

TUFFRO

DOOR OPENING SOLUTION

Architectural Hardware

www.tuffro.com

CONTENTS

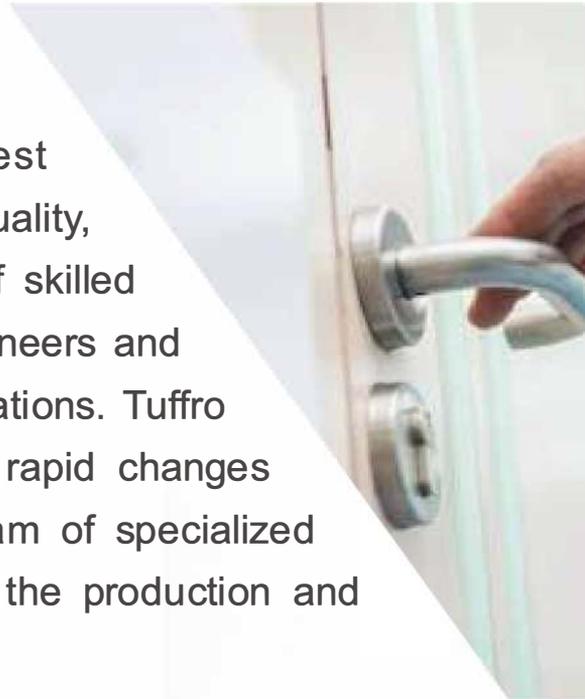
STAINLESS STEEL HINGE	01-32
ELECTRIC TRANSFER DEVICE	33
BRASS HINGE	34
CONCEALED HINGE	35-38
EUROPEAN MORTISE LOCK	39-59
TUBULAR LOCKSET	60
ANSI TUBULAR LOCKSET	61-62
LOCK CYLINDER	63-68
ANSI MORTISE LOCKSET	69-76
PANIC EXIT DEVICE	77-84
DOOR CLOSER	85-96
DOOR COORDINATOR	97-98
HOLLOW LEVER HANDLE	99-110
SOLID LEVER HANDLE	111-118
PULL HANDLE	119-126
LEVER HANDLE WITH PLATE	127-128
SIGN,NAME PLATE,PUSH PLATE	129-130
THUMBTURN WITH INDICATOR	131
ROSETTE & ESCUTCHEON	132
DOOR STOPPER	133-139
BALL CATCH	140
DOOR BOLT	141-144
DOOR GUARD / DOOR CHAIN	145-146
DUST PROOF STRIKE	147
DOOR VIEWER	148
GLASS HINGE	149
GLASS CLIP	150
PATCH FITTING	151-152
FLOOR SPRING	153
FURNITURE HANDLE	154-155
ACCESSORY FOR METAL DOOR	156-157
DOOR BOTTOM SEAL	158
BRAND	159
INSTALLATION GUIDE	160-162
ANSI CODE / FINISH	163-164



TUFFRO

Company Introduction

TUFFRO-The Door Opening Solution is a leading name in the world of ironmongery architectural hardware and furniture fittings. Engineered to the best industrial standards, meeting international quality, safety, durability and reliability. Our team of skilled hardware specialists helps consultants, engineers and architects with various ironmongery specifications. Tuffro adopts modern technologies that adapt to rapid changes and challenges felt in the industry. Our team of specialized engineers source quality raw materials for the production and manufacturing of Tuffro.



Hardware fittings play a very important role in the construction industry for residential and commercial purposes. We offer products that serve as the solution for acquiring safe and secure access to buildings. With over decades of experience and commitment towards our customers, we promise to partner with passion and utmost honesty.





OUR VISION

To provide quality products and services that perfectly meet the needs and requirements of customers and surpass their expectations.



OUR MISSION

To build a long-term and successful relationship with our clients and pursue our goals and strategies through persistent business development and innovative techniques.



Application Technique of Door Hardware

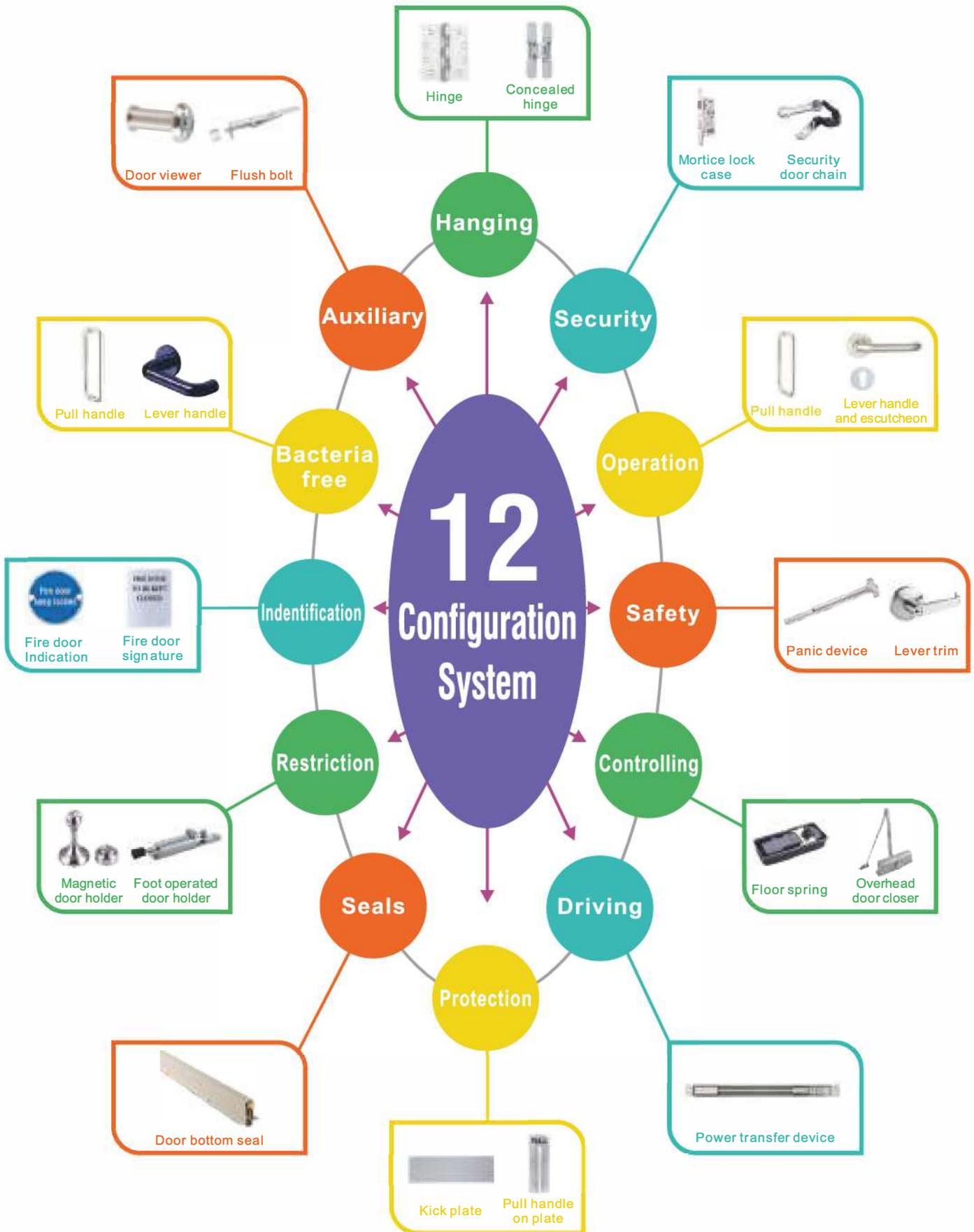
TUFFRO has a very important position in the modern complex function construction project.

Standardized and professional hardware plays an important role in ensuring the operation, safe escape, security, environmental comfort and aesthetic of a building.

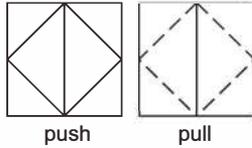
8 considerations of configuration (Core application technology in the industry) as below:

There are many kinds of building hardware with different functions. All the functions can be classified into **12 categories**.

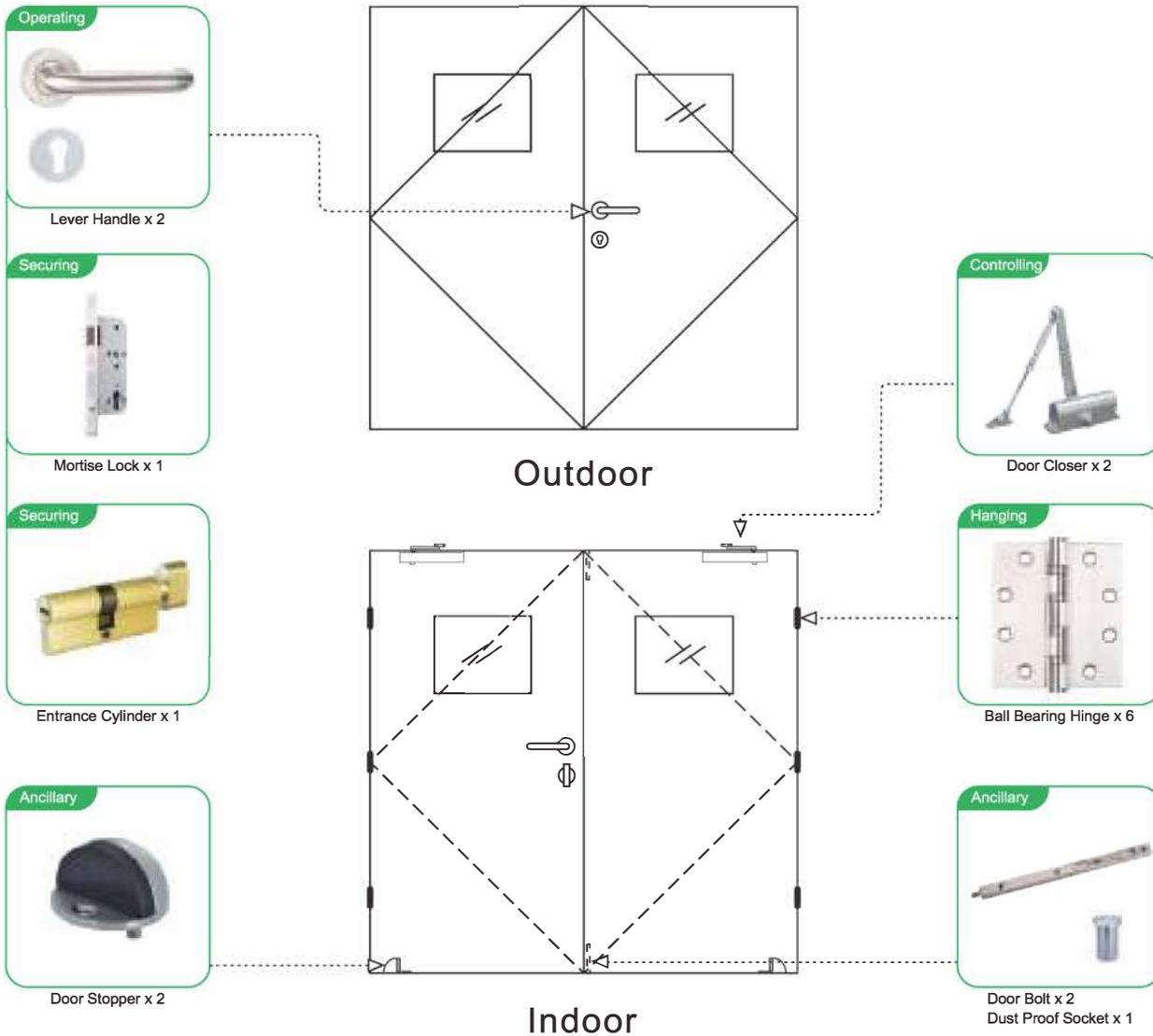




Office

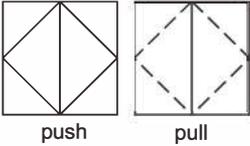


Wooden Double Door Solution (European Configuration)

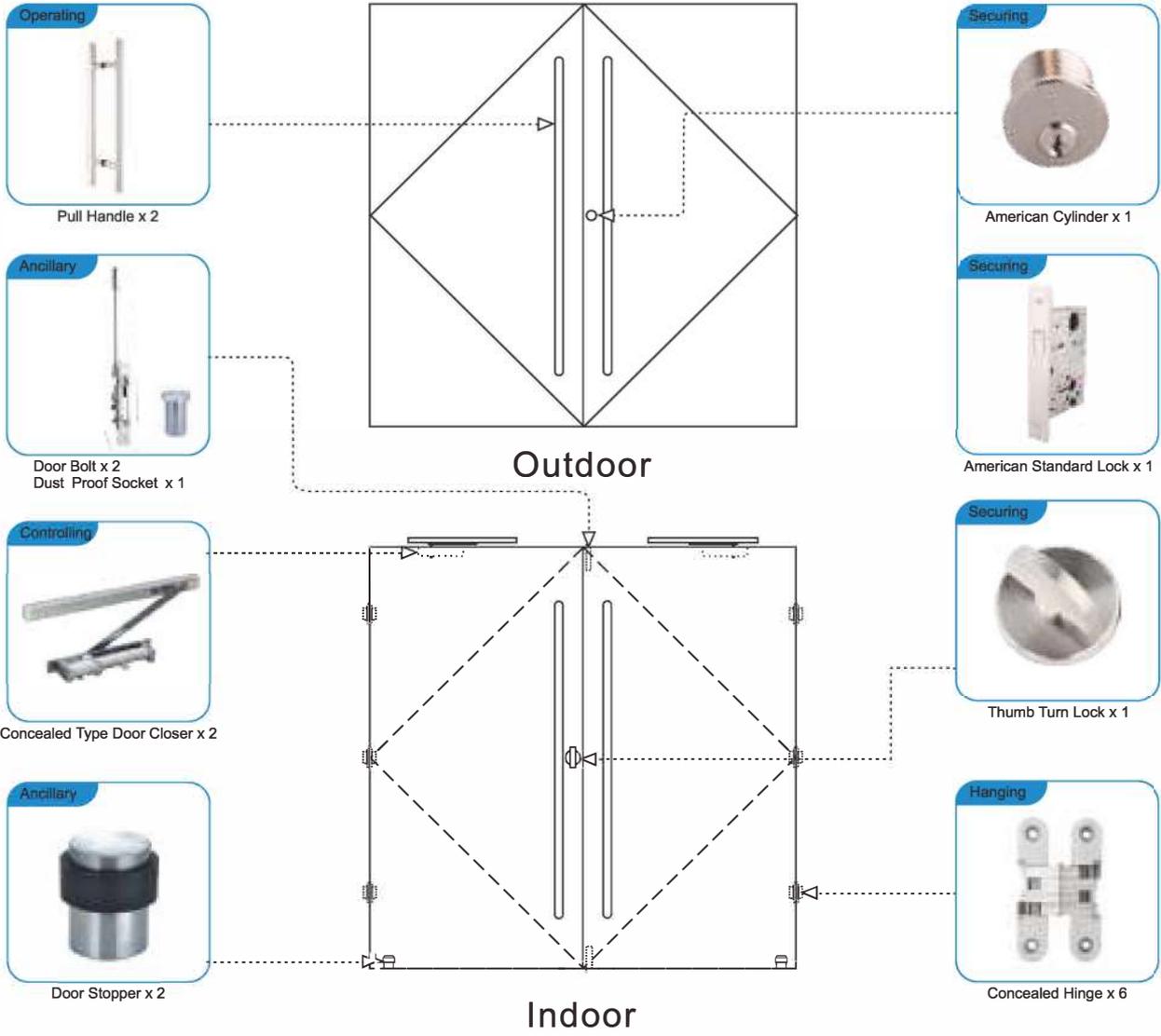


Applicable Building

Residence	<input type="radio"/>	High-grade Residence	<input type="radio"/>	Vllia	<input type="radio"/>	Super Market	<input type="radio"/>
Shopping Mall	<input type="radio"/>	School	<input type="radio"/>	Station	<input type="radio"/>	Hospital	<input checked="" type="radio"/>
Nursing Home	<input type="radio"/>	Hotel	<input checked="" type="radio"/>	5-star Hotel	<input type="radio"/>	Senior Club	<input type="radio"/>
Office Building	<input checked="" type="radio"/>	Senior Office Building	<input checked="" type="radio"/>	Government Building	<input checked="" type="radio"/>	Gymnasium	<input checked="" type="radio"/>
Museum	<input checked="" type="radio"/>	Exhibition Building	<input checked="" type="radio"/>	Terminal	<input checked="" type="radio"/>	Prison	<input type="radio"/>



Metal Double Door Solution (American Configuration)



Applicable Building			
Residence	<input type="radio"/>	High-grade Residence	<input type="radio"/>
Shopping Mall	<input type="radio"/>	School	<input type="radio"/>
Nursing Home	<input type="radio"/>	Hotel	<input checked="" type="radio"/>
Office Building	<input type="radio"/>	Senior Office Building	<input type="radio"/>
Museum	<input checked="" type="radio"/>	Exhibition Building	<input checked="" type="radio"/>
		Vlila	<input type="radio"/>
		Station	<input type="radio"/>
		5-star Hotel	<input checked="" type="radio"/>
		Government Building	<input type="radio"/>
		Terminal	<input type="radio"/>
		Super Market	<input type="radio"/>
		Hospital	<input type="radio"/>
		Senior Club	<input checked="" type="radio"/>
		Gymnasium	<input type="radio"/>
		Prison	<input type="radio"/>

Installation Guide

Recommended hardware locations for hollow metal doors and frames

These standards are recommended by the Hollow Metal Manufacturers Association as representing the long accepted usual preferences of both architects and users under normal conditions of use. Under some circumstances these standard locations are inadvisable for certain items based on accessibility codes. For example, a lower position for the deadlock is possible, when intended usage by small children or handicapped persons necessitates require positioning the user handled items in other than these recommended standard locations.

Hardware location and floor conditions

As shown on the drawing, all hardware items except the upper and intermediate hinges are located by fixed dimensions from the floor to the centerline of the item, making the locations of all user-handled items at the same lever for all door heights. The floor is defined as top of the concrete or structural slab. Refer to "Defining Undercuts" when determining hardware locations based on special floor conditions.

BUTT HINGE

The three hinges shown on the drawing are recommended for doors over 5 ft. 0 in. (1524mm) and including 7 ft. 6 in. (2286mm) in height. For doors of greater heights, where four or more hinges are used, the top and bottom hinges are located as shown, with the intermediate hinges being equally spaced between them. The hinge backset (the dimension from the stop face, or narrow side, to the edge of the hinge cutout) is 1/4 in. (6.4mm).

LOCKSET

Regardless of the type of lock or latch used, the centerline of the lever or knob is located at the 38 in. (965mm) from the floor, for the convenience of the user. This will result in some variation in the strike location, depending on the type of lock used.

EXIT DEVICE

Locations may vary depending on hardware manufacturers' recommended locations or as required by code.

AUXILLIARY DEADLOCK AND LATCH

The recommended location for the deadlock is 46 in. (1168mm) to centerline positioning it so as to avoid interference with through bolts and preparations for other hardware. ADA requires that the centerline of operating element of cylinder be on more than 48 in. (1219mm) above floor.

PUSH-PULL HARDWARE

The recommended location for the center of the grip on a door pull or on a push plate, and the centerline of a push/pull bar is 46 in. (1168mm).

ROLLER LATCH

The recommended location is 46 in. (1168mm) to centerline of latch. Roller latches are generally used with dummy knobs or with push/pulls.

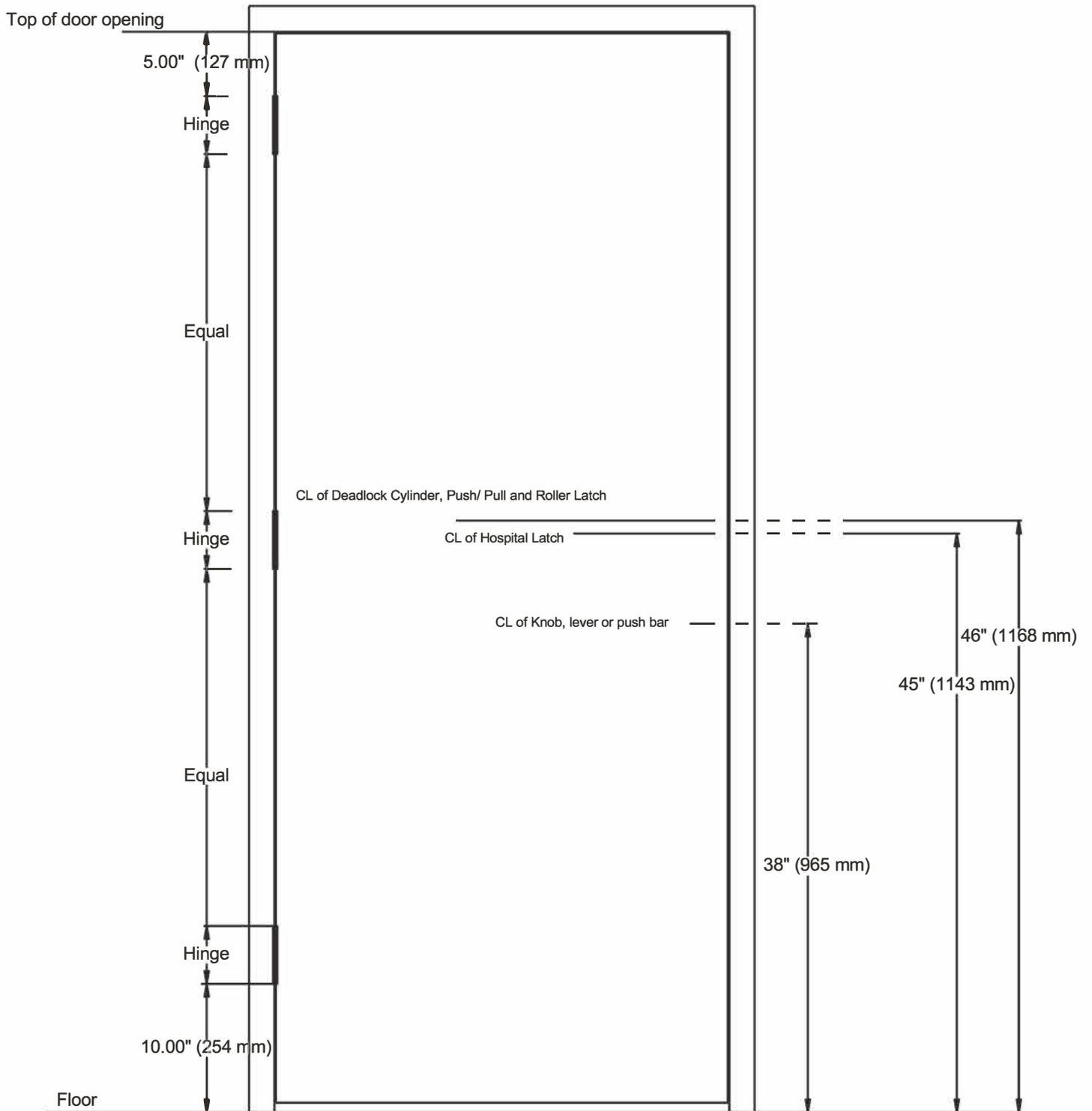
HOSPITAL LATCH

The recommended location is 45 in. (1143mm) to centerline of latch.

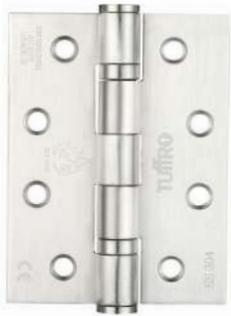
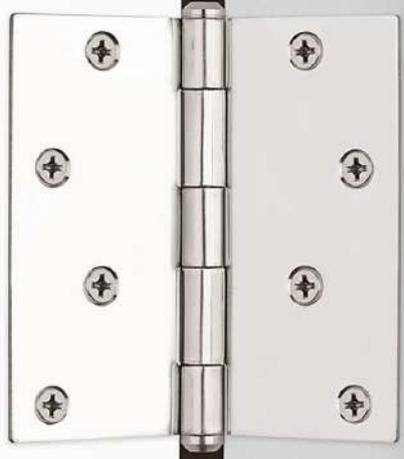
DOOR CONTROL DEVICES (CLOSERS, HOLDERS, STOPS, OPERATORS)

Locations may vary depending on hardware manufacturers' recommended locations or as required by code.

Installation Guide



HINGES



Selecting a Hinge

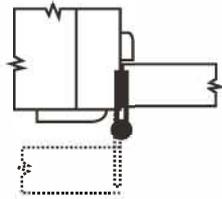
Determine Type of Hinge

- What is the door material (wood, stainless steel, fiberglass, or hollow metal) ?
- What is the frame material (wood, stainless steel, channel iron, or hollow metal) ?

Hinges are manufactured in accordance with ANSI / BHMA A156.1. Self-closing hinges and pivots are in accordance with ANSI / BHMA A156.17 using three hinges per opening on a 3'0" x 7'0" x 1-3/4" (914mm x 2134mm x 44mm) door.

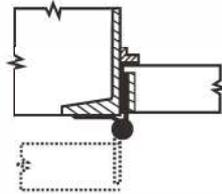
Round corners are available in 1/4" (6mm) (standard) or 5/8" (16mm) radius.

Full Mortise



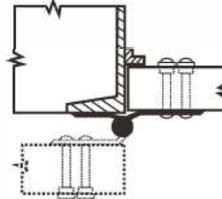
Both leaves are mortised, one leaf in the door and one leaf in the frame
(wood door or hollow metal door with wood frame or hollow metal frame).
4-1/2" x 4-1/2" (114mm x 114mm),US32D

Half Mortise



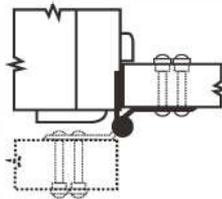
One leaf is mortised in the door and the other is surface applied to the frame
(hollow metal door with channel iron frame).
4-1/2" (114mm),US32D

Full Surface



Both leaves are applied to the surface, one to the door and the other to the frame
(metal core door or hollow metal door with channel iron frame).
5" (127mm),US32D

Half Surface



One leaf is mortised in the frame and the other is surface applied to the face of the door
(wood door with wood frame or metal core door with hollow metal frame).
5" (127mm),US32D

Select the Proper Weight and Bearing Structure

Heavy Weight - Ball Bearing

Example: TFSS002, 5" x 5" (127mm x 127mm),US32D

Standard Weight - Ball Bearing

Example: TFSS001, 4-1/2" x 4-1/2" (114mm x 114mm),US32D

Standard Weight - Plain Bearing

Example: TFSS004, 4" x 4" (102mm x 102mm),US32D

There are two factors that determine the weight and structure of the hinge: weight of the door and frequency of use. It is advisable to include the approximate weight of additional hardware that will be installed on the door.

Determine the Size of Hinge

Thickness of Door	Width of Door	Height of Hinge
1-3/8" (35mm) Door	To 32" (813mm)	3-1/2" (89mm)
1-3/8" (35mm) Door	32" to 36" (813 to 914mm)	4" (102mm)
1-3/4" (45mm) Door	To 36" (914mm)	4-1/2" (114mm)
1-3/4" (45mm) Door	36" to 48" (914 to 1219mm)	5" (127mm)
1-3/4" (45mm) Door	Over 48" (1219mm)	6" (152mm)
2", 2-1/4", 2-1/2" Door (51,57&64mm)	To 42" (1067mm)	5" (127mm) Heavy Weight
2", 2-1/4", 2-1/2" Door (51,57&64mm)	Over 42" (1067mm)	6" (152mm) Heavy Weight

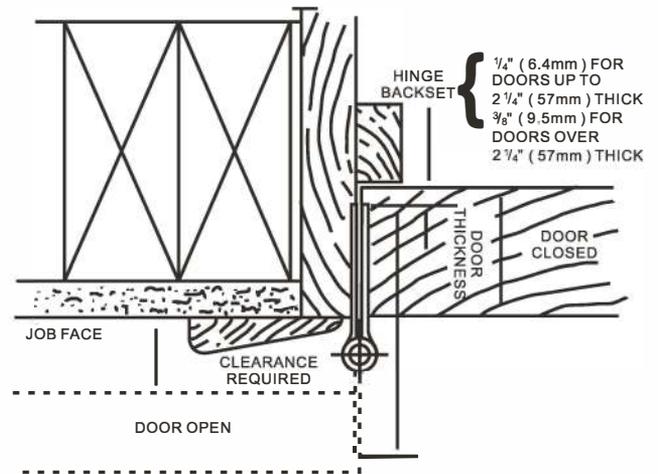
Height of Hinge

There are three dimensions to know in order to determine the minimum width of the hinge: door thickness, backset, and clearance required.

- When figuring the calculations for a wood door and wood frame, the door is flush with the casing or face of the frame.
When figuring the calculations for a wood or metal door with a hollow metal frame, the door is inset approximately 1/8" (3.2mm).
- For doors up to 2-1/4" (57mm) thick, the hinge is set back 1/4" (6.4mm) from the back face of the door.
- For doors over 2-1/4" (57mm) thick, the hinge is set back 3/8" (9.5mm) from the back face of the door.

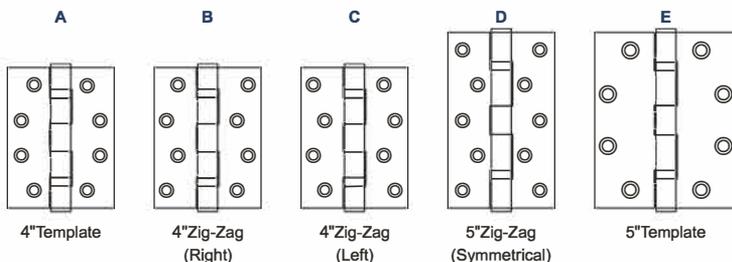
Once these dimensions are known, the formula can then be applied.

Take the door thickness, subtract the backset, multiply by two, and add the clearance required. If the hinge size is not standard, then go to the next larger hinge width. If the width of the hinge is greater than the height of the hinge [example: 4-1/2" x 6" (114mm x 152mm)] this is referred to as a wide throw hinge. This would apply only to full mortise hinges.

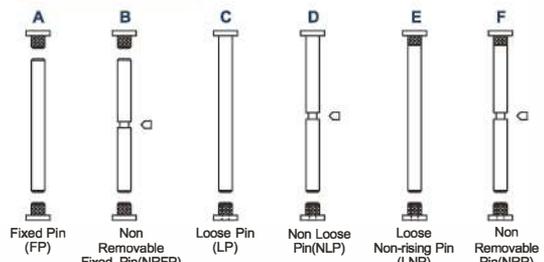


Door Thickness	Standard Backset	Max. Clearance Provided	Width of Hinge
1-3/8" (35mm)	1/4" (6.4mm)	1-1/4" (32mm) 1-3/4" (45mm)	3-1/2" (89mm) 4" (102mm)
1-3/4" (45mm)	1/4" (6.4mm)	1" (25mm) 1-1/2" (38mm) 2" (51mm) 3" (76mm)	4" (102mm) 4-1/2" (114mm) 5" (127mm) 6" (152mm)
2" (51mm)	1/4" (6.4mm)	1" (25mm) 1-1/2" (38mm) 2-1/2" (64mm)	4-1/2" (114mm) 5" (127mm) 6" (152mm)
2-1/4" (57mm)	1/4" (6.4mm)	1" (25mm) 2" (51mm)	5" (127mm) 6" (152mm)
2-1/2" (64mm)	3/8" (9.5mm)	3/4" (19mm) 1-3/4" (45mm)	5" (127mm) 6" (152mm)

Hole Options:



Pin Options:



ANSI/BHMA A156.1 Butts and Hinges



American National Standard Institute (ANSI) ANSI 156.1

This Standard establishes requirements for butts and hinges. Cycle tests, lateral and vertical wear tests, friction tests, strength tests, finish tests, and material and dimensional requirements are included.

ANSI/BHMA A 156.1 Requirements		
Cycle-test	Grade 1: 2,500,000	Heavy Duty 4 Ball Bearings
	Grade 2: 1,500,000	Standard Duty 2 Ball Bearings
	Grade 3: 350,000	Plain Bearing
Fire Test	Pass UL 10 C 3 hours fire test	

Tests described in this Standard are performed under laboratory conditions. In actual usage, results vary because of installation, maintenance and environmental conditions.

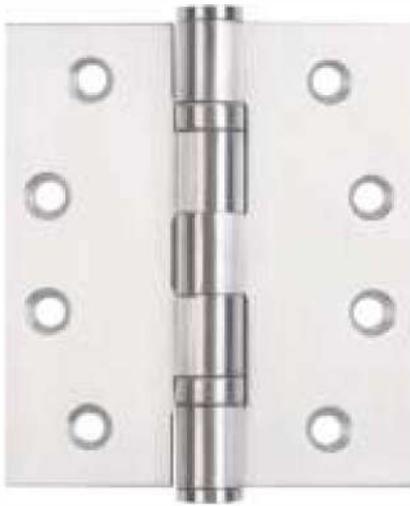
Detection The Size Of Hinge

Height Of Hinge (+0/-0.015in.(+0/-0.4mm))	Thickness Of Hinge (±.005in(±0.83mm))	Number Of Screws Per Hinge
"A" Heavy Duty		
4 1/2"(114mm)	0.180"(4.6mm)	8
5" (127mm)	0.190"(4.8mm)	8
6" (152mm)	0.203"(5.2mm)	10
8" (203mm)	0.203"(5.2mm)	14min.
"B" Stand Duty		
3 1/2"(89mm)	0.123"(3.1mm)	6
4" (102mm)	0.130"(3.3mm)	8
4 1/2"(114mm)	0.134"(3.4mm)	8
5" (127mm)	0.146"(3.7mm)	8
6" (152mm)	0.160"(4.1mm)	10

Detection The Weight Of The Door

Height Of Hinge	Grade 1 And Grade 2 Weight Of The Door	Grade 3 And Grade 4 Weight Of The Door
3" (76mm)	--	40lbs(18kg)
3 1/2"(89mm)	100lbs(45kg)	45lbs(20kg)
4" (102mm)	125lbs(57kg)	60lbs(27kg)
4 1/2"(114mm)	150lbs(68kg)	75lbs(34kg)
5" (127mm)	175lbs(79kg)	100lbs(45kg)
6" (152mm)	230lbs(104kg)	125lbs(57kg)
8" (203mm)	300lbs(135kg)	--

Full Mortise Ball Bearing Hinges



**UL/cUL Listed
Certification**

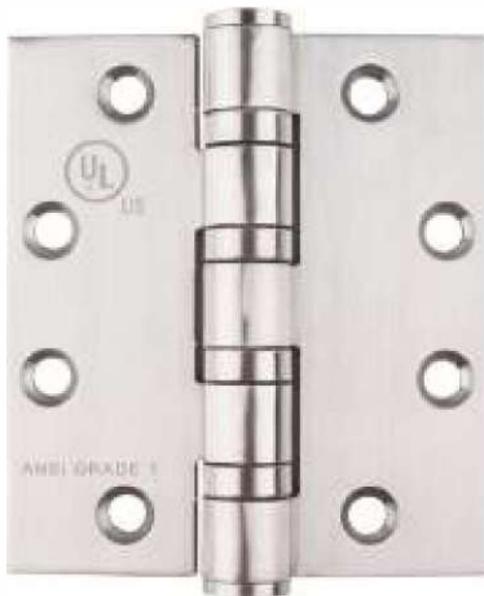


3 Hours Fire-Rated

UL Certificate, In Total 18 Sizes As Following:

4.0"x3.0"x3.0mm	4.0"x3.5"x3.0mm	4.0"x4.0"x3.0mm
4.5"x4.0"x3.0mm	4.0"x4.0"x3.4mm	4.5"x4.0"x4.6mm
4.5"x4.5"x3.0mm	4.5"x4.0"x3.4mm	4.5"x4.5"x4.6mm
5.0"x3.0"x3.0mm	4.5"x4.5"x3.4mm	5.0"x4.0"x4.6mm
5.0"x3.5"x3.0mm	5.0"x4.0"x3.4mm	5.0"x4.5"x4.6mm
5.0"x4.0"x3.0mm	5.0"x4.5"x3.4mm	5.0"x5.0"x4.6mm

Heavy Duty Hinge (ANSI) Four Ball Bearing



Data and Features	TFSS001-ANSI-1	
Size in inch (Height x Width)	4.5 x 4	4.5 x 4.5
Thickness in mm	4.6	4.6
Heavy Duty Doors	•	•
Fire and smoke resistant doors	•	•
Non - handed	•	•
5 Knuckles	•	•
Ball Bearing (2BB or 4BB)	•	•
ANSI & UL mark	•	•
Optional Pin Type		
Non-removable Pin (NRP)		
Removable Pin (RP)	•	•
Security Stud (SS)		

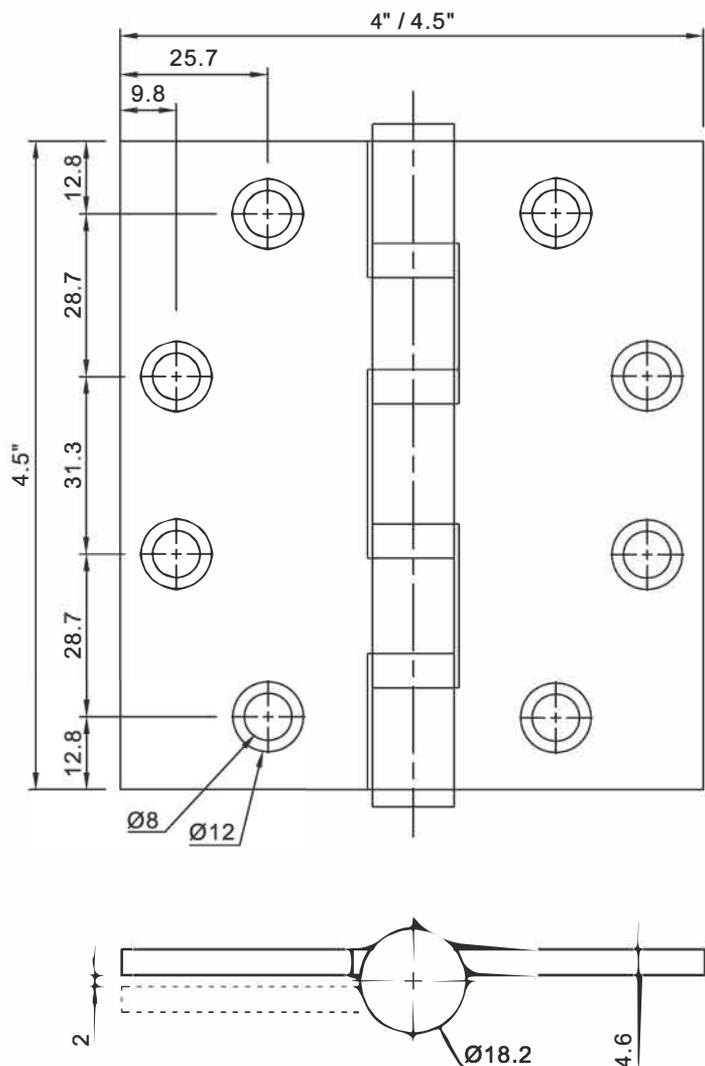
TFSS001-ANSI-1



Art. No.	Height (inch)	Width (inch)	Thickness (mm)
ANSI-4.5x4x4.6mm-4BB	4.5"	4"	4.6
ANSI-4.5x4.5x4.6mm-4BB	4.5"	4.5"	4.6

Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle four ball bearing with non-rising pins with button tip and plug.
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Hole in bottom tip for easy pin removal.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Heavy duty weight template hinge.
- Supplied with SS screws



Standard Weight Hinge (ANSI) Double Ball Bearing

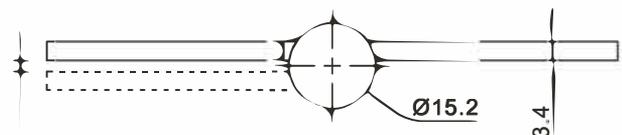
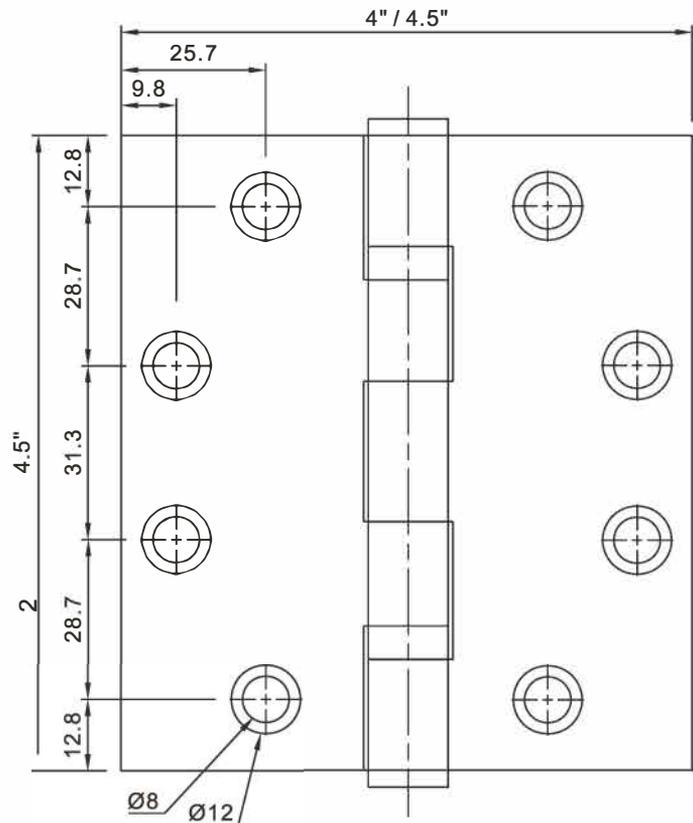


Data and Features	TFSS001-ANSI-2	
Size in inch (Height x Width)	4.5 x 4	4.5 x 4.5
Thickness in mm	3.4	3.4
Standard Doors	•	•
Fire and smoke resistant doors	•	•
Non - handed	•	•
5 Knuckles	•	•
Ball Bearing (2BB or 4BB)	•	•
ANSI & UL mark	•	•
Optional Pin Type		
Non-removable Pin (NRP)	•	•
Removable Pin (RP)		
Security Stud (SS)		

TFSS001-ANSI-2



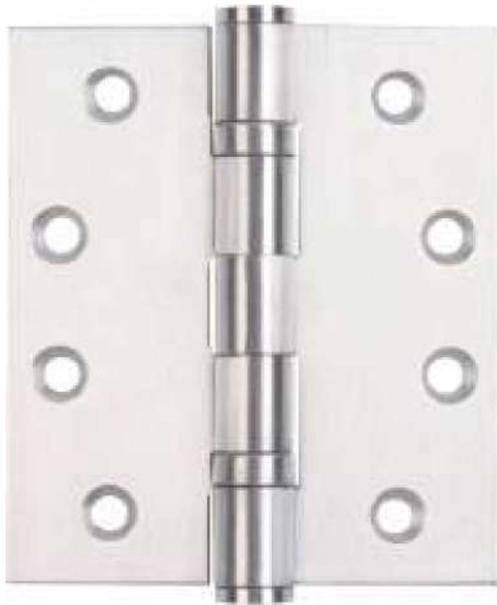
Art. No.	Height (inch)	Width (inch)	Thickness (mm)
ANSI-4.5x4x3.4mm-2BB	4.5"	4"	3.4
ANSI-4.5x4.5x3.4mm-2BB	4.5"	4.5"	3.4



Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle two ball bearing with non-rising pins with button tip and plug.
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Hole in bottom tip for easy pin removal.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight template hinge.
- Supplied with SS screws

Full Mortise Hinge (Fire Rated) Double Ball Bearing



TFSS001-FR

UL/cUL Listed Certification

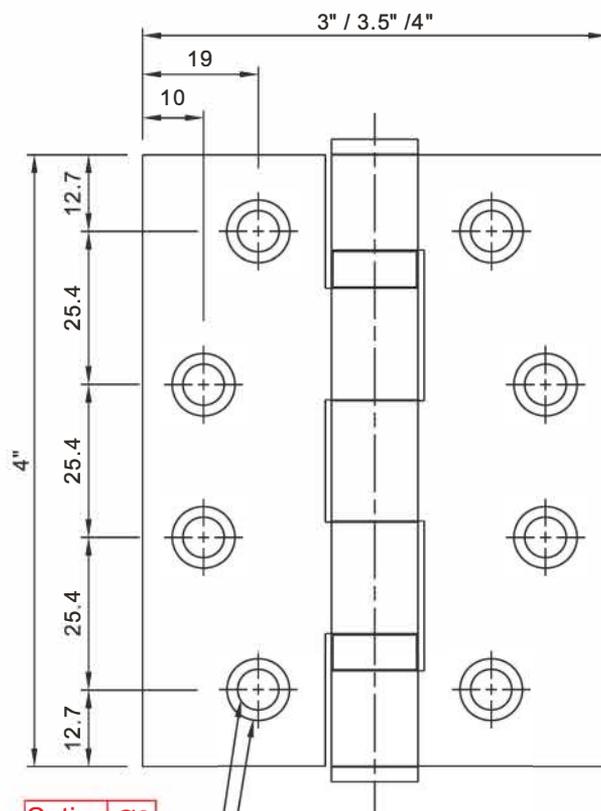
3 Hours Fire-Rated

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-4x3x3.0mm-2BB	4"	3"	3.0
TF-SS-4x3.5x3.0mm-2BB	4"	3.5"	3.0
TF-SS-4x4x3.0mm-2BB	4"	4"	3.0
TF-SS-4x4x3.4mm-2BB	4"	4"	3.4

Specification Advice

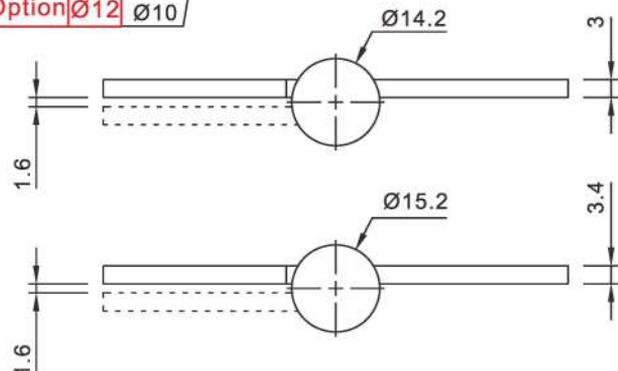
- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle two ball bearing
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight template hinge.
- Supplied with SS screws

Data and Features	TFSS001-FR			
Size in inch (Height x Width)	4 x 3	4 x 3.5	4 x 4	4 x 4
Thickness in mm	3.0	3.0	3.0	3.4
Standard Doors	•	•	•	•
Fire and smoke resistant doors	•	•	•	•
Non - handed	•	•	•	•
5 Knuckles	•	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•	•
UL mark for building products	•	•	•	•
Optional Pin Type				
Non-removable Pin (NRP)	•	•	•	•
Removable Pin (RP)				
Security Stud (SS)				



Option Ø8 Ø6.5

Option Ø12 Ø10



Full Mortise Hinge (Fire Rated) Double Ball Bearing



TFSS002-FR



UL/cUL Listed Certification



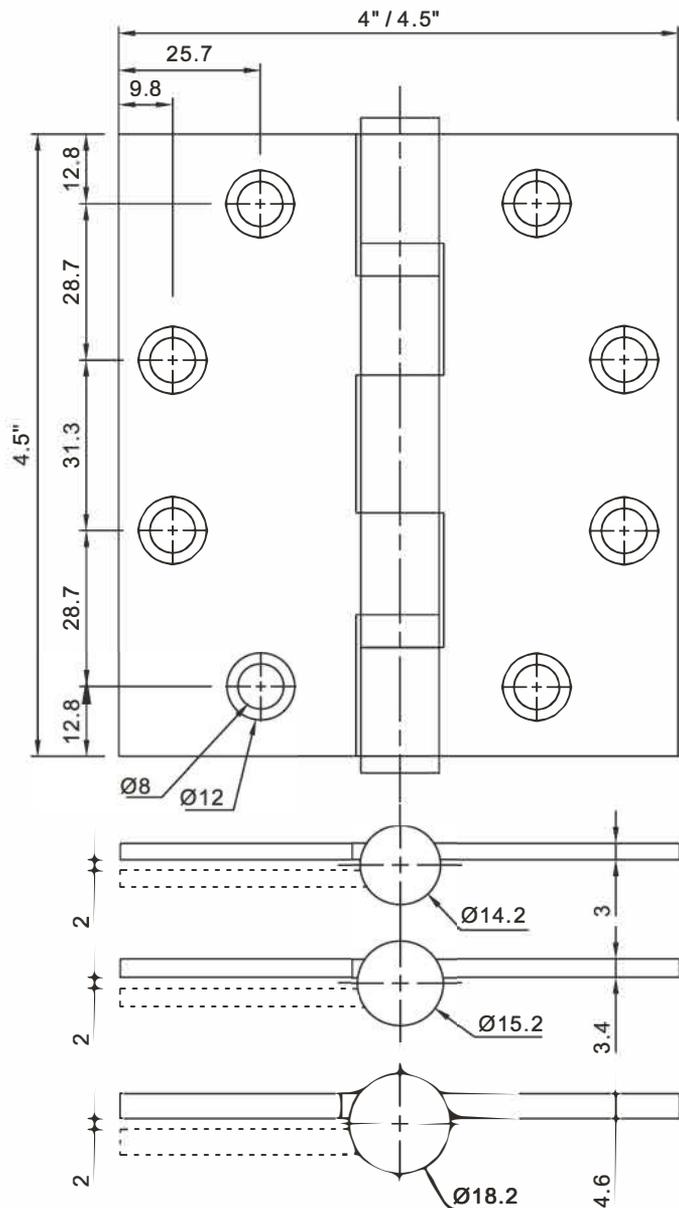
3 Hours Fire-Rated

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-4.5x4x3.0mm-2BB	4.5"	4"	3.0
TF-SS-4.5x4.5x3.0mm-2BB	4.5"	4.5"	3.0
TF-SS-4.5x4x3.4mm-2BB	4.5"	4"	3.4
TF-SS-4.5x4.5x3.4mm-2BB	4.5"	4.5"	3.4
TF-SS-4.5x4x4.6mm-2BB	4.5"	4"	4.6
TF-SS-4.5x4.5x4.6mm-2BB	4.5"	4.5"	4.6

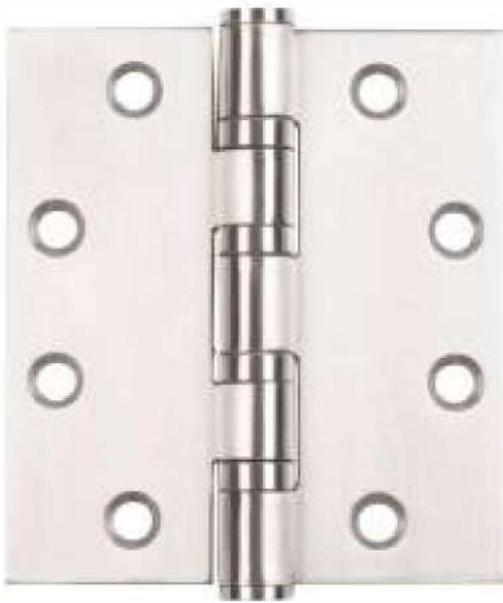
Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle two ball bearing
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight template hinge.
- Supplied with SS screws

Data and Features	TFSS002-FR					
Size in inch (Height x Width)	4.5 x 4	4.5 x 4.5	4.5 x 4	4.5 x 4.5	4.5 x 4	4.5 x 4.5
Thickness in mm	3.0	3.0	3.4	3.4	4.6	4.6
Standard Doors	•	•	•	•	•	•
Fire and smoke resistant doors	•	•	•	•	•	•
Non - handed	•	•	•	•	•	•
5 Knuckles	•	•	•	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•	•	•	•
UL mark for building products	•	•	•	•	•	•
Optional Pin Type						
Non-removable Pin (NRP)	•	•	•	•	•	•
Removable Pin (RP)	•	•	•	•	•	•
Security Stud (SS)	•	•	•	•	•	•



Full Mortise Hinge (Fire Rated) Four Ball Bearing



TFSS003-FR

 **UL/cUL Listed Certification**

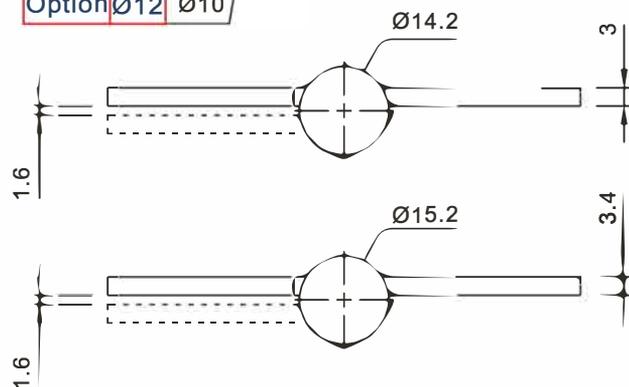
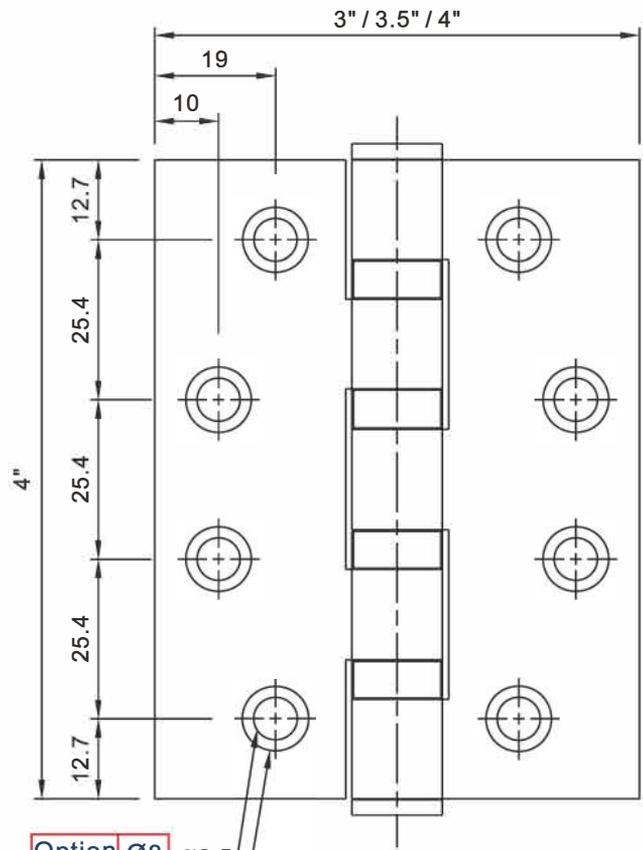
 **3 Hours Fire-Rated**

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-4x3x3.0mm-4BB	4"	3"	3.0
TF-SS-4x3.5x3.0mm-4BB	4"	3.5"	3.0
TF-SS-4x4x3.0mm-4BB	4"	4"	3.0
TF-SS-4x4x3.4mm-4BB	4"	4"	3.4

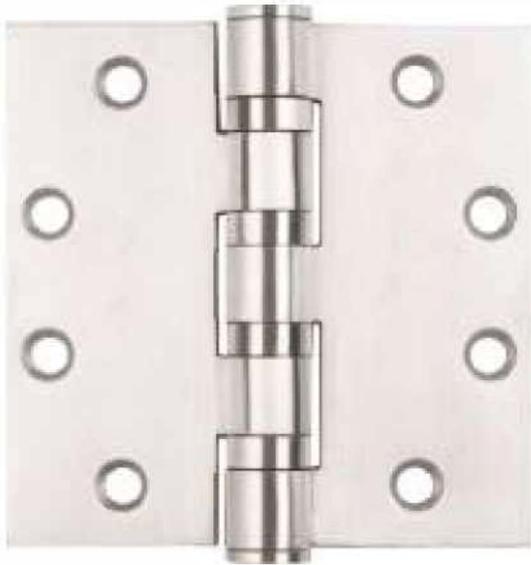
Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle four ball bearing
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight template hinge.
- Supplied with SS screws

Data and Features	TFSS003-FR			
Size in inch (Height x Width)	4 x 3	4 x 3.5	4 x 4	4 x 4
Thickness in mm	3.0	3.0	3.0	3.4
Standard Doors	•	•	•	•
Fire and smoke resistant doors	•	•	•	•
Non - handed	•	•	•	•
5 Knuckles	•	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•	•
UL mark for building products	•	•	•	•
Optional Pin Type				
Non-removable Pin (NRP)	•	•	•	•
Removable Pin (RP)	•	•	•	•
Security Stud (SS)	•	•	•	•



Full Mortise Hinge (Fire Rated) Four Ball Bearing



TFSS004-FR



UL/cUL Listed Certification



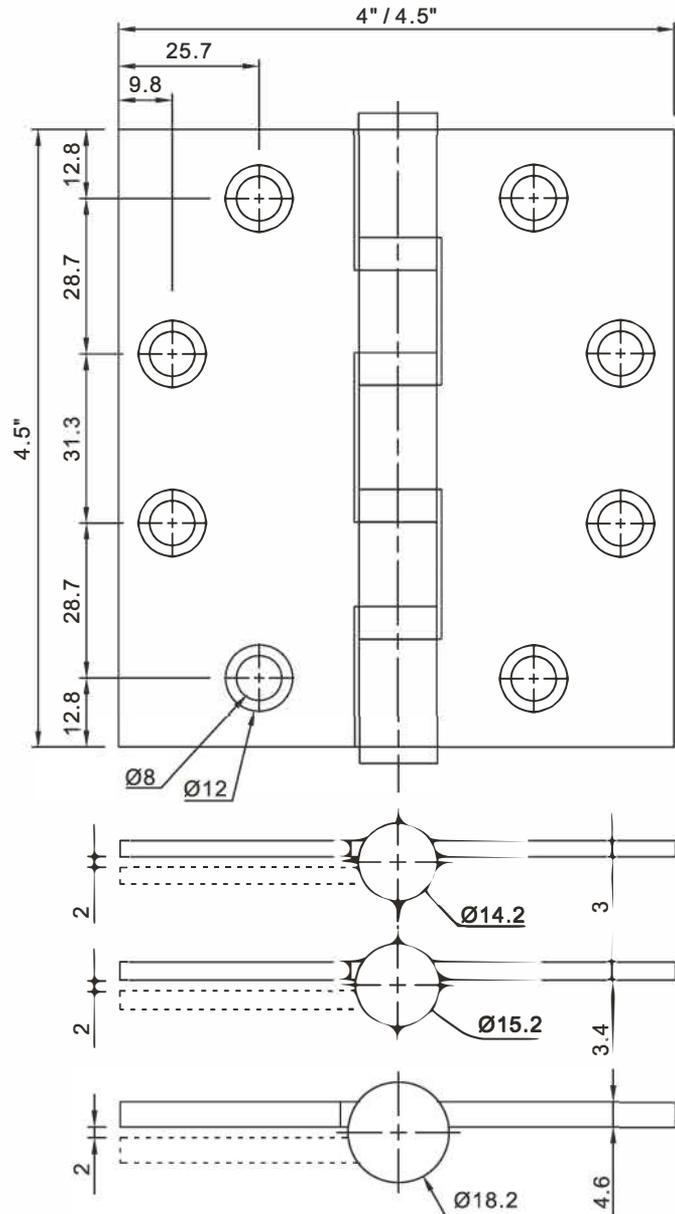
3 Hours Fire-Rated

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-4.5x4x3.0mm-4BB	4.5"	4"	3.0
TF-SS-4.5x4.5x3.0mm-4BB	4.5"	4.5"	3.0
TF-SS-4.5x4x3.4mm-4BB	4.5"	4"	3.4
TF-SS-4.5x4.5x3.4mm-4BB	4.5"	4.5"	3.4
TF-SS-4.5x4x4.6mm-4BB	4.5"	4"	4.6
TF-SS-4.5x4.5x4.6mm-4BB	4.5"	4.5"	4.6

Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle four ball bearing
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight template hinge.
- Supplied with SS screws

Data and Features	TFSS004-FR					
Size in inch (Height x Width)	4.5 x 4	4.5 x 4.5	4.5 x 4	4.5 x 4.5	4.5 x 4	4.5 x 4.5
Thickness in mm	3.0	3.0	3.4	3.4	4.6	4.6
Standard Doors	•	•	•	•	•	•
Fire and smoke resistant doors	•	•	•	•	•	•
Non - handed	•	•	•	•	•	•
5 Knuckles	•	•	•	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•	•	•	•
UL mark for building products	•	•	•	•	•	•
Optional Pin Type						
Non-removable Pin (NRP)	•	•	•	•	•	•
Removable Pin (RP)	•	•	•	•	•	•
Security Stud (SS)	•	•	•	•	•	•



Full Mortise Hinge (Fire Rated)

Double Ball Bearing



TFSS005-FR

Data and Features	TFSS005-FR		
Size in inch (Height x Width)	5 x 3	5 x 3.5	5 x 4
Thickness in mm	3.0	3.0	3.0
Standard Doors	•	•	•
Fire and smoke resistant doors	•	•	•
Non - handed	•	•	•
5 Knuckles	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•
UL mark for building products	•	•	•
Optional Pin Type			
Non-removable Pin (NRP)	•	•	•
Removable Pin (RP)			
Security Stud (SS)			



UL/cUL Listed Certification

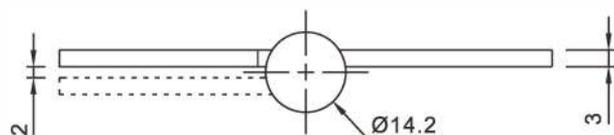
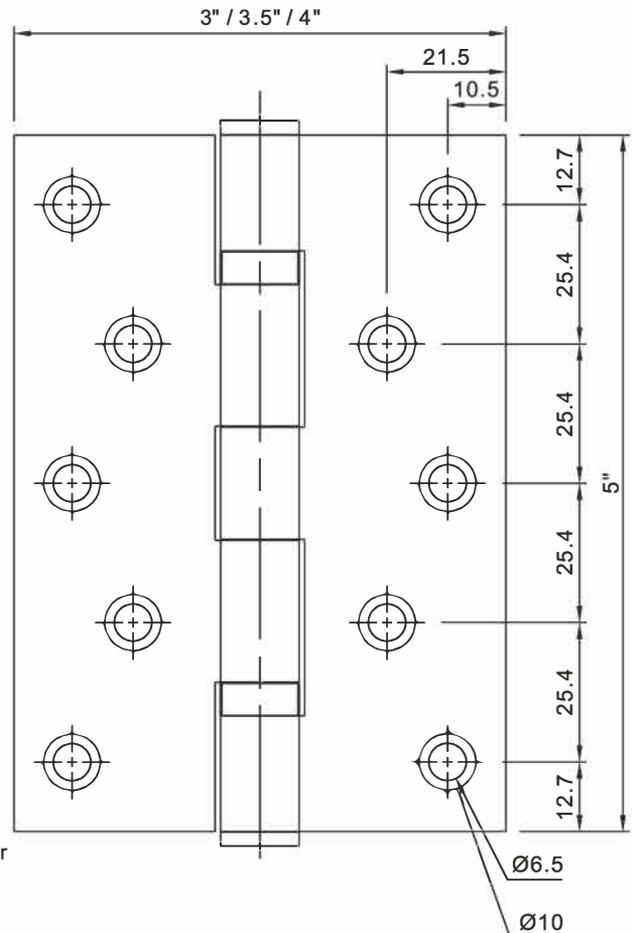


3 Hours Fire-Rated

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-5x3x3.0mm-2BB	5"	3"	3.0
TF-SS-5x3.5x3.0mm-2BB	5"	3.5"	3.0
TF-SS-5x4x3.0mm-2BB	5"	4"	3.0

Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle two ball bearing
- All hinges have Zig-Zag symmetrical screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight hinge.
- Supplied with SS screws



Heavy Duty Hinge (Fire Rated)

Double Ball Bearing



TFSS006-FR



UL/cUL Listed Certification



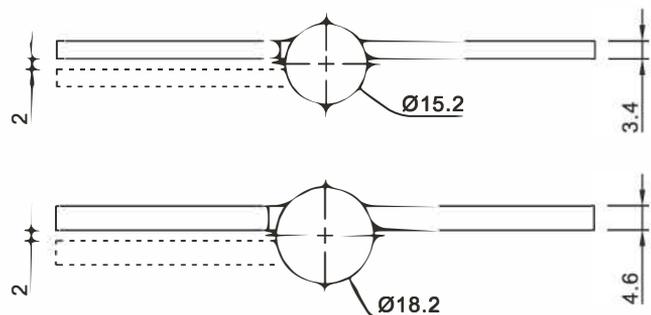
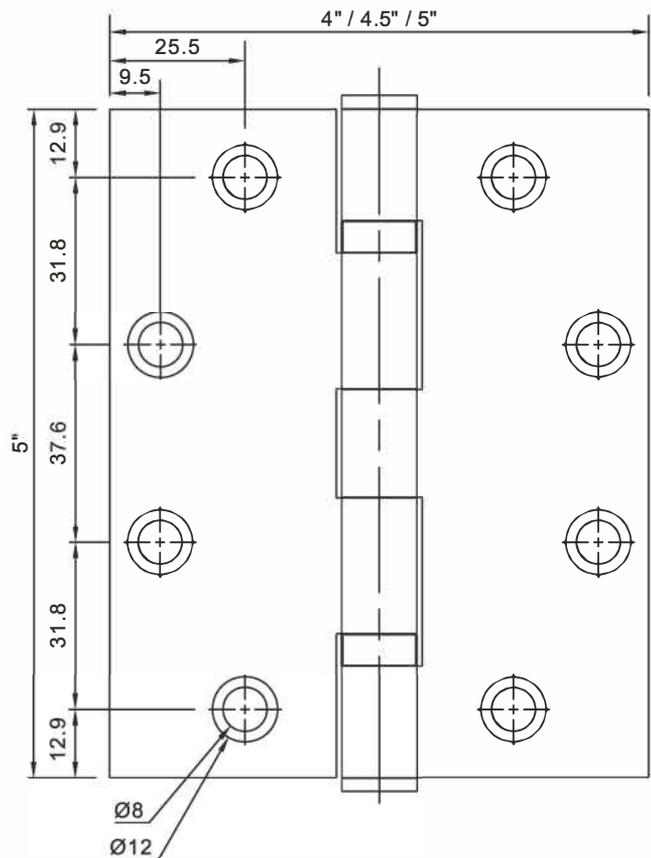
3 Hours Fire-Rated

Data and Features	TFSS006-FR				
Size in inch (Height x Width)	5 x 4	5x 4.5	5 x 4	5x 4.5	5 x 5
Thickness in mm	3.4	3.4	4.6	4.6	4.6
Standard Doors	•	•	•	•	•
Fire and smoke resistant doors	•	•	•	•	•
Non - handed	•	•	•	•	•
5 Knuckles	•	•	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•	•	•
UL mark for building products	•	•	•	•	•
Optional Pin Type					
Non-removable Pin (NRP)	•	•	•	•	•
Removable Pin (RP)					
Security Stud (SS)					

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-5x4x3.4mm-2BB	5"	4"	3.4
TF-SS-5x4.5x3.4mm-2BB	5"	4.5"	3.4
TF-SS-5x4x4.6mm-2BB	5"	4"	4.6
TF-SS-5x4.5x4.6mm-2BB	5"	4.5"	4.6
TF-SS-5x5x4.6mm-2BB	5"	5"	4.6

Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle two ball bearing
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Heavy Duty template hinge.
- Supplied with SS screws



Full Mortise Hinge (Fire Rated)

Four Ball Bearing



TFSS007-FR

 **UL/cUL Listed Certification**

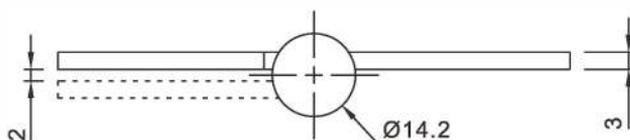
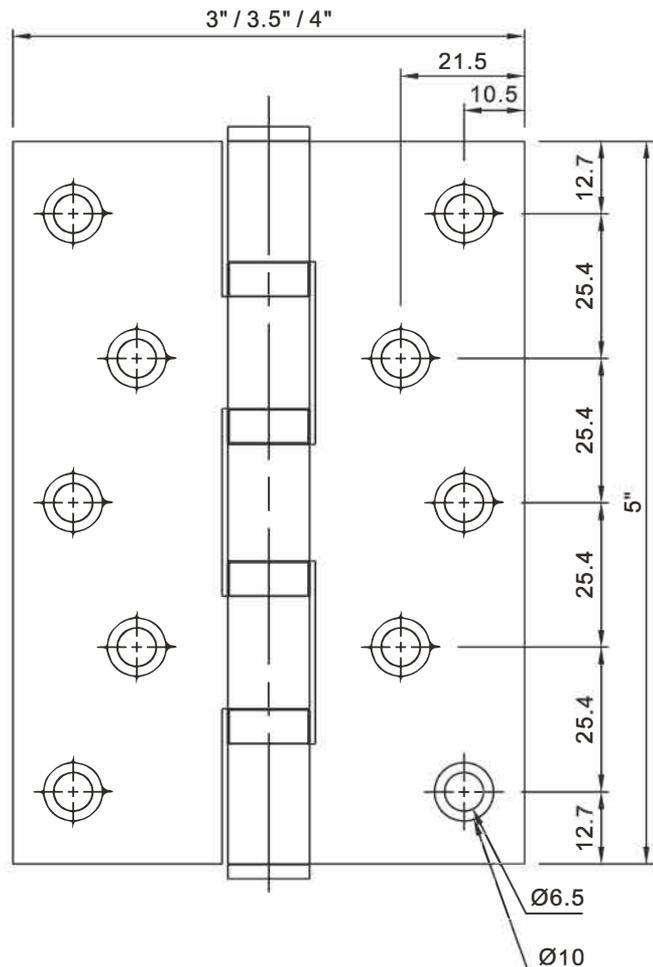
 **3 Hours Fire-Rated**

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-5x3x3.0mm-4BB	5"	3"	3.0
TF-SS-5x3.5x3.0mm-4BB	5"	3.5"	3.0
TF-SS-5x4x3.0mm-4BB	5"	4"	3.0

Specification Advice

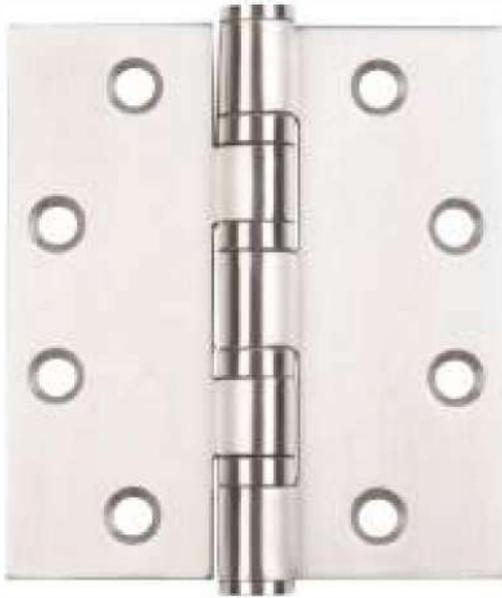
- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle four ball bearing
- All hinges have Zig-Zag symmetrical screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Standard weight hinge.
- Supplied with SS screws

Data and Features	TFSS007-FR		
Size in inch (Height x Width)	5 x 3	5 x 3.5	5 x 4
Thickness in mm	3.0	3.0	3.0
Standard Doors	•	•	•
Fire and smoke resistant doors	•	•	•
Non - handed	•	•	•
5 Knuckles	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•
UL mark for building products	•	•	•
Optional Pin Type			
Non-removable Pin (NRP)	•	•	•
Removable Pin (RP)	•	•	•
Security Stud (SS)	•	•	•



Heavy Duty Hinge (Fire Rated)

Four Ball Bearing



TFSS008-FR

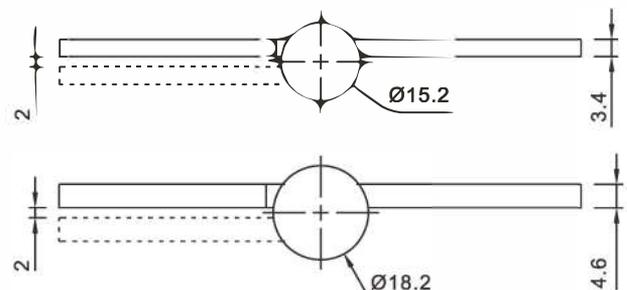
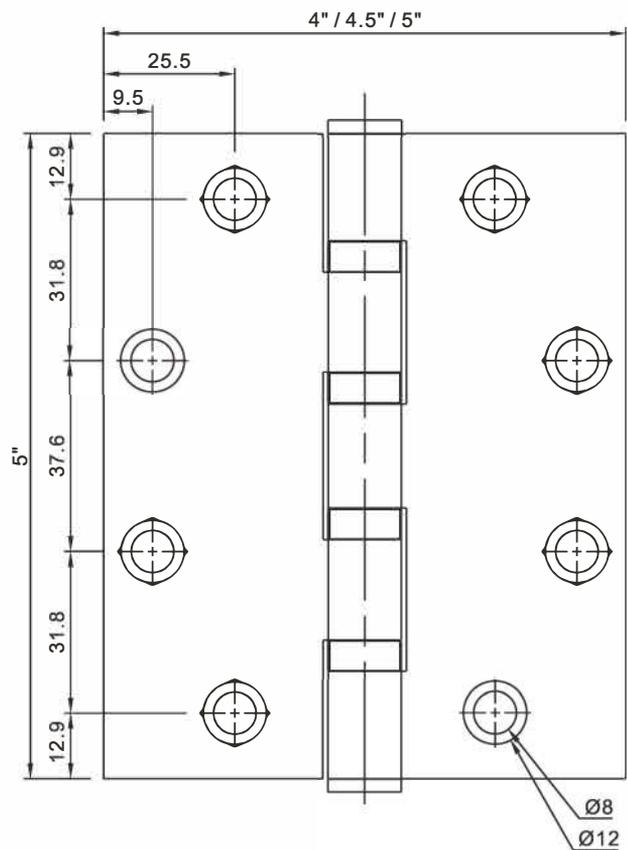


UL/cUL Listed Certification



3 Hours Fire-Rated

Data and Features	TFSS008-FR				
Size in inch (Height x Width)	5 x 4	5x 4.5	5 x 4	5x 4.5	5 x 5
Thickness in mm	3.4	3.4	4.6	4.6	4.6
Standard Doors	•	•	•	•	•
Fire and smoke resistant doors	•	•	•	•	•
Non - handed	•	•	•	•	•
5 Knuckles	•	•	•	•	•
Ball Bearing (2BB or 4BB)	•	•	•	•	•
UL mark for building products	•	•	•	•	•
Optional Pin Type					
Non-removable Pin (NRP)	•	•	•	•	•
Removable Pin (RP)					
Security Stud (SS)					



Art. No.	Height (inch)	Width (inch)	Thickness (mm)
TF-SS-5x4x3.4mm-4BB	5"	4"	3.4
TF-SS-5x4.5x3.4mm-4BB	5"	4.5"	3.4
TF-SS-5x4x4.6mm-4BB	5"	4"	4.6
TF-SS-5x4.5x4.6mm-4BB	5"	4.5"	4.6
TF-SS-5x5x4.6mm-4BB	5"	5"	4.6

Specification Advice

- Hinges manufactured accordance with ANSI / BHMA A 156.1
- All hinges with five knuckle four ball bearing
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames.
- Pins in non-ferrous hinges are stainless steel.
- Dimension & tolerances confirm to ANSI-A 156.7
- Full Mortise, Square Corner, Heavy Duty template hinge.
- Supplied with SS screws

EN1935(BS EN 1935 Single Axis Hinges)

BS EN 1935 classifies door furniture by using an 8 digit coding system. A similar classification applies to all building hardware product standards so that complementary items of hardware can be specified to, for instance, a common level of corrosion resistance, category of use, etc. Each digit refers to a particular feature of the product measured against the standard's performance requirements.

