GENERAL INFORMATION
The VRA-143 vertical rod assembly is designed for use on double doors in conjunction with the following Detex product:
Exit Control Lock Model ECL-230D.

NOTE
To locate the mounting holes for the ECL-230's and the VRA, use the templates provided with these instructions and disregard the templates provided with the ECL-230's.

The ECL-230's and the VRA can be used in any of the three arrangements shown.

Outside Key Control (OKC)
An OKC can be used on the active leaf of a type 'C' installation. An OKC can also be used on a type 'B' or type 'D' installation but for entry only.

TOOLS AND SUPPLIES REQUIRED
Center punch to mark hole centers
Hammer
Drill motor and bits
Tape to fasten templates
Tape measure
Screwdriver, blade type
7/8" diameter drill
1" diameter drill
#10-24 tap

EQUIVALENT METRIC DIMENSIONS

<table>
<thead>
<tr>
<th>INCHES</th>
<th>MILLIMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.150</td>
<td>4</td>
</tr>
<tr>
<td>0.152</td>
<td>4</td>
</tr>
<tr>
<td>1/4</td>
<td>6</td>
</tr>
<tr>
<td>3/4</td>
<td>19</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>1-1/4</td>
<td>32</td>
</tr>
</tbody>
</table>

FIGURE 1, TYPE B
Active leaf opens both doors.
Overlap plates installed on the inactive leaf.

FIGURE 2, TYPE C
Either leaf opens first.
Strike plate installed on VRA door.
Lock on leaf without VRA must be ECL-230.

FIGURE 3, TYPE D
Each leaf is independent.
TEMPLATES
Templates provided with these instructions include hole center locations for the three types of installations described on page 1. For a type B installation, use templates A, B and E. For a type C installation, use templates A, B and F. For a type D installation, use templates C, D and E. Select the required templates and tape them to the door. Make sure that the door is firmly butted against the stop and mark the required hole centers.

SCREWS AND DRILL SIZES
Several types of screws are supplied with this product. Some are for temporary use during the installation and are to be replaced with the permanent "one-way" screws after all adjustments have been completed as explained later.

#10 type AB thread-forming screws are supplied with the VRA for use in non-reinforced door areas. The recommended drill size for these screws is #24(0.152). For reinforced doors, #10-24 machine screws are supplied and the recommended tap-drill size is #25(0.150).

OUTSIDE KEY CONTROL (OKC)
Instructions for installing the rim cylinder are included in the instructions provided with the exit control lock.

UPPER AND LOWER STRIKES
Follow the instructions on the strike templates and mark the hole centers as shown. Produce a hole in the door frame and in the floor or threshold, about 3/4" deep. Drill the strike mounting holes. Install the upper strike plate making sure that the raised flange is toward the door as shown in figure 5. Install the lower strike plate.

BASE ASSEMBLY
Refer to figure 7 and install the base assembly on the door, oriented as shown, using four pan-head screws, 1" long. If a type-C installation, install the closed-back strike at this time. (The strike fits under the base assembly).

LOWER ROD ASSEMBLY
Refer to figure 7 and assemble the lower rod (39"), jam nut, lower bolt, bolt housing, (open end down), and rod guide. The lower bolt will be adjusted later.

UPPER ROD ASSEMBLY
Refer to figure 7 and assemble the upper rod, bolt housing, (open end up), upper bolt and rod guide. The upper bolt will be adjusted later.

INSTALL LOWER ROD
Install the lower rod assembly as follows. Insert the upper end of the rod through the hole in the bottom of the base assembly and lower it until the lower bolt enters the lower strike plate. Insert a cotter pin in the bottom hole in the rod. Slip a spring then a washer onto the upper end of the rod and insert the end of the rod in the link in the base assembly. Fasten the rod to the link with a knurled head pin. Fasten the lower bolt housing to the door using two Phillips-head screws. One-way screws will be added after adjustment of the bolt.

BOLT ADJUSTMENT
To make the required adjustments, temporarily install the VRA handle on the square shaft in the base assembly. Turn the handle counterclockwise to the locked position and check the top and bottom bolt positions. The upper bolt must be adjusted so that the flat on the top side is butted to the upper strike plate as shown in figure 5. Adjust the bolt by screwing or unscrewing the rod. If the rod is too long, refer to figure 7 and cut the rod as shown.

