UL 14C

STANDARD FOR SAFETY

Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs

UL Standard for Safety for Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs, UL 14C

Eighth Edition, Dated October 27, 2006

Summary of Topics

This revision of ANSI/UL 14C dated October 1, 2021 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated August 13, 2021.

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UL 14C

Standard for Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs

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This ANSI/UL Standard for Safety consists of the Eighth edition including revisions through October 1, 2021.

The most recent designation of ANSI/UL 14C as a Reaffirmed American National Standard (ANS) occurred on October 1, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

The Department of Defense (DoD) has adopted UL 14C on October 29, 1984. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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INTRODUCTION

1 Scope

1.1 These requirements apply to hardware for swinging fire doors which have demonstrated in fire tests fire-resistive properties warranting their use with two-ply and three-ply tin-clad fire doors tested in accordance with the Standard for Fire Tests of Door Assemblies, UL 10B (NFPA No. 252).

1.2 Requirements for the location and time rating required for fire doors are contained in the International Building Code (IBC). Requirements for the installation of swinging two-ply and three-ply tin-clad fire doors are included in the Standard for Fire Doors and Other Opening Protectives, NFPA No. 80.

1.3 The hardware included in these requirements is intended for mounting standard two-ply and three-ply tin-clad swinging fire doors for protection of openings not exceeding the dimensions for the hourly classifications indicated in Table 1.1.

Table 1.1
Limitations in types and dimensions

Type of door	Maximum area, square feet	Maximum area, (m^2)	Maximum width, feet	Maximum width, (m)	Maximum height, feet	Maximum height, (m)	Hourly rating or class designation
3-ply, single	–	–	6	1.8	12	3.6	3, 1-1/2, 1, 3/4
3-ply, in pairs	–	–	10	3.1	12	3.6	3, 1-1/2, 1, 3/4
2-ply, single	–	–	6	1.8	10	3.1	1-1/2, 1, 3/4
2-ply, in pairs	80	7.4	10	3.1	10	3.1	1-1/2, 1, 3/4

1.4 These requirements do not cover automatic releasing or closing mechanisms.

1.5 *Deleted*

2 Units of Measurement

2.1 When a value for measurement is followed by a value in other units in parentheses, the second value is only approximate. The first stated value is the requirement. SI units as employed are in accordance with the Standard for Practice for Use of the International System of Units (SI) (the Modernized Metric System) ASTM E380-91a.

2.2 The tolerance for all dimensions shall be as specified with the dimension. Where no tolerance is shown, the tolerances specified in Appendix B shall apply. See Appendix B for specifications.

3 Undated References

3.1 Any undated reference to a code or standard appearing in the requirements of this standard shall be interpreted as referring to the latest edition of that code or standard.

CONSTRUCTION

4 General

4.1 Each complete set of hardware for swinging tin-clad fire doors shall include:

a) For Doors Mounted Singly – Wall strips, except for openings supplied with standard steel frames, hinge brackets, hinge straps, latch straps, latch catches, connecting bar, operating handle mechanism, latch spring, and required washers, rivets, and bolts to mount hardware on the door and wall.

b) For Doors Mounted in Pairs – In addition to the above members, top and bottom bolts and top and bottom 1/2 keepers for standing doors.

4.2 All hardware parts shall be made of wrought or malleable iron or steel.

4.3 The number and spacing of hinges and latches depend on the door sizes. See Table 5.1 and Table 5.2.

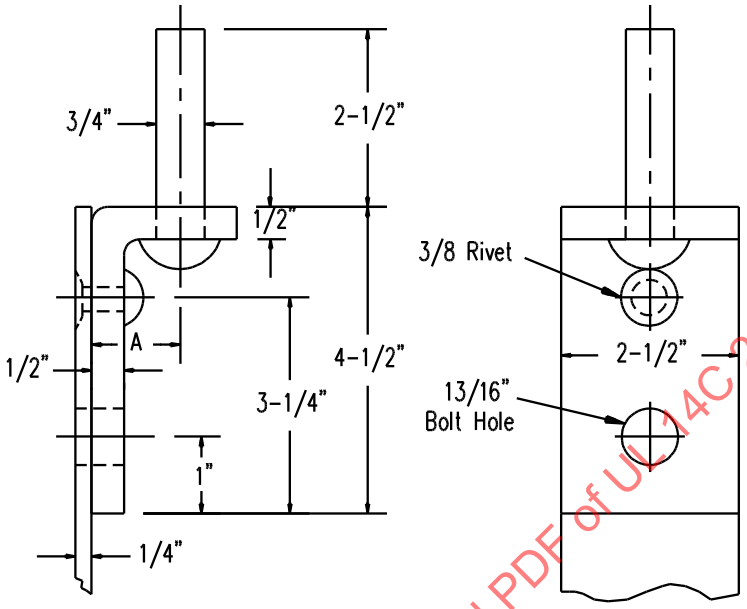
5 Hinges for Doors Mounted Singly and in Pairs