1. Category of Use

Four grades are identified:

- Grade 1 : Light duty
- Grade 2 : Medium duty
- Grade 3 : Heavy duty
- Grade 4 : Severe duty

4

2. Durability

Three grades of durability are identified for single-axsi hinges manufactured to this European standard:

- Grade 3 : 10 000 test cycles, for light duty hinges on windows only
- Grade 4 : 25 000 test cycles, for light duty hinges on windows and doors
- Grade 7 : 20 000 test cycles, for medium. heavy and severe duty hinges on door only

7

3. Test Door Mass

Eight door mass grades related to single-axis hinges are identified in this European standard as shown in below.

6

Test Door Mass Grade	Door Mass
0	10kg
1	20kg
2	40kg
3	60kg
4	80kg
5	100kg
6	120kg
7	160kg

4. Fire Resistance

Two grades of fires resistance are identified:

- Grade 0 : Not approved for fire /smoke resistant door assemblies
- Grade 1 : Suitable for fire/smoke resistant door assemblies subject to satisfactory assessment of the contribution of the single-axis hinge to the fire resistance of the specified fire/smoke door assemblies. such assessment is beyond the scope of this European standard(see EN 1634-1).

1

5. Safety

Single-axis hinges are required to satisfy the essential requirement of safety in use. Therefore, only grades 1 is identified.

1

6. Corrosion Resistance

Five grades of corrosion resistance are identified in accordance are identified in accordance with EN 1670:

- Grade 0: No defined corrosion resistance.
- Grade 1: Mild resistance
- Grade 2: Moderate Resistance
- Grade 3: High resistance
- Grade 4: Very High resistance

4

7. Security

0

Two grades of security are identified for single-axis hinges:

Grade 0: Not suitable for use on burglar-resistant door assemblies

Grade 1: Suitable for applications requiring a degree of security. Annex C of this European standard details the hinge grade to use for the level of security required.

8. Hinge Grade

13

Fourteen grades are identified in this European standard and are detailed in table 2 below. The full classification is shown in the standard.

Hinge Grade	Usage	Test Cycles	Door Mass
1	Window	10 000	10kg
2	Window	10 000	20kg
3	Window/Door	25 000	20kg
4	Door	200 000	20kg
5	Window	10 000	40kg
6	Window/Door	25 000	40kg
7	Door	200 000	40kg
8	Window	10 000	60kg
9	Window/Door	25 000	60kg
10	Door	200 000	60kg
11	Door	200 000	80kg
12	Door	200 000	100kg
13	Door	200 000	120kg
14	Door	200 000	160kg

BS EN 1634 Part 1: 2000

Is the European Fire safety Standard for determining the fire resistance of door and shutter assemblies including hardware designed for installation within openings incorporated in vertical separating elements (doorsets).

Locks can be assessed to be suitable on:

FD30 (30 minute) Fire Doors

FD60 (60 minute) Fire Doors

CE Marking

CE Marking is the easiest and safest route to providing compliance with the latest UK construction Product Directive for hardware used on fire, smoke and escape doors.

TUFFRO CE mark Grade 13 Hinges Successfully tested for conformity to all the requirements of BS EN1935, 8 Classification:

4 7 6 1 1 4 0 1 3

CE Mortise Hinge Grade 13



TFSS001-CE

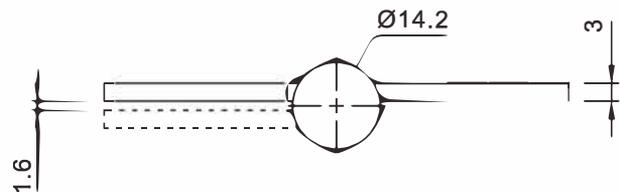
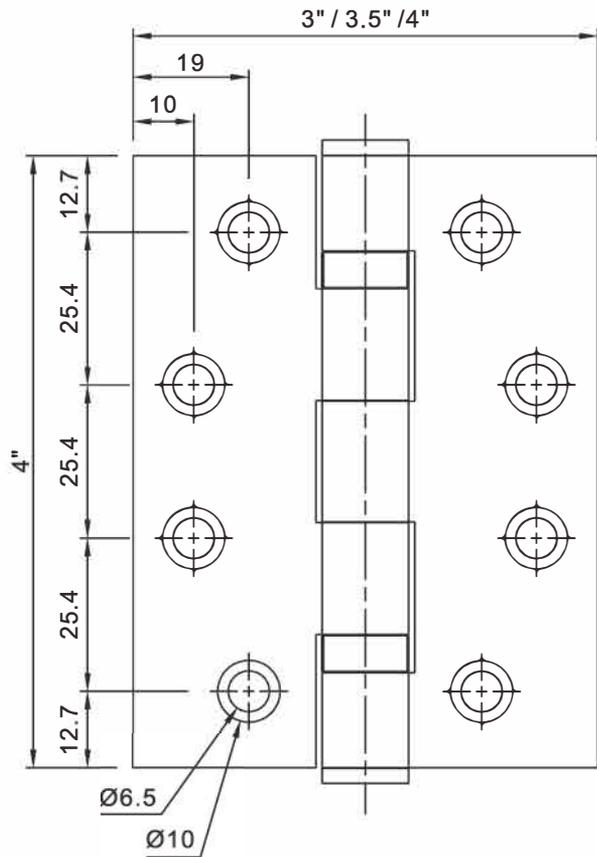
Class: **4 7 6 1 1 4 0 1 3**



EN 1935



260 Mins
Fire Rated



Data and Features	TFSS001-CE		
Size in inch (Height x Width)	4 x 3	4 x 3.5	4 x 4
Thickness in mm	3.0	3.0	3.0
Standard Doors	•	•	•
Fire and smoke resistant doors	•	•	•
Non - handed	•	•	•
5 Knuckles	•	•	•
Ball Bearing (2BB)	•	•	•
CE mark for building products	•	•	•
Optional Pin Type			
Non-removable Pin (NRP)	•	•	•
Removable Pin (RP)			
Security Stud (SS)			

Features

- Double ball bearing, five knuckle hinge
- Successfully type tested for conformity to all the requirements of BS EN1935
- Supplied with SS Screws
- Load bearing capacity up to 120kg
- Available square or radius
- Tested to over 200,000 cycles
- Suitable for fire/smoke resistant doors
- Finished with softened edges
- Pre-cut intumescent hinge pads available

Art. No.	Height (inch)	Width (inch)	Thickness (mm)
CE-4x3x3.0mm-2BB	4"	3"	3.0
CE-4x3.5x3.0mm-2BB	4"	3.5"	3.0
CE-4x4x3.0mm-2BB	4"	4"	3.0



Hinge Technical Considerations

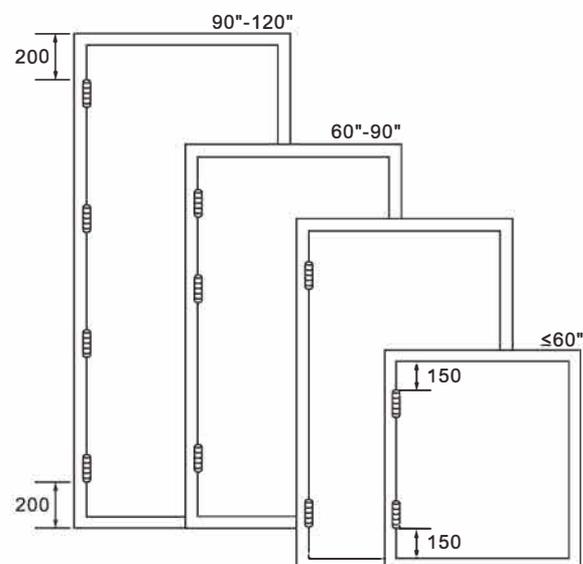
- Door weight
- Door size
- Location
- Intended use

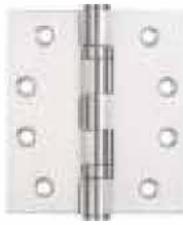
The appropriate specification and correct selection of hinges is crucial to their performance and depends on the following factors:

1. Is it a fire, smoke or emergency escape door?
2. How heavy is the door and what are the door dimension (height, width and thickness)?
3. What is the door's construction and are there any unusual features that could affect the hinges?
4. Where is the door situated e.g internal or external; is it near the coast or in a swimming pool?
5. What level of use/abuse will the door be subject to e.g office, hospital or school corridor?
6. What other items of hardware are to be fitted, that may be affect the hinge performance, typically door closer or door stops? E.g fit with door closer, will increase loading weight.
7. Any other unusual features involved e.g. door has radius top or the door is a bifold.

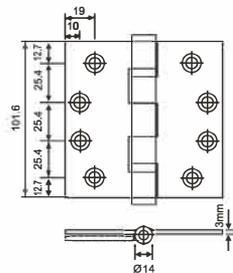
Recommendation: 3 Pieces Per Door.

1.2mm thickness Hinges: 10-15 kgs Per Door
1.5mm thickness Hinges: 15-25 kgs Per Door
2.0mm thickness Hinges: 25-40 kgs Per Door
2.5mm thickness Hinges: 40-60 kgs Per Door
3.0mm thickness Hinges: 60-80 kgs Per Door
3.5mm thickness Hinges: 80-120 kgs Per Door
4.0mm thickness Hinges: 120-150 kgs Per Door
4.5mm thickness Hinges: 150-200 kgs Per Door





TFSS001

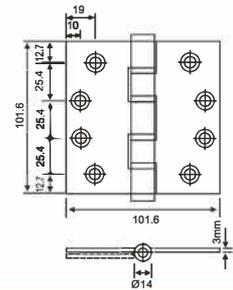


Stainless Steel Double Ball Bearing Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
3.0" x 2.0" x 2.0mm	4.0" x 3.0" x 3.0mm	4.5" x 4.5" x 3.5mm
3.0" x 2.5" x 2.0mm	4.0" x 3.5" x 3.0mm	5.0" x 5.0" x 3.5mm
3.0" x 3.0" x 2.0mm	4.5" x 4.5" x 3.0mm	4.0" x 3.0" x 4.0mm
4.0" x 3.0" x 2.0mm	5.0" x 3.0" x 3.0mm	5.0" x 5.0" x 4.0mm
4.0" x 4.0" x 2.0mm	5.0" x 3.5" x 3.0mm	6.0" x 4.0" x 4.0mm
3.5" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm	4.0" x 4.0" x 4.5mm
3.5" x 3.5" x 2.5mm	5.0" x 5.0" x 3.0mm	4.5" x 4.0" x 4.5mm
4.0" x 3.5" x 2.5mm	6.0" x 4.0" x 3.0mm	4.5" x 4.5" x 4.5mm
4.0" x 4.0" x 2.5mm	6.0" x 5.0" x 3.0mm	5.0" x 4.0" x 4.5mm
5.0" x 3.0" x 2.5mm	4.5" x 4.0" x 3.5mm	5.0" x 4.5" x 4.5mm



TFSS002

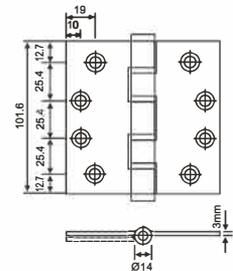


Stainless Steel 4 Ball Bearing Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 3.0" x 2.0mm	5.0" x 3.0" x 3.0mm	4.0" x 3.0" x 4.0mm
4.0" x 4.0" x 2.0mm	5.0" x 3.5" x 3.0mm	5.0" x 5.0" x 4.0mm
4.0" x 3.5" x 2.5mm	5.0" x 4.0" x 3.0mm	6.0" x 4.0" x 4.0mm
4.0" x 4.0" x 2.5mm	5.0" x 5.0" x 3.0mm	4.0" x 4.0" x 4.5mm
5.0" x 3.0" x 2.5mm	6.0" x 4.0" x 3.0mm	4.5" x 4.0" x 4.5mm
4.0" x 3.0" x 3.0mm	4.5" x 4.0" x 3.5mm	4.5" x 4.5" x 4.5mm
4.0" x 3.5" x 3.0mm	4.5" x 4.5" x 3.5mm	5.0" x 4.0" x 4.5mm
4.5" x 4.5" x 3.0mm	5.0" x 5.0" x 3.5mm	5.0" x 4.5" x 4.5mm

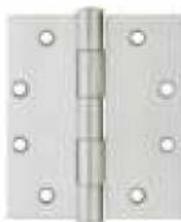


TFSS003

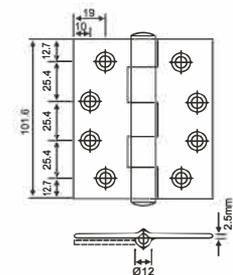


Stainless Steel Single Washer Hinge

Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 3.0" x 2.0mm	3.5" x 3.5" x 3.0mm
4.0" x 4.0" x 2.0mm	4.0" x 3.0" x 3.0mm
3.5" x 3.5" x 2.5mm	4.0" x 4.0" x 3.0mm
4.0" x 3.0" x 2.5mm	4.5" x 4.5" x 3.0mm
4.0" x 4.5" x 2.5mm	5.0" x 3.0" x 3.0mm
5.0" x 3.0" x 2.5mm	5.0" x 3.5" x 3.0mm
5.0" x 3.5" x 2.5mm	5.0" x 4.0" x 3.0mm



TFSS004

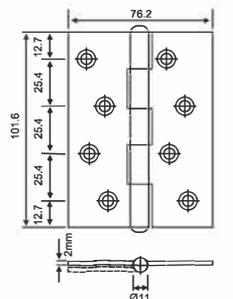


Stainless Steel Plain Joint Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 3.0" x 2.0mm	4.5" x 4.0" x 3.0mm	5.0" x 5.0" x 3.5mm
4.0" x 4.0" x 2.0mm	5.0" x 3.0" x 3.0mm	6.0" x 4.0" x 3.5mm
3.5" x 3.5" x 2.5mm	5.0" x 3.5" x 3.0mm	6.0" x 5.0" x 3.5mm
4.0" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm	4.0" x 3.0" x 4.0mm
4.0" x 4.0" x 2.5mm	5.0" x 5.0" x 3.0mm	4.0" x 3.5" x 4.0mm
5.0" x 3.0" x 3.0mm	6.0" x 3.5" x 3.0mm	5.0" x 3.5" x 4.0mm
5.0" x 3.5" x 2.5mm	6.0" x 4.0" x 3.0mm	5.0" x 4.0" x 4.0mm
3.5" x 3.5" x 3.0mm	6.0" x 5.0" x 3.0mm	6.0" x 4.0" x 4.0mm
4.0" x 3.0" x 3.0mm	4.0" x 3.0" x 3.5mm	6.0" x 5.0" x 4.0mm
4.5" x 4.0" x 3.0mm	4.0" x 4.0" x 3.5mm	



TFSS005

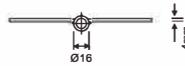
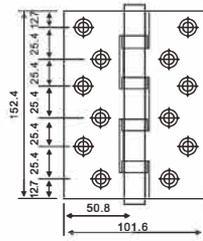


Stainless Steel Rivet Tip Hinge

Dimension(H x W x T)
4.0" x 3.0" x 2.0mm
4.0" x 4.0" x 2.0mm

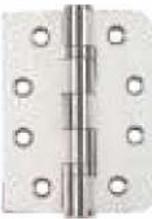


TFSS009

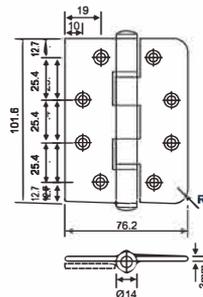


Stainless Steel Heavy Duty Hinge

Dimension(H x W x T)
6.0" x 3.0" x 3.0mm
6.0" x 3.5" x 3.0mm
6.0" x 4.0" x 3.0mm
6.0" x 4.0" x 4.0mm
6.0" x 3.5" x 5.0mm
6.0" x 4.0" x 5.0mm



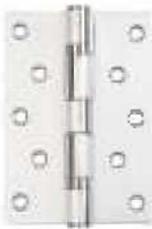
TFSS010



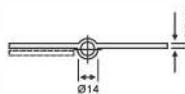
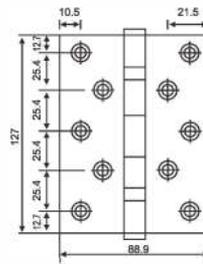
R=1/4", 3/8"

S / Steel One Round Corner One Square Corner Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
3.0" x 2.0" x 2.0mm	5.0" x 3.0" x 2.5mm	4.5" x 4.5" x 3.5mm
3.0" x 2.5" x 2.0mm	4.0" x 3.0" x 3.0mm	5.0" x 5.0" x 3.5mm
4.0" x 3.0" x 2.0mm	4.0" x 4.0" x 3.0mm	4.0" x 3.5" x 4.0mm
3.0" x 3.0" x 2.0mm	4.5" x 4.0" x 3.0mm	4.5" x 4.5" x 4.0mm
4.0" x 3.5" x 2.0mm	4.5" x 4.5" x 3.0mm	5.0" x 3.0" x 4.0mm
4.0" x 4.0" x 2.0mm	5.0" x 3.5" x 3.0mm	5.0" x 4.0" x 4.0mm
3.5" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm	5.0" x 5.0" x 4.0mm
3.5" x 3.5" x 2.5mm	6.0" x 4.0" x 3.0mm	6.0" x 4.0" x 4.0mm
4.0" x 3.0" x 2.5mm	6.0" x 5.0" x 3.0mm	5.0" x 4.0" x 4.5mm
4.0" x 4.0" x 2.5mm	4.5" x 4.0" x 3.5mm	5.0" x 4.5" x 4.5mm



TFSS011-B

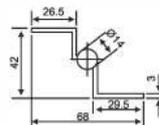
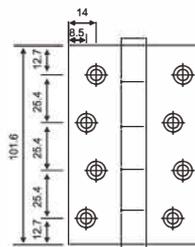


Stainless Steel Ball Bearing Hinge

Dimension(H x W x T)
5.0" x 3.0" x 3.0mm
5.0" x 3.5" x 3.0mm
5.0" x 4.0" x 3.0mm
5.0" x 5.0" x 3.0mm



TFSS012

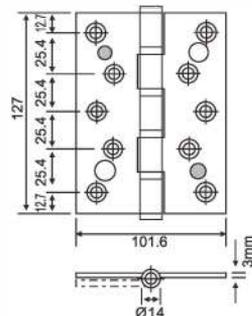


Stainless Steel Crank Hinge

Dimension(H x W x T)
4.0" x 3.0" x 3.0mm
4.0" x 3.5" x 3.0mm

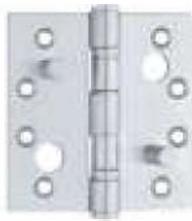


TFSS013

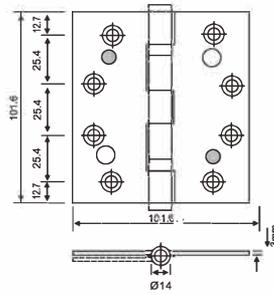


Stainless Steel Double Security Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
3.0" x 2.0" x 2.0mm	5.0" x 3.0" x 2.5mm	4.5" x 4.5" x 3.5mm
3.0" x 2.5" x 2.0mm	4.0" x 3.0" x 3.0mm	5.0" x 5.0" x 3.5mm
4.0" x 3.0" x 2.0mm	4.0" x 3.5" x 3.0mm	4.0" x 3.0" x 4.0mm
3.0" x 3.0" x 2.0mm	4.5" x 4.5" x 3.0mm	5.0" x 5.0" x 4.0mm
4.0" x 3.5" x 2.0mm	5.0" x 5.0" x 3.0mm	6.0" x 4.0" x 4.0mm
4.0" x 4.0" x 2.0mm	5.0" x 3.5" x 3.0mm	4.0" x 4.0" x 4.5mm
3.5" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm	4.5" x 4.0" x 4.5mm
3.5" x 3.5" x 2.5mm	6.0" x 4.0" x 3.0mm	4.5" x 4.5" x 4.5mm
4.0" x 3.5" x 2.5mm	6.0" x 5.0" x 3.0mm	5.0" x 4.0" x 4.5mm
4.0" x 4.0" x 2.5mm	4.5" x 4.0" x 3.5mm	5.0" x 4.5" x 4.5mm



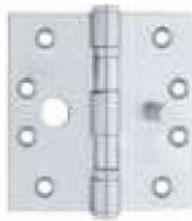
TFSS014



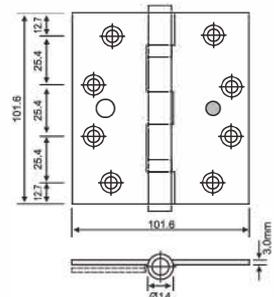
Stainless Steel Double Security Hinge

- Double Ball Bearing, five knuckle hinge
- Prevents removal of door leaf if hinge knuckle is attacked
- Predominately used on perimeter doors where the hinge knuckle is located externally

Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 3.0" x 2.5mm	4.5" x 4.0" x 3.0mm
4.0" x 3.0" x 3.0mm	4.5" x 4.5" x 3.0mm
4.0" x 3.5" x 3.0mm	4.5" x 4.0" x 3.4mm
4.0" x 4.0" x 3.0mm	4.5" x 4.5" x 3.4mm
5.0" x 3.5" x 3.0mm	



TFSS015



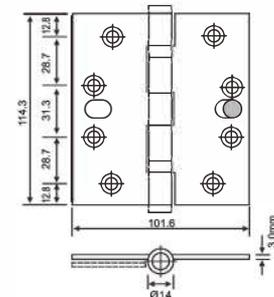
Stainless Steel Single Security Hinge

- Double Ball Bearing, five knuckle hinge
- Prevents removal of door leaf if hinge knuckle is attacked
- Predominately used on perimeter doors where the hinge knuckle is located externally

Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 3.0" x 2.5mm	4.5" x 4.0" x 3.0mm
4.0" x 3.0" x 3.0mm	4.5" x 4.5" x 3.0mm
4.0" x 3.5" x 3.0mm	4.5" x 4.0" x 3.4mm
4.0" x 4.0" x 3.0mm	4.5" x 4.5" x 3.4mm



TFSS015B

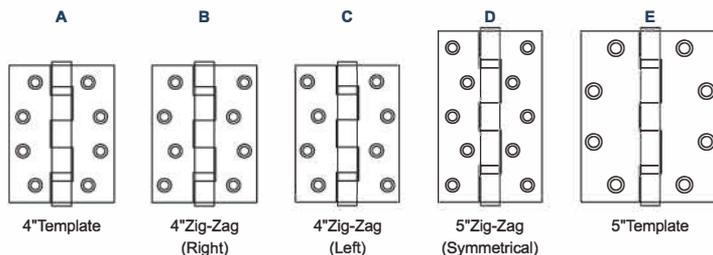


Stainless Steel Single Security Hinge

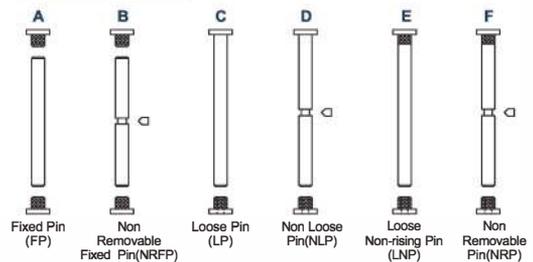
- Double Ball Bearing, five knuckle hinge
- Prevents removal of door leaf if hinge knuckle is attacked
- Predominately used on perimeter doors where the hinge knuckle is located externally

Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 3.0" x 2.5mm	4.5" x 4.0" x 3.0mm
4.0" x 3.0" x 3.0mm	4.5" x 4.5" x 3.0mm
4.0" x 3.5" x 3.0mm	4.5" x 4.0" x 3.4mm
4.0" x 4.0" x 3.0mm	4.5" x 4.5" x 3.4mm

Hole Options:



Pin Options:



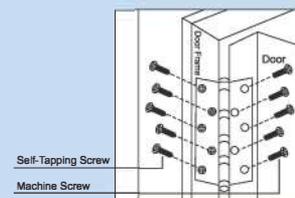
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

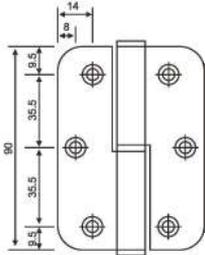
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



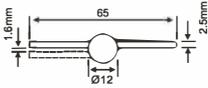


TFSS020



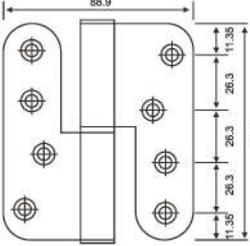
Stainless Steel Lift-off Hinge

Dimension(H x W x T)
80 x 80 x 2.5mm
90 x 65 x 2.5mm
89 x 63.5 x 3.0mm



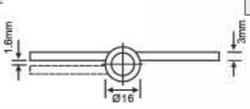


TFSS021



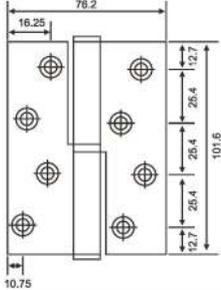
Stainless Steel Lift-off Hinge

Dimension(H x W x T)
4.0" x 3.5" x 3.0mm
90 x 65 x 2.5mm



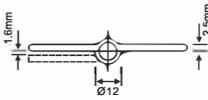


TFSS022



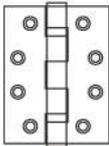
Stainless Steel Lift-off Hinge

Dimension(H x W x T)
90 x 65 x 2.5mm
102 x 76 x 2.5mm
76.2 x 64 x 2.0mm
102 x 76 x 2.0mm



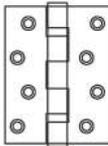
Hole Options:

A



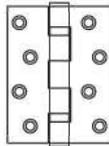
4"Template

B



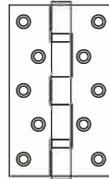
4"Zig-Zag (Right)

C



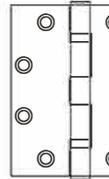
4"Zig-Zag (Left)

D



5"Zig-Zag (Symmetrical)

E



5"Template

Pin Options:

A



Fixed Pin (FP)

B



Non Removable Fixed Pin (NRFP)

C



Loose Pin (LP)

D



Non Loose Pin (NLP)

E



Loose Non-rising Pin (LNP)

F



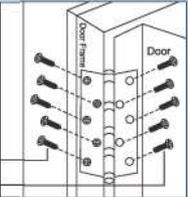
Non Removable Pin (NRP)

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

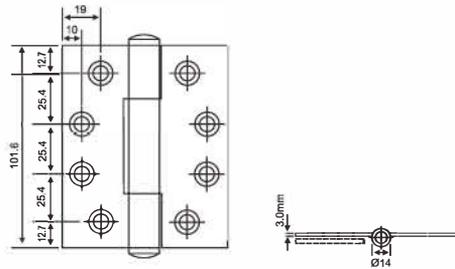
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings





TFSS023

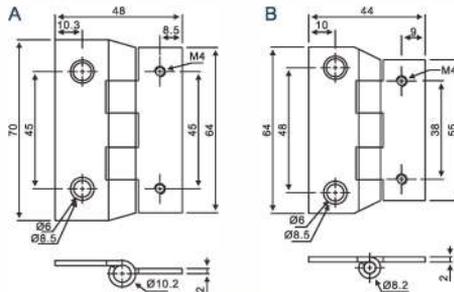


Stainless Steel 3 Knuckle Hinge

Dimension(H x W x T)
4.0" x 3.0" x 3.0mm
4.0" x 3.5" x 3.0mm
4.0" x 4.0" x 3.0mm



TFSS025

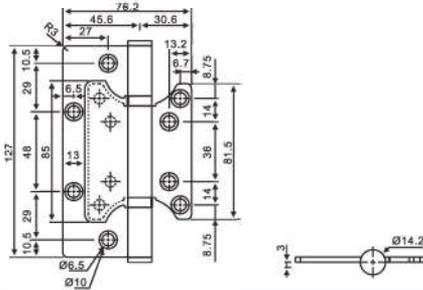


Stainless Steel Laboratory Hinge

Art. No.	Dimension(H x W x T)
TFSS025-A	70 x 48 x 2.0mm
TFSS025-B	64 x 44 x 2.0mm



TFSS026

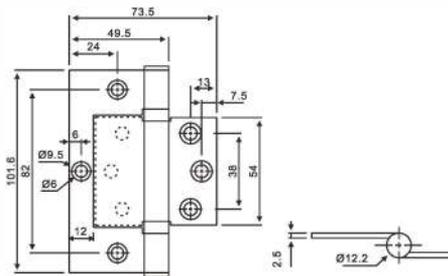


Stainless Steel Flush Hinge

Dimension(H x W x T)
4.0" x 3.0" x 2.5mm
4.0" x 3.0" x 3.0mm
5.0" x 3.0" x 3.0mm



TFSS027

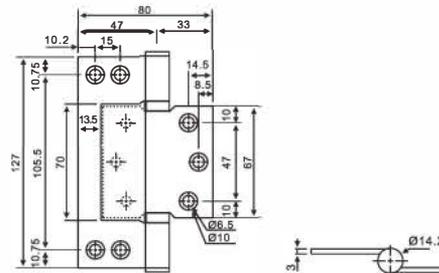


Stainless Steel Flush Hinge

Dimension(H x W x T)
101.6 x 73.5 x 2.5mm
100 x 75 x 2.5mm



TFSS027-B

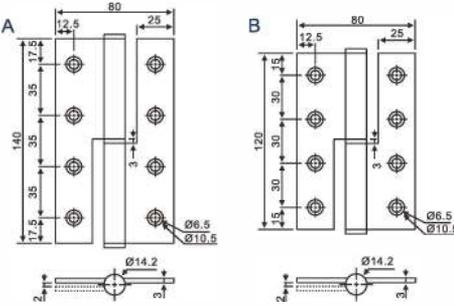


Stainless Steel Flush Hinge

Dimension(H x W x T)
127 x 80 x 3.0mm



TFSS028-B

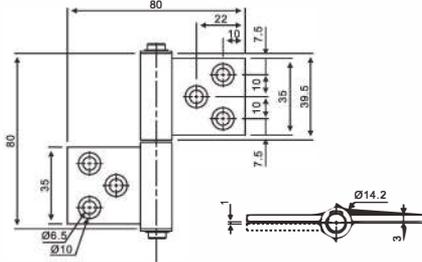


Stainless Steel Flush Hinge

Art. No.	Dimension(H x W x T)
TFSS028-A	140 x 80 x 3.0mm
TFSS028-B	120 x 80 x 3.0mm



TFSS029

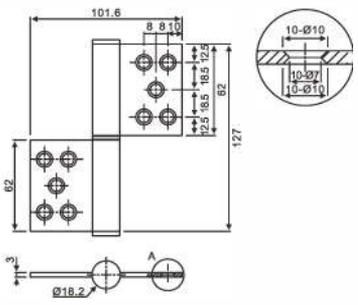


Stainless Steel Flag Hinge

Dimension(H x W x T)
80 x 80 x 3.0mm



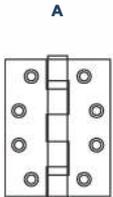
TFSS030



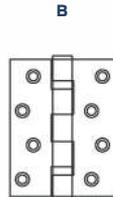
Stainless Steel Flag Hinge

Dimension(H x W x T)
5.0" x 4.0" x 3.0mm

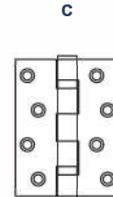
Hole Options:



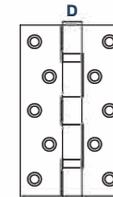
A
4"Template



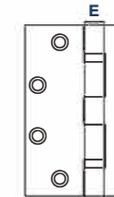
B
4"Zig-Zag (Right)



C
4"Zig-Zag (Left)



D
5"Zig-Zag (Symmetrical)



E
5"Template

Pin Options:



A
Fixed Pin (FP)



B
Non Removable Fixed Pin(NRFP)



C
Loose Pin (LP)



D
Non Loose Pin(NLP)



E
Loose Non-rising Pin (LNP)



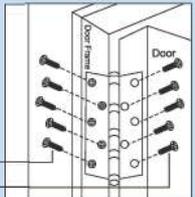
F
Non Removable Pin(NRP)

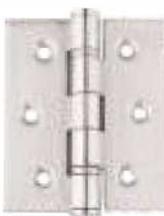
Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

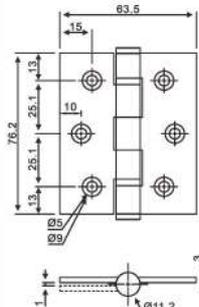
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings





TFSS048-B

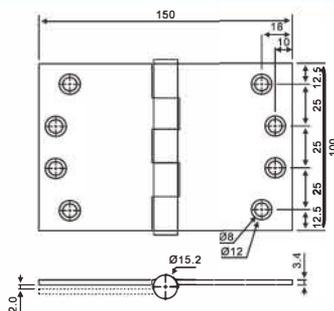


Stainless Steel Washer Hinge

Dimension(H x W x T)
3.0 x 2.0 x 2.0mm
3.0 x 2.5 x 3.0mm



TFSS049

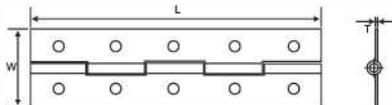


Stainless Steel Projection Hinge

Dimension(H x W x T)
100 x 125 x 3.4mm
100 x 150 x 3.4mm
100 x 180 x 3.4mm
100 x 200 x 3.4mm
100 x 230 x 3.4mm
100 x 250 x 3.4mm
100 x 300 x 3.4mm



TFSS050



Continuous Hinge / Piano Hinge

Material: stainless steel, or steel, or brass

Screw holes: drilled and undrilled

Size: L=1800mm, 2000mm, standard.

Other sizes are workable

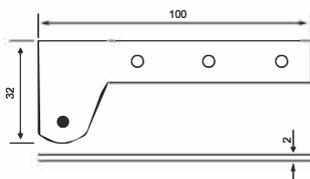
W=1, 1-1/16", 1-1/5", 1-1/4", 1-3/8", 1.5", 2.0", 2.5", 3.0", 4.0"

T=0.5mm min 4.0mm max

Finish: self-color standard, SSS, PSS



TFSS051

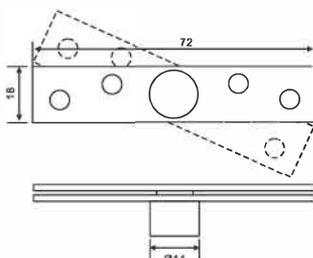


Stainless Steel Pivot Hinge

Dimension(H x W x T)
100 x 32 x 2.0mm

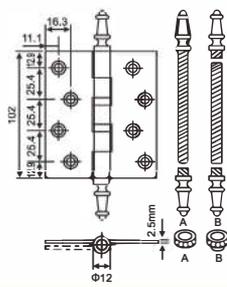


TFSS055



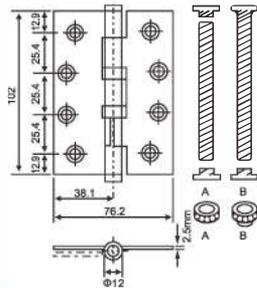
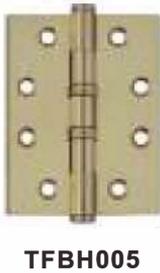
Stainless Steel Floor Hinge

Dimension(H x W x T)
72 x 18 x 3.0mm



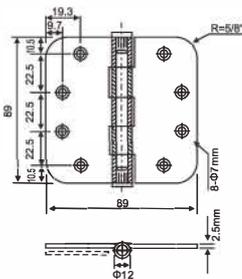
Solid Brass Double Ball Bearing Steeple Tip Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
3.0" x 2.0" x 2.0mm	5.0" x 4.0" x 2.5mm	4.5" x 4.0" x 3.5mm
3.0" x 2.5" x 2.0mm	4.0" x 3.0" x 3.0mm	4.5" x 4.5" x 3.5mm
4.0" x 3.0" x 2.0mm	4.0" x 4.0" x 3.0mm	5.0" x 5.0" x 3.5mm
3.0" x 3.0" x 2.0mm	4.5" x 4.0" x 3.0mm	4.0" x 3.5" x 4.0mm
4.0" x 3.5" x 2.0mm	4.5" x 4.5" x 3.0mm	4.5" x 4.0" x 4.0mm
4.0" x 4.0" x 2.0mm	5.0" x 3.0" x 3.0mm	4.5" x 4.5" x 4.0mm
3.5" x 3.5" x 2.5mm	5.0" x 3.5" x 3.0mm	5.0" x 3.0" x 4.0mm
3.5" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm	5.0" x 4.0" x 4.0mm
4.0" x 3.0" x 2.5mm	6.0" x 4.0" x 3.0mm	5.0" x 5.0" x 4.0mm
5.0" x 3.0" x 2.5mm	6.0" x 5.0" x 3.0mm	5.0" x 4.5" x 4.5mm



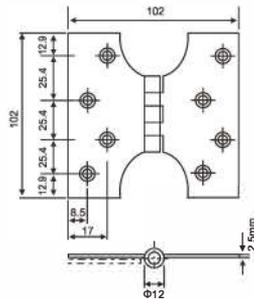
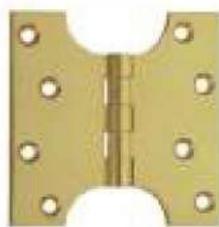
Solid Brass Double Ball Bearing Hinge

Dimension(H x W x T)	Dimension(H x W x T)	Dimension(H x W x T)
3.0" x 2.0" x 2.0mm	5.0" x 4.0" x 2.5mm	4.5" x 4.0" x 3.5mm
3.0" x 2.5" x 2.0mm	4.0" x 3.0" x 3.0mm	4.5" x 4.5" x 3.5mm
4.0" x 3.0" x 2.0mm	4.0" x 4.0" x 3.0mm	5.0" x 5.0" x 3.5mm
3.0" x 3.0" x 2.0mm	4.5" x 4.0" x 3.0mm	4.0" x 3.5" x 4.0mm
4.0" x 3.5" x 2.0mm	4.5" x 4.5" x 3.0mm	4.5" x 4.0" x 4.0mm
4.0" x 4.0" x 2.0mm	5.0" x 3.0" x 3.0mm	4.5" x 4.5" x 4.0mm
3.5" x 3.5" x 2.5mm	5.0" x 3.5" x 3.0mm	5.0" x 3.0" x 4.0mm
3.5" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm	5.0" x 4.0" x 4.0mm
4.0" x 3.0" x 2.5mm	6.0" x 4.0" x 3.0mm	5.0" x 5.0" x 4.0mm
5.0" x 3.0" x 2.5mm	6.0" x 5.0" x 3.0mm	5.0" x 4.5" x 4.5mm



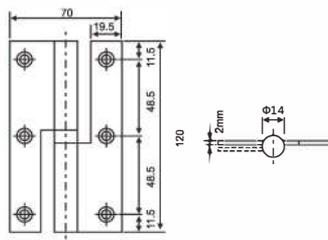
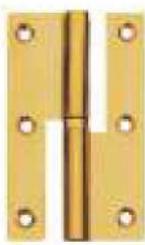
Solid Brass Plain Joint Round Corner Hinge

Dimension(H x W x T)	Dimension(H x W x T)
4.0" x 4.0" x 2.0mm	4.5" x 4.5" x 3.0mm
3.5" x 3.5" x 2.5mm	5.0" x 3.0" x 3.0mm
3.5" x 3.0" x 2.5mm	5.0" x 3.5" x 3.0mm
4.0" x 3.0" x 2.5mm	5.0" x 4.0" x 3.0mm
5.0" x 3.0" x 2.5mm	6.0" x 3.5" x 3.0mm
5.0" x 4.0" x 2.5mm	6.0" x 4.0" x 3.0mm
4.0" x 3.0" x 3.0mm	6.0" x 5.0" x 3.0mm
4.0" x 4.0" x 3.0mm	4.0" x 3.0" x 3.5mm
4.5" x 4.0" x 3.0mm	4.0" x 4.0" x 3.5mm



Solid Brass Parliament Hinge

Dimension(H x W x T)
3.0" x 5.0" x 4.0mm
4.0" x 4.0" x 4.0mm
4.0" x 5.0" x 4.0mm
4.0" x 6.0" x 4.0mm
4.0" x 7.0" x 4.0mm



Solid Brass Lift-off Hinge

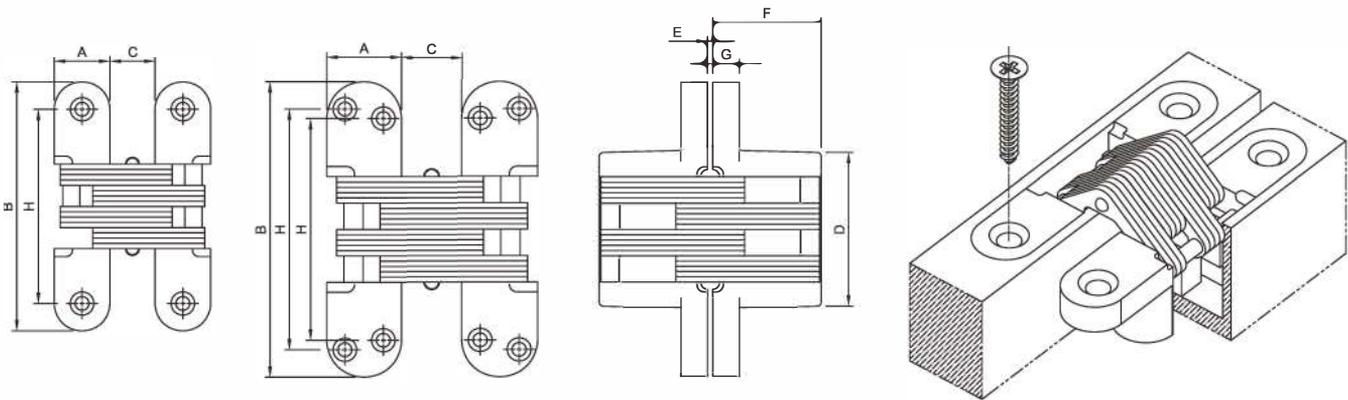
Dimension(H x W x T)
100 x 65 x 3.0mm
120 x 70 x 3.0mm
140 x 70 x 3.0mm
100 x 70 x 3.0mm
100 x 86 x 3.0mm



TFCH007 - Stainless Steel

Features

- Casting Stainless Steel Body, Stainless Steel Strips
- Concealed Installation
- Totally Invisible When Door Is Closed
- Non-handed
- Suitable For Timber And Metal Doors
- Finish: SSS, PSS, PB, PVD, AB, AC
- Maximum Opening Angle 180 Degree.
- Standard: 3 Pcs Per Door
- Packed With Screws



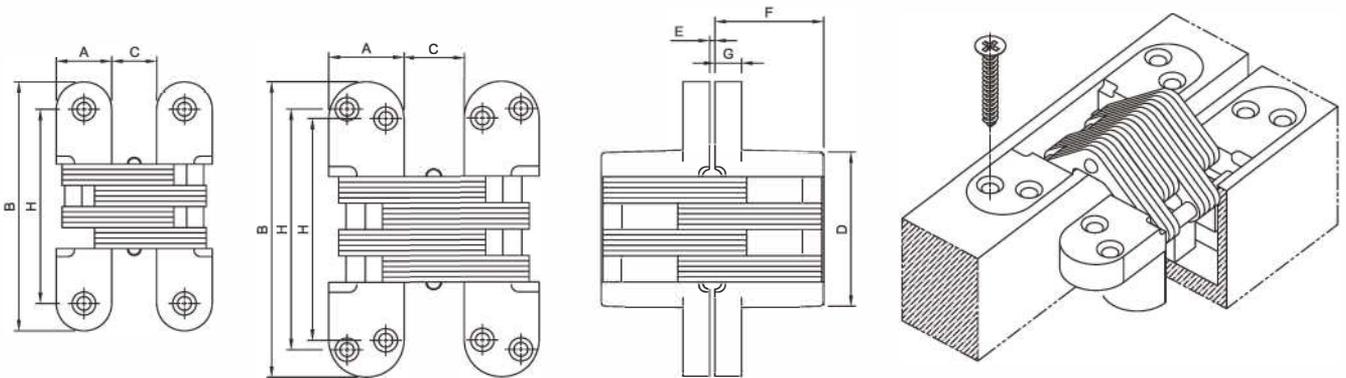
Data Unit (mm)	Stainless Steel Body, Stainless Steel Connecting Strips											
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortice Length	E Dimension From Door Edge	F Mortice Depth	G Plate Depth	H < CTC >	
SS-CC09	34 x 140	50mm	50kg	34	139.5	27.5	74.5	1.6	51	11.5	113.5	102.5
SS-CC08	28 x 118	40mm	40kg	28	118	22	61.5	1.4	41	9.5	93	88
SS-CC07	25 x 118	35mm	30kg	25	118	18	65.3	1	36.5	11.3	90.5	
SS-CC06	19 x 95	30mm	25kg	19	95	13	52.5	1.2	27	9	73	
SS-CC05	16 x 70	25mm	15kg	16	70	11	34	0.8	22.5	7.4	51	
SS-CC04 Spring Type	28 x 118	40mm	40kg	28	118	22	61.5	1.4	41	9.5	93	88
SS-CC03 Spring Type	25 x 118	35mm	30kg	25	118	18	65.3	1	36.5	11.3	90.5	

TFCH007 - Zinc Alloy



Features

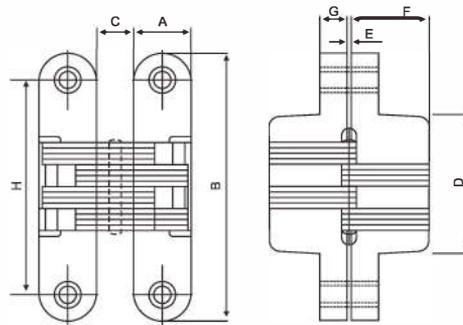
- Casting Zinc Alloy Body, Nickel Plate
- Concealed Installation
- Totally Invisible When Door Is Closed
- Non-handed
- Suitable For Timber And Metal Doors
- Finish: SSS, PSS, PB, PVD, AB, AC
- Maximum Opening Angle 180 Degree.
- Standard: 3 Pcs Per Door
- Packed With Screws



Data Unit (mm)	Zinc Alloy Body, Nickel Plate											
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth	H < CTC >	
ZA-CC09	34 x 140	50mm	50kg	34	140	27.5	74.5	1.6	51	11.5	113.5	102.5
ZA-CC08	28 x 118	40mm	40kg	28	117.5	22	61.5	1.4	41	9.5	93	87
ZA-CC07	25 x 118	35mm	30kg	25	117.5	18	64	1.6	36	11	90	
ZA-CC06	19 x 95	30mm	25kg	19	95	13	51.2	1.2	27	9	73	
ZA-CC05	16 x 70	25mm	15kg	16	70	11	34	0.8	22.5	7	51	
ZA-CC04	13 x 60	20mm	10kg	13	60	9	30.5	0.8	18	6	47	
ZA-CC03	13 x 45	20mm	5kg	13	45	9	19	0.8	18	5	30.5	
ZA-CC10	28 x 118	40mm	25kg	28	117.5	25	61.5	1.4	44	12	90	
ZA-CC11 Spring Type	25 x 118	35mm	30kg	25	117.5	18	64	1.6	36	11.5	90	
ZA-CC12 Spring Type	28 x 118	40mm	40kg	28	117.5	22	61.5	1.4	41	9.5	93	87



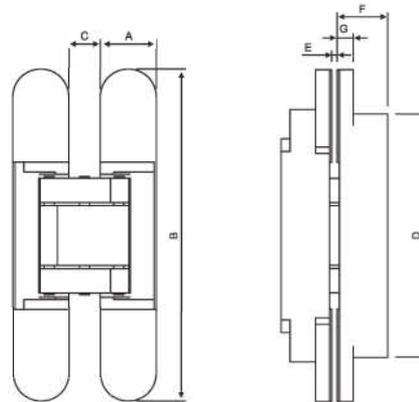
TFCH007-B



- Specification:**
- With Nylon Silencer
 - Material: Stainless Steel / Zinc Alloy

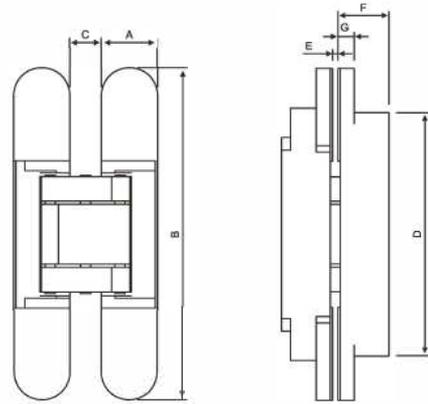


TFCH008-A

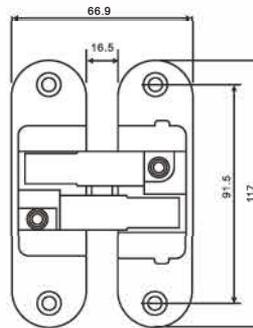


Aluminum 3-D Adjustable Invisible Hinge

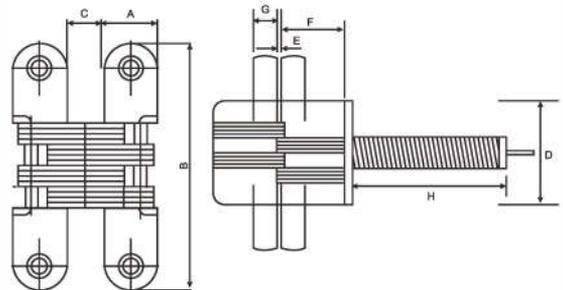
Data Unit (mm)	Aluminum Body, Nickel Plate										Finish
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth	
TF00857	25 x 150	35mm	40kg	25	150	14	121	3.5	22.5	6.5	Silver
TF00864	25 x 150	35mm	40kg	25	150	14	121	3.5	22.5	6.5	Black
TF00871	25 x 150	35mm	40kg	25	150	14	121	3.5	22.5	6.5	Gold
TF00888	28 x 117	40mm	80kg	28	177	16	145	3.5	25.5	9	Silver
TF00895	28 x 117	40mm	80kg	28	177	16	145	3.5	25.5	9	Black
TF00801	28 x 117	40mm	80kg	28	177	16	145	3.5	25.5	9	Gold
TF00818	34 x 246	45mm	120kg	34	246	18	212.5	3.5	27.5	9	Silver
TF00825	34 x 246	45mm	120kg	34	246	18	212.5	3.5	27.5	9	Black
TF00832	34 x 246	45mm	120kg	34	246	18	212.5	3.5	27.5	9	Gold


TFCH008

Zinc Alloy 3-D Adjustable Invisible Hinge

Data Unit (mm)	Zinc Alloy Body									
Product Code	Size	Min. Door Thickness	Max. Door Weight	A Hinge Width	B Hinge Length	C	D Mortise Length	E Dimension From Door Edge	F Mortise Depth	G Plate Depth
ZA-3D40	25 x 150	35mm	40kg	25	150	14	121	3.5	22.5	6.5
ZA-3D80	28 x 177	40mm	80kg	28	177	16	145	3.5	25.5	9
ZA-3D120	34 x 246	45mm	120kg	34	246	18	212.5	3.5	27.5	9


TFCH009

Zinc Alloy 3-D Adjustable Invisible Hinge

Art. No.	Dimension(H x W x T)
TFCH009-A	30 x 110mm
TFCH009-B	23 x 95mm
TFCH009-C	28 x 135mm


TFCH010

Stainless Steel Adjustable Spring Invisible

Art. No.	Dimension(H x W x T)
ZA-CC12	28 x 118 x 22mm
SS-CC04	28 x 118 x 22mm

BS EN12209 Building Hardware Mechanically Operated Locks, Latch and Locking Plates

EN 12209 classifies mechanically operated locks, latches and locking plates using an 11 digit coding system. Fundamental to this standard is a comprehensive classification system for assessing the wide range of products needed to satisfy the diverse requirements of the European market.

Features assessed include normal use (and abuse) forces, long-term durability, fire/smoke resistance, corrosion and temperature resistance and security, both manipulative and physical.

1. Category of Use

3

Three grades are identified:

Grade 1 : Low frequency of use by people with a high incentive to exercise care and a small chance of misuse. E.g. Internal residential doors

Grade 2 : Medium frequency of use by people with some incentive to exercise care but where there is some chance of misuse. E.g. Internal office doors.

Grade 3 : High frequency of use by public or others with little incentive to exercise care and with a high change of misuse. E.g. Public doors.

2. Durability

X

Twelve grades are identified with minimum figures for deadbolt and snib operation, and latch bolt operation with and without side load, as show. The side load is applied to the latch bolt when it is being withdrawn.

Grade A	50,000 tested cycles no stress on latch bolt	Grade L	100,000 tested cycles stress on latch bolt 25 N
Grade B	100,000 tested cycles no stress on latch bolt	Grade M	200,000 tested cycles stress on latch bolt 25 N
Grade C	200,000 tested cycles no stress on latch bolt	Grade R	100,000 tested cycles stress on latch bolt 50 N
Grade F	50,000 tested cycles stress on latch bolt 10 N	Grade S	200,000 tested cycles stress on latch bolt 50 N
Grade G	100,000 tested cycles stress on latch bolt 10 N	Grade W	200,000 tested cycles stress on latch bolt 100 N
Grade H	200,000 tested cycles stress on latch bolt 10 N	Grade X	200,000 tested cycles stress on latch bolt 100 N

3. Door Mass and Closing Force

9

Nine grades are identified with maximum figure for closing force at various door masses as shown.

Note :losing force is form a standing. Star :i.e. fully extended latch bolt in contact with striking plate at star of test .

Maximun closing	Up to 100kg	Door mass up to 200kg	Above 200kg
15N	grade 7	grade 8	grade 9
25N	grade 4	grade 5	grade 6
50N	grade 1	grade 2	grade 3

4. Fire Resistance

1

Two grade are identified :

Grade 0 : Not approved for use on fire/smke door assemblies

Grade 1 : Suitable for use on fire/smoke door assemblies tested to BS EN 1634-1 etc.

5. Safety

0

No requirement, but note : a lock or latch conforming to this standard can, at the same time, also be part of an exit device conforming to BS EN 179 or BS EN 1125.

6. Corrosion Resistance

G

Eight grade are identified with neutral salt-spray (NSS) corrosion resistance grades from BS EN 1670:1988, with and without Temperaturere resistance as shown :

LOCKS



Corrosion resistance (NSS)	Temperature resistance	
	No requirement	-20c to +80C
240 hours	grade D: very high corrosion resistance	grade G: very high corrosion resistance
96 hours	grade C: high corrosion resistance	grade F: high corrosion resistance
48 hours	grade B: moderate corrosion resistance	grade E: moderate corrosion resistance
24 hours	grade A: low corrosion resistance	
No requirement	grade 0: no defined corrosion resistance	

7. Security and drill resistance

Seven grades are identified with minimum figures for requirements relating to physical attack, with or without drilling of the lockcase, as shown: -

3

Increasing resistance to attack	No drilling requirement	Drilling requirement
	grade6: very high security	grade7: very high security
	grade4: high security	grade5: high security
	grade3: medium security	
	grade2: low security	
	grade1: minimum security	

8. Field of Door Application.

B

	mortise lock, unrestricted application		rim lock, pivot door, inwards opening
B	mortise lock, pivot door		mortise lock, pivot door, locked form inside
	mortise lock, sliding door		mortise lock, sliding door, locked form inside
	rim lock, unrestricted application	M	rim lock, pivot door, locked form inside
	rim lock, pivot door	N	rim lock, sliding door, locked form inside
	rim lock, sliding door	P	mortise lock, pivot door, supported, locked form inside
	bored lock, unrestricted application		
	mortise lock, pivot door, supported	R	rim lock, pivot door, inwards opening, locked form inside

9. Type of Key Operation and Locking:

C

Nine grades are identified for differing types of key operation, The grading determines how the lock is assessed for deadlocking requirement as shown. In addition, there is a maximum key torque operating requirement of 1.5 Nm and a minimum key strength requirement of 2.5 Nm .

Grade 0 : Not applicable;

Grade A : Cylinder lock or latch; manually locking;

Grade B : Cylinder lock or latch; automatically Locking;

Grade C : Cylinder lock or latch; manually locking with intermediate locking;

Grade D : Lever lock or latch; manually locking;

Grade E : Lever lock or latch; automatically locking;

Grade F : Lever lock or latch; manually locking with intermediate locking;

Grade H : Lock or latch without key operation; manually locking;

Grade G : Lock without key operation; automatically locking.

10. Type of Spindle Operation

2

Five grades are identified

Grade 0 : Lock without follower

Grade 1 : Lock with sprung lever or knob

Grade 2 : Lock with light unsprung leverg.

Grade 3 : Lock with heavy unsprung lever

Grade 4 : Lock with manufacturer's own specification furniture

11. Key Identification

0

Nine grades are identified relating to the number of differs and levers. Grades to a latch with no locking action.

No of differs	No of levers							
								grade H
					grade F		grade G	
				grade D		grade E		
			grade B		grade C			
		grade A						
	grade 0							



EN 12209

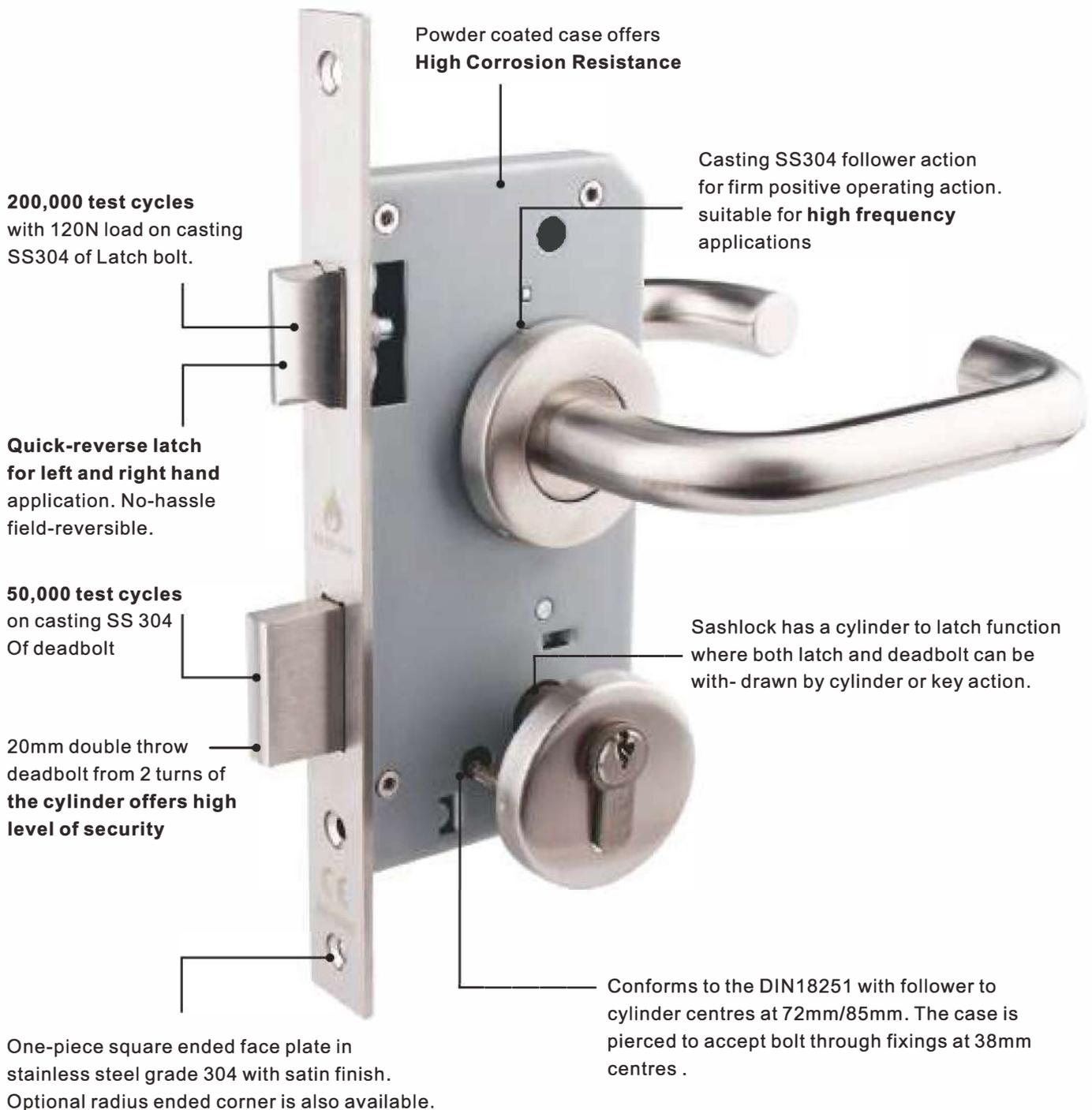


EN 1906



260 Mins
Fire Rated

TUFFRO CE mark European Mortise Lock Successfully tested for conformity to all the requirements of BS EN 12209, 11 Classification: **3X910G3BC20**



Introduction - Mortise Locks

The TUFFRO range of architectural locks is manufactured to the highest engineering standards and designed to offer a high price / performance ratio.

They have been successfully type tested to all the requirements of BS EN 12209 / EN 1634, 260 Minutes Fire Rated.

Solid stainless steel latchbolts, deadbolts, followers, forend and strike plate provide enhanced durability and security.

