

MBT and MBT2 SERIES SERVICE MANUAL



MARSHALL BEST SECURITY CORPORATION

10005 Cumberland Pointe Blvd., Noblesville, IN 46060 • Phone: 317-806-1180 • Fax: 317-578-2904
www.marshallbestsecurity.com

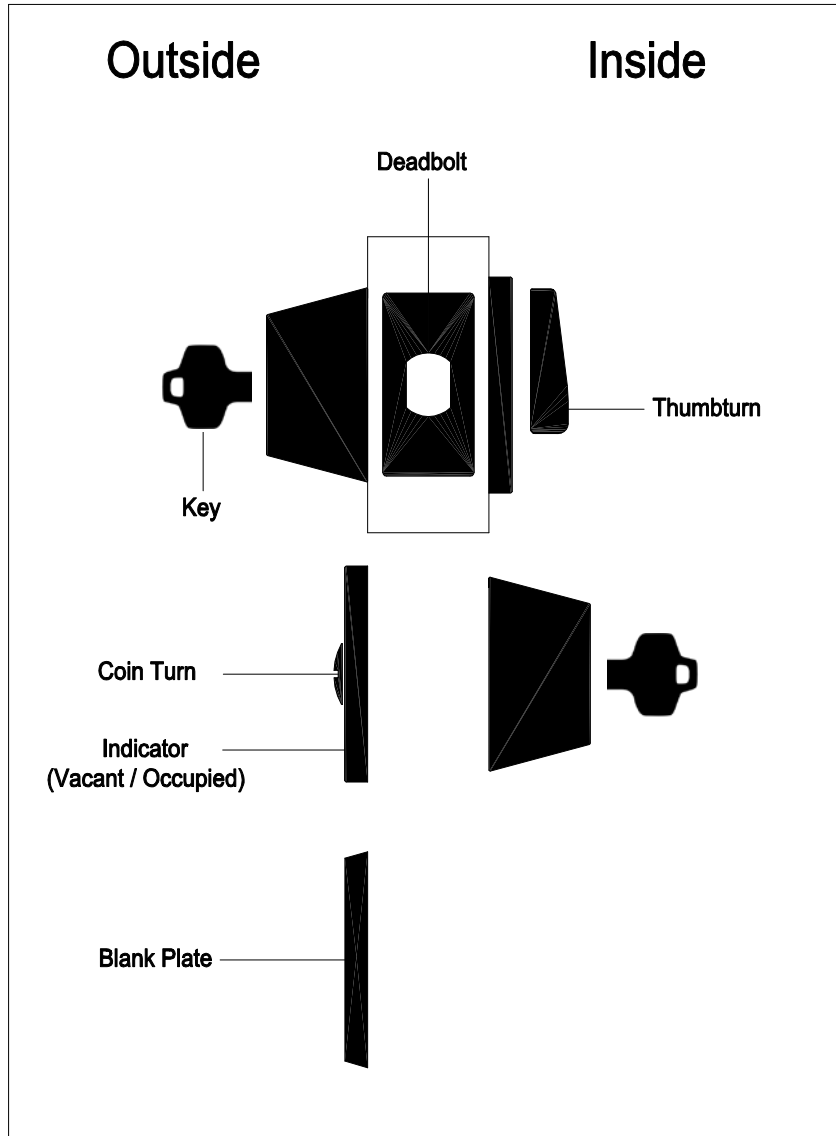
MBT and MBT2 Series Service Manual

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Lock Assembly Drawing Index

The lock Assembly Drawing Index provides visual representations and textual descriptions of available functions. Page numbers for lock assembly drawings are referenced.



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Lock Assembly Drawing Index

Functions Grade 1 MBT and MBT2 Series ANSI A156.36-2010		Lock Assembly	
		Page Number	Part Number
MBS	ANSI		
10	E2151		
	Single Cylinder Deadbolt operated by key from outside and by turn from inside.	4	K
60	E21111		
	Closet Deadbolt operate by turn from inside. Blank plate on other side.	5	KL
51	E2161		
	One-Way Deadbolt Deadbolt operated by key from one side. Mounting plate on other side.	6	L
12	E2141		
	Double Cylinder Deadbolt operated by key from either side.	7	M
21			
	Thumbturn x Occupancy Indicator Occupancy indicator on outside. Deadbolt thrown or retracted by turn unit only. Bolt automatically deadlocks when fully thrown. Coin Turn Emergency Access.	8	P-I
03	E2171		
	Classroom Deadbolt operated by key from outside. Turn retracts deadbolt but does not project it.	9	S
40	E2191		
	Thumbturn Deadbolt operated by turn from inside. No trim on other side. Grade 2 Only	10	40

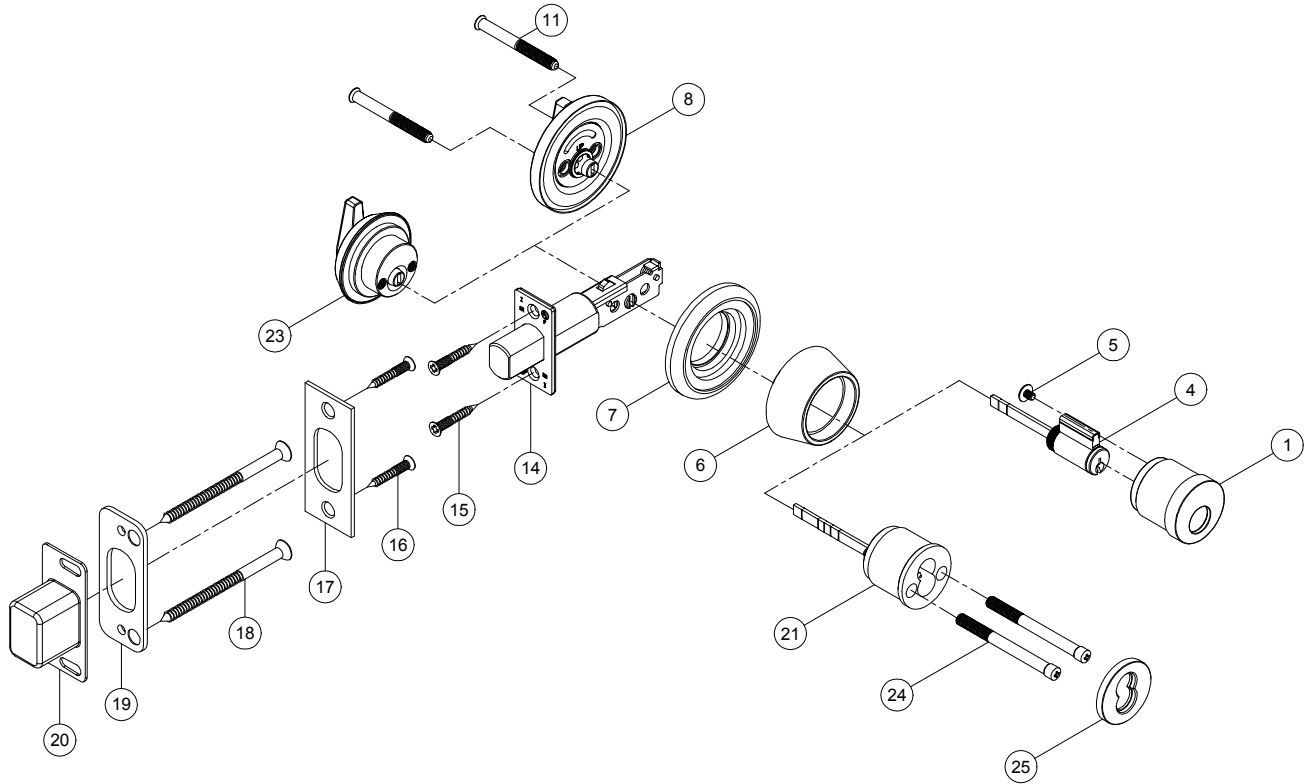
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Assembly Chart