5.1 Hinge straps

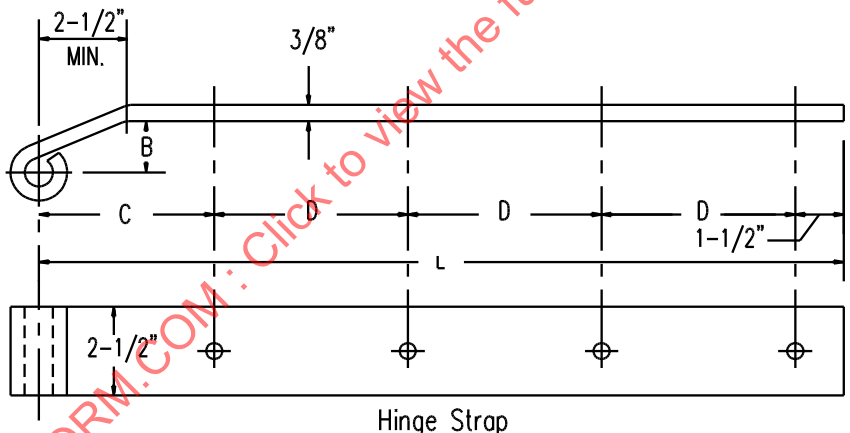
5.1.1 A hinge strap shall be made of steel 2-1/2 inches (64 mm) wide and 3/8 inch (9.5 mm) thick, shall have an eye 13/16 inch (20.6 mm) in diameter in one end, and shall be provided with bolt holes 7/16 inch (11.1 mm) in diameter at not more than 12 inch (305 mm) centers. The first hole shall be located not more than 6 inches (152 mm) from the center of the hinge eye, and the last hole shall be located at not exceeding 1-1/2 inches (38 mm) from the opposite end and shall be offset at the hinge eye as shown in Figure 5.1.

Figure 5.1

Hinge strap and hinge bracket and bolt details



Hinge Bracket, Showing Attachment To Hinge Wall Strip



Hinge Strap

A = { 1-3/8 inches for 3-ply doors; 1 inch for 2-ply doors }

B = { 1-1/8 inches for 3-ply doors; 3/4 inch for 2-ply doors }

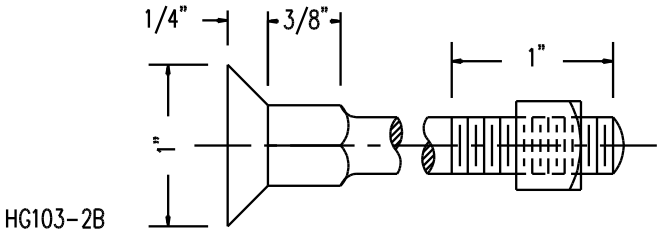
C = Not over 6 inches

D = Not over 12 inches

L = See Table 5.2

Hinge Strap and Hinge Bracket, Showing Attachment to Hinge Wall Strip.

Hinge Strap Bolt



Note: See Appendix A for SI Equivalents.

5.2 Hinge brackets

5.2.1 A hinge bracket secured to a hinge wall strip shall be made of steel 2-1/2 inches (64 mm) wide by 1/2 inch (12.7 mm) thick, bent at right angles. The vertical leg shall be 4-1/2 inches (115 mm) long. Length of the horizontal leg depends upon the type of installation. The vertical leg shall be provided with a rivet hole 13/32 inch (10.3 mm) in diameter and a wall bolt hole 13/16 inch (20.6 mm) in diameter. The horizontal leg shall be provided with a round-shouldered steel pin 3/4 inch (19.1 mm) in diameter extending 2-1/2 inches (64 mm) from the bracket and riveted over as shown in Figure 5.1.

5.2.2 When hinge wall strips are included, the hinge brackets shall be riveted to the strips at the factory.

5.2.3 When hinge wall strips are not provided, the hinge brackets shall be provided with two 9/16 inch (14.3 mm) bolt holes. A bracket shall be at least 1-1/2 inches (38 mm) wide, and the vertical leg shall be not less than 4-1/2 inches (115 mm) long. The length of the horizontal leg varies according to the type of installation.

5.2.4 When hinge wall strips are not provided, a bolt for securing a hinge bracket to a steel frame shall not be less than 1/2 inch (12.7 mm) in diameter.

5.3 Hinge wall strips

5.3.1 A hinge wall strip shall be made of steel, 2-1/2 inches (64 mm) wide and 1/4 inch (6.4 mm) thick. The length shall be equal to the distance between the top edge of the top bracket and the bottom edge of the bottom bracket. Rivet holes 13/32 inch (10.3 mm) and wall bolts holes 13/16 inch (20.6 mm) in diameter shall be provided.

5.4 Hinge wall strip bolts

5.4.1 A wall bolt for attaching hinge wall strips and brackets to a wall shall be 3/4 inch (19.1 mm) in diameter, the length to depend on the wall thickness.

5.5 Bolts for attaching hinge straps to doors

5.5.1 A bolt for attaching a hinge strap to a door shall be a 3/8 inch (9.5 mm) countersunk-head carriage bolt with nut, 3-1/4 inches (83 mm) long for three-ply doors and 2-1/2 inches (64 mm) long for two-ply doors. For details, see Figure 5.1. The number of bolts used on each hinge strap depends on the size of the door, as shown in Table 5.1.

Table 5.1
Length of hinges and number of holes for doors of different widths

Width of door,		Hinges			Intermediate hinges		
		Length,		Number of holes	Length,		Number of holes
inches	(mm)	inches	(m)		inches	(m)	
18 – 21	0.46 – 0.53	16	0.41	2	7	0.18	2
22 – 24	0.56 – 0.61	19	0.48	2	11	0.28	2
25 – 28	0.64 – 0.71	22	0.56	3	14	0.36	2
29 – 32	0.74 – 0.81	25	0.64	3	19	0.48	2
33 – 36	0.84 – 0.91	28	0.71	3	22	0.56	3
37 – 40	0.94 – 1.02	31	0.79	3	25	0.64	3

