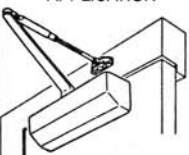
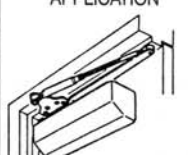
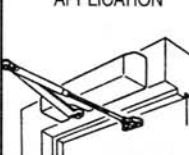
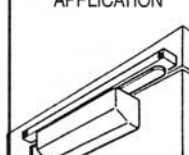


SELECT PROPER APPLICATION FROM ILLUSTRATIONS BELOW.  
THEN FOLLOW INSTALLATION INSTRUCTIONS ON GIVEN PAGE.

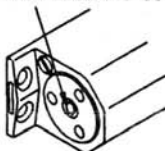
<p>STANDARD APPLICATION</p>  <p>CLOSER MOUNTED ON HINGE SIDE OF DOOR</p> <p>USE PAGE2</p>	<p>PARALLEL ARM APPLICATION</p>  <p>CLOSER MOUNTED ON STOP SIDE OF DOOR</p> <p>USE PAGE3</p>	<p>TOP JAMB APPLICATION</p>  <p>CLOSER MOUNTED ON FRAME ON STOP SIDE OF DOOR</p> <p>USE PAGE4</p>	<p>TRACK RAIL APPLICATION</p>  <p>CLOSER MOUNTED ON HINGE SIDE OF DOOR WITH TRACK-RAIL ON FRAME</p> <p>USE PAGES</p>
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### ADJUSTING SPRING POWER ACCORDING TO CHART

Closer Size	Max. Door width		Turns of Spring Adjusting Screw			
	Exterior	Interior	D-1650		D-1651	
			from Preset	from Minimum	from Preset	from Minimum
1	---	Less than 2'-8"	---	---	.3	0
2	Less than 2'-6"	2'-8"	-7	0	0	+3
3	2'-6"	3'-2"	-5	+2	+3	+6
4	3'-0"	3'-8"	-1	+6	+7	+10
5	3'-6"	4'-0"	+3	+10	---	---

ADJUST SPRING POWER FOR DOOR WIDTH AS INDICATED IN CHART. TO INCREASE CLOSING POWER, TURN SPRING ADJUSTING SCREW CLOCKWISE. MAXIMUM ADJUSTMENT IS APPROXIMATELY 10 TURNS.

SPRING ADJUSTING SCREW



### PERIODIC MAINTENANCE

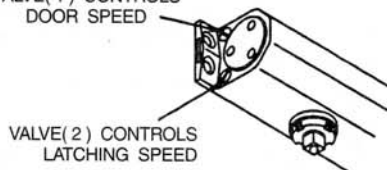
NONE REQUIRED OTHER THAN TO CHECK SECURITY OF FIXINGS ON A REGULAR BASIS.

### FINAL ADJUSTMENT AND REGULATING PROCEDURES

#### REGULATING DOOR SPEED AND LATCHING SPEED

TURN SOCKET SCREW CLOCKWISE TO SLOW DOWN OR COUNTERCLOCKWISE TO SPEED UP DOOR MOVEMENT.

VALVE(1) CONTROLS DOOR SPEED



VALVE(2) CONTROLS LATCHING SPEED

**CAUTION:**

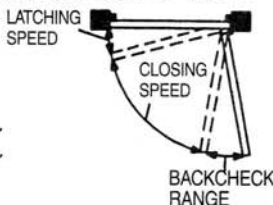
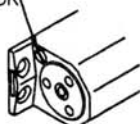
Take care when adjusting valves to ensure that they are not wound counterclockwise too far as this could disengage them and allow fluid to be lost.

#### REGULATING BACKCHECK

THE INTENSITY OF BACKCHECK ACTION IS REGULATED BY VALVE SHOWN. TURN CLOCKWISE TO INCREASE OR COUNTERCLOCKWISE TO DECREASE BACKCHECK.

**CAUTION:** Set valve for a slight cushioning effect. it is damaging to the closer if the checking action is too abrupt. Backcheck should never be used in lieu of a door stop.