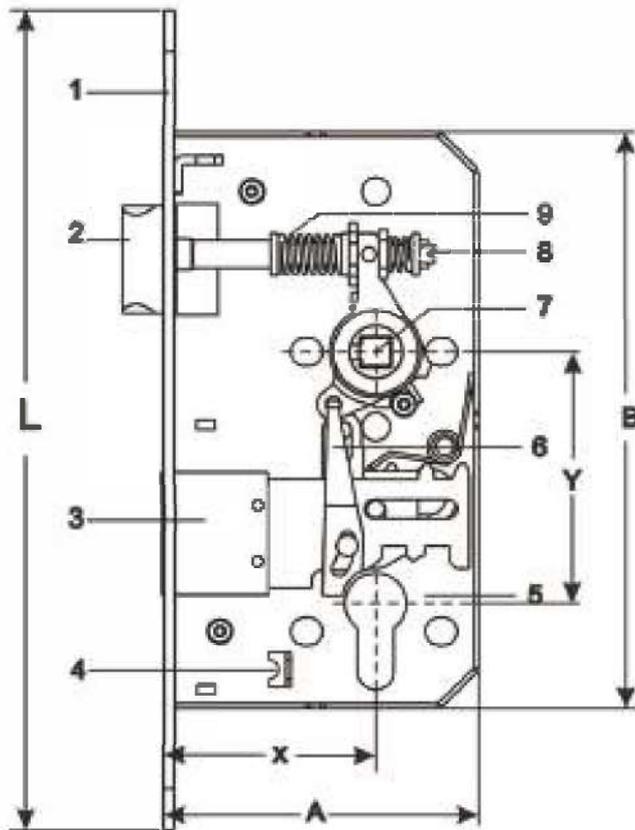


Technical Information:

- BS EN 12209 / DIN 18251, CE Classification: 3X910G3BC20
- Latch (Casting): SS304 (Durability: Grade X, 200,000 test cycles, 120N load on latch cycles)
- Dead bolt: SS304 (Durability: Grade X, 50,000 test cycles)
- EN 1634:260 Minutes Fire Rated

Optional functions:

- Escape Door Lock
- Sash Door Lock
- Classroom Lock
- Storeroom Lock
- Privacy Lock
- Passage Lock With Latchbolt
- Deadbolt Lock
- Bathroom Lock
- Night Latch



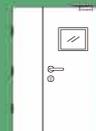
- | | |
|-------------------------------|---------------------|
| 1. Forend | 9. Spring |
| 2. Latch | X. Backset |
| 3. Dead bolt | Y. Distance |
| 4. Screw channel for cylinder | A. Lock case width |
| 5. Lock case | B. Lock case height |
| 6. Action-arm | L. Forend length |
| 7. Follower | F. Forend width |
| 8. Turning device | |

Application for Doors

- Wooden Doors/Timber
- Metal/Steel Doors
- Office Doors
- Hollow Metal Doors
- Security Doors
- Fire-Rated Doors



Single Door



Composite Door



Double Door



5 Years Mechanical Guarantee



Fire Rated Sash Lock

TFML009 (72 centres)

Function: Latchbolt can be operated by lever handles on either side. Deadbolt thrown and retracted from one or from both sides depending on the type of cylinder installed. Cylinder action will operate both deadbolt and latchbolt. Deadbolt 2-turns.



260 Mins Fire Rated

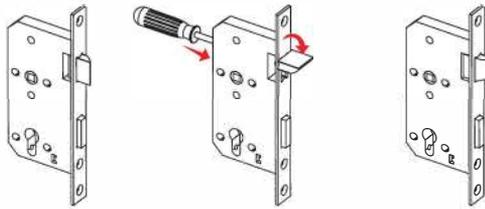
Class: **3X910G3BC20**

Certification	CE EN12209 / DIN 18251 Grade 3, 200,000 test cycles, EN1634: 260 Min fire rated, EN1670: 240 hours Corrosion Resistance
CE Classification	3X910G3BC20
Backset	55mm, 60mm, 65mm, 70mm, 80mm
Distance	72mm
Material	Solid SUS 304 Latchbolt & Deadbolt, Follower, SUS 304 Forend, Strike Plate
Forend & Strike plate	Square or Radius
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Entrance door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Fire door, Smoke door, Interior door, Outer door, Swing door etc.

Cylinder can withdraw both latch and deadbolt - offers convenience and safety combined with security.

Pierced to accept bolt through furniture and escutcheons at 38mm centres

Lockcase Reversible Direction



Art No.:

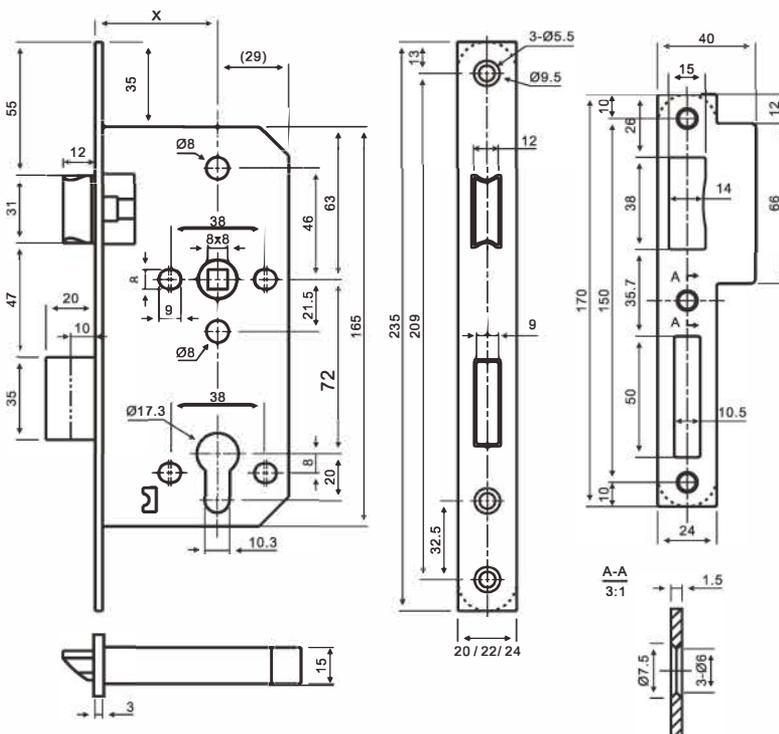
TFML009-5572 X=55mm

TFML009-6072 X=60mm

TFML009-6572 X=65mm

TFML009-7072 X=70mm

TFML009-8072 X=80mm



Standard Configuration



TFML009



TFTH001



TFCL004

TFLC003

Fire Door: rotate the handle to open the door from inside, by key from outside

Smoke Door: open by key in both side

*Master key is available



5 Years Mechanical Guarantee



Bathroom Lock

TFML012

Function: Latchbolt operated by lever on either side. Deadbolt is thrown by thumbturn inside. An indicator with an emergency release can be installed on the outside of the door and operates in conjunction with the thumbturn.

Certification	CE EN12209 / DIN 18251 Grade 3, 200,000 test cycles, EN1634: 260 Min fire rated, EN1670: 240 hours Corrosion Resistance
CE Classification	3X910G3BC20
Backset	55mm, 60mm, 65mm
Distance	78mm
Material	Solid SUS 304 Latchbolt & Deadbolt, Follower, SUS 304 Forend, Strike plate
Forend & Strike plate	Square or Radius
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Bathroom or Toilet door of commercial or residential
Suitable For Door	Wooden door, Metal door, Fire door, Smoke door, Interior door, Outer door, Swing door etc.

Class: **3X910G3BC20**



EN12209



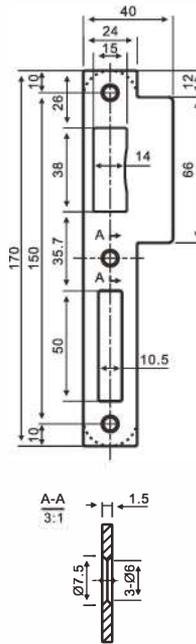
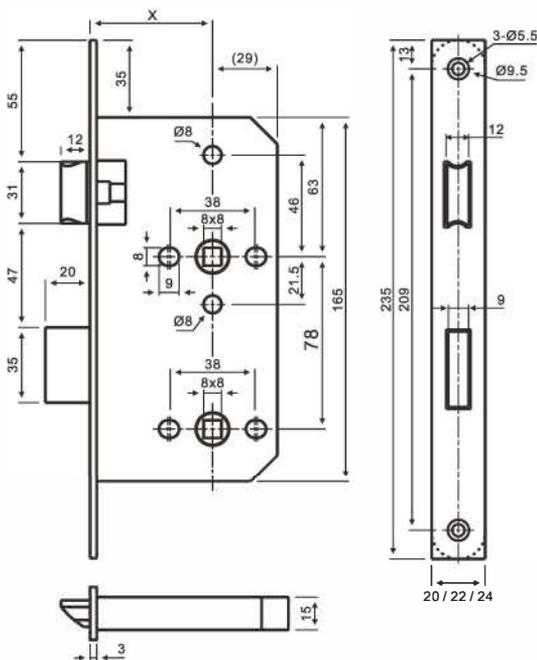
260 Mins Fire Rated

Art No.:

TFML012-5578 X=55mm

TFML012-6078 X=60mm

TFML012-6578 X=65mm



Standard Configuration



TFML012



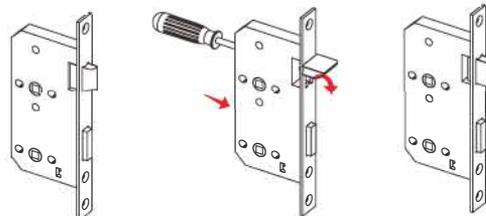
TFTH001



TFIK002

Bathroom Door: Indicator to show the occupy
Emergency open by coin.

Lockcase Reversible Direction



Deadbolt Lock

TFML013

Function: Deadbolt thrown and retracted from one side or from both sides depending on the type of cylinder installed. Deadbolt 2-turns.



Certification	CE EN12209 / DIN 18251 Grade 3, 200,000 test cycles, EN1634: 260 Min fire rated, EN1670: 240 hours Corrosion Resistance
CE Classification	3X910G3BC20
Backset	55mm, 60mm, 65mm
Distance	72mm
Material	Solid SUS 304 Latchbolt & Deadbolt, Follower, SUS 304 Forend, Strike plate
Forend & Strike plate	Square or Radius
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Entrance or storeroom door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Fire door, Smoke door, Interior door, Outer door, Swing door etc.
Cylinder can withdraw deadbolt - offers safety combined with security.	
Pierced to accept bolt through furniture and escutcheons at 38mm centres	

Class: **3 X 9 1 0 G 3 B C 2 0**

Art No.:

TFML013-5572 X=55mm

TFML013-6072 X=60mm

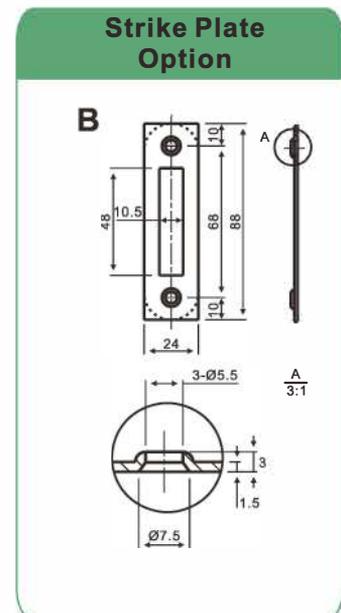
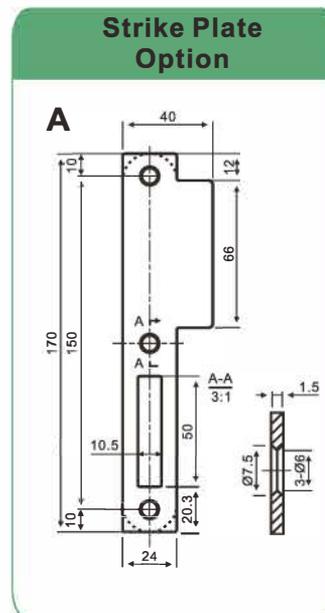
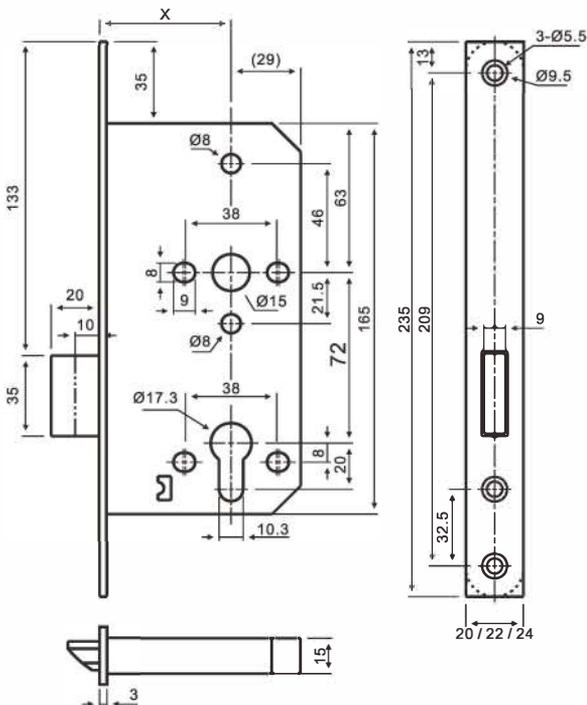
TFML013-6572 X=65mm



EN12209



260 Mins
Fire Rated



Night Latch Lock

TFML014

Function: Latchbolt operated by lever handle or key.
 Suitable for doors where single action of escape is required.
 The door will be relocked automatically when it closes and the security will be ensured.



Certification	CE EN12209 / DIN 18251 Grade 3, 200,000 test cycles, EN1634: 260 Min fire rated, EN1670: 240 hours Corrosion Resistance
CE Classification	3X910G3BC20
Backset	55mm, 60mm, 65mm
Distance	72mm
Material	Solid SUS 304 Latchbolt & Deadbolt, Follower, SUS 304 Forend, Strike plate
Forend & Strike plate	Square or Radius
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Escape door of commercial application
Suitable For Door	Wooden door, Metal door, Fire door, Smoke door, Interior door, Outer door, Swing door etc.



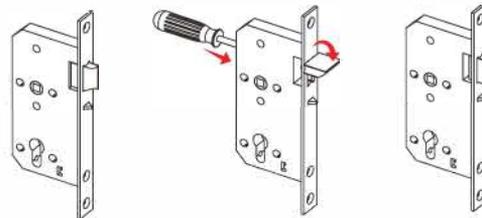
EN12209



260 Mins
Fire Rated



Lockcase Reversible Direction



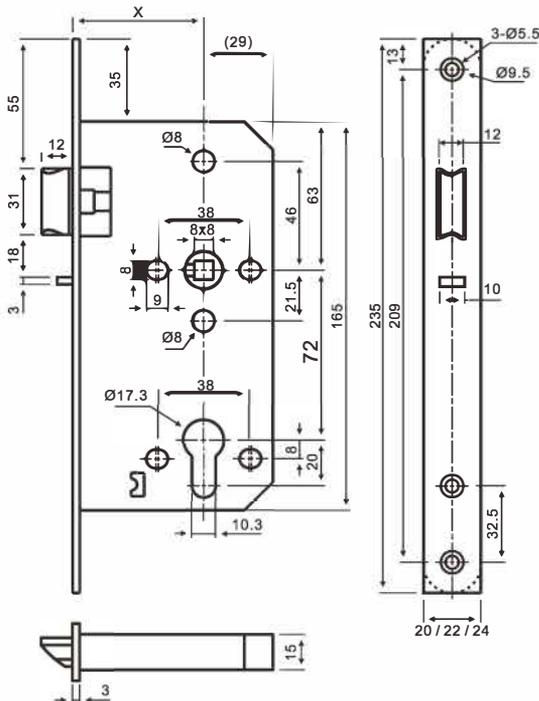
Class: **3 X 9 1 0 G 3 B C 2 0**

Art No.:

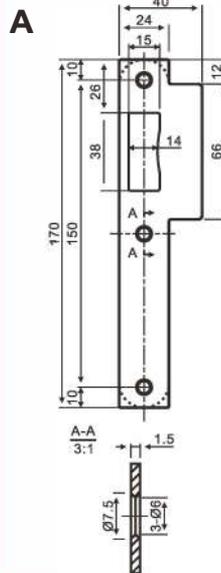
TFML014-5572 X=55mm

TFML014-6072 X=60mm

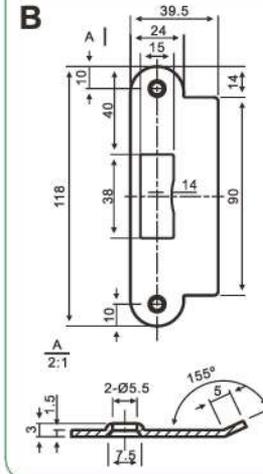
TFML014-6572 X=65mm



Strike Plate Option



Strike Plate Option



Classroom Lock

TFML015

Latchbolt retracted by lever from either side unless outside is locked by key. Unlocked from outside by key. Inside lever always free for immediate exit.



5 Years
Mechanical
Guarantee



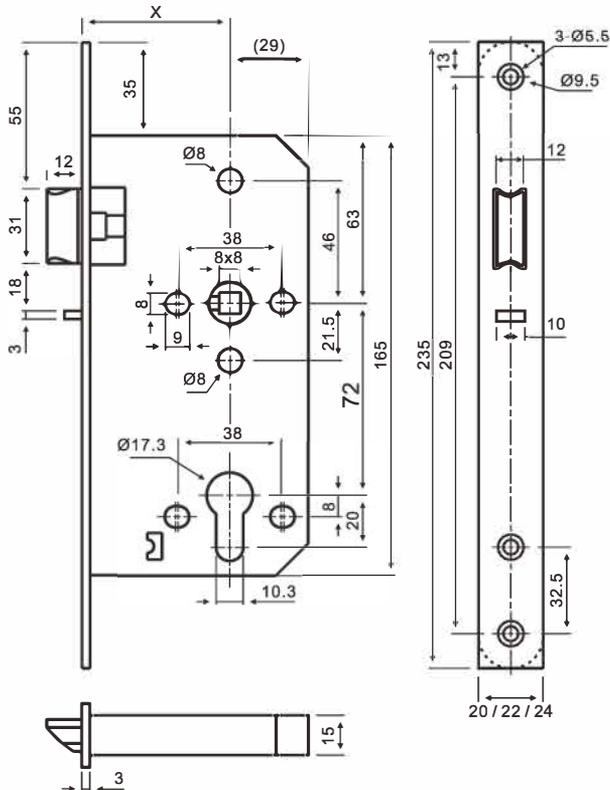
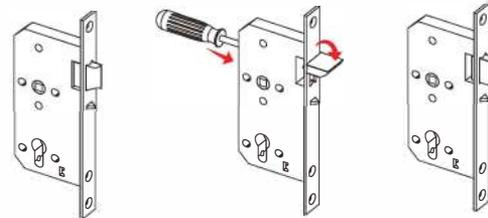
Standards	CE EN12209 / DIN 18251 Grade 3, 200,000 test cycles, EN1634: 260 Min fire rated, EN1670: 240 hours Corrosion Resistance
Backset	55mm, 60mm,
Distance	72mm
Material	Solid SUS 304 Latchbolt & Deadbolt, Follower, SUS 304 Forend, Strike plate
Forend & Strike plate	Square or Radius
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Classroom door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Fire door, Smoke door, Interior door, Outer door, Swing door etc.

Art No.:

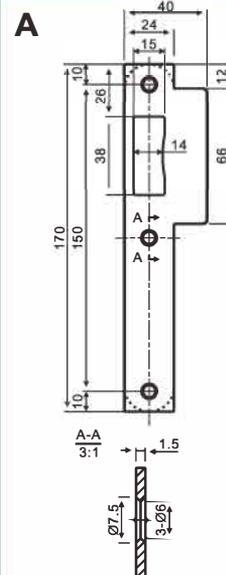
TFML015-5572 X=55mm

TFML015-6072 X=60mm

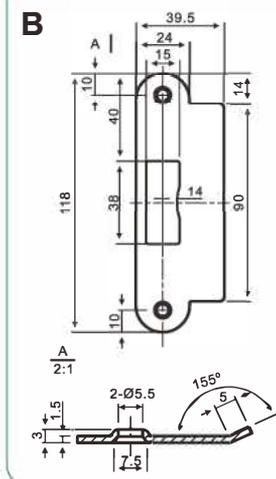
Lockcase Reversible Direction



Strike Plate Option



Strike Plate Option





Mortise Lock

TECHNICAL DATA

Follower	8x8 mm
Distance	72mm 85mm
Backset	40mm 45mm 50mm 55mm 60mm

FOREND

Type	Radius Head Square Head
Thickness	3mm
Width	22mm 23mm 24mm
Finish	SSS PSS PVD AB AC

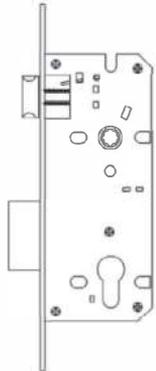
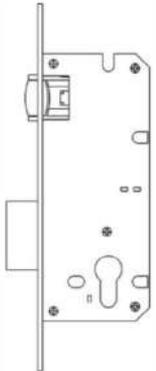
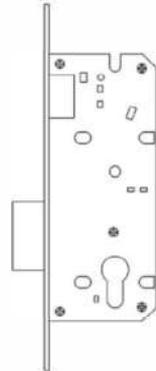
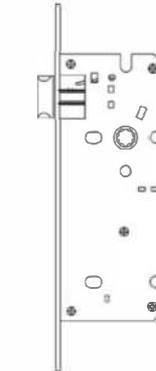
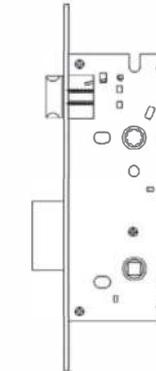
MATERIAL

Latch bolt	Brass / Zinc Alloy / Stainless Steel
Dead bolt	Brass / Zinc Alloy / Stainless Steel
Follower	Brass / Zinc Alloy / Stainless Steel
Forend	Stainless Steel

FEATURES

According to EN12209-Grade 3, DIN18251-1
 Applicable for kinds of swing gate, wooden or steel doors etc.
 Prepared for standard Euro profile cylinder
 Latch bolt has reversible ability
 Dead bolt-2 turns

FUNCTION

				
ENTRANCE	ROLLER	STOREROOM	PASSAGE	PRIVACY
TFML016	TFML017	TFML018	TFML019	TFML020


Narrow Stile Lock
TECHNICAL DATA

Follower	8x8 mm
Distance	85mm 92mm
Backset	20mm 25mm 30mm 35mm

FOREND

Type	Radius Head Square Head
Thickness	2.5 mm
Width	16mm 22mm
Finish	SSS PSS PVD AB AC

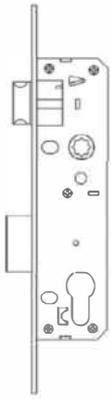
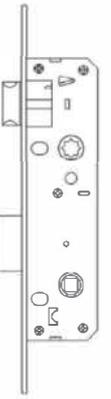
MATERIAL

Latch bolt	Brass / Zinc Alloy / Stainless Steel
Dead bolt	Brass / Zinc Alloy / Stainless Steel
Follower	Brass / Zinc Alloy / Steel/ Stainless Steel
Forend	Stainless Steel

FEATURES

According to EN12209-Grade 3, DIN18251-1
 Applicable for kinds of swing gate, wooden or steel doors etc.
 Prepared for standard Euro profile cylinder
 Latch bolt has reversible ability
 Dead bolt-1 turn

FUNCTION

				
ENTRANCE	ROLLER	STOREROOM	PASSAGE	PRIVACY

TFML021
TFML022
TFML023
TFML024
TFML025

Mortise X-Ray Lock

TFML027

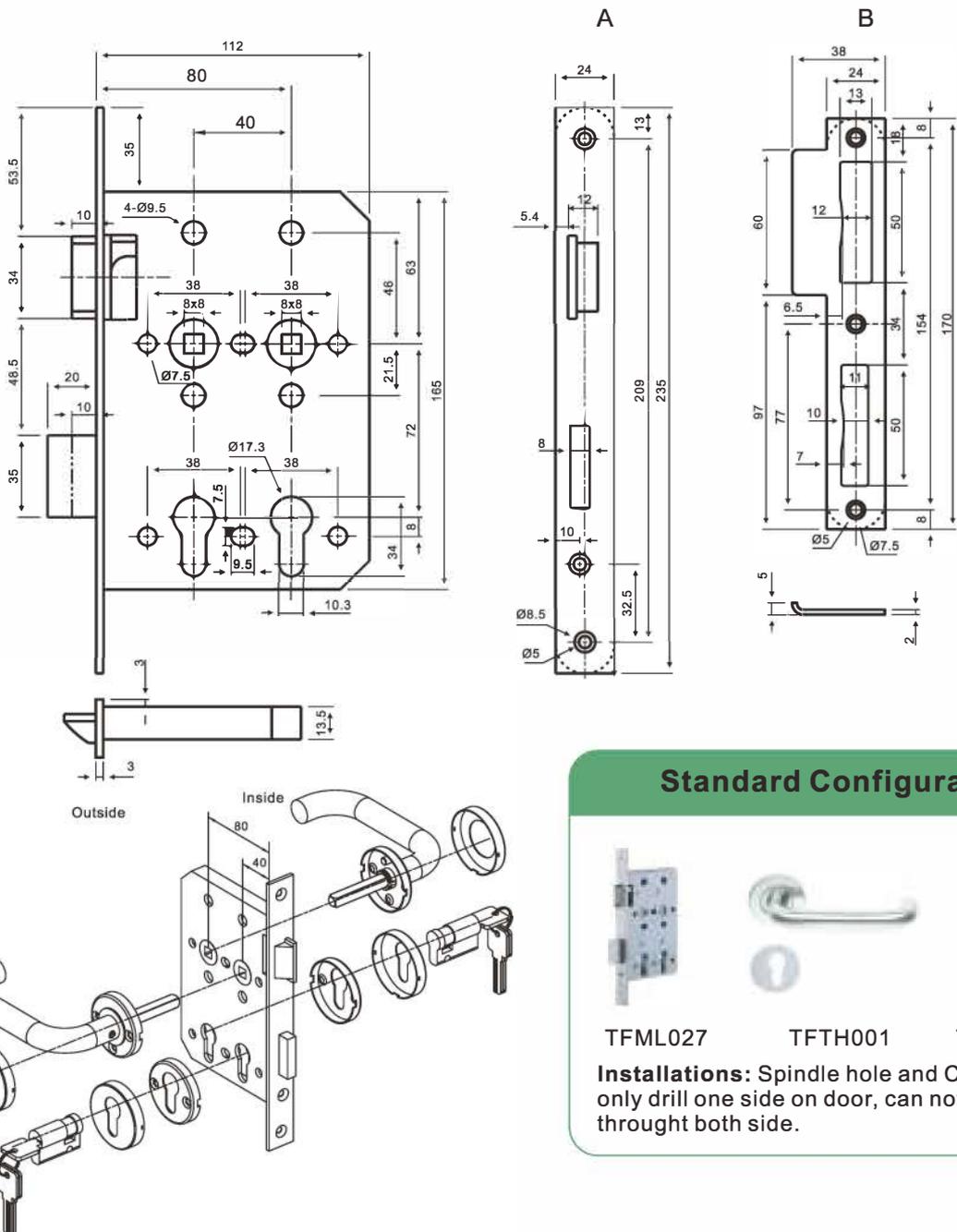
Function: Prevention of X ray Penetration.
Latch bolt can be operated by lever handles on either side.
Deadbolt thrown and retracted from both side cylinders.



5 Years
Mechanical
Guarantee



Backset	40mm, 80mm
Distance	72mm
Follower	8x8 mm
Material	Solid SUS 304 Latchbolt & Deadbolt, Follower, SUS 304 Forend, Strike plate
Forend & Strike plate	Square or Radius
Finish	SSS, PSS, PVD, PB, AB, AC
Suitable For	X-Ray door of Hospital application Ultrasonic test room doors



Standard Configuration

TFML027 TFTH001 TFLC010 x2

Installations: Spindle hole and Cylinder hole only drill one side on door, can not drill through both side.

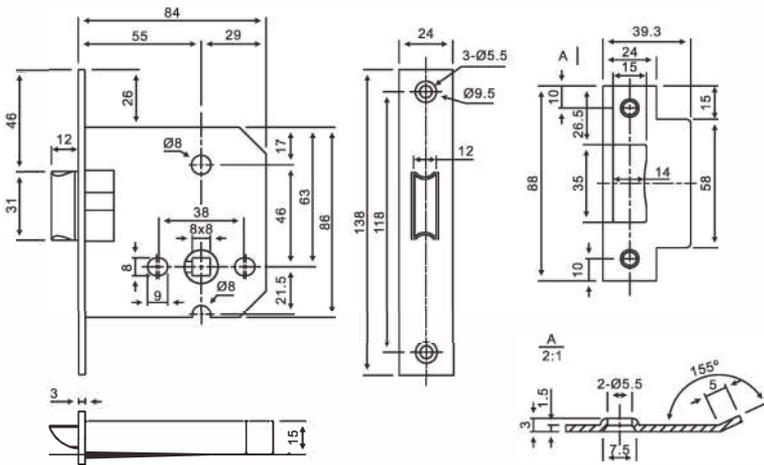


Latch Bolt Lock Body TFML028

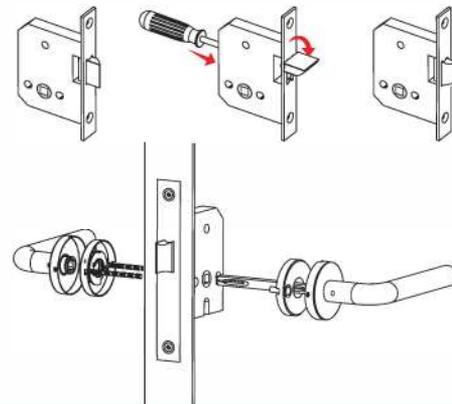
Function: Latchbolt can be operated by lever handles on either side

Backset	55mm
Material	Casting SUS 304 Latchbolt & Follower, SUS 304 Forend, Strike Plate
Forend & Strike plate	Square
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Passage door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Interior door, Outer door, Swing door etc.

Pierced to accept bolt through furniture and escutcheons at 38mm centres



Lockcase Reversible Direction



Deadbolt Lock Body TFML029

Function: Deadbolt thrown and retracted from one side or from both sides depending on the type of cylinder installed.

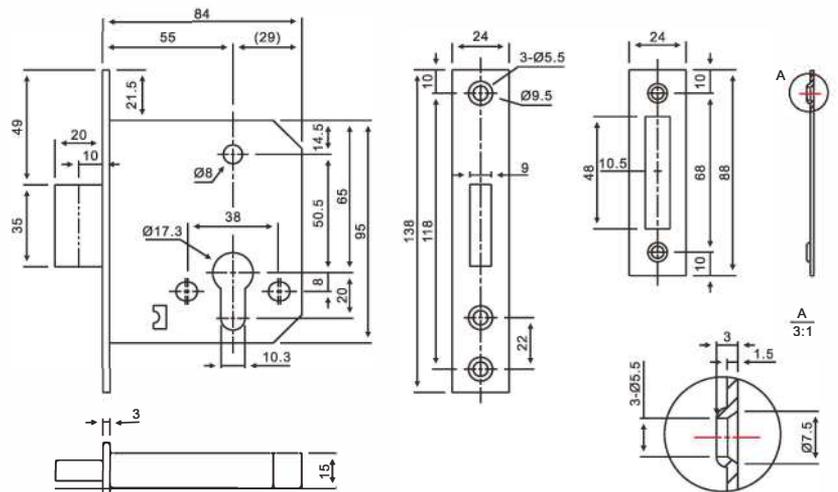
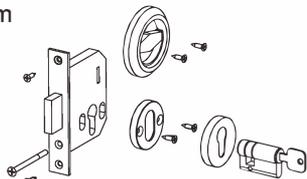
Backset	55mm
Material	Solid SUS 304 Deadbolt, SUS 304 Forend, Strike plate
Deadbolt	2 turns
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Entrance or storeroom door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Interior door, Outer door, Swing door etc.

Standard Configuration



TFML029 TFFH013 TFLC010 TFES001

Tube Wells Door : lock or open outside by key
Installation diagram



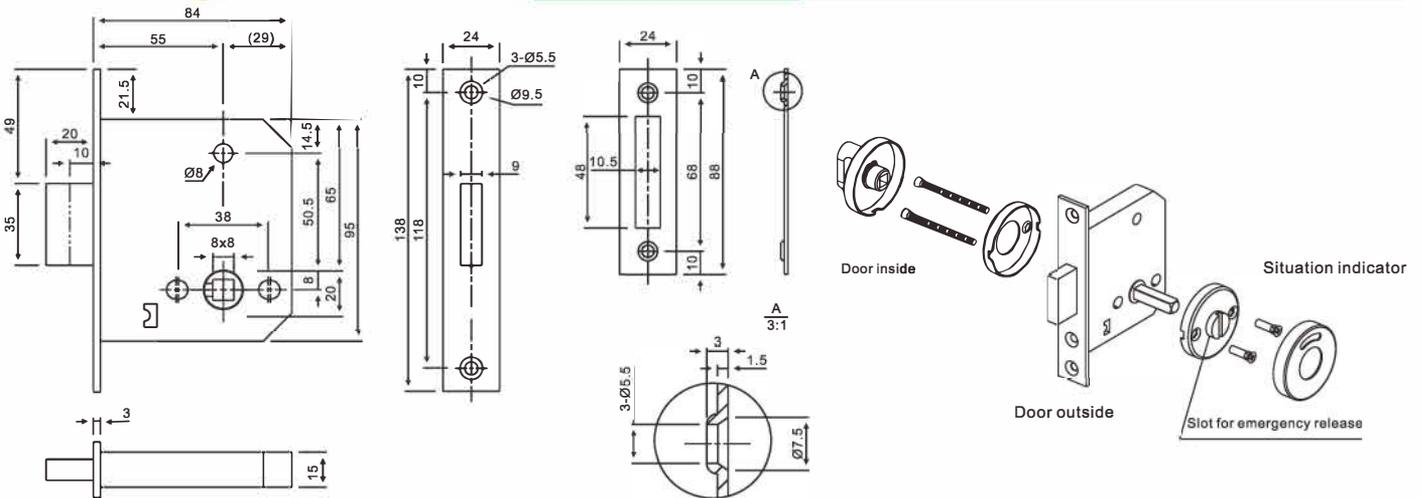


Deadbolt Lock Body

TFML029-B

Function: Deadbolt thrown and retracted from one side or from both sides depending on the type of indicator installed.

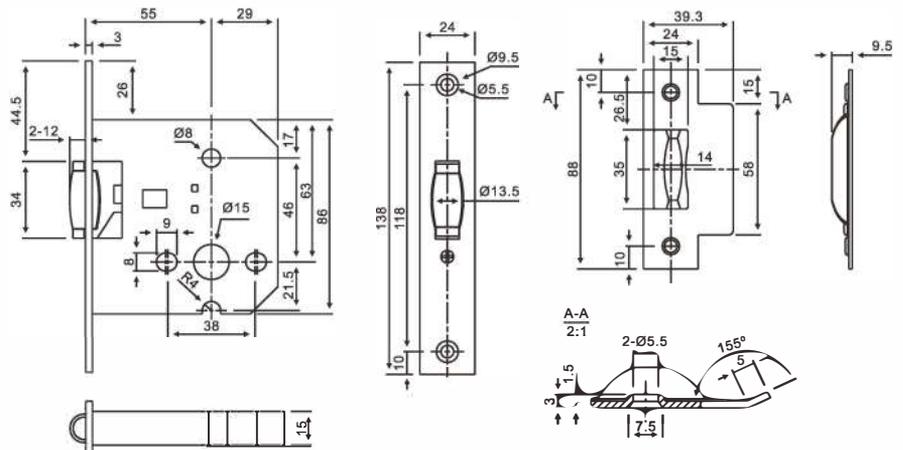
Backset	55mm
Material	Solid SUS 304 Deadbolt, SUS 304 Forend, Strike plate
Deadbolt	2 turns
Finish	SSS, PSS, PVD, PB, AB, AC
Application	Toilet door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Interior door, Outer door, Swing door etc.



Roller Bolt Lock

TFML030

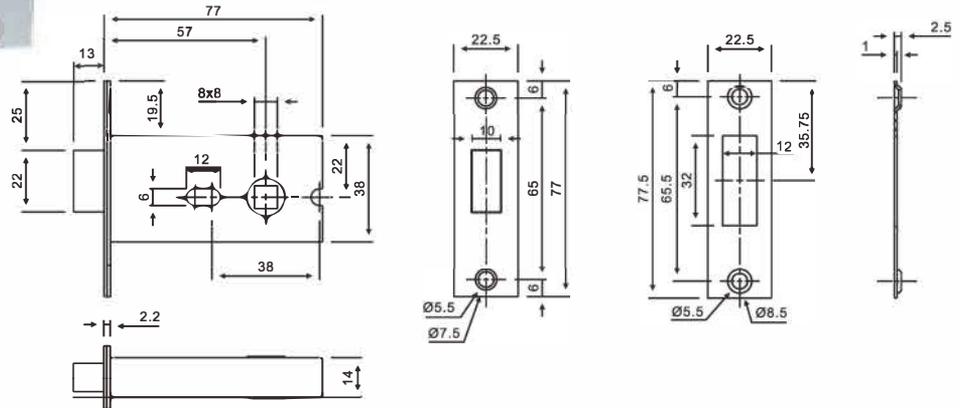
Backset available	55mm
Material	Solid SUS 304 Roller Bolt, SUS 304 Forend, Strike plate
Forend plate	W24 x H138 x T3 mm, Square head
Finish	SSS, PSS, PVD, PB, AB, AC
Suitable For Door	Wooden door, Metal door, Interior door, Outer door, Swing door etc.



WC - Bathroom Deadbolt TFML032



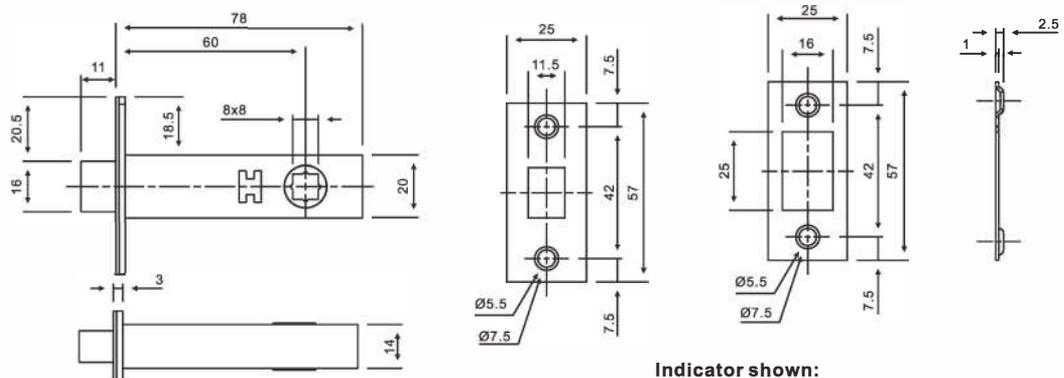
Follower	8 x 8 mm
Backset	57mm
Material	Solid Brass Deadbolt & Follower, SUS 304 Forend, Strike plate
Finish	SSS, PSS, PVD, PB, AB, AC
Suitable For	Bathroom door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Interior door etc



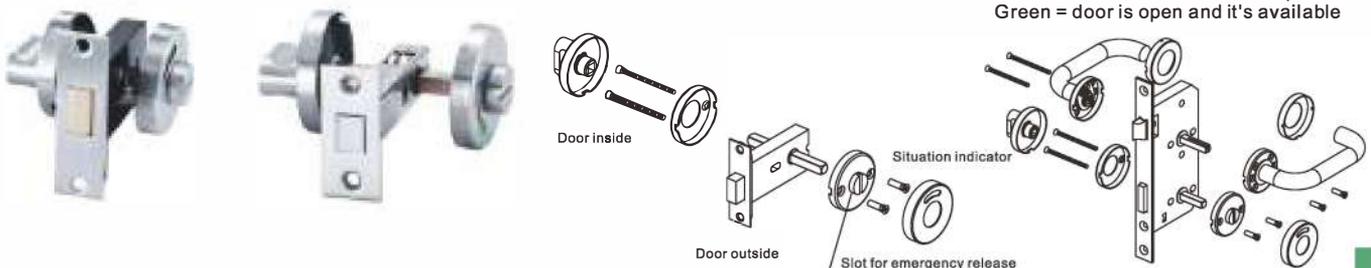
WC - Deadbolt TFML033



Follower	8 x 8 mm
Backset	60mm, 70mm
Material	Solid Brass Deadbolt & Follower, SUS 304 Forend, Strike plate
Finish	SSS, PSS, PVD, PB, AB, AC
Suitable For	Bathroom door of commercial or residential application
Suitable For Door	Wooden door, Metal door, Interior door,



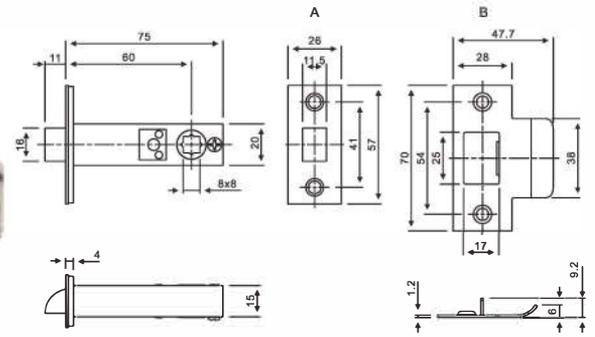
Optional Version



Indicator shown:
Red = door is close and it's occupied
Green = door is open and it's available

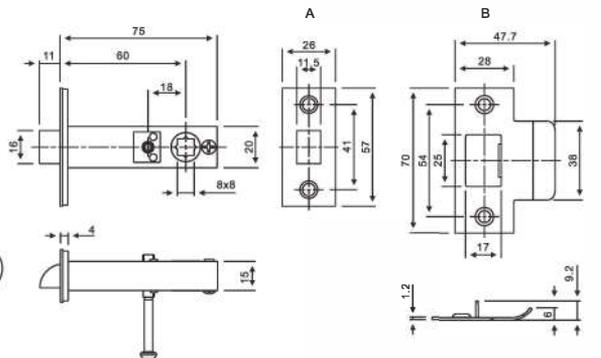
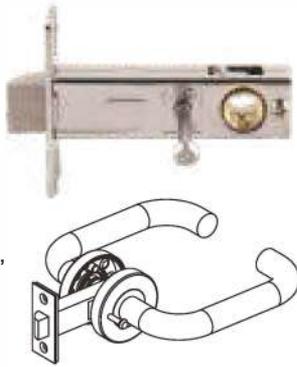
Architectural Tubular Latch TFML035

- Follower :8x8 mm
- Backset: 60mm, 70mm
- Material: Solid Brass Deadbolt & Follower, SUS 304 Forend, Strike plate
- Finish: SSS, PSS, PVD



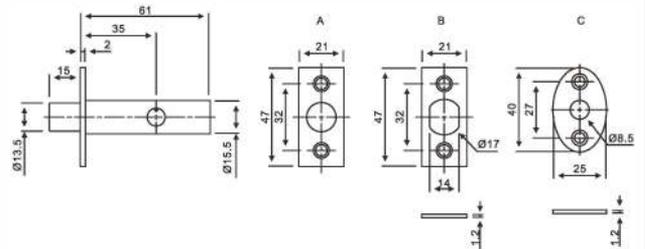
Architectural Tubular Latch TFML036

- Follower :8x8 mm
- Backset: 60mm, 70mm
- Material: Solid Brass Deadbolt & Follower, SUS 304 Forend, Strike plate
- Finish: SSS, PSS, PVD



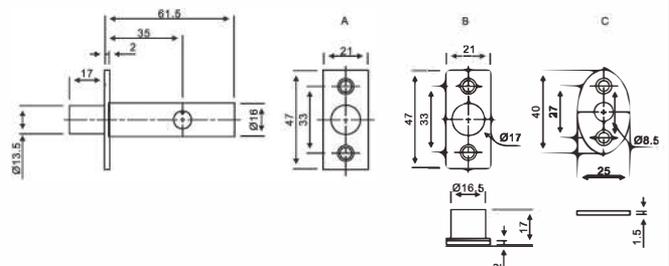
Shaft Lock(Allen Key) TFML037

- Follower :8x8 mm
- Backset: 35mm
- Material: Stainless steel
- Finish: SSS, PSS, PVD



Shaft Lock(Allen Key) TFML038

- Follower :8x8 mm
- Backset: 35mm
- Material: Stainless steel
- Finish: SSS, PSS, PVD




Entrance Knobset

- Key outside/push
- Button inside
- Stainless steel
- Standard finish: PB

TFLK001

Storeroom Knobset

- Key outside
- Stainless steel
- Standard finish: PB

TFLK002

Passage Knobset

- Non-lockable
- Stainless steel
- Standard finish: SSS

TFLK003

Bathroom Knobset

- Privacy function
- Stainless steel
- Standard finish: SSS

TFLK004

Lever Knobset

- Key outside/push
- Button inside
- Zinc Alloy
- Standard finish: PB

TFLK005

Lever Knobset

- Key outside/push
- Button inside
- Zinc Alloy
- Standard finish: PB

TFLK006

Deadbolt Lock

- Key outside
- Stainless steel
- Standard finish: AB, AC

TFLK007

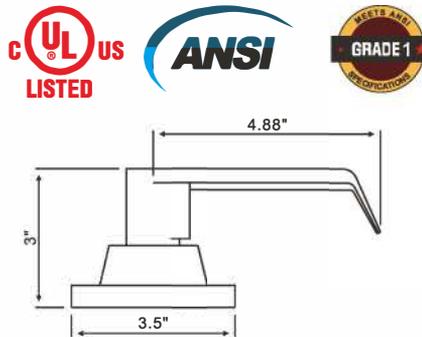
**Thumb Turn with
Cylinder Dead lock**

- Key outside with privacy function inside
- 5 Pins brass cylinder with 3 keys
- Zinc alloy Latch, SS cover
- For Door Thickness 35-45mm
- Backset: Adjustable 60 or 70mm

TFLK008

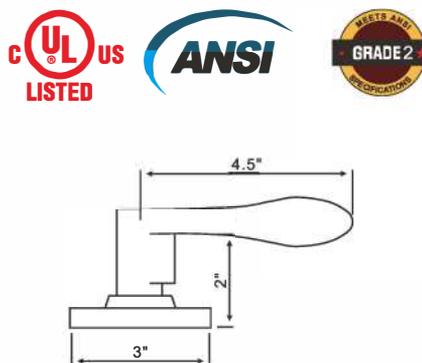


- **Door Prep:** Cross bore 2-1/8", Edge bore 1", Latch face 1-1/8"x2-1/4".
- **Backset:** 2-3/4" standard. 2-3/8" optional.
- **Door Thickness:** 1-3/8"--2" standard.
- **Cylinder:** 6-Pin removable core. Schlage "C" keyway.
- **Face plates:** 1-1/8"x2-1/4" square corner standard.
- **Strikes:** ASA strike standard. 2-1/4" full lip square corner.
- **Bolt:** 1/2"throw, stainless steel.



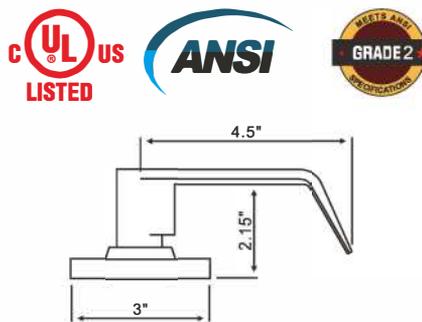
TFLK009

- **Door Prep:** Cross bore 2-1/8", Edge bore 1", Latch face 1-1/8"x2-1/4".
- **Backset:** 2-3/4" standard. 2-3/8" optional.
- **Door Thickness:** 1-3/8"--2" standard.
- **Cylinder:** 5-Pin or 6-Pin removable core. Schlage "C" keyway.
- **Rosette:** Removable exterior rosette by screw thread.
- **Face plates:** 1-1/8"x2-1/4" square corner standard.
- **Strikes:** 2-1/4" full lip square corner standard.
- **Bolt:** 1/2"throw, stainless steel.



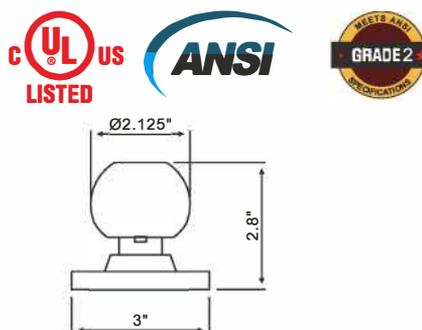
TFLK010

- **Door Prep:** Cross bore 2-1/8", Edge bore 1", Latch face 1-1/8"x2-1/4".
- **Backset:** 2-3/4" standard. 2-3/8" optional.
- **Door Thickness:** 1-1/2"--2" standard 1-3/8"--1-3/4" options.
- **Cylinder:** 5-Pin or 6-Pin removable core. Schlage "C" keyway.
- **Face plates:** 1-1/8"x2-1/4" square corner standard.
- **Strikes:** 2-1/4" full lip square corner standard.
- **Bolt:** 1/2"throw, stainless steel.



TFLK011

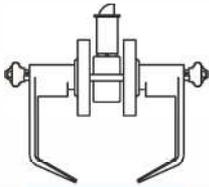
- **Door Prep:** Cross bore 2-1/8", Edge bore 1", Latch face 1-1/8"x2-1/4".
- **Backset:** 2-3/4" standard. 2-3/8" optional.
- **Door Thickness:** 1-3/8"--2" standard.
- **Cylinder:** 5-Pin or 6-Pin removable core. Schlage "C" keyway.
- **Rosette:** Removable interior and exterior rosette by screw thread.
- **Face plates:** 1-1/8"x2-1/4" square corner standard.
- **Strikes:** 2-1/4" full lip square corner standard.
- **Bolt:** 1/2"throw, stainless steel.



TFLK012

FUNCTIONS AVAILABLE

(F87)



Institutional Lock

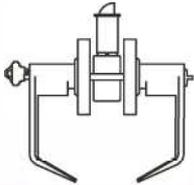
Entry or exit by key only. Both levers always free wheeling.



Single Dummy Trim

Single dummy trim for one side of door. The lever is fixed.

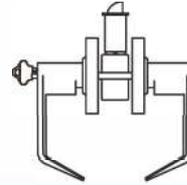
(F81)



Entrance/Office Lock

Turn/push button locking. Pushing and turning button locks outside lever requiring use of key until button is manually unlocked. Pushing button locks outside lever until unlocked with key or inside lever is turned. The inside lever is always unlocked providing emergency exit.

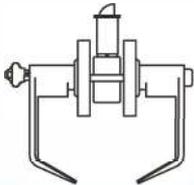
(F84)



Classroom Lock

The outside lever is locked or unlocked by key. When unlocked the lockset works as a passage set. When the lock is locked, you must use a key from outside to unlock the lockset. The inside lever is always unlocked providing emergency exit.

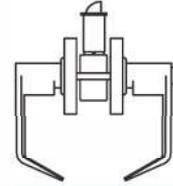
(F82)



Entrance/Office Lock

Push button locking. Pushing button in inside lever locks outside lever until unlocked with key or turning inside lever. The inside lever is always unlocked providing emergency exit.

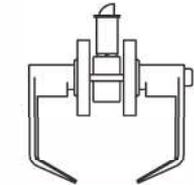
(F77)



Patio Lock

Deadlocking latchbolt operated by lever from either side. Outside lever is locked by push button inside and unlocked by rotating inside lever or closing door. The inside lever is always unlocked providing emergency exit.

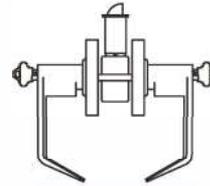
(F76)



Privacy Lock

Latchbolt operated by lever from either side. Outside lever is locked by push button inside and unlocked by emergency release outside, rotating inside lever or closing door. The inside lever is always unlocked providing emergency exit.

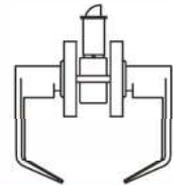
(F80)



Communicating Lock

Deadlocking latchbolt operated by lever from either side. Turning key in either lever locks or unlocks its own lever independently.

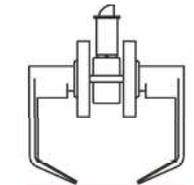
(F89)



Exit Lock

Deadlocking latchbolt operated by inside lever. Outside lever is free wheeling. The inside lever is always unlocked providing emergency exit.

(F75)



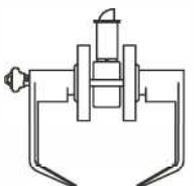
Passage/Closet

Both levers are always unlocked from inside and outside

Connecting Room/Exit Lock

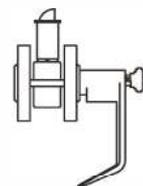
Deadlocking latchbolt operated from inside only. Blank plate outside.

(F86)



Storeroom Lock

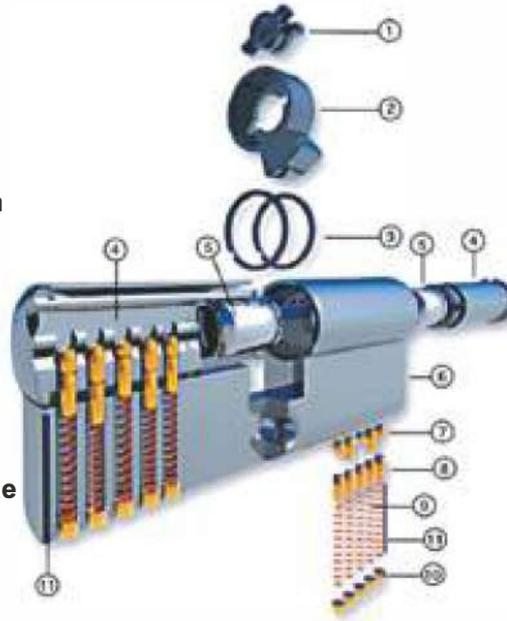
Outside lever is free wheeling, entrance by key only. Every time the door closes this unit will lock, it cannot be left unlocked. The inside lever is always unlocked providing emergency exit.



Connecting Room/Exit Lock

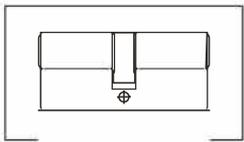
The inside lever is locked or unlocked by key. When unlocked the lockset provides Exit. When locked, the lockset stops Exit. Blank plate outside.

- EN1303 And DIN 18252/09-1999 Standards.
- Quality Solid Brass Body
- 30 Degree Offset Cam Inhibits Knock Through
- 6 Pins Standard, 10 Pin High Security With Two Line Pins, Other Sizes Available.
- Cylinders Available In A Variety Of Finish
- Key Management : Kd, Master Key, Keyed Alike Grand Master Key, Construction Key

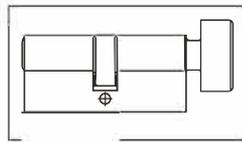


- Clutch
- Cam
- Clip Rings
- Barrel
- Spacer (long cylinders only)
- Housing
- Key Pins
- Middle Pins
- Springs
- Closing Pins
- Anti-drill Pin

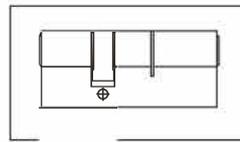
Function & Specification



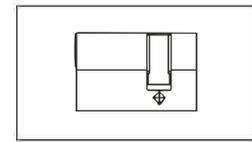
Double Entrance Function



Single Entrance Function

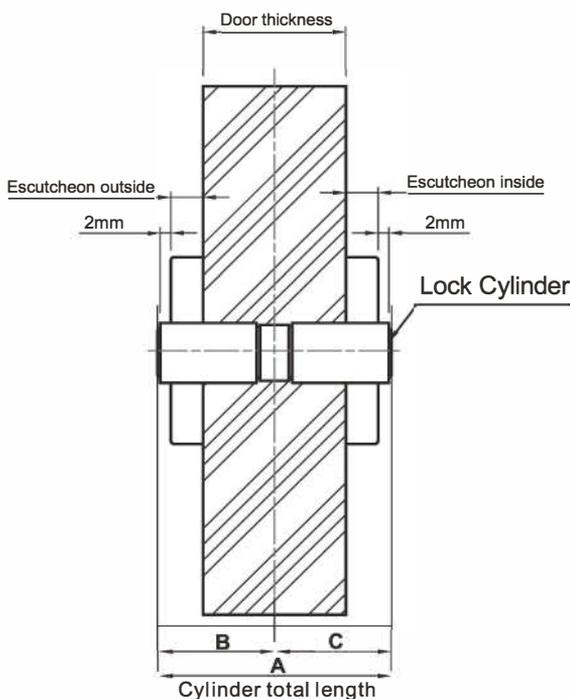


Offset Cylinder



Half Cylinder

Determination Of Cylinder Length



The following factors have to be considered when determining the length A of the locking cylinder:

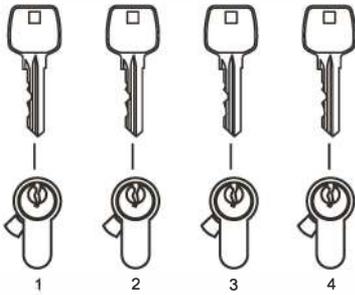
- Door thickness
- Position of the lock in the door
- Thickness of Escutcheon on the outside
- Thickness of Escutcheon on the inside

Note:

- The Lengths B and C are each measured from the centre of the fixing screw.
- The following applies to the Length A must protrude only max. 4 mm from the Escutcheon on the outside and inside.

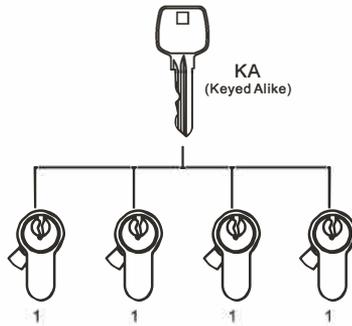
Keyed To Differ (KD)

Cylinders to differ are all operated by individual keys all different to each other.



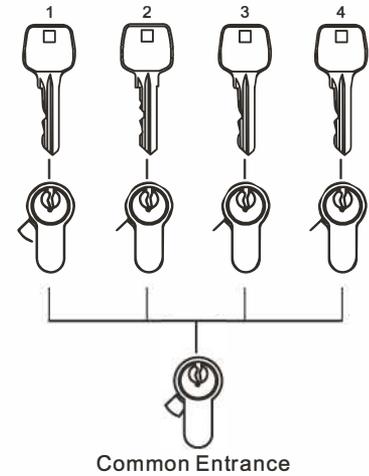
Keyed Alike Suites(KA)

All cylinders are operated by the same key. This gives an arrangement where one key will open a group of locks.



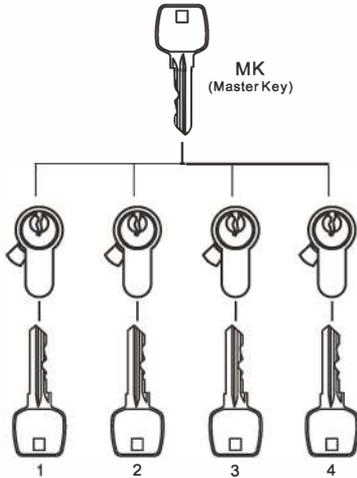
Common Entrance Suites

Each individual key is opened its own lock and the common entrance.



Master Key Suites (MK)

A group of cylinders, each equipped with an individual servant key, is also operated by one special key known as the master key. Keyed alike groups can also be incorporated into any master key suit.



Construction Key (CK)

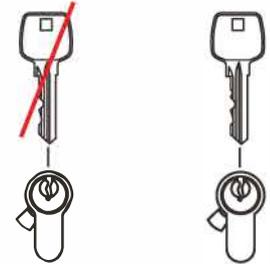
Construction key can operate the cylinder during construction period. After construction is ended up, Master Key can insert the cylinder and change the pin combination. The construction key can not open the same cylinder lock any more.

Building Construction



Construction Key

Building Completion

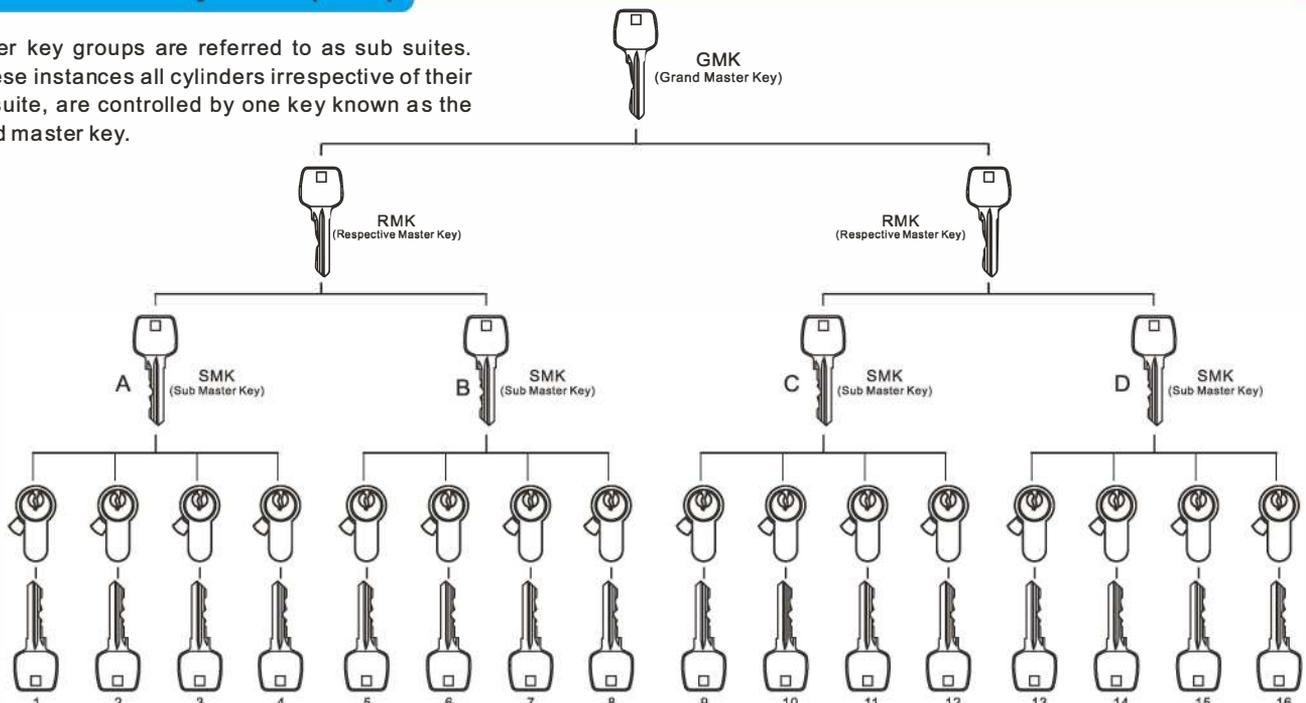


Construction Key

Owner Key

Grand Master Key Suites(GMK)

Master key groups are referred to as sub suites. In these instances all cylinders irrespective of their sub suite, are controlled by one key known as the grand master key.



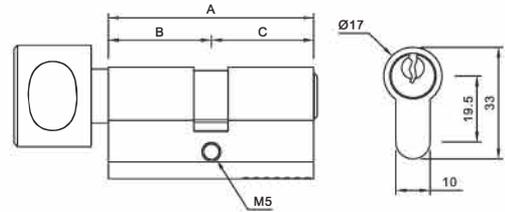
- Material: Quality Solid Brass Body And Plug
- Keys: 3 Brass Keys / 5 Brass Keys
- Key Type: Yale Key, Computer Key
- Key Management Function: Master Key, Grand Master Key, Construction Key, Keyed Alike,

- Pins: 6 Brass Pins Standard, 10 Pin High Security With Two Line Pins, Other Sizes Available.
- Degree: 0 Degree, Or 30 Degree Offset Cam Inhibits Knock Through
- Standard: Conforms To EN1303
- Fastening Screw: 65mm (standard), Other Lengths Will Be Available According To Different Backset.



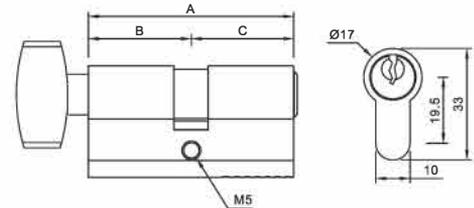
TFLC001
Key And Turn Cylinder

Art No.			
TFLC001-60	60	30	30
TFLC001-65	65	32.5	32.5
TFLC001-70	70	35	35
TFLC001-80	80	40	40



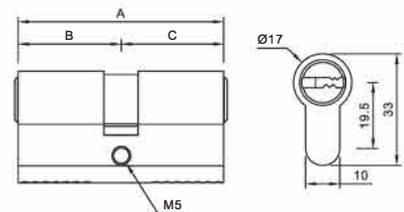
TFLC002
Single Cylinder With Turn

Art No.			
TFLC002-60	60	30	30
TFLC002-65	65	32.5	32.5
TFLC002-70	70	35	35
TFLC002-80	80	40	40



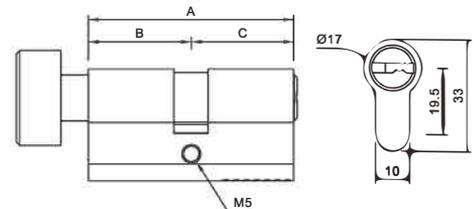
TFLC003
Double Cylinder

Art No.			
TFLC003-60	60	30	30
TFLC003-65	65	32.5	32.5
TFLC003-70	70	35	35
TFLC003-80	80	40	40



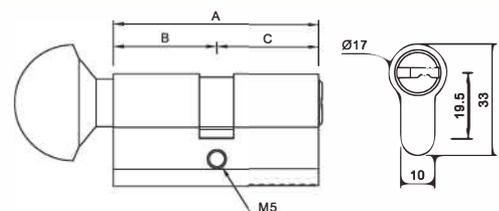
TFLC004
Thumbturn Cylinder With Key

Art No.			
TFLC004-60	60	30	30
TFLC004-65	65	32.5	32.5
TFLC004-70	70	35	35
TFLC004-80	80	40	40



TFLC005
Thumbturn Cylinder

Art No.			
TFLC005-60	60	30	30
TFLC005-65	65	32.5	32.5
TFLC005-70	70	35	35
TFLC005-80	80	40	40



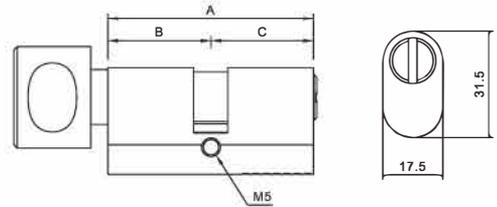
- Material: Quality Solid Brass Body And Plug
- Keys: 3 Brass Keys / 5 Brass Keys
- Key Type: Yale Key, Computer Key
- Key Management Function: Master Key, Grand Master Key, Construction Key, Keyed Alike,

- Pins: 6 Brass Pins Standard, 10 Pin High Security With Two Line Pins, Other Sizes Available.
- Degree: 0 Degree, Or 30 Degree Offset Cam Inhibits Knock Through
- Standard: Conforms To EN1303
- Fastening Screw: 65mm (standard), Other Lengths Will Be Available According To Different Backset.



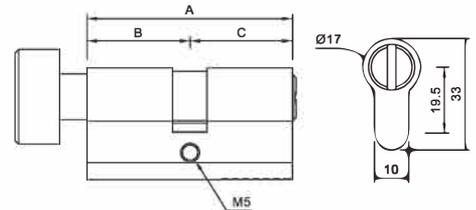
TFLC006
Oval Bathroom Cylinder

Art No.			
TFLC006-60	60	30	30
TFLC006-65	65	32.5	32.5
TFLC006-70	70	35	35
TFLC006-80	80	40	40



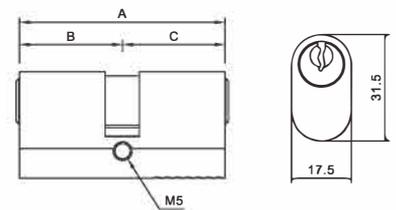
TFLC007
Euro Bathroom Cylinder

Art No.		B	
TFLC007-60	60	30	30
TFLC007-65	65	32.5	32.5
TFLC007-70	70	35	35
TFLC007-80	80	40	40



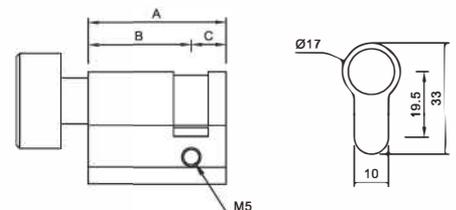
TFLC008
Oval Double Cylinder

Art No.	A	B	
TFLC008-60	60	30	30
TFLC008-65	65	32.5	32.5
TFLC008-70	70	35	35
TFLC008-80	80	40	40



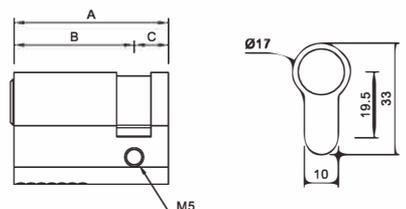
TFLC009
Half Cylinder With Thumbturn

Art No.			
TFLC009-40	40	30	10
TFLC009-45	45	35	10
TFLC009-50	50	40	10
TFLC009-55	55	45	10



TFLC010
Half cylinder With Key

Art No.			
TFLC010-40	40	30	10
TFLC010-45	45	35	10
TFLC010-50	50	40	10
TFLC010-55	55	45	10



- Material: Quality Solid Brass body and plug
- Keys: 3 Brass Keys / 5 Brass Keys
- Key type: Yale Key, computer key
- Key Management function: Master Key, Grand Master Key, Construction Key, Keyed Alike,
- Pins: 6 Brass Pins standard, 10 Pin high security with two line pins, other sizes available.
- Degree: 0 degree, or 30 degree offset cam inhibits knock through
- Standard: conforms to EN1303
- Fastening screw: 65mm (standard), other lengths will be available according to different backset.