Table 5.1 Continued on Next Page

Table 5.1 Continued

Width of door,		Hinges			Intermediate hinges		
		Length,		Number of holes	Length,		Number of holes
inches	(mm)	inches	(m)		inches	(m)	
41 – 44	1.04 – 1.12	34	0.86	4	28	0.71	3
45 – 48	1.14 – 1.22	37	0.94	4	34	0.86	4
49 – 52	1.24 – 1.32	40	1.02	4	37	0.94	4
53 – 56	1.35 – 1.42	43	1.09	4	40	1.02	4
57 – 60	1.45 – 1.52	46	1.17	5	46	1.17	5
61 – 64	1.55 – 1.63	49	1.24	5	49	1.24	5
65 – 68	1.65 – 1.73	52	1.32	5	52	1.32	5
69 – 72	1.75 – 1.83	55	1.40	5	55	1.40	5

5.6 Washers

5.6.1 Washers for the above bolts shall be made of cast steel or of malleable iron. Those used with 3/4 inch (19.1 mm) bolts shall be 4 inches (102 mm) in diameter, 3/4 inch (19.1 mm) thick under the head, and not less than 1/2 inch (12.7 mm) thick at other points. Washers used with 1/2 inch (12.7 mm) bolts shall be 3 inches (76 mm) in diameter, 1/2 inch (12.7 mm) thick under the head, and not less than 3/8 inch (9.5 mm) thick at other points.

5.7 Hinge locations

5.7.1 Upper and lower hinge straps shall be spaced not less than 8 inches (203 mm) nor more than 14 inches (356 mm) from the top and bottom of the door.

5.7.2 The number of hinges is based on the door sizes, not on the size of the opening. See Table 5.2. For widths or heights involving fractions of an inch, the next higher full inch is to be used.

Table 5.2
Number of hinges for doors of different sizes

Height of door		Width of door				
		Up to 24 inches (610 mm)	25 – 36 inches (635 – 915 mm)	37 – 48 inches (940 – 1220 mm)	49 – 60 inches (1245 – 1525 mm)	61 – 72 inches (1550 – 1830 mm)
Feet – inches	(m)	No. of hinges	No. of hinges	No. of hinges	No. of hinges	No. of hinges
Up to 5'0"	1.52 m	2	2	2	2	2
5'1" – 6'6"	1.55 – 1.98 m	2	2	2	3	3
6'7" – 8'6"	2.01 – 2.59 m	2	2	2	3	4
8'7" – 10'6"	2.62 – 3.20 m	3	3	3	4	4
10'7" – 12'4"	3.23 – 3.76 m	4	4	4	4	4

5.7.3 The length of a hinge and the number of holes for attachment are based on the door size, not on the size of the opening. See Table 5.1. For widths involving fractions of an inch, the next higher full inch is to be used.

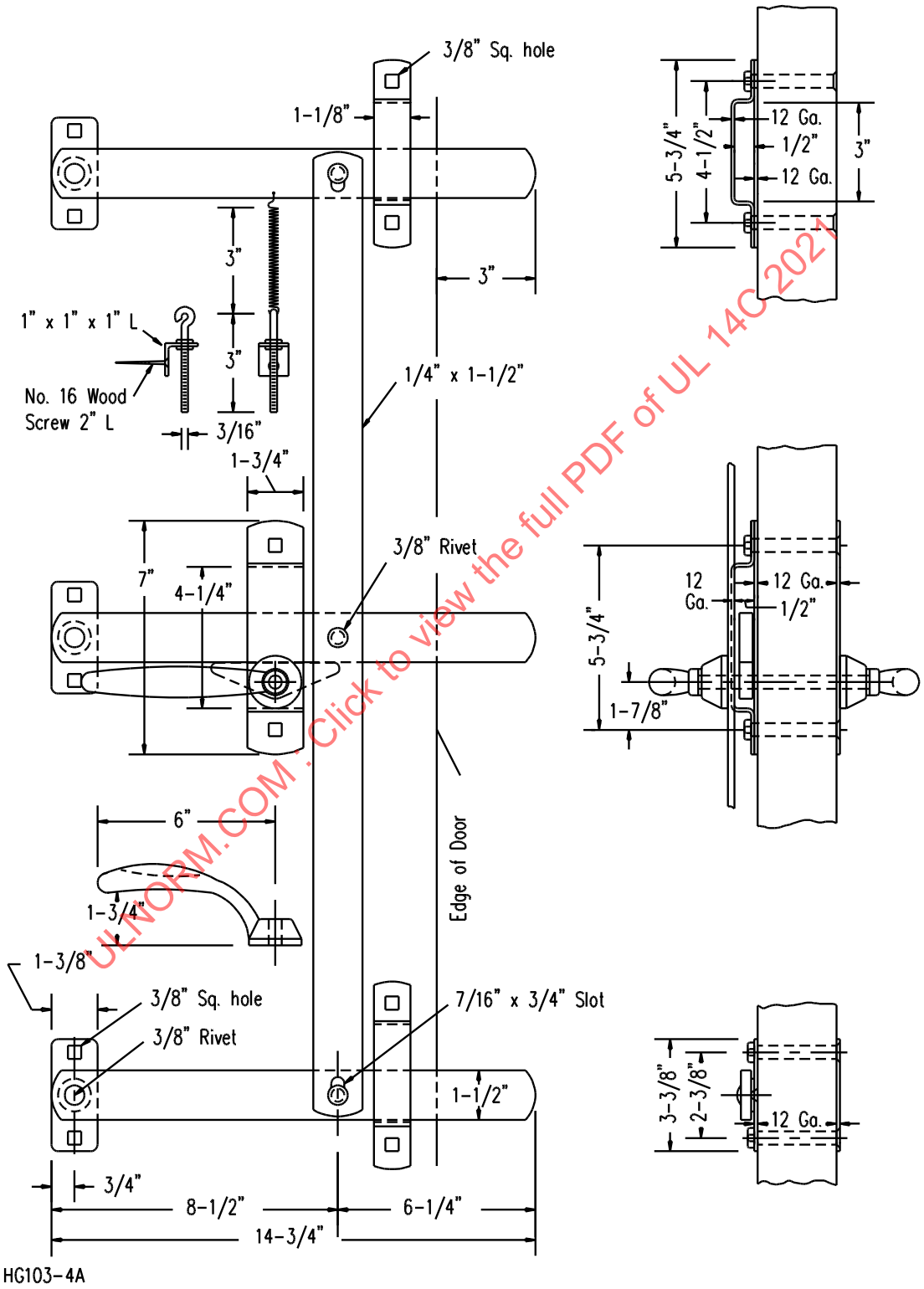
6 Locking Mechanisms for Doors Mounted Singly and in Pairs

