



P.O. Box 682
Veradale WA 99037
(509) 927-8399

January 6, 2014

**APOLLO
PO BOX 7305
KENNEWICK, WA 99336**

RE: WENATCHEE WWTP

**08110 STEEL DOORS & FRAMES
08700 FINISHED HARDWARE**

A.M. HARDWARE COMPANY hereby extends warranty for the products furnished under the above referenced project to be free from defects in material and workmanship, ordinary wear and tear and abuse accepted, for one year from the date of completion of the job and acceptance by the owner.

Determination that products are “defective” to be made by the architect or general contractor in conjunction with a representative from A.M. Hardware Company. Repairs to defective products to be made at no expense to owner providing products have been installed in accordance with printed manufacturer’s installation instructions. There are no other warranties relating to these products either expressed or implied.

A.M. HARDWARE COMPANY, INC.

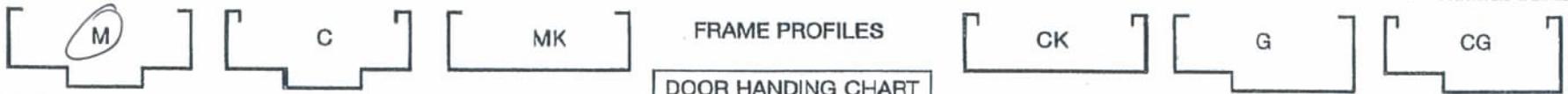
CURRIES®

HOLLOW METAL DOORS AND FRAMES

DISTRIBUTED BY:



A. M. Hardware Co., Inc.
 P.O. BOX 682
 VERADALE, WA 99037
 (509) 927-8399



RECORD OF SUBMITTALS		INSIDE	JOB NO.
SUBMITTED	RETURNED		<i>CITY OF WENATCHEE</i>
1ST <i>12-30-2011</i>			PROJECT <i>WASTEWATER TREATMENT PLANT</i>
2ND			LOCATION <i>WENATCHEE, WA</i>
3RD			ARCHITECT <i>HDR ENGINEERING</i>
4TH			CONTRACTOR <i>APOLLO INC.</i>
RECEIVED APPROVED DRAWINGS			FINISH HARDWARE BY <i>AM HARDWARE</i>
RECEIVED APPROVED HARDWARE			SHEET NO. <i>1</i> OF <i>6</i>
DRAWN BY: <i>MIKE DAVIS</i>		OUTSIDE	

GENERAL NOTES:

1. Material shown on these drawings will be fabricated only after formal approval by the architect and contractor, receipt of approved hardware schedule and all necessary hardware templates.
2. Doors and frames will be reinforced for surface mounted hardware as required. Drilling and tapping for attaching of surface mounted hardware to be provided by others. Doors and frames will be prepared and reinforced for mortise hardware. Holes for this hardware will be drilled and tapped at the factory except for trim mounting holes. Surface exit cylinder and thumb piece holes factory drilled only when ordered.
3. All doors and frames will receive an Iron phosphate pretreatment and 1 coat of baked on prime paint.
4. All frame glass stops will be installed tight to the 1-15/16" door side rabbet with one screw unless otherwise detailed herein. Installation of glass and glazing (doors and frames) by others.
5. All doors and frames will be marked with the architect's number unless specified otherwise.
6. ~~Adhesive door silencers (field applied by others after finish painting) will be supplied 3 per strike jamb for single frames and 2 per head for double frames, or if noted.~~
All frames will be prepared for push-in type silencers, 3 per strike jamb for single frames or 2 per head for double frames (supplied by others).
7. Unless noted otherwise, all hollow metal frames shall be die-mitered. ~~Knock-down construction or set-up and welded as specified.~~
8. The hardware locations indicated on the door and frame elevation are this manufacturer's standard locations for standard type hardware unless noted otherwise herein. Other hardware such as deadlocks, panic exit devices, etc., will also be located at this manufacturer's standard locations for that specific hardware unless advised otherwise.
9. All 1-3/4" hollow metal doors to be undercut on the bottom 5/8", unless noted otherwise. 1-3/8" doors are undercut 3/4".
10. On PAIRS of DOORS indicate ACTIVE LEAF in the HANDING column.
11. Store doors and frames at the building site under cover. Place units on at least 4" wood sills or on the floors in a manner that will prevent rust and damage. Avoid use of non-vented plastic or canvas shelters, which create a humidity chamber. If the wrapper on the door becomes wet, remove immediately, provide 1/4" space between doors to promote air circulation. Additional storage information per ANSI A250.8 (SDI100) is recommended.
12. When frames in masonry construction to be filled with grout and anti-freeze agents are present, the insides of the frames shall be treated by the general contractor with a suitable undercoating material.
13. 5-3/4 M Series 12 ga. frames require 1/2" minimum backbend returns instead of 7/16".

JOB NO.	PROJECT <i>W.W.T.A.</i>	LOCATION <i>WENATCHEE, WA</i>	SHEET NO. <i>2</i> OF <i>6</i>
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CURRIES®

PRODUCT WARRANTY

We warrant our products against defects in workmanship and materials for a period of one year, as follows:

- (a) There are no warranties, expressed or implied, which extend beyond those described herein, and there is no implied warranty or merchantability.
- (b) If our products should prove to be defective, our only responsibility will be to either repair or replace the defective item(s), and we will have no liability or obligation for any damages of any kind beyond such repair or replacement.
- (c) Our obligation to repair or replace any defective item terminates one year after the product has been delivered by us to the customer, and also terminates at any time anyone other than our company performs any work of repair, service, or replacement on the item without our prior written consent.
- (d) We assume no liability to pay any costs of labor or material for repair, service or replacement of any CURRIES product which has been incurred by anyone other than us.
- (e) CURRIES is committed to providing the highest quality products and services to its customers as possible. Errors can occur on occasion. We request our distributors to act as "final" quality control on our hollow metal. A simple double check procedure by an assembly person prior to modifying a door or welding a frame should be performed on every unit of product that leaves a distributor's place of business. This simple action can prevent a considerable amount of potential field problems.

JOB NO.	PROJECT <i>W.W.T.P.</i>	LOCATION <i>WENATCHEE, WA</i>	SHEET NO. <i>3</i> OF <i>6</i>
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CC-A8039

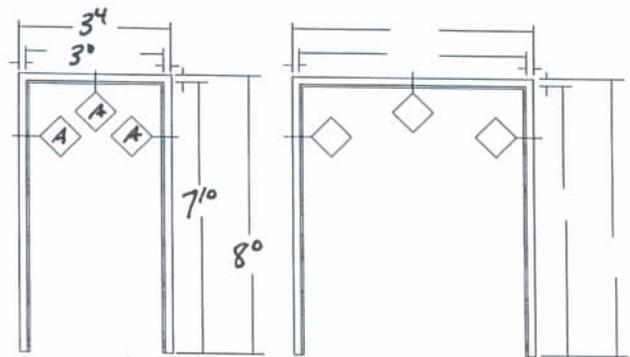
CURRIES®

C-000-A

LOCATION				FRAME DATA				DOOR DATA								SPECIAL INFO									
	TO OR FROM	ARCH #	LABEL	DOOR OPENING SIZE	HAND	THICKNESS	QTY.	JAMB DEPTH	PROFILE	GAUGE	ELEV. SHT.	ANCHOR SHT.	QTY.	SERIES	EDGE	GAUGE	TYPE	SHEET	EXTERIOR	UNDERCUT	ASTRAGAL	HWDE			
1	EXT.	F	101	D-101A	60	3'0" x 7'10"	LR	1 3/4"	1	5 3/4" M	16	1	4 MW 4	1	707 S	16	F	4	Y	5/8"	N		1		
2	EXT.	F	102	D-102A	-	3'0" x 7'10"	LR	1 3/4"	1	5 3/4" M	16	1	4 MW 4	1	707 S	16	F	4	Y	5/8"	N		2		
3																								3	
4																									4
5																									5
6																									6