THIS VALVE CONTROLS BACKCHECK

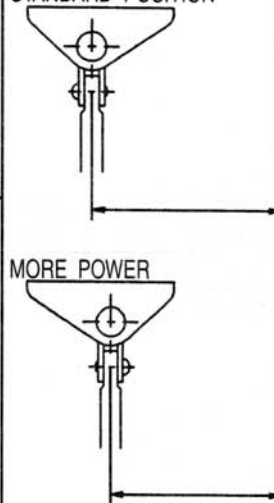


**CAUTION:**

Take care when adjusting valves to ensure it is not wound counterclockwise too far as this could disengage it and allow fluid to be lost.

#### ADJUSTING FOOT FOR ADDITIONAL CLOSING POWER

STANDARD POSITION

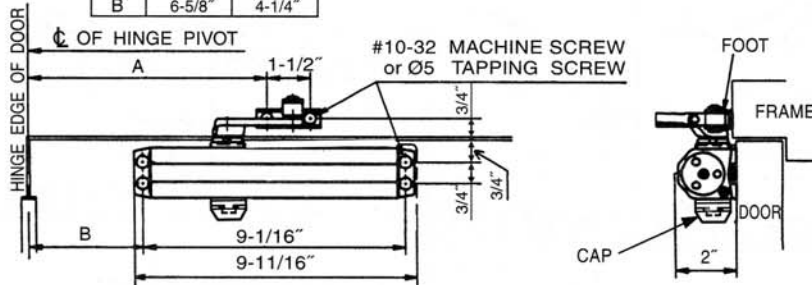


MORE POWER

HINGE EDGE OF DOOR

RIGHT HAND DOOR  
ILLUSTRATED.  
SAME DIMENSIONS  
APPLY FOR LEFT HAND  
DOOR-MEASURED FROM  
HINGE CL.

MAXIMUM DOOR OPENING		
	120°	180°
A	10-5/8"	8-1/4"
B	6-5/8"	4-1/4"



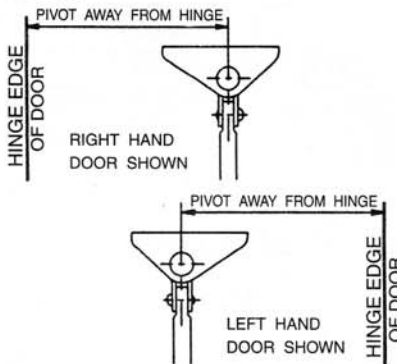
**A**

1. MARK LOCATION OF ATTACHING SCREWS ON DOOR AND FRAME AS SHOWN ABOVE. DRILL SIZES TO BE USED AS SHOWN.

2. ATTACH CLOSER TO DOOR WITH SHORT END OF CLOSER FACING TOWARD HINGE.

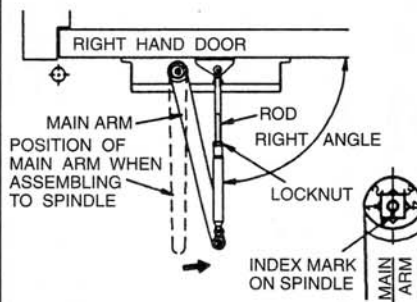
**B**

ATTACH FOOT TO FRAME WITH PIVOT AWAY FROM HINGE AS ILLUSTRATED BELOW.



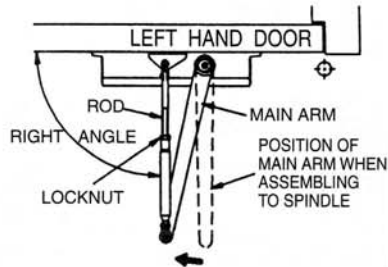
**C**

ASSEMBLE MAIN ARM TO CLOSER WITH INDEX MARK ON SPINDLE ALIGNED WITH AXIS OF ARM AS ILLUSTRATED BELOW. ATTACH ARM WITH WASHER AND SCREW. TIGHTEN SECURELY USING SPANNER.



