed metal jambs.

### SLIDING DOORS

Due to the high frequency of automatic operation, the sliding door hardware specifications as listed in manufacturers catalogs, are not adequate. Proper specifications can be obtained from your STANLEY MAGIC-DOOR Distributor or from The Stanley Works.

Stay rollers are recommended for use with sliding doors. Two stay rollers where the door slides along a brick wall.

On all wood doors, a metal strip along the bottom of the door where the stay roller will ride is recommended.

### FOLDING DOORS

On folding doors, the swinging leaf attached to the jamb must be treated the same as a standard swinging door. The outer leaf is supported by hinges joining the two doors and a trolley at the top of the door placed near the front edge of this leaf.

