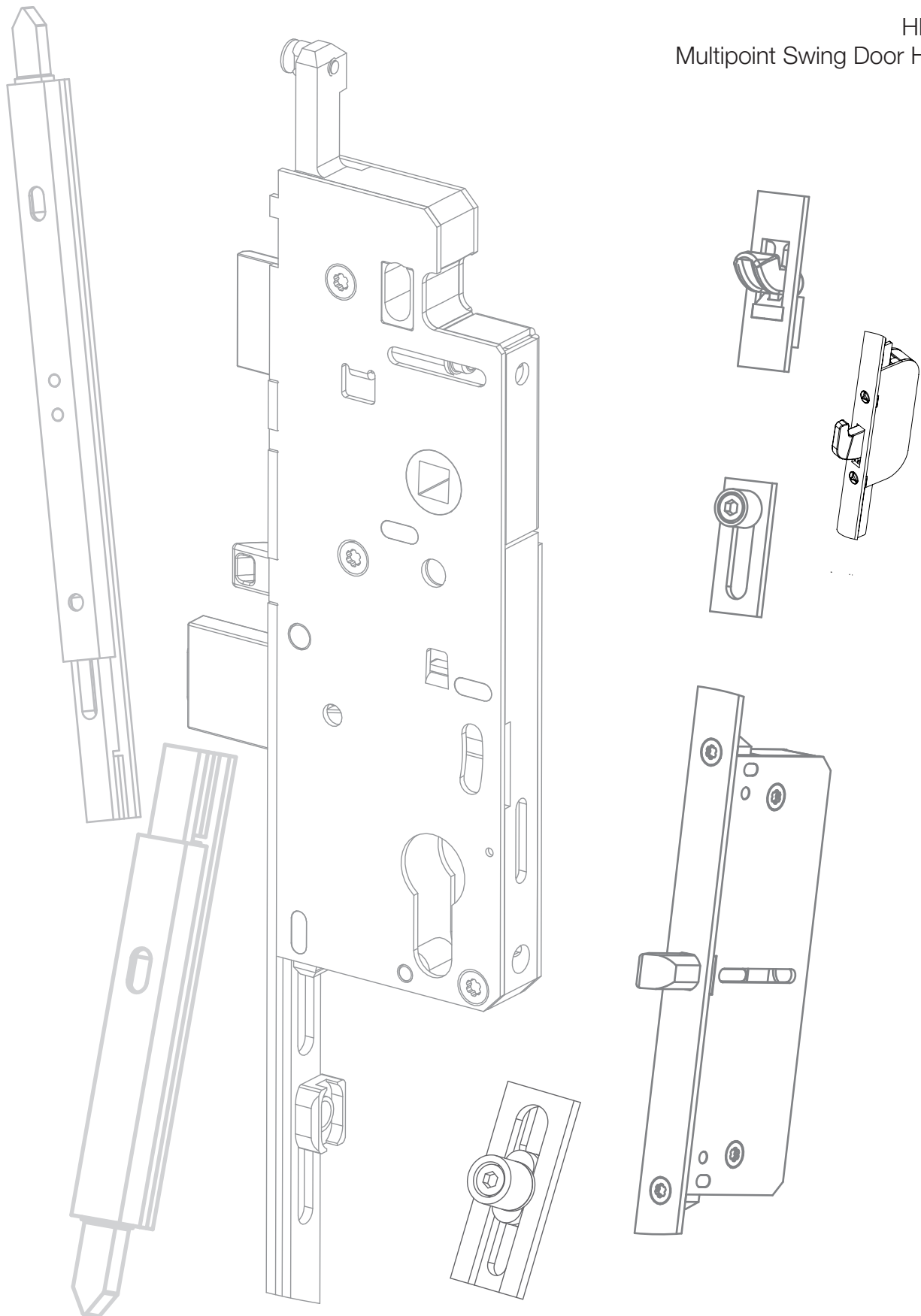


HLS®9000
Multipoint Swing Door Hardware
Edition 7



Why HOPPE Stainless Steel

Protect the quality of your product as well as your image. Insist on HOPPE Stainless Steel!

The HLS®9000 Stainless Steel Multipoint Locking System prevents the unwelcome intrusion of rust and corrosion, in addition to providing safety and security. The variety of locking point options allows for a wide range of applications on doors of virtually any height.

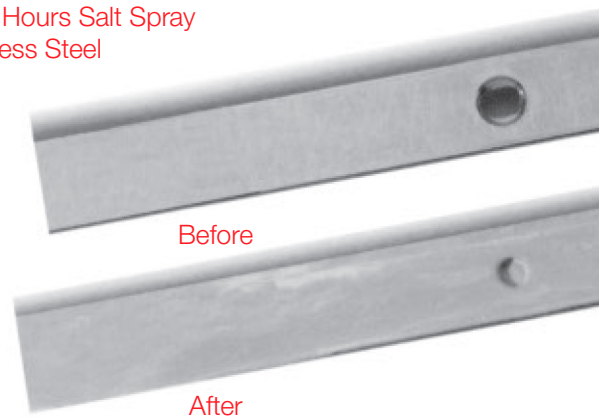


HLS®9000 Features & Benefits

- ❑ Multiple locking points for improved weather sealing
- ❑ All stainless steel construction for superior corrosion resistance
- ❑ Proven reliability in coastal environments
- ❑ Low maintenance
- ❑ Robust stainless steel latch and dead bolt
- ❑ Mishandling device prevents accidental use
- ❑ Made in the United States

HOPPE HLS®9000 Locking Systems have a proven track record. Our products have been used on the Florida coast, the Caribbean islands, Hawaii and nearly everywhere in between. Experience has shown that we have some of the most reliable, corrosion resistant multipoint locks in the market even in these coastal environments. If you are still not convinced, simply look to our HLS® lifetime finish warranty.

3000 Hours Salt Spray
Stainless Steel



16mm Faceplate

Swing Hook	Page 4
Swing Hook + Shootbolt	Page 6
Tongue	Page 8
Tongue + Shootbolt	Page 10
Shootbolt	Page 12
Roundbolt	Page 14
Roundbolt + Shootbolt	Page 15
Two Roller	Page 16
Roller + Shootbolt	Page 17
Four Roller	Page 18
Automatic Tongue	Page 19
Automatic Two Roller	Page 20
Automatic Four Roller	Page 21

20mm Faceplate

Tongue	Page 22
Tongue + Shootbolt	Page 24
Shootbolt	Page 26

16mm Faceplate Inactive

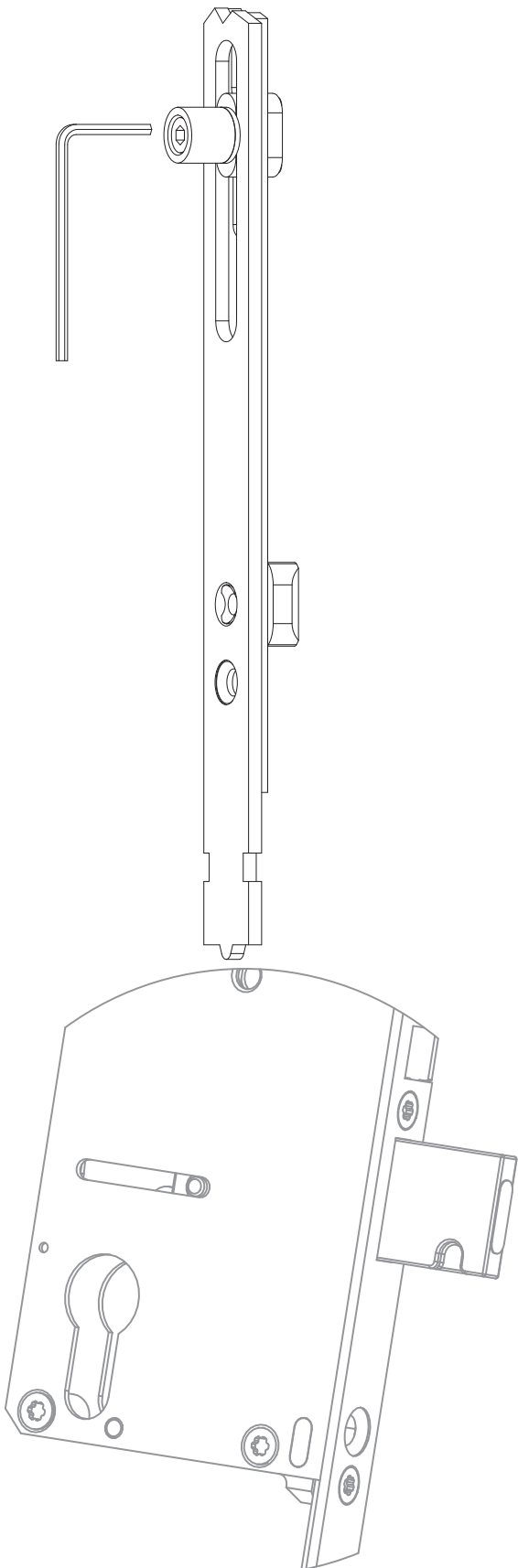
Inactive	Page 28
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20mm Faceplate Inactive

Inactive	Page 34
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Additional Hardware

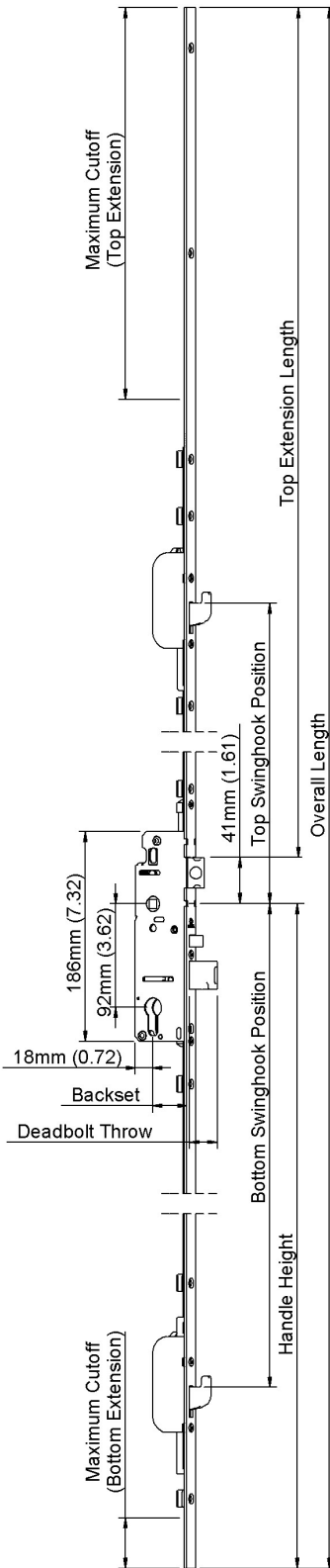
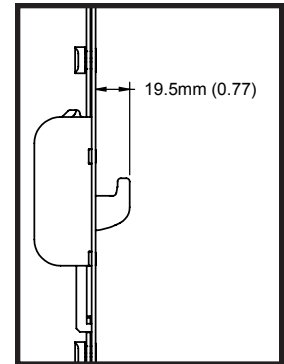
Inactive Flushbolt	Page 38
Single Point	Page 39
Strikes	Page 40
Accessories	Page 45
Optional Items	Page 46
Eurogrooves	Page 47
How to Order & Door Handing	Page 48
Terminology	Page 49
Installation & Adjustments	Page 50
Sales Tools	Page 53
Glossary	Page 54



Swing Hook - 16mm Faceplate

SWING HOOK

While offering security in the locked position, the HLS®9000 swing hook retracts when opened, giving a smooth clean appearance.



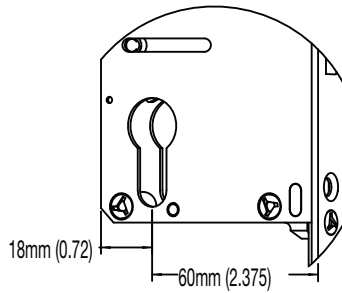
Top Extension

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to Top of Door	1st Top Swinghook Position	2nd Top Swinghook Position	Maximum Cutoff	Number of Screws
3868770	M 1058 SW1 500 16-SC 418	1595mm-2013mm (62.80-79.25)	1058mm (41.65)	1099mm (43.27)	500mm (19.69)	n/a	418mm (16.46)	6
3868796	M 1058 SW1 900 16-SC 18	1995mm-2013mm (78.54-79.25)	1058mm (41.65)	1099mm (43.27)	900mm (35.43)	n/a	18mm (0.71)	6
3868809	M 1388 SW1 900 16-SC 348	1995mm-2343mm (78.54-92.24)	1388mm (54.65)	1429mm (56.26)	900mm (35.43)	n/a	348mm (13.70)	8
3868817	M 1388 SW2 500/900 16-SC 348	1995mm-2343mm (78.54-92.24)	1388mm (54.65)	1429mm (56.26)	500mm (19.69)	900mm (35.43)	348mm (13.70)	8
3868825	M 1745 SW2 600/1193 16-SC 412	2288mm-2700mm (90.08-106.30)	1745mm (68.70)	1786mm (70.31)	600mm (23.62)	1193mm (46.97)	412mm (16.22)	10
3868833	M 2270 SW2 600/1500 16-SC 630	2595mm-3225mm (102.17-126.97)	2270mm (89.37)	2311mm (90.98)	600mm (23.62)	1500mm (59.05)	630mm (24.80)	12

Gear / Bottom Extension

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Swing Hook Position	Maximum Cutoff	Number of Screws
3868868	M/35/25 914 SW1 753 16S 30	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
3868876	M/45/25 914 SW1 753 16S 30	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

60mm Backset Gear / Bottom Extension

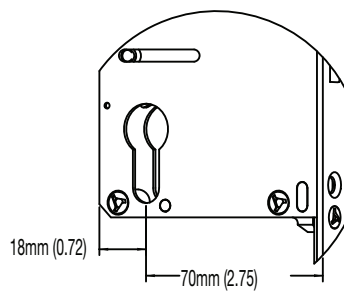


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Swing Hook Position	Maximum Cutoff	Number of Screws
3868884	M/60/25 914 SW1 753 16S 30	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

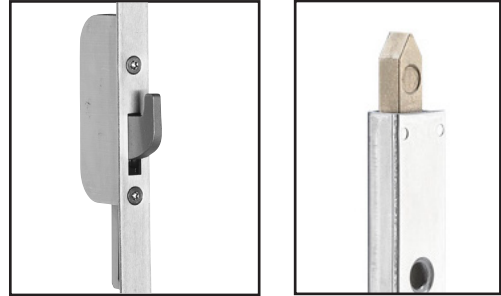
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Swing Hook Position	Maximum Cutoff	Number of Screws
3868892	M/70/25 914 SW1 753 16S 30	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

For Top Extension, please reference the Top extension chart on the adjacent page.