Item No.	Description	Part Number	S	K	M	P-I	40	L	KL
1	Outside Cylinder Housing	624944-010	●	●	●			●	
2	Cover	614923-020			●				
3	Inside Cylinder Housing	614944-040			●				
4	Cylinder	420-104	●	●				●	
		420-202			2				
5	Cylinder Retaining Screw	610778-010	●	●	●			●	
6	Cylinder cover	614926-010	●	●	2			●	
7	Lock Box Plate	614906-011	●	●	2			●	
8	Thumbturn	624925-010	●	●		●	●		●
9	Mounting Plate	624911-010					●	●	
		624909-010							●
10	Blank Plate	614924-020						●	
		614924-030							●
11	Mounting Screws	614953-040	2	2		2		2	2
		614953-020			2				
12	Mounting Screws	610154-020					3		
13	Trim Screws	615110-010					2		
14	Deadbolt	321-201	●	●		●	●	●	●
		420-202			●				
15	Deadbolt Screws	610154-020	2	2	2	2	2	2	
16	Strike Screws	610154-020	2	2	2	2	2	2	
17	Strike	610927-010	●	●	●	●	●	●	●
18	Wood Screws	610731-010	2	2	2	2	2	2	2
19	Wood frame reinforcer	531-303	●	●	●	●	●	●	●
20	Box	552-211	●	●	●	●	●	●	●
21	Outside Cylinder Housing(IC)	624944-050			●				●
		624944-080	●	●					
22	Inside Cylinder Housing(IC)	624944-100			●				
23	Thumbturn(IC)	624925-060	●						
		624925-080		●					
24	Mounting Screws(IC)	614953-050		2	2				
		614953-070	2						
25	Cover(IC)	614923-050	●	●	●				
26	Outside Trim(IC)	614926-020			2				
27	Indicator	624925-070				●			
28	Insert liner	614926-030			2				

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K Function Single Cylinder

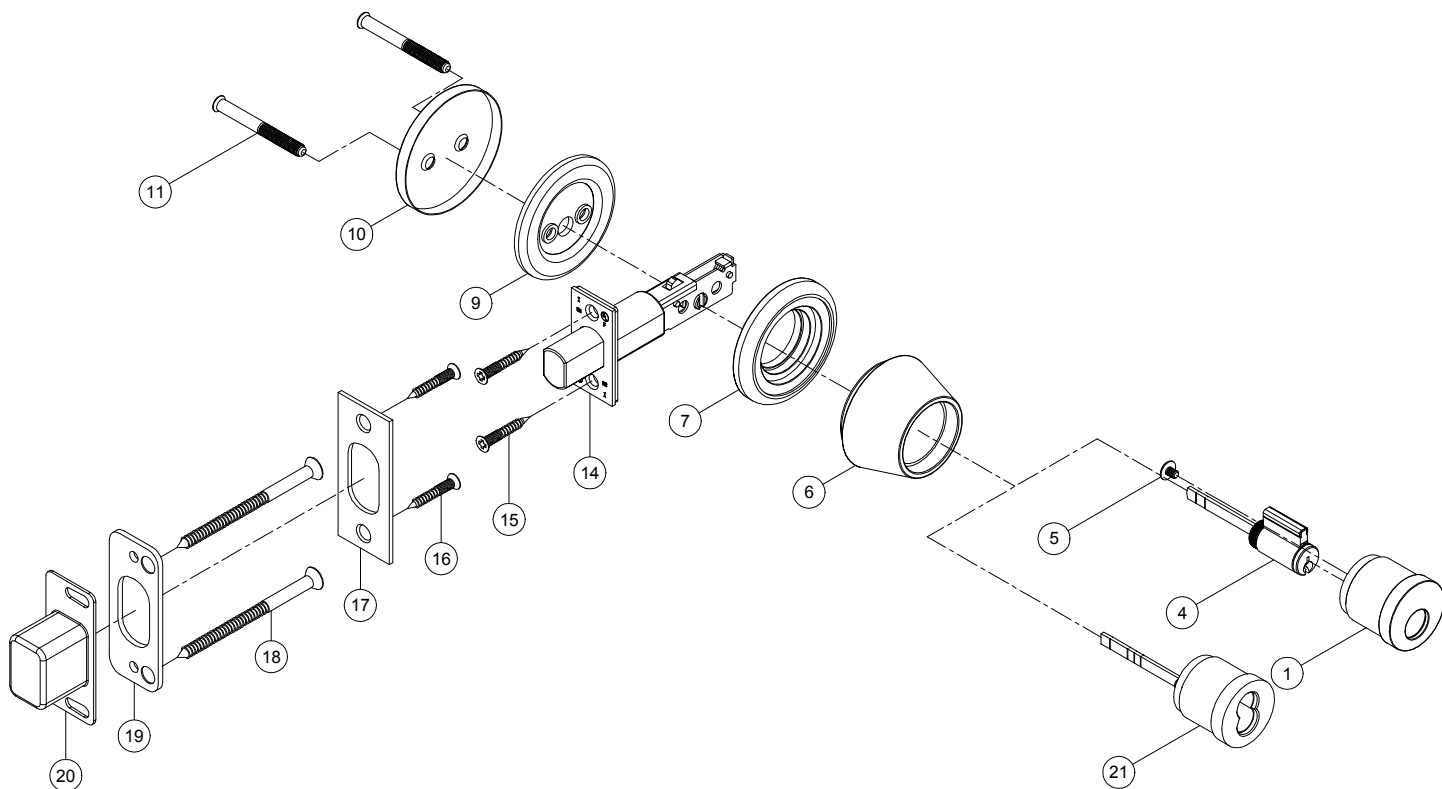


Item No.	Q'ty	Description	Part Number	Item No.	Q'ty	Description	Part Number
1	1	Outside Cylinder Housing	624944-010				
4	1	Cylinder	420-104				
5	1	Cylinder Retaining Screw	610778-010				
6	1	Cylinder collar	614926-010				
7	1	Lock Box Plate	614906-011				
8	1	Thumbturn	624925-010				
11	2	Mounting Screws	614953-040				
14	1	Deadbolt	321-201				
15	2	Deadbolt Screws	610154-020				
16	2	Strike Screws	610154-020				
17	1	Strike	610927-010				
18	2	Wood Screws	610731-010				
19	1	Wood frame reinforcer	531-303				
20	1	Box	552-211				
21	1	Outside Cylinder Housing(IC)	624944-080				
23	1	Thumbturn(IC)	614925-080				
24	2	Mounting Screws(IC)	614953-050				
25	1	Cover(IC)	614923-050				