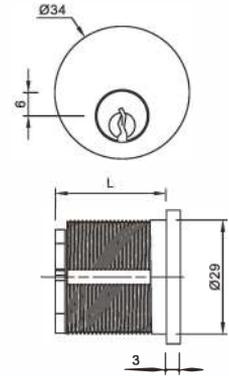


TFLC011

6 Pin SCHLAGE "C" Keyway Rim Cylinder

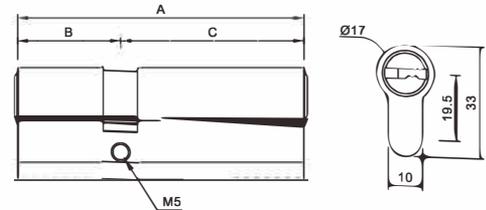
- ANSI Mortise Cylinder Standards
- 5 pins, 6 pins available
- SCHLAGE, Kwikset, Weiser & Pin-in-pin system
- Mortise cylinder with cam
- Master key is available.

Art No.	Length
TFLC011-A	1-1/8"(28.5mm)
TFLC011-B	1-1/4"(31.8mm)
TFLC011-C	1-3/8"(35mm)
TFLC011-D	1-3/4"(44.5mm)

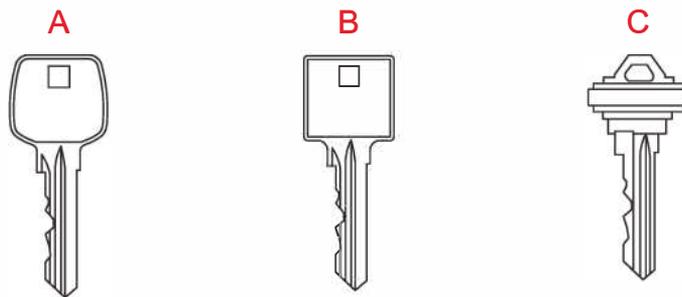


TFLC012
Offset Double Cylinder

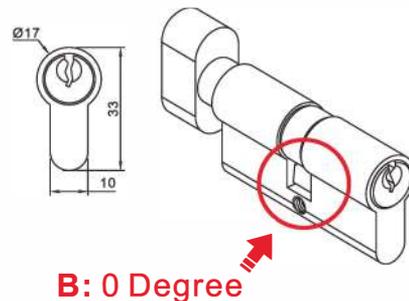
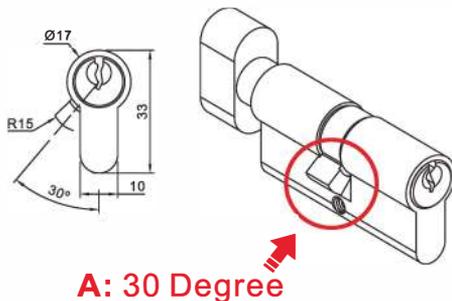
Art No.			
TFLC012-60	60	25	35
TFLC012-70	70	30	40
TFLC012-80	80	30	50
TFLC012-90	90	40	50



Key Design For Lock Cylinder

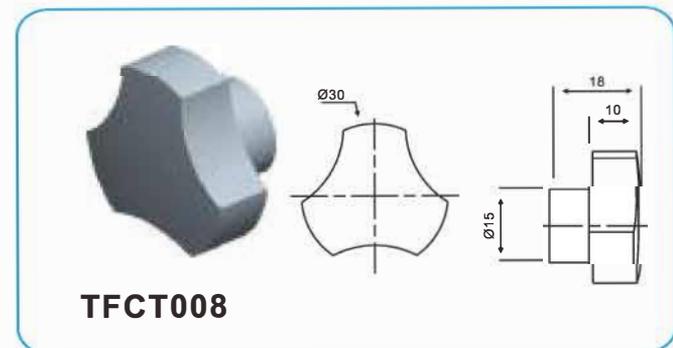
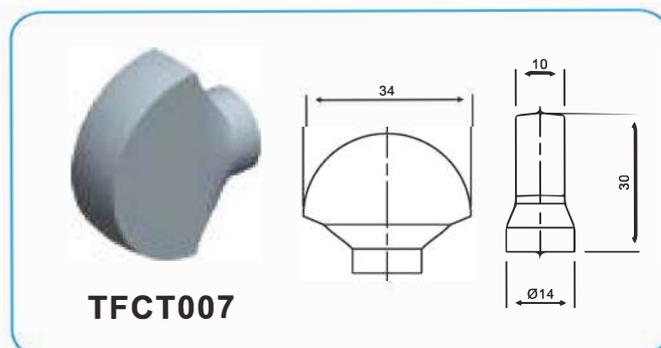
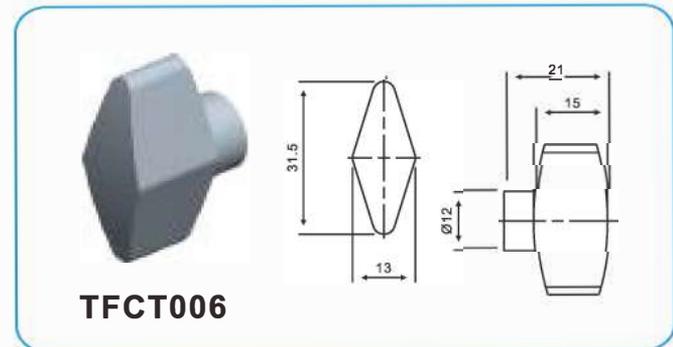
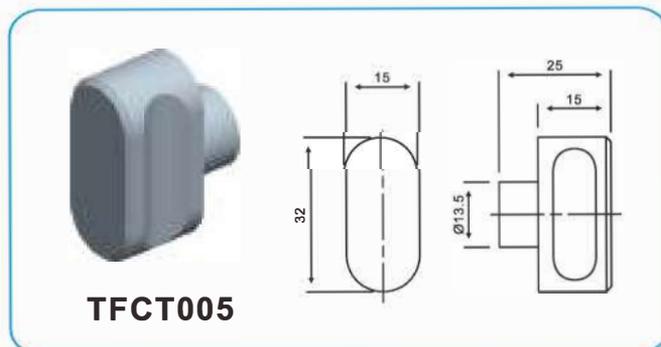
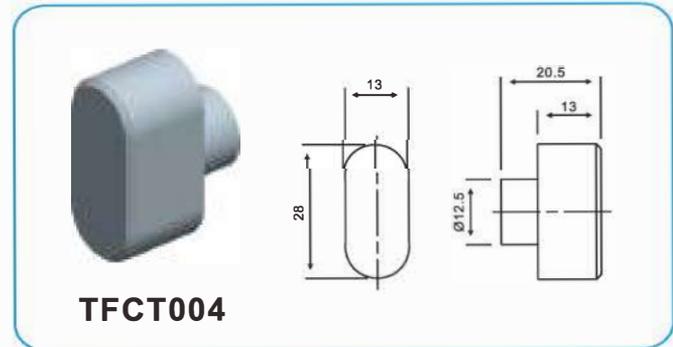
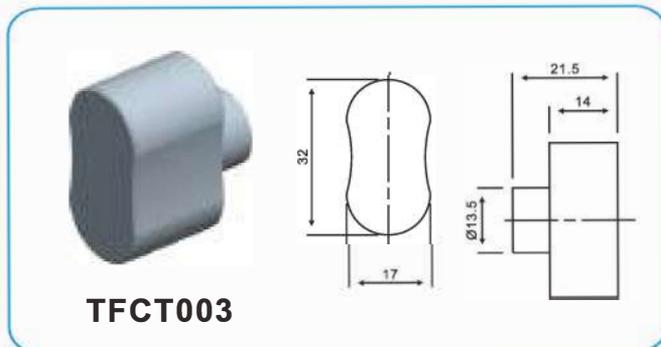
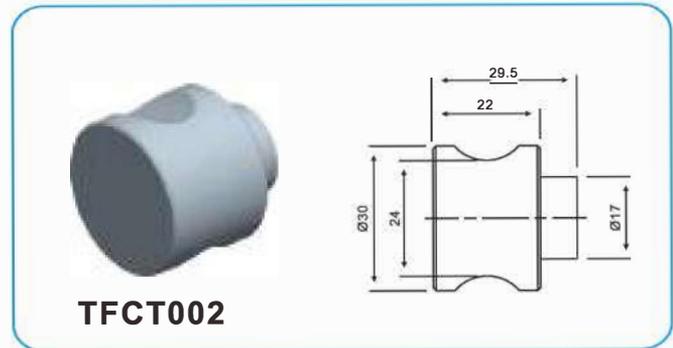
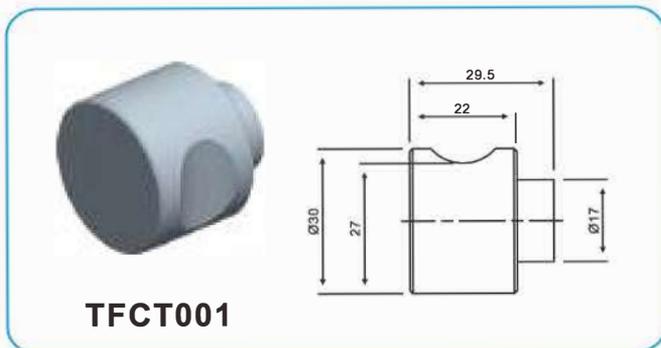


Offset Cam Degree

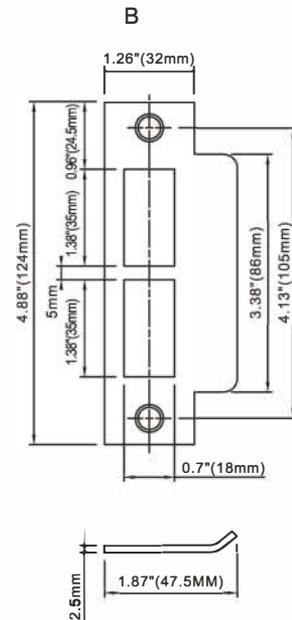
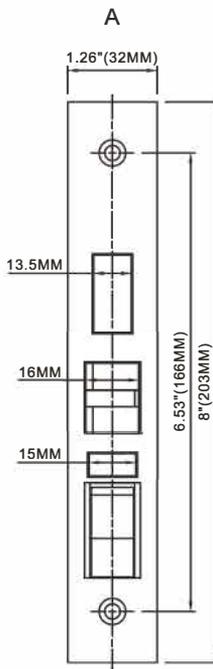
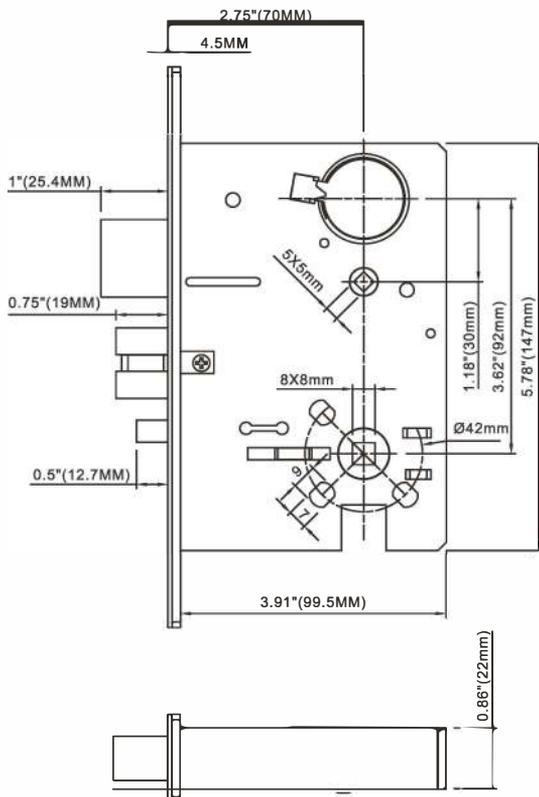
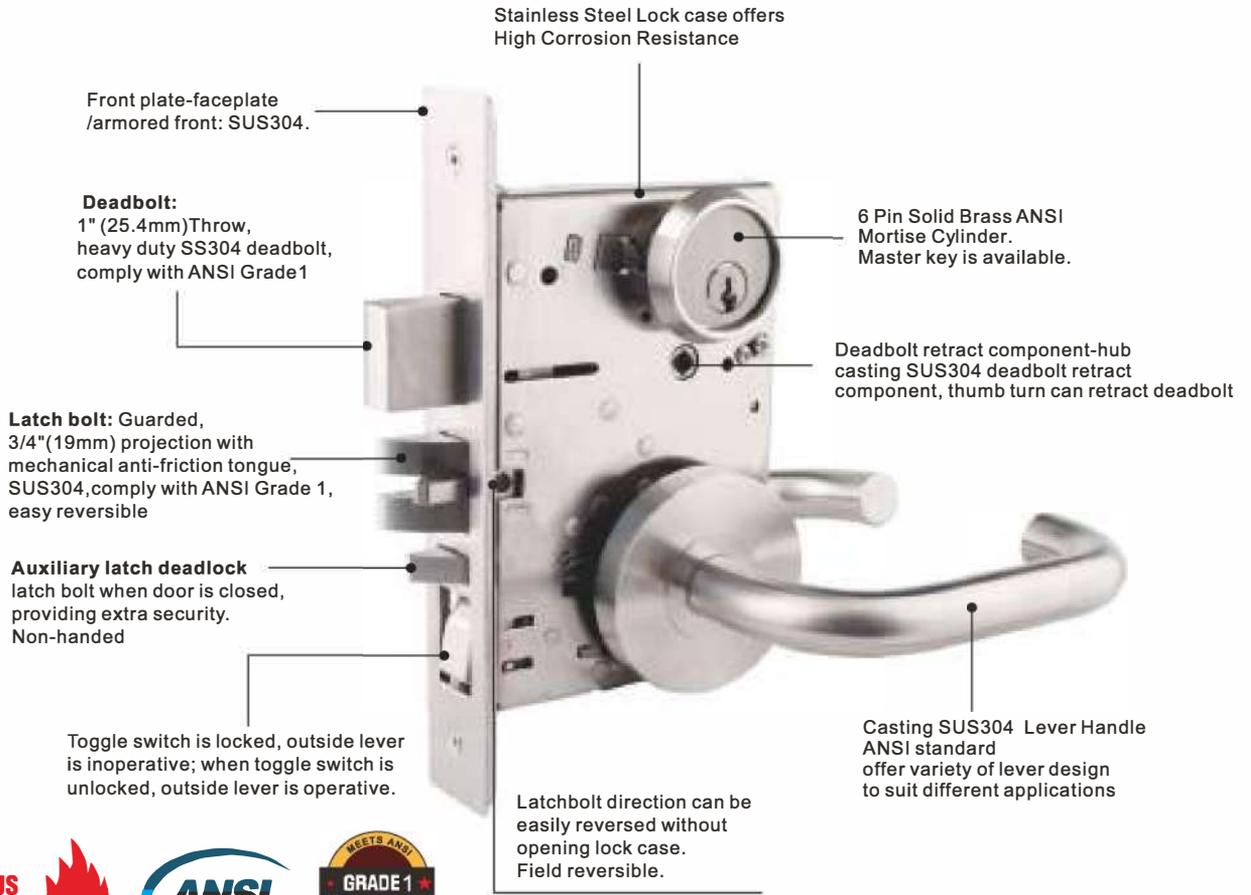


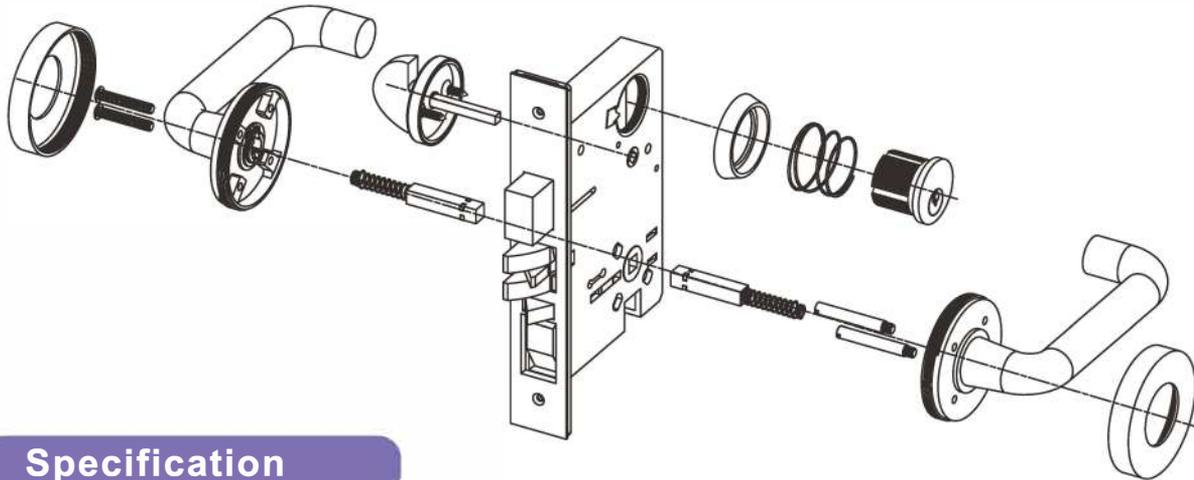
Features

- Knob for Lock Cylinder
- Material: Solid brass
- Finish: SN, PB, AB, AC, CP, PVD



Mortise Lock Case Configuration



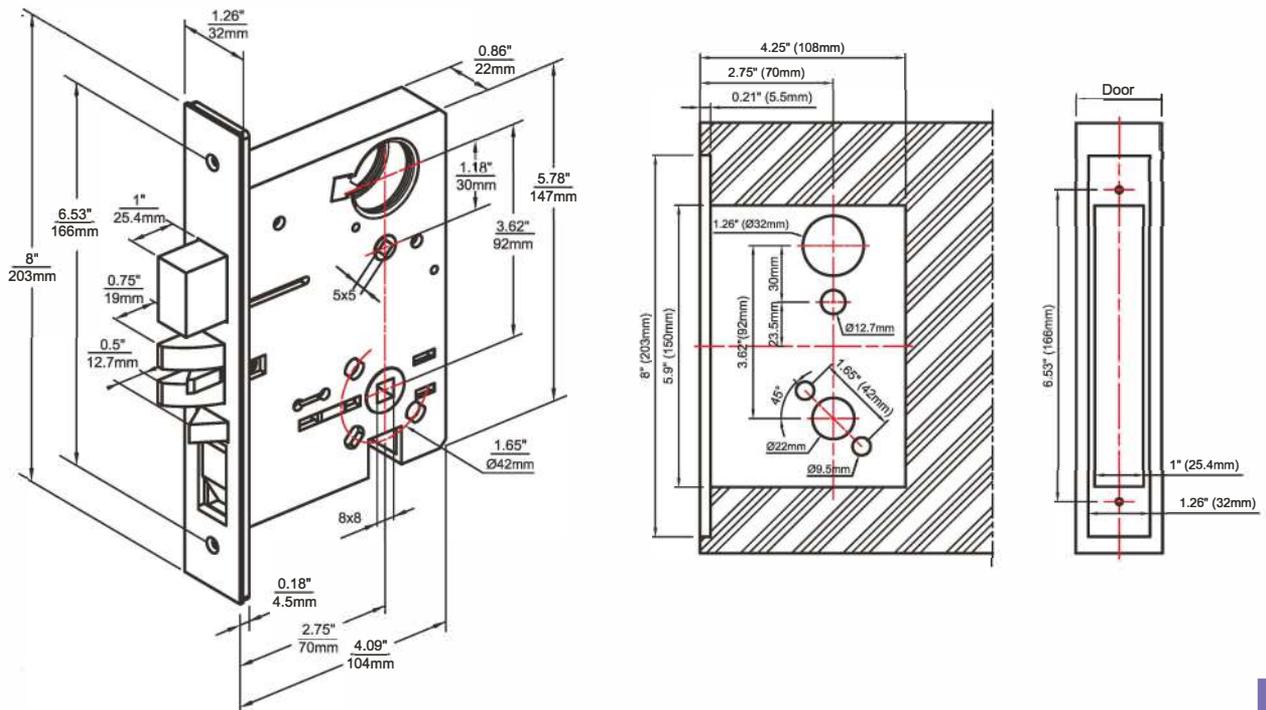


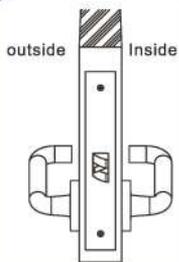
Specification

- Certification and Compliance: ANSI/BHMAA156.13-2005 Grade 1
- UL Fire Rated Certificated
- Lockcase: Heavy Gauge Stainless Steel For Corrosion Resistance
- Deadbolt: Solid Casting SUS304, Project 1"(25.4mm)
- Latchbolt: Solid Casting SUS304, Project 3/4"(19mm), Anti-Friction Two Pieces and Can be Reversible
- Forend: Stainless steel Grade 304
- Strike: Stainless steel Grade 304, Non-Handed
- Door Thickness: 45mm to 55mm As Standard
- Backset: 2-3/4"(70mm)
- Center to Center: 3-5/8"(92mm)
- Door Handing: Left Hand and Right Hand
- Application: Wood Door and Metal Door



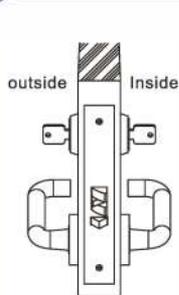
Door Preparation





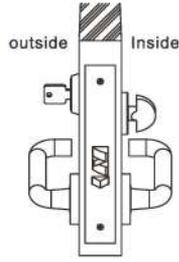
TFAL01 F01

Passage or Closet
Latchbolt operated by knob/lever from either side at all times. Inside lever is always free for immediate egress.



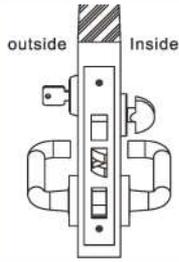
TFAL09 F09

Apartment/Exit or Public Toilet
Latchbolt operated by knob/lever from either side, except when outside knob/lever is locked by key from inside. When outside lever is locked, latchbolt is retracted by key from outside or by operating inside lever. Auxiliary deadlatch.



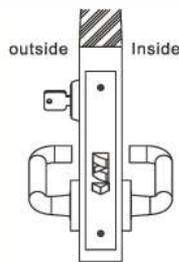
TFAL04 F04

Entry/Office
Latchbolt operated by knob/lever from either side unless outside is made inoperative by key outside or by turning inside thumbturn. When outside is locked, latchbolt is retracted by key outside or by knob/lever inside. Auxiliary latch deadlocks latchbolt when door is closed. Inside knob/lever is always free for immediate egress.



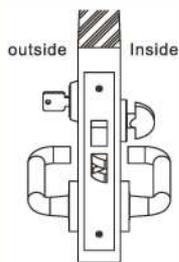
TFAL12 F12

Dormitory or Exit
Latchbolt operated by knob/lever from either side, deadbolt thrown or retracted by key outside or inside thumbturn. Turning inside knob/lever retracts deadbolt and latchbolt, unlocks outside knob/lever. Inside lever is always free for immediate egress.



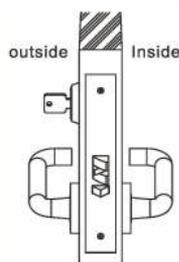
TFAL05 F05

Classroom
Latchbolt operated by knob/lever from either side unless outside is locked by key. Unlocked from outside by key. Inside knob/lever always free for immediate exit. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever is always free for immediate egress.



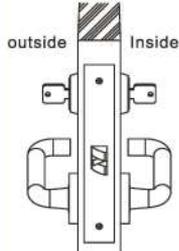
TFAL13 F13

Dormitory or Exit
Latchbolt operated by knob/lever from either side. Deadbolt thrown or retracted by key outside or inside thumbturn. Turning inside knob/lever retracts deadbolt and latchbolt and unlocks outside knob/lever. Inside lever is always free for immediate egress.



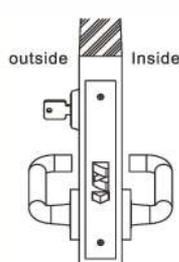
TFAL06 F06

Holdback
Latchbolt operated by knob/lever either side, unless outside is locked by key. When locked, latchbolt retracted by key outside or knob/lever inside. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever is always free for immediate egress.



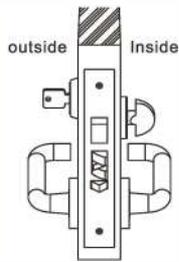
TFAL14 F14

Storeroom
Latchbolt operated by lever from either side. Deadbolt operated by key from either side.



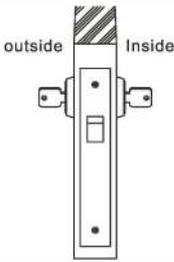
TFAL07 F07

Storeroom or Closet
Latchbolt operated by key from outside or by knob/lever inside. Outside knob/lever always inoperative. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever is always free for immediate egress.



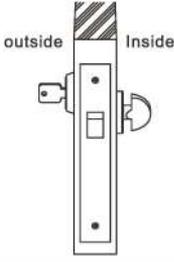
TFAL15 F15

Hotel or Motel
Latchbolt operated by key outside or by knob/lever inside. Outside knob/lever always fixed. Deadbolt thrown or retracted by inside thumbturn. When deadbolt is thrown turning inside knob/lever retracts both deadbolt and latchbolt. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever is always free for immediate egress.



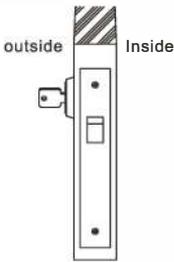
TFAL16 F16

Deadlock
Deadbolt operated from either side by key, use only on rooms with more than one exit.



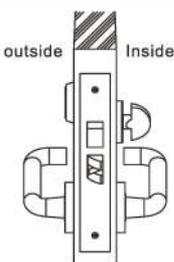
TFAL17 F17

Deadlock
Deadbolt operated or retracted by key outside or by thumbturn inside.



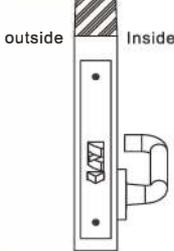
TFAL18 F18

Deadlock
Deadbolt operated from outside by key, no inside operation. Use only on rooms with more than one exit.



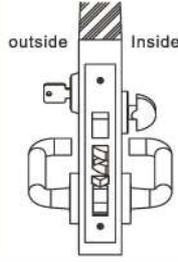
TFAL02 F19
TFAL19

Privacy or Bathroom
Latchbolt operated by knob/lever from either side unless outside is locked by inside thumbturn. Operating inside knob/lever or closing door unlocks outside knob/lever. To unlock from outside insert emergency turn mechanism furnished with lock put in hole to rotate. Inside lever is always free for immediate egress.



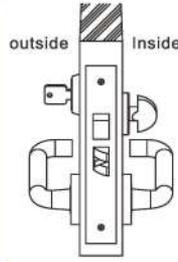
TFAL31 F31

Exit or Communicating Lock
Latchbolt operated by knob/lever from inside. Non removable blank lever or no lever outside. Auxiliary dead latch.



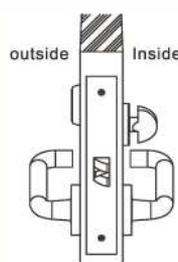
TFAL20 F20

Entrance/Apartment/Dormitory
Latchbolt operated by knob/lever from either side except when outside lever is made inoperative by push button rocker. Deadbolt projected by key from outside is locked by thumbturn. Deadbolt thrown or retracted by rotation of thumbturn. When locked, key outside or knob/lever inside retracts deadbolt and latchbolt simultaneously. Outside knob/lever remains locked until thumbturn is restored. Throwing deadbolt automatically locks outside knob/lever. Auxiliary latch deadlocks latchbolt when door is closed. Inside lever is always free for immediate egress.



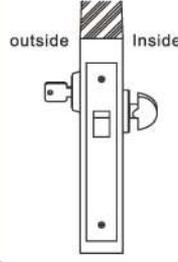
TFAL21 F21

Dormitory with Dead bolt
Latchbolt operated by knob/lever either side. Deadbolt operated by key outside or by turn from inside.



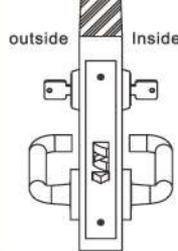
TFAL22 F22

Privacy
Latchbolt operated by knob/lever from either side unless outside is locked by inside thumbturn. Turning inside knob/lever or closing door unlocks outside knob/lever or closing door unlocks outside knob/lever. To unlock from outside coin emergency release. Inside knob/lever is always free for immediate egress.



TFAL29 F29

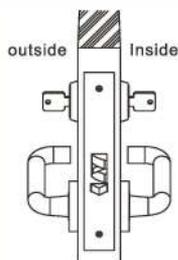
Classroom Dead bolt (only)
Key from outside operates dead bolt. Turn from inside retracts but does not project dead bolt.



TFAL30 F30

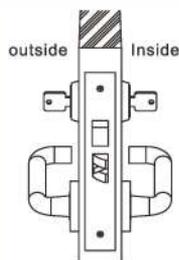
Asylum or Institutional Lock
Latchbolt operated by key either side. Both knob/ levers always inoperative. Auxiliary dead latch.

TFAL32 F32



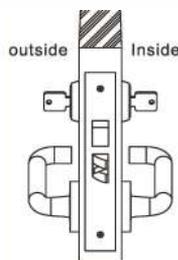
Intruder Latch bolt Lock
Latchbolt operated by knob/lever either side, except when outside lever is locked from inside or outside by key. When outside knob/lever is locked, latch bolt is retracted by key from inside or outside or by operating inside lever. Auxiliary dead latch.

TFAL35 F35



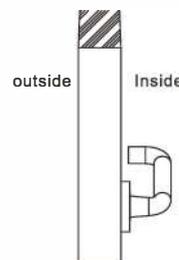
Storeroom with Dead bolt Lock
Latchbolt operated by knob/lever from either side, except when outside knob/lever is made inoperative by a stop or mechanical means other than key. Dead bolt operated by key from either side.

TFAL33 F33



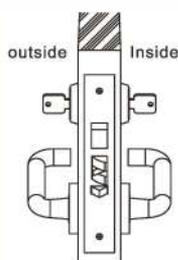
Intruder Dead bolt
Latchbolt operated by knob/lever from either side except when outside knob/lever is locked from inside or outside by key. Dead bolt retracted by key from outside. Operating inside knob/lever retracts both bolts and unlocks outside.

TFAL41 F41



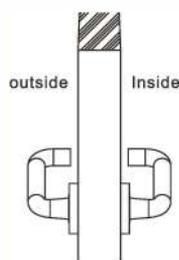
Single Dummy
No Lockcase, knob/lever on one side fixed by mounting bar only.

TFAL34 F34



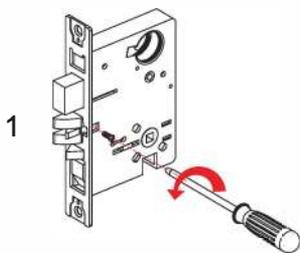
Intruder Dead bolt Lock
Latchbolt operated by knob/lever either side, except when outside knob/lever is locked from inside or outside by key. Dead bolt operated by key either side. Operating inside knob/lever retracts both bolts and unlocks outside. Auxiliary dead latch or latch bolt dead locked when dead bolt is thrown.

TFAL42 F42

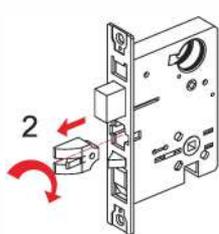


Double Dummy
No Lockcase, knob/lever on both side fixed by mounting bar only.

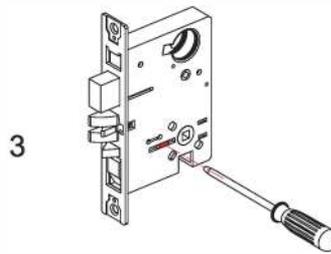
Change Latch Bolt Direction For Mortise Lock



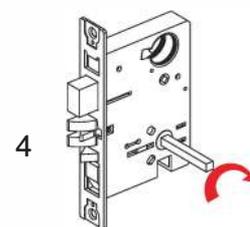
1. Release the latch screw



2. Change latch direction and secure with screw



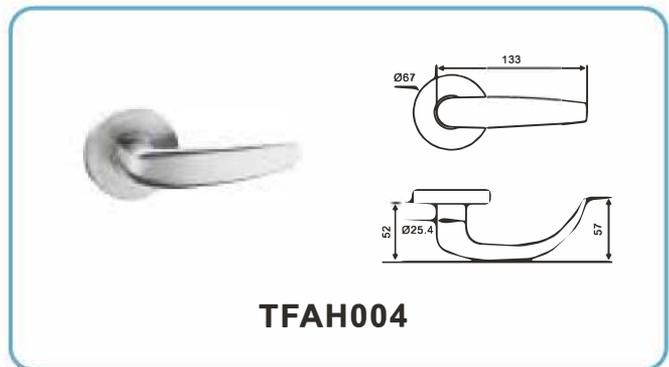
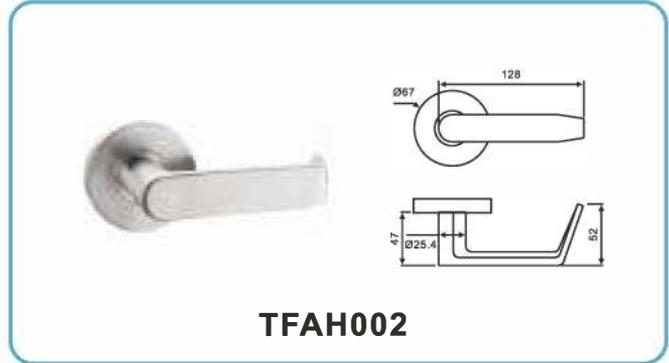
3. Rotate red color security Pin 180 under spindle hub to be the outside hub



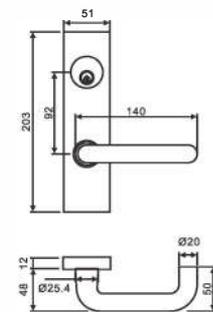
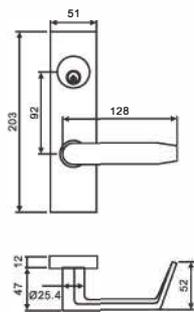
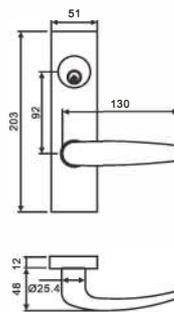
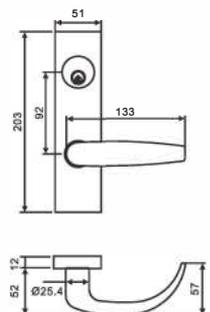
4. Use spindle to turn the hub until latch retracts.

Features

- Heavy duty solid lever handle
- Escutcheon SUS 304 / 316 stainless steel
- Lever SUS 304 / 316 stainless steel
- Escutcheon thickness: 12mm


Specification of Trim

- Material: SUS 304 Stainless steel
- Finish: US32D (stain stainless steel), or up to customer requirement
- Escutcheon Thickness: 12mm
- Cylinder: ANSI type cylinder

Trim Design

TFAH001-P

TFAH002-P

TFAH003-P

TFAH004-P

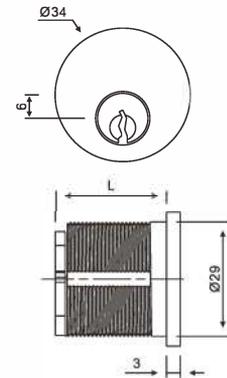


TFLC011

6 Pin SCHLAGE "C" Keyway Rim Cylinder

- ANSI Mortise Cylinder Standards
- 5 pins, 6 pins available
- SCHLAGE, Kwikset, Weiser & Pin-in-pin system
- Mortise cylinder with cam
- Master key is available.

Art No.	Length
TFLC011-A	1-1/8" (28.5mm)
TFLC011-B	1-1/4" (31.8mm)
TFLC011-C	1-3/8" (35mm)
TFLC011-D	1-3/4" (44.5mm)



TFLC013

IC Core Cylinder 6 Pin interchangeable Core Cylinder

Art No.	Length
TFLC013-A	1-1/8" (28.5mm)
TFLC013-B	1-1/4" (31.8mm)

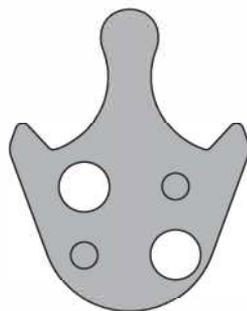


Features & Benefits

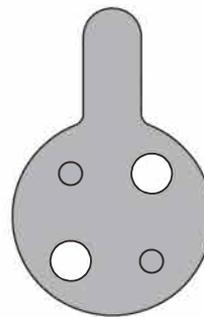
- Mortise Cylinder IC Core Housing, Small Format Best, 26D
- Mortise Cylinder IC Core Housing, Big Format Schlage "C", 26D

Interchangeable core users can enjoy the convenience of fast rekeying without having to disassemble the lock. This feature is very useful in applications where a high frequency of core changes are needed or a lock disassembly is labor intensive such as with exit devices and certain types of all-glass doors, etc.

Cam Type

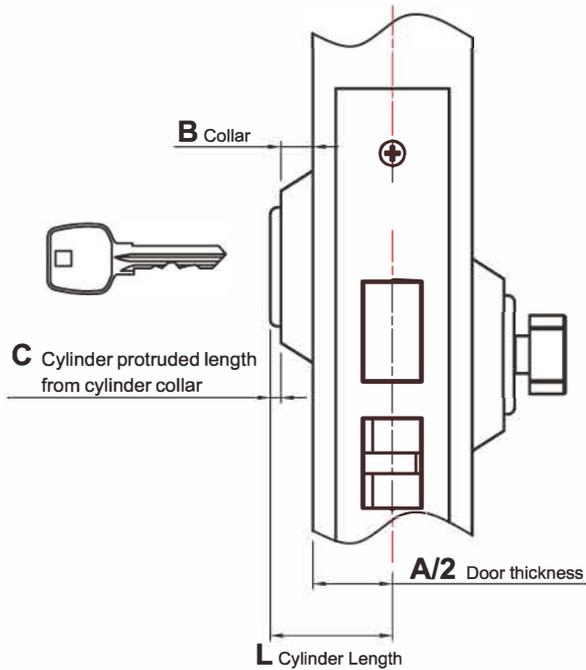


A

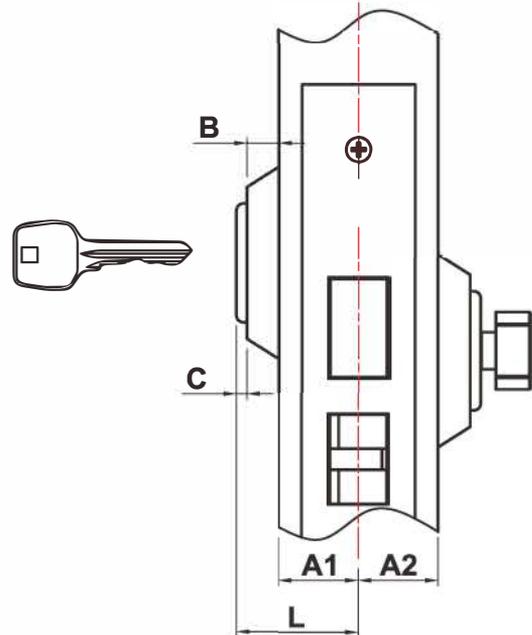


B

How to choose the right size ANSI cylinder



Lock case was installed in the center of door,
Cylinder length
 $L=A/2+B$

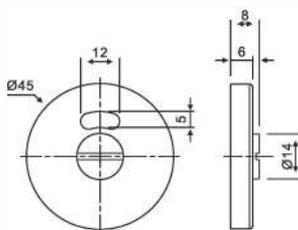


Lock case was installed deviated from the center of door,
Cylinder length
 $L=A1+B$

Indicator



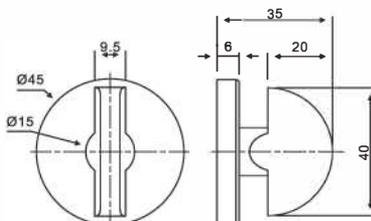
TFAT001



Thumbturn



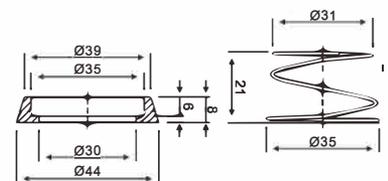
TFAT002



Collar and Spring



TFAT003



BS EN1125 Panic Exit Device

It is desirable that doors at final exit in public buildings, places of entertainment, shops etc should be fitted with panic devices operated by a horizontal bar or touch bar. The emphasis for products covered by this standard is on safe exit rather than security.

Providing details on product types, classification by use, test cycles, door mass, corrosion resistance as well as definition, product performance requirements, test apparatus, test methods and marketing products

The main purpose of the performance requirements of this standard is to give safe and effective escape through a doorway with minimum effort and without prior knowledge of the device i.e for locked doors on escape routes where panic situation can be for seen.

BS EN 1125 applies to – Type A Push Bar Panic Bolts & Type B Touch Bar Panic Bolts

BS EN 1125 Classifies panic exit devices by using a 9 digit coding system, each digit referring to a particular feature of the product measured against the standards performance requirement.

- 1. Category of Use** → 3

Only one category is identified.
Grade 3 : High frequency of use by people with little incentive to a careful application. where accidents or misuse are possible
- 2. Durability** → 7

Two categories are defined.
Grade 6 : 100,000 tested cycles
Grade 7 : 200,000 tested cycles
- 3. Test Door Mass** → 6

Two categories are defined.
Grade 5 : up to 100kg
Grade 6 : up to 200kg
- 4. Fire Resistance** → 1

Two grades of fire resistance are identified:
Grade 0 : Not approved for use on fire/smoke doors
Grade 1 : suitable for use on fire/smoke door assemblies subject to satisfactory assessment of the contribution of the panic/emergency device to the fire resistance of specified fire/smoke door assemblies.
- 5. Safety** → 1

All panic and exit devices have a critical safety function therefore only grade 1 is identified .
- 6. Corrosion Resistance** → 4

Two grades of corrosion resistance are identified according to EN 1670.
Grade 3 : High corrosion resistance
Grade 4 : Very high corrosion resistance
- 7. Security** → 2

Only one category of security is identified grade 2:
Panic devices are primarily for the operation of a door from the inside. Safety consideration will always be given over security.

8: Projection of Device

Two categories are identified.

Grade 1: projection up to 150mm(standard projection)

Grade 2: projection up to 100mm(low projection)

2

9: Type of Device

Two categories are identified.

Type A : push bar operations

Type B : touch bar operations

B

BS EN 179 Emergency Exit Device

This standard covers devices to be used in emergency situations where people are familiar with the emergency exit and its hardware and therefore a panic situation is most unlikely to develop. lever handle operated escape locks or push pads may therefore be used.

BS EN 179 applies to - Type A lever handle operated emergency devices- Type B push pad operated emergency device.

BS EN 179 classifies emergency exit devices by using a 4 digit coding system, each digit referring to a particular feature of the product measured against the standards performance requirement.

The particular features in BS EN 179 are identical to BS EN 1125, with two differences affecting digit 7 - security and digit 9 - type of device.

Digit 7-Security

Products covered by BS EN 179 have 3 identified categories and have the opportunities of greater security than devices covered by BS EN 1125. This is because BS EN 179 devices are subject to testing with doors under greater pressure. Three categories are defined.

Grade 2: 1000N

Grade 3: 2000N

Grade 4: 3000N

Digit 9-Type of device

Two categories are identified.

Type A : lever handle operations

Type B : push pad operations

CE Marking

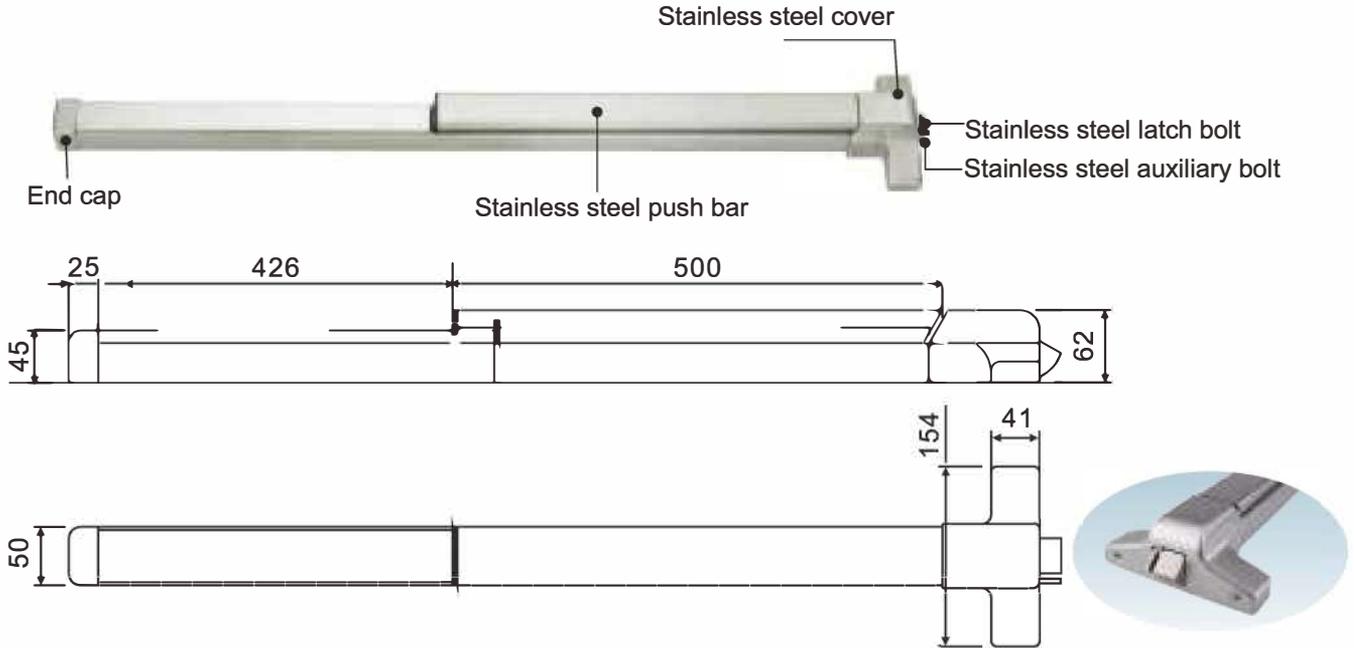
CE marking is the easiest and safest route to providing compliance with the latest UK Construction Products Regulations for hardware used on fire, smoke and escape doors.

C.E. marking indicates that the product has been 3rd party performance/fire tested where applicable and is produced in a factory which has satisfactory production control systems. All of these have to be assessed by an authorised certification organisation

Panic Exit Device

It is desirable that doors at final exits in public buildings, places of entertainment, shops etc should be fitted with panic devices operated by a horizontal bar or touch bar. The emphasis for products covered by this standard is on safe exit rather than security.

Touch Bar Rim Exit Device: TFPD003



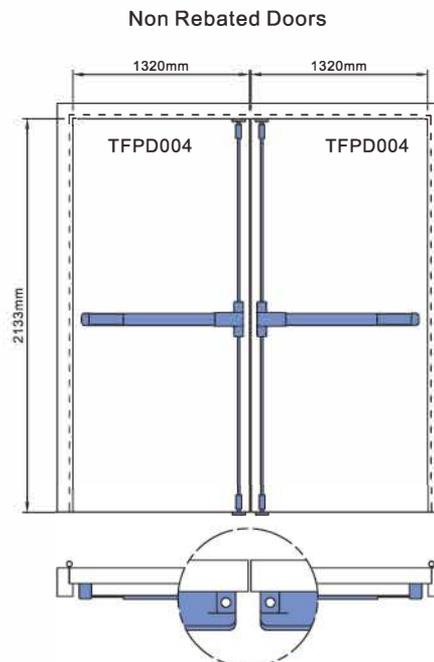
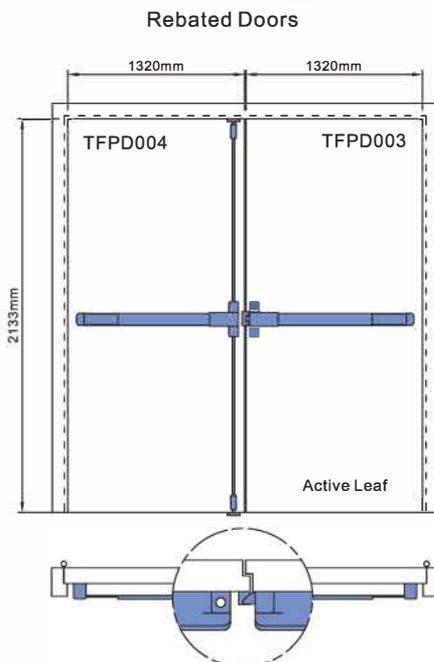
Product Specification

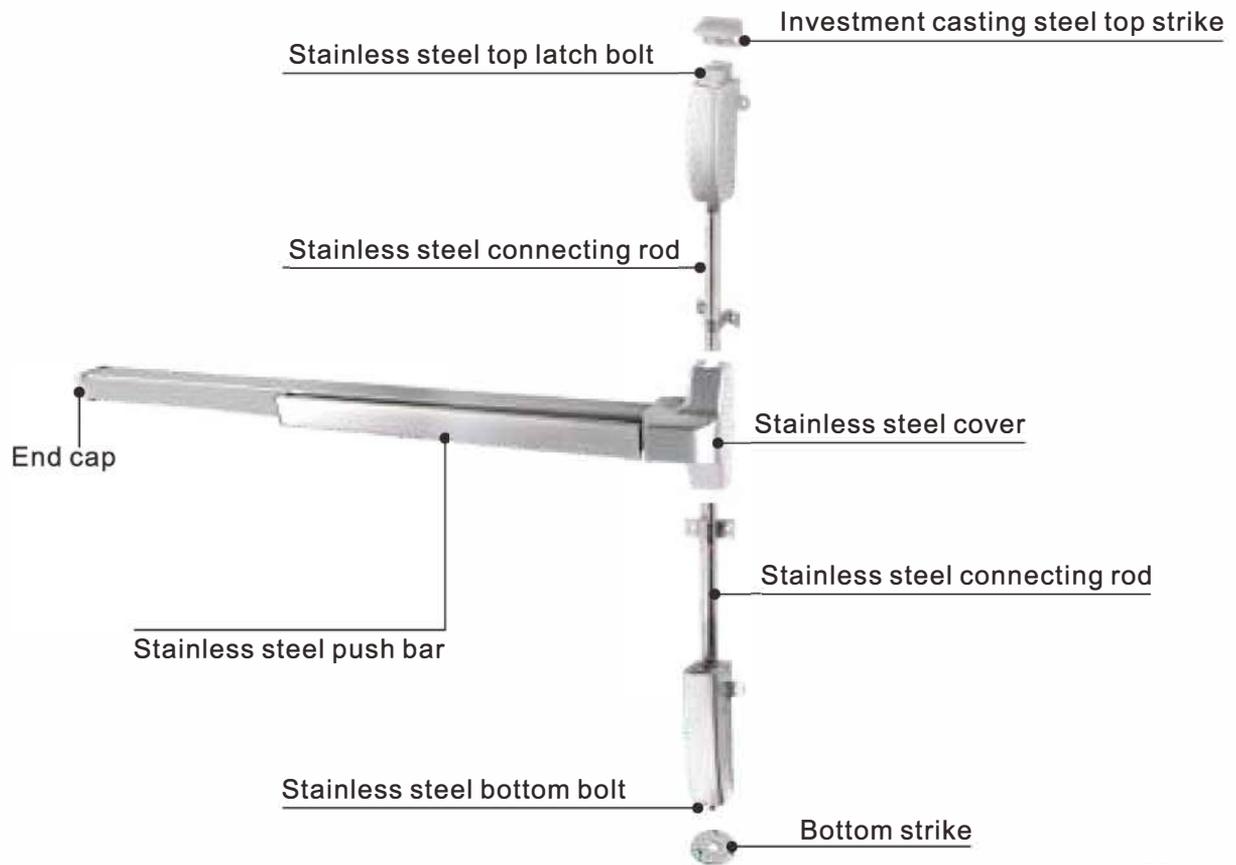
- Door width from 650mm to 1320mm
- Door Height: =2133mm
- Max. Door weight(kg): 200kg
- Max. Door thickness : 50 mm
- Non hand design

Features

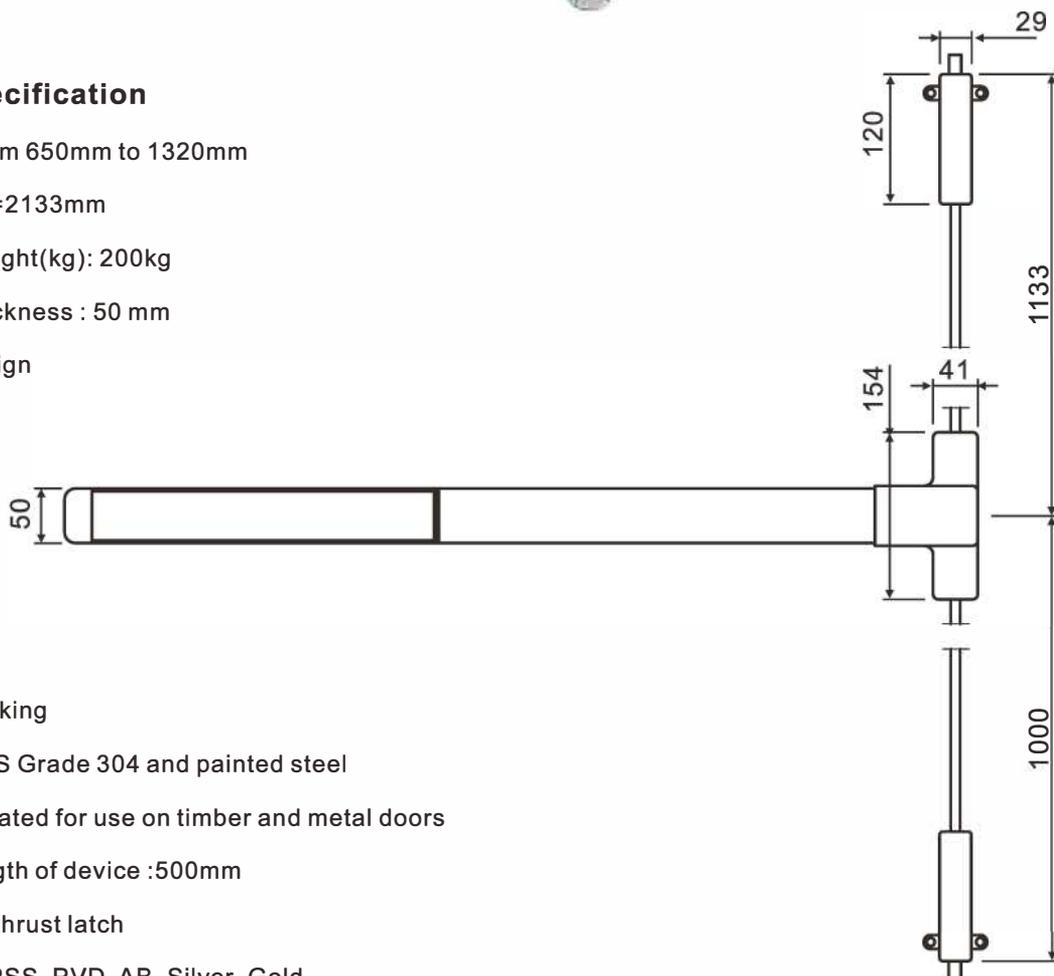
- One Point Locking
- Available in SS Grade 304 and painted steel
- UL 10C Fire Rated for use on timber and metal doors
- Touch bar length of device :500mm
- Security Anti-thrust latch
- Finish: SSS, PSS, PVD, AB, Silver, Gold

Double Door Configurations



Touch Bar Vertical Rod Exit Device:TFPD004

Product Specification

- Door width from 650mm to 1320mm
- Door Height: =2133mm
- Max. Door weight(kg): 200kg
- Max. Door thickness : 50 mm
- Non hand design


Features

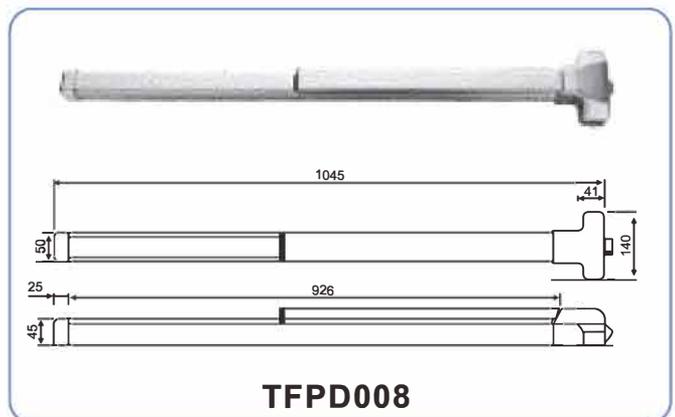
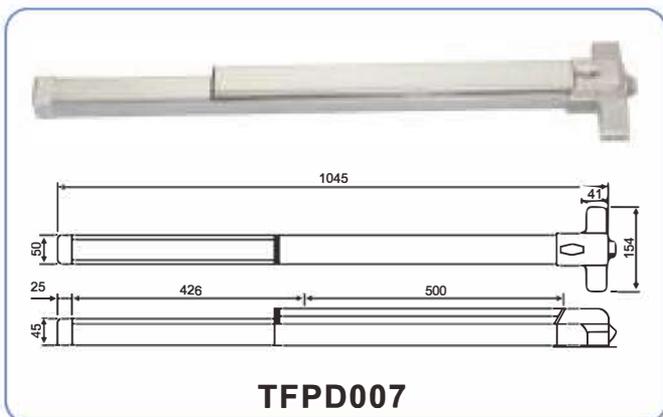
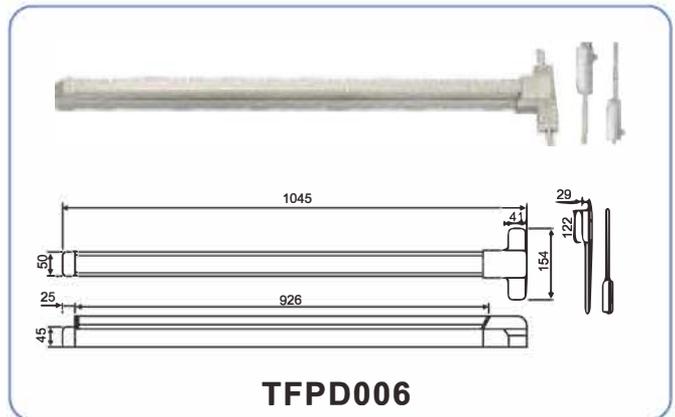
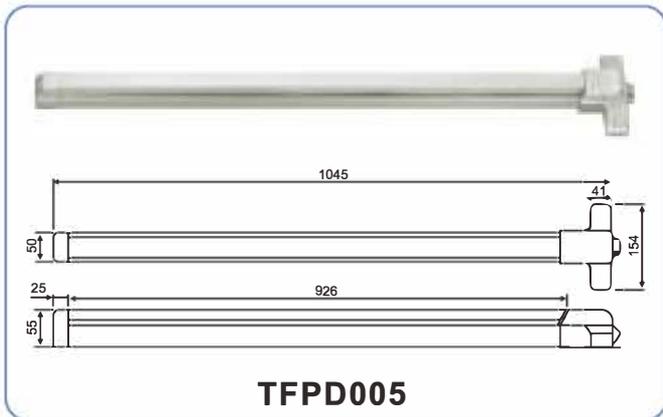
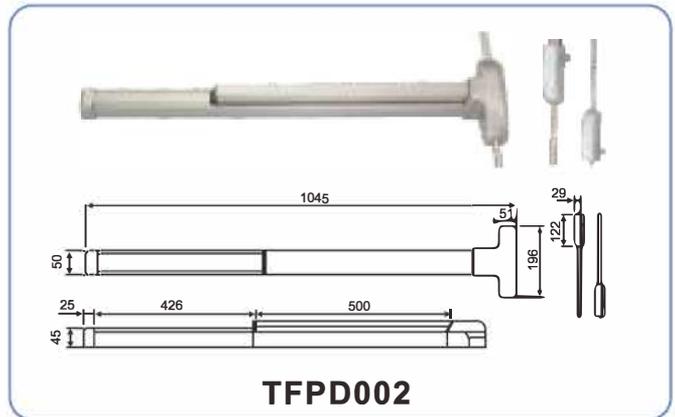
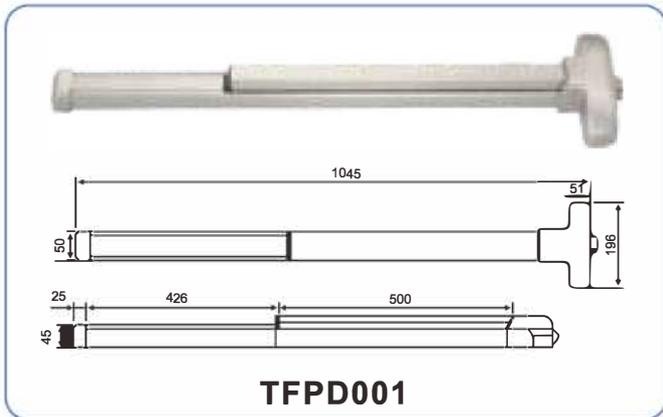
- Two Point Locking
- Available in SS Grade 304 and painted steel
- UL 10C Fire Rated for use on timber and metal doors
- Touch bar length of device :500mm
- Security Anti-thrust latch
- Finish: SSS, PSS, PVD, AB, Silver, Gold

Product Specification

- Door width from 650mm to 1320mm
- Door Height: =2133mm
- Max. Door weight(kg): 200kg
- Max. Door thickness : 50 mm
- Non hand design

Features

- Available in SS Grade 304 and painted steel
- UL 10C Fire Rated for use on timber and metal doors
- Touch bar length of device :500mm
- Security Anti-thrust latch
- Finish: SSS, PSS, PVD, AB, Silver, Gold

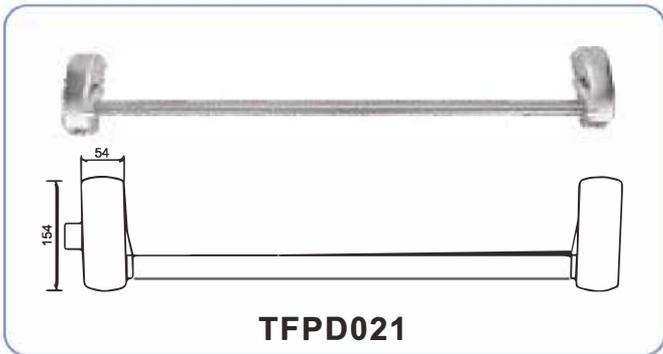
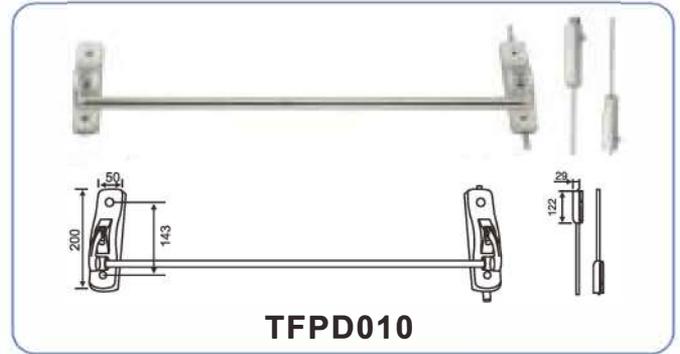
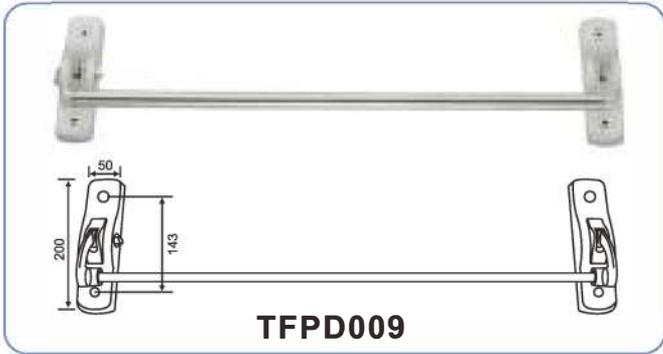


Product Specification

- Door width from 650mm to 1320mm
- Door Height: =2133mm
- Max. Door weight(kg): 200kg
- Max. Door thickness : 50 mm
- Non hand design

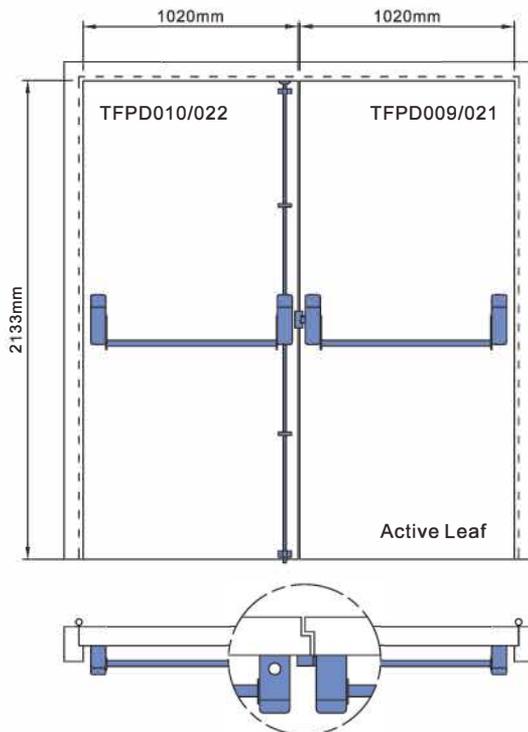
Features

- Available in SS Grade 304 and painted steel
- UL 10C Fire Rated for use on timber and metal doors
- Touch bar length of device :500mm
- Security Anti-thrust latch
- Finish: SSS, PSS, PVD, AB, Silver, Gold

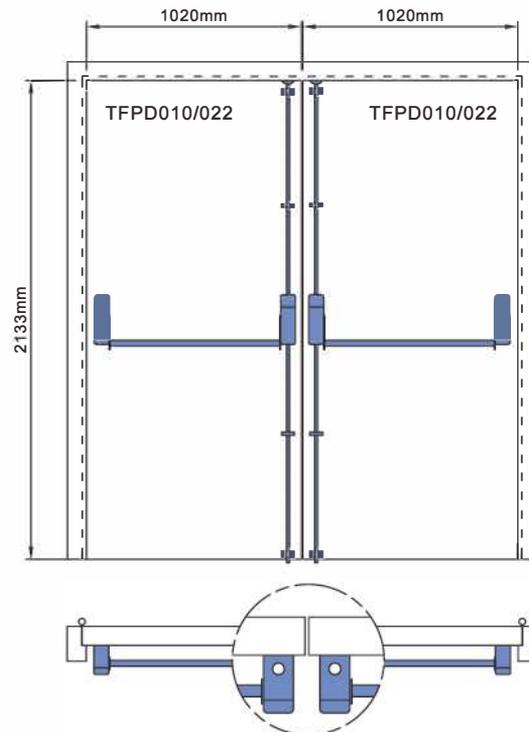


Double Door Configurations

Rebated Doors

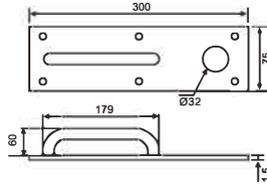


Non Rebated Doors





TFPD011

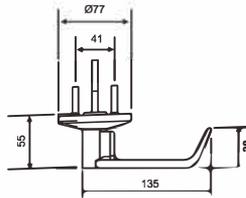


Night Latch Plate

- Stainless Steel 304
- Finish: SSS, PSS, PVD, AB, AC
- Work with cylinder TFPD020



TFPD012

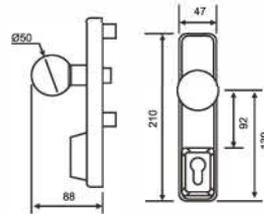


Lever Trim

- Stainless steel 304, zinc alloy
- Finish: SS, PSS, PVD, AB, AC
- Door thickness: 45mm-50mm
- Certificated: EN1634 Fire rated



TFPD013

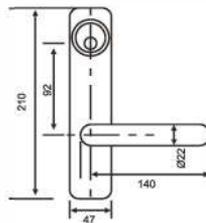


Escutcheon Knob Trim

- Stainless steel 304
- Finish: SSS, PSS, PVD, AB
- Door thickness: 45mm-50mm
- Certificated: EN1634 Fire rated



TFPD014

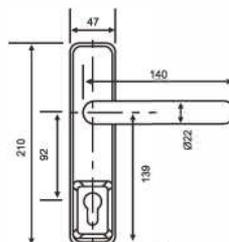


Escutcheon Lever Trim

- Stainless steel 304
- Finish: SSS, PSS, PVD, AB
- Door thickness: 45mm-50mm
- Standard: EN1634 Fire rated

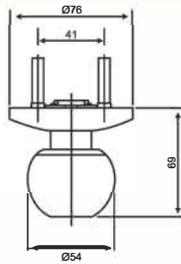


TFPD015

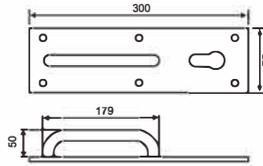


Escutcheon Lever Trim

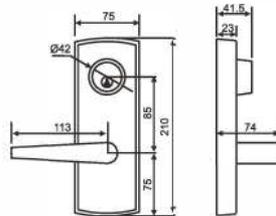
- Stainless steel 304
- Finish: SSS, PSS, PVD, AB
- Door thickness: 45mm-50mm
- Certificated: EN1634 Fire rated


TFPD016

Knob Trim

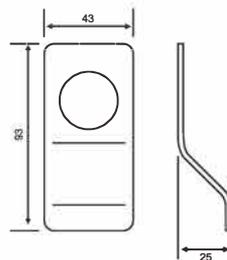
- Stainless steel 304
- Finish: SSS, PSS, PVD, AB
- Door thickness: 45mm-50mm
- Certificated: EN1634 Fire rated


TFPD017

Night Latch Plate

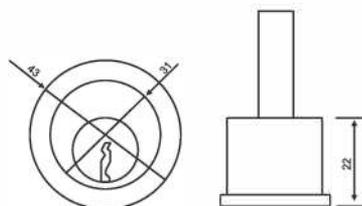
- Stainless steel 304
- Finish: SSS, PSS, PVD, AB, AC


TFPD018

Escutcheon Lever Trim

- Stainless steel 304
- Finish: SSS, PSS, PVD, AB
- Door thickness: 45mm-50mm


TFPD019

Night Latch Plate

- Stainless steel 304
- Finish: SSS, PSS, PVD, AB
- Work with cylinder TFPD020


TFPD020

Cylinder

- Zinc alloy
- Finish: SN
- Work with TFPD011&TFPD019

Architectural Range of Door Closers

TUFFRO architectural range of door controls are produced to the highest standards of design & most have adjustable control features. This comprehensive range of door controls feature varying power sized units for many different door applications. They come with a choice of architectural covers which are available in plated or colour coated finishes.