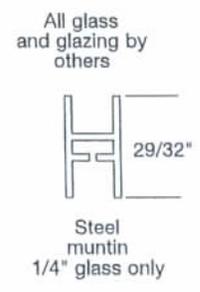
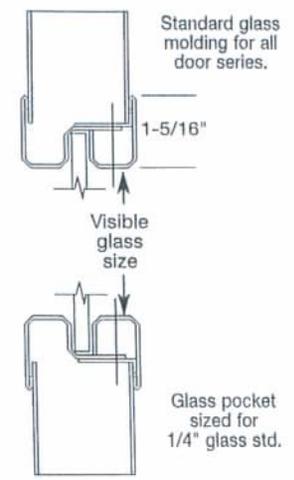
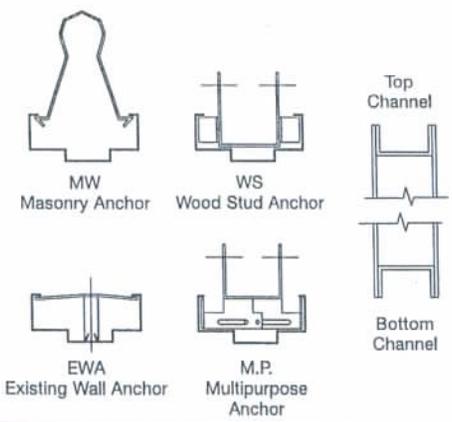
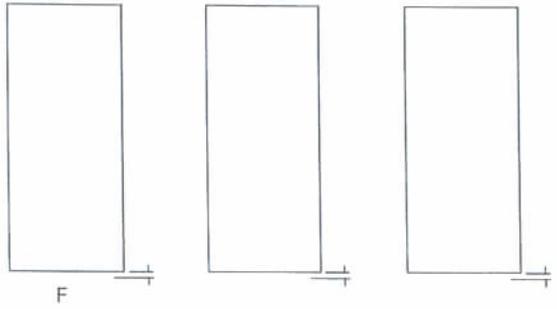
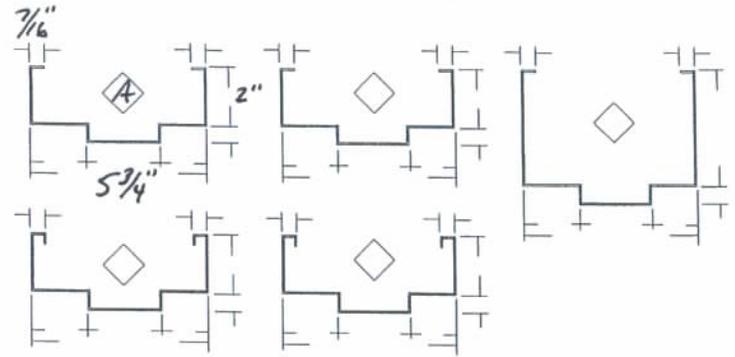
DOORS - POLYURETHANE
* INSULATED *

GALV.-ALG
GALV.-ALG



Elev. No. 1

Elev. No. _____



PROJECT *W.W.T.P.* LOCATION *NEWATCHEE, WA*

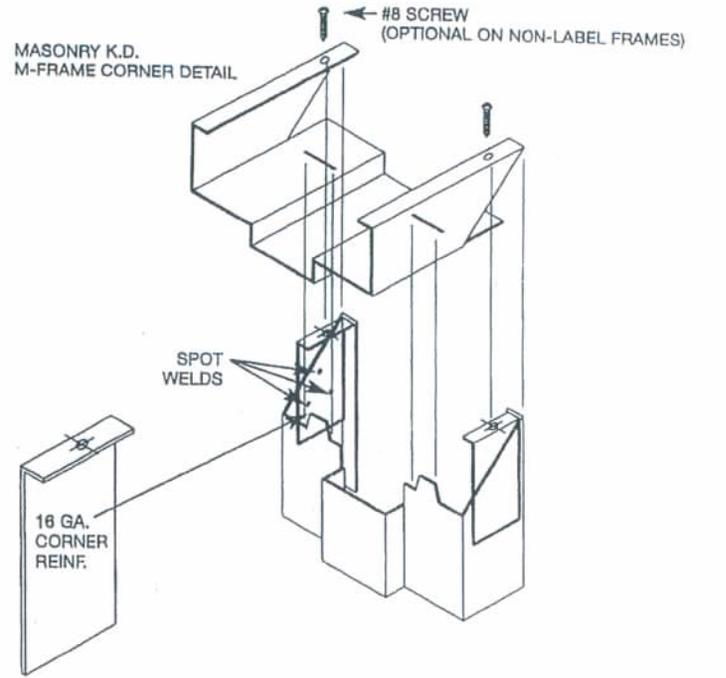
SHEET NO. 4 OF 6

M SERIES FLUSH FRAMES

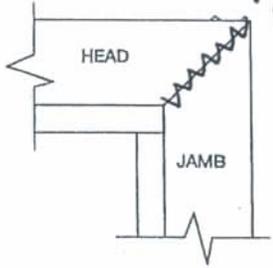
Specifications

Frames shall be M series as manufactured by CURRIES of Mason City, Iowa. Frames are to be fabricated of either cold-rolled or galvanized steel (as specified) of either 18, 16, or 14 gauge. Joints are to be die-mitered with integral tabs for reinforcement and interlocking of the jambs to the head (KD). 12 gauge frames are saw miter or saw butt end corner construction. Frames shall be knock-down or set-up and welded. Frames shall be thoroughly cleaned and receive an iron phosphate treatment prior to receiving one coat of baked on prime paint. Frames are to be reinforced only for surface mounted hardware, with drilling and tapping to be done in the field by others. Metal plaster guards are to be provided for all mortise cutouts. Minimum requirements for hardware reinforcements are to be as follows: Hinge Reinforcing - 7 gauge x 1-5/8" (41) x 10" (245), Lock Strike Reinforcing - 14 gauge conforming to template requirements and closer reinforcing - 12 gauge.

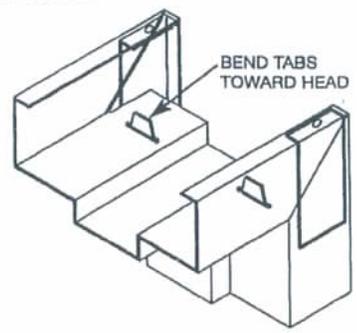
MASONRY K.D.
M-FRAME CORNER DETAIL



*AG0 GALV.
WELED &
GROUND SMOOTH*

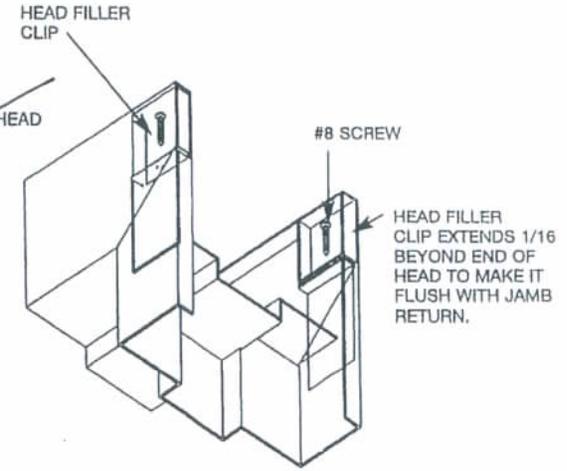


2" FACE HEAD CORNER ASSEMBLY



HEAD FILLER CLIP

4" FACE HEAD



JOB NO.	PROJECT <i>W.W.T.P.</i>	LOCATION <i>WENATCHEE, WA</i>	SHEET NO. <i>5</i> OF <i>6</i>
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707 SERIES

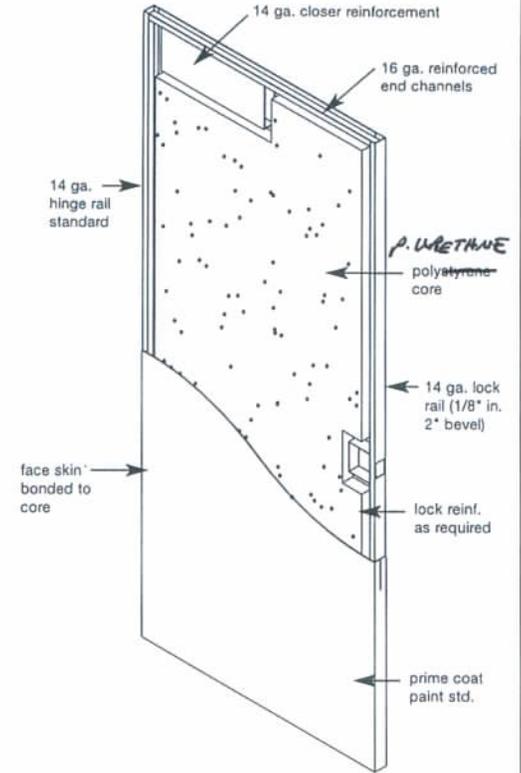
Specifications

Doors shall be 707 type as manufactured by CURRIES, Mason City, Iowa. Doors are to be manufactured of the finest quality 14, 16, 18, 20 (specify gauge) cold rolled stretcher leveled steel or galvanized steel (specify). All doors shall be full flush construction and either 1-3/4" (44) or 1-3/8" (35) thick. Doors shall be reinforced, stiffened, insulated, and sound deadened with a solid polystyrene foam board permanently bonded to the inside of each face skin. The lock and hinge edge of each door shall be welded with a centered hairline seam the full height of the door (707S) OR both the lock and hinge edge of each door shall be welded, filled and ground smooth (seamless) the full height of the door (707N) OR the lock and hinge edge of each door may have the center seam continuously wire welded the full height of the door, filled and ground smooth (707T). The lock edge shall be reinforced full height by a 14 gauge continuous one piece channel x extruded templating. The hinge edge shall be reinforced full height by a 14 gauge continuous one piece channel, formed and tapped for hinges. Top and bottom of the door shall be closed with 16 gauge channels. Doors shall have beveled 1/8" (3) in 2" (51) lock edge and square hinge edge. Doors shall be thoroughly cleaned and receive an iron phosphate treatment prior to receiving one coat of prime paint. Minimum hardware reinforcement shall consist of the following: Closers - Overhead Holders - Rim Panics, 14 gauge channels; Butts and Locks as previously specified herein. Floor Closers and Pivots - 7 gauge x template requirements.