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L Function

One-Way Deadbolt

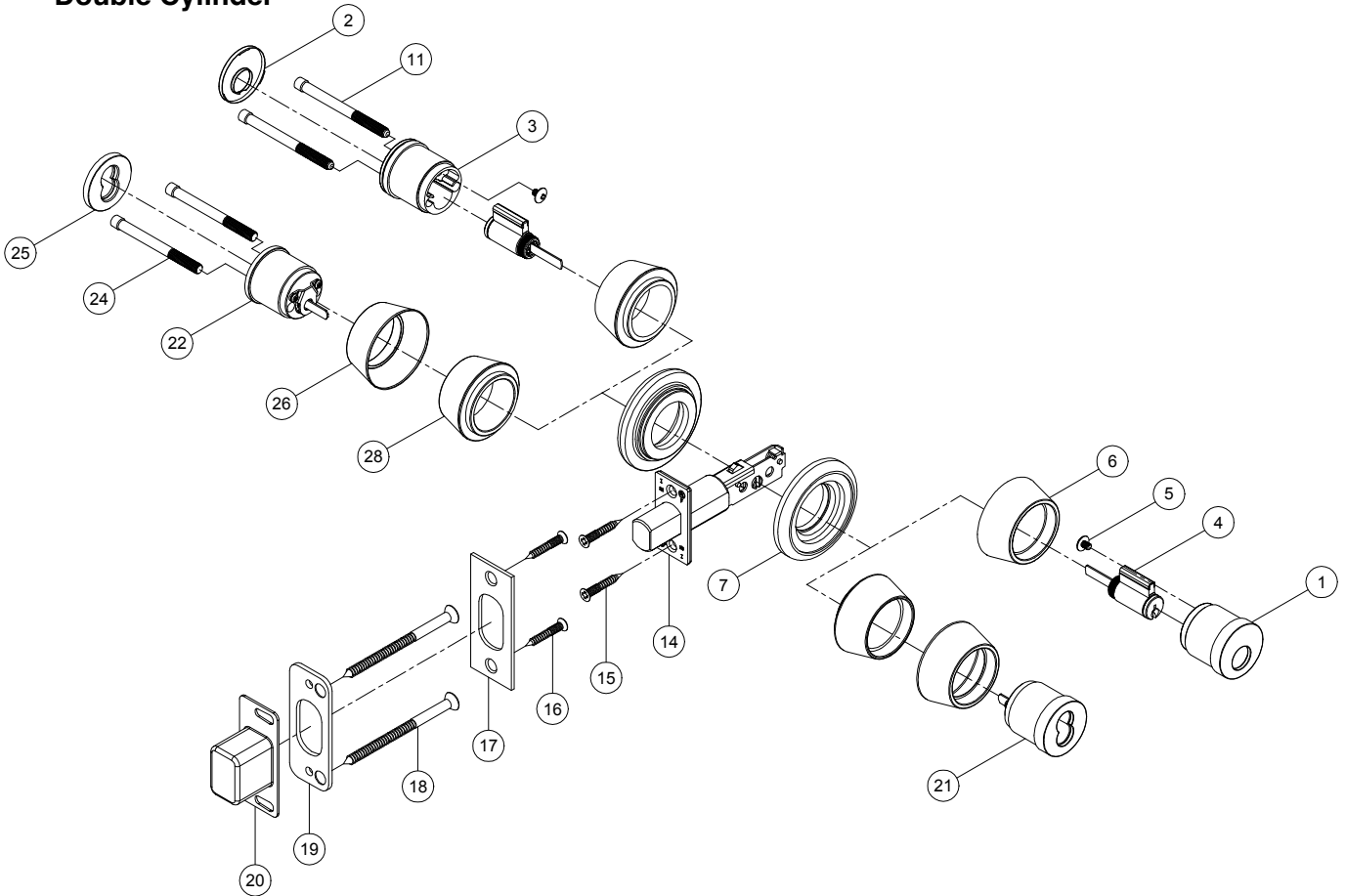


Item No.	Q'ty	Description	Part Number	Item No.	Q'ty	Description	Part Number
1	1	Outside Cylinder Housing	624944-010				
4	1	Cylinder	420-104				
5	1	Cylinder Retaining Screw	610778-010				
6	1	Cylinder cover	614926-010				
7	1	Lock Box Plate	614906-011				
9	1	Mounting Plate	624911-010				
10	1	Blank Plate	614924-020				
11	2	Mounting Screws	614953-040				
14	1	Deadbolt	321-201				
15	2	Deadbolt Screws	610154-020				
16	2	Strike Screws	610154-020				
17	1	Strike	610927-010				
18	2	Wood Screws	610731-010				
19	1	Wood frame reinforcer	531-303				
20	1	Box	552-211				
21	1	Outside Cylinder Housing	624944-050				