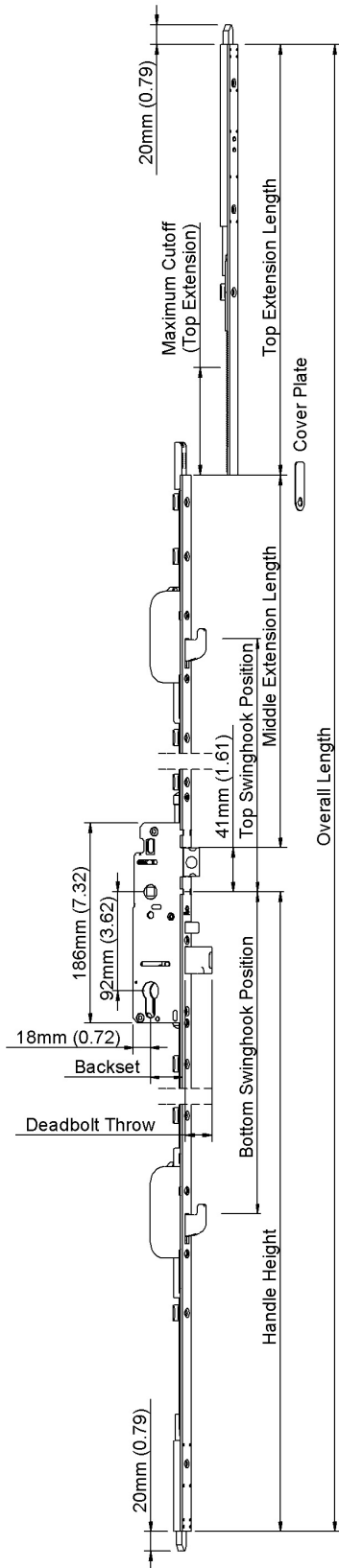
Swing Hook / Shootbolt - 16mm Faceplate

SWING HOOK/SHOOTBOLT

The HLS®9000 Swing Hook/shootbolt offers the added security of both horizontal and vertical strength for increased wind-load protection.



See corresponding colors in chart when referencing top extension length with middle extension chart



Top Extensions (used with middle extension containing 1 Swing Hook)

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 612 SW 500 (with 914mm/36" Handle Height)	Overall Length Combined with M 1012 SW 900 (with 914mm/36" Handle Height)
8778611	M 400 SB1 16S 20 100	400mm (15.75)	100mm (3.94)	3	1867mm - 1967mm (73.50 - 77.44)	2267mm - 2367mm (89.25 - 93.19)
8778615	M 475 SB1 16S 20 100	475mm (18.70)	100mm (3.94)	3	1942mm - 2042mm (76.46 - 80.39)	2342mm - 2442mm (92.20 - 96.14)
8778619	M 550 SB1 16S 20 100	550mm (21.65)	100mm (3.94)	4	2017mm - 2117mm (79.41 - 83.35)	2417mm - 2517mm (95.16 - 99.09)
8778623	M 625 SB1 16S 20 100	625mm (24.61)	100mm (3.94)	4	2092mm - 2192mm (82.36 - 86.30)	2492mm - 2592mm (98.11 - 102.05)
8778627	M 700 SB1 16S 20 100	700mm (27.56)	100mm (3.94)	4	2167mm - 2267mm (85.31 - 89.25)	2567mm - 2667mm (101.06 - 105.00)
8778631	M 775 SB1 16S 20 100	775mm (30.51)	100mm (3.94)	4	2242mm - 2342mm (88.27 - 92.20)	2642mm - 2742mm (104.02 - 107.95)
3389488	M 850 SB1 16S 20 100	850mm (33.46)	100mm (3.94)	5	2317mm - 2417mm (91.22 - 95.16)	2717mm - 2817mm (106.97 - 110.91)
3389517	M 925 SB1 16S 20 100	925mm (36.42)	100mm (3.94)	5	2392mm - 2492mm (94.17 - 98.11)	2792mm - 2892mm (109.92 - 113.86)

Top Extensions (used with middle extension containing 2 Swing Hook)

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 1012 SW2 500/900 (with 914mm/36" Handle Height)	Overall Length Combined with M 1305 SW2 600/1193 (with 914mm/36" Handle Height)	Overall Length Combined with M 1612 SW2 600/1500 (with 914mm/36" Handle Height)
8778611	M 400 SB1 16S 20 100	400mm (15.75)	100mm (3.94)	3	2267mm - 2367mm (89.25 - 93.19)	2560mm - 2660mm (100.79 - 104.72)	2867mm - 2967mm (112.87 - 116.81)
8778615	M 475 SB1 16S 20 100	475mm (18.70)	100mm (3.94)	3	2342mm - 2442mm (92.20 - 96.14)	2635mm - 2735mm (103.74 - 107.68)	2942mm - 3042mm (115.83 - 119.76)
8778619	M 550 SB1 16S 20 100	550mm (21.65)	100mm (3.94)	4	2417mm - 2517mm (95.16 - 99.09)	2710mm - 2810mm (106.69 - 110.63)	3017mm - 3117mm (118.78 - 122.72)
8778623	M 625 SB1 16S 20 100	625mm (24.61)	100mm (3.94)	4	2492mm - 2592mm (98.11 - 102.05)	2785mm - 2885mm (109.65 - 113.58)	3092mm - 3192mm (121.73 - 125.67)
8778627	M 700 SB1 16S 20 100	700mm (27.56)	100mm (3.94)	4	2567mm - 2667mm (101.06 - 105.00)	2860mm - 2960mm (112.60 - 116.54)	3167mm - 3267mm (124.69 - 128.62)
8778631	M 775 SB1 16S 20 100	775mm (30.51)	100mm (3.94)	4	2642mm - 2742mm (104.02 - 107.95)	2935mm - 3035mm (115.55 - 119.49)	3242mm - 3342mm (127.64 - 131.67)
3389488	M 850 SB1 16S 20 100	850mm (33.46)	100mm (3.94)	5	2717mm - 2817mm (106.97 - 110.91)	3010mm - 3110mm (118.50 - 122.44)	3317mm - 3417mm (130.59 - 134.53)
3389517	M 925 SB1 16S 20 100	925mm (36.42)	100mm (3.94)	5	2792mm - 2892mm (109.92 - 113.86)	3085mm - 3185mm (121.46 - 125.39)	3392mm - 3492mm (133.54 - 137.48)

Middle Extensions with 1 and 2 Swing Hooks

Middle Extension with 1 Swing Hook

Part Number	Description	Middle Extension	Top Swing Hook Position	Second Swing Hook Position	Maximum Cutoff	Number of Screws
3622868	M 612 SW1 500 16S	612mm (24.09)	500mm (19.69)	N/A	N/A	4
3644160	M 1012 SW1 900 16S	1012mm (39.84)	900mm (35.43)	N/A	N/A	6

Middle Extension with 2 Swing Hooks

Part Number	Description	Middle Extension	Top Swing Hook Position	Swcond Swing Hook Position	Maximum Cutoff	Number of Screws
3644178	M 1012 SW2 500/900 16S	1012mm (39.84)	500mm (19.69)	900mm (35.43)	N/A	6
3644186	M 1305 SW2 600/1193 16S	1305mm (51.38)	600mm (23.62)	1193mm (46.97)	N/A	8
3644194	M 1612 SW2 600/1500 16S	1612mm (63.46)	600mm (23.62)	1500mm (59.06)	N/A	9

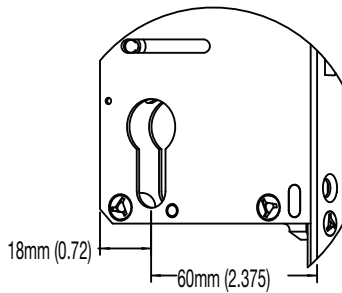
35/45mm Backset Gear / Bottom Extension

Gear

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Swing Hook Position	Max. Cutoff	Number of Screws
3814747	M/35/25 914 SW1SB1 620 16S 20	35mm (1.38)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	4
3622876	M/45/25 914 SW1SB1 620 16S 20	45mm (1.77)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	4

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

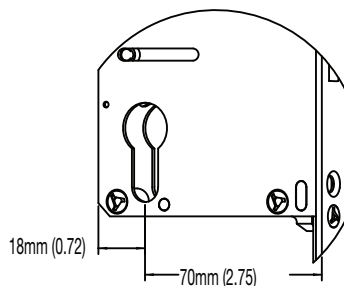


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Swing Hook Position	Number of Screws
3660426	M/60/25 914 SW1SB1 620 16S 20	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	4

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

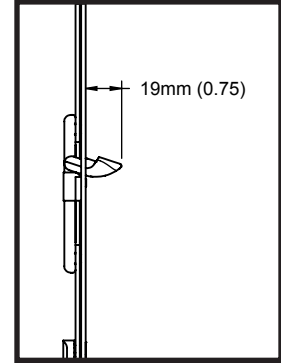
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Swing Hook Position	Number of Screws
3868761	M/70/25 914 SW1SB1 620 16S 20	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	4

For Top Extension, please reference the Top extension chart on the adjacent page.

Tongue - 16mm Faceplate

TONGUE

While offering security in the locked position, the HLS®9000 tongue retracts when opened, giving a smooth clean appearance.



Top Extension

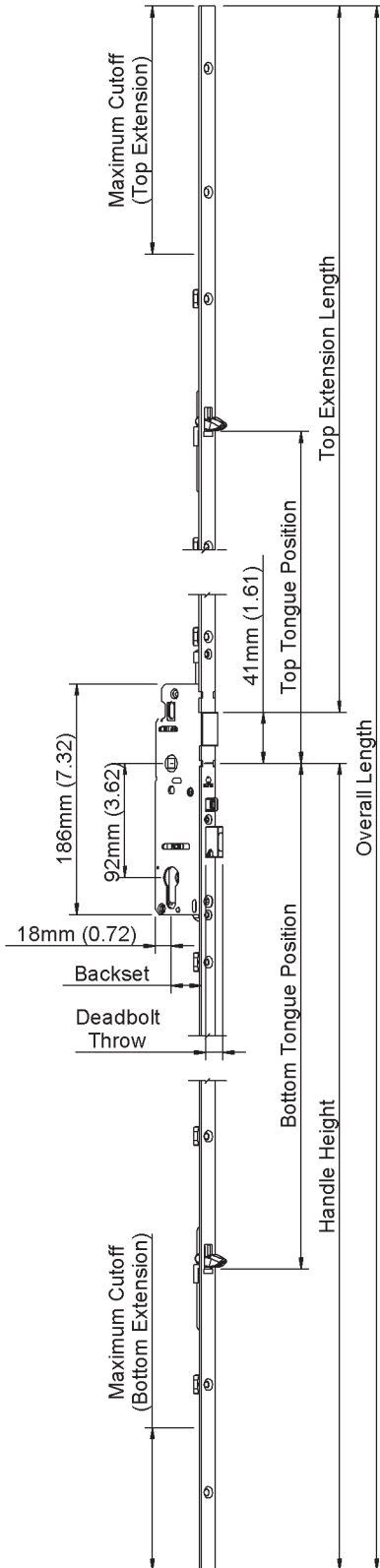
Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to Top of Door	Top Tongue Position	Maximum Cutoff	Number of Screws
3137707	M 1058 TN 743 16S 195	1805mm-2013mm (71.06 - 79.25)	1058mm (41.65)	1086mm (42.76)	743mm (29.25)	208mm (8.19)	7
8778551	M 1220 TN 743 16S 370	1805mm - 2175mm (71.06 - 85.63)	1220mm (48.03)	1261mm (49.65)	743mm (29.25)	370mm (14.57)	8
8778555	M 1395 TN 945 16S 340	2010mm - 2350mm (79.13 - 92.52)	1395mm (54.92)	1436mm (56.54)	945mm (37.20)	340mm (13.39)	9
8778559	M 1570 TN 945 16S 515	2010mm - 2525mm (79.13 - 99.41)	1570mm (61.81)	1611mm (63.43)	945mm (37.20)	515mm (20.28)	10
8778563	M 1745 TN 1193 16S 445	2255mm - 2700mm (88.78 - 106.30)	1745mm (68.70)	1786mm (70.31)	1193mm (46.97)	445mm (17.52)	10
8778567	M 1920 TN 1594 16S 220	2655mm - 2875mm (104.53 - 113.19)	1920mm (75.59)	1961mm (77.20)	1594mm (62.76)	220mm (8.66)	11
8778571	M 2095 TN 1594 16S 395	2655mm - 3050mm (104.53 - 120.08)	2095mm (82.48)	2136mm (84.09)	1594mm (62.76)	395mm (15.55)	12
8778575	M 2270 TN 1594 16S 570	2655mm - 3225mm (104.53 - 126.97)	2270mm (89.37)	2311mm (90.98)	1594mm (62.76)	570mm (22.44)	13

Top Extension with two tongues

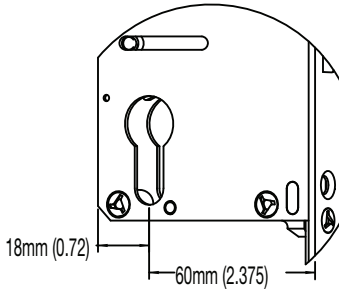
Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to Top of Door	1st Tongue Position	2nd Tongue Position	Maximum Cutoff	Number of Screws
2240631	M 1424 TN2 661/246.5 16S	2309mm - 2379mm (90.91 - 93.66)	1424mm (56.06)	1465mm (57.68)	661mm (26.02)	1246.5mm (49.07)	70mm (2.76)	8
3387298	M 1998 TN2 945/1500 16S	2563mm - 2953mm (100.91 - 116.26)	1988mm (78.66)	2039mm (80.28)	945mm (37.20)	1500mm (59.06)	390mm (15.35)	11
2949640	M 2093 TN2 945/1500 16S	2563mm - 3048mm (100.91 - 120.00)	2093mm (82.40)	2134mm (84.02)	945mm (37.20)	1500mm (59.06)	485mm (19.09)	11
3021229	M 2093 TN2 1050/1850 16S	2913mm - 3048mm (114.69 - 120.00)	2093mm (82.40)	2134mm (84.02)	1050mm (41.34)	1850mm (72.83)	135mm (5.31)	12

Gear / Bottom Extension

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
2423904	M/35/25 914 TN 620 16S 160	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
8779123	M/45/25 914 TN 620 16S 160	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
8778171	M/35/14 914 TN 671 16S 115	35mm (1.38)	14mm (.55)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778167	M/45/14 914 TN 671 16S 115	45mm (1.77)	14mm (.55)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778147	M/35/25 914 TN 671 16S 115	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778075	M/45/25 914 TN 671 16S 115	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778159	M/35/14 914 TN 753 16S 30	35mm (1.38)	14mm (.55)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
8778183	M/45/14 914 TN 753 16S 30	45mm (1.77)	14mm (.55)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
8778143	M/35/25 914 TN 753 16S 30	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
8778163	M/45/25 914 TN 753 16S 30	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5



60mm Backset Gear / Bottom Extension

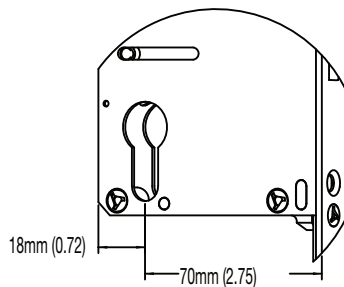


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
2406346	M/60/25 914 TN 620 16S 160	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
2406354	M/60/25 914 TN 671 16S 115	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2406362	M/60/25 914 TN 753 16S 30	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



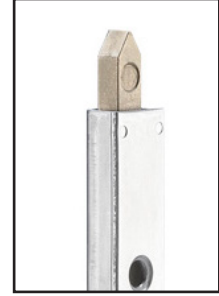
Gear - 70mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
2406371	M/70/25 914 TN 620 16S 160	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
2406389	M/70/25 914 TN 671 16S 115	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2406397	M/70/25 914 TN 753 16S 30	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

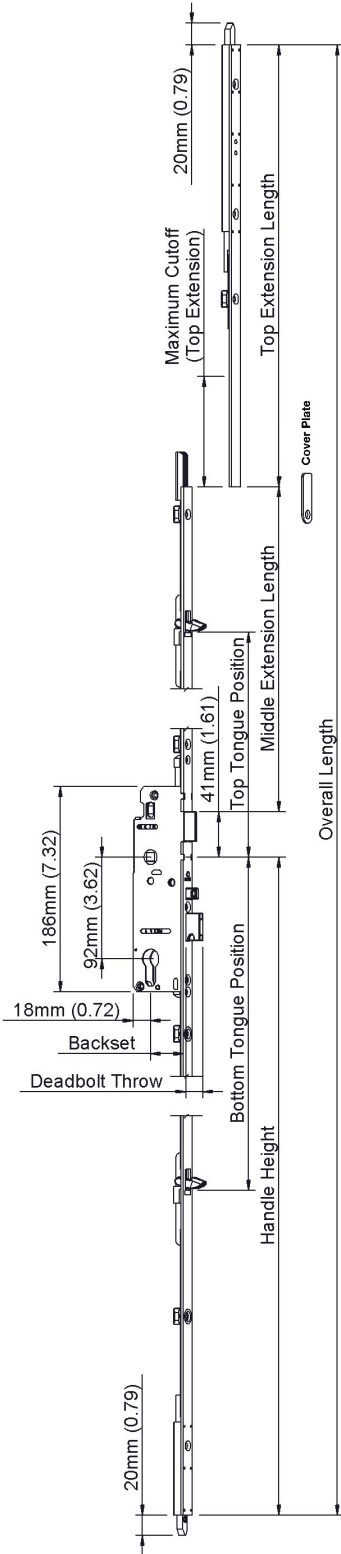
For Top Extension, please reference the Top extension chart on the adjacent page.