WELDED FLUSH TOP



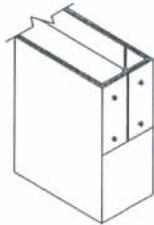
NOTE:
#4 stainless steel can be substituted into this specification with 16 ga. faces.



ALG GALV.



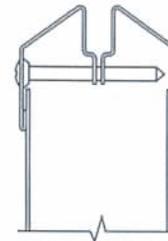
707S
Exposed hairline seam on center of door edge



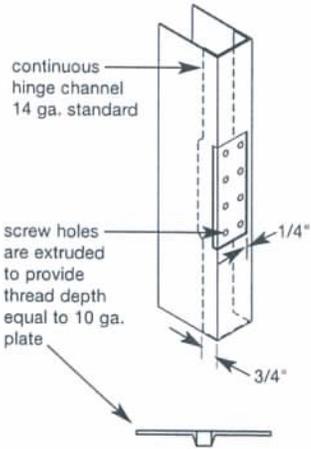
707N
Seam welded, filled and ground smooth.



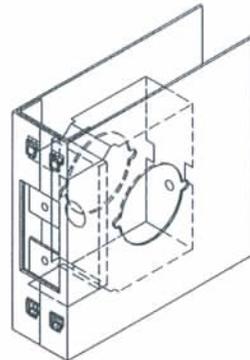
707T
Seam welded, full length and ground smooth.



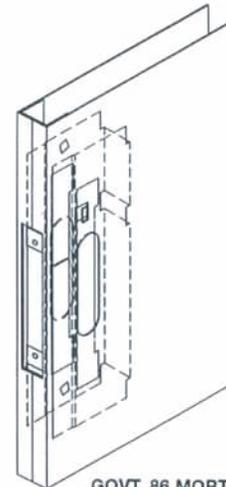
STANDARD GLASS MOLDING



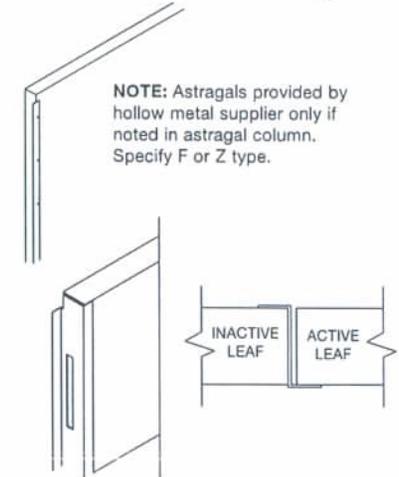
707 SERIES HINGE CHANNEL REINFORCING



GOVT. 161 CYLINDRICAL LOCK REINFORCEMENT



GOVT. 86 MORTISE LOCK REINFORCEMENT



NOTE: Astragals provided by hollow metal supplier only if noted in astragal column. Specify F or Z type.

JOB NO.

PROJECT *W.W.T.P.*

LOCATION *WENATCHEE, WA*

SHEET NO. *6* OF *6*

BUILDERS HARDWARE

December 30, 2011

*A SCHEDULE OF BUILDERS HARDWARE
FOR:
Wastewater Treatment Plant Improvements
City of Wenatchee, WA*

*ARCHITECT:
HDR Engineering*

*CONTRACTOR:
Apollo, Inc*

*SUPPLIER:
AM HARDWARE CO.*

*PREPARED BY:
Mike Davis*

As required by owner after approval of hardware schedule.

MANUFACTURERS LEGEND

<i>Hinges</i>	<i>Stanley</i>
<i>Exit Devices</i>	<i>Precision (div. of Stanley)</i>
<i>Cylinders</i>	<i>BEST (div. of Stanley)</i>
<i>Door Closers</i>	<i>Norton</i>
<i>Kickplate</i>	<i>Trimco</i>

HARDWARE GROUP #1

1 Single Door #D101A	Exterior from Screenings Room 101	LHR	60min
1 Single Door #D102A	Exterior from Electrical Room 102	LHR	

3'0" x 7'10" x 1 3/4" HMD/HMF

Total

(8)	4ea	Hinges	FBB199-4 1/2 x 4 1/2-NRP	630
(1)	1ea	Exit Device	2308x4908A @ Door D102A	630
(1)	1ea	Exit Device	FL2308x4908A @ Door D101A	630
(2)	1ea	Mortise Cylinder	1E74	626
(2)	1ea	Closer	P7500SS	689
(2)	1ea	Kick Plate	K0050-8"x34"	630

*Note hardware scheduled as specified. Smoke Seal may be required at Door D101A for fire rating.

END OF SCHEDULE

Heavy Weight Ball Bearing

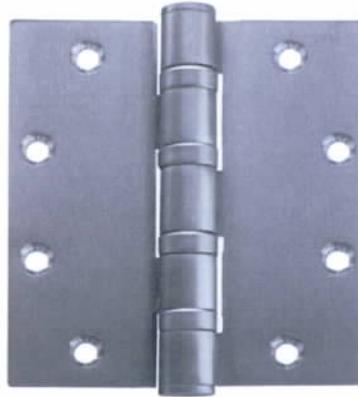
FBB168 – (ANSI A8111) Steel – polished and plated or phosphated and prime coated for painting

FBB199 – (ANSI A2111) Brass or bronze – polished and plated or painted

FBB199 (32) – (ANSI A5111) Stainless steel – highly polished

→ **FBB199 (32D)** – (ANSI A5111) Stainless steel – satin finish

- For use on heavy doors or doors where high frequency is expected such as entrance doors to office buildings, stores, public buildings and corridor entrance doors to offices
- All hinges have template screw hole location for use on either wood or hollow metal doors and frames
- Equipped with four Stanley permanently lubricated non-detachable ball bearings
- Pins in non-ferrous hinges are stainless steel
- Hole in bottom tip for easy pin removal
- Reversible flush tips and pins
- Hinges can be furnished as follows:
 - with raised barrel (RB)
 - with electric wires and/or switches (CE and/or CS)
 - with hospital tips (HT)
 - with decorative tips
 - with security studs
 - with non-removable pins (NRP)



Size Open		Gauge of Metal		Flat Head Screws Per Piece		Quantity Per Box	Quantity Per Case	Case Weight			
Inches	(mm)	Inches	(mm)	Machine	Wood			Bronze		Steel	
							Lbs.	(Kg)	Lbs.	(Kg)	
→ 4 1/2 x 4 1/2	(114 x 114)	.180	(4.6)	8 - 12-24 x 1/2	8 - 12 x 1 1/4	3 EA.	30 EA.	45	(21)	42	(19)
5 x 4 1/2	(127 x 114)	.190	(4.8)	8 - 12-24 x 1/2	8 - 12 x 1 1/2	3 EA.	24 EA.	46	(21)	40	(18)
5 x 5	(127 x 127)	.190	(4.8)	8 - 12-24 x 1/2	8 - 12 x 1 1/2	3 EA.	24 EA.	50	(23)	46	(21)
6 x 4 1/2	(152 x 114)	.203	(5.2)	10 - 1/4-20 x 1/2	10 - 14 x 1 1/2	3 EA.	24 EA.	63	(29)	53	(24)
6 x 5	(152 x 127)	.203	(5.2)	10 - 1/4-20 x 1/2	10 - 14 x 1 1/2	3 EA.	24 EA.	65	(30)	55	(25)
6 x 6	(152 x 152)	.203	(5.2)	10 - 1/4-20 x 1/2	10 - 14 x 1 1/2	3 EA.	24 EA.	76	(35)	61	(28)
8 x 6*	(203 x 152)	.203	(5.2)	16 - 1/4-20 x 1/2	16 - 14 x 1 1/2	3 EA.	12 EA.	57	(26)	51	(23)
8 x 8*	(203 x 203)	.203	(5.2)	16 - 1/4-20 x 1/2	16 - 14 x 1 1/2	3 EA.	12 EA.	68	(31)	61	(28)

*Available in Steel only

Consult factory for other sizes not listed

STANLEY[®]

Security Solutions



PRECISION HARDWARE

EXIT DEVICES

APEX 2000 SERIES

STANLEY

phi

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Introduction

The Apex 2000 Series Touchbar Style Exit Device is highly regarded by architects and end-users alike. Many of the nation's largest healthcare and educational facilities prefer the Apex for it's aesthetic design and efficient engineering. All Apex 2000 Series Exit Devices are UL listed for panic and fire hardware and are certified to ANSI A156.3 Grade 1. Several models are also certified for hurricane resistant applications.

A complete offering of mechanical and electrical options provide a wide range of exit device security solutions. However, the traditional core strengths of the product can't be overstated. Simple operation with few moving parts, manufactured with true ANSI/BHMA architectural finishes. The chassis is constructed from investment cast steel and the universal mounting holes provide an easier retrofit installation.