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M Function

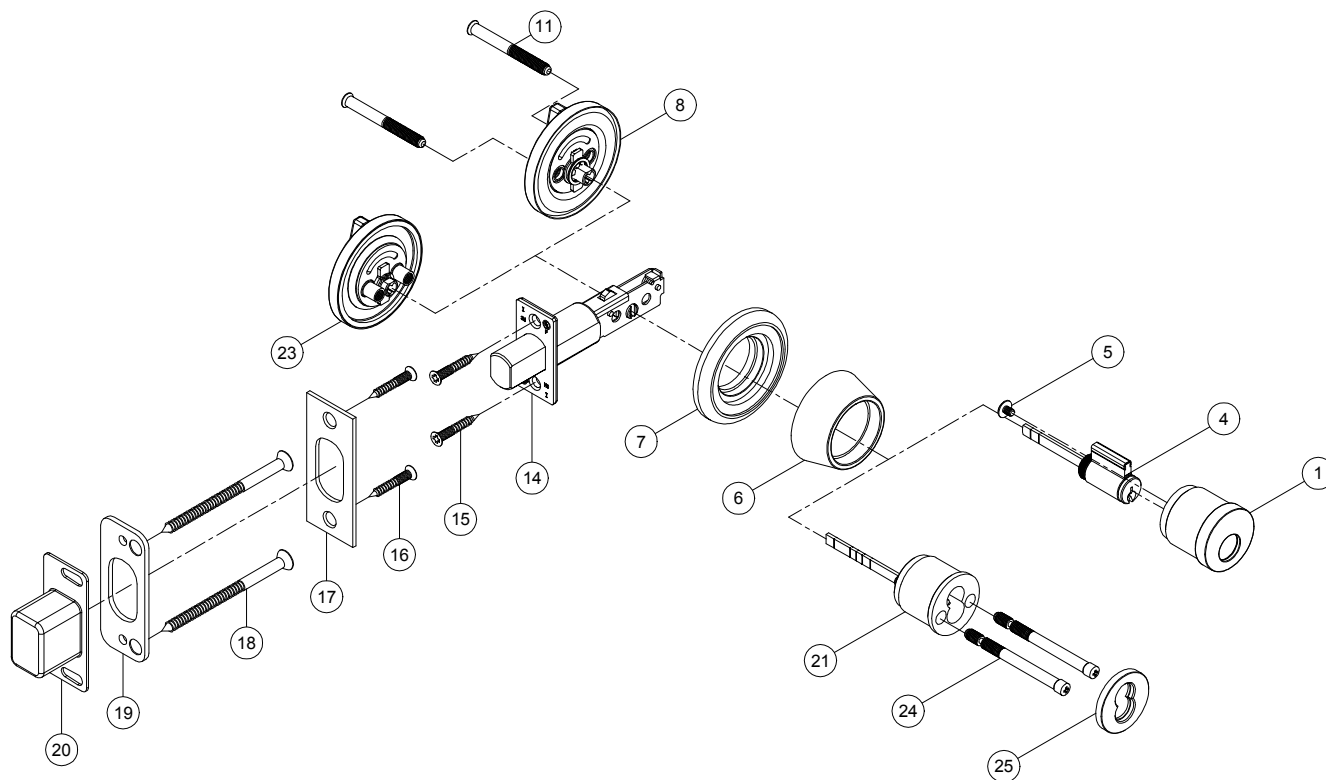
Double Cylinder



Item No.	Q'ty	Description	Part Number	Item No.	Q'ty	Description	Part Number
1	1	Outside Cylinder Housing	624944-010	26	2	Outside Trim(IC)	614926-020
2	1	Cover	614923-020	28	2	Insert liner	614926-030
3	1	Inside Cylinder Housing	614944-040				
4	2	Cylinder	420-202				
5	2	Cylinder Retaining Screw	610778-010				
6	2	Outside Trim	614926-010				
7	2	Lock Box Plate	614906-011				
11	2	Mounting Screws	614953-020				
14	1	Deadbolt	420-202				
15	2	Deadbolt Screws	610154-020				
16	2	Strike Screws	610154-020				
17	1	Strike	610927-010				
18	2	Wood Screws	610731-010				
19	1	Wood frame reinforcer	531-303				
20	1	Box	552-211				
21	1	Outside Cylinder Housing	624944-050				
22	1	Inside Cylinder Housing	624944-100				
24	2	Mounting Screws(IC)	614953-050				
25	1	Cover(IC)	614923-050				

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S Function Classroom

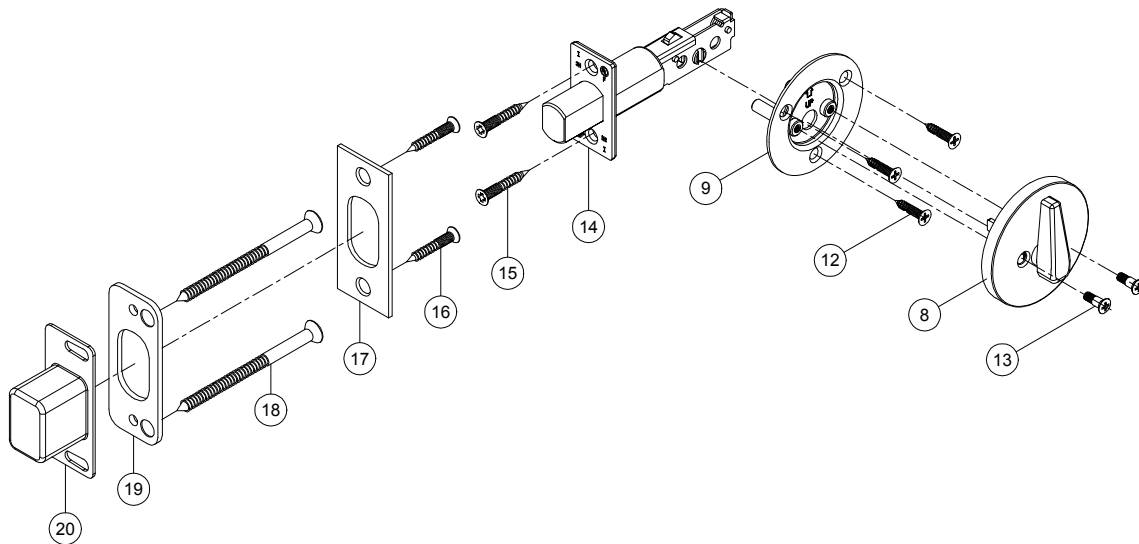


Item No.	Q'ty	Description	Part Number	Item No.	Q'ty	Description	Part Number
1	1	Outside Cylinder Housing	624944-010				
4	1	Cylinder	420-104				
5	1	Cylinder Retaining Screw	610778-010				
6	1	Cylinder cover	614926-010				
7	1	Lock Box Plate	614906-011				
8	1	Thumbturn	624925-010				
11	2	Mounting Screws	614953-040				
14	1	Deadbolt	321-201				
15	2	Deadbolt Screws	610154-020				
16	2	Strike Screws	610154-020				
17	1	Strike	610927-010				
18	2	Wood Screws	610731-010				
19	1	Wood frame reinforcer	531-303				
21	1	Box	552-211				
22	1	Outside Cylinder Housing(IC)	624944-080				
23	1	Thumbturn(IC)	624925-060				
24	2	Mounting Screws(IC)	614953-070				
25	1	Cover(IC)	614923-050				

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40 Function

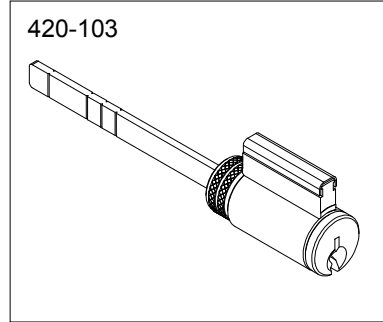
Thumbturn



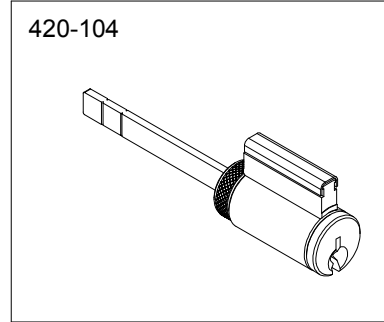
Item No.	Q'ty	Description	Part Number	Item No.	Q'ty	Description	Part Number
8	1	Turn Knob Assembly	624925-010				
9	1	Mounting Plate Assembly	624911-010				
12	3	Mounting Screws	610154-020				
13	2	Trim Screws	615110-010				
14	1	Deadbolt	321-201				
15	2	Deadbolt Screws	610154-020				
16	2	Strike Screws	610154-020				
17	1	Strike	610927-010				
18	2	Wood Screws	610731-010				
19	1	Wood frame reinforcer	531-303				
20	1	Box	552-211				