TONGUE/SHOOTBOLT

The HLS®9000 tongue/shootbolt offers the added security of both horizontal and vertical strength for increased wind-load protection.



See corresponding colors in chart when referencing top extension length with middle extension chart



Top Extension

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 691 TN 600 (with 914mm/36" Handle Height)	Overall Length Combined with M 1141 TN 1050 (with 914mm/36" Handle Height)	Overall Length Combined with M 1591 TN 1500 (with 914mm/36" Handle Height)
8778611	M 400 SB 16S 20 100	400mm (15.75)	100mm (3.94)	3	1946mm - 2046mm (76.61 - 80.55)	2396mm - 2496mm (94.33 - 98.27)	2846mm - 2946mm (112.05 - 115.98)
8778615	M 475 SB 16S 20 100	475mm (18.70)	100mm (3.94)	3	2021mm - 2121mm (79.57 - 83.50)	2471mm - 2571mm (97.28 - 101.22)	2921mm - 3021mm (115.00 - 118.94)
8778619	M 550 SB 16S 20 100	550mm (21.65)	100mm (3.94)	4	2096mm - 2196mm (82.52 - 86.46)	2546mm - 2646mm (100.24 - 104.17)	2996mm - 3096mm (117.95 - 121.89)
8778623	M 625 SB 16S 20 100	625mm (24.61)	100mm (3.94)	4	2171mm - 2271mm (85.47 - 89.41)	2621mm - 2721mm (103.19 - 107.13)	3071mm - 3171mm (120.91 - 124.84)
8778627	M 700 SB 16S 20 100	700mm (27.56)	100mm (3.94)	4	2246mm - 2346mm (88.43 - 92.36)	2696mm - 2796mm (106.14 - 110.08)	3146mm - 3246mm (123.86 - 127.80)
8778631	M 775 SB 16S 20 100	775mm (30.51)	100mm (3.94)	5	2321mm - 2421mm (91.38 - 95.31)	2771mm - 2871mm (109.09 - 113.03)	3221mm - 3321mm (126.81 - 130.75)

Middle Extension

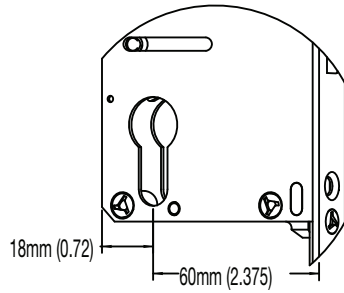
Part Number	Description	Middle Extension	Top Tongue Position	Second Tongue Position	Maximum Cutoff	Number of Screws
2344923	M 341 TN 250 16S	341mm (13.43)	250mm (9.84)	N/A	N/A	3
8778703	M 691 TN 600 16S	691mm (27.20)	600mm (23.62)	N/A	N/A	4
8779139	M 750 TN 600 16S	750mm (29.53)	600mm (23.62)	N/A	N/A	4
2002350	M 834 TN 743 16S	834mm (32.83)	743mm (29.25)	N/A	N/A	5
8778707	M 1141 TN 1050 16S	1141mm (44.92)	1050mm (41.34)	N/A	N/A	7
8779143	M 1156 TN 1050 16S	1156mm (45.51)	1050mm (41.34)	N/A	N/A	7
2002384	M 1284 TN 1193 16S	1284mm (50.55)	1193mm (46.97)	N/A	N/A	7
8778711	M 1591 TN 1500 16S	1591mm (62.64)	1500mm (59.06)	N/A	N/A	9
2339358	M 2041 TNT 1050/1950 16S	2041mm (80.35)	1950mm (76.77)	1050mm (41.34)	N/A	12

Gear

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Max. Cutoff	Number of Screws
8778283	M/35/14 914 TNS 620 16S 20	35mm (1.38)	14mm (0.55)	914mm (36.00)	620mm (24.41)	N/A	6
8778311	M/45/14 914 TNS 620 16S 20	45mm (1.77)	14mm (0.55)	914mm (36.00)	620mm (24.41)	N/A	6
8778263	M/35/25 914 TNS 620 16S 20	35mm (1.38)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6
8778107	M/45/25 914 TNS 620 16S 20	45mm (1.77)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

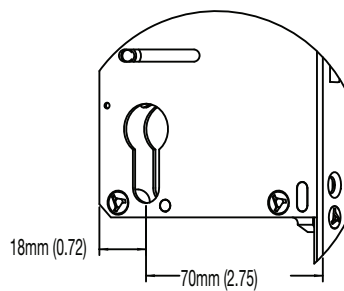


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Number of Screws
2406477	M/60/25 914 TNS 620 16S 20	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Number of Screws
2406485	M/70/25 914 TNS 620 16S 20	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

Shootbolt - 16mm Faceplate

SHOOTBOLT

Added vertical strength is a proven benefit of the shootbolt version providing extra security through the locking points in the head and sill of the door.



See corresponding colors in chart when referencing top extension length with middle extension chart

Top Extension

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 691 (with 914mm/36" Handle Height)	Overall Length Combined with M 1141 (with 914mm/36" Handle Height)	Overall Length Combined with M 1591 (with 914mm/36" Handle Height)
8778611	M 400 SB 16S 20 100	400mm (15.75)	100mm (3.94)	3	1946mm - 2046mm (76.61 - 80.55)	2396mm - 2496mm (94.33 - 98.27)	2846mm - 2946mm (112.05 - 115.98)
8778615	M 475 SB 16S 20 100	475mm (18.70)	100mm (3.94)	3	2021mm - 2121mm (79.57 - 83.50)	2471mm - 2571mm (97.28 - 101.22)	2921mm - 3021mm (115.00 - 118.94)
8778619	M 550 SB 16S 20 100	550mm (21.65)	100mm (3.94)	4	2096mm - 2196mm (82.52 - 86.46)	2546mm - 2646mm (100.24 - 104.17)	2996mm - 3096mm (117.95 - 121.89)
8778623	M 625 SB 16S 20 100	625mm (24.61)	100mm (3.94)	4	2171mm - 2271mm (85.47 - 89.41)	2621mm - 2721mm (103.19 - 107.13)	3071mm - 3171mm (120.91 - 124.84)
8778627	M 700 SB 16S 20 100	700mm (27.56)	100mm (3.94)	4	2246mm - 2346mm (88.43 - 92.36)	2696mm - 2796mm (106.14 - 110.08)	3146mm - 3246mm (123.86 - 127.80)
8778631	M 775 SB 16S 20 100	775mm (30.51)	100mm (3.94)	5	2321mm - 2421mm (91.38 - 95.31)	2771mm - 2871mm (109.09 - 113.03)	3221mm - 3321mm (126.81 - 130.75)

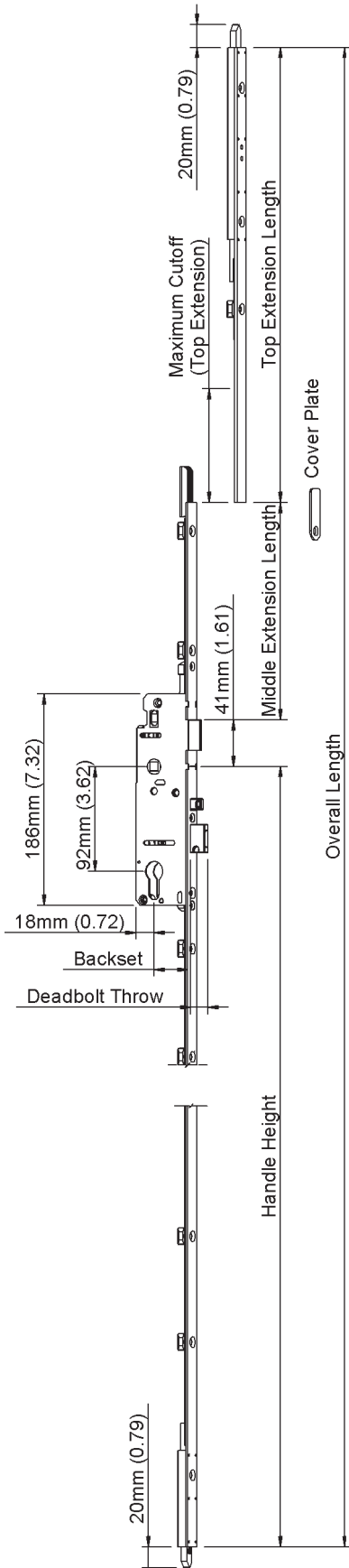
Middle Extension

Part Number	Description	Middle Extension	Maximum Cutoff	Number of Screws
8779199	M 191 16S	191mm (7.52)	N/A	2
2424114	M 441 16S	441mm (17.36)	N/A	3
8778691	M 691 16S	691mm (27.20)	N/A	4
8778695	M 1141 16S	1141mm (44.92)	N/A	6
8778699	M 1591 16S	1591mm (62.64)	N/A	8
3174559	M 2041 16S	2041mm (80.35)	N/A	11

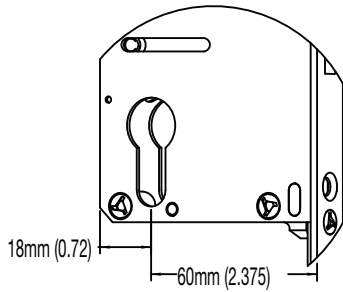
Gear / Bottom Extension

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Max. Cutoff	Number of Screws
8778339	M/35/14 914 SB 16S 20	35mm (1.38)	14mm (0.55)	914mm (36.00)	N/A	6
8778343	M/45/14 914 SB 16S 20	45mm (1.77)	14mm (0.55)	914mm (36.00)	N/A	6
8778335	M/35/25 914 SB 16S 20	35mm (1.38)	25mm (1.00)	914mm (36.00)	N/A	6
8778331	M/45/25 914 SB 16S 20	45mm (1.77)	25mm (1.00)	914mm (36.00)	N/A	6

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

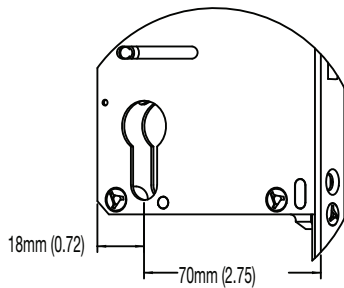


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Number of Screws
2406514	M/60/25 914 SB 16S	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

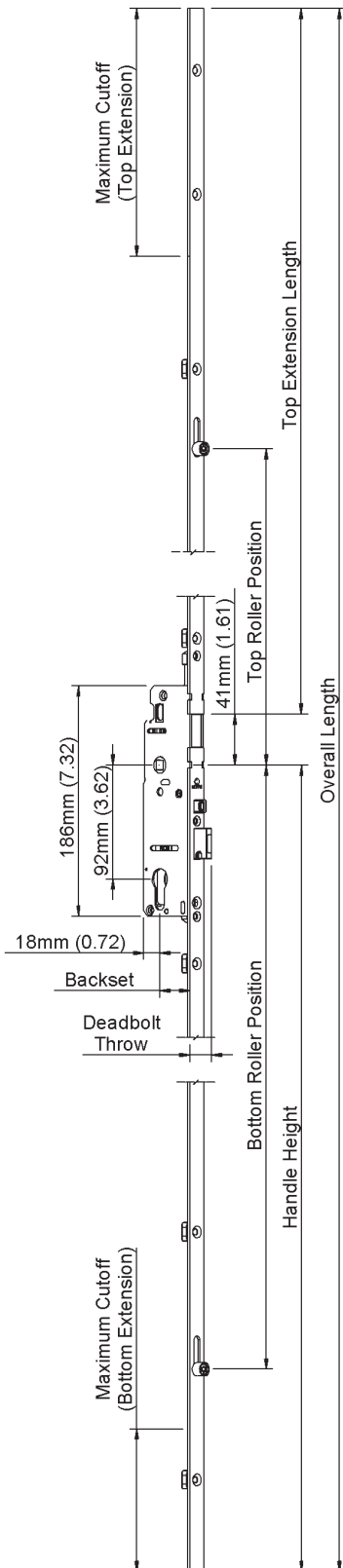
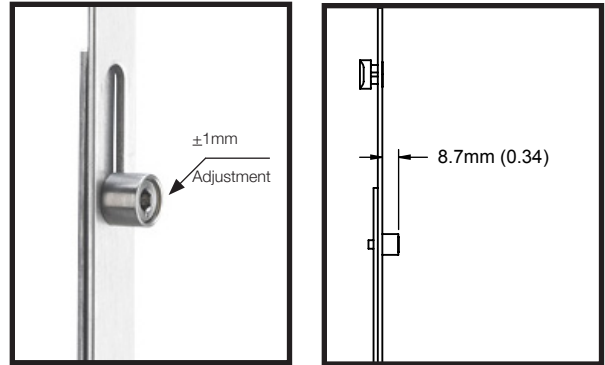
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Number of Screws
2406522	M/70/25 914 SB 16S	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

Two Roller - 16mm Faceplate

TWO ROLLER

The HLS®9000 two roller version is easily adjusted with the simple turn of a hex wrench for improved weather sealing.