Power Size - Selection Chart - BS EN 1154

Door Mass / Size

Seven door mass / size grades and related door closer power sizes are identified according to BS EN 1154.

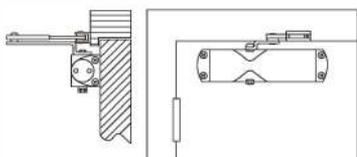
Door closer provides a range of power sizes, both the minimum and the maximum sizes should be identified.

Door Closer Power Size	Recommended Max Door Width (mm)	Max Test Door Mass KG	INSTANCE
1	<750	20	Rest Room Door
2	850	40	Office Door, Wooden fire Door, Metal fire Door
3	950	60	Security Door, Meeting Room Door
4	1100	80	Steel Security Door
5	1250	100	Heavy Steel Security Door
6	1400	120	Heavy Garage Door
7	1600	160	Heavy Strong Door, Large Special Door

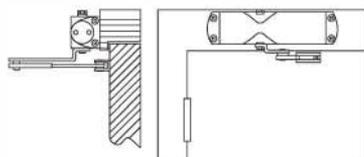
Note:

The door widths given are for standard installations. In the case of unusually high or heavy doors, windy or draughty conditions, or special installations, a larger power size of door closer should be used.

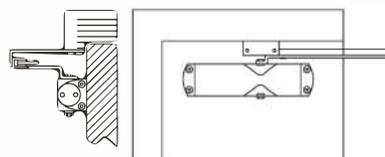
Installation Diagram



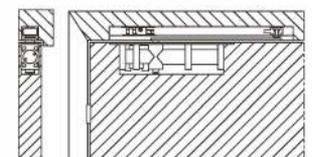
Standard Door Installation



Door Frame Installation



Parallel Block Installation



Slide Arm Installation

Application

Doors

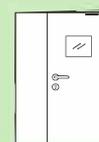
- Wooden Doors
- Hollow Metal Doors
- Steel Doors
- Aluminum Doors
- Office Doors
- Fire-Rated Doors

Projects

- Stadium
- Hotels
- Academic
- Airports
- Mixed-use
- Residential Buildings



Single Door



Composite Door



Double Door

BS EN 1154:1997 -The European standard for the performance of controlled door closing devices.

Providing details on product types, classification by use, test cycles, door mass, corrosion resistance, as well as definitions, product performance requirements, test apparatus, test methods and marking of products.

BS EN 1154:1997 classifies door closers by using a 6 digit coding system.

<p>1. Category of Use -----></p> <p>Two categories are defined.</p> <ul style="list-style-type: none"> Grade 3: For closing doors from at least 105° open Grade 4: For closing doors from 180° open 	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">4</div>
<p>2. Number of Test Cycles -----></p> <p>Only one categories are is identified.</p> <ul style="list-style-type: none"> Grade 8: 500,000 cycles 	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">8</div>
<p>3. Test Door Mass/ Size -----></p> <p>Where a door closer provides a range of power sizes both the minimum and maximum shall be identified. *Door size/mass in accordance with BS EN 1154:1997</p>	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">3</div>
<p>4. Fire Behaviour -----></p> <p>Two categories are defined.</p> <ul style="list-style-type: none"> Grade 0 : Not suitable for use on fire/smoke door assemblies Grade 1 : Suitable for use on fire/smoke door assemblies, subject to satisfactory testing and assessment (See BS EN 1634 Part1: 2000) 	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div>
<p>5. Safety -----></p> <p>All doors closers are required to satisfy the essential requirements of safety in use. Therefore only grade 1 is identified.</p>	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">1</div>
<p>6. Corrosion Resistance -----></p> <p>Five categories are defined.</p> <ul style="list-style-type: none"> Grade 0 : No defined resistance. Grade 1 : mild resistance Grade 2 : moderate resistance Grade 3 : high resistance Grade 4 : very high resistance 	<div style="border: 1px solid black; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;">3</div>

BS EN 1155:1997 -The European Standard for the performance of electrically powered hold open devices for swing doors.

This standard again provides details on product types, classification by use, test cycles, door mass, corrosion resistance, as well as definitions, product performance requirements, test apparatus, test method and marking of products.

BS EN 1155:1997 classifies products using the same 6 digit coding system as outlined in BS EN 1154:1997. The only difference being box 3 where BS EN 1154 refers to durability, BS EN 1155 refers to hold open power size.

Advanced Function of TUFFRO Door Closer

Hold Open or Hold Open Arm

Hold Open is the ability of the door closer to hold the door in the open position. Most over head door closers achieve this function via a special type arm (Hold Open Arm).

Warning Note: Hold open function are not allow to install for fire doors and smoke doors.

Back Check

To slows the door in the opening swing to help keep it from hitting an adjacent wall ,so that it can't be thrown open violently and damage the door, the closer, door handle and the walls.

Backcheck resistance should only be felt near the fully open position.

Notes: Backcheck is not a door stop.

Delay Action

To adjust the delay of door closing from maximum opening,useful on door ways that require the door to stay open for a set amount of time.

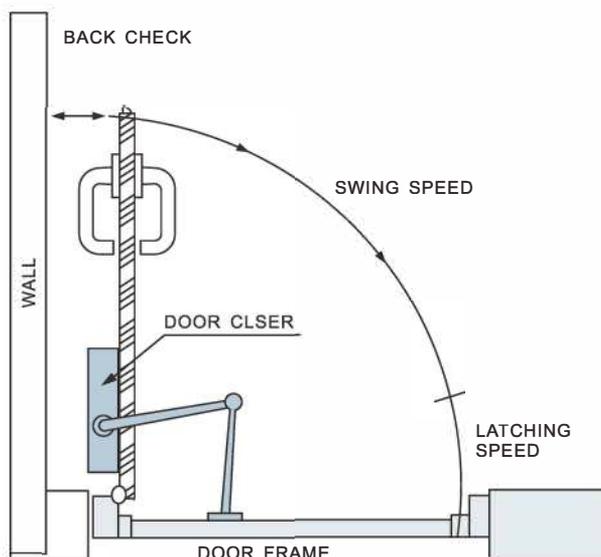
This allows pedestrians to pass through the open door without having to worry about the door closing on them right away.

Swing Speed

To adjustment controls how fast the door closes from fully open to within about fifteen degrees of closed.

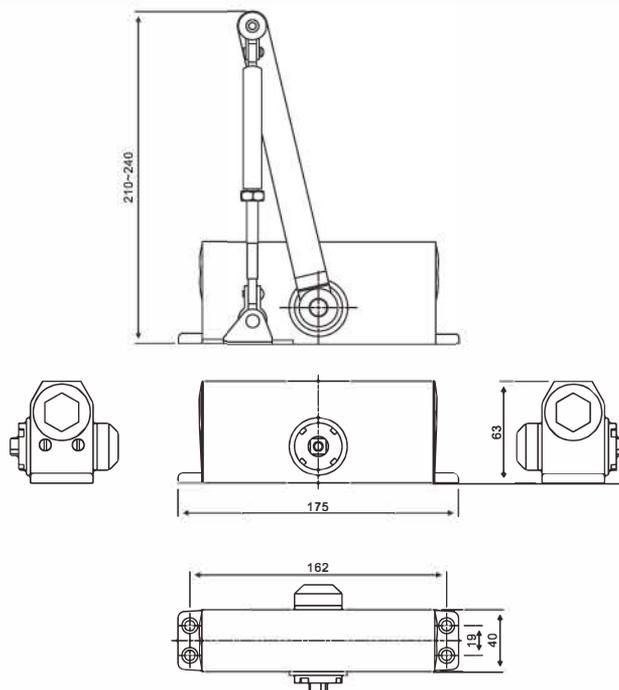
Latching Speed

To adjustment controls how fast the door closes for those last few inches.




TFDC001
Specification

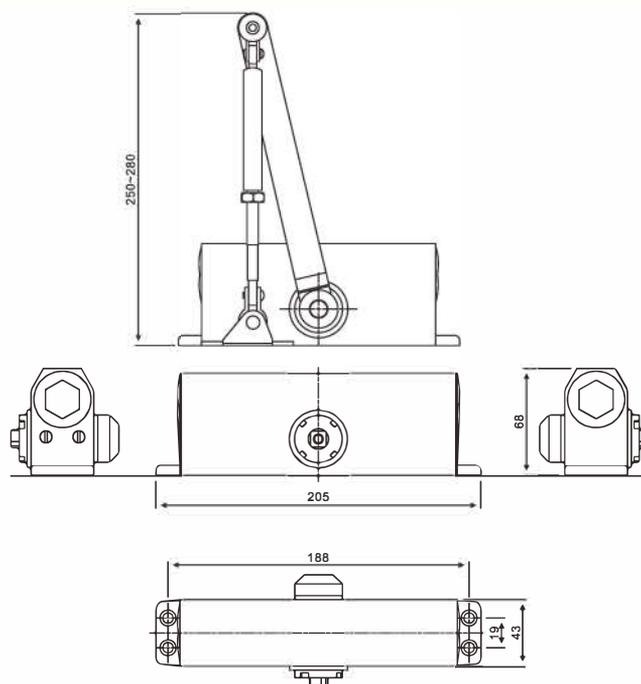
Power size	EN2	EN3
Width of door max (mm)	850	950
Weight of door max (kg)	40	60
Speed Control	Two Adjustable Speed	
Dimension (mm)	L175 x W40 x H63	
Application	Commercial & Residential	


Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.


TFDC002
Specification

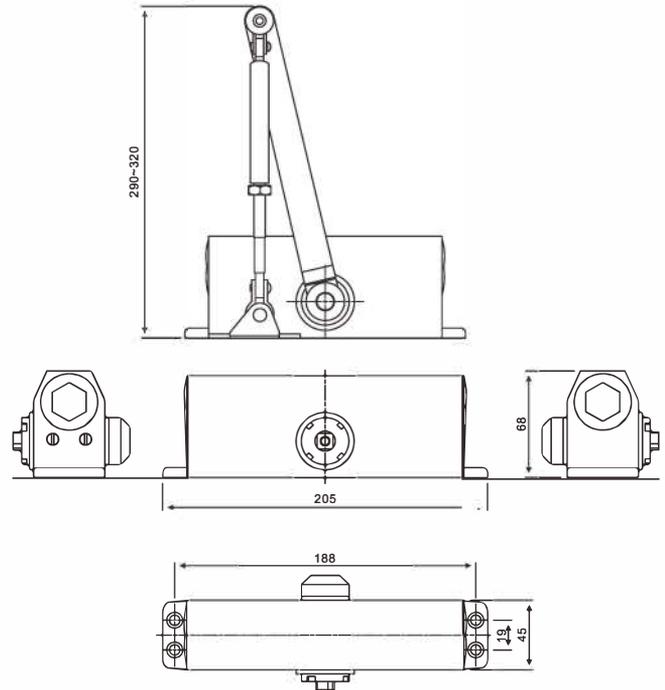
Power size	EN3	EN4
Width of door max (mm)	950	1100
Weight of door max (kg)	60	80
Speed Control	Two Adjustable Speed	
Dimension (mm)	L205 x W43 x H68	
Application	Commercial & Residential	


Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.



TFDC003



Specification

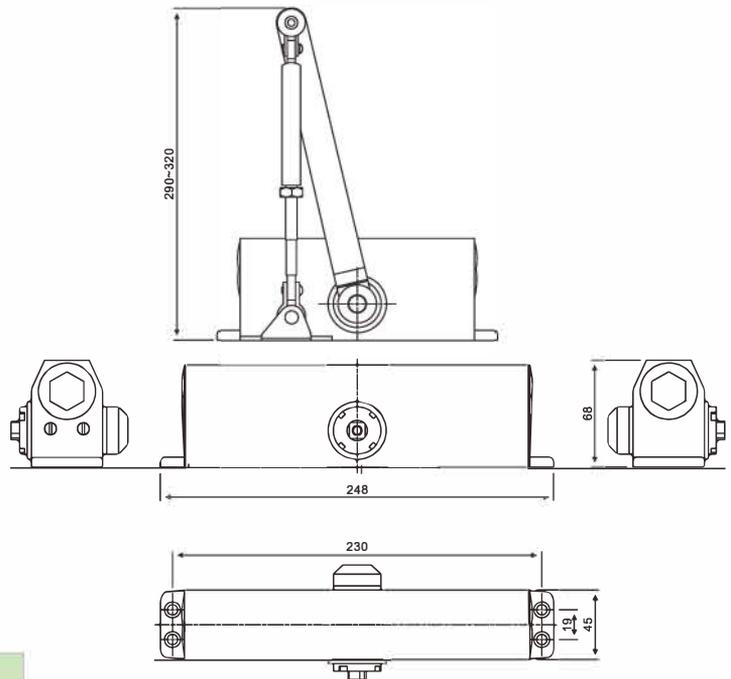
Power size	EN4	EN5
Width of door max (mm)	1100	1250
Weight of door max (kg)	80	100
Speed Control	Two Adjustable Speed	
Dimension (mm)	L205 x W45 x H68	
Application	Commercial & Residential	

Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.



TFDC004



Specification

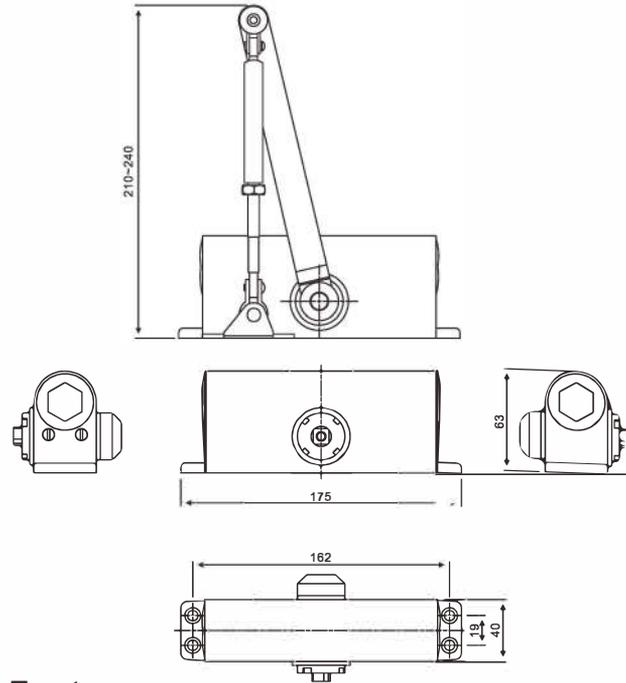
Power size	EN4	EN5	EN6
Width of door max (mm)	1100	1250	1400
Weight of door max (kg)	80	100	120
Speed Control	Two Adjustable Speed		
Dimension (mm)	L248 x W45 x H68		
Application	Commercial & Residential		

Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.


TFDC006
Specification

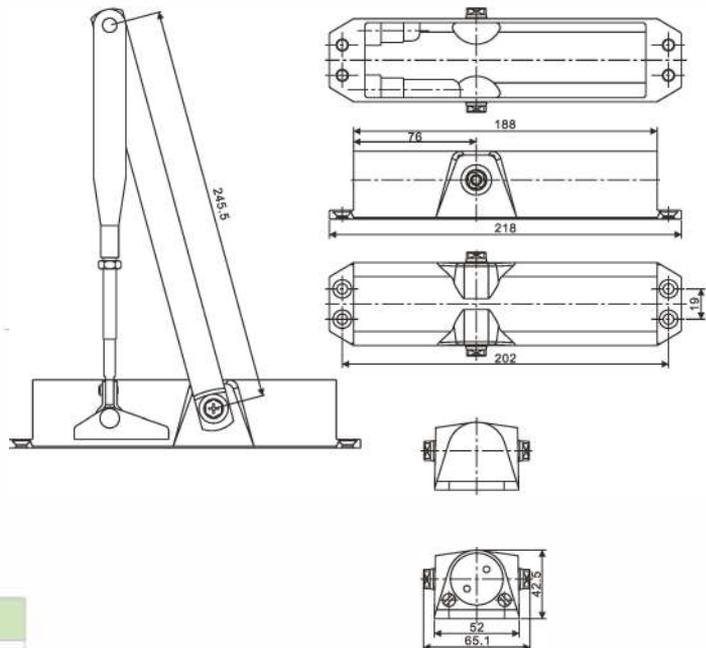
Power size	EN2	EN3
Width of door max (mm)	850	950
Weight of door max (kg)	40	60
Speed Control	Two Adjustable Speed	
Dimension (mm)	L175 x W40 x H63	
Application	Commercial & Residential	


Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.


TFDC007
Specification

Power size	EN2	EN3	EN4
Width of door max (mm)	850	950	1100
Weight of door max (kg)	40	60	80
Speed Control	Two Adjustable Speed		
Dimension (mm)	L218 x W52 x H42.5		
Application	Commercial & Residential		
Passed durability test	500,000 cycles		


Features

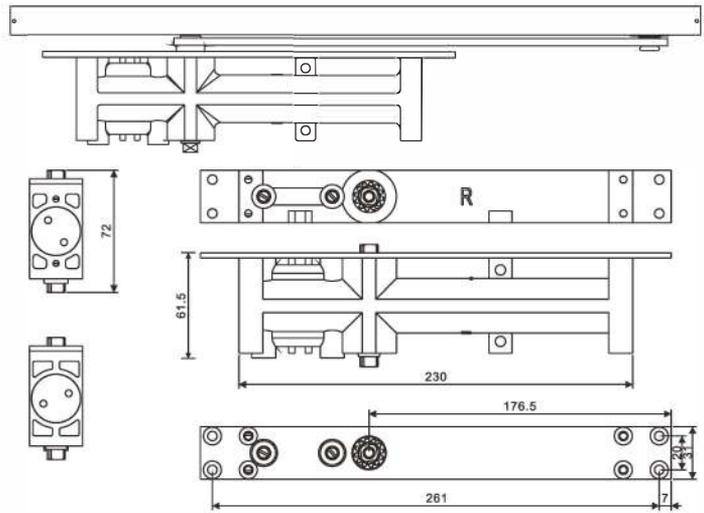
- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.



TFDC005 Concealed Door Closer

Specification

Power size	EN2	EN3
Width of door max (mm)	850	950
Weight of door max (kg)	40	60
Speed Control	Two Adjustable Speed	
Dimension (mm)	L230 x W31 x H61.5	
Application	Commercial & Residential	



Features

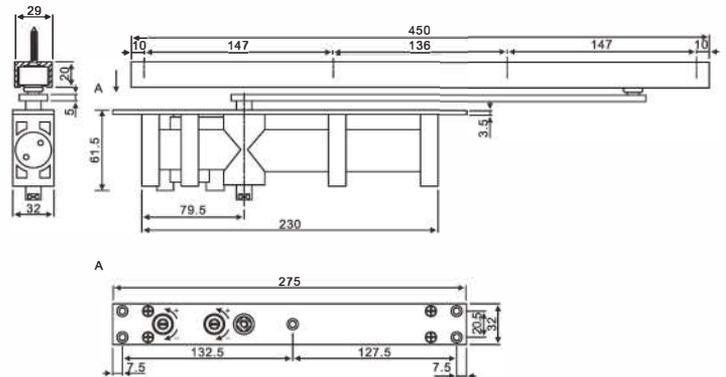
- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Reliable closing with adjustable latching action.
- 2 Speed controls: Closing speed and Latching speed.



TFDC009 Concealed Door Closer

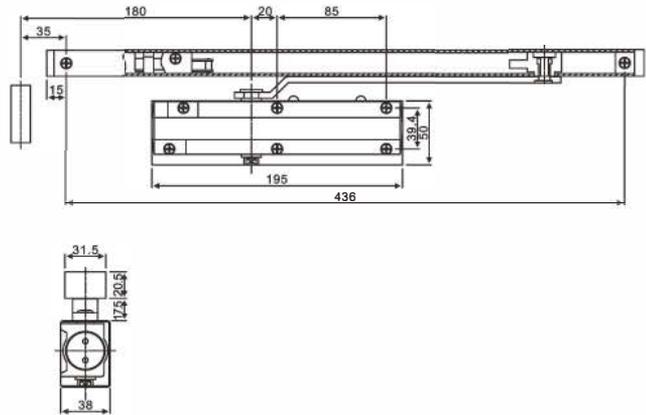
Specification

Power size	EN3	EN4
Width of door max (mm)	950	1100
Weight of door max (kg)	60	80
Speed Control	Two Adjustable Speed	
Dimension (mm)	L230 x W32 x H61.5	
Application	Commercial & Residential	



Features

- Applicable to single door with the maximum door width of 1000mm.
- Precise sealed, preventing oil leakage, preventing oil leakage.
- High quality die-casting aluminum alloy, protected with two-layer bright paint.
- Two hydraulic press valves controlling two stage doors closing speed automatically, 180 degrees fully hydraulic control.
- Two stage speed adjustment, 90-160 degree locating function is available.
- Either to be installed on doors with normal method or to be installed on door frame.
- Standard color: golden, silver, copper or other kinds of color on clients' requirements.



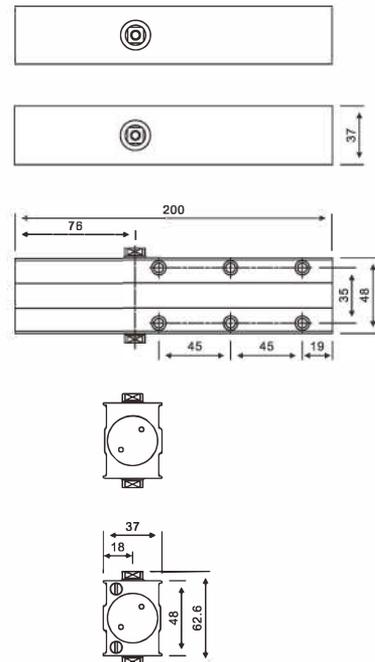
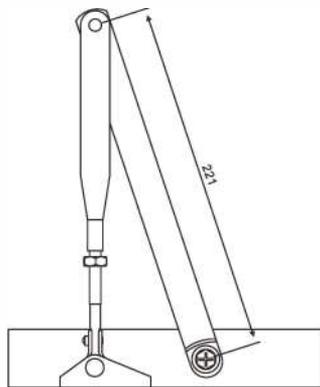
TFDC008

Specification

Power size	EN2	EN3
Width of door max (mm)	850	950
Weight of door max (kg)	45	65
Speed Control	Two Adjustable Speed	
Dimension (mm)	L195 x W50 x H31.5	
Application	Commercial & Residential	

Features

- Applicable to single door with the maximum door width of 1000mm.
- Precise sealed, preventing oil leakage, preventing oil leakage.
- High quality die-casting aluminum alloy, protected with two-layer bright paint.
- Two hydraulic press valves controlling two stage doors closing speed automatically, 180 degrees fully hydraulic control.
- Two stage speed adjustment, 90-160 degree locating function is available.
- Either to be installed on doors with normal method or to be installed on door frame.
- Standard color: golden, silver, copper or other kinds of color on clients' requirements.



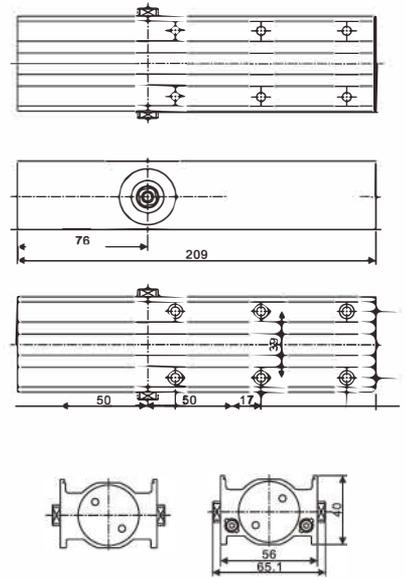
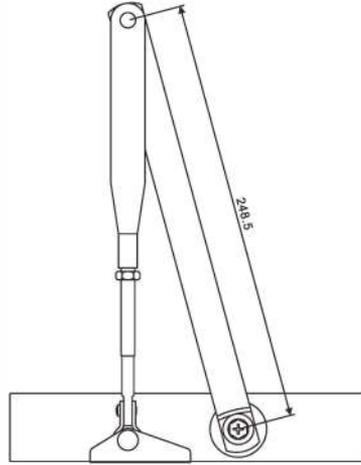
TFDC010

Specification

Power size	EN2	EN3
Width of door max (mm)	950	1100
Weight of door max (kg)	65	80
Speed Control	Two Adjustable Speed	
Dimension (mm)	L200 x W48 x H37	
Application	Commercial & Residential	

Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Fine quality aluminium alloy body. Provided with 2 coatings for protection.
- 2 Speed controls: Closing speed and Latching speed.



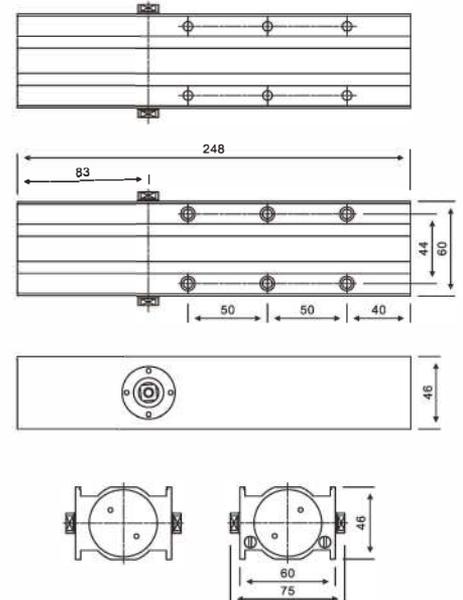
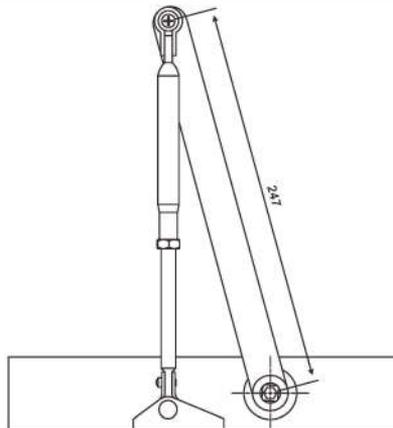
TFDC011

Specification

Power size	EN2	EN3	EN4
Width of door max (mm)	850	950	1100
Weight of door max (kg)	40	60	80
Speed Control	Two Adjustable Speed		
Dimension (mm)	L209 x W56 x H40		
Application	Commercial & Residential		

Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Side swing rocker for easy erection.
- Fine quality aluminium alloy body. Provided with 2 coatings for protection.
- Full hydraulic control of closing speeds by the help of adjustable valves.
- 2 speed controls: closing speed and latching speed.



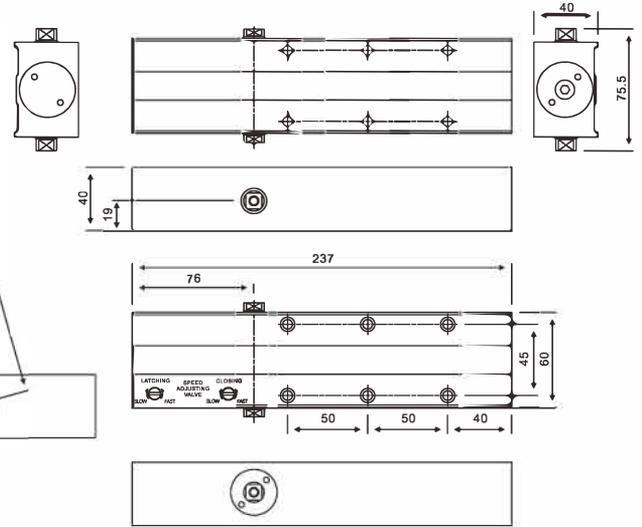
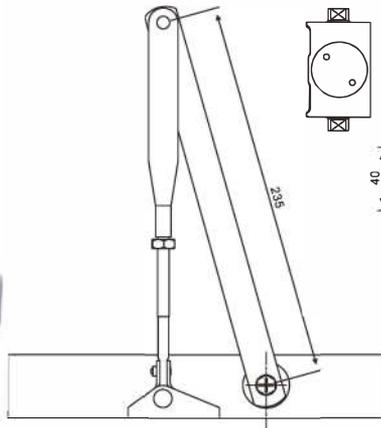
TFDC012

Specification

Power size	EN3	EN4	EN5
Width of door max (mm)	950	1100	1250
Weight of door max (kg)	60	80	100
Speed Control	Two Adjustable Speed		
Dimension (mm)	L248 x W60 x H46		
Application	Commercial & Residential		

Features

- High quality imported Gaskets to prevent oil leakage.
- Strong Spring to guarantee powerful closing.
- Side swing rocker for easy erection.
- Fine quality aluminium alloy body. Provided with 2 coatings for protection.
- Full hydraulic control of closing speeds by the help of adjustable valves.
- 2 speed controls: closing speed and latching speed.



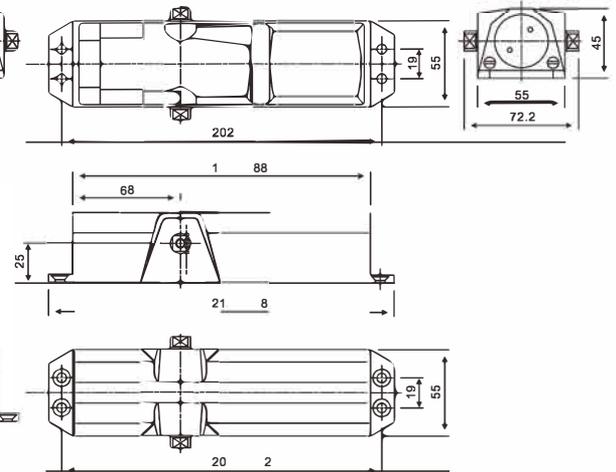
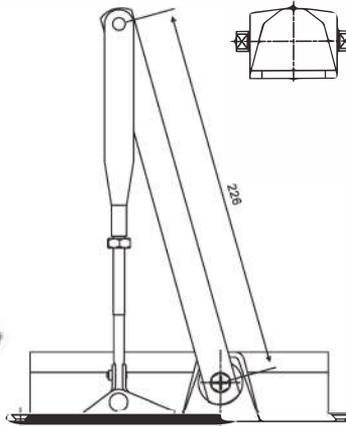
TFDC013

Specification

Power size	EN2	EN3	EN4	EN5
Width of door max (mm)	850	950	1100	1250
Weight of door max (kg)	40	60	80	100
Speed Control	Two Adjustable Speed			
Dimension (mm)	L237 x W60 x H40			
Application	Commercial & Residential			
Passed durability test	500,000 cycles			

Features

- Tested to CE EN1154 By intertek.
- Power adjustable for EN2~5 by spring.
- EN fire Tested .
- Suitable for -45°C to 60°C environment.



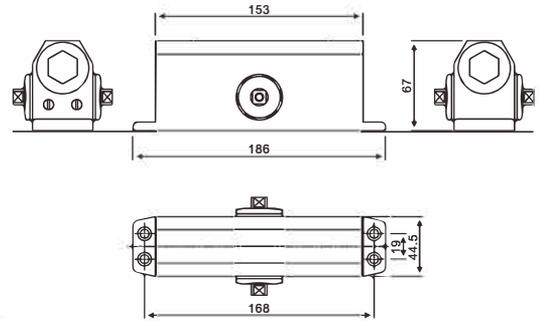
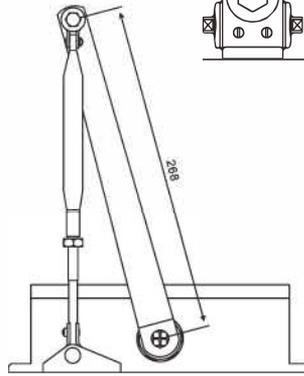
TFDC014

Specification

Power size	EN2	EN3	EN4
Width of door max (mm)	850	950	1100
Weight of door max (kg)	45	65	80
Speed Control	Two Adjustable Speed		
Dimension (mm)	L218 x W55 x H45		
Application	Commercial & Residential		

Features

- Tested to CE EN1154 By intertek.
- Power adjustable for EN2/3/4 by position.
- EN fire Tested .
- Suitable for -45°C to 60°C environment.



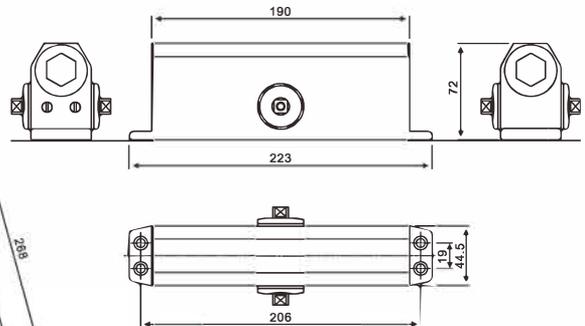
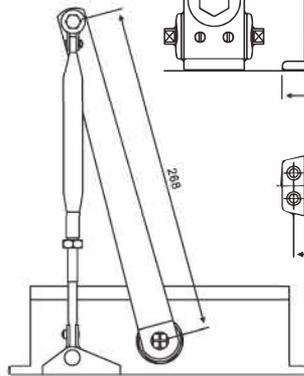
TFDC015

Specification

Power size	EN1	EN2
Width of door max (mm)	750	850
Weight of door max (kg)	20	40
Speed Control	Two Adjustable Speed	
Dimension (mm)	L186 x W44.5 x H67	
Application	Commercial & Residential	
Passed durability test	500,000 cycles	

Features

- UL listed , CE Certification.
 - 500,000 Cycles Guaranteed In Endurance.
 - Two separate valves adjustable closing & latching speed.
 - Work Temperature -30°C TO 60°C.
 - Optional Built-In HOLD OPEN type.
 - Universal Application: Standard, Top-Jamb.
- Parallel Arm installation.



TFDC016

Specification

Power size	EN2	EN3
Width of door max (mm)	850	950
Weight of door max (kg)	40	60
Speed Control	Two Adjustable Speed	
Dimension (mm)	L223 x W44.5 x H72	
Application	Commercial & Residential	
Passed durability test	500,000 cycles	

Features

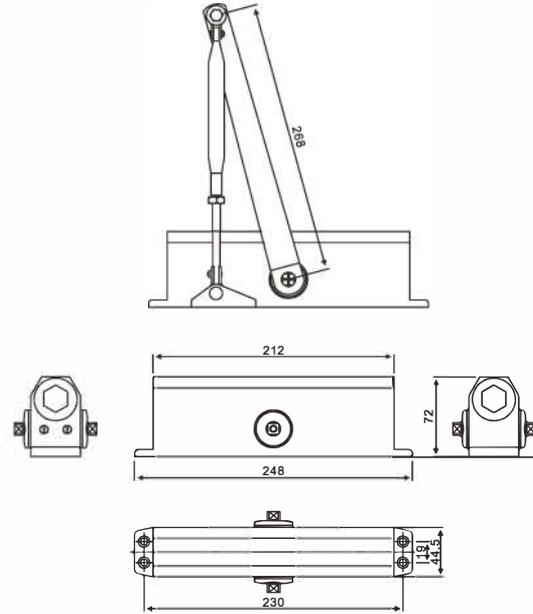
- UL listed, CE Certification.
 - 500,000 Cycles Guaranteed In Endurance.
 - Two separate valves adjustable closing & latching speed.
 - Work Temperature -30°C TO 60°C.
 - Optional Built-In HOLD OPEN type.
 - Universal Application: Standard, Top-Jamb.
- Parallel Arm installation.



TFDC017

Specification

Power size	EN3	EN4
Width of door max (mm)	950	1100
Weight of door max (kg)	60	80
Speed Control	Two Adjustable Speed	
Dimension (mm)	L248 x W44.5 x H72	
Application	Commercial & Residential	
Passed durability test	500,000 cycles	



Features

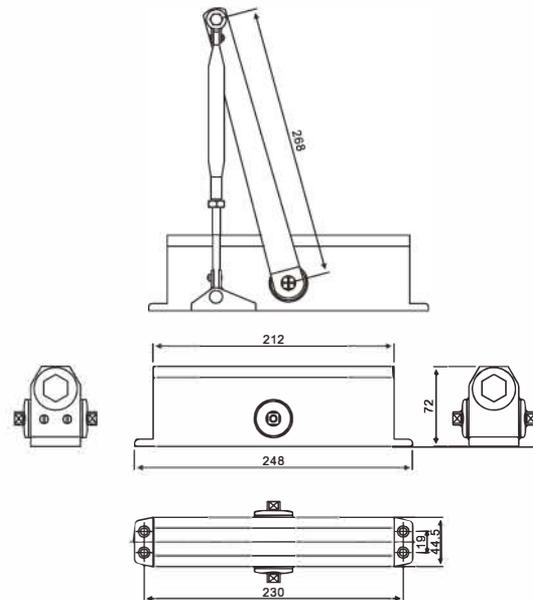
- UL listed, CE Certification.
- 500,000 Cycles Guaranteed In Endurance.
- Two separate valves adjustable closing & latching speed.
- Work Temperature -30°C TO 60°C.
- Optional Built-In HOLD OPEN type.
- Universal Application: Standard, Top-Jamb. Parallel Arm installation.



TFDC018

Specification

Power size	EN3	EN4	EN5
Width of door max (mm)	950	1100	1250
Weight of door max (kg)	80	100	120
Speed Control	Two Adjustable Speed		
Dimension (mm)	L248 x W44.5 x H72		
Application	Commercial & Residential		
Passed durability test	500,000 cycles		

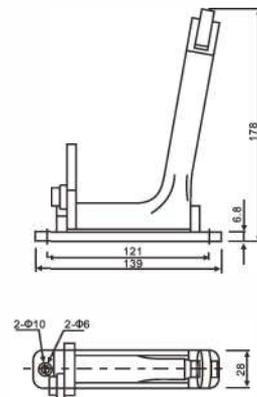


Features

- UL listed, CE Certification.
- 500,000 Cycles Guaranteed In Endurance.
- Two separate valves adjustable closing & latching speed.
- Work Temperature -30°C TO 60°C.
- Optional Built-In HOLD OPEN type.
- Universal Application: Standard, Top-Jamb. Parallel Arm installation.

Gravity Door Selector for Hollow Metal Doors

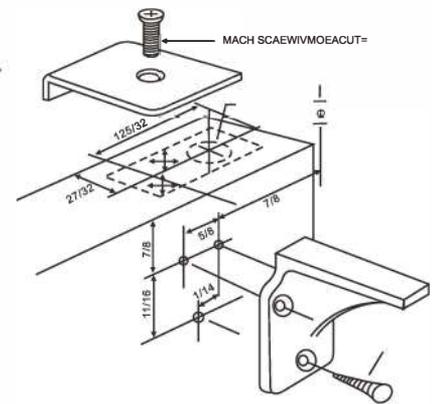
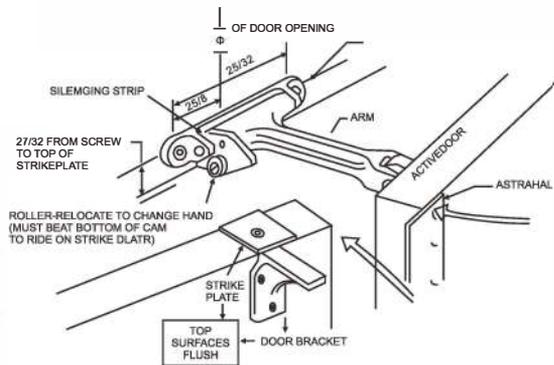
TFDR001



- Material: Casting Stainless Steel 304
- Size A: 7" Projection(140x170mm)
- Size B: 9" Projection(200x225mm)
- Non-handed Reversible
- Roller arm stops active door from closing before the inactive door.
- Gravity action arm and door bracket are adjustable on the job for ease of installation.
- Used with door closer to make sure the doors is closed properly and completely
- Available for Heavy Duty Double Doors of public buildings

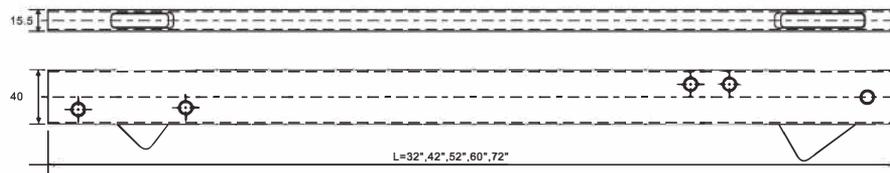
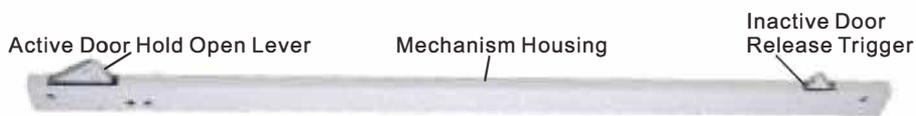
Size

A	7" Projection
B	9" Projection

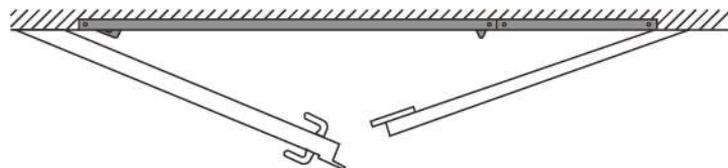


Concealed Door Coordinator for Double Doors

TFDR003



Installation Diagram



- Material: Stainless Steel 201/ 304
- Size: 40x15x(600-18000mm)
- The coordinator with companion filler is designed to become an integral part of the door frame and when painted with frame becomes virtually invisible.
- It is engineered to prevent damage in case of abnormal force against active door that is held open
- Used with door closer to make sure the doors is closed properly and completely

LEVER HANDLES





BS EN1906 Lever Handle and Knob Furniture

BS EN 1906 classifies door furniture by using an 8 digit coding system. A similar classification applies to all building hardware product Standards so that complementary items of hardware can be specified to, for instance, a common level of corrosion resistance, category of use, etc. Each digit refers to a particular feature of the product measured against the standard's performance requirements.

1. Category of Use

4

Four grades are identified:

Grade 1: medium frequency of use with a high incentive to exercise care and a small chance of misuse.

E.g. internal residential doors;

Grade 2: medium frequency of use by people with some incentive to exercise care but where there is some chance of misuse.

E.g. internal office doors;

Grade 3: high frequency of use by public or others with little incentive to exercise care and with a high chance of misuse.

E.g. public office doors;

Grade 4: high frequency of use on doors which are subject to frequent violent use.

E.g. football stadiums, oil rigs, barracks, public toilets, etc.

2. Durability

7

Two grades of durability are identified:

Grade 6: Medium use-100 000 test cycles

Grade 7: High use-200 000 test cycles

The test undertaken to achieve these grades involve the application of additional forces to the door furniture in order to simulate the conditions of use likely to be experienced in the field.

3. Test Door Mass

-

No requirement

4. Fire Resistance

1

Two grades of fire resistance are identified:

Grade 1: Not approved for use on fire /smoke door assemblies.

Grade 2: Suitable for use on fire /smoke door assemblies.

Note: grade 1 classification means only that the furniture has been designed for use on fire / smoke control doors; the actual fire Performance achieved (E.g. fire integrity of 30 minutes on a partial glazed timber door etc.) will be contained in a separate fire test report.

5. Safety

1

Two grades of safety are identified:

Grade 0: Normal use

Grade 1: Safety application-to qualify for this grade, handles must have high strength handle-to plate and plate-to handle door fixing and/or handle-to spindle fixing such that they would withstand a person grabbing in order to prevent falling. It is recommended that only safety furniture is used at the top of cellar steps or other staircase.

6. Corrosion Resistance

4

Five grades are identified according to EN 1670:

Grade 0	No defined Corrosion Resistance
Grade 1	Mild Resistance- minimum requirement for internal use(24h salt spray test)
Grade 2	Moderate Corrosion Resistance (48h salt spray test)
Grade 3	High Corrosion Resistance (96h salt spray test)
Grade 4	Extremely High Resistance (240h salt spray test)- recommended for use in exposed marine atmosphere or very polluted industrial environments.

Note: Products intended to develop a natural patina(such as bronze or brass)are not required to comply with any requirements.

7. Security

0

Five grades are identified:

Grade 0	Not approved for use on burglary resistant doors
Grade 1	Low burglary resistance
Grade 2	Moderate burglary resistance
Grade 3	High Burglary resistance
Grade 4	Extra High Burglary Resistance

Note: The main requirement include resistance to drilling, close fitting plates or escutcheons to help protect the lock and support the cylinder. They must be resistant to removal from the outside of the door and make provision to minimise the cylinder projection to a maximum of 3mm. full details of the requirement can be found in BS EN 1960.

8. Type of Operations

B

Three operations types are identified:

Type A	Spring assisted furniture
Type B	Spring Loaded furniture
Type U	Unsprung Furniture

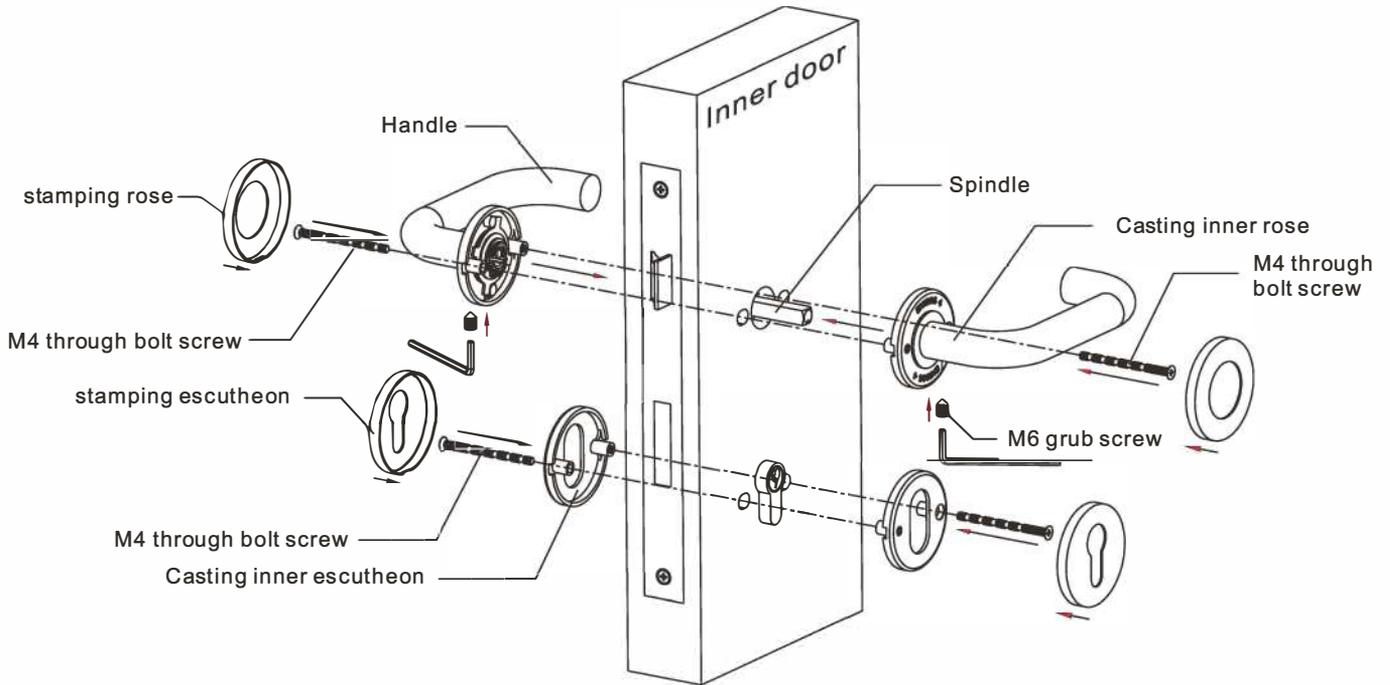
The TUFFRO range of stainless steel lever handle is ideal for the majority of applications, tested to 200,000 cycles, suitable for use in contract, public, commercial, institutional and residential buildings, e.g. public office doors, common area doors etc.

Characteristics such as Longevity and Corrosion Resistance have established stainless steel as popular material in the manufacture of architectural fittings.

Material	Stainless Steel
Finish	Stain, Polished,PVD, AB, AC
Bearing	Lever handle pivot-fitted in rose,with height holding mechanism
Standard	Certified in compliance with EN1906:2012
Class	47-1140B
Standard	Certified in compliance with EN1634:2012
Class	2 hours fire rated



EN1906 Class 4
EN1634 Fire Rated 2 Hours



Category of use	Test Cycles Durability	Door Mass	Fire Resistance	Safety for persons	Corrosion Resistance	Security	Type of operation
4	7	-	1	1	4	0	B

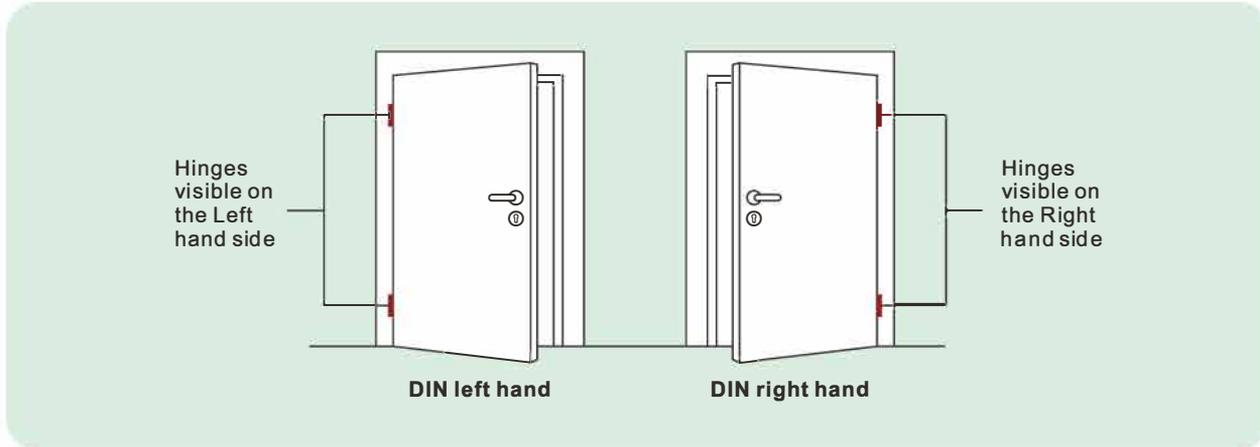
	Supplied With	Door Thickness(mm)
	2 Lever handle aperture parts with handle roses 1 Spindle 8×8×100mm 1 Pair of CB escutcheons 4 Threaded screws M4×60mm,can be shortened	38-55
	2 Lever handle aperture parts with handle roses 1 Spindle 8×8×100mm 1 Pair of PC escutcheons 4 Threaded screws M4×60mm,can be shortened	38-55
	2 Lever handle aperture parts with handle roses 1 Spindle 8×8×100mm 1 Pair of WC escutcheons with red/green indicator disc 1 Locking pin 8×8×65mm 4 Threaded screws M4×60mm,can be shortened	38-55

Door Direction-left or Right

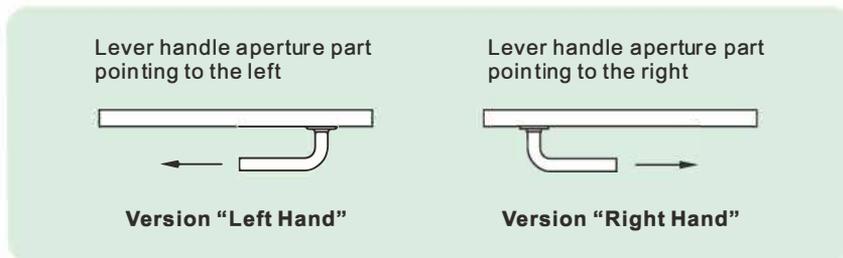
The door direction (left/right) according to DIN 107 is determined as follows:

Visible position of the door hinges on the left: **(DIN) left**

Visible position of the door hinges on the right: **(DIN) right**



Lever Handle Direction



When selecting alternate sets with asymmetrical handles a distinction to the right/left is required.

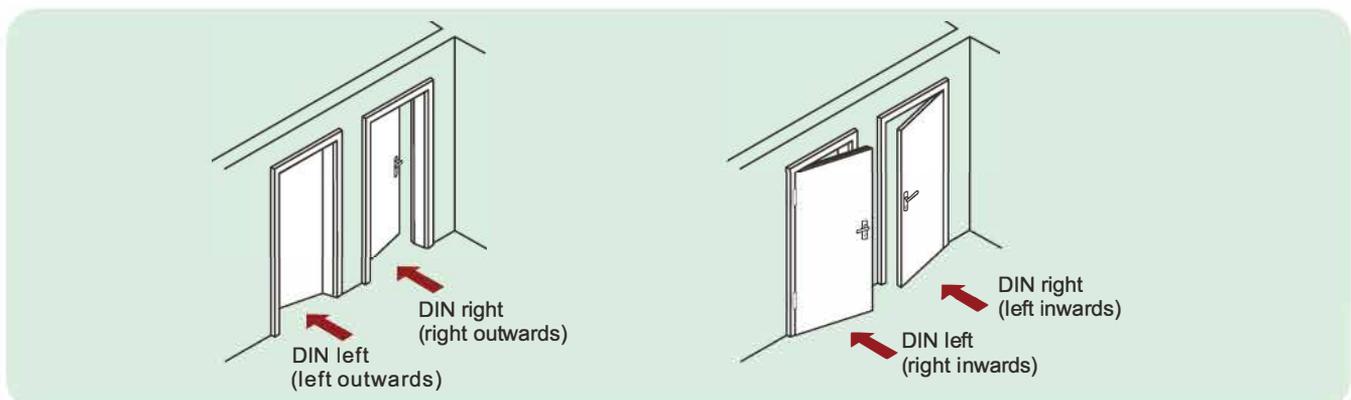
It is therefore necessary to observe the particular door direction.

Examples of asymmetrical lever handles

Examples of symmetrical lever handles

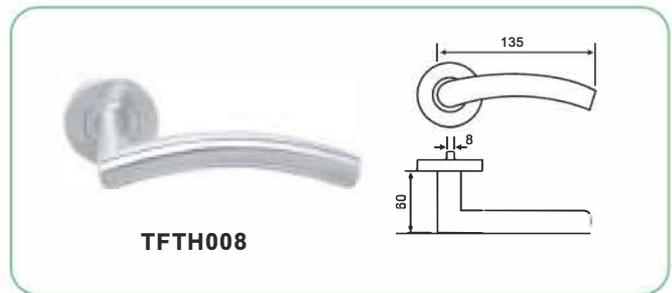
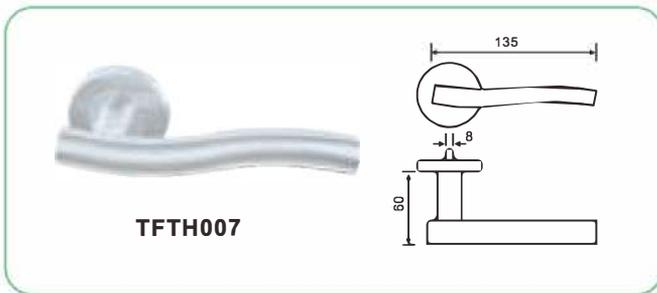
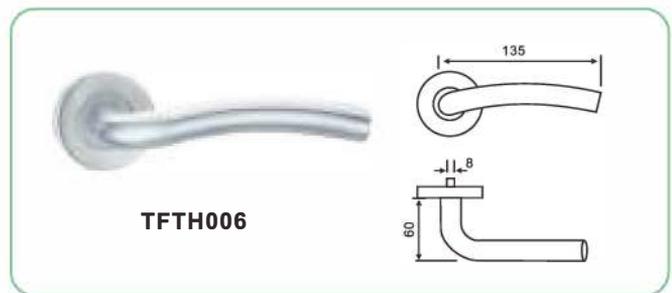
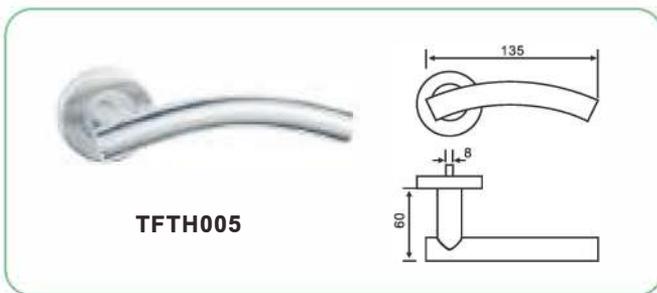
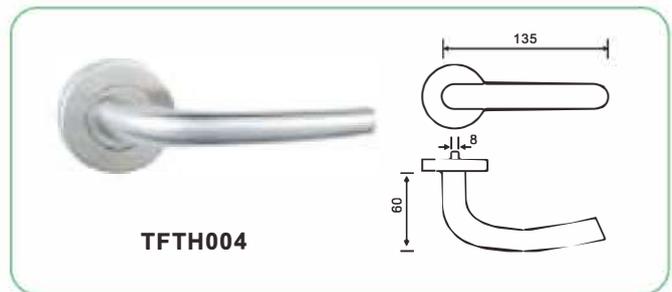
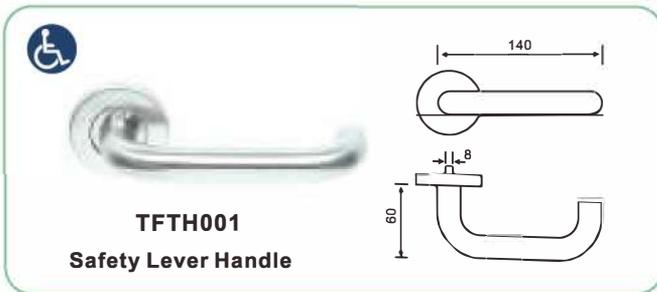


Opening Direction



Features

- Certification : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 201/ 304 / 316
- Diameter : $\Phi 16$ / $\Phi 19$ / $\Phi 20$ / $\Phi 22$ mm
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



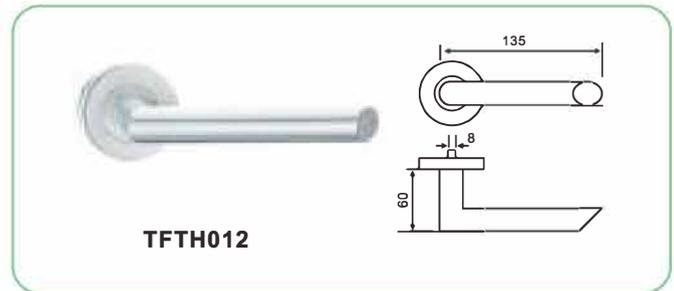
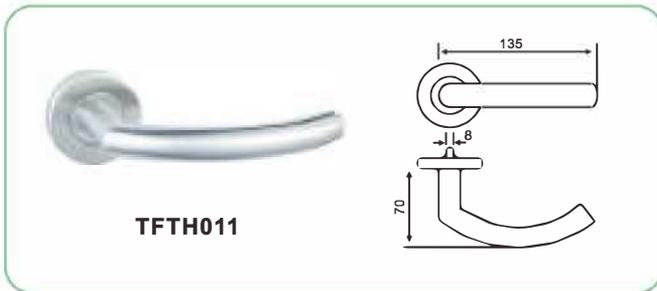
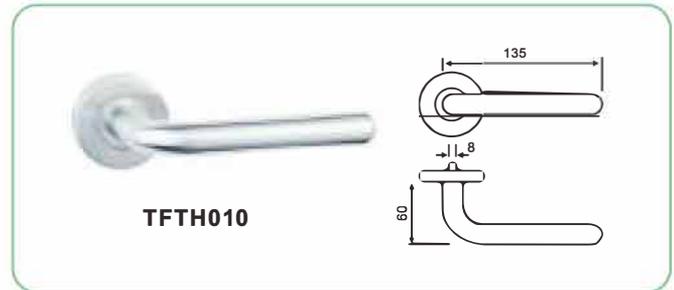
TFES009



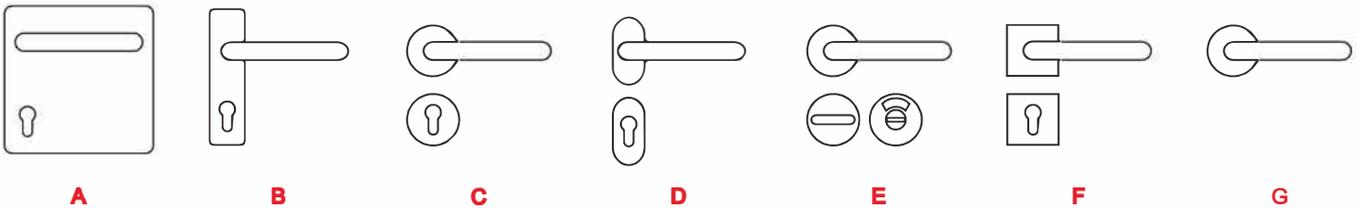
TFES010

Features

- Certification : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 201/ 304 / 316
- Diameter : $\Phi 16$ / $\Phi 19$ / $\Phi 20$ / $\Phi 22$ mm
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



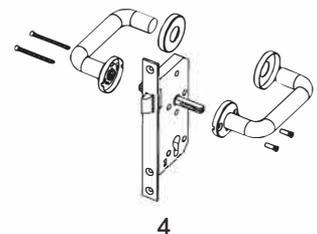
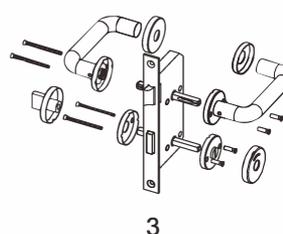
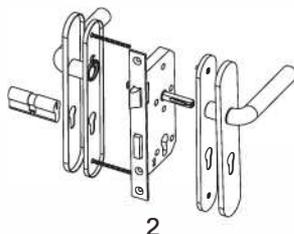
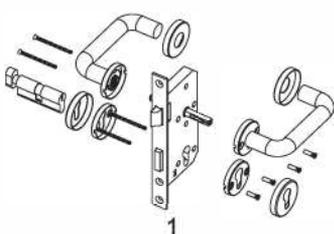
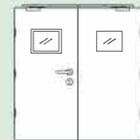
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

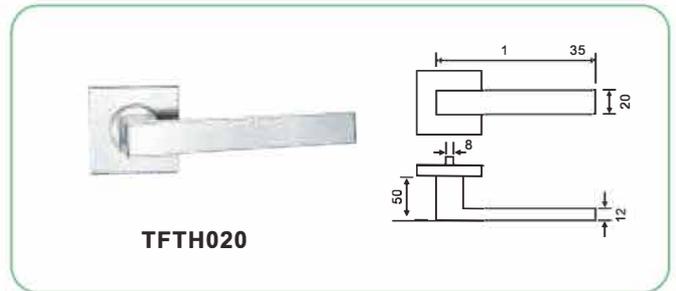
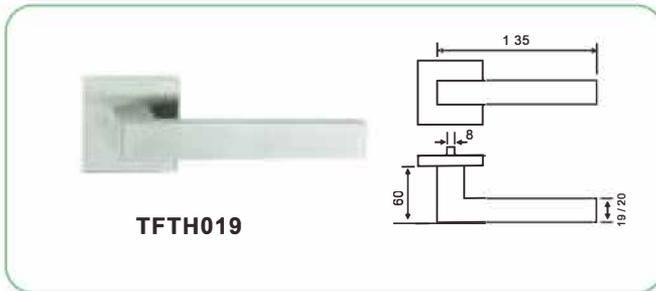
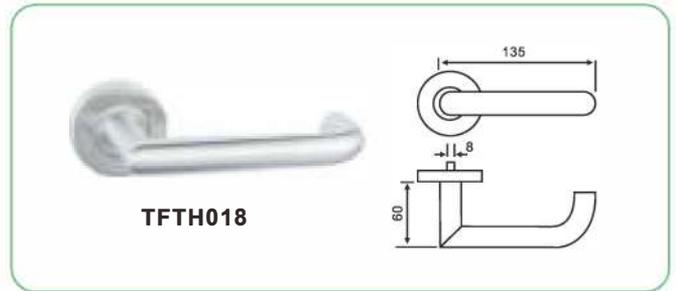
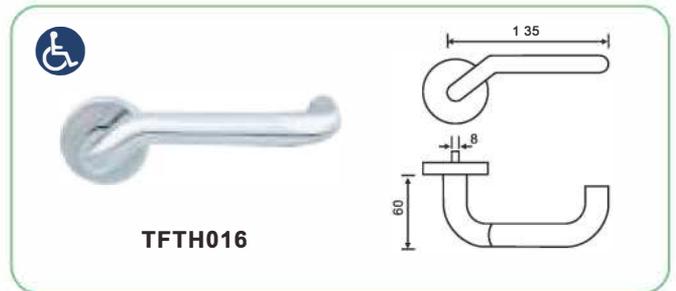
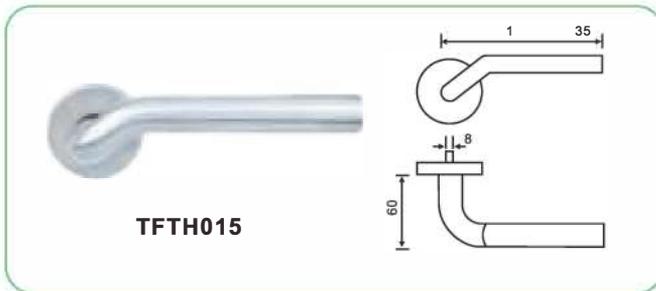
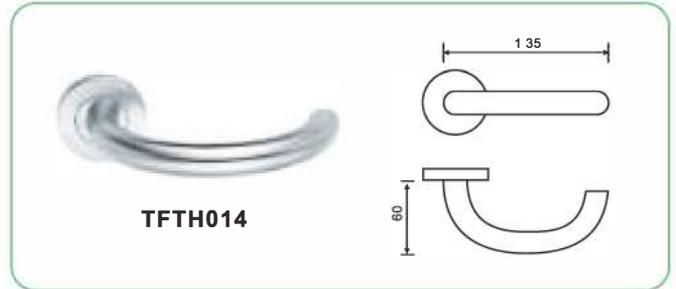
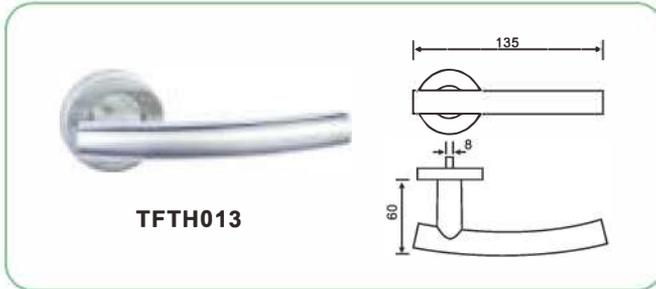
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