**D**

TIGHTEN LOCKNUT SECURELY WHEN ROD IS AT RIGHT ANGLE TO DOOR. SEE ILLUSTRATION BELOW.



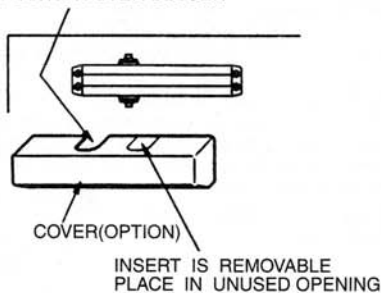
SECURE MAIN ARM TO FRAME ARM AT ELBOW WITH SCREW AND TIGHTEN.

**E**

ADJUST AND REGULATE DOOR CLOSER AS DIRECTED AT PAGE 1 FOR SPEED AND BACKCHECK.

**F**

INSTALL OPTIONL COVER AS FOLLOWS:  
ALIGN COVER OPENINGS WITH THE CLOSER SPINDLE, AND SNAP ENDS OF COVER INTO POSITION OVER CLOSER

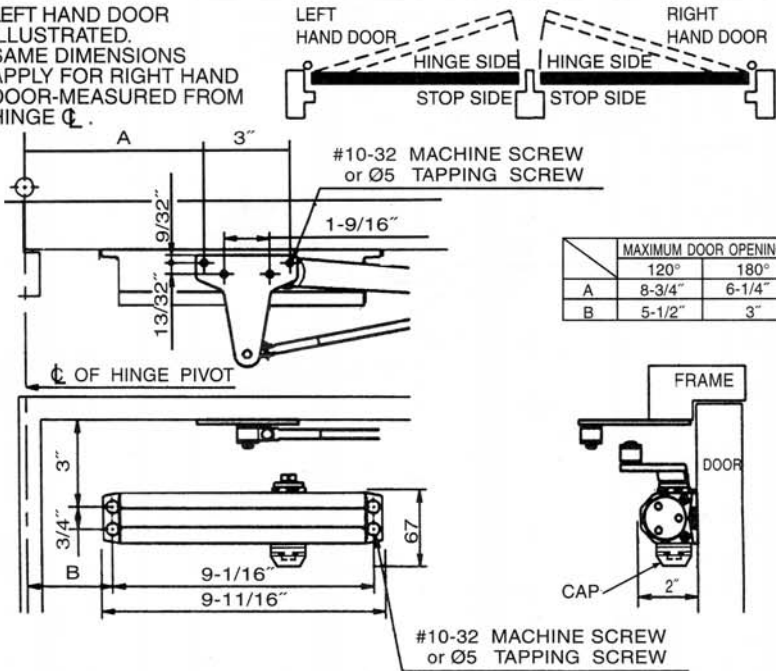


**INSTALLATION INSTRUCTIONS**

**PARALLEL ARM APPLICATION**

**CLOSER MOUNTED ON STOP SIDE OF DOOR**

LEFT HAND DOOR ILLUSTRATED. SAME DIMENSIONS APPLY FOR RIGHT HAND DOOR-MEASURED FROM HINGE  $\phi$ .

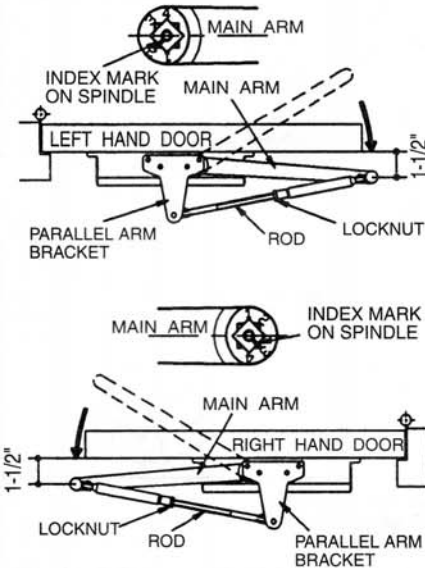


**A**

1. MARK LOCATION OF ATTACHING SCREWS ON DOOR AND FRAME AS SHOWN ABOVE. DRILL SIZES TO BE USED AS SHOWN.
2. ATTACH CLOSER TO DOOR AND PARALLEL ARM BRACKET TO FRAME (LONG END OF CLOSER TOWARD HINGE).