Top Extension

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to Top of Door	Top Roller Position	Maximum Cutoff	Number of Screws
8778479	M 1045 RL 730 16S 275	1725mm-2000mm (67.91 - 78.74)	1045mm (41.14)	1086mm (42.76)	730mm (28.74)	275mm (10.83)	7
8778483	M 1220 RL 930 16S 250	1925mm - 2175mm (75.79 - 85.63)	1220mm (48.03)	1261mm (49.65)	930mm (36.61)	250mm (9.84)	8
8778487	M 1395 RL 1135 16S 220	2130mm - 2350mm (83.86 - 92.52)	1395mm (54.92)	1436mm (56.54)	1135mm (44.69)	220mm (8.66)	9
8778491	M 1570 RL 1285 16S 245	2280mm - 2525mm (89.76 - 99.41)	1570mm (61.81)	1611mm (63.43)	1285mm (50.59)	245mm (9.65)	10
8778495	M 1745 RL 1285 16S 420	2280mm - 2700mm (89.76 - 106.30)	1745mm (68.70)	1786mm (70.31)	1285mm (50.59)	420mm (16.54)	11

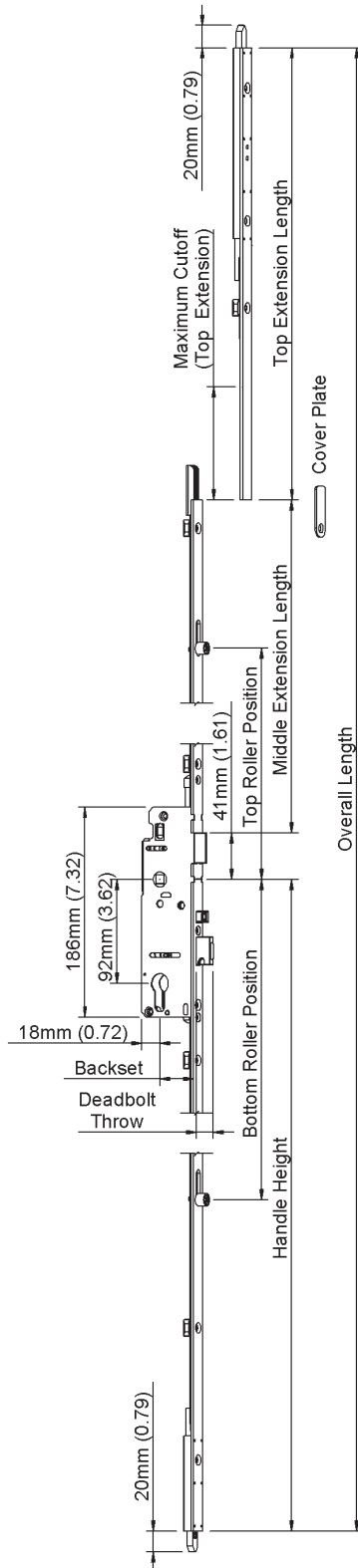
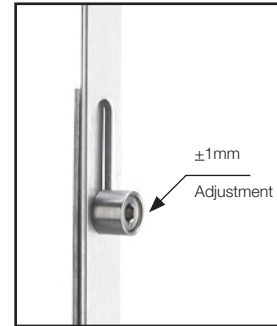
Gear

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Roller Position	Maximum Cutoff	Number of Screws
8778279	M/35/14 914 RL 750 16S 60	35mm (1.38)	14mm (.55)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5
8778511	M/45/14 914 RL 750 16S 60	45mm (1.77)	14mm (.55)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5
8778255	M/35/25 914 RL 750 16S 60	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5
8778223	M/45/25 914 RL 750 16S 60	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5

Note: Rollers are listed in the locked or down position.

ROLLER/SHOOTBOLT

The roller/shootbolt combines all the qualities of the shootbolt and the roller systems. The simple adjustability of a typical roller system for additional weather sealing and the strength of the shootbolt.



Top Extension

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 691 RL 600 (with 914mm/36" Handle Height)	Overall Length Combined with M 1141 RL 1050 (with 914mm/36" Handle Height)	Overall Length Combined with M 1591 RL 1500 (with 914mm/36" Handle Height)
8778611	M 400 SB 16S 20 100	400mm (15.75)	100mm (3.94)	3	1946mm - 2046mm (76.61 - 80.55)	2396mm - 2496mm (94.33 - 98.27)	2846mm - 2946mm (112.05 - 115.98)
8778615	M 475 SB 16S 20 100	475mm (18.70)	100mm (3.94)	3	2021mm - 2121mm (79.57 - 83.50)	2471mm - 2571mm (97.28 - 101.22)	2921mm - 3021mm (115.00 - 118.94)
8778619	M 550 SB 16S 20 100	550mm (21.65)	100mm (3.94)	4	2096mm - 2196mm (82.52 - 86.46)	2546mm - 2646mm (100.24 - 104.17)	2996mm - 3096mm (117.95 - 121.89)
8778623	M 625 SB 16S 20 100	625mm (24.61)	100mm (3.94)	4	2171mm - 2271mm (85.47 - 89.41)	2621mm - 2721mm (103.19 - 107.13)	3071mm - 3171mm (120.91 - 124.84)
8778627	M 700 SB 16S 20 100	700mm (27.56)	100mm (3.94)	4	2246mm - 2346mm (88.43 - 92.36)	2696mm - 2796mm (106.14 - 110.08)	3146mm - 3246mm (123.86 - 127.80)
8778631	M 775 SB 16S 20 100	775mm (30.51)	100mm (3.94)	5	2321mm - 2421mm (91.38 - 95.31)	2771mm - 2871mm (109.09 - 113.03)	3221mm - 3321mm (126.81 - 130.75)

Middle Extension

Part Number	Description	Middle Extension	Top Roller Position	Maximum Cutoff	Number of Screws
8779295	M 691 RL 330 16S	691mm (27.20)	330mm (12.99)	N/A	4
8778823	M 691 RL 600 16S	691mm (27.20)	600mm (23.62)	N/A	4
2164818	M 742 RL 651 16S	742mm (29.21)	651mm (25.63)	N/A	4
2162396	M 920 RL 829 16S	920mm (36.22)	829mm (32.64)	N/A	5
8778827	M 1141 RL 1050 16S	1141mm (44.92)	1050mm (41.34)	N/A	7
8778831	M 1591 RL 1500 16S	1591mm (62.64)	1500mm (59.06)	N/A	9

Gear

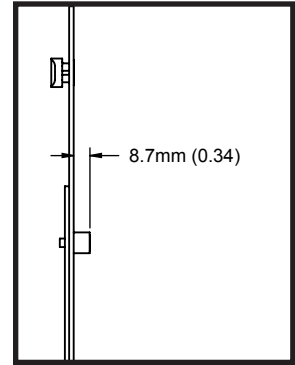
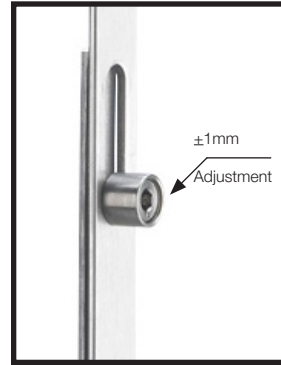
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Roller Position	Max. Cutoff	Number of Screws
8778835	M/35/14 914 RLS 620 16S 20	35mm (1.38)	14mm (0.55)	914mm (36.00)	620mm (24.41)	N/A	6
8778839	M/45/14 914 RLS 620 16S 20	45mm (1.77)	14mm (0.55)	914mm (36.00)	620mm (24.41)	N/A	6
8778843	M/35/25 914 RLS 620 16S 20	35mm (1.38)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6
8778847	M/45/25 914 RLS 620 16S 20	45mm (1.77)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6
2858511	M/60/25 914 RLS 620 16S 20	60mm (2.36)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6
3924524	M/70/25 914 RLS 620 16S 20	70mm (2.75)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6

2875118	Cover Plate
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Four Roller - 16mm Faceplate

FOUR ROLLER

The four roller version offers the same benefits as the two roller version with two additional locking points for added security and additional weather sealing.



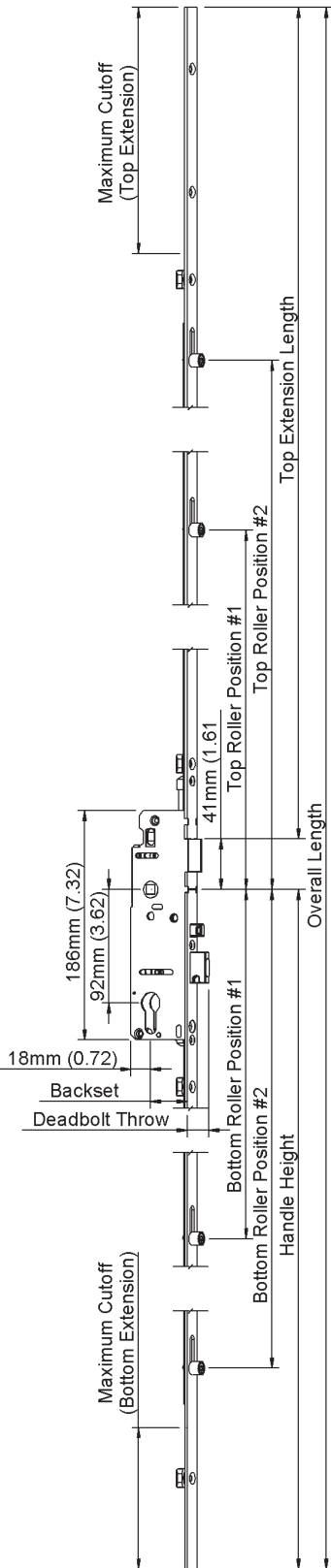
Top Extension

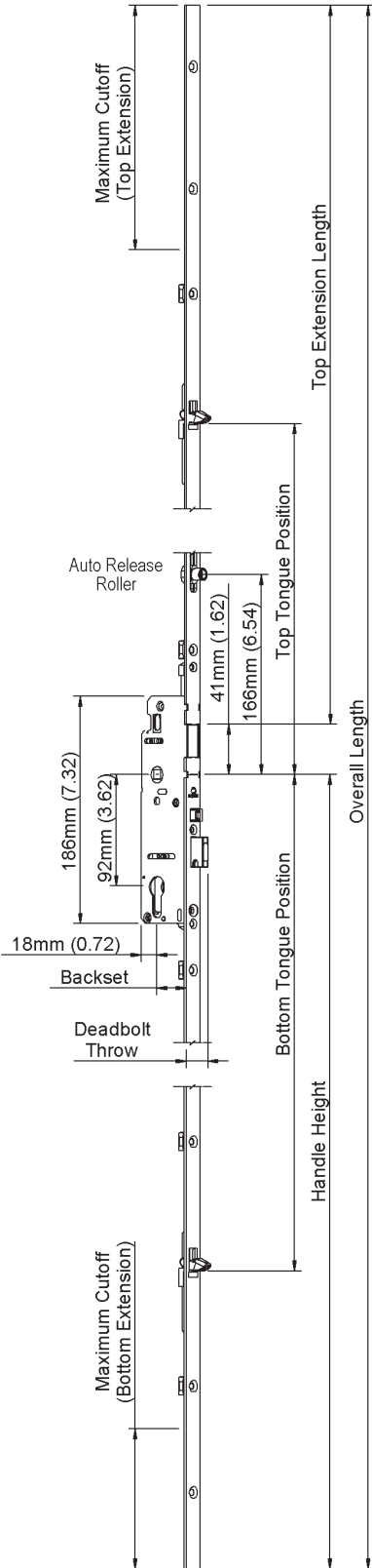
Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Ext. Length	Handle to Top of Door	Top Roller Pos. #1	Top Roller Pos. #2	Max. Cutoff	Number of Screws
8778851	M 1045 RLR 400/800 16S 205	1795mm-2000mm (70.67 - 78.74)	1045mm (41.14)	1086mm (42.76)	400mm (15.75)	800mm (31.50)	205mm (8.07)	7
8778855	M 1220 RLR 400/800 16S 380	1795mm - 2175mm (70.67 - 85.63)	1220mm (48.03)	1261mm (49.65)	400mm (15.75)	800mm (31.50)	380mm (14.96)	8
8778859	M 1395 RLR 600/1150 16S 205	2145mm - 2350mm (84.45 - 92.52)	1395mm (54.92)	1436mm (56.54)	600mm (23.62)	1150mm (45.28)	205mm (8.07)	9
8778863	M 1570 RLR 600/1150 16S 380	2145mm - 2525mm (84.45 - 99.41)	1570mm (61.81)	1611mm (63.43)	600mm (23.62)	1150mm (45.28)	380mm (14.96)	10
8778867	M 1745 RLR 800/1500 16S 205	2495mm - 2700mm (98.23 - 106.30)	1745mm (68.70)	1786mm (70.31)	800mm (31.50)	1500mm (59.06)	205mm (8.07)	11
8778871	M 1920 RLR 800/1500 16S 380	2495mm - 2875mm (98.23 - 113.19)	1920mm (75.59)	1961mm (77.20)	800mm (31.50)	1500mm (59.06)	380mm (14.96)	12
8778875	M 2095 RLR 1000/1850 16S 205	2845mm - 3050mm (112.01 - 120.08)	2095mm (82.48)	2136mm (84.09)	1000mm (39.97)	1850mm (72.83)	205mm (8.07)	12
8778879	M 2270 RLR 1000/1850 16S 380	2845mm - 3225mm (112.01 - 126.97)	2270mm (89.37)	2311mm (90.98)	1000mm (39.97)	1850mm (72.83)	380mm (14.96)	13

Gear

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Roller Pos. #1	Bottom Roller Pos. #2	Max. Cutoff	Number of Screws
8778883	M/35/14 914 RLR 400/750 16S 60	35mm (1.38)	14mm (.55)	914mm (36.00)	400mm (15.75)	750mm (29.53)	60mm (2.36)	5
8778887	M/45/14 914 RLR 400/750 16S 60	45mm (1.77)	14mm (.55)	914mm (36.00)	400mm (15.75)	750mm (29.53)	60mm (2.36)	5
8778891	M/35/25 914 RLR 400/750 16S 60	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	400mm (15.75)	750mm (29.53)	60mm (2.36)	5
8778895	M/45/25 914 RLR 400/750 16S 60	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	400mm (15.75)	750mm (29.53)	60mm (2.36)	5

Note: Rollers are listed in the locked or down position.





AUTOMATIC TONGUE

While offering security in the locked position, the HLS®9000 tongue version retracts when opened, giving a smooth clean appearance. Automatic version engages multipoint when door is closed.



Top Extension

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to Top of Door	Top Tongue Position	Maximum Cutoff	Number of Screws
8778579	A 1045 TN 743 16S 195	1805mm - 2000mm (71.06 - 78.74)	1045mm (41.14)	1086mm (42.76)	743mm (29.25)	195mm (7.67)	7
8778583	A 1220 TN 743 16S 370	1805mm - 2175mm (71.06 - 85.63)	1220mm (48.03)	1261mm (49.65)	743mm (29.25)	370mm (14.57)	8
8778587	A 1395 TN 945 16S 340	2010mm - 2350mm (79.13 - 92.52)	1395mm (54.92)	1436mm (56.54)	945mm (37.20)	340mm (13.39)	9
8778591	A 1570 TN 945 16S 515	2010mm - 2525mm (79.13 - 99.41)	1570mm (61.81)	1611mm (63.43)	945mm (37.20)	515mm (20.28)	10
8778595	A 1745 TN 1193 16S 445	2255mm - 2700mm (88.78 - 106.30)	1745mm (68.70)	1786mm (70.31)	1193mm (46.97)	445mm (17.52)	10
8778607	A 2270 TN 1594 16S 570	2655mm - 3225mm (104.53 - 126.97)	2270mm (89.37)	2311mm (90.98)	1594mm (62.76)	570mm (22.44)	13

Gear

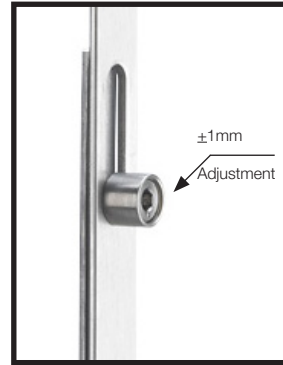
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
8778271	A/35/14 914 TN 671 16S 115	35mm (1.38)	14mm (.55)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778303	A/45/14 914 TN 671 16S 115	45mm (1.77)	14mm (.55)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778247	A/35/25 914 TN 671 16S 115	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778291	A/45/25 914 TN 671 16S 115	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
8778267	A/35/14 914 TN 753 16S 30	35mm (1.38)	14mm (.55)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
8778243	A/35/25 914 TN 753 16S 30	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
8778287	A/45/25 914 TN 753 16S 30	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

See page 43 for Special Automatic Strike.