Features

- Certification : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 201/ 304 / 316
- Diameter : $\Phi 16$ / $\Phi 19$ / $\Phi 20$ / $\Phi 22$ mm
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



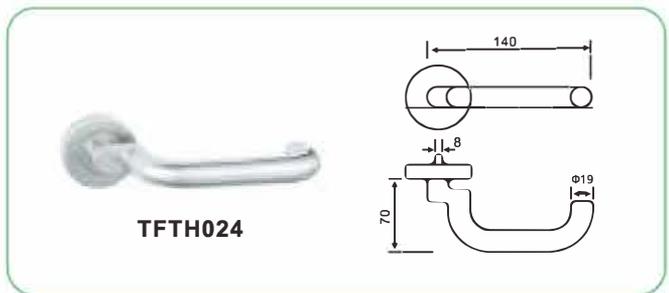
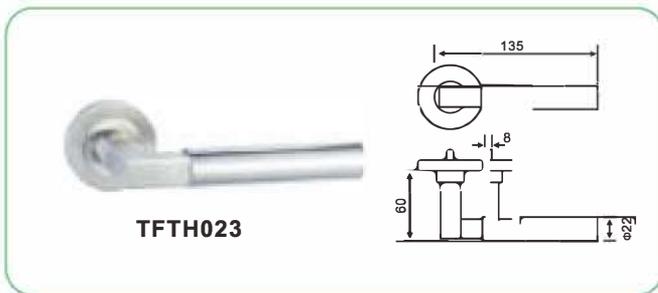
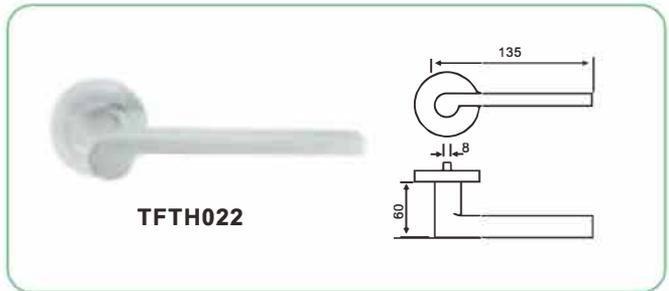
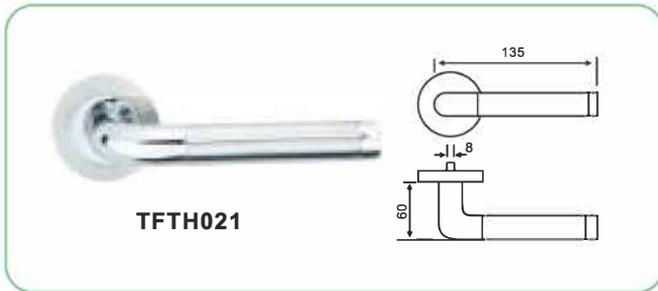
TFES009



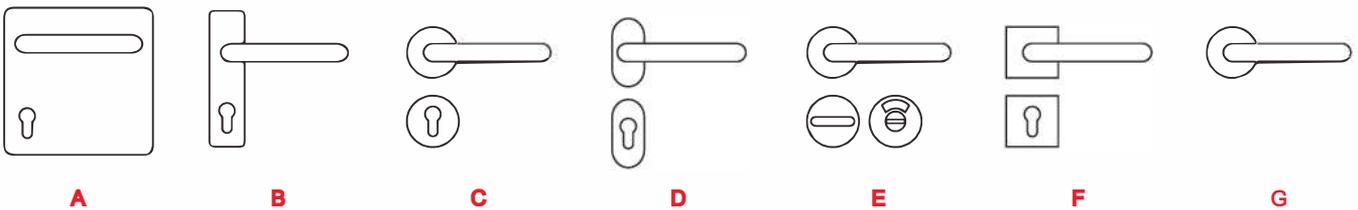
TFES010

Features

- Certification : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 201/ 304 / 316
- Diameter : $\Phi 16$ / $\Phi 19$ / $\Phi 20$ / $\Phi 22$ mm
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



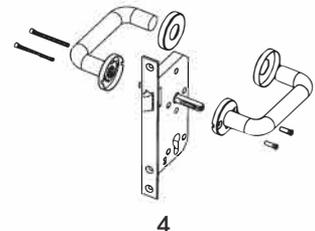
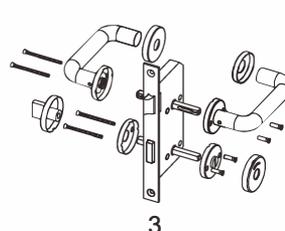
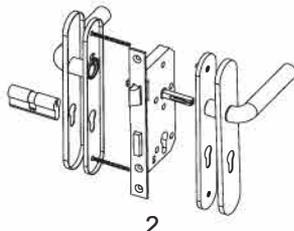
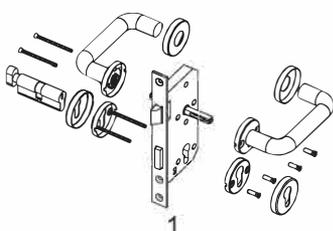
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

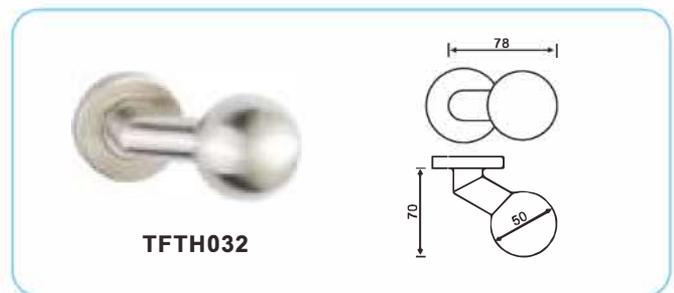
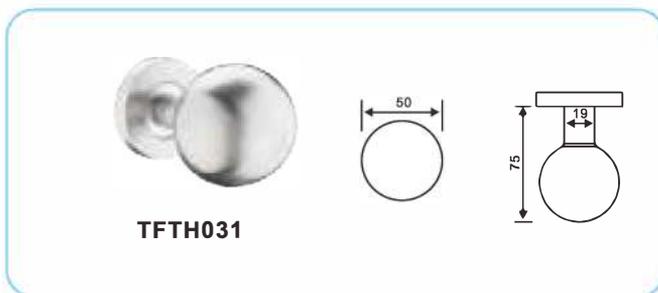
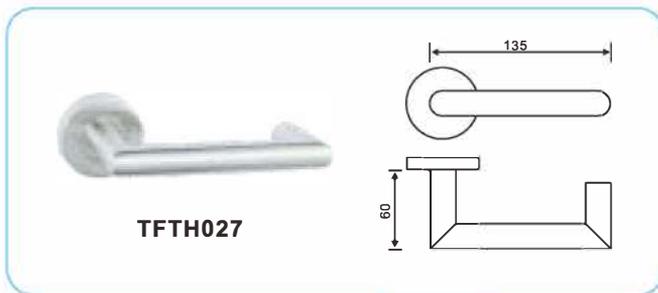
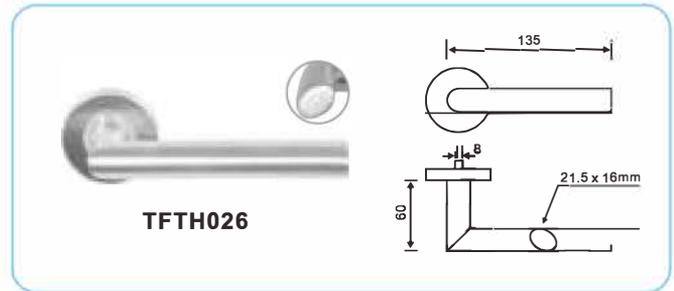
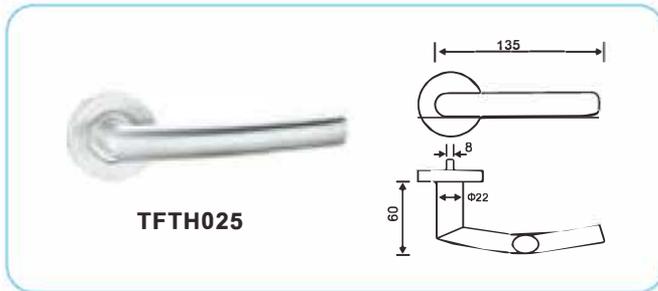
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



Features

- Certification : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 201/ 304 / 316
- Diameter : $\Phi 16$ / $\Phi 19$ / $\Phi 20$ / $\Phi 22$ mm
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



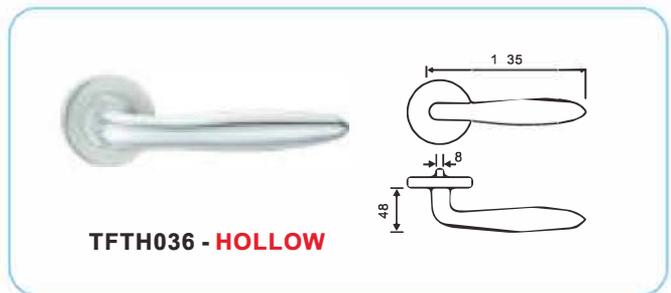
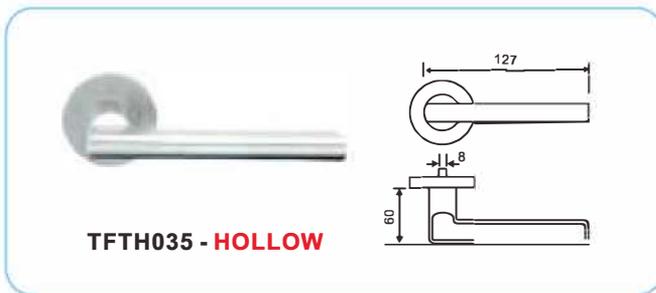
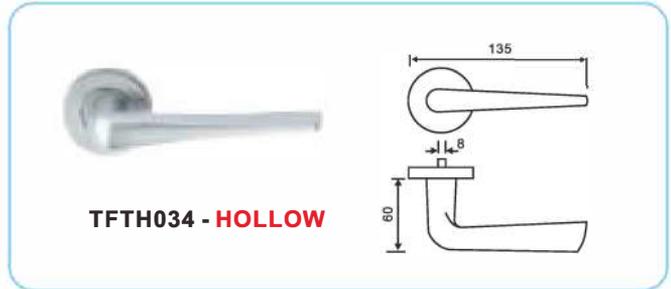
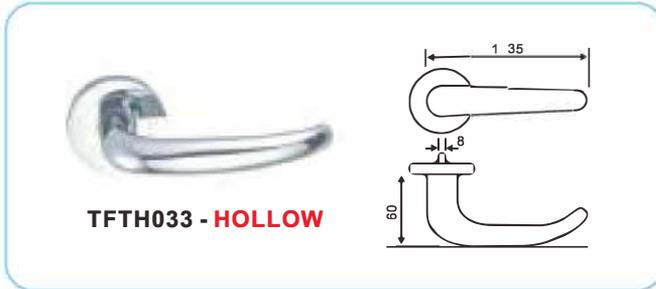
TFES009



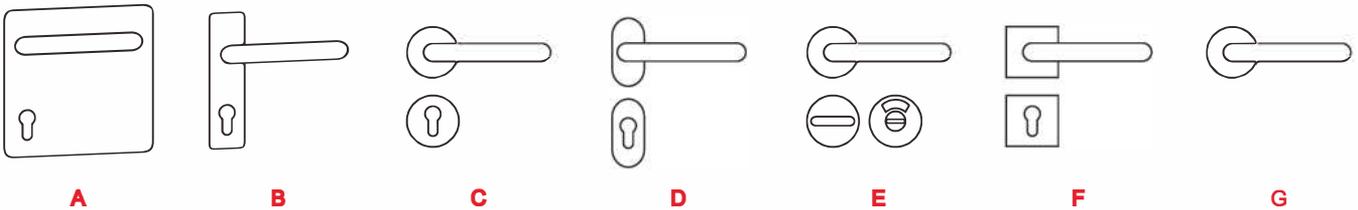
TFES010

Features

- Certification : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 201/ 304 / 316
- Diameter : $\Phi 16$ / $\Phi 19$ / $\Phi 20$ / $\Phi 22$ mm
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



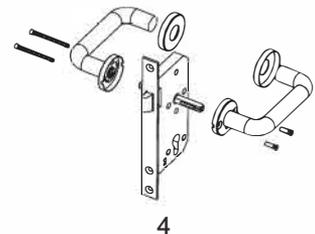
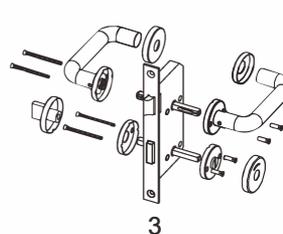
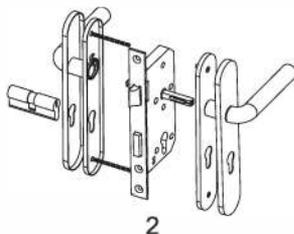
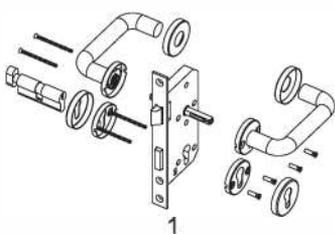
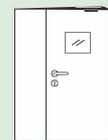
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

Projects

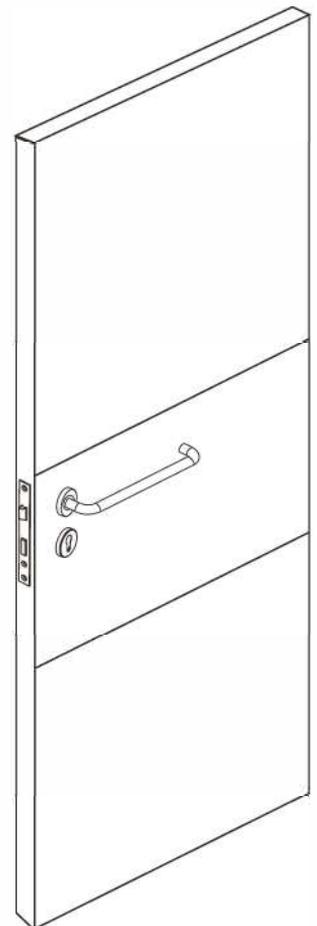
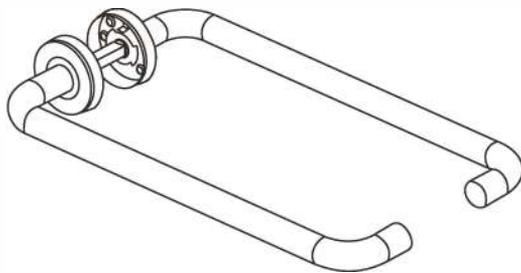
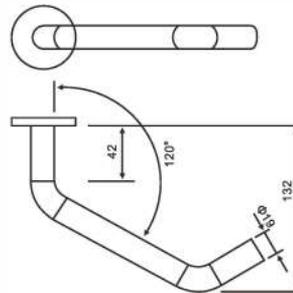
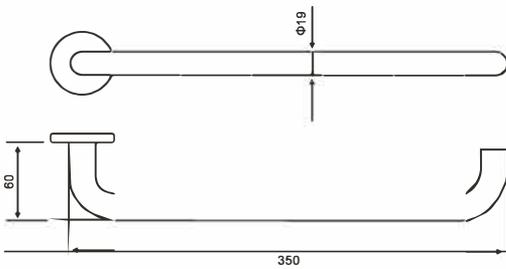
- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings





TFTH037
Disable handle

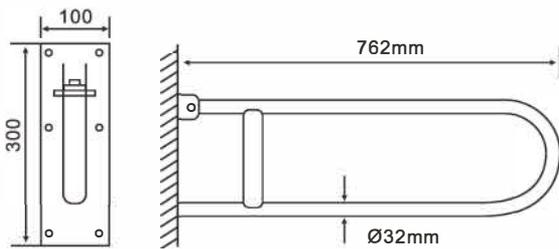
Optional Version



- Application Range: hospital, warehouse or public area.
- Apply to disabled person
- Optionally match up with Panic lock or passenger lock
- Handle shape and length can be designed accordingly



TFTH038
Disabled Safety Grab Bar



Disabled Safety Grab Bar

Grab bars for the bath and shower assist the elderly and disabled with getting in and out easily. Bathroom grab bars are available in many types, such as steel grab bars. Also, grab bar installation is very easy as they mount on the shower wall.

Maximum weight capacity of 220 lbs

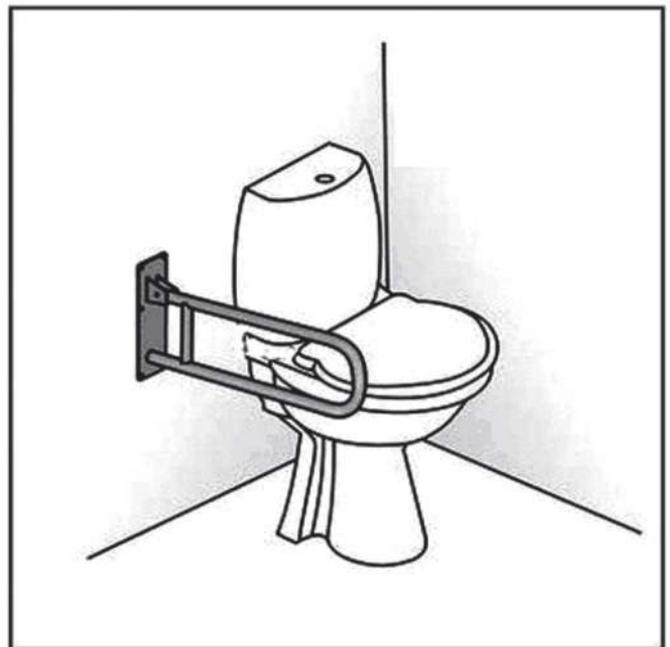
Material: Heavy Duty 304 Stainless Steel

Finish : Satin, PSS

Diameter:32mm

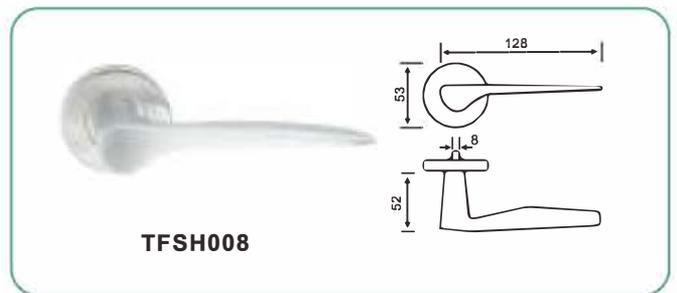
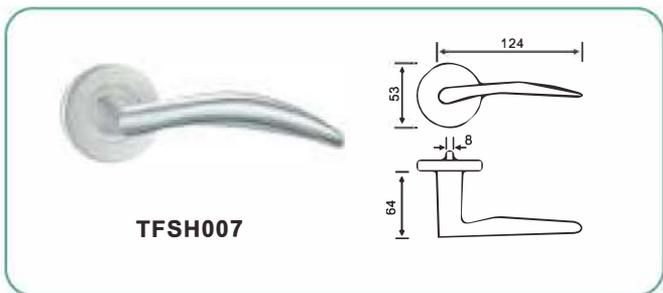
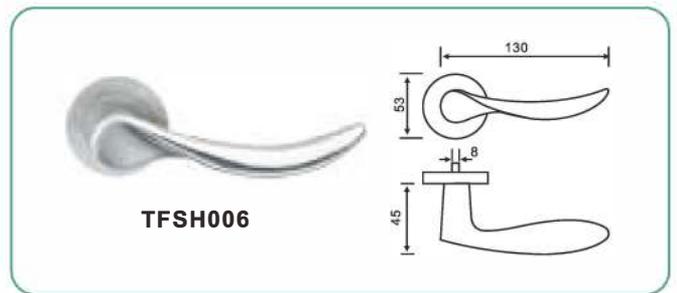
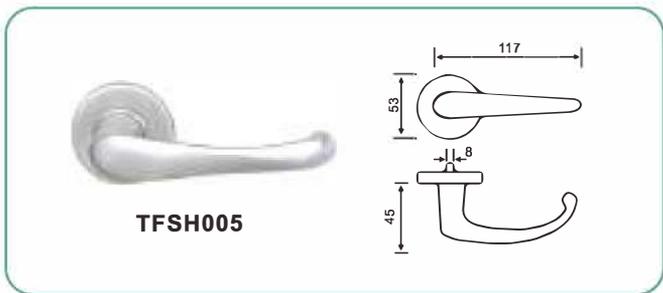
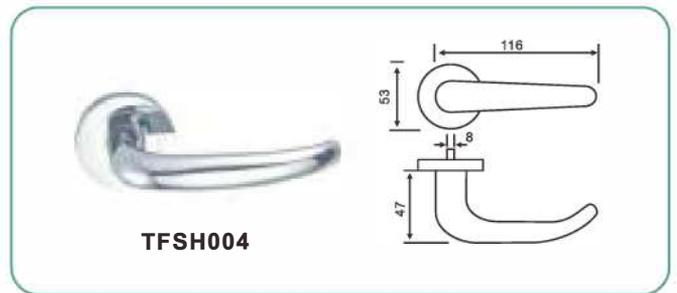
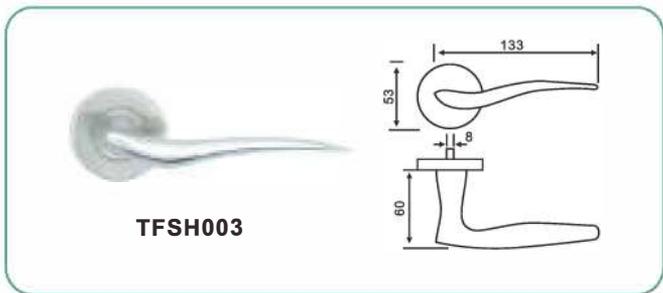
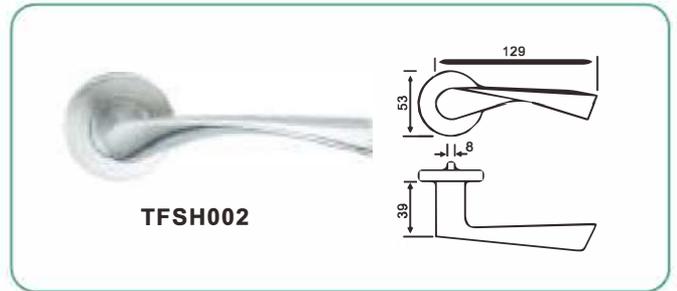
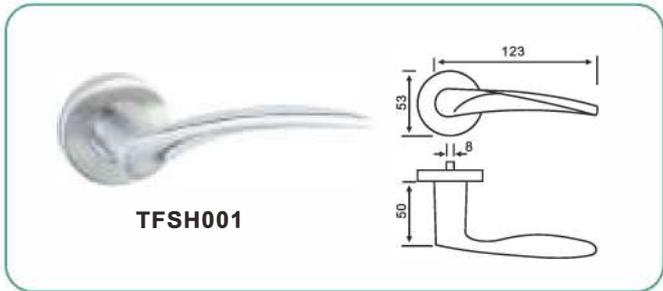
Length:30"

Installation : For Right or Left Handed



Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



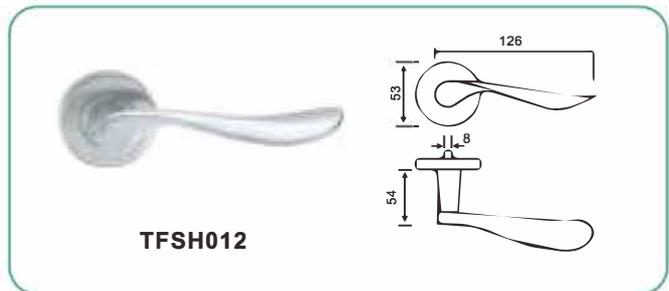
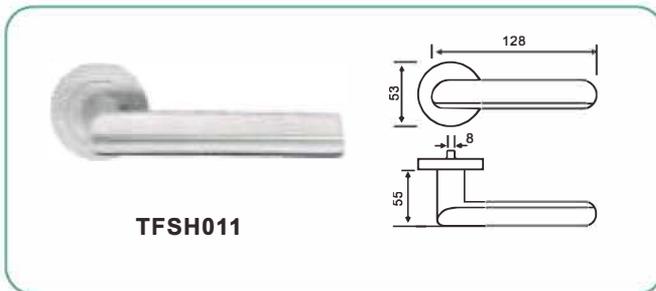
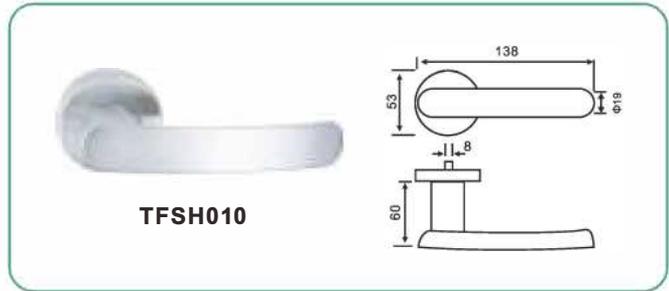
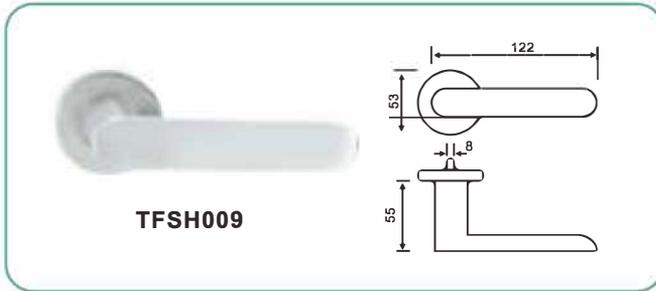
TFES009



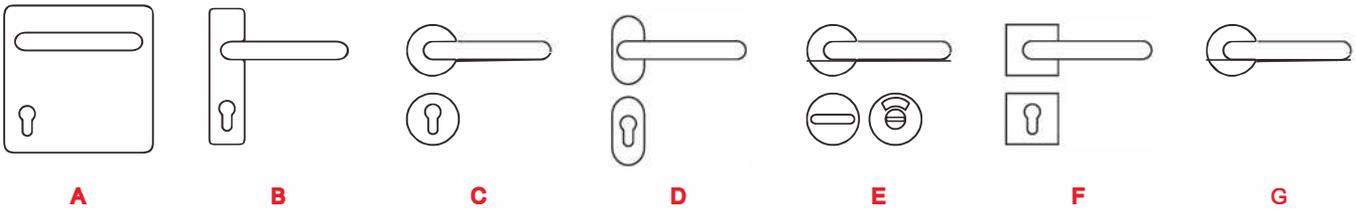
TFES010

Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



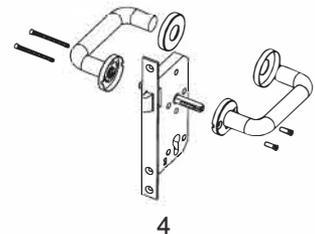
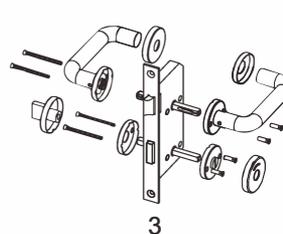
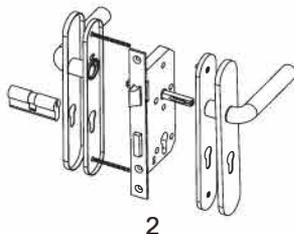
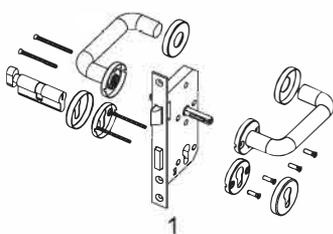
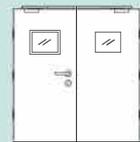
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

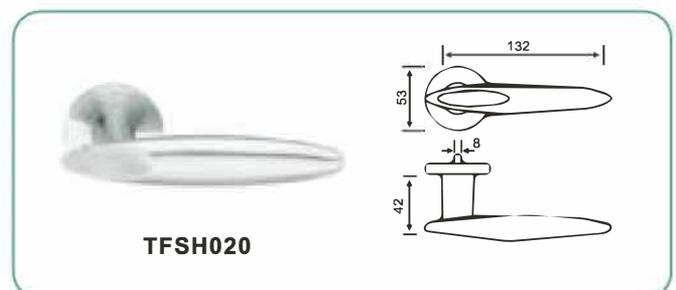
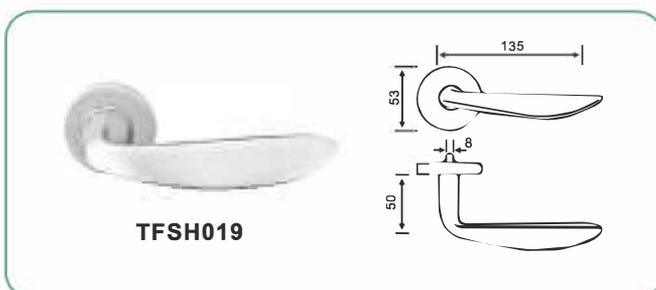
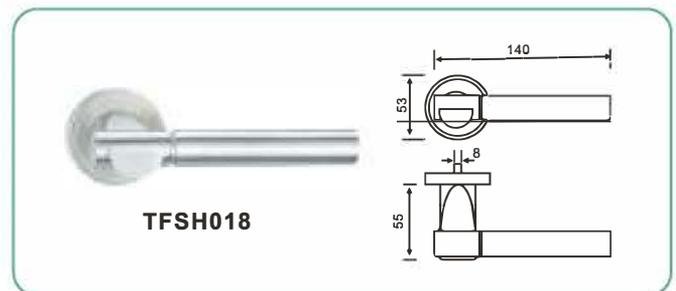
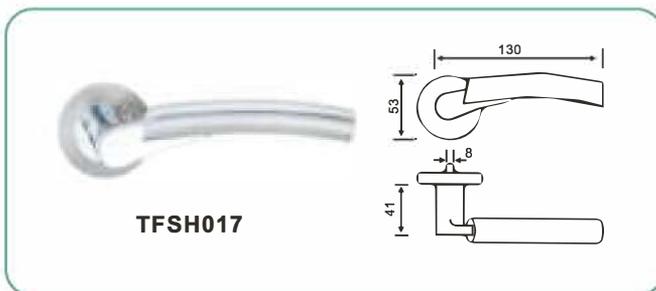
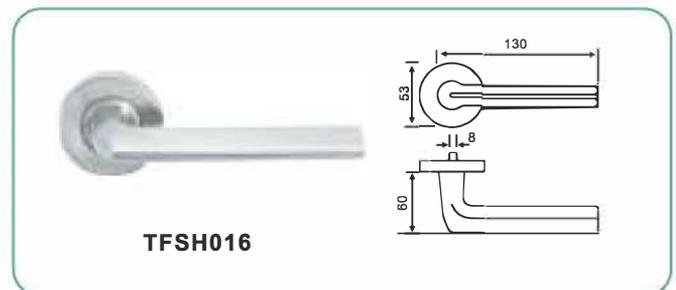
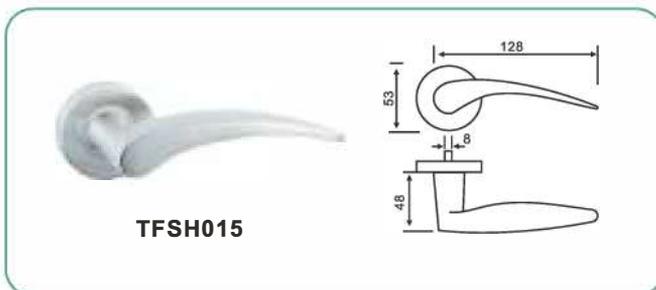
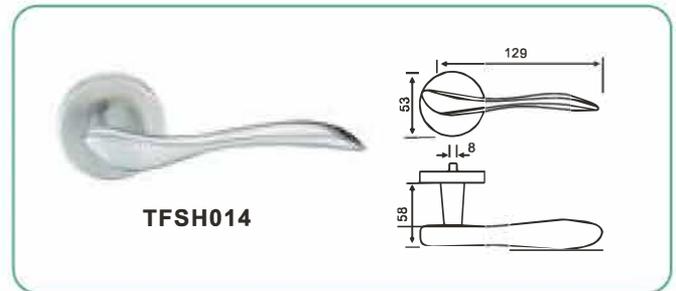
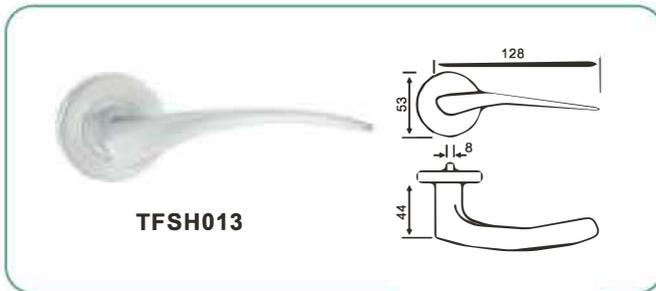
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



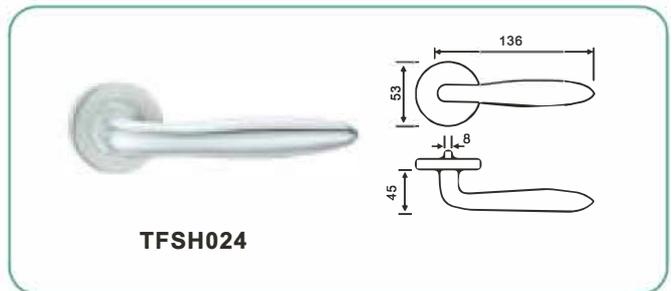
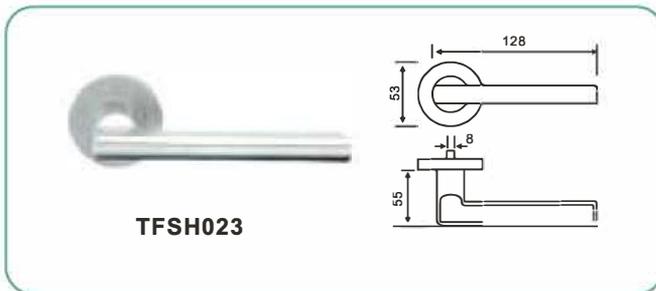
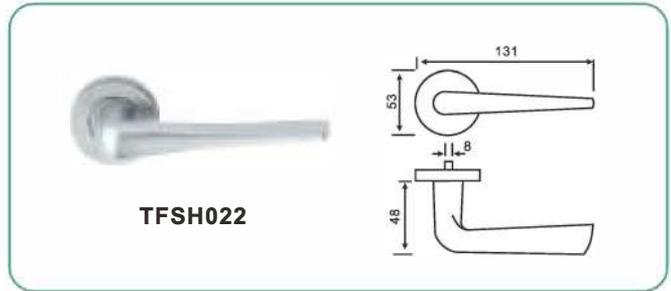
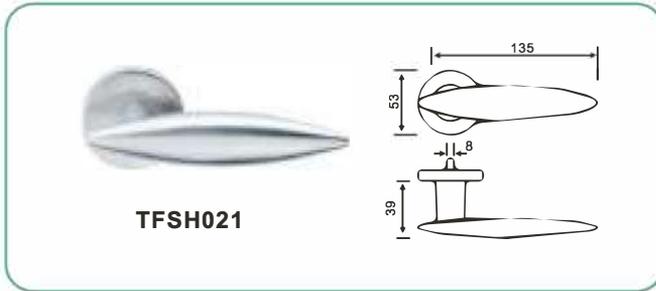
TFES009



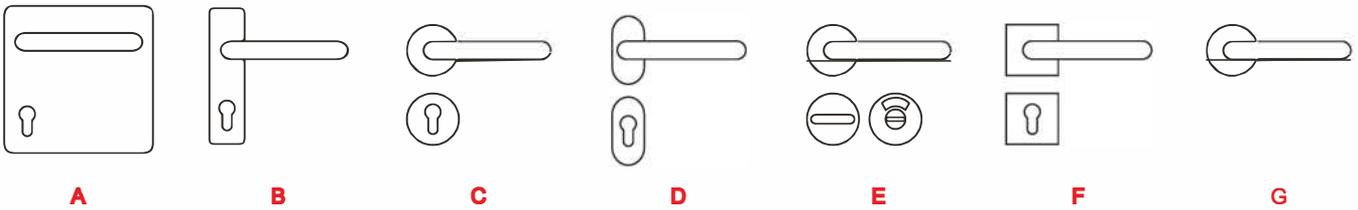
TFES010

Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

Projects

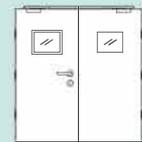
- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



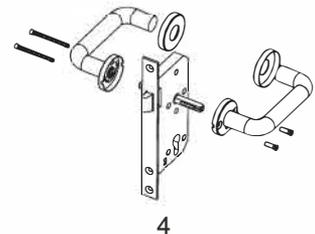
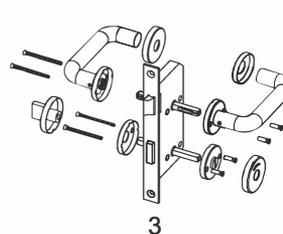
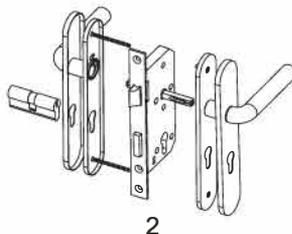
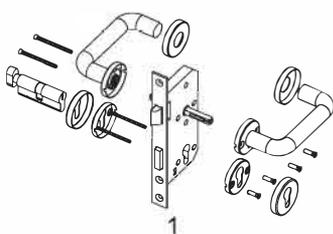
Single Door



Composite Door

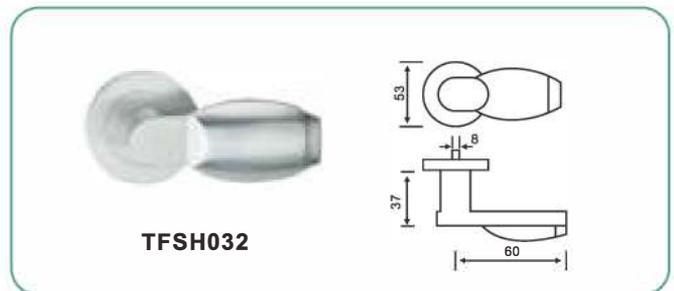
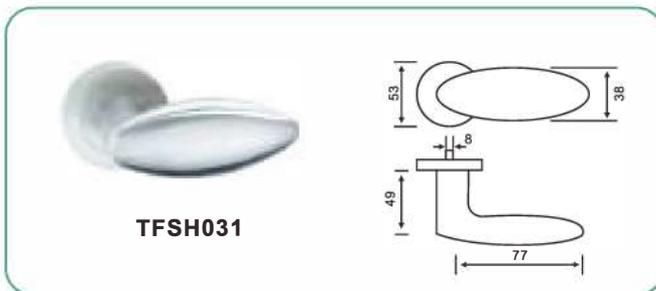
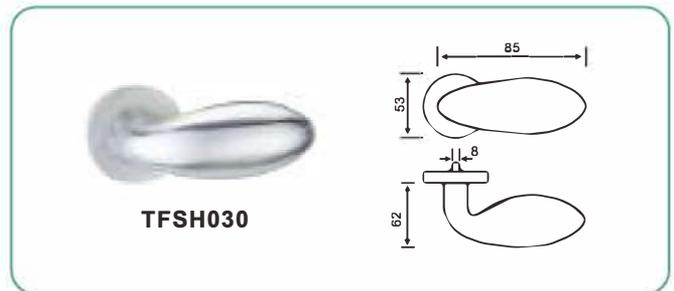
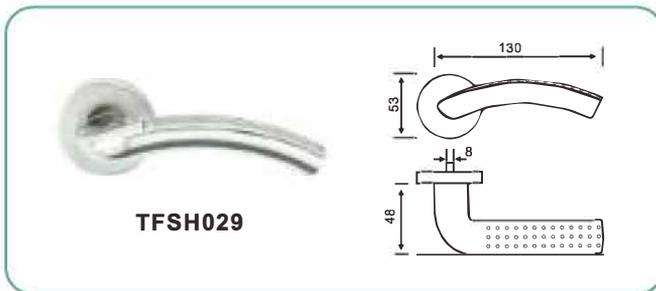
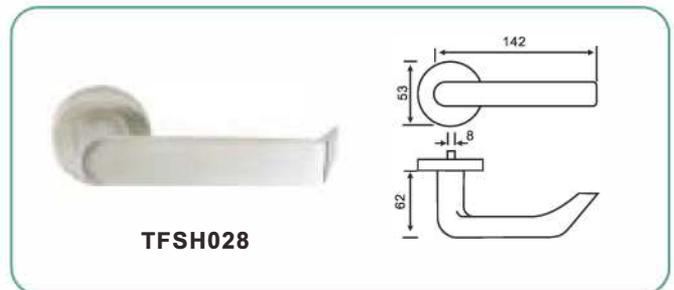
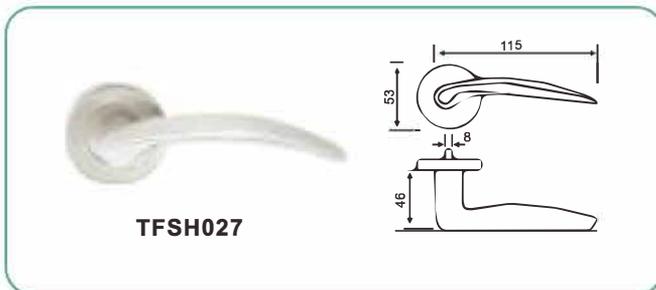
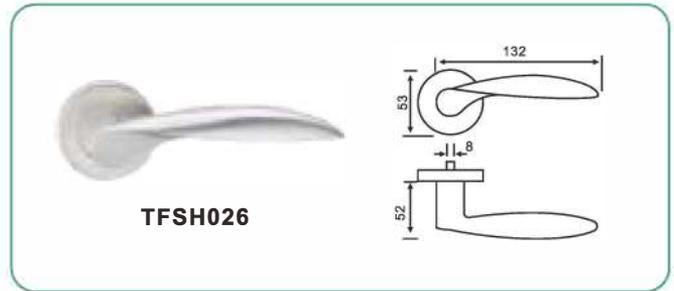
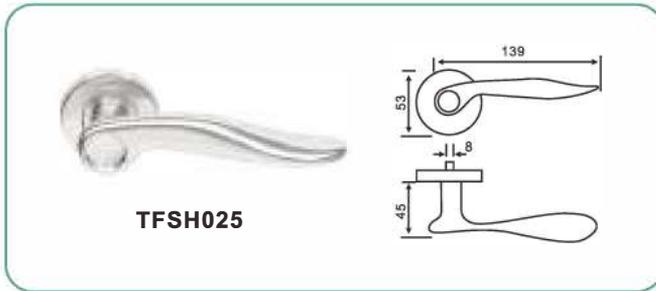


Double Door



Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



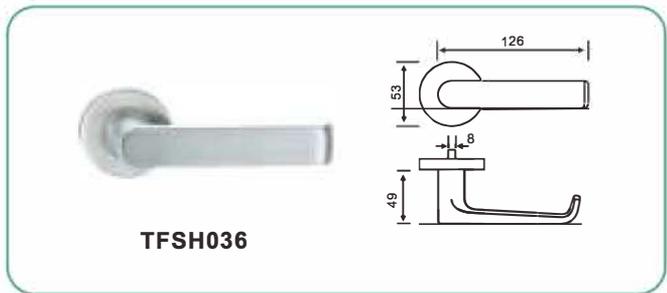
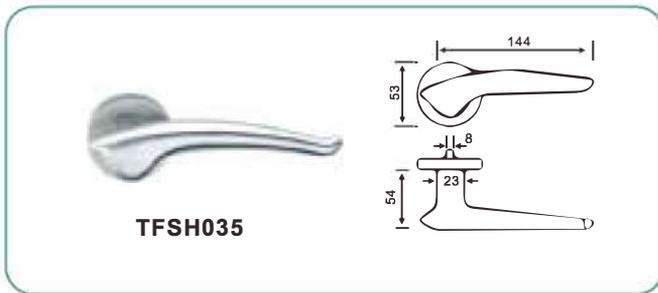
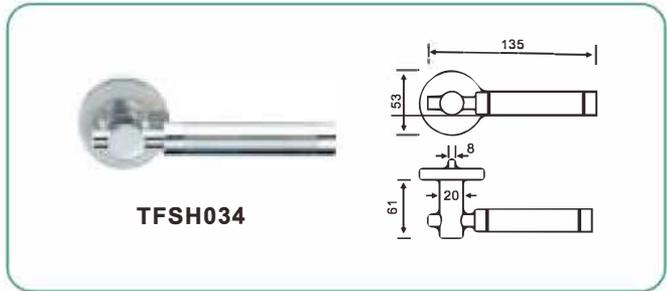
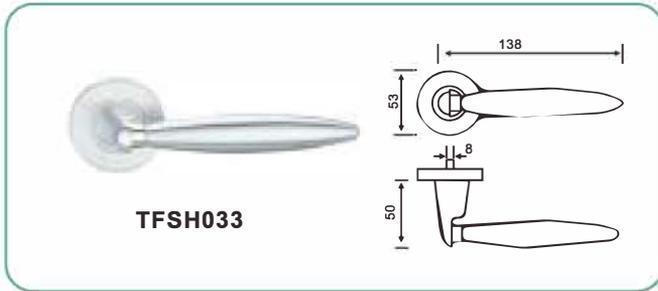
TFES009



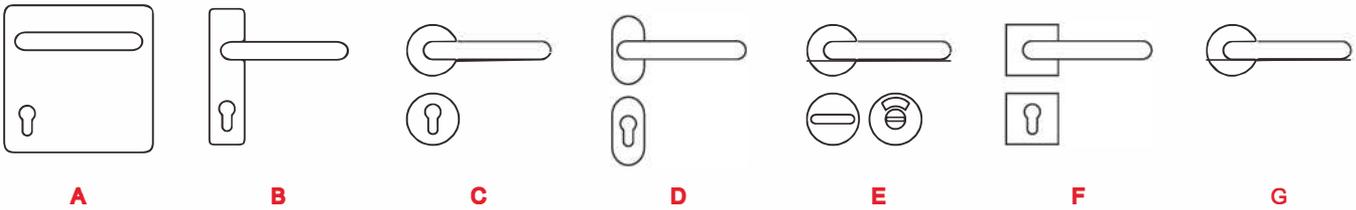
TFES010

Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



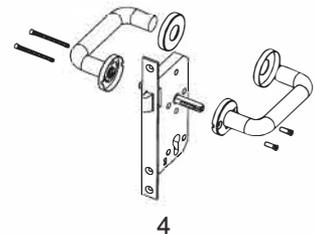
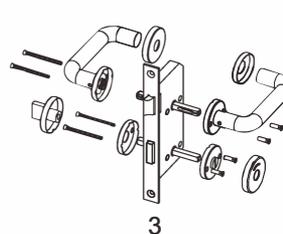
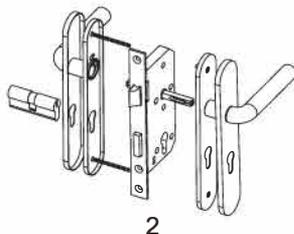
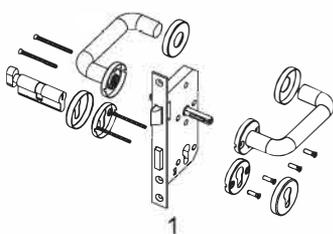
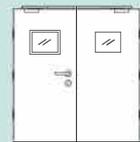
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

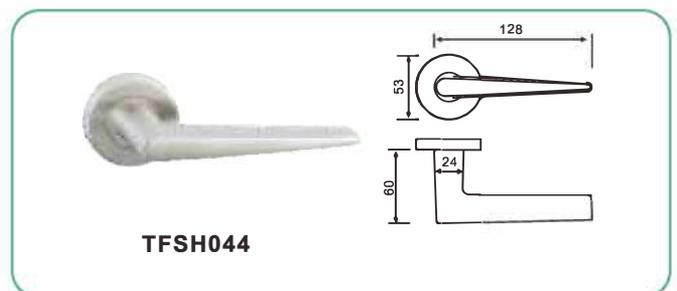
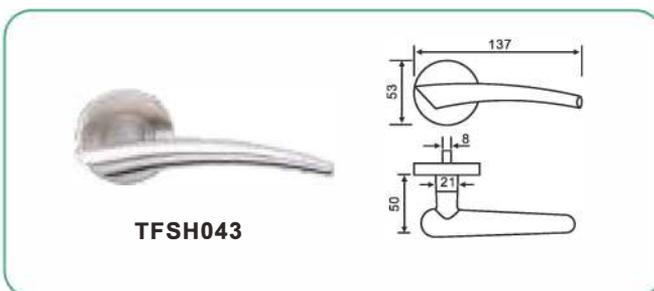
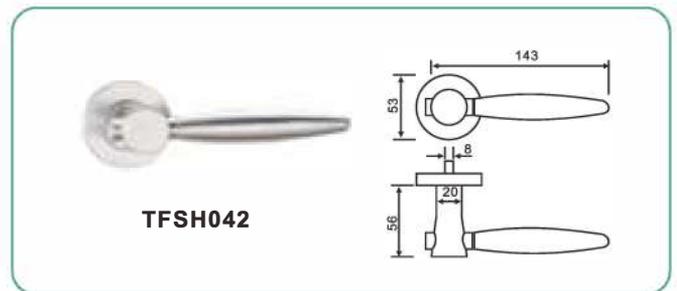
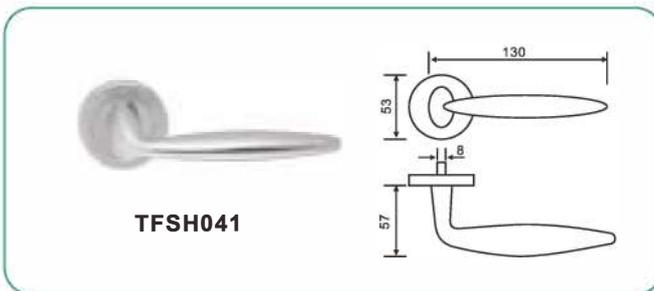
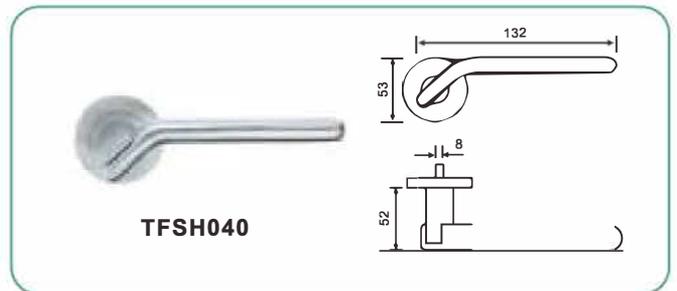
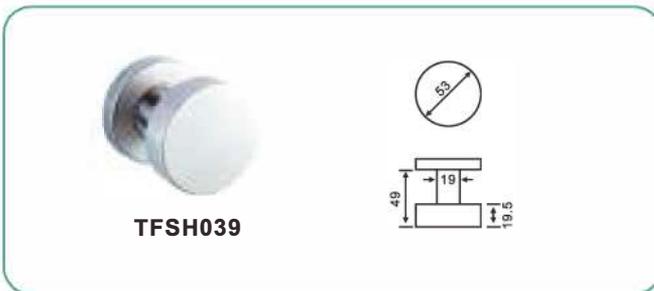
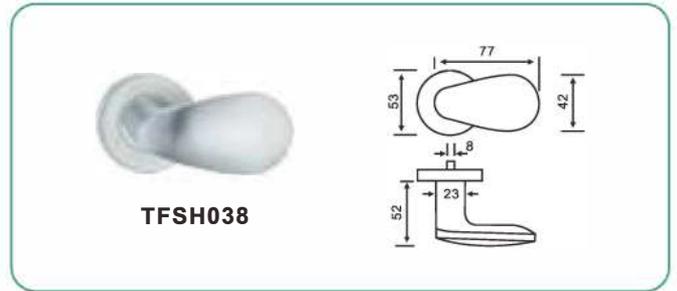
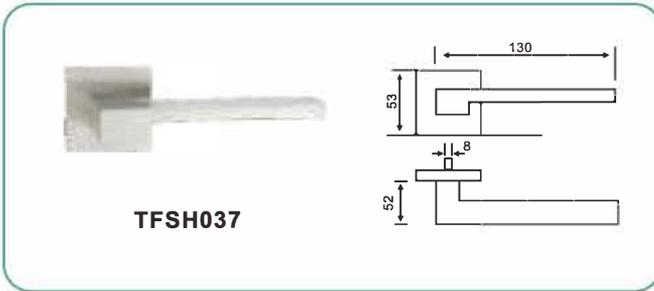
Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



TFES001



TFES004



TFES005



TFES006



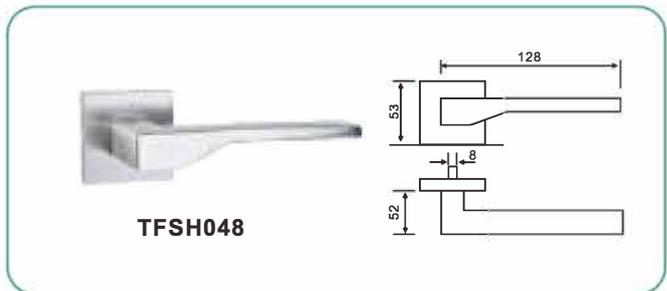
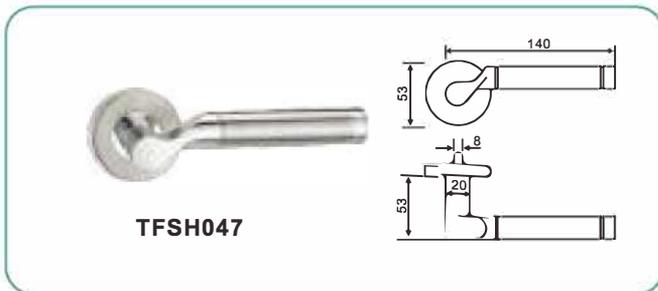
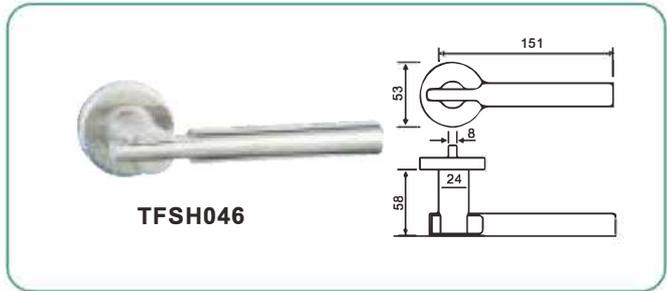
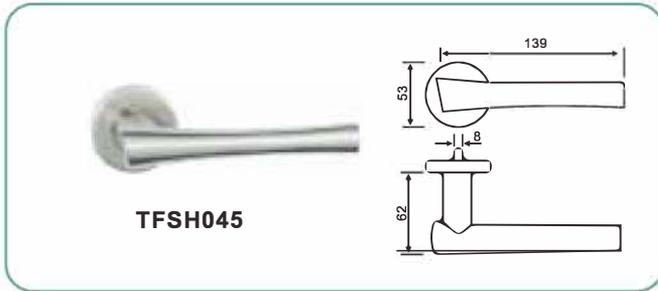
TFES009



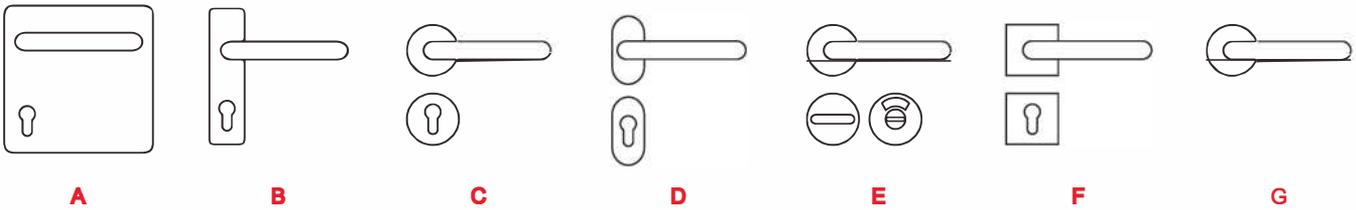
TFES010

Features

- EN Compliance : EN1906, Grade 4
- Concealed fixings
- Spring assisted chassis
- Same lever design with multiple escutcheons and functions to suit different applications
- Material : Stainless Steel 304 / 316
- Rosette Type: Clip on / Thread Type
- Spindle : 8x8 / 7x7 / 6x6mm
- Finish : SSS, PSS, PVD, AB, AC
- For 35-55 mm thickness doors



Optional Version



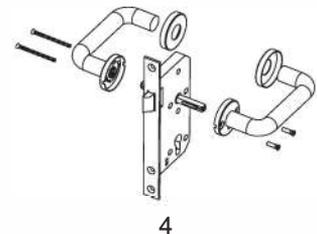
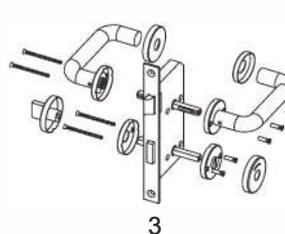
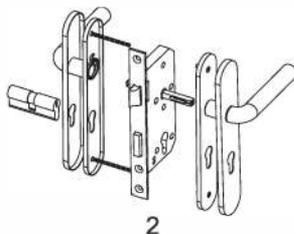
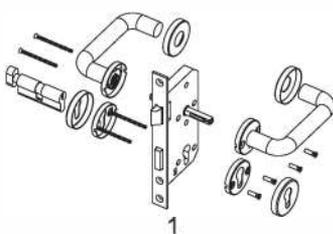
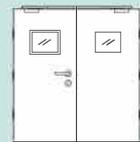
Application

Doors

- Wooden Doors
- Steel Doors
- Office Doors
- Hollow Metal Doors
- Aluminum Doors
- Fire-Rated Doors

Projects

- Stadium
- Academic
- Mixed-use
- Hotels
- Airports
- Residential Buildings



Pull Handle

At TUFFRO, we believe that every door is a gateway and your opportunity to make the first impression.

Having been working on the stainless steel pull handles for many years, TUFFRO now presents you a complete range of pull handles.

By incorporating the superior material, outstanding finish and a variety of styles, you will easily find the balance of simplicity and flexibility in thin line.



Pull Handle

Pull handle is installed onto glass door or deluxe door, which is suitable for the buildings of commercial, business, office, industry or public works.

Installation

Two kinds of pull format existing:

1. SH back to back fixing (for glass door or wooden door).
2. SL bolt through fixing (for glass door or wooden door).

Daily Use and Maintenance

Direction for use:

Open the door by pushing or pulling the door pull handle, the door will be open easily, but please do not open the door too violently.

Maintenance:

Cleaning:

Clean the handle with dry cloth or with neutral cleanser, instead of any corrosive liquid.

Checking:

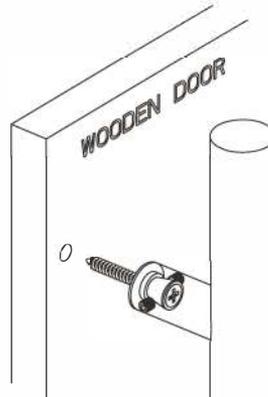
Timely check the fastened screws, in case of loose screws, please tighten them immediately.