6.1 Latch straps

6.1.1 A latch strap shall be made of steel, 1-1/2 inches (38 mm) wide, 3/8 inch (9.5 mm) thick by 14-3/4 inches (375 mm) long, with rounded corners, and shall be provided with 13/32 inch (10.3 mm) rivet holes located 3/4 inch (19.1 mm) and 8-1/2 inches (216 mm), respectively, from the pivot end. Details are shown in Figure 6.1.

Figure 6.1

Locking mechanism, including pivot plates, latch guides, latch connecting bar, and operating handle mechanism



Note: See Appendix A for SI Equivalents.

6.1.2 Latch straps shall be riveted at the factory to the pivot plates and latch connecting bar with 3/8 inch (9.5 mm) rivets.

6.2 Pivot plates

6.2.1 A pivot plate shall be made of not less than 0.093 inch (2.36 mm) thick steel, 1-3/8 inches (34.9 mm) wide by 3-3/8 inches (86 mm) long, and shall be provided with 5/16 inch (7.9 mm) square holes located 1/2 inch (12.7 mm) from each end, and with a 3/8 inch (9.5 mm) rivet hole located at the center. Details are shown in Figure 6.1.

6.2.2 A companion plate identical with the pivot plate, except for the omission of the center rivet hole, shall be provided for the side of the door opposite the latches.

6.2.3 Pivot plates shall be riveted at the factory with a 3/8 inch (9.5 mm) rivet to the latch strap. A 1/16 inch (1.6 mm) round washer shall be located between the pivot plate and the latch strap.

6.2.4 Each pivot plate shall be provided with two 3/8 inch (9.5 mm) countersunk carriage bolts and nuts, 3 inches (76 mm) long for three-ply doors and 2-1/4 inches (57 mm) long for two-ply doors.

6.3 Latch guides

6.3.1 A latch guide, as shown in Figure 6.1, shall consist of two members made of not less than 0.093 inch (2.36 mm) thick steel, 1-1/8 inches (28.6 mm) wide by 5-3/4 inches (146 mm) long overall. One member shall be flat, and the other provided with an offset measuring 1/2 by 3 inches (12.7 by 76 mm). Each member shall have a 3/8 inch (9.5 mm) square bolt hole located 5/8 inch (15.9 mm) from the end.

6.3.2 A latch guide constructed as shown in Figure 6.1 shall be furnished for all latch straps except that at which the operating handle mechanism is located.

6.3.3 Each latch guide plate shall be provided with two 3/8-inch (9.5 mm) carriage bolts and nuts, 3 inches (76 mm) long for three-ply doors and 2-1/4 inches (57 mm) long for two-ply doors.

6.4 Latch connecting bars

6.4.1 A latch connecting bar shall be made of steel, 1-1/2 inches (38 mm) wide by 1/4 inch (6.4 mm) thick. Its length shall be equal to the distance between the top edge of the top latch strap and the bottom edge of the bottom latch strap. It shall be provided with a 7/16 inch (11.1 mm) rivet hole at the point of attachment to the latch at which the operating handle mechanism is located, and with 7/16 by 3/4 inch (11.1 by 19.1 mm) slots at the point of attachment to other latch straps. Details are shown in Figure 6.1.

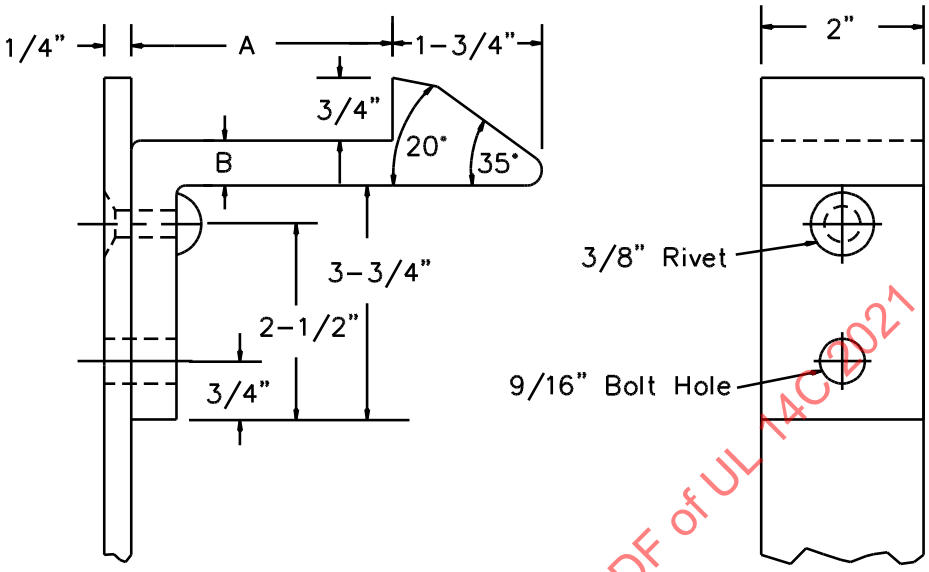
6.4.2 Latch straps shall be riveted at the factory to the latch connecting bar with 3/8 inch (9.5 mm) rivets.