Cylinders

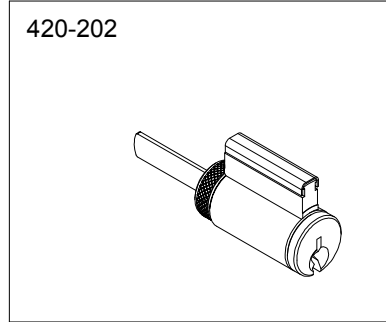
Standard Cylinder



Standard Cylinder



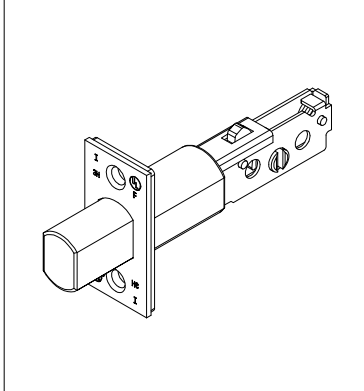
Standard Cylinder



for M Function

Deadbolts

Deadbolt



Housing Diameter:

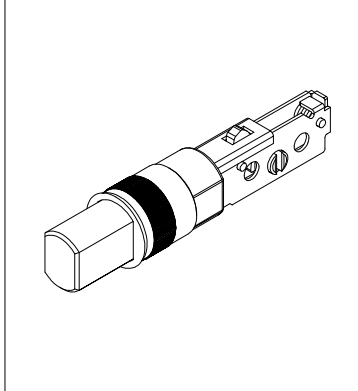
321-101(2-3/8")

321-201(2-3/4")

Description:

Square corner, 1-1/8" x 2-1/4" faceplate

Drive-In Deadbolt



Housing Diameter:

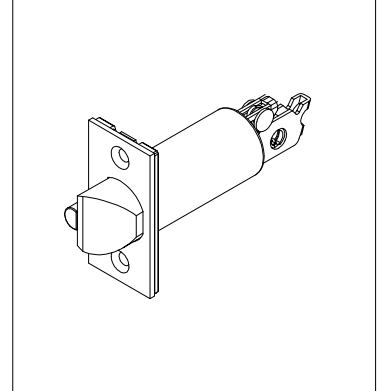
323-101(2-3/8")

323-201(2-3/4")

Description:

1" circular drive-in

Deadlatch



Housing Diameter:

(2-3/8")

(2-3/4")

Description:

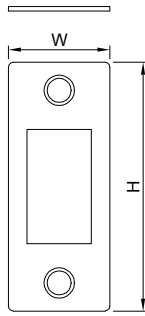
Square corner, 1-1/8" x 2-1/4" faceplate

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Strikes

ANSI Strike

527-512

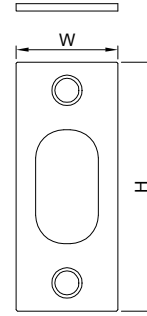


Finishes

605
606
612
613
625
626
629
630

ANSI Strike

527-531

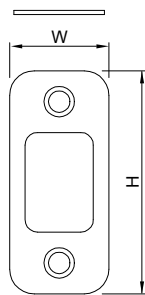


Finishes

605
606
612
613
625
626
629
630

1/4" Radius Corner Strike

527-522

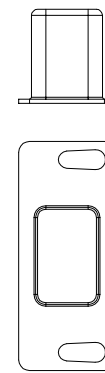


Finishes

605
606
612
613
625
626
629
630

Strike Box (Plastic)

552-211



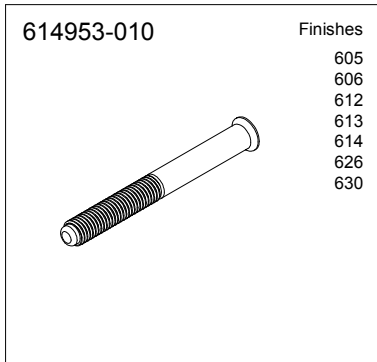
Strikes and Descriptions

Part Number	Description	Size (H x W)
527-511	Square Corner	2-3/4" x 1-1/8"
527-531	Square Corner	2-3/4" x 1-1/8"
529-112	1/4" Radius Corner	2-3/4" x 1"

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Components

Mounting Screw

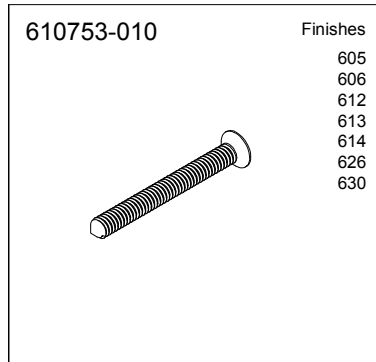


Mounting Screw



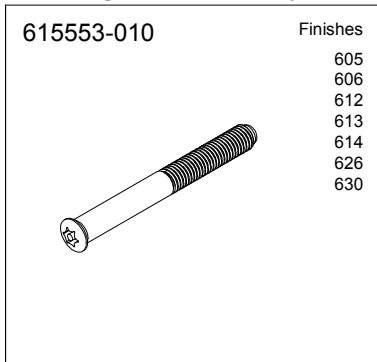
for M(E2141) Function

Mounting Screw

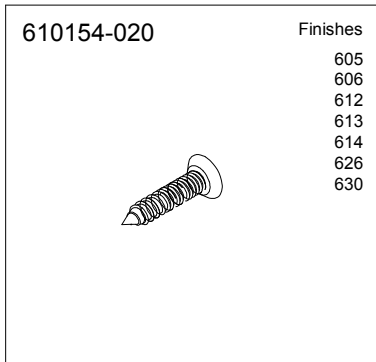


for KL(E2111) Function

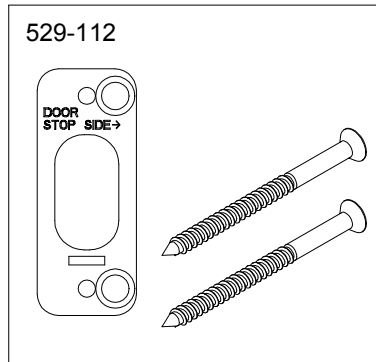
Mounting Screw (Security Screw)



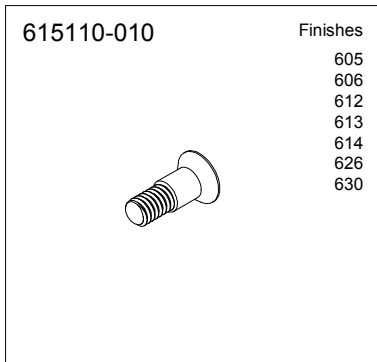
Mounting Screw / Deadbolt Screw / Strike Screw