Installation & Instructions

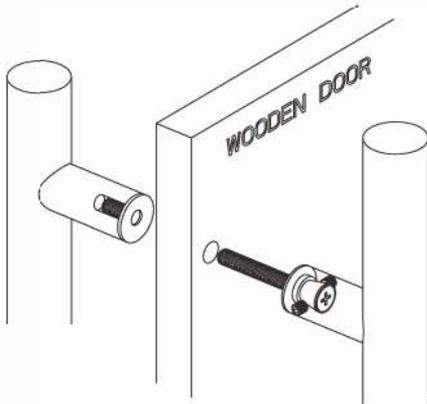
For Wooden Door:



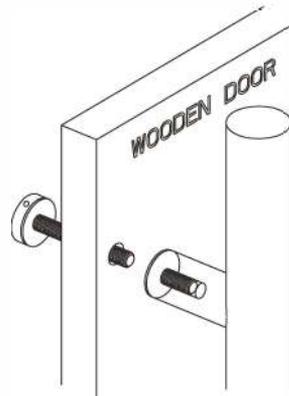
A: Single fixing on wooden doors
Bolt-through fixing



B: Single fixing on wooden doors
Concealed fixing With Rampa Sleeve

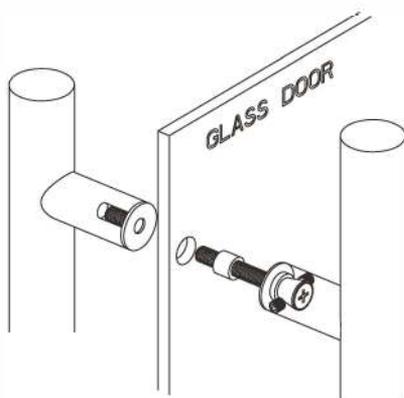


C: Back to back fixing on wooden doors
Door thickness 35-55mm

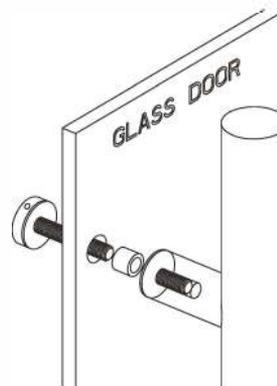


D: Single fixing on wooden doors with cover caps
Bolt-through fixing, for door thickness 35-55mm

For Glass Door:



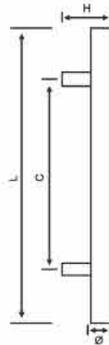
E: Back to back fixing on glass doors
Door thickness 8-12mm



F: Single fixing on glass doors with cover caps
Bolt-through fixing, for door thickness 8-12mm

Features

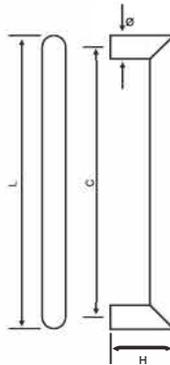
- Material: Stainless steel 201/ 304 / 316
- Back to back fixing, Bolt through fixing
- Packed /supplied with fasteners and screws
- Thickness: 1.0mm, 1.2mm, 1.5mm
- Finish : SSS, PSS, PVD, AB, AC
- For Glass Door, Timber doors, Metal Doors



TFPH001

T Bar Pull Handle

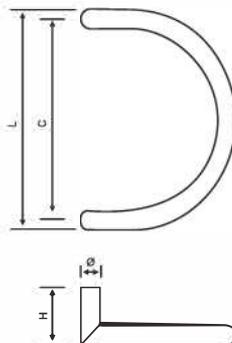
Art. No.	Dia Φ	C T C	Length	Height
TFPH001-A	22	200	300	65
TFPH001-B	25	300	450	80
TFPH001-C	25	450	600	80
TFPH001-D	25	600	800	80
TFPH001-E	30	450	600	80
TFPH001-F	30	600	800	80
TFPH001-G	32	600	800	80
TFPH001-H	32	700	1000	80
TFPH001-I	38	1200	1500	85



TFPH002

Mitred Pull Handle

Art. No.	Dia Φ	C T C	Length	Height
TFPH002-A	22	200	222	65
TFPH002-B	22	250	272	65
TFPH002-C	25	300	325	80
TFPH002-D	25	450	475	80
TFPH002-E	25	600	625	80
TFPH002-F	30	600	630	80
TFPH002-G	30	800	830	80
TFPH002-H	32	1000	1032	80



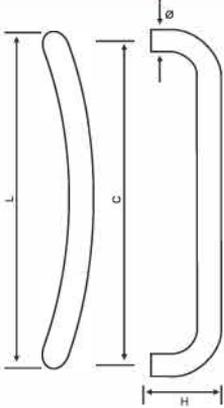
TFPH003

C Shaped Pull Handle

Art. No.	Dia Φ	C T C	Length	Height
TFPH003-A	25	200	225	80
TFPH003-B	25	300	325	80
TFPH003-C	32	300	332	80

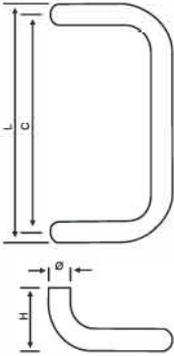
Features

- Material: Stainless steel 201/ 304 / 316
- Back to back fixing, Bolt through fixing
- Packed /supplied with fasteners and screws
- Thickness: 1.0mm, 1.2mm, 1.5mm
- Finish : SSS, PSS, PVD, AB, AC
- For Glass Door, Timber doors, Metal Doors

TFPH004

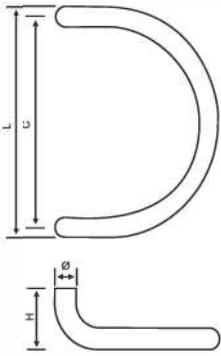
Art. No.	Dia Φ	C T C	Length	Height
TFPH004-A	25	400	425	80
TFPH004-B	32	600	632	80

TFPH005

Cranked Pull Handle

Art. No.	Dia Φ	C T C	Length	Height
TFPH005-A	25	300	325	80
TFPH005-B	25	400	425	80
TFPH005-C	25	450	475	80
TFPH005-D	25	600	625	80
TFPH005-E	32	300	332	80
TFPH005-F	32	400	432	80
TFPH005-G	32	450	482	80
TFPH005-H	32	600	632	80

TFPH006

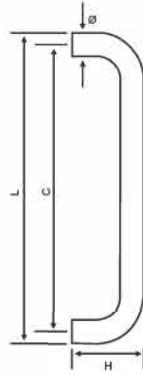
Art. No.	Dia Φ	C T C	Length	Height
TFPH006-A	25	200	225	80
TFPH006-B	25	300	325	80
TFPH006-C	32	300	332	80
TFPH006-D	32	350	382	80

Features

- Material: Stainless steel 201/ 304 / 316
- Back to back fixing, Bolt through fixing
- Packed /supplied with fasteners and screws
- Thickness: 1.0mm, 1.2mm, 1.5mm
- Finish : SSS, PSS, PVD, AB, AC
- For Glass Door, Timber doors, Metal Doors



TFPH007

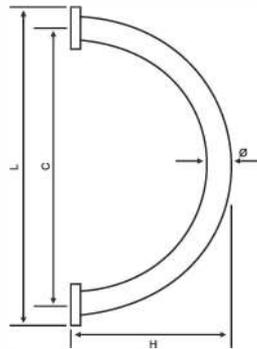


D Pull Handle

Art. No.	Dia Φ	C T C	Length	Height
TFPH007-A	19	150	169	60
TFPH007-B	19	200	219	60
TFPH007-C	19	300	319	60
TFPH007-D	22	300	322	65
TFPH007-E	25	300	325	80
TFPH007-F	25	600	625	80
TFPH007-G	32	450	482	80
TFPH007-H	32	600	632	80
TFPH007-I	32	800	832	80



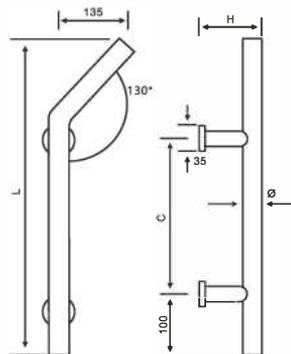
TFPH008



Art. No.	Dia Φ	C T C	Length	Height
TFPH008-A	25	200	225	100
TFPH008-B	25	300	325	150
TFPH008-C	32	300	332	150



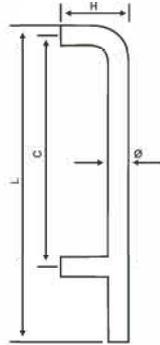
TFPH009



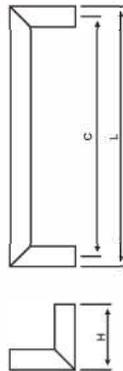
Art. No.	Dia Φ	C T C	Length	Height
TFPH009-A	25	450	800	80
TFPH009-B	25	600	950	80
TFPH009-C	32	600	950	80
TFPH009-D	32	800	1100	80

Features

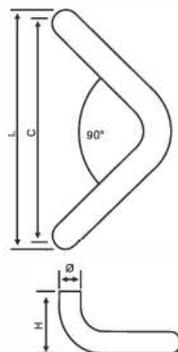
- Material: Stainless steel 201/ 304 / 316
- Back to back fixing, Bolt through fixing
- Packed /supplied with fasteners and screws
- Thickness: 1.0mm, 1.2mm, 1.5mm
- Finish : SSS, PSS, PVD, AB, AC
- For Glass Door, Timber doors, Metal Doors


TFPH010


Art. No.	Dia Φ	C T C	Length	Height
TFPH010-A	25	450	550	80
TFPH010-B	25	600	700	80
TFPH010-C	32	600	700	80


TFPH011

Elegante Pull Handle

Art. No.	\square	CTC	Length	Height
TFPH011-A	25x25	300	325	80
TFPH011-B	25x25	450	475	80
TFPH011-C	25x25	600	625	80
TFPH011-D	40x20	600	640	80
TFPH011-E	40x20	800	840	80


TFPH012


Art. No.	Dia Φ	C T C	Length	Height
TFPH012-A	25	300	325	80
TFPH012-B	32	300	332	80

Features

- Material: Stainless steel 201/ 304 / 316
- Back to back fixing, Bolt through fixing
- Packed /supplied with fasteners and screws
- Thickness: 1.0mm, 1.2mm, 1.5mm
- Finish : SSS, PSS, PVD, AB, AC
- For Glass Door, Timber doors, Metal Doors



TFPH015



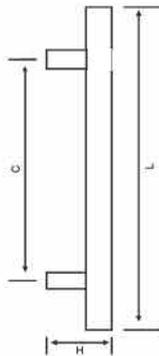
Allure Pull Handle

Art. No.	∅	CTC	Length	Height
TFPH015-A	20x20	200	220	65
TFPH015-B	20x20	250	270	65
TFPH015-C	20x20	300	320	65
TFPH015-D	20x20	400	420	65
TFPH015-E	25x25	300	325	75
TFPH015-F	25x25	450	475	75
TFPH015-G	25x25	600	625	75
TFPH015-H	30x30	300	330	80
TFPH015-I	30x30	400	430	80
TFPH015-J	30x30	500	530	80
TFPH015-K	30x30	600	630	80
TFPH015-L	30x30	800	830	80

Art. No.	∅	CTC	Length	Height
TFPH015-M	30x15	200	215	65
TFPH015-N	30x15	250	265	65
TFPH015-O	30x15	300	315	65
TFPH015-P	30x15	400	415	65
TFPH015-Q	30x15	600	615	65
TFPH015-R	40x20	300	320	75
TFPH015-S	40x20	400	420	75
TFPH015-T	40x20	500	520	75
TFPH015-U	40x20	600	620	75
TFPH015-V	40x20	800	820	75



TFPH016

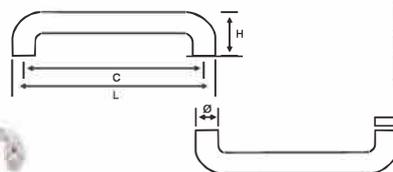


Square T Shape Pull Handle

Art. No.	∅	C T C	Length	Height
TFPH016-A	25x25	200	300	75
TFPH016-B	25x25	300	450	75
TFPH016-C	25x25	450	600	75
TFPH016-D	25x25	600	800	75
TFPH016-E	30x30	300	450	80
TFPH016-F	30x30	450	600	80
TFPH016-G	30x30	600	800	80
TFPH016-H	30x30	800	1000	80
TFPH016-I	30x30	1000	1200	80



TFPH018

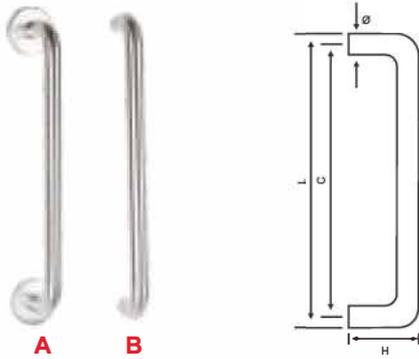


Bathroom Pull Handle

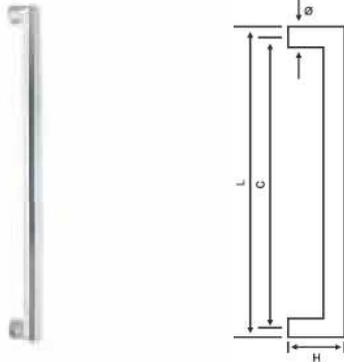
Art. No.	Dia Φ	C T C	Length	Height
TFPH018-A	22	400+150	422+172	65
TFPH018-B	25	400+200	425+225	80
TFPH018-C	25	450+200	475+225	80

Features

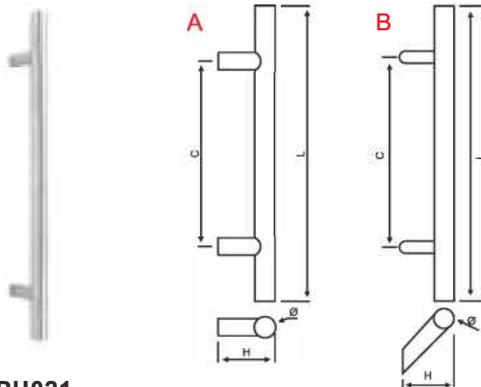
- Material: Stainless steel 201/ 304 / 316
- Back to back fixing, Bolt through fixing
- Packed /supplied with fasteners and screws
- Thickness: 1.0mm, 1.2mm, 1.5mm
- Finish : SSS, PSS, PVD, AB, AC
- For Glass Door, Timber doors, Metal Doors


TFPH019

Art. No.	Dia Φ	CTC	Length	Height
TFPH019-C	19	150	169	60
TFPH019-D	19	225	244	60
TFPH019-E	19	250	269	60
TFPH019-F	22	250	272	60
TFPH019-G	22	300	322	60
TFPH019-H	22	400	422	60
TFPH019-I	25	450	475	80
TFPH019-J	25	600	625	80
TFPH019-K	30	600	630	80
TFPH019-L	30	800	830	80
TFPH019-M	32	600	632	80


TFPH020

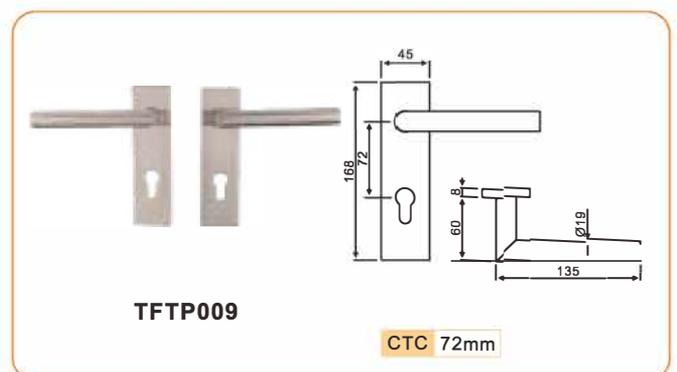
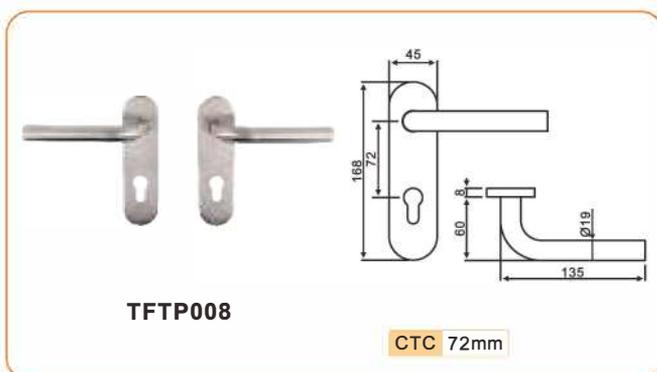
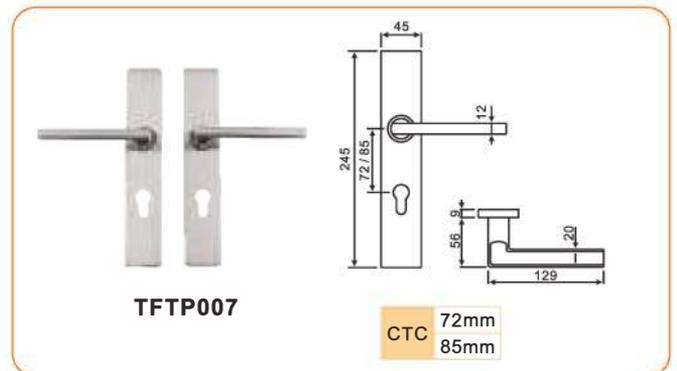
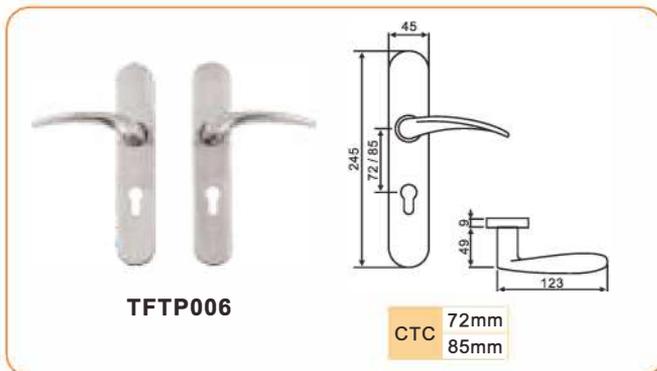
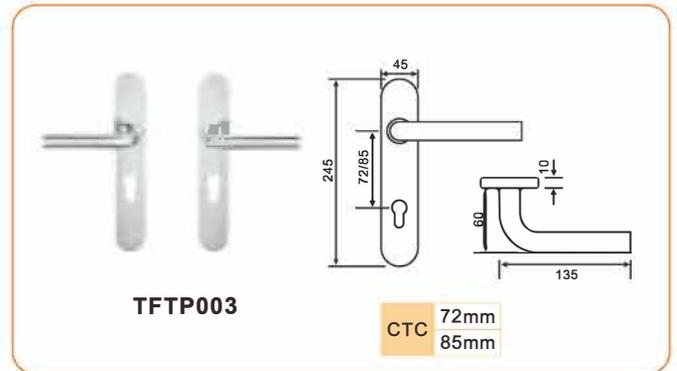
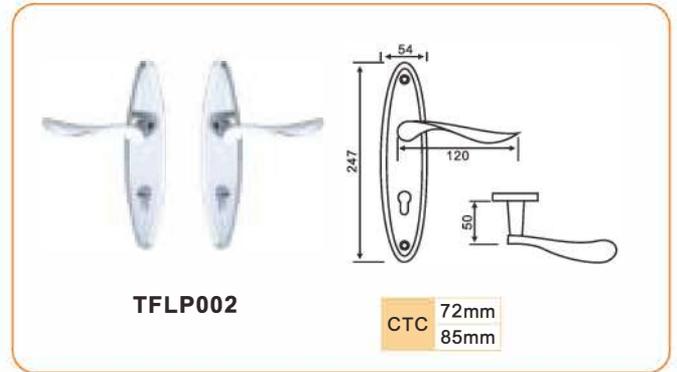
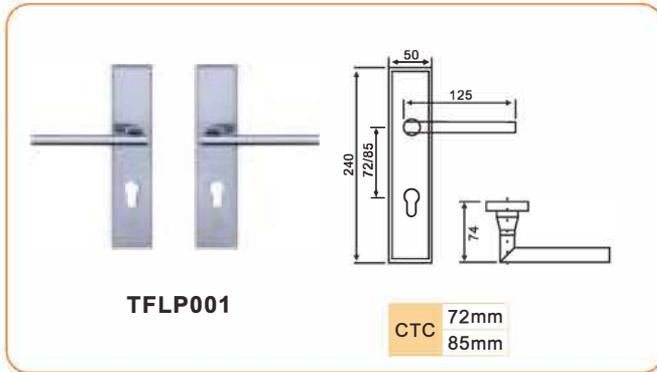
Art. No.	Dia Φ	CTC	Length	Height
TFPH020-A	19	150	169	60
TFPH020-B	19	225	244	60
TFPH020-C	19	250	269	60
TFPH020-D	22	250	272	60
TFPH020-E	22	300	322	60
TFPH020-F	22	400	422	60
TFPH020-G	25	450	475	80
TFPH020-H	25	600	625	80
TFPH020-I	30	600	630	80
TFPH020-J	30	800	830	80
TFPH020-K	32	600	632	80

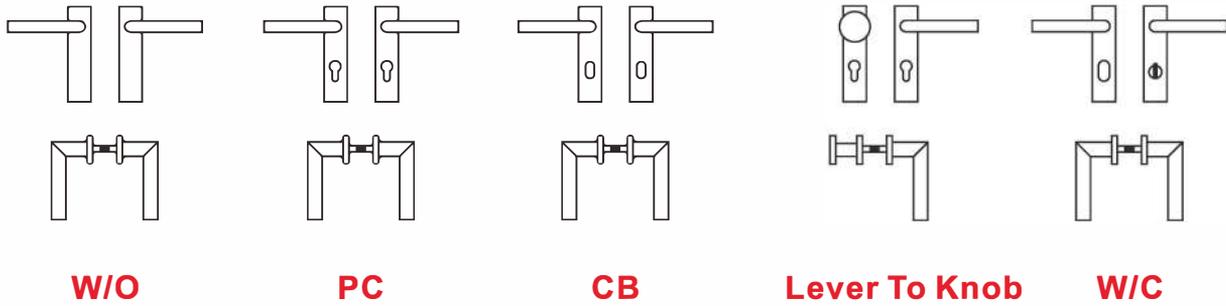
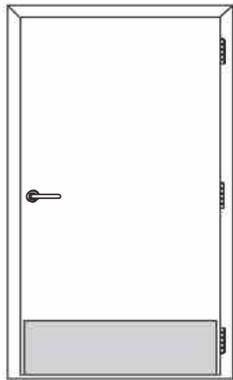
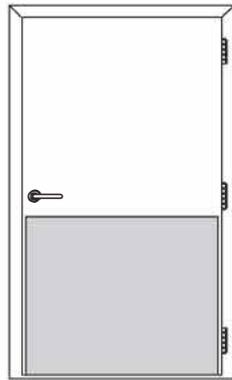
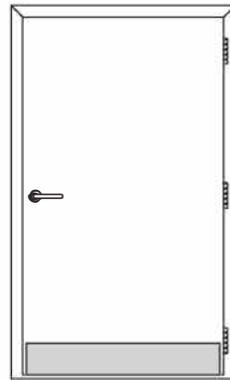
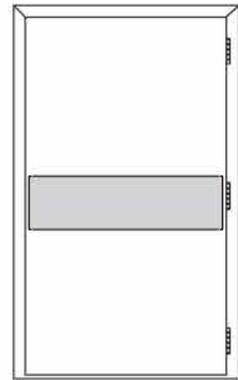

TFPH021

Art. No.	Dia Φ	CTC	Length	Height
TFPH021-C	25	250	400	80
TFPH021-D	25	300	450	80
TFPH021-E	25	450	600	80
TFPH021-F	32	300	450	80
TFPH021-G	32	450	600	80
TFPH021-H	32	600	800	80
TFPH021-I	32	800	1000	80

Features

- Material: Stainless steel 304 / 316
- For 35mm-55mm thickness doors
- Applicable: Wooden doors, Metal doors
- Finish: SSS, PSS, PVD, AB, AC
- Spring assisted chassis
- Same plate design with multiple Lever and functions to suit different applications



Features Options:

W/O
PC
CB
Lever To Knob
W/C
Door Plate TFKP002

Kick Plate
 H6" to 12"xW48"

Armor Plate
 H48"xW48"

Mop Plate
 H6"xW48"

Stretcher Plate
 H6"to 12"x up to W48"

Width of Plates

Push Side: 2" less than door width; Pull Side: 1.5" less than door width

Radius corners drilled- supplied complete with screws

Plate thickness 1.0mm, 1.2mm, 1.5mm.

Material: Stainless Steel 304,

Finishes: SSS, PSS

Art. No.	Height	Width
TFKP002-A	6"	30"
TFKP002-B	6"	46"
TFKP002-C	8"	34"
TFKP002-D	8"	40"
TFKP002-E	10"	40"
TFKP002-F	10"	46"
TFKP002-G	12"	46"
TFKP002-H	46"	46"

Features

- Material: Stainless steel 304 / 316
- Finish: SSS, PSS, PVD
- Thickness: 1.5mm, 2.0mm
- Application: Wooden Doors, Metal Doors, Aluminum Doors



TFSP001
Male

TFSP002
Female

Disabled

Washroom
(Square type)
Size: 100×100×1.5mm



TFSP003

Unisex Public Washroom
(Square type)
Size: 130×170×1.5mm



TFSP004
Push Plate
(Square type)
Size: 100×300×1.5mm
100×300×2.0mm
75 × 300×1.5mm
75 × 300×2.0mm



TFSP005
Push Plate (Square type)

- All plates are drilled and countersunk as standard with radius corners
- Engraved to order
- Size: 100×300×1.5mm
100×300×2.0mm
75 × 300×1.5mm
75 × 300×2.0mm



TFSP006
Push Plate
(Round type)
Size: 100×300×1.5mm
100×300×2.0mm
75 × 300×1.5mm
75 × 300×2.0mm



TFSP007
Fire Door Indication
(Round type sign plate)
Size: Ø76×1.5mm



TFSP008
No Smoking
(Round type)
Size: Ø76×1.5mm



TFSP009
Pull Plate
(Round type)
Size: Ø76×1.5mm

A

B



TFSP010
Fire Door Signature
(Square type)
Size: 130×170×1.5mm



Push Plate
 Size: 100x400x1.5mm
 100x400x2.0mm

TFSP011 TFSP012



Pull Handle With Plate
 Size: 170x170x1.5mm
 170x170x2.0mm
 170x170x3.0mm

TFPH021



Pull Handle With Plate
 Size: 100x300x1.5mm
 100x400x1.5mm

TFPH022



Pull Handle With Plate
 Size: 100x300x1.5mm
 100x300x2.0mm
 Handle: Ø22 x C to C 203mm

TFPH023



Pull Handle With Plate
 Size: 100x400x1.5mm
 100x400x2.0mm
 Handle: Ø25 x C to C 250mm

TFPH024



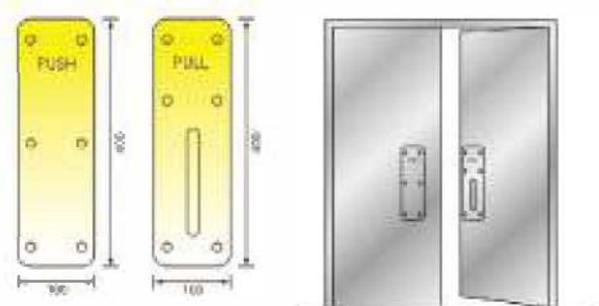
Pull Handle With Plate
 Size: 100x400x1.5mm
 100x400x2.0mm
 Handle: Ø25 x C to C 200mm

TFPH025



TFKP001
Kick Plate

Specifications: 8"x34" / 8"x35"
 10"x34" / 10"x35"
 Thickness: 0.8 / 0.9 / 1.0 / 1.2 / 1.5mm

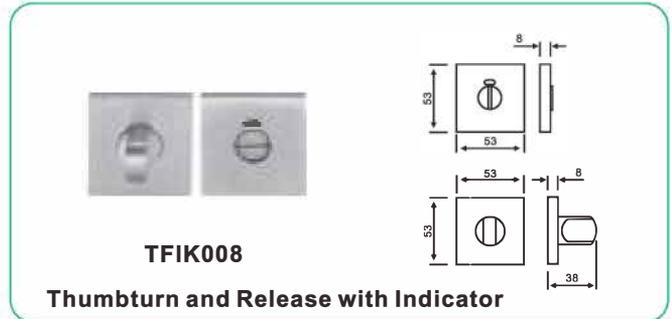
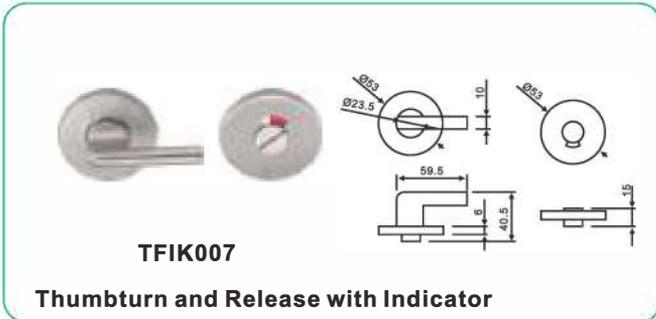
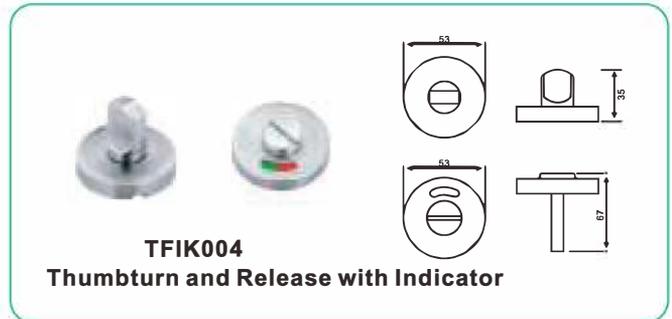


0 1 2 3 4 5 6 7 8 9 a b

TFSP013 NUMBER, LETTER

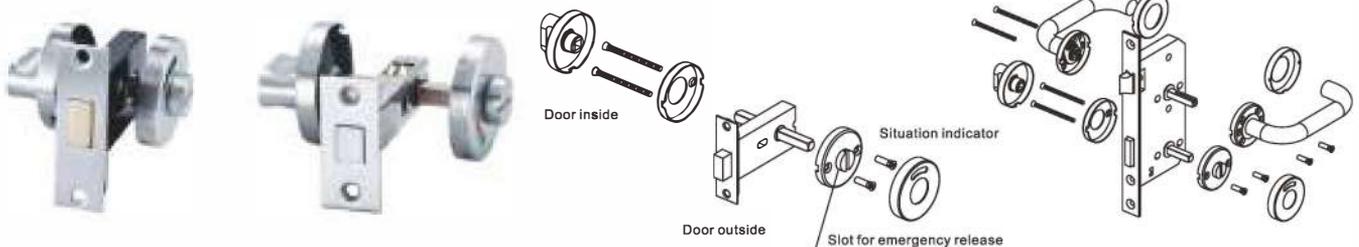
Features

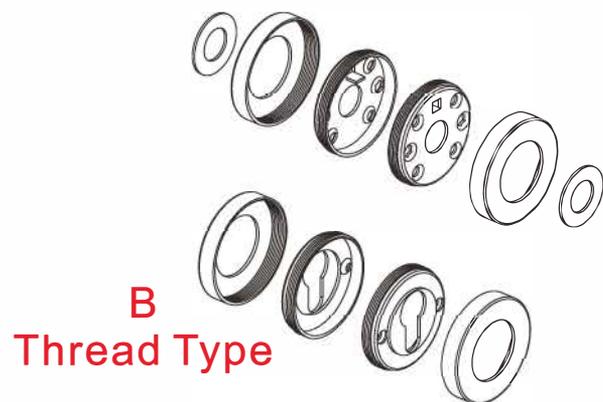
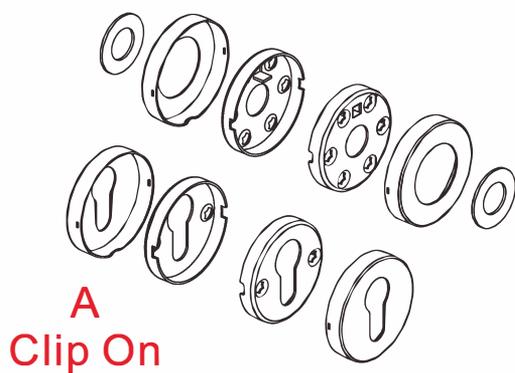
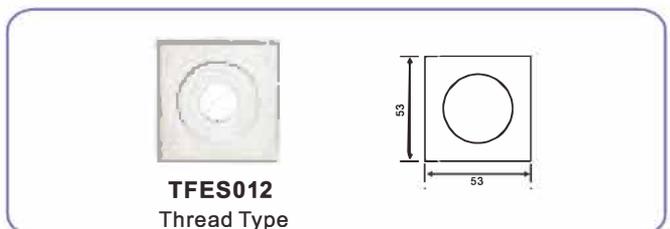
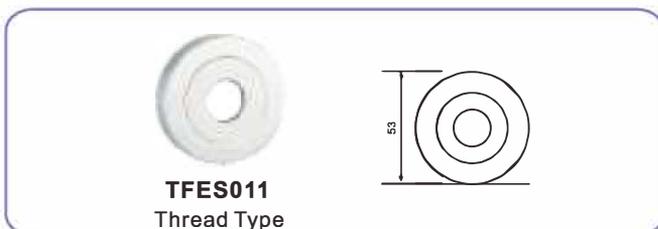
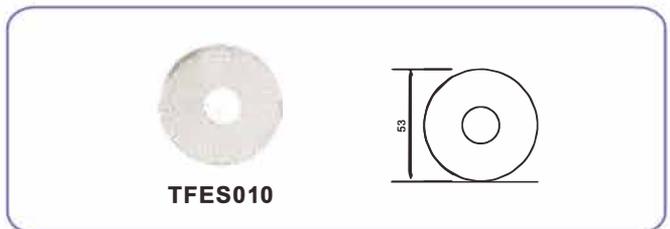
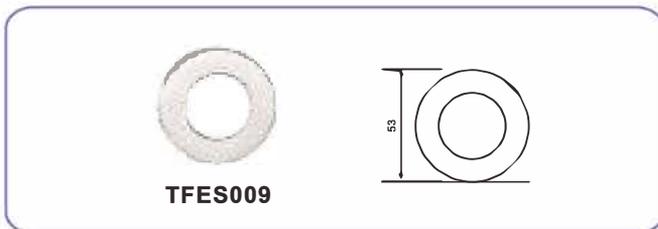
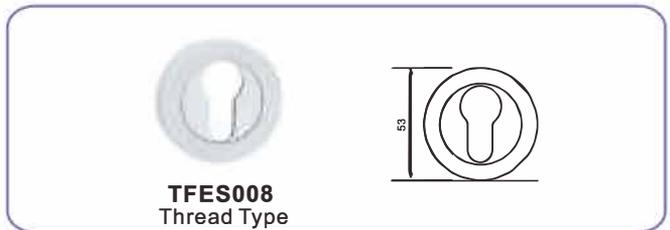
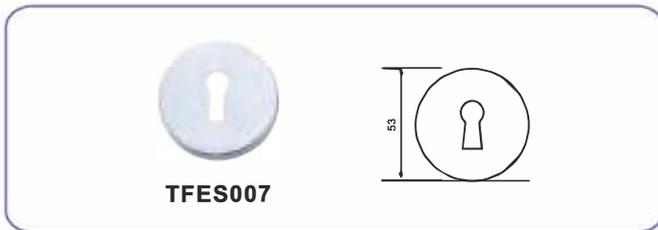
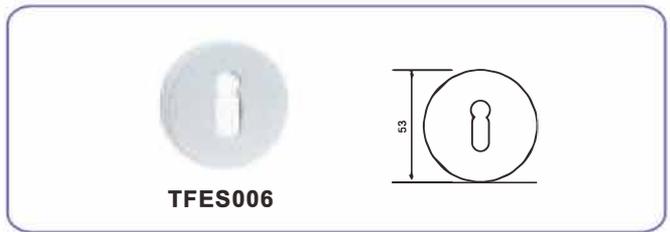
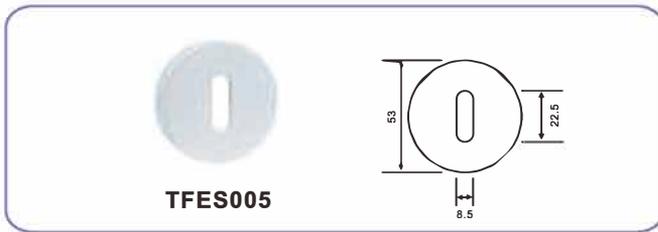
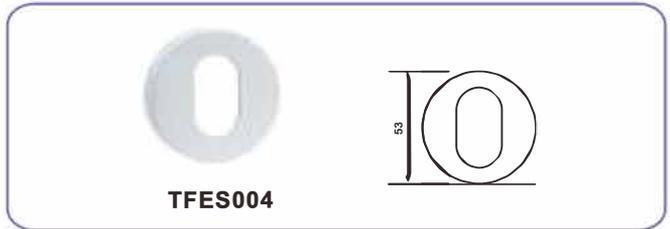
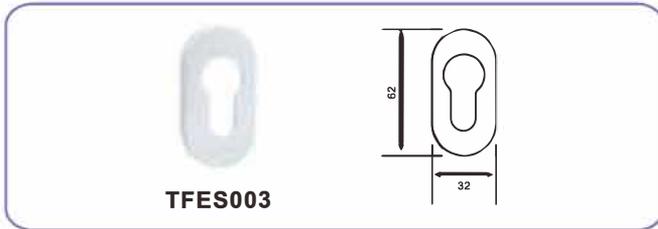
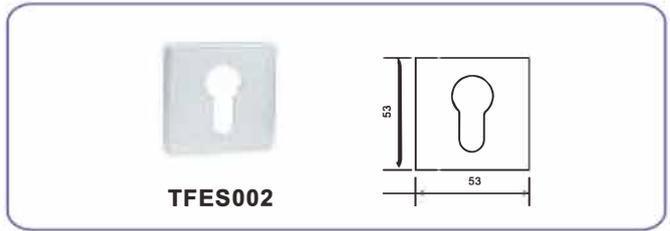
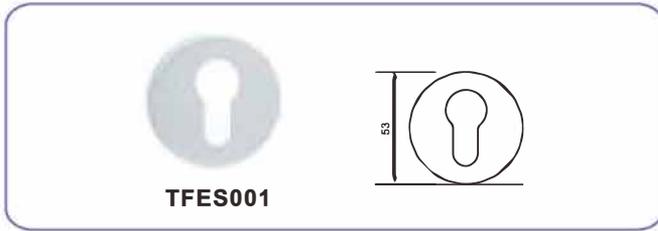
- Material: Stainless steel 304/316
- Applicable: Wooden doors, Metal doors, Bathroom doors
- Door thickness: 35mm-55mm
- Spindle: 6x6, 8x8 mm



Optional version

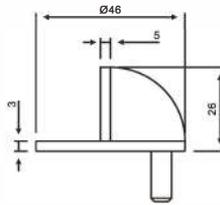
Indicator shown:
Red = door is close and it's occupied
Green = door is open and it's available







TFDS001

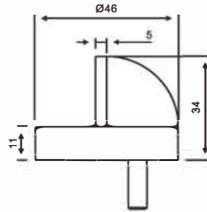


Stainless Steel Hemisphere Door Stopper

- Floor mounted type
- Size: 44x25mm, 46x26mm
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS002

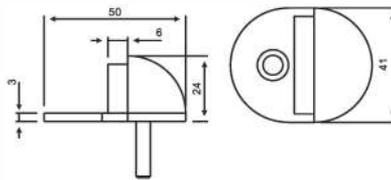


Stainless Steel / Zinc Alloy Door Stopper

- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS003

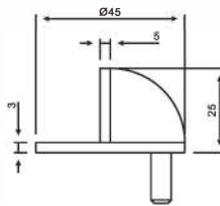


Zinc Alloy Hemisphere Door Stopper

- Floor mounted type
- Finish: BP, CP, NP, GP, AB, AC



TFDS004

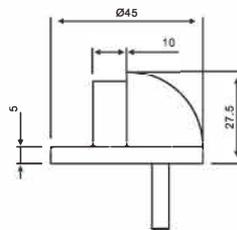


Zinc Alloy Hemisphere Door Stopper

- Floor mounted type
- Finish: BP, CP, NP, GP, AB, AC



TFDS005

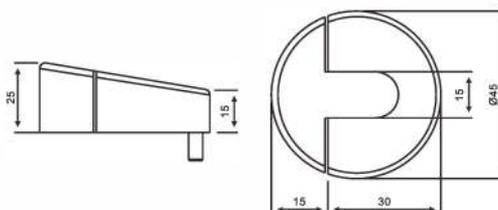


Brass Hemisphere Door Stopper

- Floor mounted type
- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC

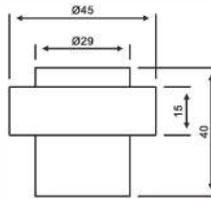


TFDS006

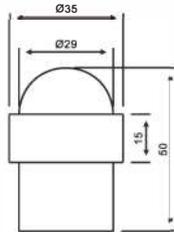


Stainless Steel / Zinc Alloy Door Stopper

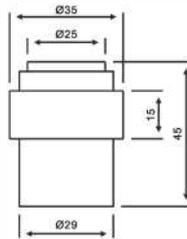
- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC


TFDS007

Stainless Steel Door Stopper

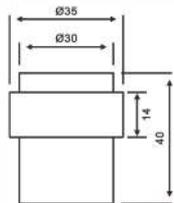
- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC


TFDS008

Stainless Steel Door Stopper

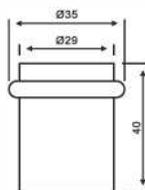
- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC


TFDS009

Stainless Steel / Zinc Alloy Door Stopper

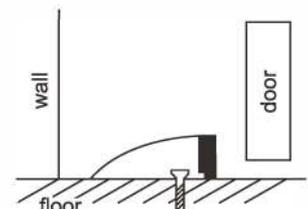
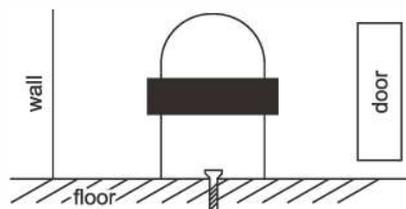
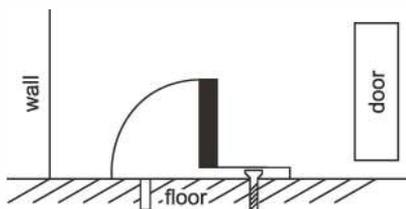
- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC


TFDS010

Stainless Steel Door Stopper

- Floor mounted type
- Screw and plug included
- Finish: SSS, PSS, BP, GP, AB, AC

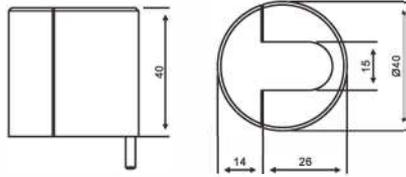

TFDS011

Stainless Steel Door Stopper

- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC





TFDS012

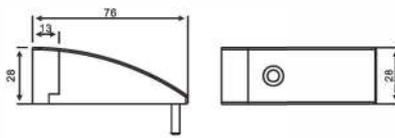


Stainless Steel / Zinc Alloy Door Stopper

- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS013

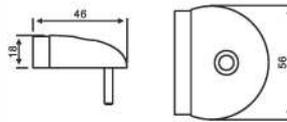


Stainless Steel / Zinc Alloy Door Stopper

- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS014

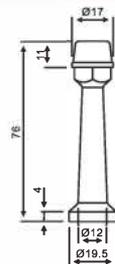


Stainless Steel Door Stopper

- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS015-B

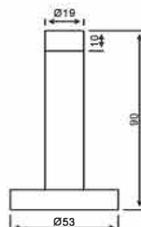


Stainless Steel / Zinc Alloy Door Stopper

- Wall Mounted Type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS016

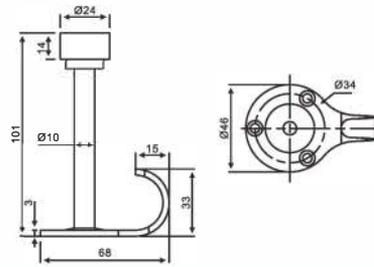


Stainless Steel Door Stopper

- For Bathroom / public Toilet
- Wall mounted type
- Screws included
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS017

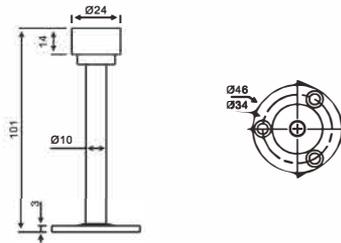


Stainless Steel Door Stopper

- Wall mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS018

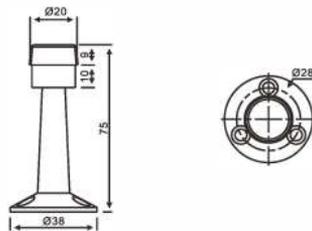


Stainless Steel Door Stopper

- Wall mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS019

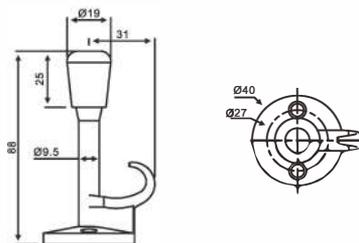


Stainless Steel / Zinc Alloy Door Stopper

- Wall mounted type
- Finish: SSS, PSS, BP, GP, AB, AC

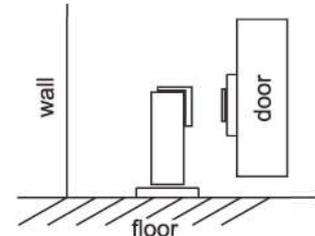
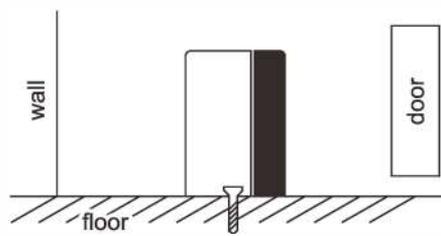
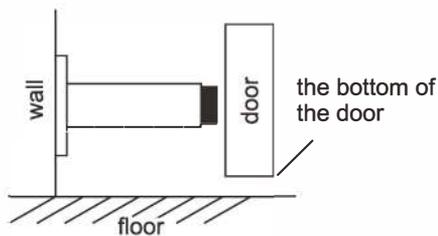


TFDS020



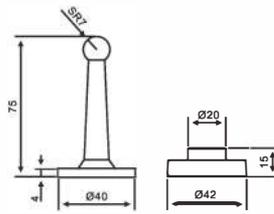
Zinc Alloy Door Stopper

- Wall mounted type
- Finish: SN, CP, BP, GP, AB, AC





TFDS021

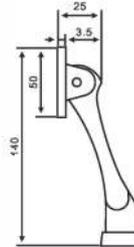


Zinc Alloy Door Stopper

- Wall mounted type
- Finish: SN, CP, BP, GP, AB, AC



TFDS022

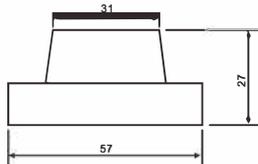


Zinc Alloy Door Holder

- Mounted on door
- Finish: SN, CP, BP, GP, AB, AC



TFDS023

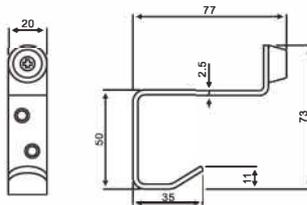


Stainless Steel Concave Stopper

- Wall mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS024

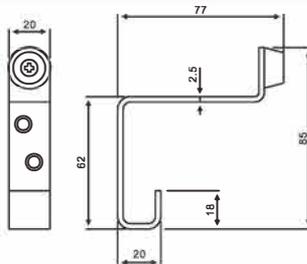


Stainless Steel Door Stopper

- For Bathroom / public Toilet
- Wall mounted type, also can be used as coat hook
- Screws included
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS025

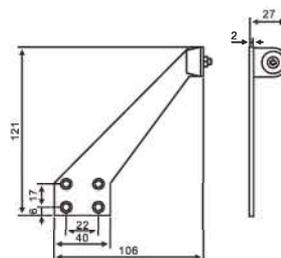


Stainless Steel Door Stopper

- For Bathroom / public Toilet
- Wall mounted type, also can be used as coat hook
- Screws included
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS026

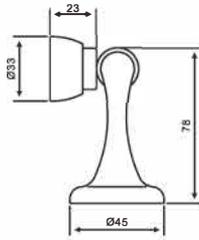


Stainless Steel Door Stopper

- Wall mounted type
- Finish: SSS, PSS, AB, AC, GP



TFDS027

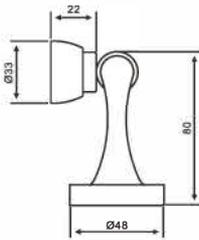


**Stainless Steel / Zinc Alloy
Door Stopper, Magnetic**

- Finish: SSS,PSS,BP, CP, NP, GP, AB, AC



TFDS028

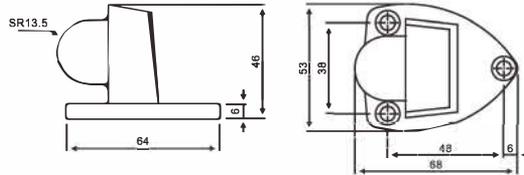


**Stainless Steel / Zinc Alloy
Door Stopper, Magnetic**

- Finish: SSS,PSS,BP, CP, NP, GP, AB, AC



TFDS029-B

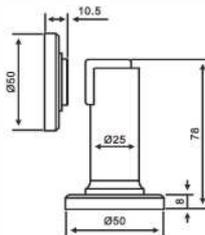


**Stainless Steel / Zinc Alloy
Door Stopper**

- Floor Mounted Type
- Finish: SSS, PSS, BP, GP, AB, AC

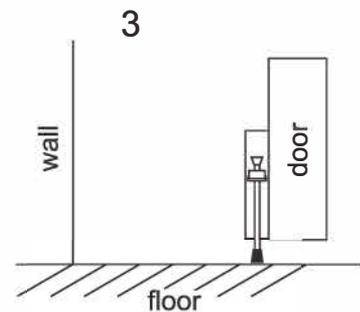
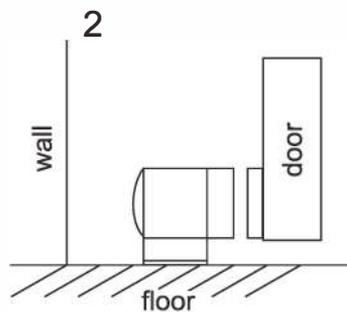
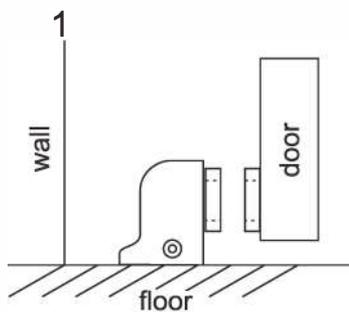


TFDS030



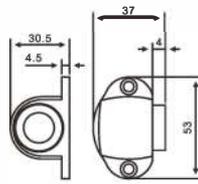
**Stainless Steel / Zinc Alloy Door
Stopper, Magnetic**

- Finish: SSS, PSS, AB, AC, GP





TFDS031

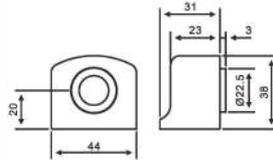


Stainless Steel / Zinc Alloy Door Stopper, Magnetic

- Floor mounted type
- Finish: SSS, PSS, BP, GP, AB, AC



TFDS032

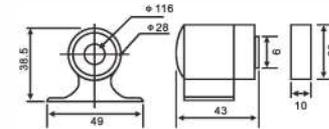


Zinc Alloy Door Stopper, Magnetic Floor Mounted Type

- Finish: BP, CP, NP, GP, AB, AC



TFDS033

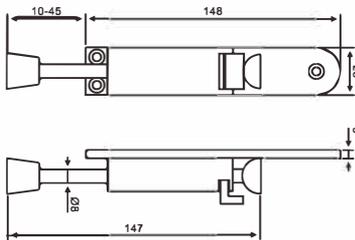


Zinc Alloy Door Stopper, Magnetic

- Finish: P&L, S&L, CP, NP, SNP, AB, AC



TFDS034

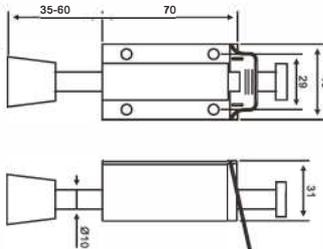


Foot Operated Door Holder Door Mounted Type

- Material: Stainless Steel / Zinc Alloy
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC



TFDS035

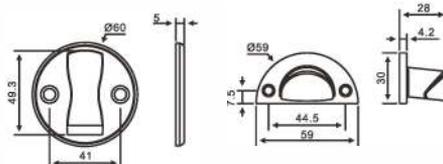


Foot Operated Door Holder Door Mounted Type

- Material: Stainless Steel
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC



TFDS036

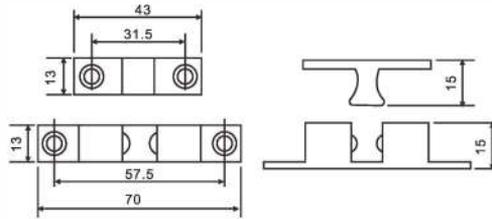


Stainless Steel / Zinc Alloy Door Stopper, Magnetic

- Finish: P&L, S&L, CP, NP, SNP, AB, AC



TFBC001



Brass Ball Catch

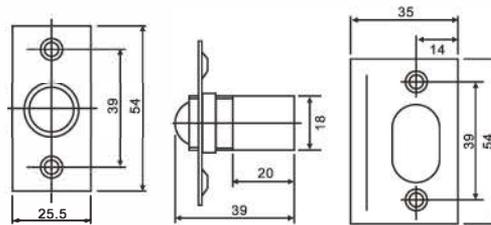
- Size: 43, 50, 60, 70mm
- Finish: P&L, S&L, CP, NP, AB, AC

Stainless Steel Ball Catch

- Size: 70mm
- Finish: SSS



TFBC002

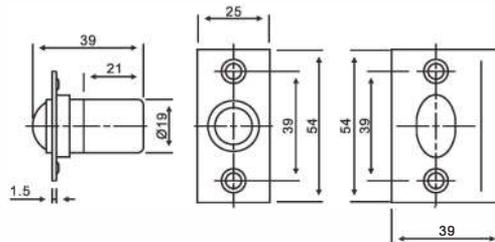


Brass Ball Catch

- Finish: CP, NP, GP, AB, AC



TFBC002-SS

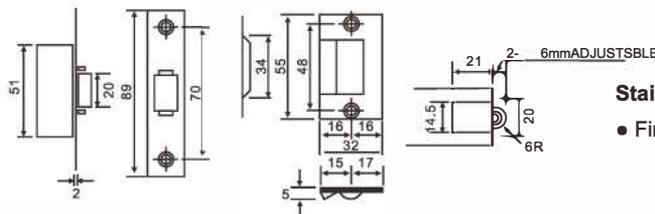


Stainless Steel Ball Catch

- Finish: SSS, PSS



TFBC003

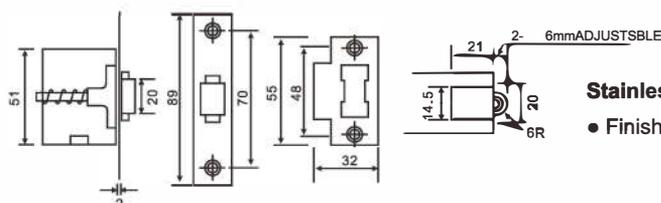


Stainless Steel Roller Catch

- Finish: SS, PSS



TFBC004

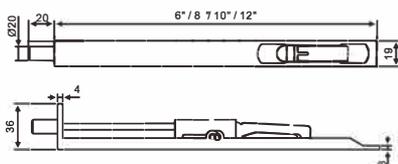


Stainless Steel Roller Catch

- Finish: SS, PSS



TFDB001

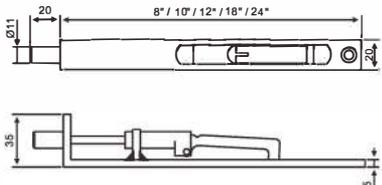


**Heavy Duty Flush Bolt for Wooden Door
Stainless Steel**

- Finish: SSS, PSS, BP, AB, AC
- Size: 8", 10", 12", 18", 24"



TFDB002

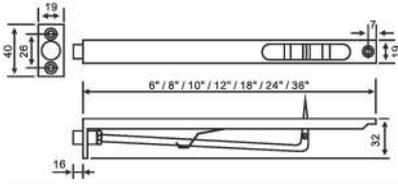


Brass Flush Door Bolt

- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 6", 8", 10", 12", 18", 24", 36"



TFDB003

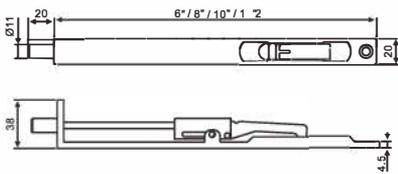


Brass Flush Door Bolt

- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 6", 8", 10", 12", 18", 24", 36"



TFDB004

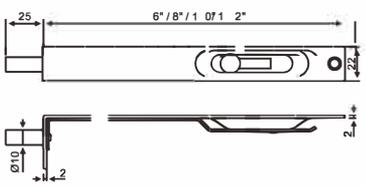


Brass Flush Door Bolt

- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 6", 8", 10", 12"

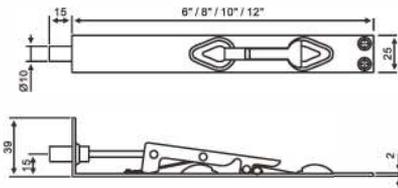


TFDB005

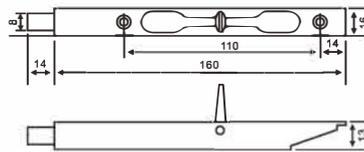


**Stainless Steel Flush Door Bolt
for Wooden Door**

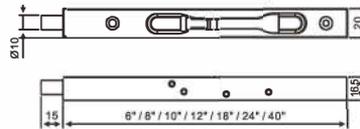
- Finish: SSS, PSS, BP, AB, AC
- Size: 6", 8", 10", 12"


TFDB006

Stainless Steel Flush Door Bolt for Wooden Door

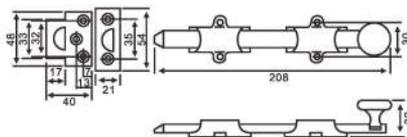
- Finish: SSS, PSS, BP, AB, AC
- Size: 6", 8", 10", 12"


TFDB007

Stainless Steel Flush Door Bolt for Wooden Door

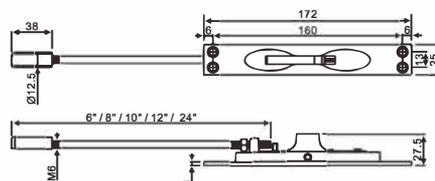
- Finish: SSS, PSS, BP, AB, AC
- Size: 6"x3/4", 8"x3/4", 10"x3/4", 12"x3/4"


TFDB008

Stainless Steel Flush Door Bolt for Wooden Door

- Finish: SSS, PSS, BP, AB, AC
- Size: 6"x3/4", 8"x3/4", 10"x3/4", 12"x3/4", 18"x3/4", 24"x3/4", 40"x3/4"


TFDB009

Brass Flush Door Bolt

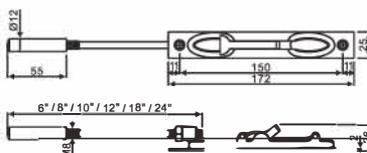
- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 6", 8", 10", 12", 18"


TFDB010

Brass Flush Door Bolt for Metal Door

- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 6", 8", 10", 12", 18", 24"



TFDB011

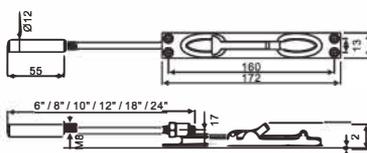


Stainless Steel Flush Door Bolt for Metal Door

- Finish: SSS, PSS, BP, AB, AC
- Size: 6", 8", 10", 12", 18", 24"



TFDB012-B

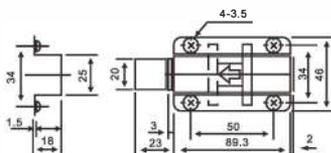


Stainless Steel Flush Door Bolt for Metal Door

- Finish: SSS, PSS, BP, AB, AC
- Size: 6", 8", 10", 12", 18", 24"



TFDB013

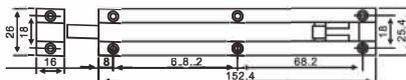


Stainless Steel Door Bolt

- Finish: SS, PSS, BP, GP, AB, AC
- Surface Mounted



TFDB016

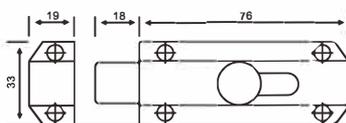


Brass Narrel Bolt

- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 1", 2", 2", 3", 4", 5", 6", 12", 18"

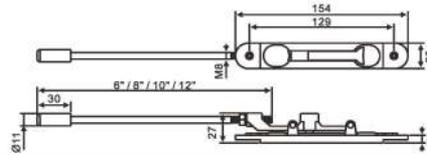


TFDB017



Brass Door Bolt

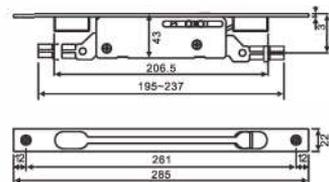
- Finish: P&L, S&L, CP, NP, SCP, SNP, GP, AB, AC
- Size: 2", 3", 4", 5", 6", 8", 10", 12", 18", 24", 36"


TFDB018-B

Flush Bolt for Metal Door

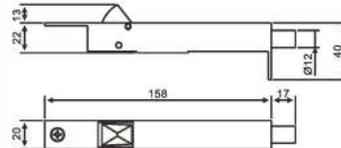
Material: Zinc Alloy

Size: 6", 8", 10", 12"

 Finish: SN, SC, CP, SB, AB, AC, BP,
PC, PN, PVD

TFDB022-B

**Double Action Flush Door Bolt
for Hollow Metal Door**

• Finish: SS, PSS, PVD, GP, AB, AC

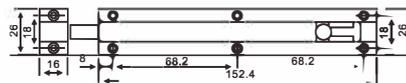

TFDB023

Automatic Flush Door Bolt

• Finish: SS, PSS, PVD, GP, AB, AC


 sinistrad
A

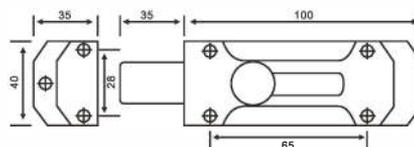
 dextrad
B

 sideways
C

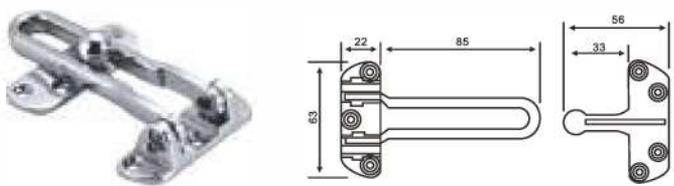
TFDB024

Stainless Steel Door Bolt

• Finish: SS, PSS, PVD, GP, AB, AC

• Size: 2", 3", 4", 5", 6", 8"


TFDB025

Heavy Duty Security Barrel Bolt
Zinc Alloy Material

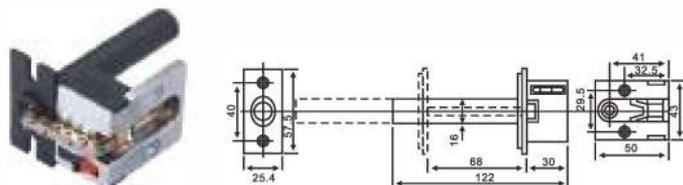
• Finish: CP, NP, GP, AB, AC



TFDG001

Security Door Guard

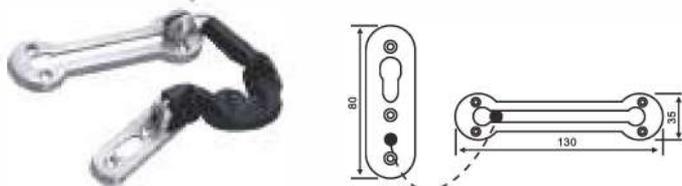
- Material: Stainless steel / Zinc alloy
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC



TFDG002

**Concealed Security Door Chain
Concealed Fix**

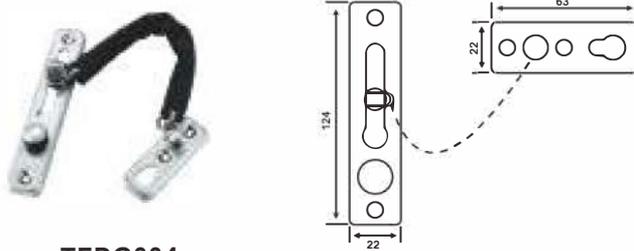
- Material: Stainless steel / Zinc alloy
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC



TFDG003

Security Door Chain

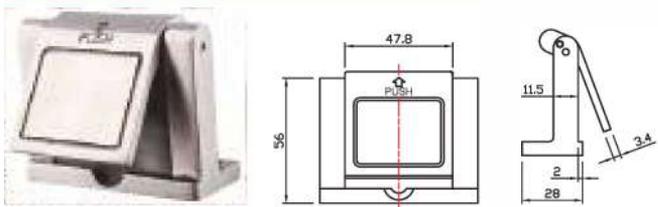
- Material: Stainless steel / Zinc alloy
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC



TFDG004

Security Door Chain

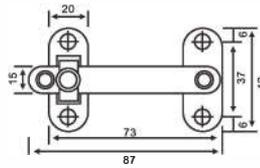
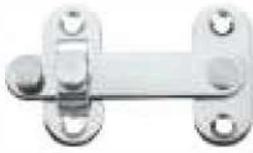
- Material: Stainless steel
- Finish: SS, PSS, BP, CP, NP, GP, AB, AC



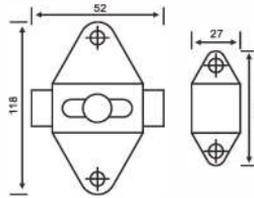
TFDG005

Security Door Guard

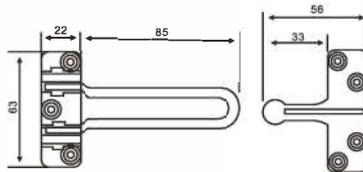
- Material: Stainless steel 304
- Finish: SS, PSS, PVD, AB, AC, BP, CP


TFDG006
Security Door Guard

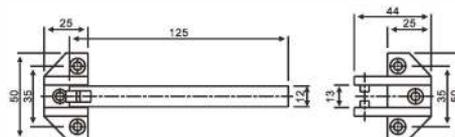
- Material: Stainless steel
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC


TFDG007
Security Door Bolt

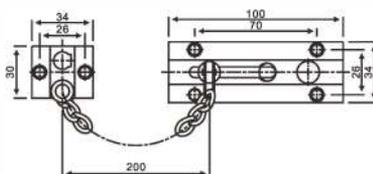
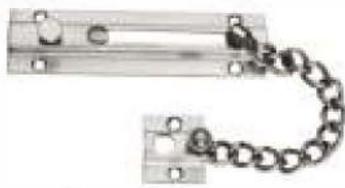
- Material: Stainless steel
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC


TFDG008
Security Door Guard

- Material: Stainless steel / Zinc alloy
- Finish: SS, PSS, PVD, SNP, SCP, AB, AC


TFDG009
Security Door Guard

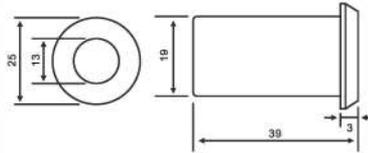
- Material: Zinc alloy
- Finish: SNP, SCP, AB, AC


TFDG010
Security Door Chain Surface Mounted

- Material: Stainless steel
- Finish: SS, PSS, PVD



TFDP001

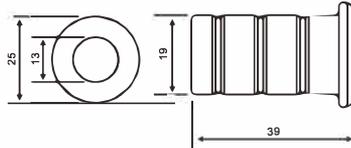


Dust Proof Socket / Strike

- Material: Stainless Steel
- Finish: SSS, PSS



TFDP002

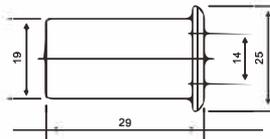


Dust Proof Socket / Strike

- Material: Stainless Steel
- Finish: SSS, PSS



TFDP003

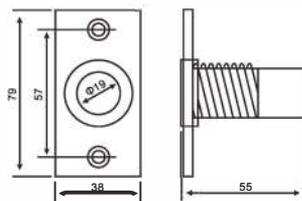


Dust Proof Socket / Strike

- Material: Brass
- Finish: SCP, SNP, AB, AC



TFDP004

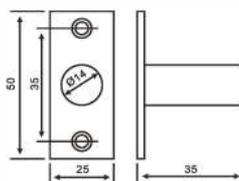


Dust Proof Strike With Plate

- Material: Brass
- Finish: AB, AC, P&L, SCP, SNP



TFDP005

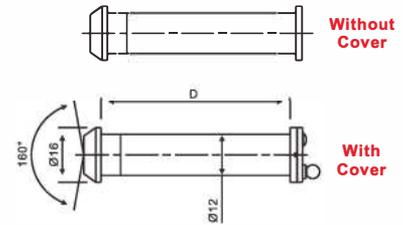


Dust Proof Strike With Plate

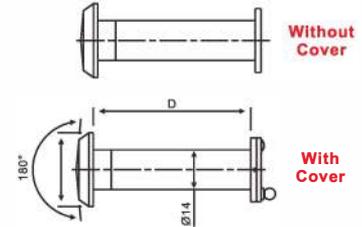
- Material: Stainless Steel
- Finish: SSS, PSS

TFDV001

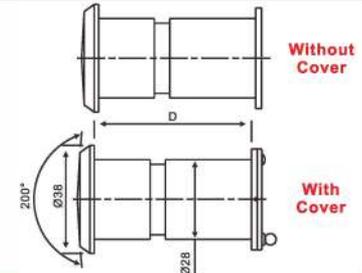
- Material: Brass / Zinc Alloy, Glass Lens
- With Cover / Without Cover
- Finish: BP, CP, NP, GP, AB, AC
- Application: Wooden Doors, Metal Doors
- Door Thickness: D=35-55mm
- Size: Ø16 x Ø12 x 160°


TFDV002

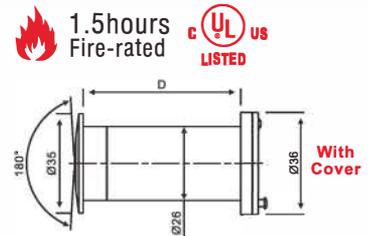
- Material: Brass / Zinc Alloy, Glass Lens
- With Cover / Without Cover
- Finish: BP, CP, NP, GP, AB, AC
- Application: Wooden Doors, Metal Doors
- Door Thickness: D=35-55mm
- Size: Ø26 x Ø14 x 180°


TFDV003

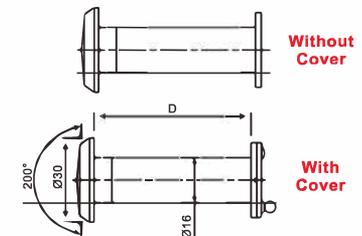
- Material: Brass / Zinc Alloy, Glass Lens
- With Cover / Without Cover
- Finish: BP, CP, NP, GP, AB, AC
- Application: Wooden Doors, Metal Doors
- Door Thickness: D=35-55mm
- Size: Ø38 x Ø28 x 200°


TFDV004

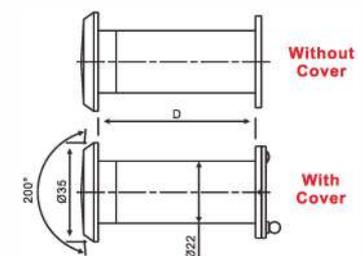
- Material: Steel, Glass Lens
- With Cover / Without Cover
- Finish: BP, CP, NP, GP, AB, AC
- Application: Wooden Doors, Metal Doors
- Door Thickness: D=40-65mm
- Size: Ø35 x Ø26 x 180°


TFDV005

- Material: Brass / Zinc Alloy, Glass Lens
- With Cover / Without Cover
- Finish: BP, CP, NP, GP, AB, AC
- Application: Wooden Doors, Metal Doors
- Door Thickness: D=35-55mm
- Size: Ø30 x Ø16 x 200°

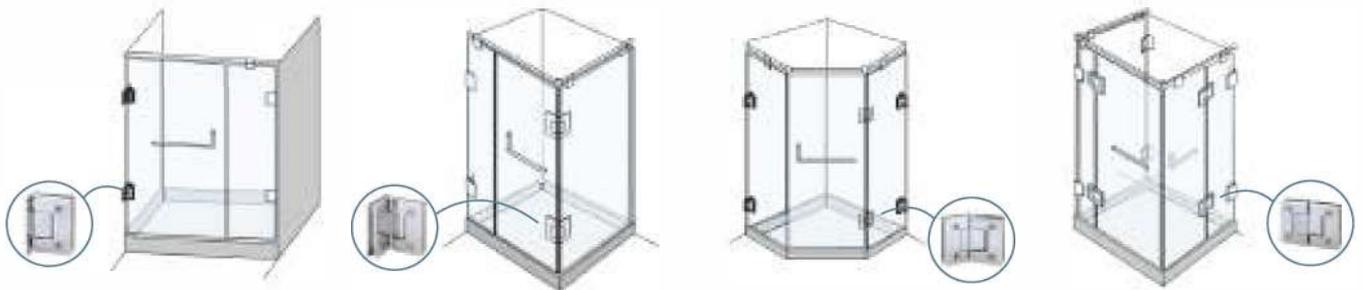

TFDV006

- Material: Brass / Zinc Alloy, Glass Lens
- With Cover / Without Cover
- Finish: BP, CP, NP, GP, AB, AC
- Application: Wooden Doors, Metal Doors
- Door Thickness: D=35-55mm
- Size: Ø35 x Ø22 x 200°



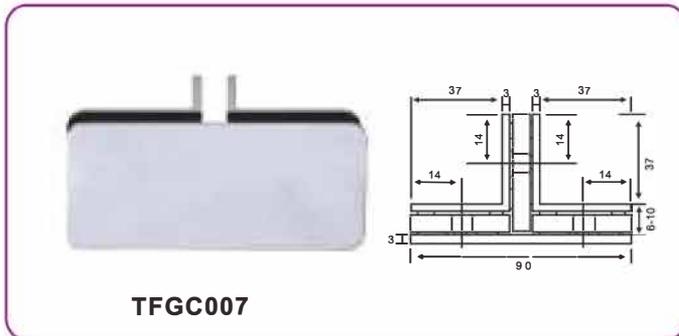
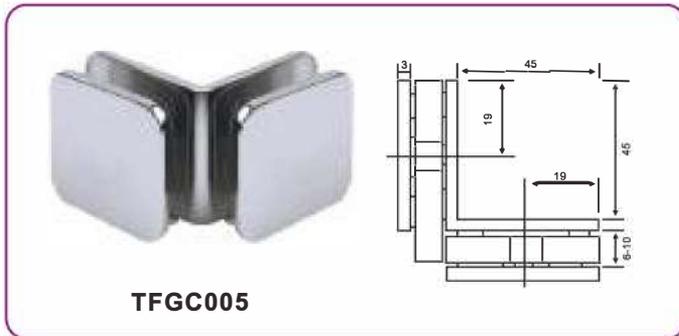
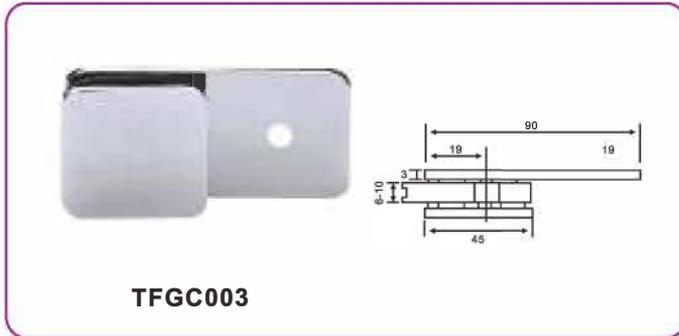
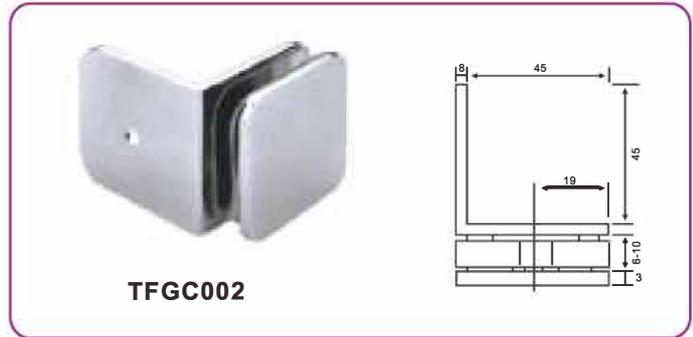
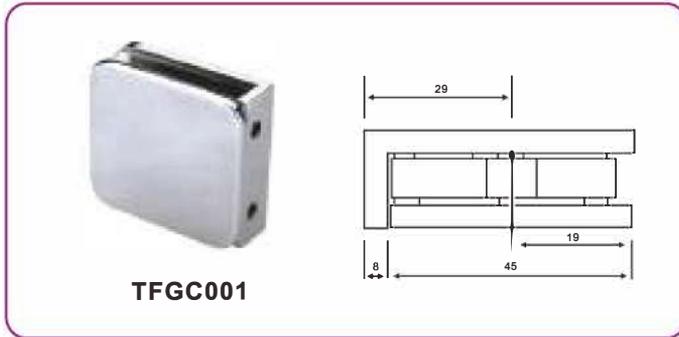
Features