6.5 Latch catches

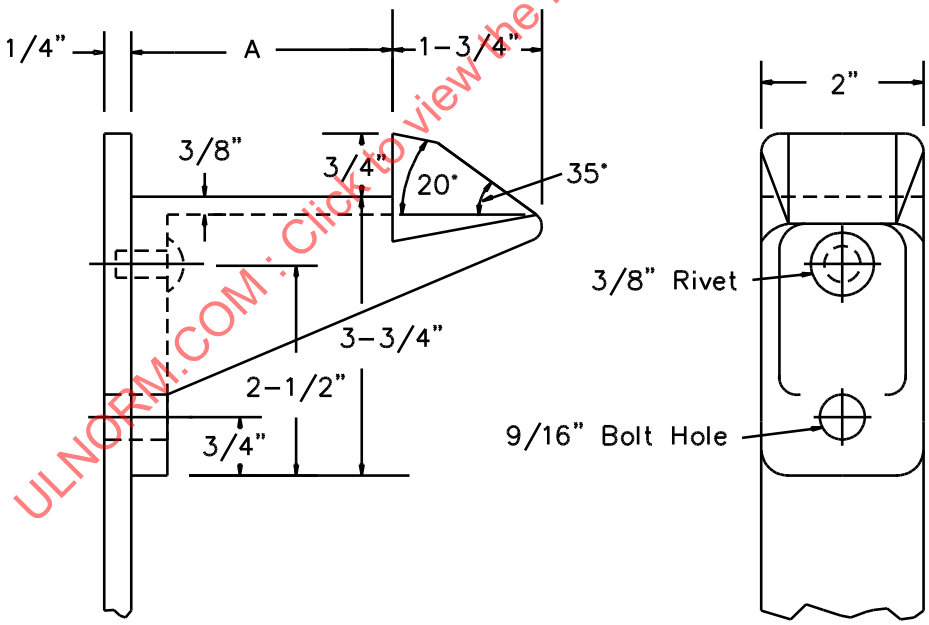
6.5.1 A latch catch for a door mounted singly shall be made of wrought or malleable iron in the form of an angle. The vertical portion shall be 3-3/4 inches (95 mm) long, with a 9/16 inch (14.3 mm) bolt hole and a 3/8 inch (9.5 mm) rivet hole if latch wall strips are provided. The horizontal portion shall be formed as shown, beveled at the end, and recessed 3/4 inch (19.1 mm) at 1-3/4 inches (45 mm) from the end. Details are shown in Figure 6.2.

Figure 6.2

Latch catches for flush doors and for overlap doors



WROUGHT-IRON CATCH



MALLEABLE-IRON CATCH

A = 1/2 inch

A = { 3-1/8 inches for 3-ply doors
    { 2-3/8 inches for 2-ply doors

B = 1/2 inch for overlap doors

B = 3/8 inch for flush doors

HG103-3A

Note: See Appendix A for SI Equivalents.

6.5.2 When latch wall strips are not provided, latch catches for installation on steel door frames shall have two 7/16 inch (11.1 mm) holes in the vertical leg, for 3/8 inch (9.5 mm) bolts or rivets.

6.6 Latch catch wall strips

6.6.1 A latch catch wall strip shall be made of steel, 2 inches (51 mm) wide by 1/4 inch (6.4 mm) thick. Its length shall be equal to the distance between the top edge of the top catch and the bottom edge of the bottom catch. Details are shown in Figure 6.2.

6.7 Latch catches for doors mounted in pairs

6.7.1 A latch catch for doors mounted in pairs shall be made of wrought or malleable iron in the form of an angle. The vertical portion shall be 3-3/4 inches (95 mm) long, and shall be provided with two 7/16 inch (11.1 mm) bolt holes. The horizontal portion shall be 2-7/16 inches (62 mm) long, beveled at the end, and recessed 3/4 inch (19.1 mm) at 1-3/4 inches (45 mm) from the end.

6.7.2 A steel plate of not less than 0.093 inch (2.36 mm) thickness, 2 inches (51 mm) wide by 3-3/4 inches (95 mm) long, shall be provided for the side of the door opposite the catches. Holes shall be provided in this plate for two 3/8 inch (9.5 mm) bolts.

6.8 Bolts for attaching catches– doors mounted in pairs

6.8.1 A bolt for attaching a catch on doors mounted in pairs shall be a 3/8-inch (9.5 mm) countersunk-head carriage bolt, 3-1/4 inches (83 mm) long for three-ply doors and 2-1/2 inches (64 mm) long for two-ply doors. Two bolts of each size shall be furnished for each catch.

6.9 Operating handle mechanisms

6.9.1 An operating handle mechanism shall consist of two handles, one latch spindle, one operating lever, and one latch guide. Details are shown in Figure 6.1.

6.10 Handles

6.10.1 A handle shall be substantial in construction, made of steel or malleable iron, shall have a grip not less than 4-1/2 inches (115 mm) long, and shall provide a 1-3/4 inch (45 mm) clearance between each side of the grip and the latch strap. A square hole shall be provided for a 1/2 inch (12.7 mm) spindle.