Strike Reinforcer Kit

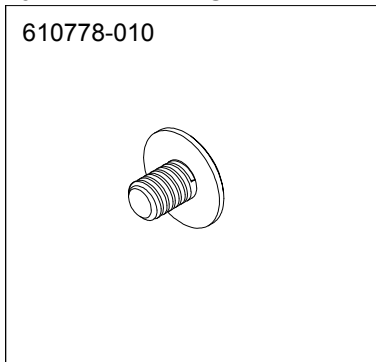


Trim Screw

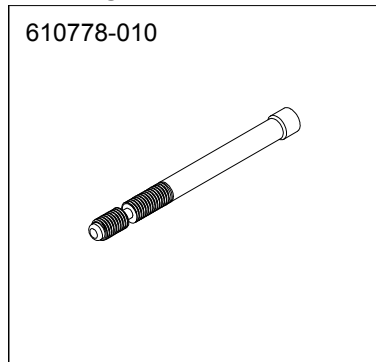


for 40(E2191) Function

Cylinder Retaining Screw



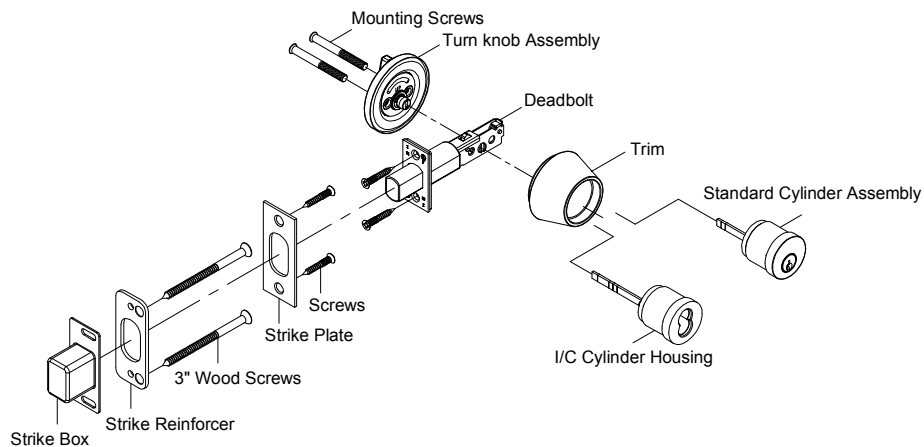
Mounting Screw



for K(E2151) / M(E2141) / S(E2171) Function(IC)

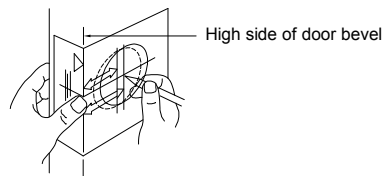
Installation Instructions - Standard (Page 1)

GRADE 1 DEADBOLT INSTALLATION INSTRUCTIONS



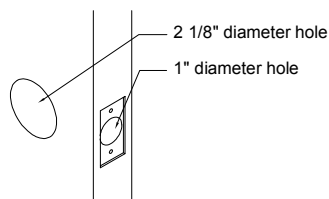
1 Mark door

- 1 Place template on door and mark center for 2 1/8" hole at desired backset.
- 2 Template should be placed on high edge of beveled door edge.



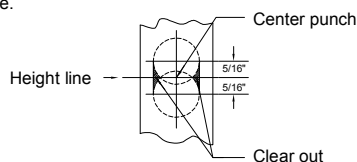
2 Bore two holes

- 1 Bore a 2 1/8" diameter hole. To avoid splintering a wood door, bore the hole from both sides of the door.
- 2 Drill a 1" diameter hole from the edge of door that intersects the 2 1/8" hole.
- 3 Using the deadbolt faceplate as a guide, mortise the edge of door to recess the faceplate.



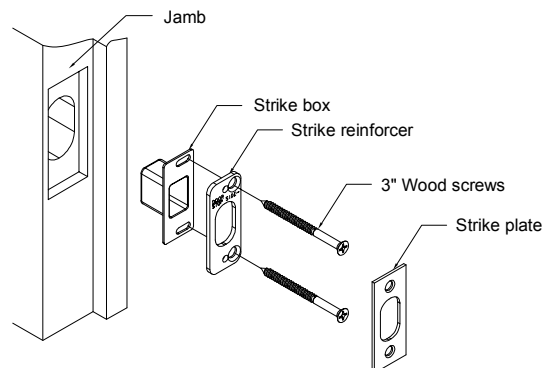
3 Prepare door jamb

- 1 Locate exact center of bolt and mark center lines on jamb as shown.
- 2 Mark drill points 5/16" above and below horizontal center line.
- 3 Bore two overlapping 7/8" holes, 1 1/8" deep.
- 4 Clean out holes for strike box and place strike box in hole.
- 5 Place strike over box and trace for cutout.
- 6 Chisel about 1/4" deep for flush fit of strike box, support plate and strike.



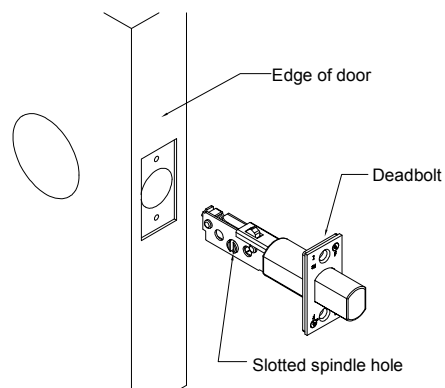
4 Install strike plate

- 1 Place support with screw holes toward doorstop.
- 2 Mark and drill two 3/16" holes for 3" wood screws.
- 3 Install support plate, strike box, and finish strike in the order shown.
- 4 Test lock with key and turn knob. Bolt must travel and project fully into strike preparation without binding.



5 Install deadbolt assembly

- 1 Insert the deadbolt with slotted spindle hole at the bottom of the assembly.
- 2 Secure the deadbolt to the door with screws.



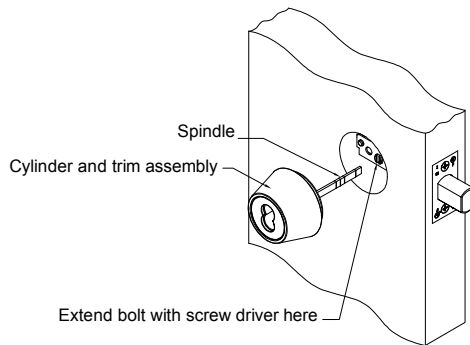
Installation Instructions - Standard (Page 2)

GRADE 1 DEADBOLT INSTALLATION INSTRUCTIONS

6 Install cylinder(s)

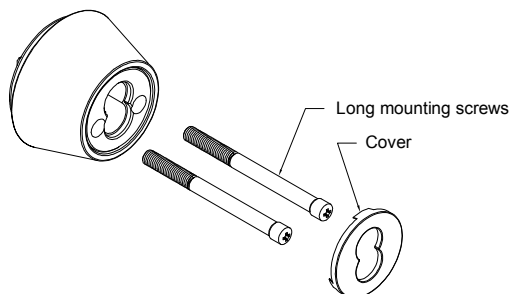
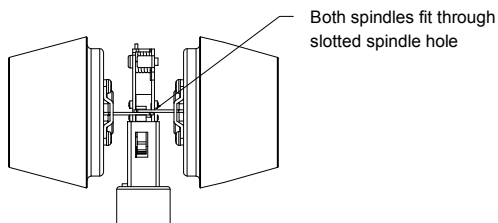
For single cylinder deadbolts:

- 1 Extend the bolt with a screwdriver.
- 2 Install the cylinder and trim assembly with the spindle in the vertical position.



For double cylinder deadbolts:

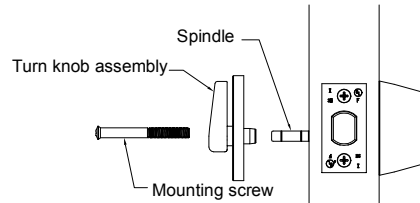
- 1 Extend the bolt with a screwdriver.
- 2 Install each cylinder with its ring and rose.
- 3 Insert long mounting screws and tighten.
- 4 Check to make sure the deadbolt operates properly.
- 5 Insert the cover.