Quiet Operation

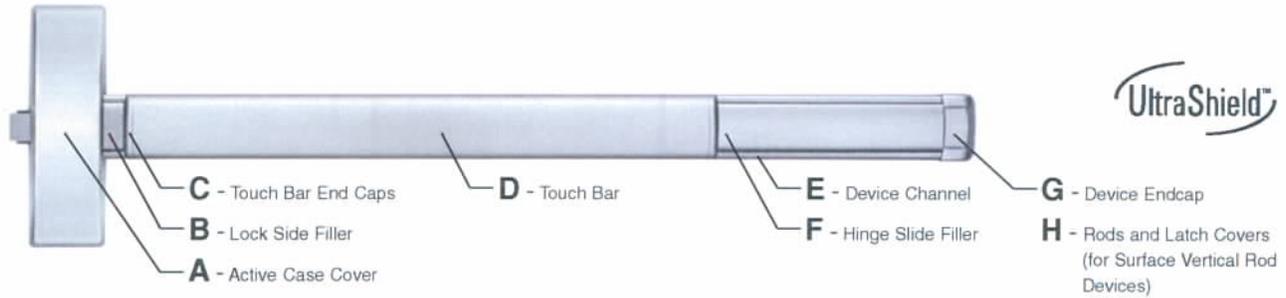
Sound Dampeners reduce the noise associated with Exit Device operation on the depression and return stroke of the Touchpad.

Touchbar Clearance

The Apex Wide Stile Series Exit Devices accommodate doors with vision lites or glass windows where the vision lite frames or moldings project up to 1/4 beyond the face of the door. The Active Case and End Cap Mounting Bracket are mounted on the face of the door without shims or without cutting the glass molding. These devices have a 1/4" gap between the face of the door and the Touchbar Assembly. This gap allows proper functioning of the devices even on doors which are not perfectly flat. Since the Active Case is mounted directly on the face of the door, it accommodates standard lengths of through bolting screws, thumbpieces, knob & lever Trim fingers, and cylinder tail pieces.



GENERAL INFORMATION



Base Materials

Finishes	ANSI/BHMA	US	Aluminum	Brass	Bronze	Stainless Steel
Polished Brass, Clear Coated	605	US3	—	A,B,C,D,E,F,G,H	—	—
Satin Brass, Clear Coated	606	US4	—	A,B,C,D,E,F,G,H	—	—
Satin Bronze, Clear Coated	612	US10	—	—	A,B,C,D,E,F,G,H	—
Dark Oxidized Satin Bronze	613	US10B	—	—	A,B,C,D,E,F,G,H	—
Satin Aluminum, Clear Anodized	628	US28	A,E,F	—	—	B,C,D,G,H
→ Satin Stainless Steel	630	US32D	—	—	—	A,B,C,D,E,F,G,H

Finishes

ANSI/BHMA	US	Description
605	US3	Polished Brass, Clear Coated
606	US4	Satin Brass, Clear Coated
612	US10	Satin Bronze, Clear Coated
613	US10B	Dark Oxidized Satin Bronze
625	US26	Polished Chromium Plated
628	US28	Satin Aluminum, Clear Anodized
→ 630	US32D	Satin Stainless Steel

Antimicrobial finishes

626AM	Satin Chrome Plated with UltraShield™ Antimicrobial coating
630AM	Satin Stainless Steel with UltraShield™ Antimicrobial coating

Mullion finishes

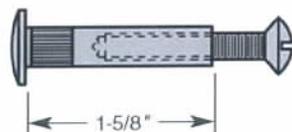
600	USP	Primed for Paint
689		Aluminum Paint
695		Dark Bronze Paint

Fasteners

Furnished standard with machine screws and full thread wood/sheet metal screws. Specify Sex Nuts and Bolts (SNB) where recommended or required by the door manufacturer.

Sex Nuts & Bolts (not furnished std.)

Sex Nuts & Bolts are furnished with No. 10-24 x 1" OHMS (1-1/2" long screws required for guides).



Security Screws

All exposed screws will be a Torx pin in tamper resistant type, machine screws only. Specify (SEC) Security Screws. Cover Screws use a T20 driver, End Cap Screws use a T25 driver.



Door Sizes

Stock sizes for door widths and heights are listed below. If required, cut to size in the field.

Door Widths	Stock Sizes
2'-0" to 2'-6"	2'-6"*
2'-7" to 3'-0"	3'-0"
3'-1" to 4'-0"	4'-0"

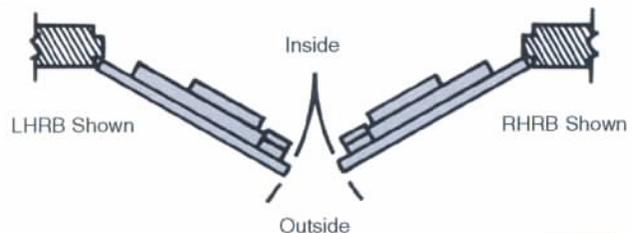
* Not available for Narrow Stile Devices.

Vertical Rod Devices

Device	Door Heights	Stock Sizes
Surface Vertical Rod Device*	up to 7'-0"	7'-0"
	7'-1" to 8'-0"	8'-0"
	8'-1" to 10'-0"	10'-0"
Concealed Vertical Rod Device	6'-8" to 8'-0"	8'-0"
	8'-1" to 10'-0"	10'-0"

* Surface Vertical Rods are furnished of the same material as the device. Stainless steel rods are furnished for 625, 628 and 630 devices.

Hand of Doors



MORTISE EXIT DEVICES



Apex 2300 Series - Handed
Apex FL2300 Fire Exit Series - Handed

DOORS - For all types of single and double door applications. Available for 1-3/4" to 2-1/4" thick, up to 4-0" wide opening. For thicker door, consult factory. Furnished standard for 1-3/4" thick, 3'-0" wide opening.

DEVICE - Covers ANSI A115.1 (Type 86) Mortise Lock preparation.

DOUBLE CYLINDER - Handed, "10" Function available. Requires one rim type cylinder and one 1-1/4" long mortise type cylinder, not furnished standard. See page 9 and 19.

BASE MATERIAL - The Cover, Touchbar, Device Channel, Lock/Hinge Side Filler and End Cap are furnished of heavy wrought Brass, Bronze or Stainless Steel. US28 Devices are furnished with Aluminum, Brass, Bronze and Stainless Steel components. See "Finish & Base Material" chart on page 3.

CHASSIS - Investment Cast Steel, Zinc Dichromated.

DOGGING - 1/4" turn hex key dogging standard. NOT available on Fire Exit Hardware.

TOUCHBAR HEIGHT - 39-15/16" from floor standard.

HANDED - Specify hand when ordering as RHRB or LHRB. Touchbar Assembly, Mortise Lock and Trim may be reversed in the field. For reversibility of complete device, mortise strike is required for the other hand.

UL LISTED - Panic and Fire Exit Hardware. For FIRE EXIT HARDWARE Ratings see page 33. Conforms to UL10C and UBC 7-2.

ANSI/BHMA - Devices are BHMA certified for ANSI 156.3, Grade 1.

FINISHES - 605, 606, 612, 613, 625, 628, 630. For finish description see page 3.

STILE WIDTH - See Stile Information on page 36.

CYLINDERS - Mortise type, not furnished standard. For cylinder details see page 19.

RETROFIT APPLICATIONS - The 2300 and FL2300 Series Devices are designed to retrofit into other manufacturers' mounting hole locations. 1700 Series Pull Trim and 4900 Series Lever Trim may also be factory set for these applications by specifying prefix "R" (e.g. 2308 R4908A).

Consult factory for details.

Exit Series - Handed

Fits doors machined per ANSI A115.1 (Type 86) Mortise Lock preparation.

BACKSET - 2-3/4".

CASE - Wrought Steel, Zinc Dichromate finish.

LOCK FRONT PLATE - 8" x 1-1/4" Bronze, Brass or Stainless Steel, pivots for beveled or square edged doors.

LATCHBOLT - Stainless Steel, Deadlocking, 3/4" throw, anti-friction.

GUARDBOLT - Stainless Steel, sliding type.

FINISHES - LOCK FRONT PLATE and STRIKE
 605, 606, 612, 613, 625, 630. 630 furnished for 626 and 628 locks. For finish description see page 3.

STRIKES - No. S982, handed curved lip strike furnished standard. For optional strikes see page 34.

LOCK NO.

- M303: 01, 02 & 03 functions.
- M308: 05, 08, 14 & 15 functions.
- M310: 10 function.

NOTE - For Mortise Lock dimensions see page 28. For Mortise Lock with Electrical options see page 28.

DEVICE OPTIONS

Prefix	Description	Page
DE	Delayed Egress	24
E	Electric Lock/Unlock.....	28
ELR	Electric Latch Retraction	21
FL	Fire Exit Hardware	8
HC	Windstorm and Hurricane Code Device	20
LS	Latchbolt Monitoring, "03" Function	28, 29
LS	Latchbolt and Trim locked or unlocked monitoring, "08" Function.....	28, 29
TDS	Touchbar Monitoring Double Switch	29
TS	Touchbar Monitoring Switch.....	29

To specify add Prefix to Device No. (e.g. TS2303)

Prefix	Description	Page
WTDS	Weatherized Touchbar Mon. Dbl. Switch	29
WTS	Weatherized Touchbar Monitoring Switch	29
Suffix	Description	Page
ALK	Exit Alarm: battery operated.....	27
ALW	Exit Alarm: remote power	27
BRL	Braille Touchbar	35
CD	Cylinder Dogging	19
DS	Door Position Monitoring Switch	29
LD	Less Dogging	19
SEC	Security Screws	3
SNB	Sex Nut and Bolt	3
WALW	Weatherized Exit Alarm: remote power	27

To specify add Suffix to Device No. (e.g. 2303CD)



1700A
"A" Grip



1700B
"B" Grip



1700C
"C" Grip



2000C
"C" Grip



1. All Trims are furnished with wrought plates and extruded or cast solid grips.
2. Specify Grip Design (A,B,C) ("A" Grip furnished standard for 1700 Series Trim, "C" Grip furnished standard for 2000 Series Trim)
3. 630 Trim is furnished for 628 Devices.