**B**

ASSEMBLE MAIN ARM TO CLOSER WITH INDEX MARK ON END OF SPINDLE 45° FROM AXIS OF ARM, AS ILLUSTRATED BELOW, USING A WRENCH ON THE BOTTOM SPINDLE TO ROTATE SPINDLE INTO POSITION. ATTACH ARM TO SPINDLE WITH WASHER AND SCREW.



**C**

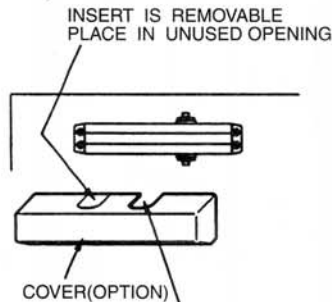
PARALLEL ARM BRACKET FOR PARALLEL ARM APPLICATION REMOVE FOOT BRACKET AND REPLACE WITH PARALLEL ARM BRACKET USING SCREW AND WASHER PROVIDED.

**D**

ADJUST AND REGULATE DOOR CLOSER AS DIRECTED AT PAGE 1 FOR SPEED AND BACKCHECK.

**E**

INSTALL OPTIONAL COVER AS FOLLOWS:



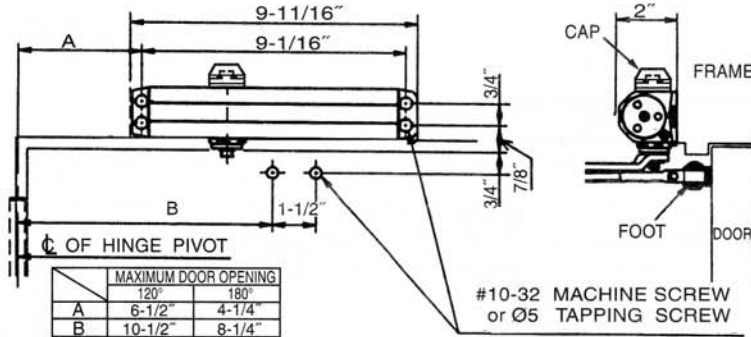
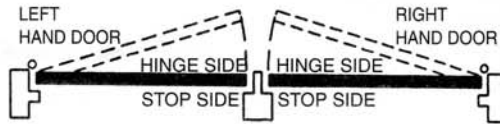
ALIGN COVER OPENINGS WITH THE CLOSER SPINDLE, AND SNAP ENDS OF COVER INTO POSITION OVER CLOSER

INSTALLATION INSTRUCTIONS

TOP JAMB APPLICATION

CLOSER MOUNTED ON FRAME ON STOP SIDE OF DOOR

LEFT HAND DOOR ILLUSTRATED. SAME DIMENSIONS APPLY FOR RIGHT HAND DOOR—MEASURED FROM HINGE  $\odot$ .



MAXIMUM DOOR OPENING	
	120° 180°
A	6-1/2" 4-1/4"
B	10-1/2" 8-1/4"

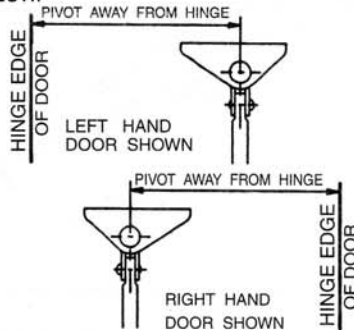
#10-32 MACHINE SCREW or  $\varnothing 5$  TAPPING SCREW

**A**

1. MARK LOCATION OF ATTACHING SCREWS ON DOOR AND FRAME AS SHOWN ABOVE. DRILL SIZES TO BE USED AS SHOWN.
2. ATTACH CLOSER TO FRAME WITH SHORT END OF CLOSER FACING TOWARD HINGE.