6.11 Spindles

6.11.1 A spindle shall be made of machine steel, 1/2 inch (12.7 mm) square and 6-1/8 inches (156 mm) long overall for three-ply doors, and 5-5/16 inches (135 mm) long for two-ply doors. The ends shall be rounded and threaded for a distance of 7/8 inch (22.2 mm). A 1/2 inch (12.7 mm) nut shall be provided for each end of the spindle. Details are shown in Figure 6.1.

6.12 Operating levers

6.12.1 An operating lever shall be triangular in shape, 4 inches (102 mm) long, 1-7/16 inches (36.5 mm) wide, and 5/16 inch (7.9 mm) thick, and shall be provided with a square hole for the latch spindle.

6.13 Center latch guides

6.13.1 A center latch guide shall consist of three members made of not less than 0.093 inch (2.36 mm) thick steel, 1-3/4 inches (45 mm) wide and 7 inches (178 mm) long overall. Two members shall be flat and

the other provided with an offset measuring 1/2 by 4-1/2 inches (12.7 by 115 mm). All three members shall have 3/8 inch (9.5 mm) square bolt holes located 5/8 inch (15.9 mm) from the ends, and a 5/8 inch (15.9 mm) round hole for the latch spindle 2-1/2 inches (64 mm) from the lower end.

6.14 Latch springs

6.14.1 A latch spring shall consist of a coiled spring, a screw eye and an attachment angle. Details are shown in Figure 6.1.

6.14.2 A latch spring shall be made of not less than 0.064 inch (1.63 mm) diameter steel spring wire. The coil shall be 2-3/4 inches (70 mm) long and 1/2 inch (12.7 mm) in outside diameter, formed into a hook at one end and a loop at the other.

6.14.3 A screw eye shall be 3/16 inch (4.8 mm) in diameter and 3 inches (76 mm) long, and shall be fastened to the loop of the spring. Two 3/16 inch (4.8 mm) locknuts shall be provided.

6.14.4 An attachment angle shall be a 1- by 1- by 1-inch (25- by 25- by 25-mm) angle made of not less than 0.093 inch (2.36 mm) thick steel. The vertical leg of the angle shall be provided with a 5/16 inch (7.9 mm) hole for a No. 16 (6.9 mm diameter) wood screw, 2 inches (51 mm) long, and the horizontal leg shall be provided with a 1/4 inch (6.4 mm) hole for attachment of the screw eye.

6.15 Number of latches

6.15.1 The number of latches shall conform to the schedule in Table 6.1. For heights involving fractions of inches, the next higher full inch is to be used. The number of latches is based on door height, not opening height.

Table 6.1
Number of latches for doors of different heights

Height of door, inches	(m)	Number of latches
Up to 5 feet 0 inches	1.52 m	2
5 feet 1 inch – 6 feet 6 inches	1.55 – 1.98 m	2
6 feet 7 inches – 8 feet 6 inches	2.01 – 2.59 m	3
8 feet 7 inches – 10 feet 6 inches	2.62 – 3.20 m	4
10 feet 7 inches – 12 feet 4 inches	3.23 – 3.76 m	5

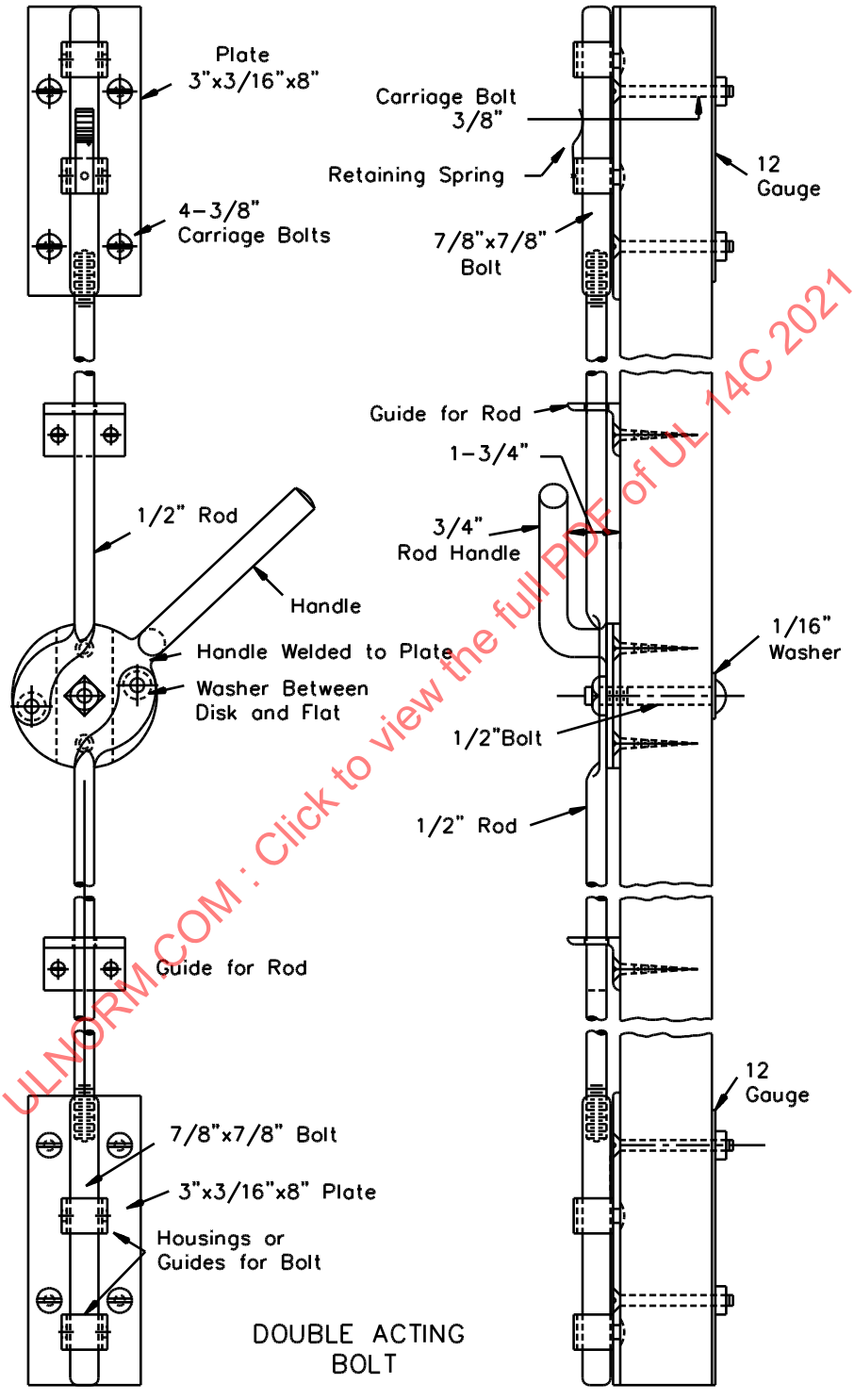
7 Nonautomatic Double-Acting Bolt Mechanisms for Standing Doors of Doors in Pairs