NOTE: B & C grip pull handles are not available in the 05 and 15 functions.

Retrofit Applications

The R1700 Series Trim is designed to retrofit into other manufacturers' installations when used with the wide stile Apex Series Devices.

Consult factory for details.

4900A
"A" Lever



4900B
"B" Lever



4900C
"C" Lever



4900D
"D" Lever



4900K
"K" Knob



V4908A

Vandal Resistant Trim

A heavy duty lever trim designed to withstand abuse and vandalism. Composed of extra strength shock-absorbing "overload" springs and heavy duty investment cast stainless steel internal components. Lever returns to the "home" position eliminating the need to reset the lever.

Retrofit Applications

The R4900 Series Trim is designed to retrofit into other manufacturers' installations when used with the wide stile Apex Series

Devices. Consult factory for details.

1. All the escutcheons and levers are castings or forgings.
2. Specify Lever or Knob Design (A,B,C,D,K) and Handing ("A" Lever x RHRB furnished standard)
3. 626 Trim furnished for 628 and 630 Devices.
4. All Lever Trims, M4908K and M4914K are Handed, Specify Hand.
 - For Trim dimensions see page 38.
 - Trims are BHMA certified for ANSI 156.3, Grade 1.
 - Trims are through bolted and will cover 161 and 86 cutouts (except for 2000C Trim).
 - Cylinder 1-1/4" long Mortise Type, not furnished standard. For cylinder details see page 19.

ANSI Function	01 Exit Only (cover plate)	02 Dummy Trim	03 Key Retracts Latchbolt	05 Key Locks/Unlocks Thumbpiece	08 Key Locks/Unlocks Lever/Knob	10* Double Cylinder Inside Key Locks/Unlocks Lever/Knob	14 No Cylinder Lever/Knob Always Active	15 No Cylinder Thumbpiece Always Active
Device Nos.	2301 FL2301	2302	2303** FL2303**	2305 FL2305	2308 FL2308	2310 FL2310	2314 FL2314	2315 FL2315
Trim Nos.	1701 R1701	1702A R1702A	1703A R1703A	M1705A RM1705A	M4908A VM4908A RM4908A VRM4908A	M4908A VM4908A RM4908A VRM4908A	M4914A RM4914A	M1715A RM1715A
	2001 4901 R4901	2002C 4902A R4902A	2003C 4903A R4903A					

Device with Trim:

Device No. _____

Add Prefix for options, see page 8.

Add Suffix: for options, see page 8.

Add Prefix: "V" Vandal Resistant Lever Trim

"M" Mortise Trim (per specific function, see above)

"R" Retrofit Trim

Add Suffix: Lever or Knob Design (A,B,C,D,K)

Grip Design (A,B,C)

Add Suffix: "KNR" Knurled Lever or Grip (Abrasive Strip)

TS2308CD x V4908AKNR x RHRB x 630 x S982 x 3'-0" x 7'-0" x 1-3/4"

Device w/options

Trim No.

Hand

Finish

Strike

Door Size

Device Only: Device no., hand, finish, strike, and door size including thickness:

(e.g. TS2108CD x RHRB x 630 x S982 x 3'-0" x 7'-0" x 1-3/4")

Trim Only: Trim no., hand, finish, strike, and door size including thickness: (e.g. VM4908A x RHRB x 626 x 1-3/4")

STANLEY
Security Solutions



≡ SERIES

MORTISE AND RIM CYLINDERS



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1E SERIES – FEATURES

1E Mortise Cylinder

Standard mortise applications require use of BEST's 1E series cylinders with standard 1E-C4 cam. BEST cylinders may be altered to function with other manufacturers' locks by use of different cams (see page 8) and different cylinder rings (see page 9). Special cylinder variations are available for most applications (see pages 4 & 5). BEST cylinders are machined from brass or bronze bar stock and are available in a variety of finishes. Additional security is provided by a set screw that mounts diagonally in the cylinder wall and when tightened, holds the cylinder securely in the housing. BEST mortise cylinders feature the BEST interchangeable core and may be master-keyed into any existing BEST system. Contact your local Stanley Security Solutions sales office for information on special cylinder applications not listed in this catalog.



1E Rim Cylinder

Standard rim cylinder applications require the use of BEST's 1E rim cylinder series. BEST rim cylinders are interchangeable with other manufacturers' rim cylinders. BEST rim cylinders are machined from solid bar stock and are available in a variety of finishes. The standard package for the BEST rim cylinder includes cylinder, RP3 ring package, 1E-S2 spindle, clamp plate and clamp plate screws. BEST rim cylinders feature the BEST interchangeable core and may be master-keyed into any existing Best system.



Specifications

Cylinder Nomenclature	Dimension "A"	Door Thickness
1E-64	1 1/8"	1 5/8" to 2 1/4"
1E-74	1 1/4"	1 7/8" to 2 1/2"

Cylinder diameter– 1 5/32"

To order: example: 1E74-C4-RP3-626

Products covered by on or more of the following patents: 5,590,555 5,794,472



Specifications

Cylinder Nomenclature	Dimension "A"	Door Thickness
1E-62	1 3/16"	1" to 2 3/4"
1E-72	1 11/32"	1 1/4" to 3"

Cylinder diameter– 1 5/32"

To order: example: 1E72-S2-RP3-626

HOW TO ORDER

STEP A	B	C	D	E	F	G	
1E	7	4		C4	RP3	626	**
Cylinder Diameter	Core Housing	Function Code Length	Standard Mortise Code	Cam or Spindle	Rings	Standard Finishes	
1E– 1 5/32"	0– dummy	2– rim	Blank– standard	C4– standard cam	RP1– tapered cyl.	605 606	
3E– 1 1/2"	6– 6 pin	4– mortise*	22– 1 3/8"	C181– Adams Rite	RP2– 6 pin mortise	612 613	
5E– see pages 10,11	7– 7 pin housing accepts all Best cores	6– tapered mortise	24– 1 1/2" up to 96– 6"	MS cam	RP3– std. package	622 625	
8E– see page 7		see pages 4-5 for special cylinders	(see page 4-5)	S2– standard spindle	RP4– 3E mortise	626 690	
				(For special cams see page 8)	(For special rings see page 9)	Specify hand if required	

* For additional special mortise cylinders, see pages 4 and 5.
 ** Must specify keymark and number of keys or designate L/C for less core.



Norton®

ASSA ABLOY

7500/7700 Series Institutional Door Closers



ASSA ABLOY, the global leader
in door opening solutions

OVERVIEW

Features

- Non-handed
- Rack-and-pinion design
- Cast aluminum body
- 2-3/16" (56mm) projection
- 1-1/2" (38mm) diameter piston
- 5/8" (16mm) diameter pinion journals
- Spring Force Indicator (7500 Series only)
- Staked valves
- Standard, separate and independent, latch, sweep and backcheck intensity valves
- Backcheck positioning valve
- NorGlide® fluid
- Molded plastic cover
- All standard arm applications allow doors to swing 180°, conditions permitting
- Self-drilling screws
- Full-size template
- 10-year limited warranty
- Heavy-duty arms: Regular Rigid, Parallel Rigid, CloserPlus®, CloserPlus Spring™ and Unitrol®
- Slide Tracks: push or pull side mounting

Features	7500	7700
Adjustable spring sizes 1 through 6 (ADA Compliant)	X	
Sized springs 2,3,4,5,6 with 50% power adjustment		X
Tri-Style® packaging; tri-packed for regular, top jamb or parallel arm mounting	X	
Bi-packed for regular or top jamb mounting		X

Compliance Standards

- ANSI/BHMA A156.4, Grade 1 certified
- UL listed
- UL 10C compliant for positive pressure
- ADA Compliant (7500)
- New York City, MEA 41-60-5M



Optional Features

- Corrosion resistant model (non-hold open only). Specify 7500SS
- Metal cover. Specify M suffix
- Lead lined metal cover. Specify MLL suffix
- Enhanced backcheck. Specify EBC suffix
- Delayed action with pressure relief valve
- Retrofit plates

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7500/7700 Series Door Closers