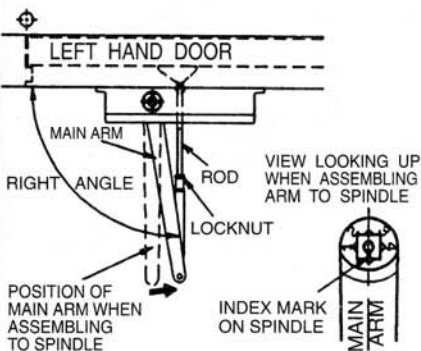
**B**

ATTACH FOOT TO FRAME WITH PIVOT AWAY FROM HINGE AS ILLUSTRATED BELOW.



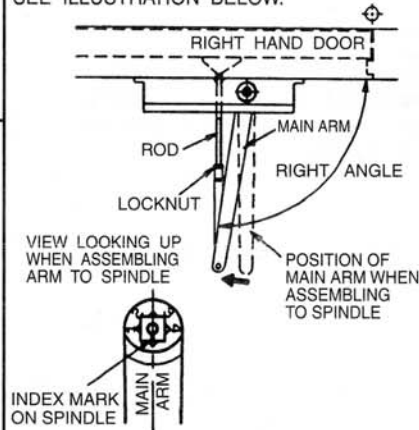
**C**

ASSEMBLE MAIN ARM TO CLOSER WITH INDEX MARK ON SPINDLE ALIGNED WITH AXIS OF ARM AS ILLUSTRATED BELOW. ATTACH ARM WITH WASHER AND SCREW. TIGHTEN SECURELY USING SPANNER.



**D**

TIGHTEN LOCKNUT SECURELY WHEN ROD IS AT RIGHT ANGLE TO DOOR. SEE ILLUSTRATION BELOW.



SECURE MAIN ARM TO FRAME ARM AT ELBOW WITH SCREW AND TIGHTEN.

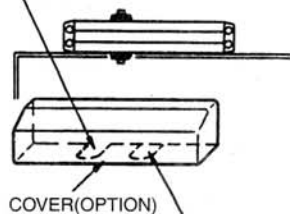
**E**

ADJUST AND REGULATE DOOR CLOSER AS DIRECTED AT PAGE 1 FOR SPEED AND BACKCHECK.

**F**

INSTALL OPTIONAL COVER AS FOLLOWS:

ALIGN COVER OPENINGS WITH THE CLOSER SPINDLE, AND SNAP ENDS OF COVER INTO POSITION OVER CLOSER



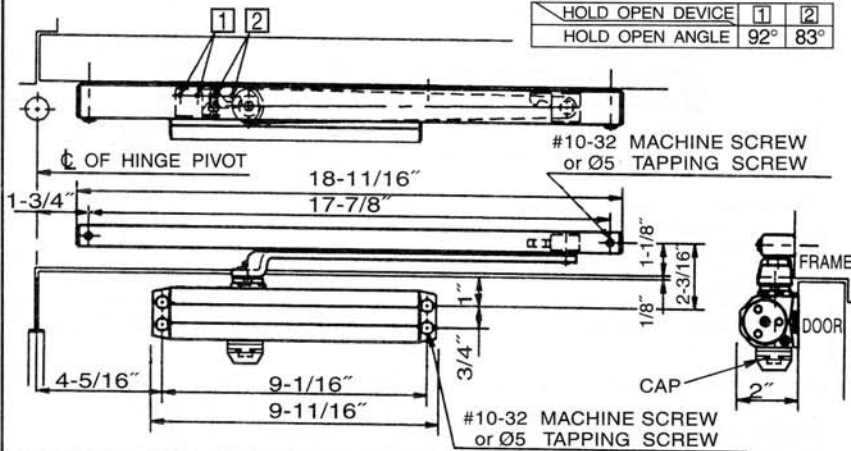
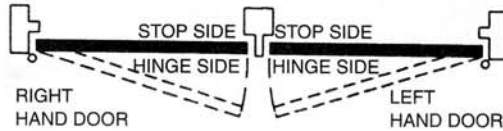
INSERT IS REMOVABLE PLACE IN UNUSED OPENING