- Shower Hinge: suitable for glass door from 8 to 12mm thick and 800mm wide.
The door will be closed automatically when being closed to about 25°.
- Finishes: Chrome plated, Nickel plated, Satin, Polish
- Weight of door: 40kg / Pair
- Material: Brass / Stainless Steel Grade 304 / 316
- Times Fatigue: Above 100,000 times



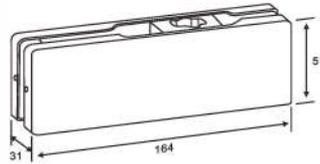
Features

- Suitable for glass from 8 to 12mm
- Finishes: Satin, Polish





TFPT001

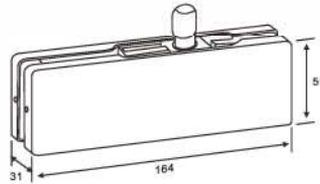


Bottom Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Bottom clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



TFPT002

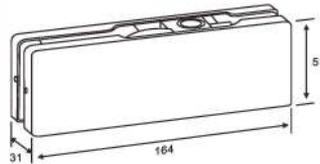


Over Panel Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Top clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



TFPT003

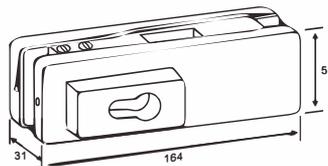


Top Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Upper clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



TFPT004

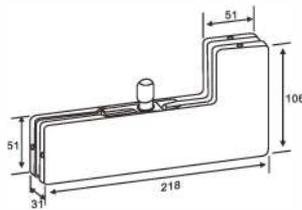


Patch Fitting Lock

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Lock clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



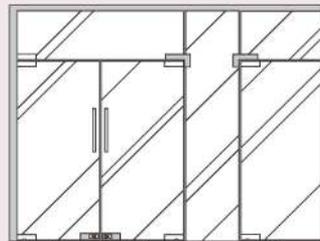
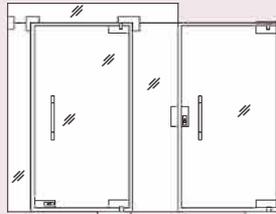
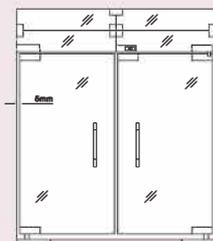
TFPT005



Corner Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Corner clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium

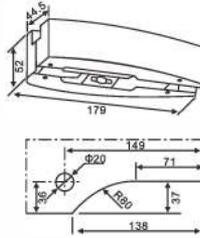
Application



Pull Handle



TFPT006

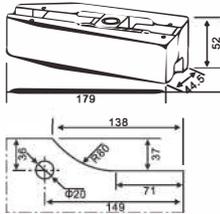


Bottom Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Bottom clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



TFPT007

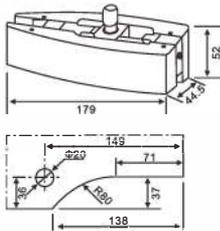


Top Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Upper clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



TFPT008

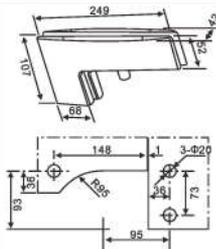


Over Panel Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Top clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



TFPT009

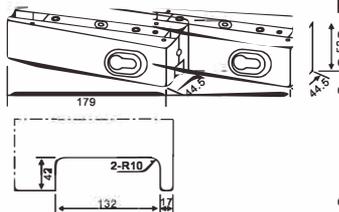


Corner Patch Fitting

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Corner clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium



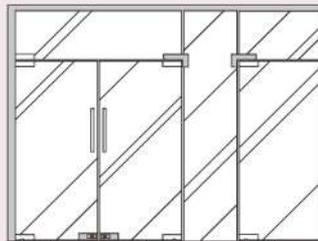
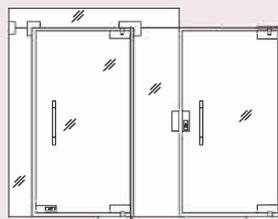
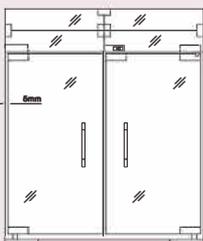
TFPT010



Patch Fitting Lock

- Door thickness: 10-12mm
- Available for: The glass door installed floor spring
- Features: Lock clamping head of various specifications are available and can be used in conjunction with springs from World Famous Brand
- Material: Stainless steel, Aluminium

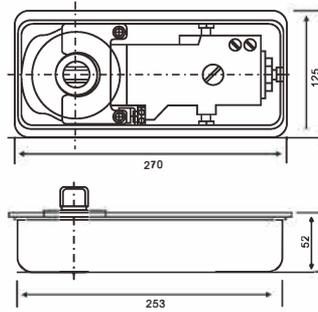
Application



Pull Handle



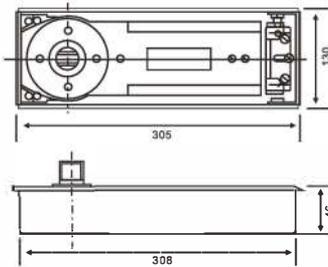
TFFS220



- Dimensions: 270 x 125 x 52mm
- Suitable for maximum 800mm wide door leaf and the maximum bearing weight is 70kg
- The maximum opening angle is 105 degree, can be located at 90 degree or 105 degree



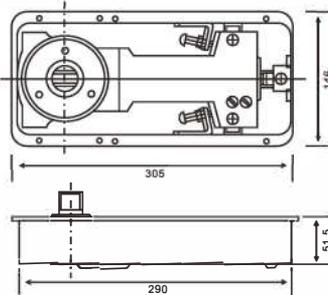
TFFS222



- Dimensions: 305 x 146 x 51.5mm
- Suitable for maximum 1000mm wide door leaf and the maximum bearing weight is 100kg
- The maximum opening angle is 105 degree, can be located at 90 degree or 105 degree



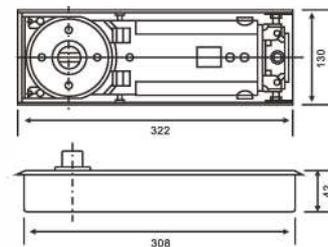
TFFS312



- Dimensions: 322 x 130 x 46mm
- Suitable for maximum 1000mm wide door leaf and the maximum bearing weight is 100kg
- The maximum opening angle is 105 degree, can be located at 90 degree or 105 degree



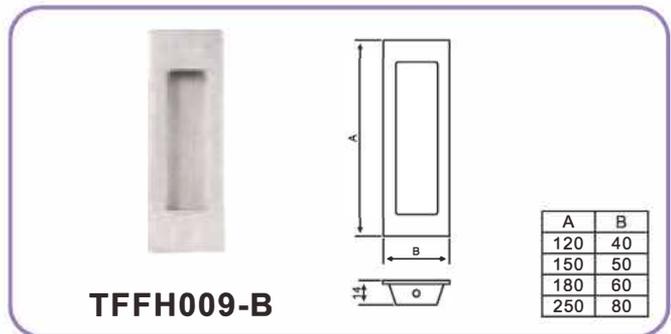
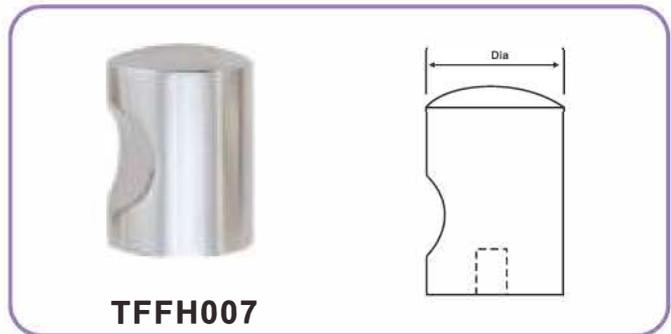
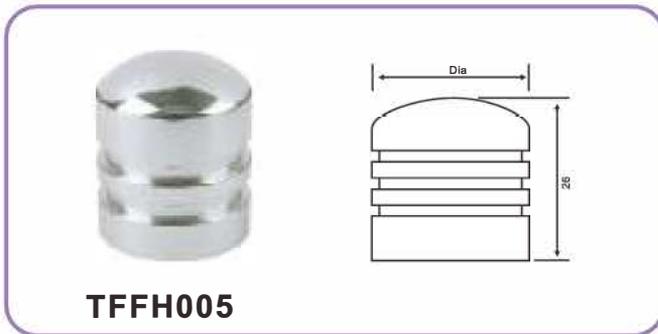
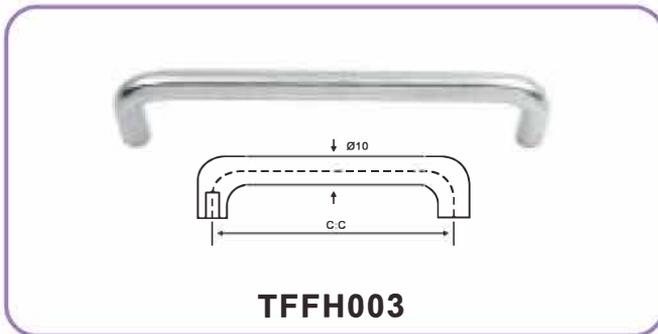
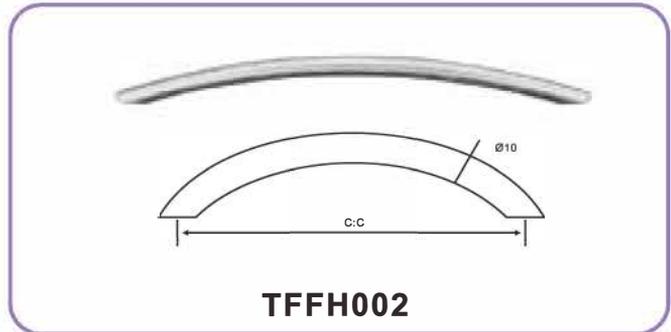
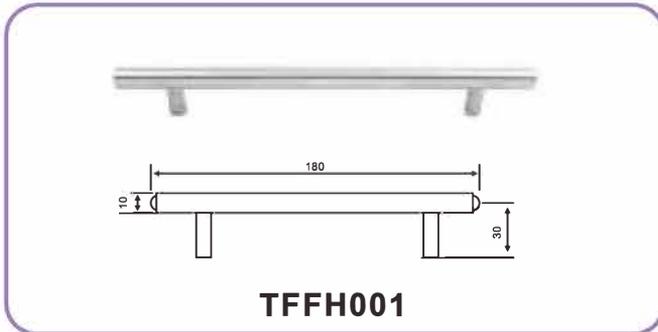
TFFS322



- Dimensions: 322 x 130 x 42mm
- Suitable for maximum 1200mm wide door leaf and the maximum bearing weight is 130kg
- The maximum opening angle is 105 degree, can be located at 90 degree or 105 degree

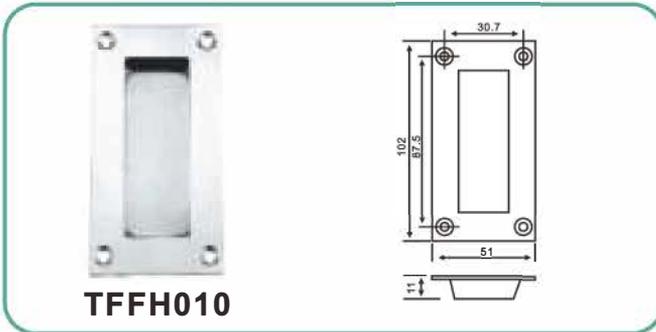
- Material: Stainless Steel 304 / 316
- Diameter: 10mm, 12mm, 14mm

- Finish: SS, PSS, BP, GP, AB, AC
- CTC: 96, 128, 160, 192, 256, 320mm

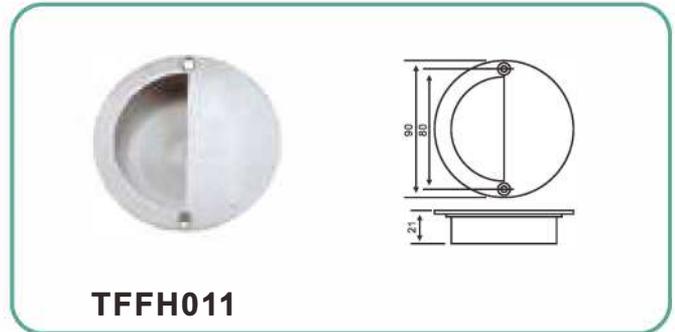


• Material: Stainless Steel 304 / 316

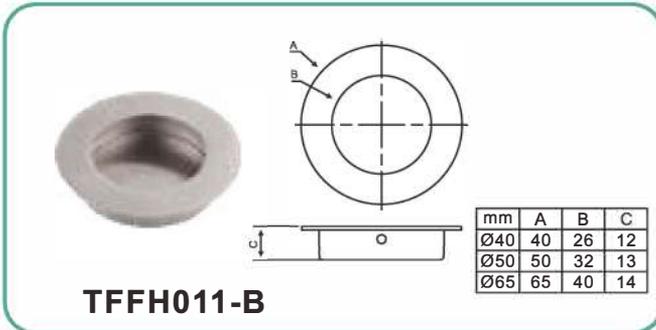
• Finish: SS, PSS, BP, GP, AB, AC



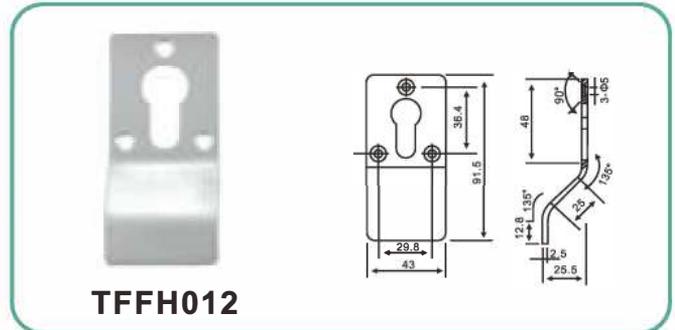
TFFH010



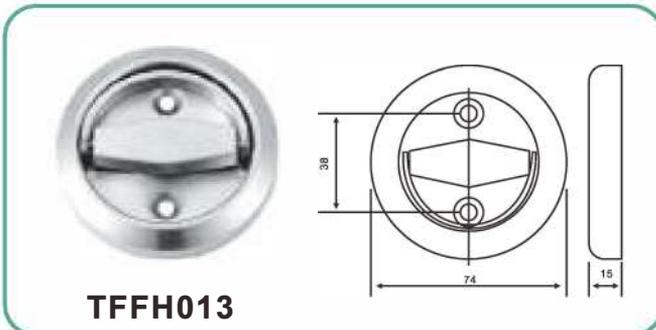
TFFH011



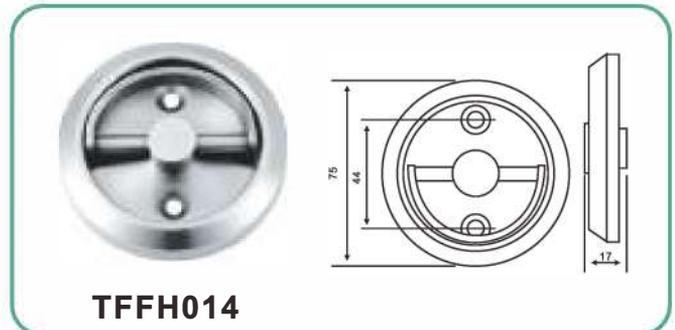
TFFH011-B



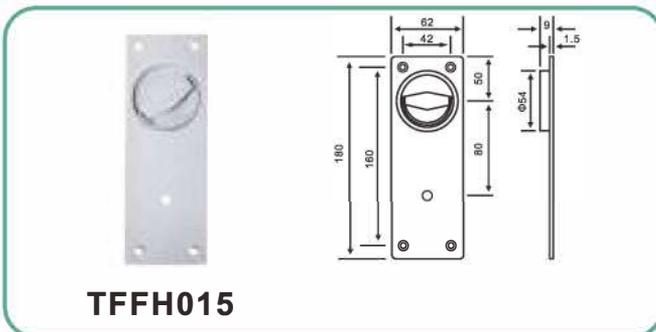
TFFH012



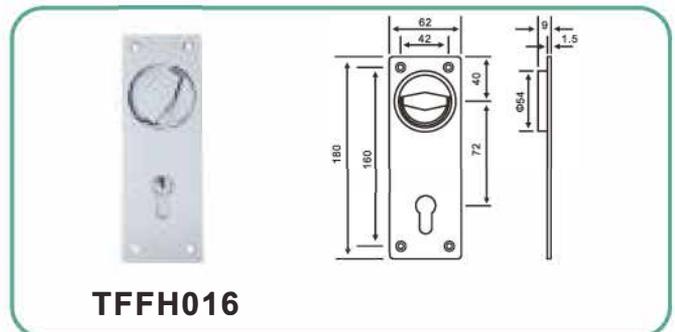
TFFH013



TFFH014

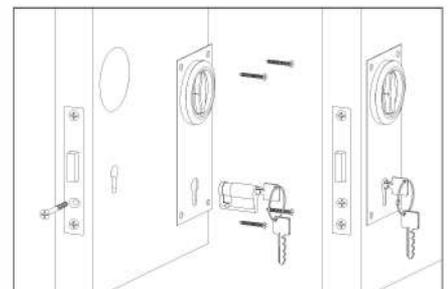
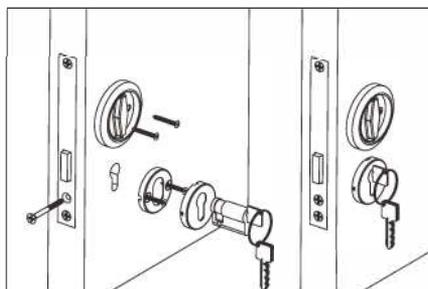
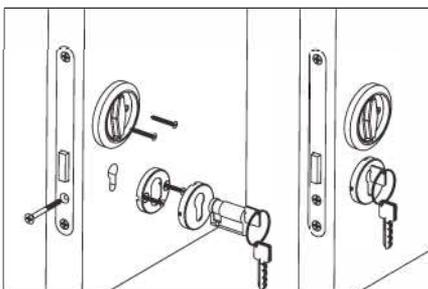


TFFH015

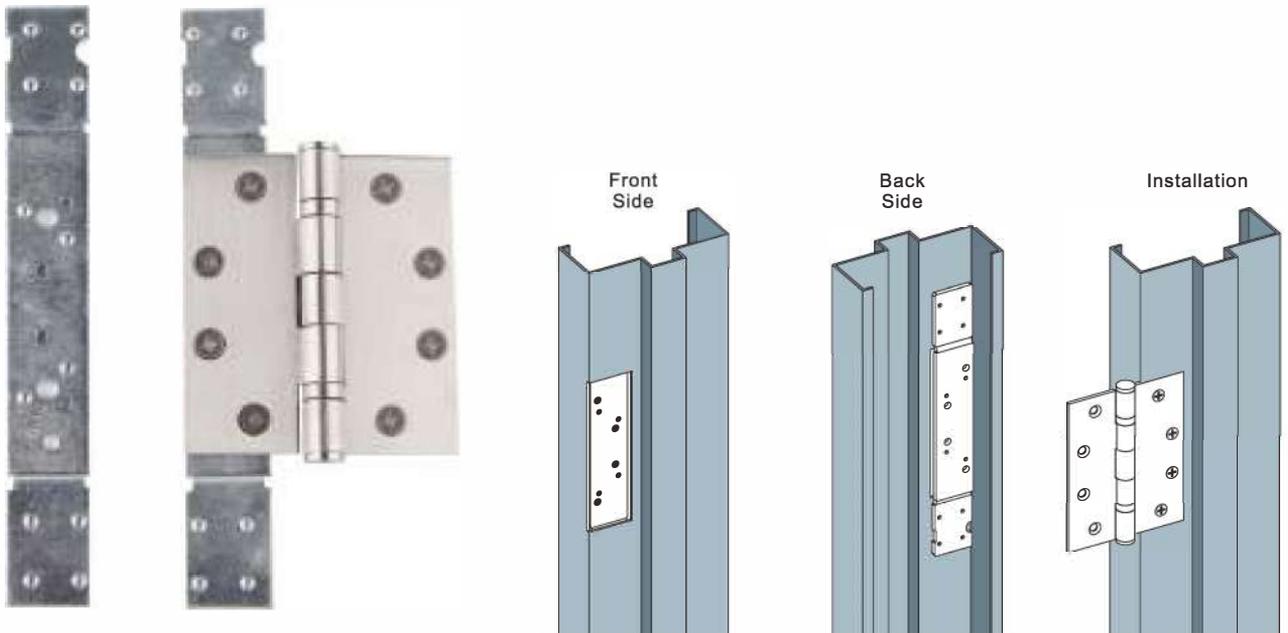


TFFH016

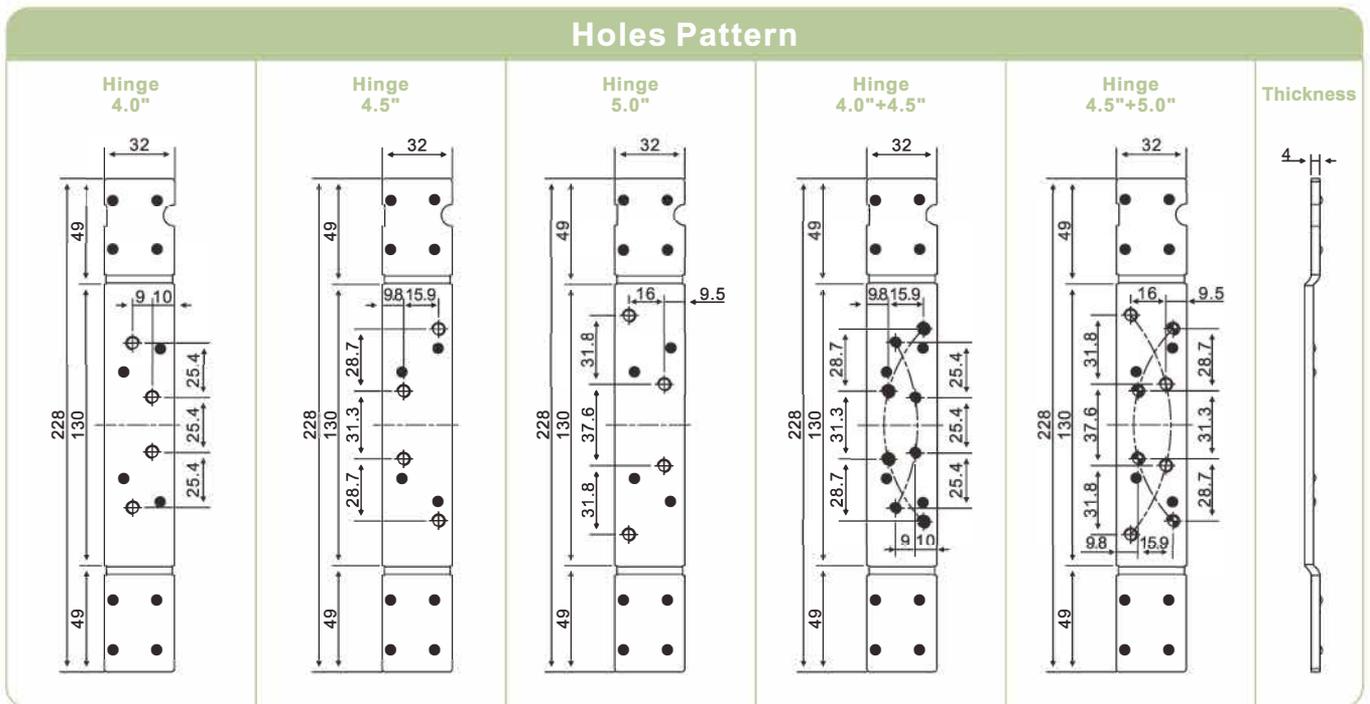
Optional version



Hinge Reinforcement Plate TFHR001



Holes Pattern



Suitable for Hinge Size

4.0"x3.0"x3.0mm	4.0"x4.0"x3.4mm	4.5"x4.0"x4.6mm
4.0"x3.5"x3.0mm	4.5"x4.0"x3.4mm	4.5"x4.5"x4.6mm
4.0"x4.0"x3.0mm	4.5"x4.5"x3.4mm	5.0"x4.0"x4.6mm
4.5"x4.0"x3.0mm	5.0"x4.0"x3.4mm	5.0"x4.5"x4.6mm
4.5"x4.5"x3.0mm	5.0"x4.5"x3.4mm	5.0"x5.0"x4.6mm

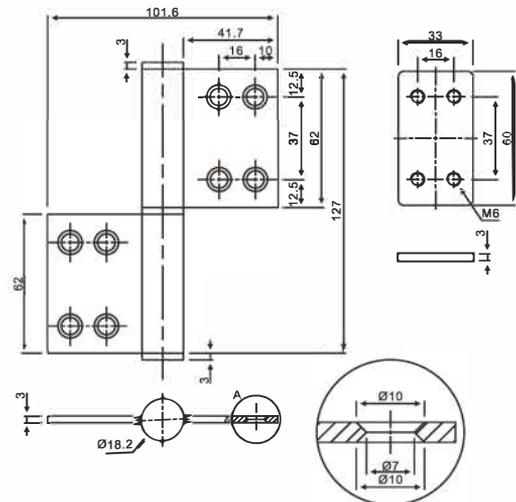
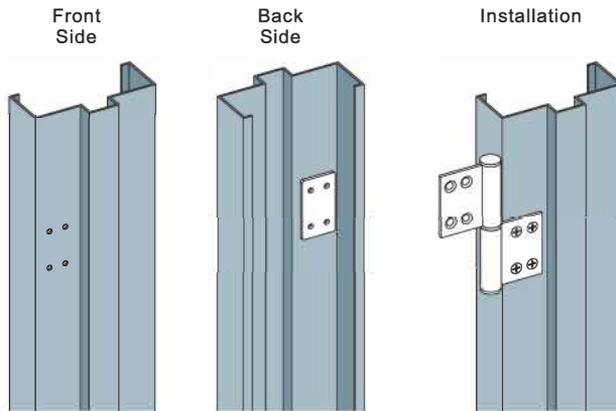
- Plate Height: 228mm
- Plate Width: 32mm
- Plate Thickness: 4.0mm
- Material: Steel, Zinc plated
- Mounting: 4 holes tapped in M5 , M6 , 7/32
- Hinge Length: 4" , 4.5" , 5"
- Hinge thickness: 3.0mm , 3.4mm , 4.6mm
- Non-Handed, Can Be Used for Both Door and Frame Reinforcement
- Welding inside of Steel Door or Frame.
- Beneficial for Heavy Doors.

Reinforcement Plate for Flag Hinge

TFHR002



- Plate Height: 60mm
- Plate Width: 33mm
- Plate Thickness: 3.0mm
- Material: Steel, Zinc plated
- Mounting: 4 holes tapped in M6
- Non-Handed, Can Be Used for Both Door and Frame Reinforcement
- Welding inside of Steel Door or Frame.
- Beneficial for Heavy Doors.

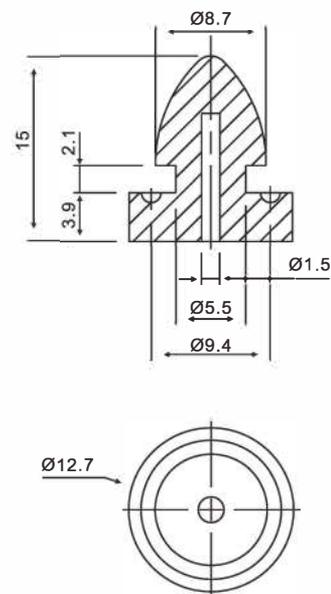


Rubber Door Silencer TFRS001



- Grey Rubber
- For Hollow Metal Frames.
- Size: 1/2" Diameter x 3/5" Length
- Rubber door silencers prevent rattle and noise when doors are closing.
- They are used in places where you want to control the noise made by closing doors.

- Some applications for door silencers including**
- Hospitals
 - Childrens / babies rooms
 - Offices
 - Schools
 - Care/group homes





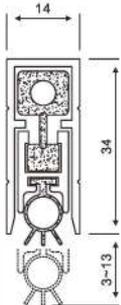
Intertek



Tested by EN 1191:2012 **Tested by UL 10C:2009**

Advantage

- Sound proof / wind&Dust proof/ Cold Air proof/ Hot Air proof
- Light proof / Insect, Mildew and Fungus&Vermin proof /Fire Labeled

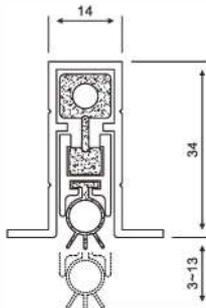


TFBS001

• Features

A concealed, automatic door bottom seal that is spring loaded to lift clear of the floor when the door is opened. It is acoustically designed, featuring silicon gaskets for medium temperature smoke and fire door applications. Operated automatically by pressure against the door jamb on its adjustable strike. It can also be fitted into the bottom rail of a metal door by the fabricator.

- **Location:** Fully mortised into the groove in the bottom of single and double butt-hinged door.
- **Installation:** Fixing screws are supplied. This seal is mortised. Pre-drilled radiused end plates are supplied which also secure the product in place. (Square end plates available on request)
- **Seal:** Silicon Rubber in grey color
- **The sealing gap:** 3-15 mm(0.12"- 0.6")
- **Available length:** 380-1500mm(15"- 60")
- **Finish:** Silver or bronze anodized aluminium

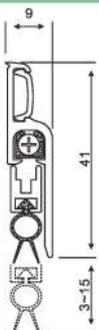


TFBS002

• Features

A concealed, automatic door bottom seal that is spring loaded to lift clear of the floor when the door is opened. It is acoustically designed, featuring silicon gaskets for medium temperature smoke and fire door applications. Operated automatically by pressure against the door jamb on its adjustable strike. It can also be fitted into the bottom rail of a metal door by the fabricator.

- **Location:** Fully mortised into the groove in the bottom of single and double butt-hinged door.
- **Installation:** Fixing screws are supplied. This seal is mortised. Pre-drilled radiused end plates are supplied which also secure the product in place. (Square end plates available on request)
- **Seal:** Silicon Rubber in black color
- **The sealing gap:** 3-14 mm (0.12"- 0.55")
- **Available length:** 380-1500mm (15"- 60")
- **Finish:** Silver or bronze anodized aluminium

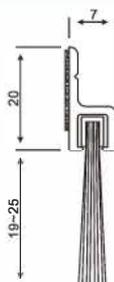


TFBS003

• Features

An adjustable, automatic door bottom seal which is spring loaded to lift clear of the floor when the door is opened. Operated automatically by pressure against the door stop on its adjusting screw and incorporates concealed fixings.

- Location:** Face mounted on the bottom of single or double butt-hinged doors.
- Installation:** Screw. Fixing holes are pre-slotted; screws and decoration cover strip are supplied.
- **Seal:** TPE in black color
- **The sealing gap:** 3-15 mm (0.12"- 0.6")
- **Available length:** 380-1500mm (15"- 60")
- **Finish:** Silver or bronze anodized aluminium



TFBS004

• Features

A nylon brush strip seal with aluminium carrier that is ideal where larger gaps are encountered.

- **Location:** Bottom of single, double or sliding doors.
- **Installation:** Self-adhesive or can be screw fixed.
- **Seal:** Black fine, dense, UV stabilized nylon filaments. (Brush length could make form 12-25mm)
- **The sealing gap:** Up to 25mm (1")
- **Available length:** 1000mm (39.4")
- **Finish:** Grind arenaceous oxidation surface, silver, brown, golden

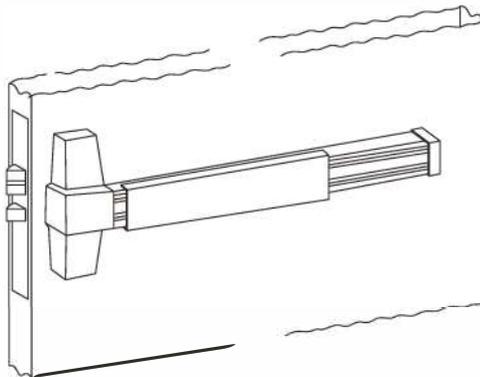
• Advantage

Sound proof / wind&Dust proof/ Cold Air proof/ Hot Air proof
Light proof / Insect & Vermin proof

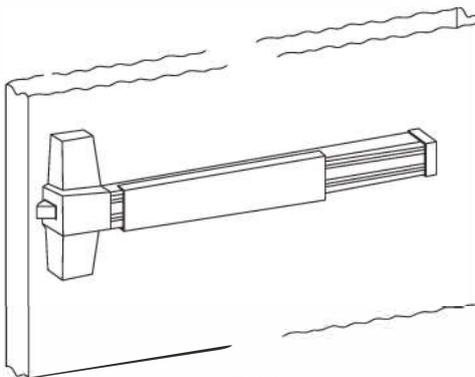


PANIC / FIRE EXIT HARDWARE

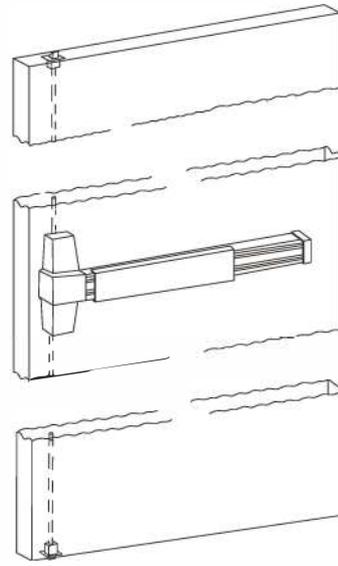
Panic hardware is tested and labeled for life safety only, whereas fire exit hardware is tested for both life safety and fire resistance. Only the latter may be used where fire-rated doors are required. Both types are always operable from the inside by depressing a cross bar. The mortise type and the concealed vertical rod type are the least conspicuous, and are readily applicable to custom-hollow metal doors.



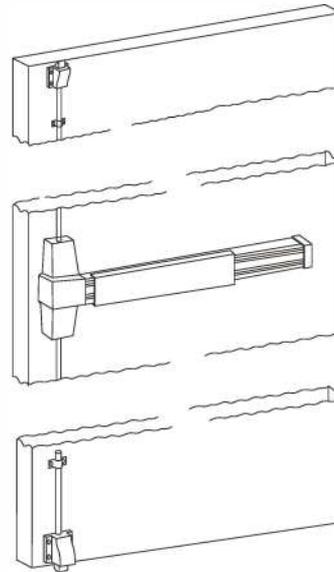
MORTISE



RIM



CONCEALED VERTICAL ROD



SURFACE VERTICAL ROD

1. Mortise and Rim types are used on single doors, active leaves of pairs, and multi-opening assemblies.

Where rim type or exposed surface vertical rod exit devices are specified, internal reinforcement plates shall be provided in the door and frame by the manufacturer. Drilling and tapping for trim and mounting plates shall be done in the field by the installer. The hardware can then be more readily adjusted for optimal operation.

2. Vertical Rod types; (Concealed and Surface) are normally used on pairs of doors. In preparing the door for an exit device, the drilling of the bolt holes (1/2 in. dia. or less) and/or the drilling and tapping for sectional or full trim plates shall be done in the field by the installer. After the lock is installed and adjusted, the trim plate can be applied to suit the final position of the latching device. If through bolt or tapped holes were provided by the manufacturer, this adjustment becomes difficult if not impossible.

Careful consideration must be taken in the selection of strikes and adjustment of rods to ensure proper operation.

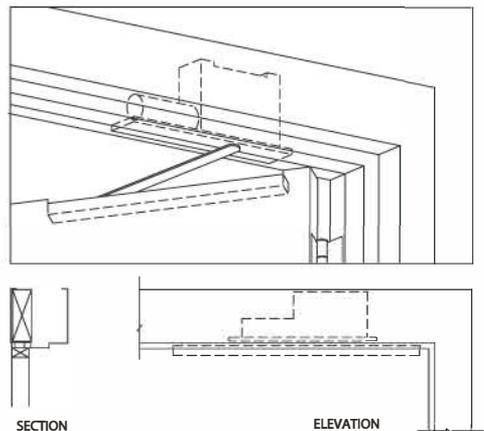
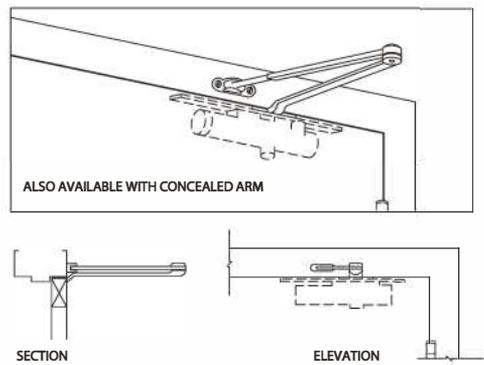
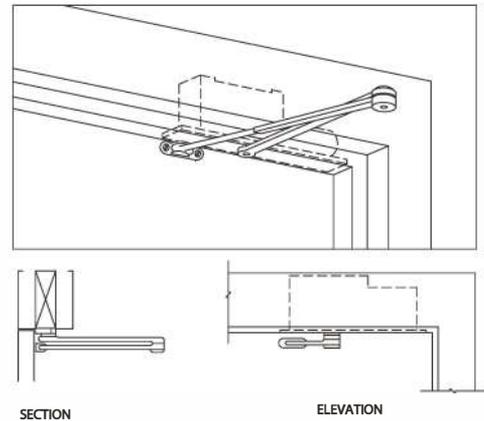
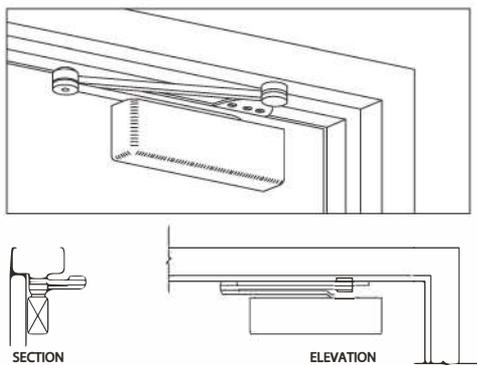
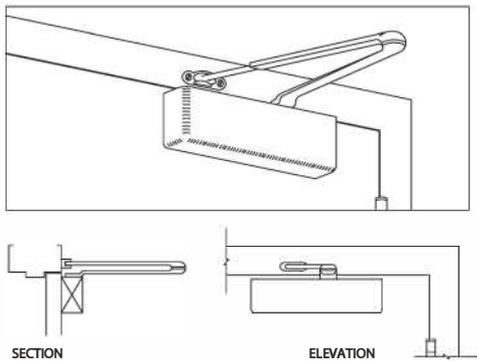
CLOSING AND CONTROLLING DEVICES

A. CLOSERS

Closer devices control the closing of a door. They are available in a range of sizes for various door sizes, locations, and job conditions. The hardware manufacturer's recommendations should always be followed in determining size and type.

Where surface mounted closers or concealed components are specified, internal reinforcement plates are provided in the door and frame by the hollow metal manufacturer. Drilling and tapping shall be done in the field by the installer. Only after the door is installed and adjusted can the closer be mounted for proper operation.

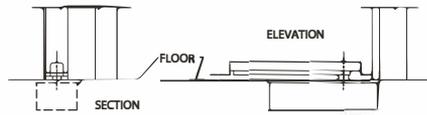
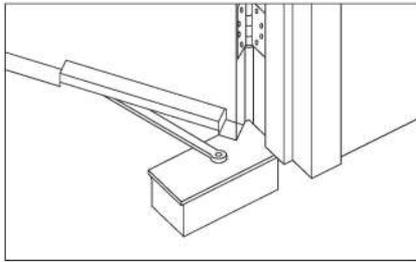
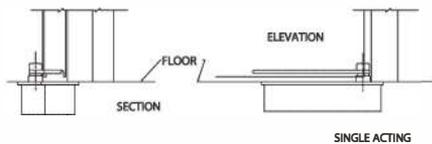
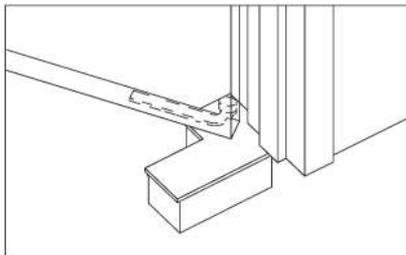
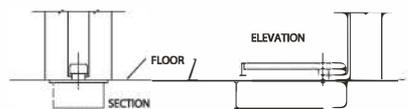
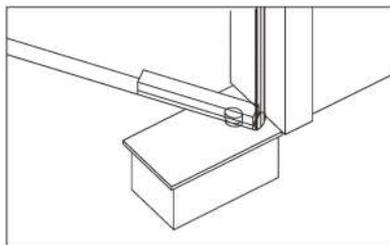
AT NO TIME SHOULD A CLOSER BE USED AS A STOP, UNLESS THIS DEVICE HAS BEEN ENGINEERED TO INCLUDE SELECTIVE HOLD-OPEN, POSITIVE STOPS, OR BACK CHECK FEATURES.



OVERHEAD CLOSERS

1. Overhead Closers are hydraulic devices containing a piston, fluid chambers, and a spring. When the door is open the piston is pulled back, compressing the spring and moving the fluid from one side of the piston to the other. With the release of the door a reverse action takes place, closing the door. Closing speed is controlled by an adjustment valve or valves. Overhead closers may be concealed or surface mounted.

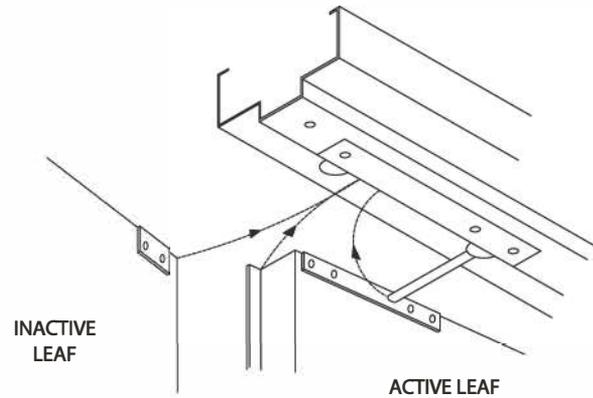
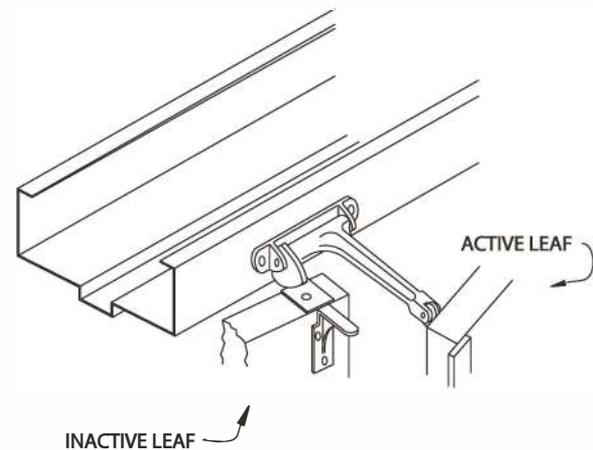
As shown, the type of closer used depends on whether the door is hung on hinges, offset pivots, or center pivots.


FOR HINGED DOORS

FOR OFFSET PIVOT DOORS


EITHER SINGLE OR DOUBLE-ACTING

FOR CENTER PIVOT DOORS
B. DOOR COORDINATORS

Coordinators are used on pairs of doors. When both leaves are open, the coordinator holds the active leaf open until the inactive leaf is closed, preventing interference of the astragal or locking mechanism.


MORTISE

SURFACE

2. Floor Closers generally are more durable than overhead closers and provide concealed closing mechanisms, often appropriate for doors having a high frequency of use.



FURNITURE FITTINGS



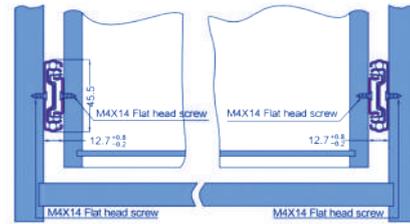
TUFFRO TFDS-45 IRON BUFFER 3 FOLD BALL BEARING DRAWER SLIDE



TECHNICAL DETAILS

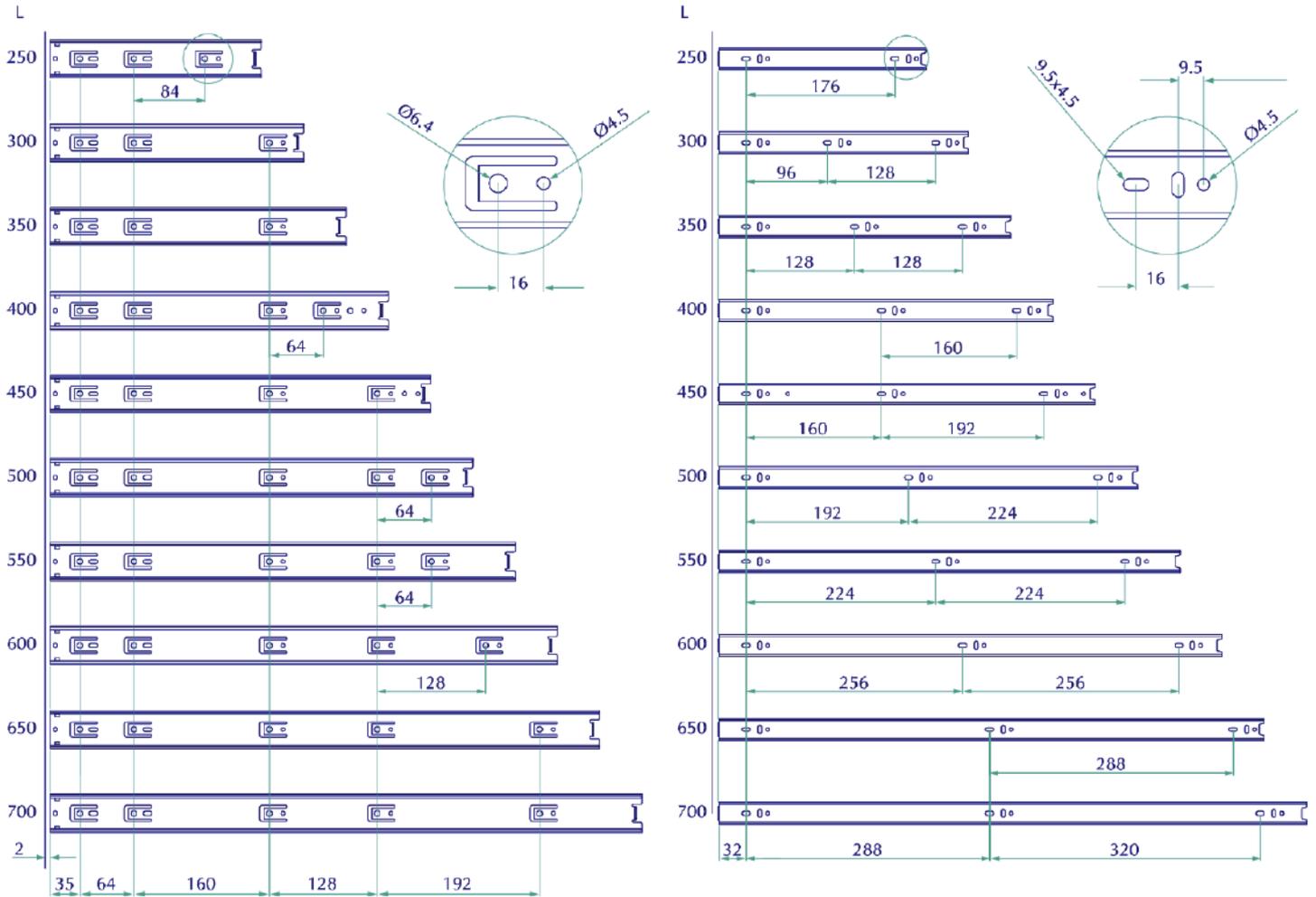
WIDTH	: 45 MM
LENGTH	: 250MM-600MM
MATERIAL THICKNESS	: 1MM X 1MM X 1MM
LOAD CAPACITY	: 25 KG
CYCLING	: 50000

INSTALATION	SIDE MOUNT
FINISH	STAINLESS STEEL
MAIN MATERIAL	HIGHLY REFINED POLISHED



Model Number	Description	Size(mm)
TFDS-45-10	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	250
TFDS-45-12	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	300
TFDS-45-14	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	350
TFDS-45-16	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	400
TFDS-45-18	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	450
TFDS-45-20	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	500
TFDS-45-22	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	550
TFDS-45-24	Drawer Slide -45mm full Extension soft closing ball bearing slide 1.0x1.0x1.0 load capacity= 20-25 kg	600

SLIDE FIXING DIMANTIONS



Drawer mounting & dimensions



TFCH105-2D HYDRAULIC SOFT CLOSING HINGE, CLIP ON



**TFCH105-2D-A
FULL OVERLAY**

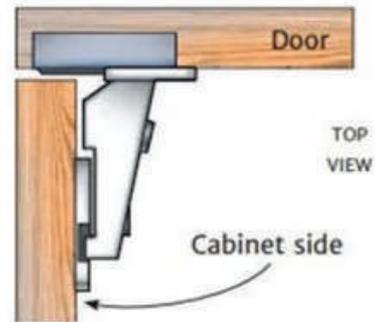


**TFCH105-2D-B
HALF OVERLAY**

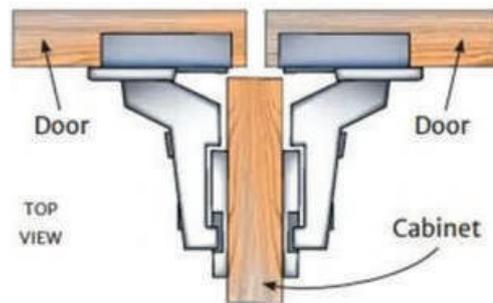


**TFCH105-2D-C
INSET**

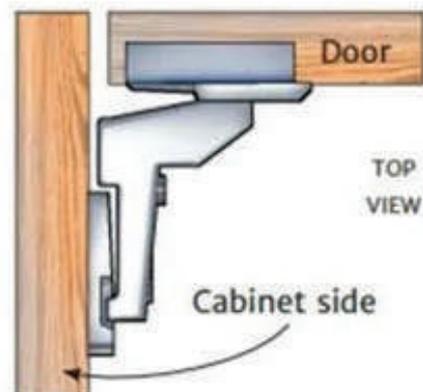
Full Overlay



Half Overlay Cabinet



Inset Cabinet



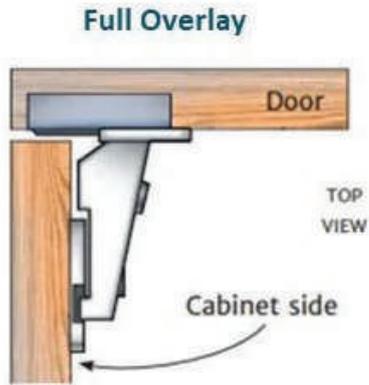
- SGS Certified
- Stable quality with good SS Material
- Double nickel plating, Salt spray Test: 48 Hrs.
- 3 way Adjustment for Easy installation
- Heat treated screw for longer service life, closing time 30,000
- Various Weights(103gram-118gram) caps available

Opening Angle	:110 degree
Material	: Stainless steel
Dia of hinge cup	: 35 mm
Depth of hinge cup	: 11.3
Net weight	: 105 g
Fixing Plate	: 4 Whole available

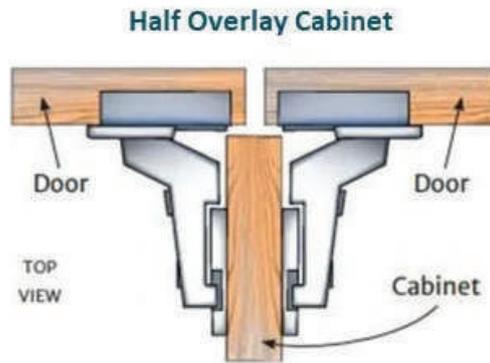
TFCH106-35MM 3D HYDRAULIC SOFT CLOSING HINGE, CLIP ON



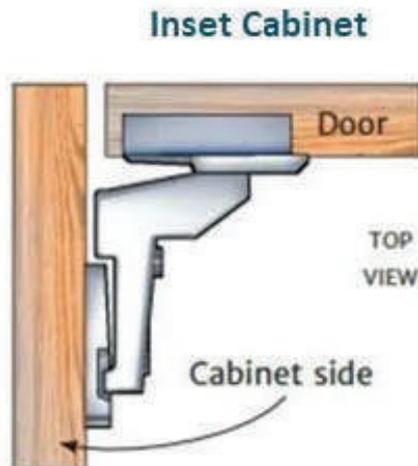
**TFCH106-3D-A
FULL OVERLAY**



**TFCH106-3D-B
HALF OVERLAY**



**TFCH106-3D-C
INSET**



- SGS Certified
- Stable quality with good SS Material
- Double nickel plating, Salt spray Test: 48 Hrs.
- 3 way Adjustment for Easy installation
- Heat treated screw for longer service life, closing time 30,000
- Various Weights(103gram-118gram) caps available

Opening Angle	: 110 degree
Material	: Stainless steel
Dia of hinge cup	: 35 mm
Depth of hinge cup	: 11.3
Net weight	: 115 g
Fixing Plate	: 4 Whole available

,TFCH165-HYDRAULIC 165 DEGREE HINGE SOFT CLOSING HINGE CLIP ON



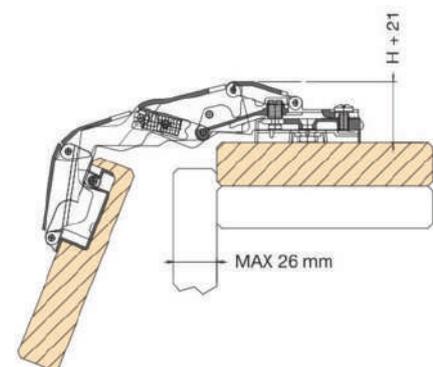
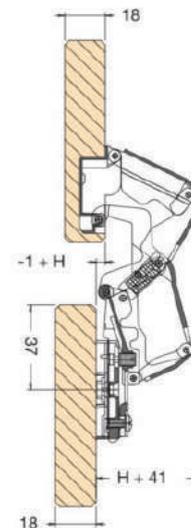
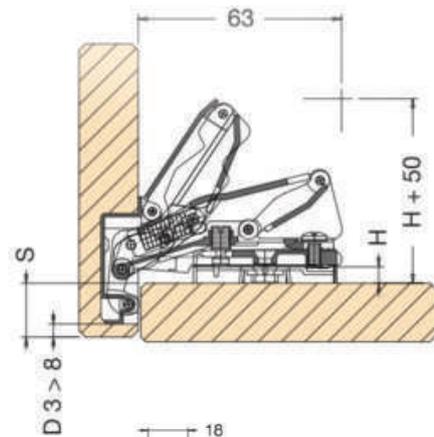
**TFCH-165-A
FULL OVERLAY**



**TFCH-165-B
HALF OVERLAY**



**TFCH-165-C
INSET**



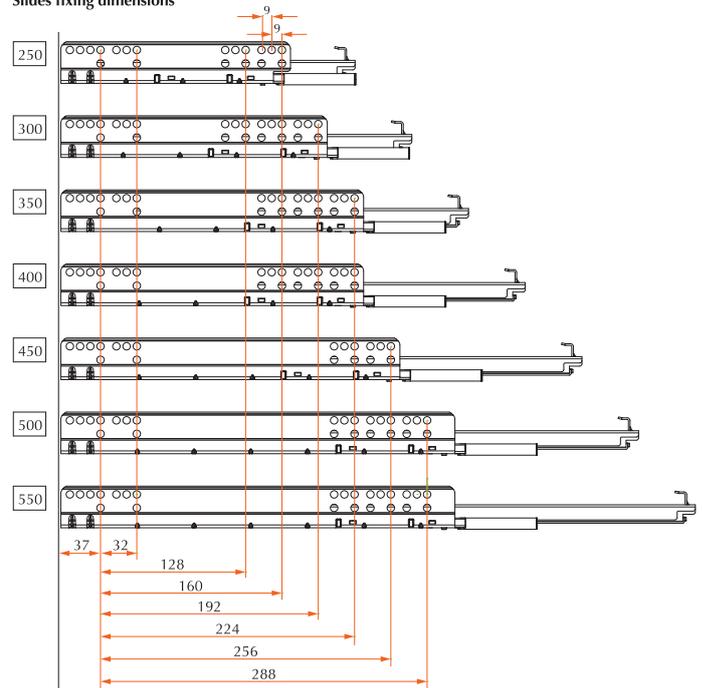
- SGS Certified
- Stable quality with good SS Material
- Double nickel plating, Salt spray Test: 48 Hrs.
- 3 way Adjustment for Easy installation
- Heat treated screw for longer service life, closing time 30,000
- Various Weights(103gram-118gram) caps available

Opening degree	: 165
Diameter of Hinge cup	: 0.35
Depth of Hinge	: 11.3mm
Range of door thickness	: 14-25mm
Material	: Cold rolled steel
Net weight	: 170 g
Fixing Plate	: 4 Whole available

TFU3D-SC- UNDER MOUNT SLIDE FULL EXTENSION SOFT CLOSING



Slides fixing dimensions



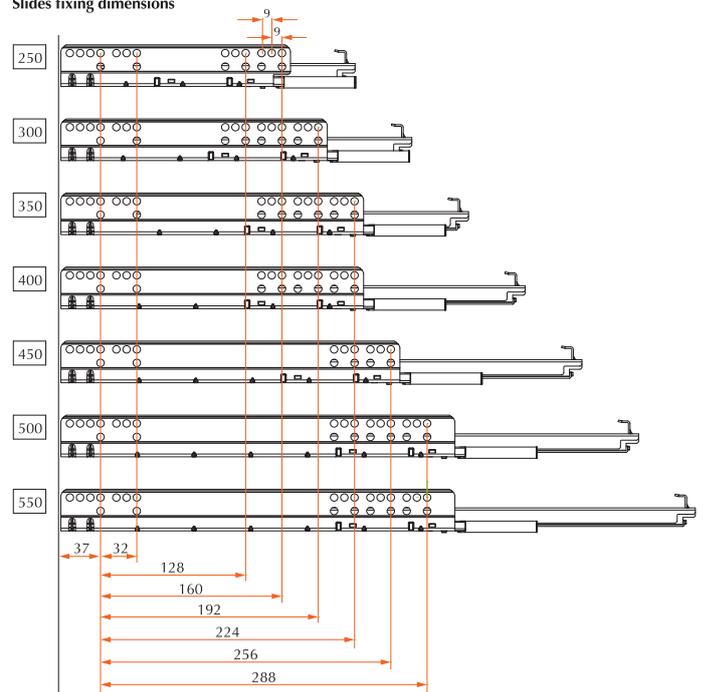
Length	: 250-600mm
Maximum Load	: 35kg
Material	: Cold rolled steel
Surface treatment	: SS plated
Material Thickness	: 1.8" 1.4" 10
Lock	: 3D lockings

Model Number	Description	Size(mm)
TFU3D-SC-14	Under Mount Drawer Slide - Full Extension Soft closing with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	350
TFU3D-SC-16	Under Mount Drawer Slide - Full Extension Soft closing with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	400
TFU3D-SC-18	Under Mount Drawer Slide - Full Extension Soft closing with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	450
TFU3D-SC-20	Under Mount Drawer Slide - Full Extension Soft closing with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	500
TFU3D-SC-22	Under Mount Drawer Slide - Full Extension Soft closing with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	550
TFU3D-SC-24	Under Mount Drawer Slide - Full Extension Soft closing with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	600

TFU3D-PO- UNDER MOUNT SLIDE FULL EXTENSION PUSH TO OPEN



Slides fixing dimensions



Length	: 250-600mm
Maximum Load	: 35kg
Material	: Cold rolled steel
Surface treatment	: SS plated
Material Thickness	: 1.8" 1.4" 10
Drawer Height Adjustment	: 0-4mm

Model Number	Description	Size(mm)
TFU3D-PO-14	Under Mount Drawer Slide - Full Extension Push to open with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	350
TFU3D-PO-16	Under Mount Drawer Slide - Full Extension Push to open with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	400
TFU3D-PO-18	Under Mount Drawer Slide - Full Extension Push to open with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	450
TFU3D-PO-20	Under Mount Drawer Slide - Full Extension Push to open with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	500
TFU3D-PO-22	Under Mount Drawer Slide - Full Extension Push to open with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	550
TFU3D-PO-24	Under Mount Drawer Slide - Full Extension Push to open with 3D Lock, 1.8"1.4"10 load capacity=30-35 kg	600

Complete ANSI / BHMA Numbers for Materials & Finishes

ANSI Code	Description	Base Material	Nearest Former U.S. Equivalent
600	Primed For Painting	Steel	USP
601	Bright Japanned	Steel	US1B
603	Zinc Plated	Steel	US2G
604	Zinc Plated And Dichromate Sealed	Steel	
605	Bright Brass, Clear Coated	Brass	US3
606	Satin Brass, Clear Coated	Brass	US4
607	Oxidized Satin Brass, Oil Rubbed	Brass	
608	Oxidized Satin Brass, Relieved, Clear Coated	Brass	
609	Satin Brass, Blackened, Satin Relieved, Clear Coated	Brass	US5
610	Satin Brass, Blackened, Bright Relieved, Clear Coated	Brass	US7
611	Bright Bronze, Clear Coated	Bronze	US9
612	Satin Bronze, Clear Coated	Bronze	US10
613	Dark Oxidized Satin Bronze, Oil Rubbed	Bronze	US10B
614	Oxidized Satin Bronze, Relieved, Clear Coated	Bronze	
615	Oxidized Satin Bronze, Relieved, Waxed	Bronze	
616	Satin Bronze, Blackened, Satin Relieved, Clear Coated	Bronze	US11
617	Darkened Oxidized Satin Bronze, Bright Relieved, Clear Coated	Bronze	US13
618	Bright Nickel Plated, Clear Coated	Brass, Bronze	US14
619	Satin Nickel Plated, Clear Coated	Brass, Bronze	US15
620	Satin Nickel Plated, Blackened, Satin Relieved, Clear Coated	Brass, Bronze	US15A
621	Nickel Plated, Blackened, Relieved, Clear Coated	Brass, Bronze	US17A
622	Flat Black Coated	Brass, Bronze	US19
623	Light Oxidized Statuary Bronze, Clear Coated	Bronze	US20
624	Dark Oxidized Statuary Bronze, Clear Coated	Bronze	US20A
625	Bright Chromium Plated	Brass, Bronze	US26
626	Satin Chromium Plated	Brass, Bronze	US26D
627	Satin Aluminum, Clear Coated	Aluminum	US27
628	Satin Aluminum, Clear Anodized	Aluminum	US28
629	Bright Stainless Steel	Stainless Steel	US32
630	Satin Stainless Steel	Stainless Steel	US32D
631	Flat Black Booted	Steel	US19
632	Bright Brass Plated, Clear Coated	Steel	US3
633	Satin Brass Plated, Clear Coated	Steel	US4
634	Oxidized Satin Brass Oil Rubbed	Steel	
635	Oxidized Satin Brass Plated, Relieved, Clear Coated	Steel	
636	Satin Brass Plated, Blackened, Bright Relieved, Clear Coated	Steel	US7
637	Bright Bronze Plated, Clear Coated	Steel	US9
638	Satin Brass Plated, Blackened, Satin Relieved Clear Coated	Steel	USS
639	Satin Bronze Plated, Clear Coated	Steel	US10
640	Oxidized Satin Bronze Plated Over Copper Plate, Oil Rubbed	Steel	US10B
641	Oxidized Satin Bronze Plated, Relieved, Clear Coated	Steel	
642	Oxidized Satin Bronze Plated, Relieved, Waxed	Steel	
643	Satin Bronze Plated, Blackened, Satin Relieved, Clear Coated	Steel	US11
644	Dark Oxidized Satin Bronze Plated, Bright Relieved, Clear	Steel	US13
645	Bright Nickel Plated, Clear Coated	Steel	US14
646	Satin Nickel Plated, Clear Coated	Steel	US15
647	Satin Nickel Plated, Blackened Satin Relieved, Clear Coated	Steel	US15A
648	Nickel Plated, Blackened Relieved, Clear Coated	Steel	US117A
649	Light Oxidized Bright Bronze Plated, Clear Coated	Steel	US20

Complete ANSI / BHMA Numbers for Materials & Finishes

ANSI Code	Description	Base Material	Nearest Former U.S. Equivalent
650	Dark Oxidized Statuary Bronze Plated, Clear Coated	Steel	US20A
651	Bright Chromium Plated	Steel	US26
652	Satin Chromium Plated	Steel	US26D
653	Bright Stainless Steel	Stainless Steel	
654	Satin Stainless Steel	Stainless Steel	
655	Light Oxidized Satin Bronze Bright Relieved, Clear Coated	Bronze	US13
656	Light Oxidized Satin Bronze Plated, Bright Relieved, Clear	Steel	US13
657	Dark Oxidized Copper Plated, Satin Relieved, Clear Coated	Steel	
658	Dark Oxidized Copper Plated, Bright Relieved, Clear Coated	Steel	
659	Light Oxidized Copper Plated, Satin Relieved, Clear Coated	Steel	
660	Light Oxidized Copper Plated Bright Relieved, Clear Coated	Steel	
661	Oxidized Satin Copper, Relieved, Clear Coated	Steel	
662	Satin Brass Plated, Browned, Satin Relieved, Clear Coated	Steel	
663	Zinc Plated With Clear Chromate Seal	Steel	
664	Cadmium Plated With Clear Chromate Seal	Steel	
665	Cadmium Plated With Iridescent Dichromate	Steel	
666	Bright Brass Plated, Clear Coated	Aluminum	US3
667	Satin Brass Plated, Clear Coated	Aluminum	US4
668	Satin Bronze Plated, Clear Coated	Aluminum	US10
669	Bright Nickel Plated	Aluminum	US14
670	Satin Nickel Plated	Aluminum	US15
671	Flat Black Coated	Aluminum	US19
672	Bright Chromium Plated	Aluminum	US26
673	Aluminum Clear Coated	Aluminum	
674	Primed For Painting	Zinc	USP
675	Dichromate Sealed	Zinc	
676	Flat Black Coated	Zinc	US19
677	Bright Brass Plated, Clear Coated	Zinc	US3
678	Satin Brass Plated, Clear Coated	Zinc	US4
679	Bright Bronze Plated, Clear Coated	Zinc	US9
680	Satin Bronze Plated, Clear Coated	Zinc	US10
681	Bright Chromium Plated	Zinc	US26
682	Satin Chromium Plated	Zinc	US26D
683	Oxidized Satin Brass Plated, Oil Rubbed	Zinc	
684	Black Chrome, Bright Brass, Bronze		
685	Black Chrome, Satin	Brass, Bronze	
686	Black Chrome, Bright	Steel	
687	Black Chrome, Satin	Steel	
688	Satin Aluminum, Gold Anodized	Aluminum	US4
689	Aluminum Painted	Any	US28
690	Dark Bronze Painted	Any	US20
691	Light Bronze Painted	Any	US10
692	Tan Painted	Any	
693	Black Painted	Any	(Black Aluminum Hard Coat)
694	Medium Bronze Painted	Any	(Bronze Aluminum Hard Coat)
695	Dark Bronze Painted	Any	(Dark Bronze Aluminum Hard Coat)
696	Satin Bronze Painted	Any	US4
697	Bright Brass Plated, Clear Coated	Plastic	US3
698	Satin Brass Plated, Clear Coated	Plastic	US4
699	Satin Bronze Plated, Clear Coated	Plastic	US10
700	Bright Chromium Plated	Plastic	US26
701	Satin Chromium Plated	Plastic	US26D
702	Satin Chromium Plated	Aluminum	US26D
703	Oxidized Satin Bronze Plated, Oil Rubbed	Aluminum	US10D
704	Oxidized Satin Bronze Plated, Oil Rubbed	Zinc	US10B

The logo for Tuffro, featuring the word "Tuffro" in a bold, red, sans-serif font. The letter "o" is replaced by a white keyhole icon. The logo is set against a dark blue circular background that is part of a larger white graphic element resembling a door handle.

DOOR OPENING SOLUTION
Architectural Hardware

**Sole Distributor for
Middle East and Africa**

**Lumber World Building Material
Trading LLC
P.O. Box:12888,Ajman,U.A.E.
Tel:+97167484216
Fax:+97167484217
E-mail:info@lumberworldllc.com**

www.tuffro.com