Automatic Two Roller - 16mm Faceplate

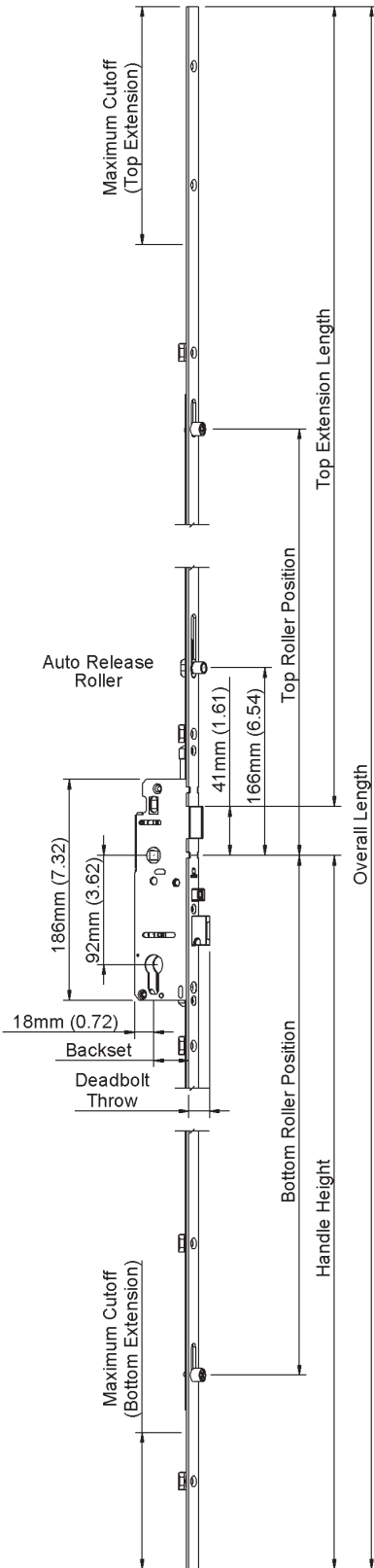
AUTOMATIC TWO ROLLER

The HLS®9000 two roller version is easily adjusted with the simple turn of a hex wrench for improved weather sealing. Automatic version engages multi-point when door is closed.



Top Extension

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to Top of Door	Top Roller Position	Maximum Cutoff	Number of Screws
8778515	A 1045 RL 730 16S 195	1805mm-2000mm (71.06 - 78.74)	1045mm (41.14)	1086mm (42.76)	730mm (28.74)	275mm (10.83)	7
8778519	A 1220 RL 930 16S 370	1805mm - 2175mm (71.06 - 85.63)	1220mm (48.03)	1261mm (49.65)	930mm (36.61)	250mm (9.84)	8
8778523	A 1395 RL 1135 16S 340	2010mm - 2350mm (79.13 - 92.52)	1395mm (54.92)	1436mm (56.54)	1135mm (44.69)	220mm (8.66)	9
8778527	A 1570 RL 1285 16S 515	2010mm - 2525mm (79.13 - 99.41)	1570mm (61.81)	1611mm (63.43)	1285mm (50.59)	245mm (9.65)	10
8778531	A 1745 RL 1285 16S 445	2255mm - 2700mm (88.78 - 106.30)	1745mm (68.70)	1786mm (70.31)	1285mm (50.59)	420mm (16.54)	11



Gear

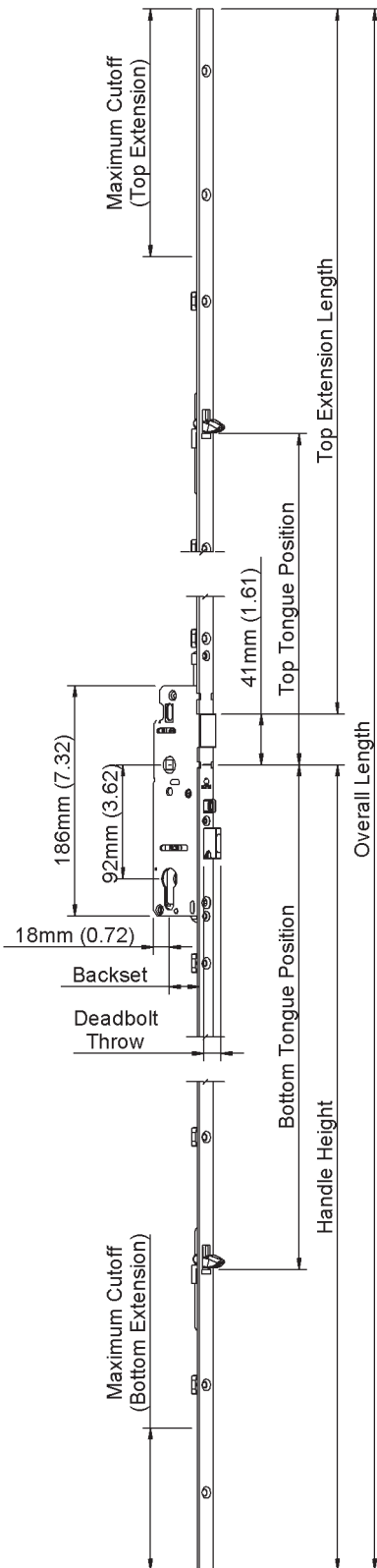
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Roller Position	Maximum Cutoff	Number of Screws
8778275	A/35/14 914 RL 750 16S 60	35mm (1.38)	14mm (.55)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5
8778307	A/45/14 914 RL 750 16S 60	45mm (1.77)	14mm (.55)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5
8778251	A/35/25 914 RL 750 16S 60	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5
8778295	A/45/25 914 RL 750 16S 60	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	750mm (29.53)	60mm (2.36)	5

See page 43 for Special Automatic Strike.

Tongue Version - 20mm Faceplate

TONGUE VERSION

While offering security in the locked position, the HLS®9000 tongue version retracts when opened, giving a smooth clean appearance.



Top Extension

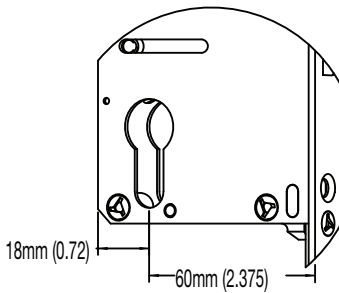
Part Number	Description	Overall Length (with 914mm 36° Handle Height)	Extension Length	Handle to Top of Door	Top Tongue Position	Maximum Cutoff	Number of Screws
2320956	M 1045 TN 743 20S 195	1805mm - 2000mm (71.06 - 78.74)	1045mm (41.14)	1086mm (42.76)	743mm (29.25)	195mm (7.67)	7
2332973	M 1220 TN 743 20S 370	1805mm - 2175mm (71.06 - 85.63)	1220mm (48.03)	1261mm (49.65)	743mm (29.25)	370mm (14.57)	8
2332990	M 1395 TN 945 20S 340	2010mm - 2350mm (79.13 - 92.52)	1395mm (54.92)	1436mm (56.54)	945mm (37.20)	340mm (13.39)	9
2333010	M 1570 TN 945 20S 515	2010mm - 2525mm (79.13 - 99.41)	1570mm (61.81)	1611mm (63.43)	945mm (37.20)	515mm (20.28)	10
2333036	M 1745 TN 1193 20S 445	2255mm - 2700mm (88.78 - 106.30)	1745mm (68.70)	1786mm (70.31)	1193mm (46.97)	445mm (17.52)	10
2333052	M 1920 TN 1594 20S 220	2655mm - 2875mm (104.53 - 113.19)	1920mm (75.59)	1961mm (77.20)	1594mm (62.76)	220mm (8.66)	11
2333781	M 2270 TN 1594 20S 570	2655mm - 3225mm (104.53 - 126.97)	2270mm (89.37)	2311mm (90.98)	1594mm (62.76)	570mm (22.44)	13

Gear

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
2332324	M/35/25 914 TN 620 20S 160	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
2332316	M/45/25 914 TN 620 20S 160	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
2320972	M/45/14 914 TN 671 20S 115	45mm (1.77)	14mm (.55)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2320981	M/35/25 914 TN 671 20S 115	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2320948	M/45/25 914 TN 671 20S 115	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2332341	M/45/14 914 TN 753 20S 30	45mm (1.77)	14mm (.55)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
2332359	M/35/25 914 TN 753 20S 30	35mm (1.38)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5
2332367	M/45/25 914 TN 753 20S 30	45mm (1.77)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

60mm Backset Gear / Bottom Extension

Gear - 60mm Backset

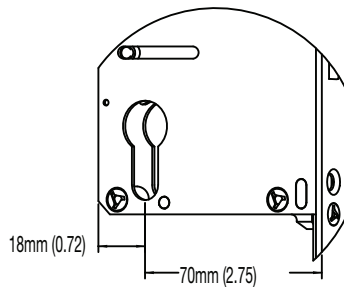


Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
2406400	M/60/25 914 TN 620 20S 160	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
2406418	M/60/25 914 TN 671 20S 115	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2406434	M/60/25 914 TN 753 20S 30	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension

Gear - 70mm Backset



Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Maximum Cutoff	Number of Screws
2406442	M/70/25 914 TN 620 20S 160	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	160mm (6.30)	6
2406451	M/70/25 914 TN 671 20S 115	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	671mm (26.42)	115mm (4.53)	6
2406469	M/70/25 914 TN 753 20S 30	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	753mm (29.65)	30mm (1.18)	5

For Top Extension, please reference the Top extension chart on the adjacent page.

Tongue / Shootbolt - 20mm Faceplate

TONGUE/SHOOTBOLT

The HLS®9000 tongue/shootbolt offers the added security of both horizontal and vertical strength for increased wind-load protection.



Top Extension

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 691 TN 600 (with 914mm/36" Handle Height)	Overall Length Combined with M 1141 TN 1050 (with 914mm/36" Handle Height)	Overall Length Combined with M 1591 TN 1500 (with 914mm/36" Handle Height)
2186566	M 400 SB 20S 20 100	400mm (15.75)	100mm (3.94)	3	1946mm - 2046mm (76.61 - 80.55)	2396mm - 2496mm (94.33 - 98.27)	2846mm - 2946mm (112.05 - 115.98)
2186507	M 475 SB 20S 20 100	475mm (18.70)	100mm (3.94)	3	2021mm - 2121mm (79.57 - 83.50)	2471mm - 2571mm (97.28 - 101.22)	2921mm - 3021mm (115.00 - 118.94)
2186486	M 550 SB 20S 20 100	550mm (21.65)	100mm (3.94)	4	2096mm - 2196mm (82.52 - 86.46)	2546mm - 2646mm (100.24 - 104.17)	2996mm - 3096mm (117.95 - 121.89)
2186030	M 625 SB 20S 20 100	625mm (24.61)	100mm (3.94)	4	2171mm - 2271mm (85.47 - 89.41)	2621mm - 2721mm (103.19 - 107.13)	3071mm - 3171mm (120.91 - 124.84)
2186013	M 700 SB 20S 20 100	700mm (27.56)	100mm (3.94)	4	2246mm - 2346mm (88.43 - 92.36)	2696mm - 2796mm (106.14 - 110.08)	3146mm - 3246mm (123.86 - 127.80)
2185993	M 775 SB 20S 20 100	775mm (30.51)	100mm (3.94)	5	2321mm - 2421mm (91.38 - 95.31)	2771mm - 2871mm (109.09 - 113.03)	3221mm - 3321mm (126.81 - 130.75)

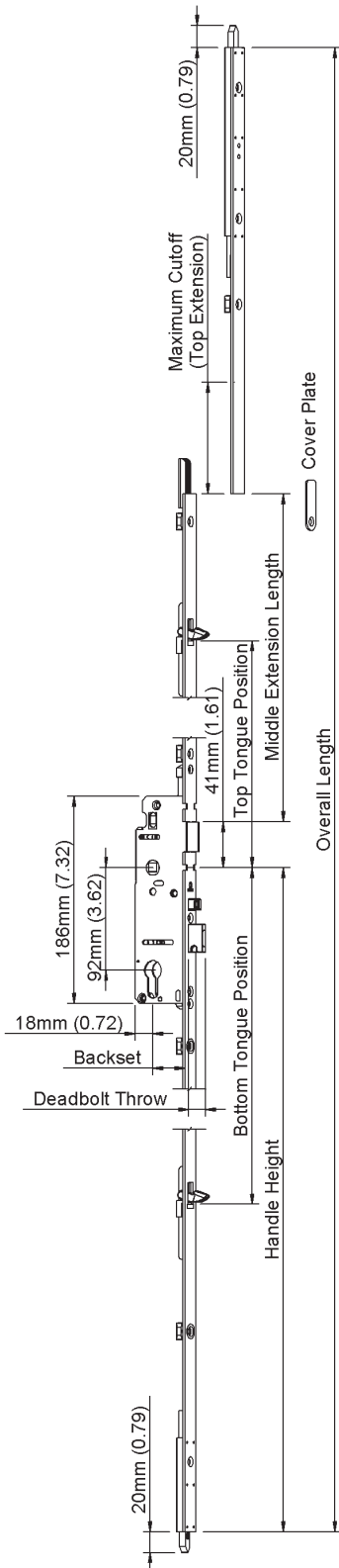
Middle Extension

Part Number	Description	Middle Extension	Top Tongue Position	Second Tongue Position	Maximum Cutoff	Number of Screws
2400577	M 691 TN 600 20S	691mm (27.20)	600mm (23.62)	N/A	N/A	4
2400593	M 1141 TN 1050 20S	1141mm (44.92)	1050mm (41.34)	N/A	N/A	7
2400606	M 1591 TN 1500 20S	1591mm (62.64)	1500mm (59.06)	N/A	N/A	9

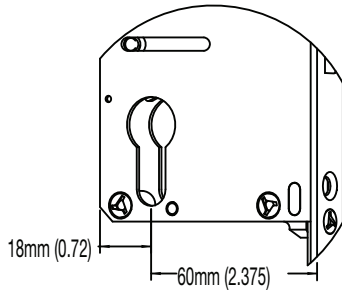
Gear

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Max. Cutoff	Number of Screws
2400649	M/35/25 914 TN 620 20S 20	35mm (1.38)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6
2400657	M/45/25 914 TN 620 20S 20	45mm (1.77)	25mm (1.00)	914mm (36.00)	620mm (24.41)	N/A	6

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

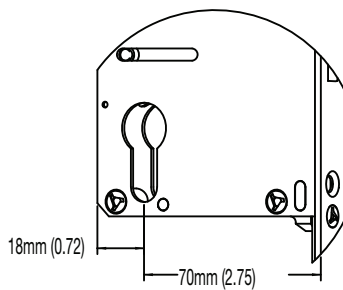


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Number of Screws
2406493	M/60/25 914 TNS 620 20S 20	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Bottom Tongue Position	Number of Screws
2406506	M/70/25 914 TNS 20S 20	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	620mm (24.41)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

Shootbolt - 20mm Faceplate

SHOOTBOLT VERSION

Added vertical strength is a proven benefit of the shootbolt version providing extra security through the locking points in the head and sill of the door.