INSTALLATION  
INSTRUCTIONS

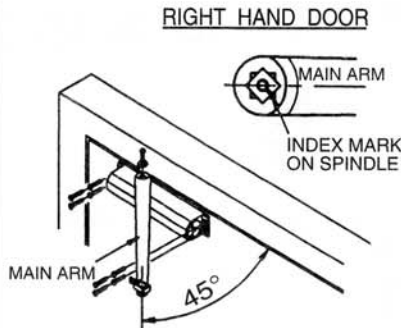
TRACK RAIL APPLICATION

CLOSER MOUNTED ON  
HINGE SIDE OF DOOR  
WITH TRACK RAIL ON FRAME

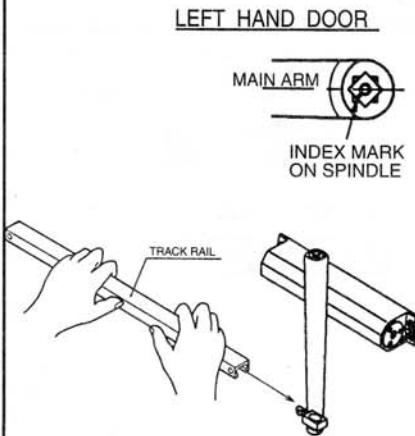
RIGHT HAND DOOR  
ILLUSTRATED.  
SAME DIMENSIONS  
APPLY FOR LEFT HAND  
DOOR—MEASURED FROM  
HINGE  $\text{C}$ .



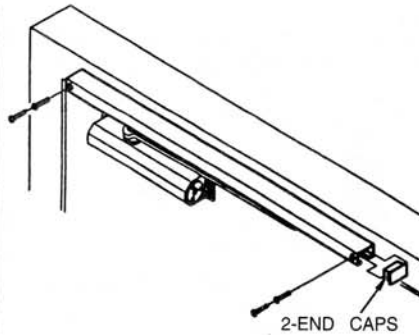
**A**  
ASSEMBLE MAIN ARM TO CLOSER 45°  
AWAY FROM DOOR AS ILLUSTRATED  
BELOW. ATTACH ARM WITH WASHER  
AND SCREW.  
ATTACH CLOSER TO DOOR WITH SHORT  
END OF CLOSER FACING TOWARD HINGE.



**B**  
INSERT SLIDER OF ARM INSIDE TRACK  
RAIL AS ILLUSTRATED BELOW.

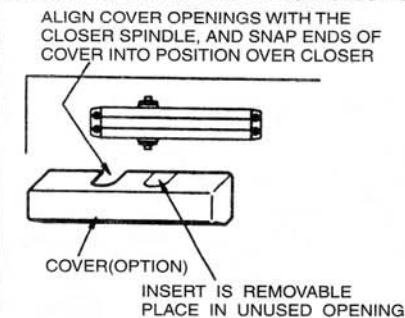


**C**  
ASSEMBLE END CAPS ON BOTH ENDS OF  
TRACK RAIL. ATTACH TRACK RAIL ON  
FRAME WITH SCREW.



**D**  
ADJUST AND REGULATE DOOR CLOSER AS  
DIRECTED AT PAGE 1 FOR SPEED AND  
BACKCHECK.

**E**  
INSTALL OPTIONAL COVER AS FOLLOWS:



## OPENING FORCE

Closer Size	Opening Force			
	For opening to 120°			
	D-1650		D-1651	
	lbf · 30"	N · 30"	lbf · 30"	N · 30"
1	---	---	4.6	20.5
2	8.9	39.7	7.2	32.1
3	11.0	49.1	9.9	44.1
4	15.1	67.3	13.4	59.8
5	19.0	84.7	---	---