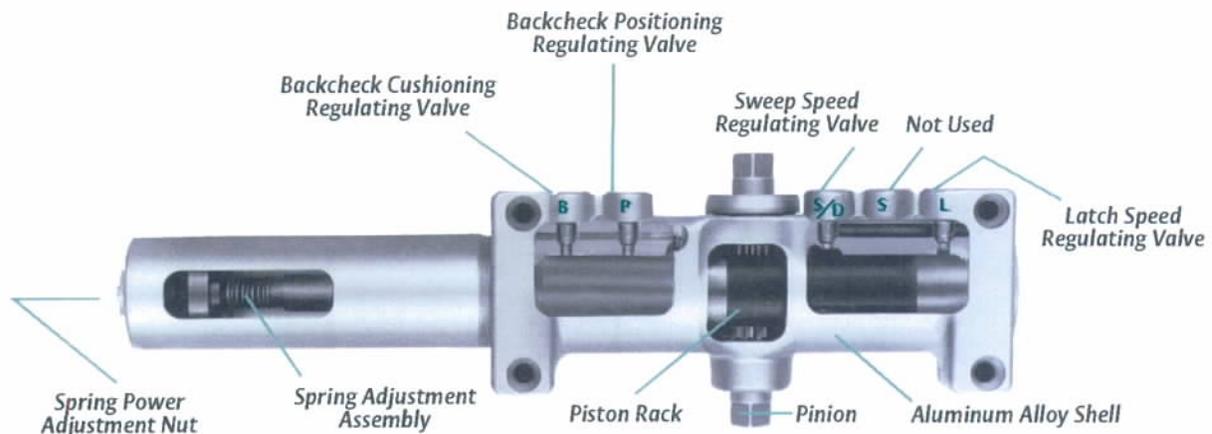
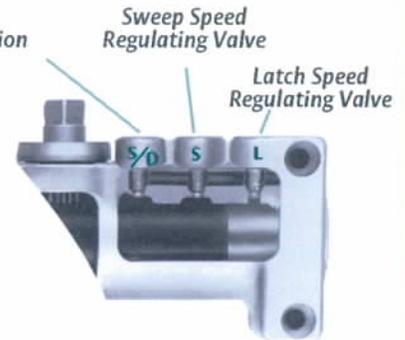


OVERVIEW

Cutaway View

Optional Delayed Action Valving

Optional: "DA" Delayed Action Closing Regulating Valve



COMPLIANCE STANDARDS

The series 7500 door closers are designed to comply with requirements of the Americans with Disabilities Act (A.D.A.) and ANSI standard A117.1. All series 7500/7700 door closers are ANSI/BHMA A156.4 Grade 1 certified. All Norton series 7500/7700 closers with non-hold open arms are listed by Underwriters' Laboratories for labeled fire doors. This includes compliance to UL10C for 3-hour assemblies. The product is manufactured in an ISO 9001 facility. These closers are also listed by the New York City Materials and Equipment Acceptance Division.

Windstorm

Norton 7500 door closers are UL certified for inswing and outswing single and pair (up to 8'0" x 8'0") door assemblies to ICC 500 for Storm Shelters. Additionally, the 7500 meets FEMA 361 guidelines.

7500 is part of a complete ASSA ABLOY tornado and hurricane shelter solutions utilizing Ceco StormPro 361, Curries StormPro 361, Fleming F5 doors and frames and McKinney SP hinges.

CAUTION: Door Closers for Low Opening Force Applications:

Door closers installed in openings required to meet the requirements of the Americans With Disabilities Act or ANSI Standard A117.1, when adjusted to meet those requirements, may not provide adequate closing power to dependably close and latch the door.

HOW TO ORDER

NOTE: For optimum protection of door and frame assemblies, always use auxiliary wall, floor, or overhead door stop.

- No Prefix** } 7700 series designates bi-packed (regular & top jamb). (Top jamb up to 3" reveal. For frame face less than 3", order 7786 backplate.)
 } 7500 series designates Tri-Style® packaging (tri-packed).
- J** - Top jamb installation. Supplied with 7786 backplate 2-3/4" - 7" reveal, 150° swing.
 - JL** - Top jamb Installation. Supplied with 7786 back plate 2-3/4" - 7" reveal, 180° swing.
 - P** - 7700 parallel arm only.
 - - 7500 parallel arm units with specialty brackets.
 - 7580 low-profile closer.
 - 7500SS corrosion-resistant closer.
 - PR** - Parallel rigid arm (parallel arm only); specify hand for hold open functions.
 - PRO** - Parallel rigid arm with offset soffit plate (parallel arm only); specify hand for hold open applications.
 - PS** - 7500ST / 7540ST / 7700ST / 7740ST for push side mounting only.
 - R** - Rigid heavy-duty regular arm. (Torx® screws not included) (N/A in stainless steel)
 - CLP** - CloserPlus® arm (parallel arm only).
 - CPS** - CloserPlusSpring™ arm (parallel arm only).
 - UNI** - Unicontrol® arm (parallel arm only - specify **door width**).
Frame reveals 1-7/8" to 4-5/8" (48mm-117mm) standard.
 - UNIJ** - Unicontrol arm (top jamb only - specify **frame reveal**). 7-3/8" (187mm) maximum.

JL
PREFIXES

75
FIRST & SECOND DIGIT
Defines closer series

0
THIRD DIGIT
Specifies some options

0
FORTH DIGIT
Closer power sizing

H
SUFFIXES

77 = 7700 sized closer
75 = 7500 multi-sized closer

- 0** - Specifies standard arm.
- 3** - Indicates top jamb (J prefix) for frame reveal 0 to 3" (0-76mm). 7786 back plate included.
- 4** - Specifies shallow 11/16" (17mm) depth slide track for closer with "ST" suffix.
- 7** - Specifies closer having a security arm, security cover and Torx® security screws (specify hand).
- 8** - Specifies low-profile arm (use prefix "P" parallel arm or "J" for top jamb). Non-hold open only.

Note:

- Door closer warranty becomes void if it is installed on the exterior side of a door in the exterior wall of a building
- It is strongly recommended, and it is required on fire door assemblies, that doors having a door closer be hung on ball-bearing or anti-friction hinges or pivots
- Failure to use the correct type and size fasteners may void factory warranty
- Fasteners for fire/smoke door assemblies must conform to NFPA 80. In some applications additional fasteners may be mandated by NFPA 80 that are not shipped with Norton's standard product, such as sleeve nuts or through-bolts and grommet nuts
- Sizing charts provided on pages 13-25 are based on 1-3/4" (44mm) x 7' (2.13m) standard weight doors swinging to 110 degrees. Other conditions (such as door height or weight; or wind/draft conditions) may require a larger size closer.

Sizing charts provided on pages 13-25 are based on 1-3/4" (44mm) x 7'0" (2.13m) standard weight doors swinging to 110°. Other conditions (such as door height or weight, or wind/draft conditions) may require a larger size closer.

0 - Series 7500 power range 1 through 6

- Series 7700**
- "2" - ANSI size 2
 - "3" - ANSI size 3
 - "4" - ANSI size 4
 - "5" - ANSI size 5
 - "6" - ANSI size 6

- None** - Non-hold open arm function
- H** - Hold open arm function (specify hand when "PR" prefix is ordered)
- M** - Metal cover (cover is handed for top jamb applications)
- MLL** - Lead lined metal cover
- DA** - Optional delayed action feature
- EBC** - Optional enhanced backcheck
- HOSP** - 7703 or 7704 only. Hospital hold open (specify hand)
- COUP** - 7702 or 7703 only. Coupon both hold open (specify hand)
- TEL** - 7702 only - Telephone booth function (non-handed)
- ST** - Slide track - single lever arm (auxiliary stop recommended). For push side - prefix PS
- ST-180** - Slide track - single lever arm, pull side track without buffer assembly for maximum door swing (auxiliary stop required)
- ST-DE** - Slide track - pull side double egress
- SS** - Series 7500 only. Corrosion-resistant closer. Available with non-hold open adjustable arm only; for regular arm, top jamb "J" prefix or parallel arm "P" prefix
- STP** - 7706 and 7706EP door closers only, slide track for pocket door application
- EP** - Extra power door closer (for 7706 closer only)
- T** - Thumbturn hold open on CloserPlus® (CLP) or CloserPlusSpring™ (CPS) arm
- G** - ABS cover

7500/7700 Series Door Closers



FASTENERS/ FINISHES

Fasteners

Type	Description	Arm								
		RA	PA	TJ	Low Profile	PR	CLP/CPS	UNI	UNI-J	Slide Track
DOOR										
SDST	Self Drilling Self Tapping	S	S	S	S	S	S	S	S	S
MS	Machine Screw	S	S	S	S	S	S	S	S	S
SN	Sleeve Nut	O	O	O	O	S	S	S	S	S
TBGN	Thru Bolts & Grommet Nuts	O	O	O	O	O	O	O	O	O
SMS	Sheet Metal Screws	O	O	O	O	O	O	O	O	O
TORX®	Torx Drive Security Screw	O	O	O	O	O	O	O	O	O
FRAME										
SDST	Self Drilling Self Tapping	S	S	S	S	S	S	S	S	S
MS	Machine Screw	S	S	S	S	S	S	S	S	S
SMS	Sheet Metal Screws	O	O	O	O	O	O	O	O	O
TORX	Torx Drive Security Screw	O	O	O	O	O	O	O	O	O

S = standard; O = optional

SN are for use on unreinforced hollow metal doors or to prevent any hollow metal door from collapse/dimpling. They can also be used for thru bolting on wood doors. **SN** are supplied for 1-3/4" (44mm) thick doors unless specified for 2-1/4" (57mm) thick doors.

TBGN are an alternative to **SN** for wood doors. **TBGN** are supplied standard for 1-3/4" (44mm) thick doors. They can be specified for 1-3/8" (35mm) thick doors.