- Note 1 : When possible, mount cylinders on the door so that the mounting screws enter from the inside of the door.
- 2 : Both spindles must fit through the spindle hole in the deadbolt assembly.

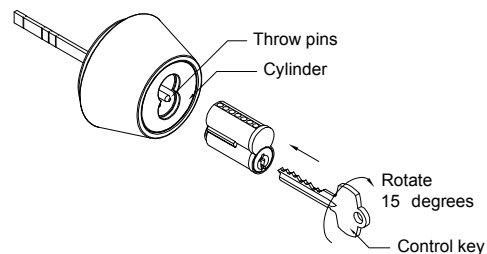
7 Attach inside trim

- 1 Break the spindle at the appropriate notch to suit the installation.
- 2 Slide the Turn Knob assembly over the spindle and secure it and the cylinder to the door with mounting screws supplied.
- 3 Check to make sure that the deadbolt operates properly.



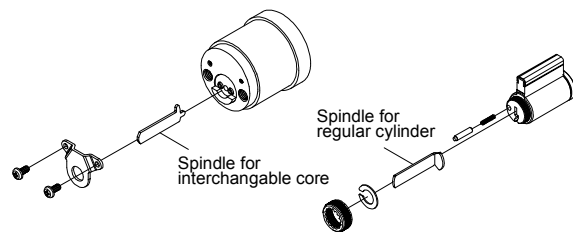
8 Install core(s)

- 1 Put the control key into the core and turn the key 15 degrees clockwise.
- 2 Adjust the throw pins if needed, then put the core into the cylinder with the control key.
- 3 Turn the key 15 degrees counterclockwise and remove the key.



9 Replacement of spindle

A spare longer spindle is included in package for door thicker than 1 3/4" (45mm). Replacement of the spindle as shown in figure.



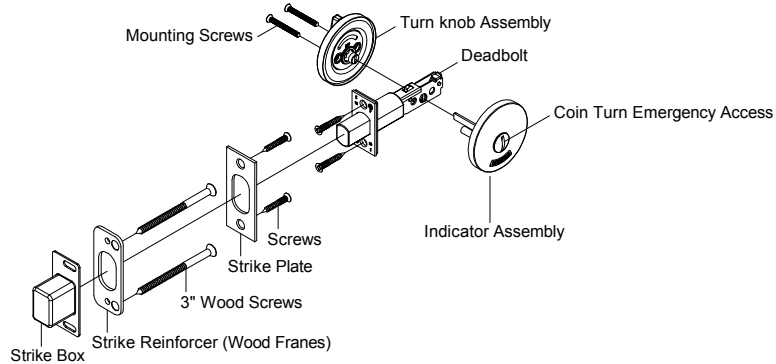
Patents :

Products are protected by one or more of the following
U.S. patents: 4725086, 4838053, 5398531, 5713231, 5906125, 5970760. Other patents pending.

Caution : Double cylinder locks are operated by key only and may hinder emergency exit . Check for applicable fire codes and / or life safety codes before installing double cylinder deadbolt .

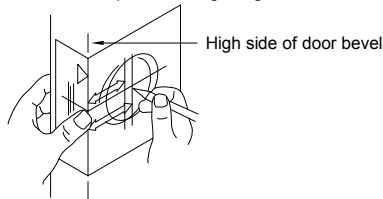
Installation Instructions - Indicator (Page 1)

GRADE 1 DEADBOLT INSTALLATION INSTRUCTIONS-INDICATOR



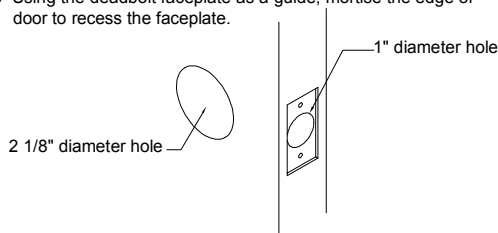
1 Mark door

- 1 Place template on door and mark center for 2 1/8" hole at desired backset.
- 2 Template should be placed on high edge of beveled door edge.



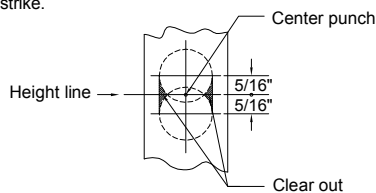
2 Bore two holes

- 1 Bore a 2 1/8" diameter hole. To avoid splintering a wood door, bore the hole from both sides of door.
Note : If there is an existing 1 1/2" diameter cross bore, there is no need to re-drill cross bore. 1" diameter edge hole must be drilled 4" deep to accommodate deadbolt.
- 2 Drill a 1" diameter hole from the edge of door that intersects the 2 1/8" hole.
- 3 Using the deadbolt faceplate as a guide, mortise the edge of door to recess the faceplate.



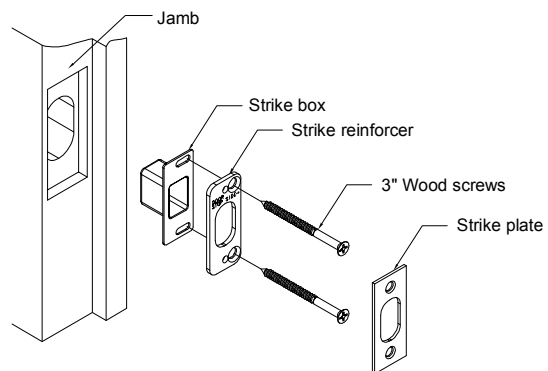
3 Prepare door jamb

- 1 Locate exact center of bolt and mark center lines on jamb as shown.
- 2 Mark drill points 5/16" above and below horizontal center line.
- 3 Bore two overlapping 7/8" holes, 1 1/8" deep.
- 4 Clean out holes for strike box and place strike box in hole.
- 5 Place strike over box and trace for cutout.
- 6 Chisel about 1/4" deep for flush fit of strike box, strike reinforcer and strike.



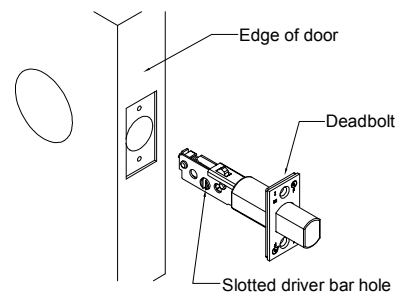
4 Install strike plate

- 1 Place strike reinforcer with screw holes toward doorstop.
- 2 Mark and drill two 3/16" holes for 3" wood screws.
- 3 Install strike reinforcer, strike box, and finish strike in the order shown.