See corresponding colors in chart when referencing top extension length with middle extension chart

Top Extension

Part Number	Description	Top Extension Length	Max. Cutoff	Number of Screws	Overall Length Combined with M 691 (with 914mm/36" Handle Height)	Overall Length Combined with M 1141 (with 914mm/36" Handle Height)	Overall Length Combined with M 1591 (with 914mm/36" Handle Height)
2186566	M 400 SB 20S 20 100	400mm (15.75)	100mm (3.94)	3	1946mm - 2046mm (76.61 - 80.55)	2396mm - 2496mm (94.33 - 98.27)	2846mm - 2946mm (112.05 - 115.98)
2186507	M 475 SB 20S 20 100	475mm (18.70)	100mm (3.94)	3	2021mm - 2121mm (79.57 - 83.50)	2471mm - 2571mm (97.28 - 101.22)	2921mm - 3021mm (115.00 - 118.94)
2186486	M 550 SB 20S 20 100	550mm (21.65)	100mm (3.94)	4	2096mm - 2196mm (82.52 - 86.46)	2546mm - 2646mm (100.24 - 104.17)	2996mm - 3096mm (117.95 - 121.89)
2186030	M 625 SB 20S 20 100	625mm (24.61)	100mm (3.94)	4	2171mm - 2271mm (85.47 - 89.41)	2621mm - 2721mm (103.19 - 107.13)	3071mm - 3171mm (120.91 - 124.84)
2186013	M 700 SB 20S 20 100	700mm (27.56)	100mm (3.94)	4	2246mm - 2346mm (88.43 - 92.36)	2696mm - 2796mm (106.14 - 110.08)	3146mm - 3246mm (123.86 - 127.80)
2185993	M 775 SB 20S 20 100	775mm (30.51)	100mm (3.94)	5	2321mm - 2421mm (91.38 - 95.31)	2771mm - 2871mm (109.09 - 113.03)	3221mm - 3321mm (126.81 - 130.75)

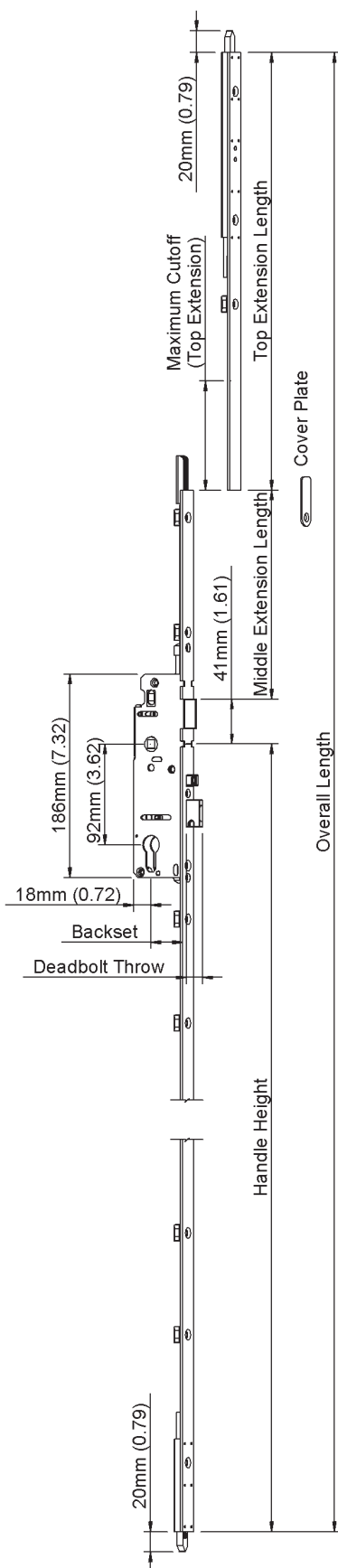
Middle Extension

Part Number	Description	Middle Extension	Maximum Cutoff	Number of Screws
2424131	M 441 20S	441mm (17.36)	N/A	3
2186523	M 691 20S	691mm (27.20)	N/A	4
2185951	M 1141 20S	1141mm (44.92)	N/A	6
2185934	M 1591 20S	1591mm (62.64)	N/A	8

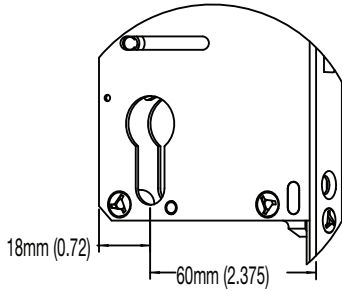
Gear / Bottom Extension

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Max. Cutoff	Number of Screws
2185133	M/35/14 914 SB 20S 20	35mm (1.38)	14mm (0.55)	914mm (36.00)	N/A	6
2185150	M/45/14 914 SB 20S 20	45mm (1.77)	14mm (0.55)	914mm (36.00)	N/A	6
2185125	M/35/25 914 SB 20S 20	35mm (1.38)	25mm (1.00)	914mm (36.00)	N/A	6
2185141	M/45/25 914 SB 20S 20	45mm (1.77)	25mm (1.00)	914mm (36.00)	N/A	6

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

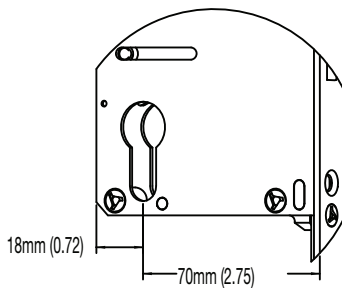


Gear - 60mm Backset

Part Number	Description	Backset	Deadbolt Throw	Handle Height	Number of Screws
2406531	M/60/25 914 SB 20S	60mm (2.375)	25.4mm (1.00)	914mm (36.00)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

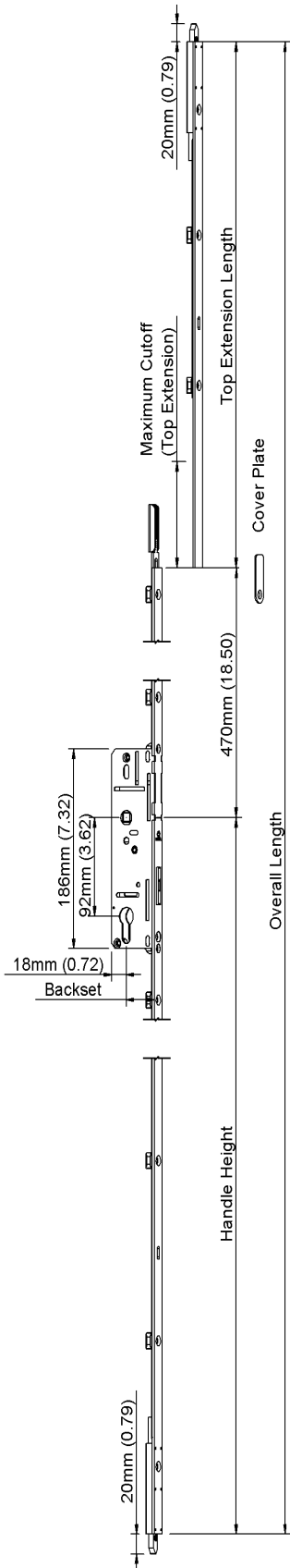
Part Number	Description	Backset	Deadbolt Throw	Handle Height	Number of Screws
2406549	M/70/25 914 SB 20S	70mm (2.75)	25.4mm (1.00)	914mm (36.00)	6

For Top Extension, please reference the Top extension chart on the adjacent page.

Inactive - 16mm Faceplate 20mm Shootbolt Throw

INACTIVE

Our inactive shootbolt with a 16mm faceplate and **20mm shootbolt throw** is handle operated for security on the secondary panel. With this **2 piece version**, not only do you have the security of our shootbolts, but the added beauty of operable handles on French doors.



Top Extension

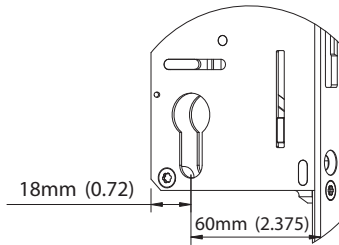
Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to top of Door	Maximum Cutoff	Number of Screws
3416909	IA 415 SB 16S 20 100	66.89" - 70.83" (1699mm - 1799mm)	16.33" (415mm)	34.84" (885mm)	3.94" (100mm)	2
8778759	IA 490 SB 16S 20 100	69.84" - 73.78" (1774mm - 1874mm)	19.29" (490mm)	37.80" (960mm)	3.94" (100mm)	3
8778763	IA 565 SB 16S 20 100	72.80" - 76.73" (1849mm - 1949mm)	22.24" (565mm)	40.75" (1035mm)	3.94" (100mm)	3
8778767	IA 640 SB 16S 20 100	75.75" - 79.69" (1924mm - 2024mm)	25.20" (640mm)	43.70" (1110mm)	3.94" (100mm)	4
8778771	IA 715 SB 16S 20 100	78.70" - 82.64" (1999mm - 2099mm)	28.15" (715mm)	46.65" (1185mm)	3.94" (100mm)	4
8778775	IA 790 SB 16S 20 100	81.65" - 85.59" (2074mm - 2174mm)	31.10" (790mm)	49.61" (1260mm)	3.94" (100mm)	4
8778779	IA 865 SB 16S 20 100	84.61" - 88.54" (2149mm - 2249mm)	34.06" (865mm)	52.56" (1335mm)	3.94" (100mm)	6
8778783	IA 940 SB 16S 20 100	87.56" - 91.50" (2224mm - 2324mm)	37.01" (940mm)	55.51" (1410mm)	3.94" (100mm)	6
8778787	IA 1140 SB 16S 20 230	90.31" - 99.37" (2294mm - 2524mm)	44.88" (1140mm)	63.39" (1610mm)	9.06" (230mm)	7
8778791	IA 1340 SB 16S 20 230	98.19" - 107.24" (2494mm - 2724mm)	52.76" (1340mm)	71.26" (1810mm)	9.06" (230mm)	8
8778795	IA 1540 SB 16S 20 230	106.06" - 115.12" (2694mm - 2924mm)	60.63" (1540mm)	79.13" (2010mm)	9.06" (230mm)	10
8778799	IA 1740 SB 16S 20 230	113.94" - 122.99" (2894mm - 3124mm)	68.50" (1740mm)	87.01" (2210mm)	9.06" (230mm)	11
8778803	IA 1940 SB 16S 20 230	121.81" - 130.87" (3094mm - 3324mm)	76.38" (1940mm)	94.88" (2410mm)	9.06" (230mm)	12

Gear / Bottom Extension - ONE- PIECE INCLUDES BOTH

Part Number	Description	Backset	Handle Height	Number of Screws
2074564	IA 35 914 16S 20	1.38" (35mm)	36" (914mm)	8
1997447	IA 45 914 16S 20	1.77" (45mm)	36" (914mm)	8

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

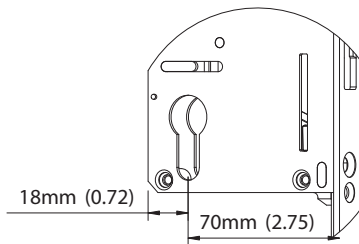


Gear - 60mm Backset

Part Number	Description	Backset	Handle Height	Number of Screws
2406557	IA/60 914 16S 20	2.375" (60mm)	36" (914mm)	8

For Top Extension, Please reference the Top Extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

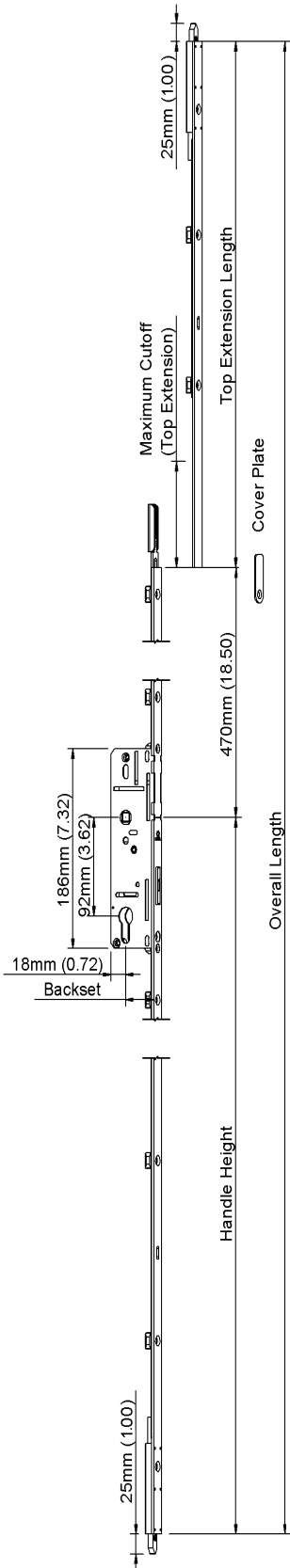
Part Number	Description	Backset	Handle Height	Number of Screws
2406565	IA/70 914 16S 20	2.75" (70mm)	36" (914mm)	8

For Top Extension, Please reference the Top Extension chart on the adjacent page.

Inactive Version - 16mm Faceplate 25mm Shootbolt Throw

INACTIVE

Our inactive shootbolt version with a 16mm faceplate and **25mm shootbolt throw** is handle operated for security on the secondary panel. With this **2 piece version**, not only do you have the security of our shootbolts, but the added beauty of operable handles on French doors.



Top Extension

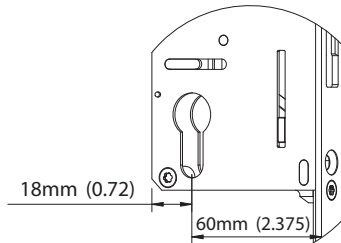
Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to top of Door	Maximum Cutoff	Number of Screws
3416896	IA 415 SB 16S 25 100	66.89" - 70.83" (1699mm - 1799mm)	16.33" (415mm)	34.84" (885mm)	3.94" (100mm)	2
8786975	IA 490 SB 16S 25 100	69.84" - 73.78" (1774mm - 1874mm)	19.29" (490mm)	37.80" (960mm)	3.94" (100mm)	3
8786979	IA 565 SB 16S 25 100	72.80" - 76.73" (1849mm - 1949mm)	22.24" (565mm)	40.75" (1035mm)	3.94" (100mm)	3
8786983	IA 640 SB 16S 25 100	75.75" - 79.69" (1924mm - 2024mm)	25.20" (640mm)	43.70" (1110mm)	3.94" (100mm)	4
8786987	IA 715 SB 16S 25 100	78.70" - 82.64" (1999mm - 2099mm)	28.15" (715mm)	46.65" (1185mm)	3.94" (100mm)	4
8786991	IA 790 SB 16S 25 100	81.65" - 85.59" (2074mm - 2174mm)	31.10" (790mm)	49.61" (1260mm)	3.94" (100mm)	4
8786995	IA 865 SB 16S 25 100	84.61" - 88.54" (2149mm - 2249mm)	34.06" (865mm)	52.56" (1335mm)	3.94" (100mm)	6
8786999	IA 940 SB 16S 25 100	87.56" - 91.50" (2224mm - 2324mm)	37.01" (940mm)	55.51" (1410mm)	3.94" (100mm)	6
8787003	IA 1140 SB 16S 25 230	90.31" - 99.37" (2294mm - 2524mm)	44.88" (1140mm)	63.39" (1610mm)	9.06" (230mm)	7
8787007	IA 1340 SB 16S 25 230	98.19" - 107.24" (2494mm - 2724mm)	52.76" (1340mm)	71.26" (1810mm)	9.06" (230mm)	8
8787011	IA 1540 SB 16S 25 230	106.06" - 115.12" (2694mm - 2924mm)	60.63" (1540mm)	79.13" (2010mm)	9.06" (230mm)	10
8787015	IA 1740 SB 16S 25 230	113.94" - 122.99" (2894mm - 3124mm)	68.50" (1740mm)	87.01" (2210mm)	9.06" (230mm)	11
8787019	IA 1940 SB 16S 25 230	121.81" - 130.87" (3094mm - 3324mm)	76.38" (1940mm)	94.88" (2410mm)	9.06" (230mm)	12

Gear / Bottom Extension - ONE- PIECE INCLUDES BOTH

Part Number	Description	Backset	Handle Height	Number of Screws
2139436	IA 35 914 16S 25	1.38" (35mm)	36" (914mm)	8
2099201	IA 45 914 16S 25	1.77" (45mm)	36" (914mm)	8

2875118	Cover Plate
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60mm Backset Gear / Bottom Extension

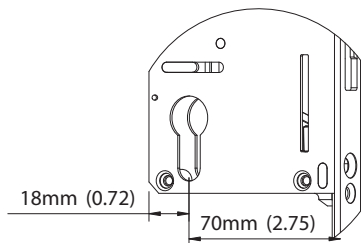


Gear - 60mm Backset

Part Number	Description	Backset	Handle Height	Number of Screws
2406573	IA/60 914 16S 25	2.375" (60mm)	36" (914mm)	8

For Top Extension, Please reference the Top Extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension



Gear - 70mm Backset

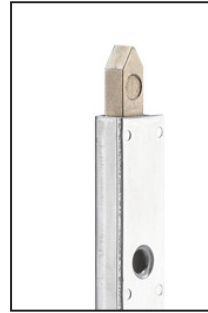
Part Number	Description	Backset	Handle Height	Number of Screws
2406581	IA/70 914 16S 25	2.75" (70mm)	36" (914mm)	8

For Top Extension, Please reference the Top Extension chart on the adjacent page.