SMS - when specified, closer will be packed with sheet metal screws for the door AND sheet metal screws plus machine screws for the frame.

TORX screws with security pin are standard with 7570/7770 Security Door Closers. *Torx* may be specified for all other series applications. *Torx* are only available with machine screw threads. Sheet metal screw threads are not available.

Finishes: Product will be painted with a combination of waterborne acrylic and polyester powder coat. Closers will withstand 100 hours of salt spray. ANSI requires 25 hours.

Sprayed Finishes	Specify BHMA Designation	Complements the following finishes	Old Designation
Aluminum	689	628, 625, 629, 630, 651, 652	AL
Statuary Bronze	690	640, 613	STAT
Dull Bronze	691	612, 637, 639	DB
Black	693	315	315
Medium Amber	694	312	312
Gold	696	605, 606, 632, 633	GB
Prime Coat*	600	—	SRI

*600 is a special rust-inhibiting prime coat. Closers can be ordered prime coat only (specify closer x 600). An additional charge applies if finish coat is required over prime coat (ex: 7500 x 600 x 690).

Plated Finishes	Specify BHMA Designation (Metal Covers Only)	Old Designation
Bright Brass	605E	US3
Satin Brass	606E	US4
Bright Bronze	611E	US9
Satin Bronze	612E	US10
Oxidized Oil Rubbed Bronze	613E	US10B
Bright Chrome	625E	US26
Satin Chrome	626E	US26D

Finishes other than those listed above may be available on special order. A sample will be required.

When a plated finish is ordered, arm and cover will be plated unless "cover only" is specified.

FEATURES

Aluminum Alloy Housing

Closer bodies are constructed of a special aluminum alloy, carefully selected to accommodate interactive steel components and operating conditions.

Rack & Pinion Operation

Provides a smooth constant control of the door through its full opening and closing cycle. 180° door swing can be achieved when door, frame, hardware and arm function do not interfere.

Non-handed

With few exceptions all series 7500 and 7700 door closers are non-handed and can be installed on either right or left hand swing doors. Pinion shaft extends vertically through the closer body in both directions. Some options, as noted on pages 6-8, will require that the hand of the closer be specified.

Sweep Speed Control Valve

Allows adjustment of door speed from the door's full open position down to approximately 10° from the closed position.

Latch Speed Control Valve

Allows adjustment of door speed from approximately 10° down to the door's fully closed position.

Tri-Style® Packing

7500 comes with screws, brackets and soffit plates to allow for regular, top jamb, and parallel arm installations.

Adjustable Backcheck Cushion Valve

Provides control of the door in the opening cycle, beginning at approximately 75° of door opening. It slows/cushions the door opening, when the door is forcibly opened beyond its pre-adjusted limits.

Adjustable Backcheck Position Valve

Allows the door opening position, where backcheck cushioning begins, to be adjusted to a greater door angle, up to a maximum of 20° farther (approximately 95°).

Standard Molded Cover

Molded of high-impact U.L. listed material and covers the entire closer body assembly. This cover is non-handed for all applications.

Warranty

These closers carry a limited ten-year warranty against defect, and life of the building on the aluminum housing.

Spring Force Indicator

This visual indicator enables the installer to quickly set and verify the spring size on the closer, eliminating the guesswork of setting the spring force. Standard on all 7500 Series door closers.



Closer Fluid

NorGlide® closer fluid is a specially formulated multi-viscosity hydraulic fluid that contains lubricity and anti-oxidation agents that provide optimum performance and efficiency. This fluid complements the interaction of the door closer's aluminum housing with its steel and brass components, while maintaining stable viscosity to allow the door closer to perform in temperatures ranging from extremely high to as low as -40° F.

Door Closer Power Options

Series 7700 Sized Door Closer

Available in five different power sizes (2, 3, 4, 5 or 6). Each power size is adjustable up to 50% stronger than the minimum closing force for that size, as outlined in ANSI/BHMA specification A156.4.

Series 7500 Multi-Sized Door Closer

Adjustable through the entire power range of door closer sizes 1 through 6, as outlined in ANSI/BHMA standard A156.4.

The series 7500 also conforms to the minimum opening force requirements of the Americans with Disabilities Act (A.D.A.) and ANSI/BHMA standard A117.1 for interior doors.

OPTIONAL FEATURES

Corrosion-Resistant Door Closer

The series 7500SS door closers with molded plastic cover are available for use where corrosive conditions exist. This series is provided with brass adjustment valves, a 440 grade stainless steel pinion shaft, an all-aluminum body and bronze closer arm bushings; all other components are of 302/303 grade stainless steel. Fasteners are 8-18 stainless steel. This product is available for standard regular arm, top jamb and parallel arm, non-hold open, applications only.

Optional Metal Cover

This steel cover is non-handed for regular and parallel arm applications, but is handed for top jamb applications. Cover is available in sprayed or architectural plated finishes.



Security Cover

Supplied standard with all series 7570/7770 door closers. This deep drawn steel cover is handed for all applications. The cover is fastened to the closer body at two points on top and to the door closer body stand-offs at two points on the bottom.

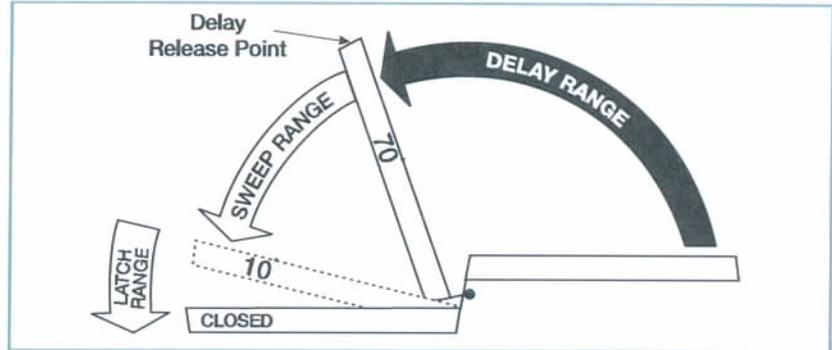
Optional ABS Cover

Consult factory for details

OPTIONAL FEATURES

Enhanced Backcheck

This feature provides adjustable backcheck intensity beginning at approximately 15 degrees of the door opening cycle. It is intended for use in situations where the standard backcheck beginning at approximately 75° of door opening allows too much unrestricted door travel to obtain control of the door without the fear of peripheral damage to the door closer, door, frame, hinges or pivots; or adjacent walls or structures. This feature is most frequently used in schools and detention facilities. Specify suffix EBC.



Adjustable Delayed Action Closing

An optional hydraulic feature that adds a third speed range to the closing cycle. This feature becomes effective when the door is opened and released at any point beyond 70°. The amount of time delay depends upon the combination of the angle of door release and valve adjustment. The valve can be adjusted with a 1/8" (3mm) hex key from no delay time up to maximum delay times of:

Door Opened and Released at	Approximate Time of Delay Cycle
180°	4-5 minutes
120°	2-3 minutes
90°	25-30 seconds

Pressure Relief Safety Valve

The delayed action hydraulic system contains a pressure relief valve. Any time the door is forced toward the closed direction while it is in the closing cycle, the valve will open and permit the door to close. This prevents damage to door, frame and closer.

accommodate the facility's staff with movement of food service carts, beds, and other wheeled traffic.

Use of delayed action closers on many doors throughout industrial and commercial buildings can also assist the flow of traffic. Locations where additional time to clear the opening is advantageous are doors between office and factory/warehouse facilities, doors to workshops or laboratories, to kitchen and food processing areas, etc.

Suggested Applications

Delayed Action closing allows slow-moving traffic to clear the opening before the door closer's normal closing cycle begins. This feature can be helpful in health care facilities such as hospitals and nursing homes. It provides sufficient time for persons on crutches or in wheelchairs to pass through a door without concern of it closing. At the same time, it can

OPTIONAL FEATURES ARMS

Non-Hold Open

Self-closes door every time door is opened. Auxiliary stop (by others) required except when using the CloserPlus®, CloserPlus Spring™ or Unitrol® arms.

Hold Open

Achieved by means of friction or ball and detent/roller. Friction hold open has a range of 90° to 180° using template location and mechanical adjustment. Ball and detent or roller hold open is effective in a range of 85° to 110°.

Hold open arm door closers are not permitted to be used on fire door assemblies.

Door Opening Degrees

Arm Function	Regular Arm, Top Jamb Parallel Arm	Parallel Rigid Arm	CloserPlus® Parallel Arm	CloserPlus Spring™ Parallel Arm	Unitrol® Parallel Arm	Unitrol Top Jamb	Low Profile Regular, Parallel	Slide Track
Non-Hold Open	✓	✓	85° to 110°	85° to 110°	85° to 110°	85° to 110°	✓	85° to 110°/180°
Hold Open	90° to 180°	85° to 180°	85° to 110°	85° to 110°	85° to 110°	85° to 110°	N/A	85° to 110°

✓=180° trim and template permitting

7500/7700 - 7

SPECIAL
FUNCTION DOOR
CLOSER

7700 Special Function Door Closers

Telephone Booth Operation

Closer holds the door to the telephone booth open at 5° from the closed position. This prevents the light switch from being activated and allows the booth to be ventilated. It also indicates to users that the booth is unoccupied. Available in size 2 only for regular arm or top jamb application only.