7.1 General

7.1.1 A nonautomatic double-acting top and bottom bolt for the standing door of doors in pairs shall consist of a top bolt and a bottom bolt, a top and a bottom bolt keeper, connecting rods, connecting rod guides, and an operating plate and handle. Details are shown in Figure 7.1.

Figure 7.1

Nonautomatic double-acting top and bottom bolt for standing door, and details



Note: See Appendix A for SI Equivalents.

7.1.2 This locking mechanism for the standing door of doors mounted in pairs is not of the automatic releasing type and shall not be installed on doors intended to close automatically in case of fire.

7.2 Top and bottom bolts

7.2.1 A top and a bottom bolt shall be made of machine steel, 7/8 inch (22.2 mm) square in section and 8 inches (203 mm) long. They shall be provided with a hole in one end, 1-1/2 inches (38 mm) deep, tapped for a 1/2 inch (12.7 mm) connecting rod.

7.3 Top and bottom bolt keepers

7.3.1 A top and a bottom bolt keeper shall be made of steel, 3/16 inch (4.8 mm) thick, 3 inches (76 mm) wide, and 8 inches (203 mm) long. They shall be equipped with two bolt housings made of not less than 0.093 inch (2.36 mm) thick steel having an inside dimension 7/8 inch (22.2 mm) square. A housing shall be securely riveted to the plate by two 1/4 inch (6.4 mm) rivets on each side and shall be provided with four holes for 3/8 inch (9.5 mm) carriage bolts, 2-1/2 inches (64 mm) long for two-ply doors and 3-1/4 inches (83 mm) long for three-ply doors.

7.3.2 A companion plate shall be provided on the side of the door opposite the bolts, made of not less than 0.093 inch (2.36 mm) thick steel, 8 inches (203 mm) long and 3 inches (76 mm) wide, and provided with four holes for 3/8 inch (9.5 mm) attachment bolts.

7.4 Connecting rods

7.4.1 A connecting rod shall be made of round steel, 1/2 inch (12.7 mm) in diameter, with one end threaded for a distance of 1-1/2 inches (38 mm). The opposite end shall be flattened, bent, and drilled for a 3/8 inch (9.5 mm) rivet. The sum of the lengths of the upper and lower connecting rods shall be equal to the height of the door less 13 inches (330 mm).

7.5 Connecting rod guides

7.5.1 A connecting rod guide shall be made from a 1-1/2- by 1-1/2-inch (38- by 38-mm) steel angle 1/4 inch (6.4 mm) thick. One leg shall be provided with a 9/16 inch (14.3 mm) hole for the connecting rod, and the other leg shall be supplied with two 5/16 inch (7.9 mm) holes for No. 16 (6.9 mm diameter) wood screws 2 inches (51 mm) long. At least two rod guides shall be supplied.

7.6 Operating plate and handle

7.6.1 An operating plate shall be made of rolled steel, 1/4 inch (6.4 mm) thick, circular in shape, and 4 inches (102 mm) in diameter, drilled in the center for a 1/2 inch (12.7 mm) through-bolt and provided with two 3/8 inch (9.5 mm) rivet holes for the attachment of the connecting rod.

7.6.2 A handle shall be made of steel, 3/4 inch (19.1 mm) in diameter and 6 inches (152 mm) long, welded to the operating plate and bent so as to provide a clearance of at least 1-3/4 inches (45 mm) between the inside of the grip and the door.

7.6.3 A bearing plate made of not less than 0.093 inch (2.36 mm) thick steel, 4 inches (102 mm) long and 1-1/2 inches (38 mm) wide, shall be provided for use between the door and the operating plate. The bearing plate shall be provided with two 5/16 inch (7.9 mm) holes for No. 16 (6.9 mm diameter) wood screws, 2 inches (51 mm) long, and with a hole in the center of the 1/2 inch (64 mm) steel through-bolt, 2-1/2 inches (64 mm) long for two-ply doors and 3-1/4 inches (83 mm) long for three-ply doors.