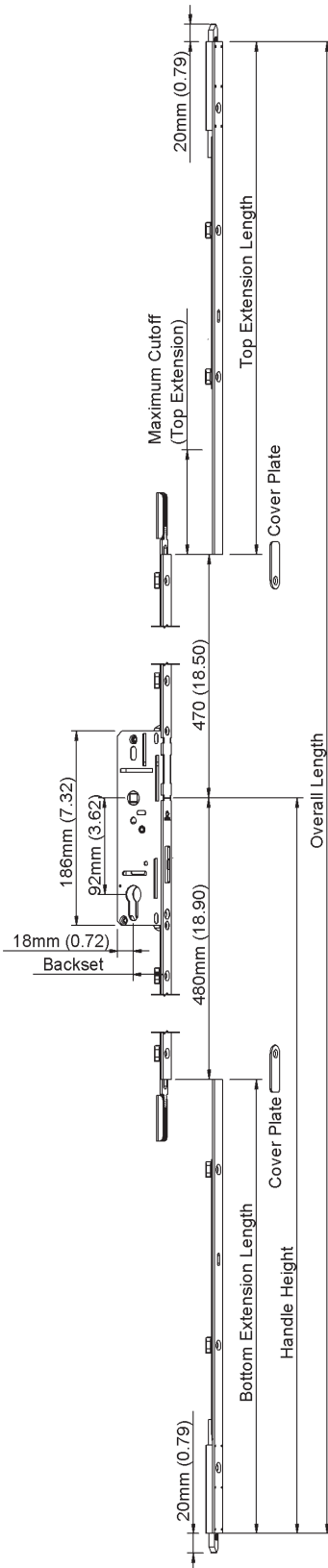
Inactive - 16mm Faceplate
20mm Shootbolt Throw

INACTIVE

Our inactive shootbolt with a 16mm faceplate and **20mm shootbolt throw** is handle operated for security on the secondary panel. With this **3 piece version**, not only do you have the security of our shootbolts, but the added beauty of operable handles on French doors.



Top Extension - CAN USE TOP EXTENSIONS FOR BOTTOM EXTENSIONS



Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to top of Door	Maximum Cutoff	Number of Screws
3416909	IA 415 SB 16S 20 100	66.89" - 70.83" (1699mm - 1799mm)	16.33" (415mm)	34.84" (885mm)	3.94" (100mm)	2
8778759	IA 490 SB 16S 20 100	69.84" - 73.78" (1774mm - 1874mm)	19.29" (490mm)	37.80" (960mm)	3.94" (100mm)	3
8778763	IA 565 SB 16S 20 100	72.80" - 76.73" (1849mm - 1949mm)	22.24" (565mm)	40.75" (1035mm)	3.94" (100mm)	3
8778767	IA 640 SB 16S 20 100	75.75" - 79.69" (1924mm - 2024mm)	25.20" (640mm)	43.70" (1110mm)	3.94" (100mm)	4
8778771	IA 715 SB 16S 20 100	78.70" - 82.64" (1999mm - 2099mm)	28.15" (715mm)	46.65" (1185mm)	3.94" (100mm)	4
8778775	IA 790 SB 16S 20 100	81.65" - 85.59" (2074mm - 2174mm)	31.10" (790mm)	49.61" (1260mm)	3.94" (100mm)	4
8778779	IA 865 SB 16S 20 100	84.61" - 88.54" (2149mm - 2249mm)	34.06" (865mm)	52.56" (1335mm)	3.94" (100mm)	6
8778783	IA 940 SB 16S 20 100	87.56" - 91.50" (2224mm - 2324mm)	37.01" (940mm)	55.51" (1410mm)	3.94" (100mm)	6
8778787	IA 1140 SB 16S 20 230	90.31" - 99.37" (2294mm - 2524mm)	44.88" (1140mm)	63.39" (1610mm)	9.06" (230mm)	7
8778791	IA 1340 SB 16S 20 230	98.19" - 107.24" (2494mm - 2724mm)	52.76" (1340mm)	71.26" (1810mm)	9.06" (230mm)	8
8778795	IA 1540 SB 16S 20 230	106.06" - 115.12" (2694mm - 2924mm)	60.63" (1540mm)	79.13" (2010mm)	9.06" (230mm)	10
8778799	IA 1740 SB 16S 20 230	113.94" - 122.99" (2894mm - 3124mm)	68.50" (1740mm)	87.01" (2210mm)	9.06" (230mm)	11
8778803	IA 1940 SB 16S 20 230	121.81" - 130.87" (3094mm - 3324mm)	76.38" (1940mm)	94.88" (2410mm)	9.06" (230mm)	12

Gear Only

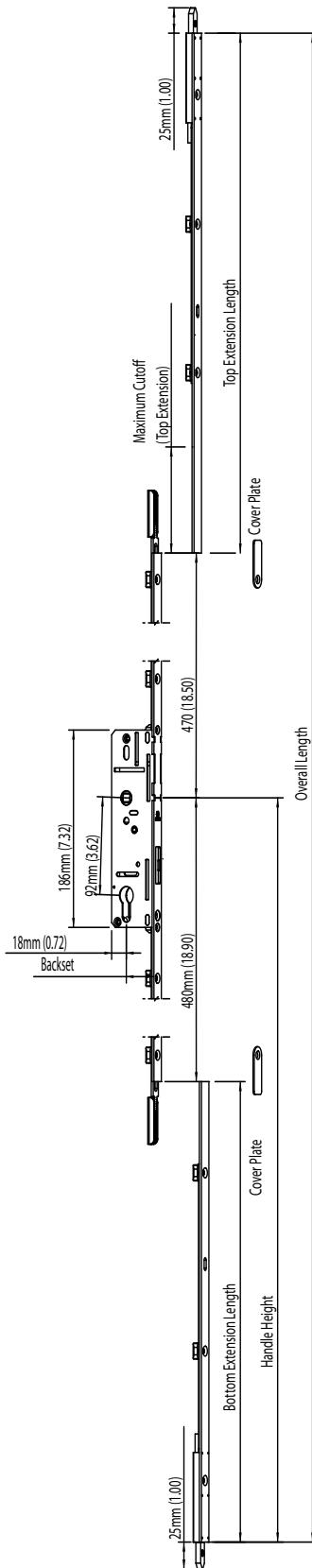
Part Number	Description	Backset	Handle Height Combined with IA 434 16S 20 15	Number of Screws
8778155	IA 35 16S	1.38" (35mm)	36" (914mm)	6
8778443	IA 45 16S	1.77" (45mm)	36" (914mm)	6
3403999	IA 60 16S	2.375" (60mm)	36" (914mm)	6
3761139	IA 70 16S	2.755" (70mm)	36" (914mm)	6

Bottom Extension - Allows for variable handle heights
If needing 36" handle heights use 2 piece version on page 30

Part Number	Description	Extension Length	Maximum Cutoff	Number of Screws
8787583	IA 434 16S 20 15	17.09" (434mm)	.59" (15mm)	3

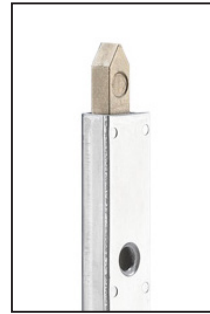
2875118	Cover Plate
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Inactive - 16mm Faceplate
25mm Shootbolt Throw



INACTIVE

Our inactive shootbolt with a 16mm faceplate and **25mm shootbolt throw** is handle operated for security on the secondary panel. With this **3 piece version**, not only do you have the security of our shootbolts, but the added beauty of operable handles on French doors.



Top Extension - CAN USE TOP EXTENSIONS FOR BOTTOM EXTENSIONS

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to top of Door	Maximum Cutoff	Number of Screws
3416896	IA 415 SB 16S 25 100	66.89" - 70.83" (1699mm - 1799mm)	16.33" (415mm)	34.84" (885mm)	3.94" (100mm)	2
8786975	IA 490 SB 16S 25 100	69.84" - 73.78" (1774mm - 1874mm)	19.29" (490mm)	37.80" (960mm)	3.94" (100mm)	3
8786979	IA 565 SB 16S 25 100	72.80" - 76.73" (1849mm - 1949mm)	22.24" (565mm)	40.75" (1035mm)	3.94" (100mm)	3
8786983	IA 640 SB 16S 25 100	75.75" - 79.69" (1924mm - 2024mm)	25.20" (640mm)	43.70" (1110mm)	3.94" (100mm)	4
8786987	IA 715 SB 16S 25 100	78.70" - 82.64" (1999mm - 2099mm)	28.15" (715mm)	46.65" (1185mm)	3.94" (100mm)	4
8786991	IA 790 SB 16S 25 100	81.65" - 85.59" (2074mm - 2174mm)	31.10" (790mm)	49.61" (1260mm)	3.94" (100mm)	4
8786995	IA 865 SB 16S 25 100	84.61" - 88.54" (2149mm - 2249mm)	34.06" (865mm)	52.56" (1335mm)	3.94" (100mm)	6
8786999	IA 940 SB 16S 25 100	87.56" - 91.50" (2224mm - 2324mm)	37.01" (940mm)	55.51" (1410mm)	3.94" (100mm)	6
8787003	IA 1140 SB 16S 25 230	90.31" - 99.37" (2294mm - 2524mm)	44.88" (1140mm)	63.39" (1610mm)	9.06" (230mm)	7
8787007	IA 1340 SB 16S 25 230	98.19" - 107.24" (2494mm - 2724mm)	52.76" (1340mm)	71.26" (1810mm)	9.06" (230mm)	8
8787011	IA 1540 SB 16S 25 230	106.06" - 115.12" (2694mm - 2924mm)	60.63" (1540mm)	79.13" (2010mm)	9.06" (230mm)	10
8787015	IA 1740 SB 16S 25 230	113.94" - 122.99" (2894mm - 3124mm)	68.50" (1740mm)	87.01" (2210mm)	9.06" (230mm)	11
8787019	IA 1940 SB 16S 25 230	121.81" - 130.87" (3094mm - 3324mm)	76.38" (1940mm)	94.88" (2410mm)	9.06" (230mm)	12

Gear Only

Part Number	Description	Backset	Handle Height Combined with IA 434 16S 20 15	Number of Screws
8778155	IA 35 16S	1.38" (35mm)	36" (914mm)	6
8778443	IA 45 16S	1.77" (45mm)	36" (914mm)	6
3403999	IA 60 16S	2.375" (60mm)	36" (914mm)	6
3761139	IA 70 16S	2.755" (70mm)	36" (914mm)	6

Bottom Extension - Allows for variable handle heights
If needing 36" handle heights use 2 piece version on page 3

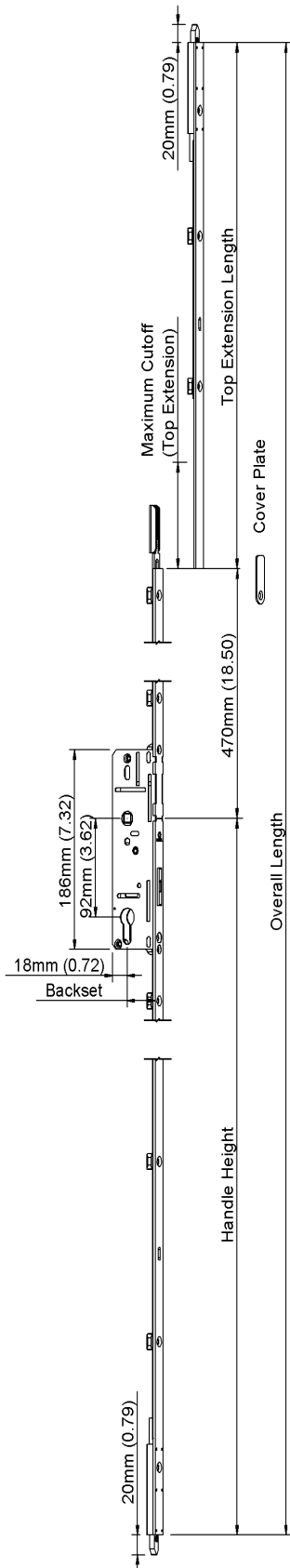
Part Number	Description	Extension Length	Maximum Cutoff	Number of Screws
8779355	IA 434 16S 25 15	17.09" (434mm)	.59" (15mm)	3

2875118	Cover Plate
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Inactive - 20mm Faceplate 20mm Shootbolt Throw

INACTIVE

Our inactive shootbolt with a 20mm faceplate and **20mm shootbolt throw** is handle operated for security on the secondary panel. With this **2 piece version**, not only do you have the security of our shootbolts, but the added beauty of operable handles on French doors.



Top Extension

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to top of Door	Maximum Cutoff	Number of Screws
2185918	IA 490 SB 20S 20 100	69.84" - 73.78" (1774mm - 1874mm)	19.29" (490mm)	37.80" (960mm)	3.94" (100mm)	3
2185897	IA 565 SB 20S 20 100	72.80" - 76.73" (1849mm - 1949mm)	22.24" (565mm)	40.75" (1035mm)	3.94" (100mm)	3
2186582	IA 640 SB 20S 20 100	75.75" - 79.69" (1924mm - 2024mm)	25.20" (640mm)	43.70" (1110mm)	3.94" (100mm)	4
2185871	IA 715 SB 20S 20 100	78.70" - 82.64" (1999mm - 2099mm)	28.15" (715mm)	46.65" (1185mm)	3.94" (100mm)	4
2185854	IA 790 SB 20S 20 100	81.65" - 85.59" (2074mm - 2174mm)	31.10" (790mm)	49.61" (1260mm)	3.94" (100mm)	4
2185838	IA 865 SB 20S 20 100	84.61" - 88.54" (2149mm - 2249mm)	34.06" (865mm)	52.56" (1335mm)	3.94" (100mm)	6
2185811	IA 940 SB 20S 20 100	87.56" - 91.50" (2224mm - 2324mm)	37.01" (940mm)	55.51" (1410mm)	3.94" (100mm)	6
2185791	IA 1140 SB 20S 20 230	90.31" - 99.37" (2294mm - 2524mm)	44.88" (1140mm)	63.39" (1610mm)	9.06" (230mm)	7
2185774	IA 1340 SB 20S 20 230	98.19" - 107.24" (2494mm - 2724mm)	52.76" (1340mm)	71.26" (1810mm)	9.06" (230mm)	8
2185758	IA 1540 SB 20S 20 230	106.06" - 115.12" (2694mm - 2924mm)	60.63" (1540mm)	79.13" (2010mm)	9.06" (230mm)	10
2185731	IA 1740 SB 20S 20 230	113.94" - 122.99" (2894mm - 3124mm)	68.50" (1740mm)	87.01" (2210mm)	9.06" (230mm)	11

Gear / Bottom Extension - ONE- PIECE INCLUDES BOTH

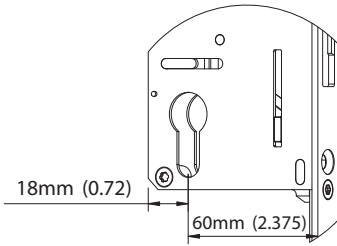
Part Number	Description	Backset	Handle Height	Number of Screws
2185176	IA 35 914 20S 20	1.38" (35mm)	36" (914mm)	8
2185651	IA 45 914 20S 20	1.77" (45mm)	36" (914mm)	8

2875118	Cover Plate
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Inactive - 20mm Faceplate
20mm Shootbolt Throw

60mm Backset Gear / Bottom Extension

Gear - 60mm Backset

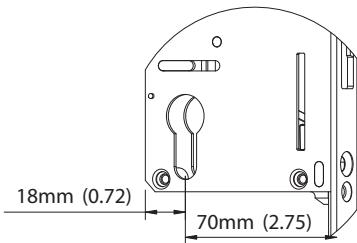


Part Number	Description	Backset	Handle Height	Number of Screws
2406590	IA/60 914 20S 20	2.375" (60mm)	36" (914mm)	8

For Top Extension, Please reference the Top Extension chart on the adjacent page.