INSTALL UPPER ROD
Place the handle on the square shaft in the base assembly and turn it to verify that there is no binding.

Position the rod guide about midway between the base assembly and the lower bolt housing and mark the hole centers. Drill the holes and fasten the rod guide to the door with #10 x 3/4" oval-head screws. Verify that there is no binding when the handle is turned.

INSTALL LOWER ROD
Insert the lower end of the rod into the hole in the top of the base assembly. Slip a spring and washer onto the lower end of the rod and insert a cotter pin in the second hole from the bottom of the rod. Attach the rod to the link in the base assembly with a knurled pin. Fasten the upper bolt housing to the door with two Phillips-head screws. One-way screws will be added after adjustment of the upper bolt.

Position the rod guide about midway between the top of the base assembly and the underside of the bolt housing. Mark the hole centers and drill the holes for the #10 screws. Install the rod guide with #10 x 3/4" oval-head screws. Verify that there is no binding.

INSTALL UPPER ROD
Place the handle on the square shaft in the base assembly and turn it to verify that there is no binding.

Position the rod guide about midway between the base assembly and the lower bolt housing and mark the hole centers. Drill the holes and fasten the rod guide to the door with #10 x 3/4" oval-head screws. Verify that there is no binding when the handle is turned.

INSTALL UPPER ROD
Place the handle on the square shaft in the base assembly and turn it to verify that there is no binding.

Position the rod guide about midway between the base assembly and the lower bolt housing and mark the hole centers. Drill the holes and fasten the rod guide to the door with #10 x 3/4" oval-head screws. Verify that there is no binding when the handle is turned.

INSTALL LOWER ROD
Insert the lower end of the rod into the hole in the top of the base assembly. Slip a spring and washer onto the lower end of the rod and insert a cotter pin in the second hole from the bottom of the rod. Attach the rod to the link in the base assembly with a knurled pin. Fasten the upper bolt housing to the door using two Phillips-head screws. One-way screws will be added after adjustment of the bolt.

Position the rod guide about midway between the top of the base assembly and the underside of the bolt housing. Mark the hole centers and drill the holes for the #10 screws. Install the rod guide with #10 x 3/4" oval-head screws. Verify that there is no binding.

INSTALL LOWER ROD
Insert the lower end of the rod into the hole in the top of the base assembly. Slip a spring and washer onto the lower end of the rod and insert a cotter pin in the second hole from the bottom of the rod. Attach the rod to the link in the base assembly with a knurled pin. Fasten the upper bolt housing to the door using two Phillips-head screws. One-way screws will be added after adjustment of the bolt.

Position the rod guide about midway between the top of the base assembly and the underside of the bolt housing. Mark the hole centers and drill the holes for the #10 screws. Install the rod guide with #10 x 3/4" oval-head screws. Verify that there is no binding.
The lower bolt must be adjusted so that the bolt enters the lower strike plate as shown in figure 6. Adjust the bolt by screwing or unscrewing it on the rod. Tighten the jam nut on the lower rod.

When all the adjustments are complete, operate the VRA handle to make sure that the mechanism works freely and the top and bottom bolts enter the strike plates properly when locked. Make sure that the top and bottom bolts clear the strike plates when the rods are retracted.

Replace the temporary screws in the top and bottom bolt housings with "one-way" screws.

INSTALL COVER
Remove the VRA handle and install the cover with two pan-head screws, 1/4" long. Install the handle.

INSTALL ECL(S)
Refer to the instructions provided with the ECL-230 and install the products(s). If a type-C installation with an OKC, install the cylinder before installing the ECL-230.

OVERLAP PLATES
If a type-B installation, install the top and bottom overlap plates with two one-way screws and two Phillips-head screws each. See figure 7.