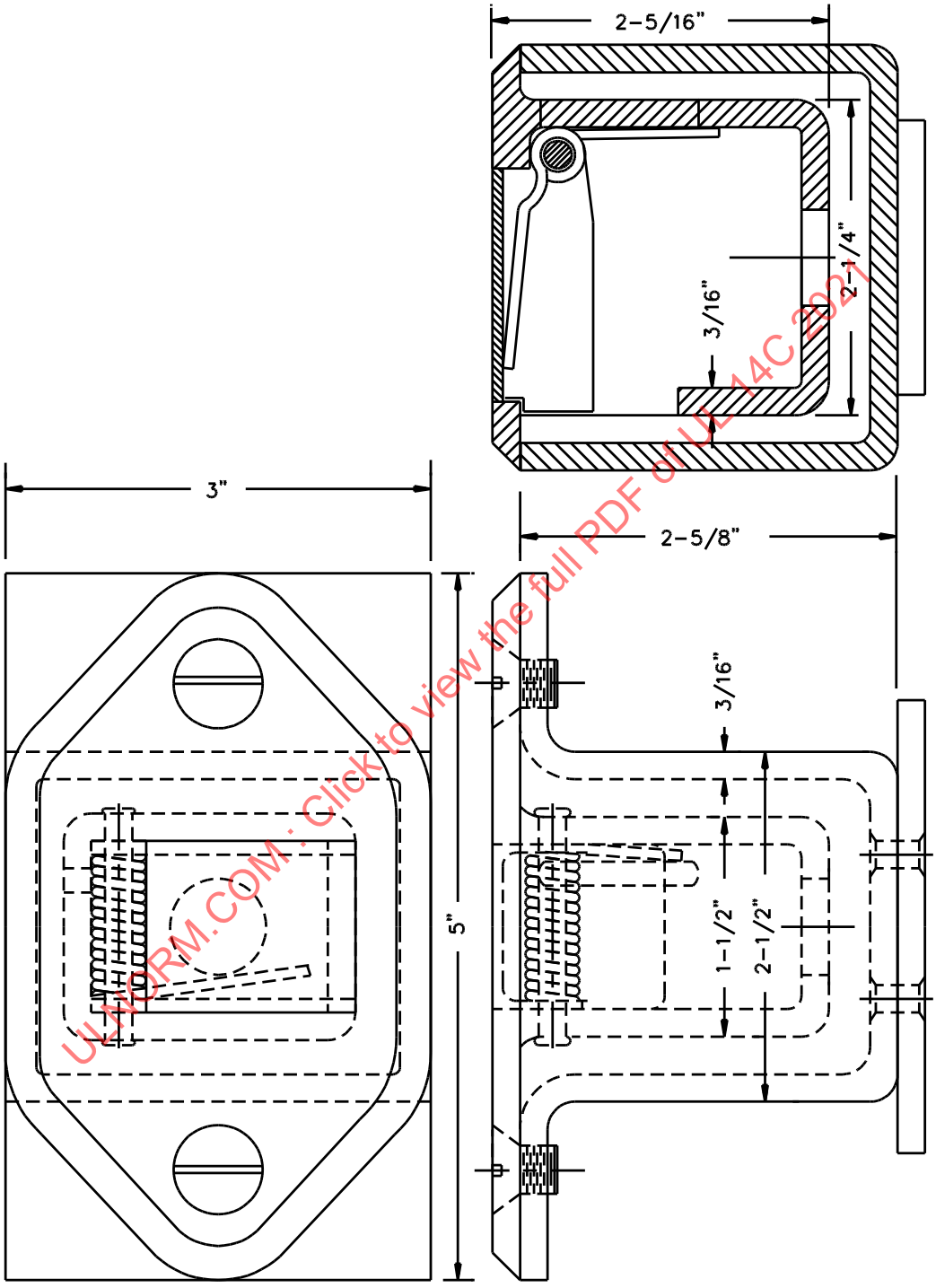
7.6.4 The connecting rods shall be riveted at the factory to the operating plate with 3/8 inch (9.5 mm) rivets. A 1/16 inch (1.6 mm) washer shall be supplied between the plate and the rod.

7.7 Bottom bolt catches for double-acting bolts

7.7.1 A bottom bolt catch for a double acting bolt shall consist of two boxes, one of which fits in the other. When used with a metal sill, the inner box only is required. Details are shown in Figure 7.2.

Figure 7.2

Bottom bolt catch for double-acting bolt



Note: See Appendix A for SI Equivalents.

7.7.2 An outer box shall be made of not less than 0.167 inch (4.24 mm) thick steel, cut and bent into shape, 3 inches (76 mm) long, 2-1/2 inches (64 mm) wide, and 2-5/8 (67 mm) deep. It shall have a strap 3-1/4 inches (83 mm) long by 2 inches (51 mm) wide riveted to the bottom.

7.7.3 An inner box shall be made of cast iron. The box shall be 2-1/4 inches (57 mm) long, 1-1/2 inches (38 mm) wide, and 2-5/16 inches (59 mm) deep. The top shall be flanged and shall contain a spring trap. The trap shall be 1-3/16 inches (30.2 mm) wide by 1-1/2 inches (38 mm) deep. Two 5/16 inch (7.9 mm) machine screws shall be used to fasten the inner box to the outer box.

7.8 Top bolt catches for double-acting bolts

7.8.1 A top bolt catch for a double-acting bolt for a door mounted flush with the wall shall be made of 3/8- by 2-1/2-inch (9.5- by 64-mm) steel, bent at right angles. The horizontal leg shall be 2-3/8 inches (60 mm) long and flared up 1 inch (25.4 mm) from the end, and shall be provided with a hole, 1-1/8- by 1-1/8-inch (28.6- by 28.6-mm), for the top bolt. The vertical leg shall be 9 inches (229 mm) long when intended to be attached to the wall, and 2 inches (51 mm) long when intended to be attached to a metal lintel. It shall be provided with holes for attachment bolts. Details are shown in Figure 7.3.