5 Install deadbolt assembly

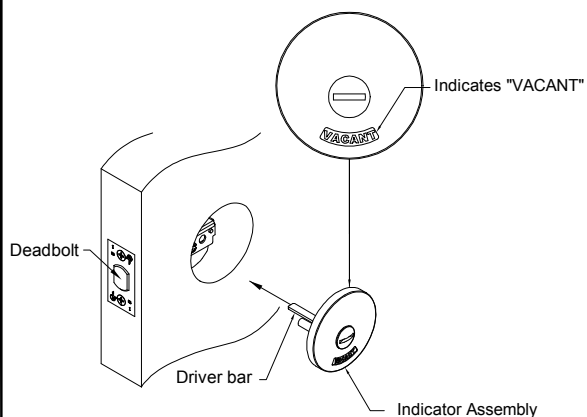
- 1 Insert the deadbolt with slotted driver bar hole at the bottom of the assembly.
- 2 Secure the deadbolt to the door with screws.



Installation Instructions - Indicator (Page 2)

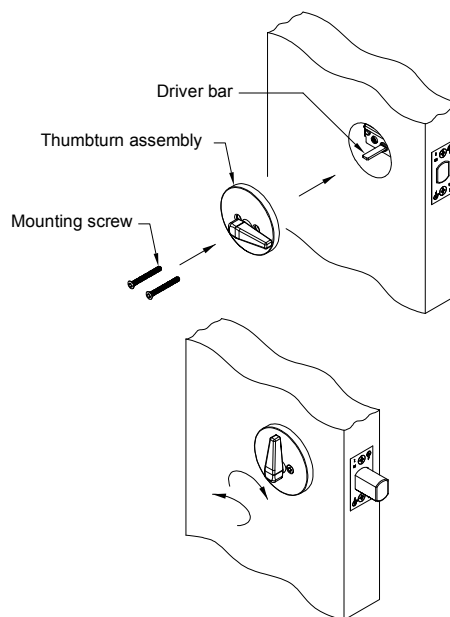
6 Install Indicator

- 1 Retract deadbolt with a screwdriver.
- 2 Set up the Indicator Assembly to "VACANT"
- 3 Slide the driver bar in indicator assembly over deadbolt.



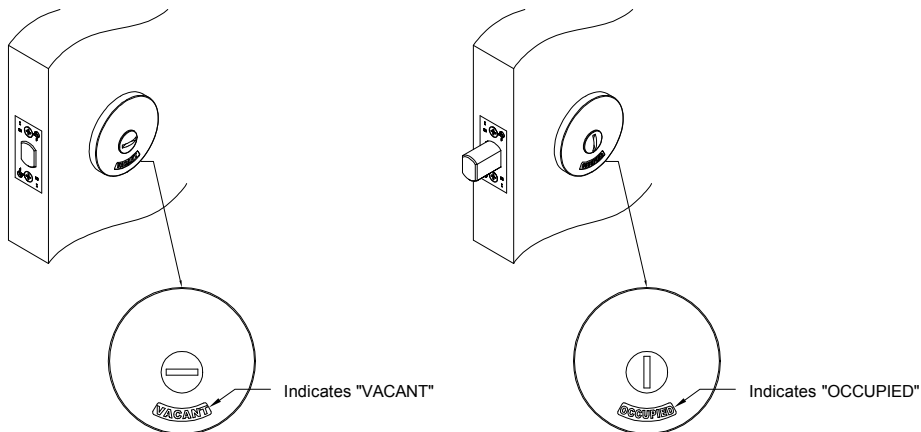
7 Attach inside trim

- 1 Slide the thumbturn assembly over the driver bar.
- 2 Secure the thumbturn assembly to the door with the mounting screws supplied.
- 3 Test thumbturn. Bolt must travel and project fully into strike preparation without binding.

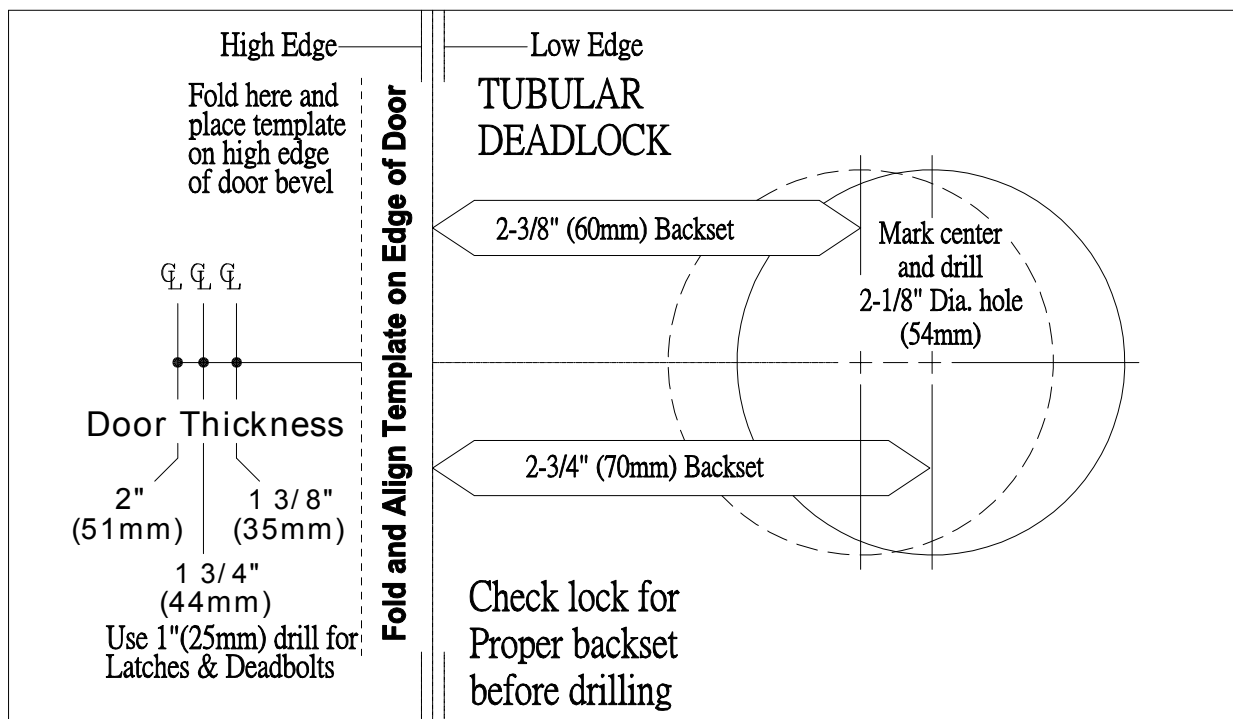


8 Test thumbturn

- 1 "VACANT" indicates when Deadbolt is retracted.
- 2 "OCCUPIED" indicates when Deadbolt is in locking position.



Templates



Finishes

Finish Codes and Descriptions

Finish	Description	ANSI / BHMA Code
605 (PB)	Bright brass , clear coated	US 3
606 (SB)	Satin brass , clear coated	US 4
611 (PBZ)	Bright bronze , clear coated	US 9
612 (SBZ)	Satin bronze , clear coated	US 10
613 (OB)	Dark oxidized satin bronze , oil rubbed	US 10B
625 (PC)	Bright chromium plated over nickel	US 26
626 (SC)	Stain chromium plated over nickel	US 26D
629 (PS)	Bright stainless steel	US 32
630 (SS)	Satin stainless steel	US 32D