PROBLEMS?
Contact Customer Service at 1-800-729-3839
FIGURE 7 ILLUSTRATED PARTS BREAKDOWN

Overlap plate, VRA-173
2 required, type B only
one-way screws,
#10 x 1" type AB
2 per plate
type AB Phillips - head screws
#10 x 1", 2 per plate

Strike, closed back
VRA-161
For type - C only

Cover, VRA-179
#8-32 x 3/16"
Pan-head machine screws, (2)

Handle, VRA-137

Cotter-pin
PP-5096-7G, 2 required

Upper strike plate
VRA-121
#10 x 3/4" flat-head screws (2)

Upper bolt, VRA-139

Bolt housing, VRA-119 (2)
One-way screws, #10 x 1" type AB, 2 per housing
Phillips-head screws, #10 x 1" type AB, 2 per housing

Upper rod, VRA-144, specify door height in inches

Rod guide, VRA-117 (2)
#10 x 3/4" oval-head screws, type AB
(2 per guide)

Spring, VRA-193, 2 required

Washer, PP-5063-37, 2 required

Base assembly, VRA-192

Pin, VRA-135, 2 required

Cotter-pin, PP-5096-7G, 2 required

Lower rod, VRA-118

Jam nut, PP-5062-37

Lower bolt, VRA-129

Lower strike plate, VRA-127
#10 x 3/4" flat-head screws, type AB

Cut rod here
if necessary.
NOTE: DIMENSIONS MAY NOT BE ACCURATE WHEN PRINTING FROM WEBSITE
PLEASE CONFIRM DIMENSIONS WITH RULER BEFORE USE

TEMPLATE A, TOP OF DOOR
VRA INSTALLED ON RH DOOR

HOLES TO BE #25 DRILL (0.150) DIAMETER UNLESS OTHERWISE NOTED

1-1/8” DIAMETER HOLE IN TOP FRAME

FOLD UP ON DASHED LINE

CENTERLINE OF OPENING BETWEEN DOORS

1-3/8 7/8

CENTERLINE OF ROD

1-5/8 3/4 3/4

March 30, 2001
NOTE: DIMENSIONS MAY NOT BE ACCURATE WHEN PRINTING FROM WEBSITE
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TEMPLATE B, BOTTOM OF DOOR VRA INSTALLED ON RH DOOR

1-3/8  7/8  1-13/16

3/4  3/4

2

15/16

FOLD UP ON DASHED LINE

CENTERLINE OF OPENING BETWEEN DOORS
CENTERLINE OF ROD

TYPHO S HOLES FOR TYPE B INSTALLATION ONLY

HOLES TO BE #25 DRILL (0.150) DIAMETER UNLESS OTHERWISE NOTED

7/8" DIAMETER HOLE IN FLOOR OR THRESHOLD

March 30, 2001
NOTE: DIMENSIONS MAY NOT BE ACCURATE WHEN PRINTING FROM WEBSITE
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TEMPLATE C, TOP OF DOOR
VRA INSTALLED ON LH DOOR

1-1/8" DIAMETER HOLE IN FRAME

7/8  7/8  15/16

Holes to be #25 drill (0.150) diameter unless otherwise noted

FOLD UP ON DASHED LINE

CENTERLINE OF ROD

3/4  3/4

CENTERLINE OF OPENING BETWEEN DOORS

1-5/16

1-5/8

March 30, 2001
NOTE: DIMENSIONS MAY NOT BE ACCURATE WHEN PRINTING FROM WEBSITE
PLEASE CONFIRM DIMENSIONS WITH RULER BEFORE USE

TEMPLATE D, BOTTOM OF DOOR
VRA INSTALLED ON LH DOOR

CENTERLINE OF ROD

1-13/16

3/4

3/4

1-5/8

1-5/16

5/8

7/8

7/8

7/8" DIAMETER HOLE IN FLOOR OR THRESHOLD

FOLD UP ON DASHED LINE

HOLES TO BE #25 DRILL (0.150) DIAMETER UNLESS OTHERWISE NOTED

March 30, 2001
INSTALLATION TEMPLATE FOR TYPE C INSTALLATION

REINFORCING BY DOOR MFR
ALL HOLES #10-24 TAP
FOR DOOR PREP IN FIELD, PRODUCE
HOLES FOR #10 THREAD-FORMING
SCREWS.

CYLINDER CENTER
FOR OUTSIDE KEY
CONTROL.

1-1/4" DIAM HOLE
THROUGH DOOR.

BOLT L

4-1/8

1-1/8

1-1/4

2-3/8

3/16

2-5/8

4-1/4

1-3/4

3/16

5/16

13/16

4-1/4

5/16

4-9/16

1-1/4

2-5/8

3-7/8

4-1/2

1-1/8

4-1/2

BOLT L

CKC CENTER

ALL DIMENSIONS IN INCHES

TPL-VRA-F

March 30, 2001