Coupon Booth Hold Open

Most commonly used on doors to safe deposit box inspection cubicles. Closer holds the door to the booth open at 15° to indicate that the booth is available for use by a safe-deposit-box renter. When the door is opened beyond 70°, the closer will close the door and engage the lock, providing the occupant with the desired privacy. Available in sizes 2 and 3 only for regular arm, top jamb or parallel arm application. Specify hand.

Hospital Hold Open

Closer will hold door open at approximately 15° for ventilation, 45° for observation and beyond 90° for full access.

Closer is supplied with a standard hold open arm for the beyond 90° hold open position. Available in sizes 3 and 4 only for regular arm, top jamb or parallel arm application. Specify hand.

SUGGESTED
SPECIFICATIONS

7500 Series

Closers for interior and exterior doors shall be full rack-and-pinion type with cast aluminum alloy body. Closers shall be surface mounted and shall project no more than 2-3/16" (55mm) from the surface of the door. Closers shall be non-handed to permit installation on doors of either hand. Closer fluid shall contain lubricity and anti-oxidation agents. Closer fluid shall maintain stable viscosity to allow door closer to perform in temperatures ranging from extremely high to as low as -40°F. Closers shall have multi-size spring power adjustment to permit setting of spring from size 1 through size 6. Closer shall have visual indicator noting spring size. Closers shall have two non-critical valves, hex key adjusted, to independently regulate sweep speed and latch speed. Closers shall have backcheck cushioning controlled by a hex key adjusted valve. Closers shall have backcheck position controlled by a hex key adjusted valve.

[Closers shall have adjustable delayed-action closing controlled by a hex key adjustable valve.]

[Closers shall be highly corrosion resistant and shall have all external body components of aluminum, brass or stainless steel material and all fasteners of stainless steel.]

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+/- 7-1/2%) power adjustment. **Closers shall be enclosed in a [molded resin cover] [plated or sprayed metal cover]. Closers to be Norton [7500] [7500M] [7500SS].

**For special arms insert the appropriate specification from column three on this page.

7700 Series

Closers for interior and exterior doors shall be full rack-and-pinion type with cast aluminum alloy shell. Closers shall be surface mounted and shall project no more than 2-3/16" (55mm) from the surface of the door. Closers shall be non-handed to permit installation of doors of either hand. Closer fluid shall contain lubricity and anti-oxidation agents. Closer fluid shall maintain stable viscosity to allow door closer to perform in temperatures ranging from extremely high to as low as -40°F. Closers shall have power adjustment to permit a 50% increase in power over the minimum closing force for each size. Closers shall have two non-critical valves, hex key adjusted, to independently regulate sweep speed and latch speed. Closers shall have backcheck cushioning controlled by a hex key adjusted valve. Closers shall have backcheck position controlled by a hex key adjusted valve.

[Closers shall have adjustable delayed action closing controlled by a hex key adjustable valve.]

Regular arm and top jamb closers shall have a non-hold open shoe permitting 15% (+/- 7-1/2%) power adjustment. ** Closers shall be enclosed in a [molded resin cover] [plated or sprayed metal cover]. Closers to be Norton [7700] [7700M].

**For special arms insert that specification here (see column three on this page).

****Unitrol® Arm**

Door closers shall have a fixed door stop feature effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop shall be cushioned by a shock-absorbing heavy-duty spring action effective at the [soffit plate] [arm shoe] pivot. [Closers shall be provided for parallel arm installation using rigid steel main arm and secondary arm lengths proportional to the door width.] [Closers shall be provided for top jamb installation using steel, rigid main arm and telescoping secondary arm adequate for the frame reveal of the openings.]

****CloserPlus® Arm**

Door closers shall have a field reversible door stop. Door closer shall have a feature with selectable on and off ball and detent hold open. Hold open tension shall be adjustable effective at one point selected at installation, from 85° - 110° in five degree increments. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel arm installation using a forged rigid steel main arm and secondary arm.

****CloserPlus Spring™ Arm**

Door closers shall have built-in door stop [and holder] effective at one point selected at installation, from 85° - 110° in five-degree increments. Door stop mechanism shall be reversible and have a buffer spring that engages prior to the dead stop feature, reducing shock loads to the door and frame assembly. Door stop mechanism shall be attached to soffit plate. [Hold open mechanism shall have engage/disengage selection actuated by thumbturn]. Closers shall be provided for parallel installation using a forged rigid steel main arm and secondary arm.

APPLICATIONS

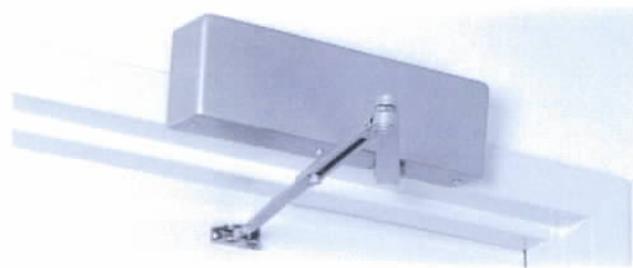


Non-hold open arm shown

Regular Arm

This is the only pull-side application where a double lever arm is used. It is the most power efficient application for a door closer. Sufficient frame, door and/or ceiling clearance must be considered.

Since the arm assembly projects directly out from the frame, this application may present an aesthetics issue or be prone to vandalism.



Non-hold open arm shown

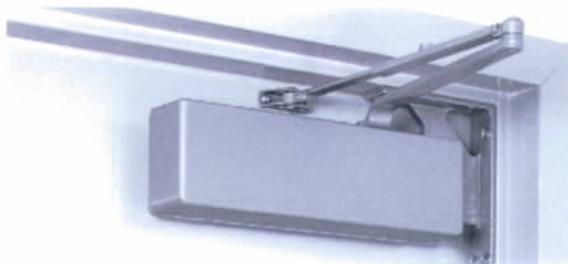
Top Jamb

For efficiency reasons this application provides the best alternative to the regular arm application. There must be sufficient frame face and/or ceiling clearance for this application. It requires a top rail on the door of just 2-1/8" (54mm). This application provides the best door control for doors in exterior walls that swing out of a building.

The entire door closer and arm assembly project from the frame, similar to the regular arm application, where matters of appearance and malicious abuse can be of concern. Consideration must be given to depth of frame reveal.



Non-hold open arm shown



Non-hold open arm shown

Parallel Arm

This application provides the most appealing design appearance for a surface-mounted door closer having a double lever arm. This also makes it beneficial in vandalism-prone areas. It is on the push side of the door and the arm assembly extends almost parallel to the door. In the closed position, there is very little or no hardware projecting beyond the frame face in most situations.

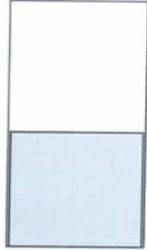
Due to the geometry of the arm it is approximately 25% less power-efficient than a regular arm application. The entire closer and arm assembly are mounted below the frame stop, requiring a top rail clearance on the door of between 6-5/8" (168mm), when using a low profile arm, to 7-1/4" (184mm), when using the hold open arm.

Corner Bracket

This application can be used where top jamb and parallel arm application will not accommodate the door and frame conditions. Requires minimal top rail on the door; however, vertical clearance to the floor within the door opening should be checked to ensure code compliance.

The close proximity, for this application, of the door closer to the door's pivot point reduces the door closer's power efficiency by approximately 25% when compared to a regular arm. The projection of the arm from the door face might pose questions regarding design parameters.

PLATES AND GUARDS



TRIMCO#	KA038	KA050-1	KA050-2	KA050-3
OA	17-48" H	17-24" H	25-42" H	43-48" H
M	.038	.050	.050	.050
BHMA		J101	J101	J101

Armor Plate SS only

605 finish = 24" height maximum
 606/609 finishes = 36" height maximum
 611/612/613 finishes = 36" height maximum
 Aluminum and SS = 48" height maximum

Br, Bz, Al, SS



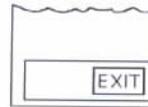
TRIMCO#	KM038	KM050
OA	Under 6" high	Under 6" high
M	.038	.050
BHMA		J103

Mop Plate SS only

Br, Bz, Al, SS



TRIMCO#	K0038	K0050
OA	7"-16"	7"-16"
M	.038	.050
BHMA		J102



TRIMCO# K0050.ILLUM
.050 Kick Plat
 with an illuminated "EXIT"
 Sign. Specify handing

Br, Bz, Al, SS

Kick Plate SS only
 Add "ILLUM" for illuminated exit.



TRIMCO#	KS050
OA	6" high
M	Countersunk Holes, B4E, .050

Stretcher Plate - .050
 Other heights are
 available.

Br, Bz, Al, SS



TRIMCO#	K6000
OA	4-48" high
COL	Black, Grey
M	Plastic 1/8"
BHMA	J106

Plastic

Kick Plate
 Other colors and clear are
 available.

NOTE: All Kick plates are made from solid 260 Brass, 220 Bronze, 304 Stainless Steel or 5005H34 Aluminum. All edges are relieved. Heavy bevel at extra charge. All .038 Protection plates are Stainless Steel ONLY. Specify countersinking if required.