70mm Backset Gear / Bottom Extension

Gear - 70mm Backset



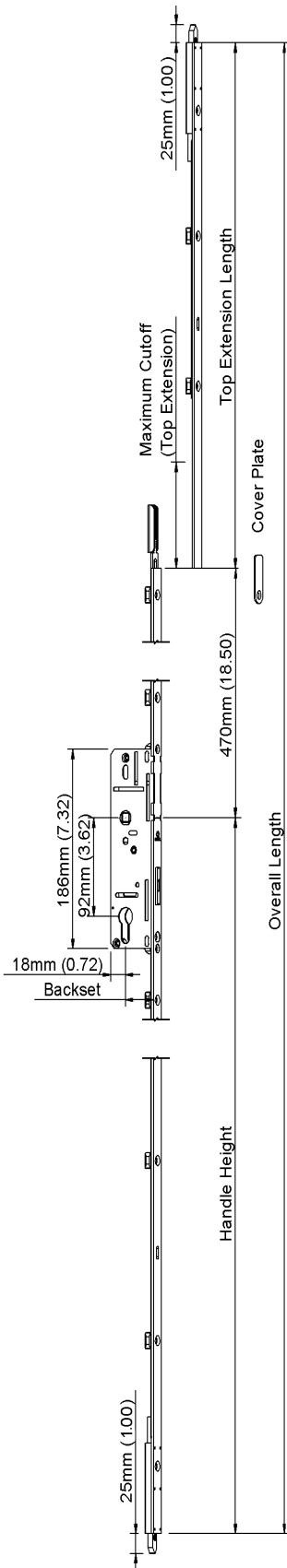
Part Number	Description	Backset	Handle Height	Number of Screws
2406602	IA/70 914 20S 20	2.75" (70mm)	36" (914mm)	8

For Top Extension, Please reference the Top Extension chart on the adjacent page.

Inactive - 20mm Faceplate
25mm Shootbolt Throw

INACTIVE

Our inactive shootbolt with a 20mm faceplate and **25mm shootbolt throw** is handle operated for security on the secondary panel. With this **2 piece version**, not only do you have the security of our shootbolts, but the added beauty of operable handles on French doors.



Top Extension

Part Number	Description	Overall Length (with 914mm 36" Handle Height)	Extension Length	Handle to top of Door	Maximum Cutoff	Number of Screws
2399861	IA 640 SB 20S 25 100	75.75" - 79.69" (1924mm - 2024mm)	25.20" (640mm)	43.70" (1110mm)	3.94" (100mm)	4
2399879	IA 715 SB 20S 25 100	78.70 - 82.64" (1999mm - 2099mm)	28.15" (715mm)	46.65" (1185mm)	3.94" (100mm)	4
2399924	IA 1140 SB 20S 25 230	90.31" - 99.37" (2294mm - 2524mm)	44.88" (1140mm)	63.39" (1610mm)	9.06" (230mm)	7
2399932	IA 1340 SB 20S 25 230	98.19" - 107.24" (2494mm - 2724mm)	52.76" (1340mm)	71.26" (1810mm)	9.06" (230mm)	8

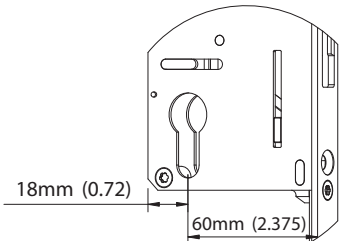
Gear / Bottom Extension - ONE- PIECE INCLUDES BOTH

Part Number	Description	Backset	Handle Height	Number of Screws
2399983	IA 35 914 20S 25	1.38" (35mm)	36" (914mm)	8

2875118	Cover Plate
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Inactive - 20mm Faceplate
 25mm Shootbolt Throw

60mm Backset Gear / Bottom Extension



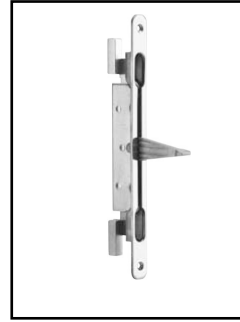
Gear - 60mm Backset

Part Number	Description	Backset	Handle Height	Number of Screws
2406611	IA/60 914 20S 25	2.375" (60mm)	36" (914mm)	8

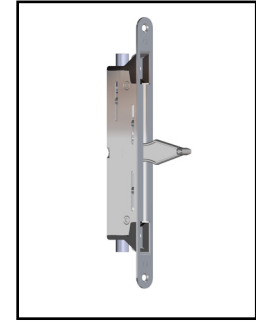
For Top Extension, Please reference the Top Extension chart on the adjacent page.

INACTIVE FLUSHBOLT

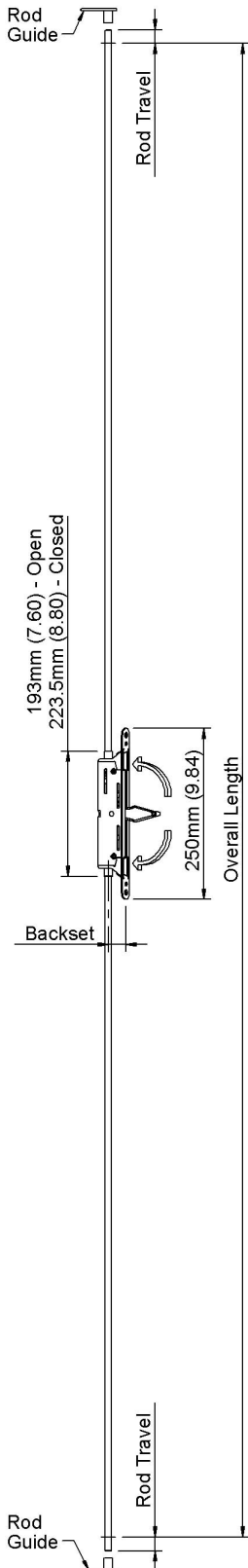
The inactive flushbolt version provides a simple solution for securing inactive panels of French doors. Edge-mounted, the lockset activates the rod extensions which secure the door at both head and sill.



15mm Rod Travel



25mm Rod Travel



8mm Rods with 8mm threads

Part Number	Description	Rod Length
8786895	BK/SS/08/08/0599.6/B	8mm x 599.6mm (.31 X 23.61)
8779363	BK/SS/08/08/0972/B	8mm x 972mm (.31 X 38.27)
8779367	BK/SS/08/08/1035.5/B	8mm x 1035.5mm (.31 X 40.77)
8786907	BK/SS/08/08/1188.6/B	8mm x 1188.6mm (.31 X 46.79)
8779379	BK/SS/08/08/1695.9/B	8mm x 1695.9mm (.31 X 66.77)

B = Beveled 1.0 X 45°

9.5mm Rods with 8mm threads

Part Number	Description	Rod Length
8789539	BK/SS/9.5/08/0676/B	9.5mm x 676mm (.37 X 24.33)
8789547	BK/SS/9.5/08/1005/B	9.5mm x 1005mm (.37 X 39.57)
8786855	BK/SS/9.5/08/1038.7/B	9.5mm x 1038.7mm (.37 X 40.89)
8789551	BK/SS/9.5/08/1183/B	9.5mm x 1183mm (.37 X 46.57)
8786863	BK/SS/9.5/08/1394.3/B	9.5mm x 1394.3mm (.37 X 54.89)
8786867	BK/SS/9.5/08/1699.1/B	9.5mm x 1699.1mm (.37 X 66.71)
8786871	BK/SS/9.5/08/2003.9/B	9.5mm x 2003.9mm (.37 X 78.89)

B = Beveled 1.0 X 45°

Rod Guides

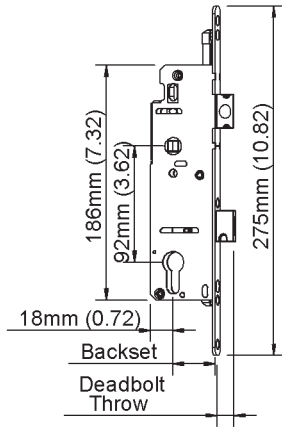
Part Number	Description	Finish
1900916	Standard 8mm	Black
1900908	Standard 10mm	Black

Mortise Flushbolt in Stainless Steel

Part Number	Description	Backset	Rod Travel
40006463	BK Rod Lock - 8mm Version 33N	30mm (1.18)	15mm (.59)
40006426	BK Rod Lock - 8mm Version 17N	26mm (1.02)	15mm (.59)
40006445	BK Rod Lock - 8mm Version 19N	24mm (0.94)	15mm (.59)
2792267	Rod Lock - 8mm	30mm (1.18)	25mm (1.00)

SINGLE POINT

A cost effective alternative to using multipoint in any application where you want to use HOPPE handle sets.

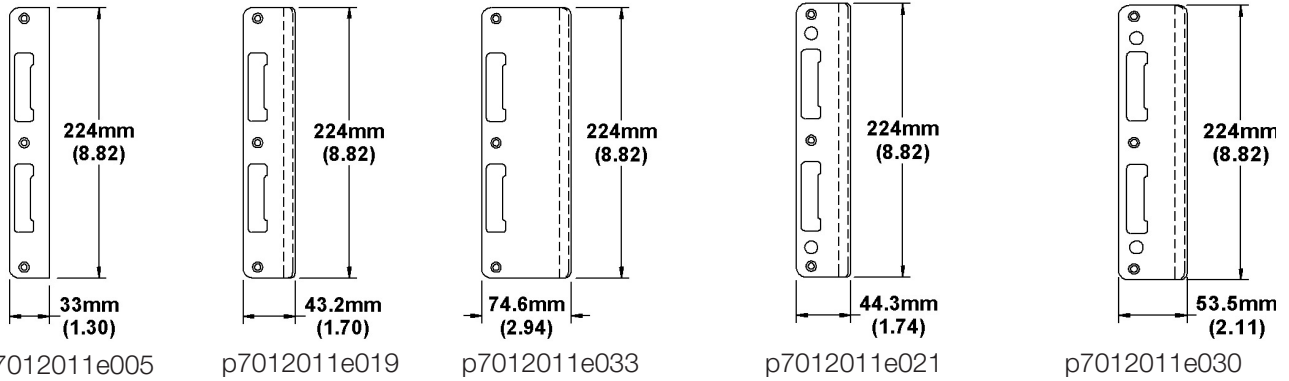


Single Point

Part Number	Description	Backset	Deadbolt Throw	Number of Screws
11517463	M/35/14 16R	35mm (1.38)	14mm (.55)	2
11517487	M/45/14 16R	45mm (1.75)	14mm (.55)	2
11517475	M/35/25 16R	35mm (1.38)	25mm (1.00)	2
11517499	M/45/25 16R	45mm (1.77)	25mm (1.00)	2
11517505	M/60/25 16R	60mm (2.36)	25mm (1.00)	2
11517517	M/70/25 16R	70mm (2.75)	25mm (1.00)	2

Strikes

Latch and Deadbolt Strikes



Latch & Deadbolt Strikes Flat for 1-3/4" panel, non handed

	Brass	Stainless Steel	Rustic Umber (F8709)
p7012011e005	2342194	2342311	2621821

Latch & Deadbolt Strikes, curved lip, non handed for 1-3/4" to 2-1/8" panel Will work for some 2 1/4" doors, but may have to notch edge of panel.

	Brass	Stainless Steel	Rustic Umber (F8709)
p7012011e019	1963546	1963554	2162880

Latch & Deadbolt Strikes, extended curved lip, non handed for larger offset panels

	Brass	Stainless Steel	Rustic Umber (F8709)
p7012011e033	3879701	8787743	2829867

Latch and Deadbolt Strike - Curved Lip with Inactive Cylinder Hole & Non Handed Contains access hole for reaching the cylinder screw on Inactive panel

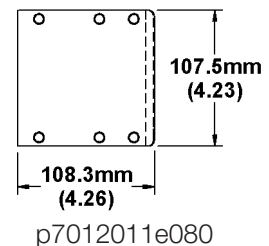
	Brass	Stainless Steel	Matte Black (F9714)	Satin Nickel (F42)	Rustic Umber (F8709)
p7012011e021	8787715	8787747	8787735	2127443	2616554

Latch and Deadbolt Strike - extended curved lip, non handed For centered 2-1/4" panels

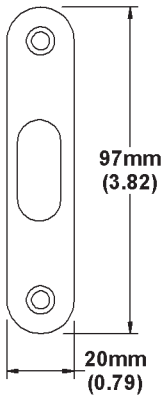
	Brass	Stainless Steel	Rustic Umber (F8709)
p7012011e030	2014019	2014027	3772612

Extender for use with Latch & Deadbolt - Curved Lip & Non Handed

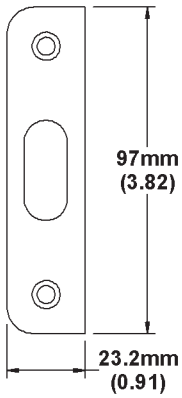
	Stainless Steel
p7012011e080	1972477



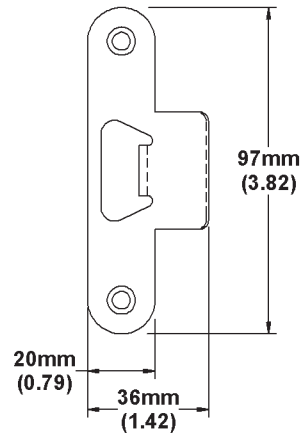
Roundbolt Strikes



p7012009e001



p7012009e002



p7012009e003

Roundbolt Strike - with Offset Roundbolt Hole

	Stainless Steel
p7012009e001	1958739

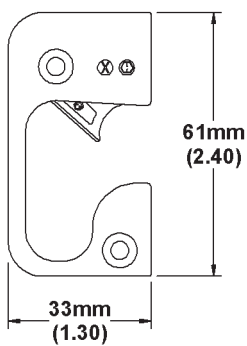
Roundbolt Strikes - Flat

	Brass
p7012009e002	8784651

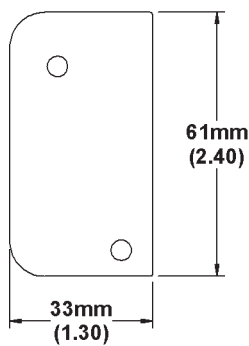
Roundbolt Strike - Radius Lip

	Brass
p7012009e003	2013260

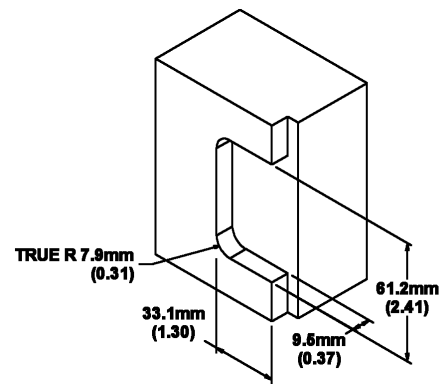
Auto Release Strikes



p7012019g001



p7012019e004



Automatic Strike Route

Auto-Release Strike Plate

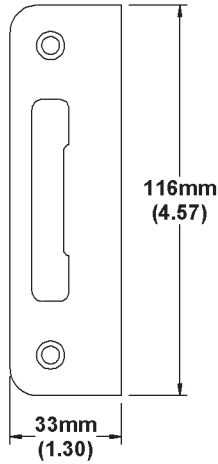
	Brass Finished	Nickel
p7012019g001	8783867	8783871

Underplate for Auto-Release Strike Plate Required if using Auto-Release Strike.

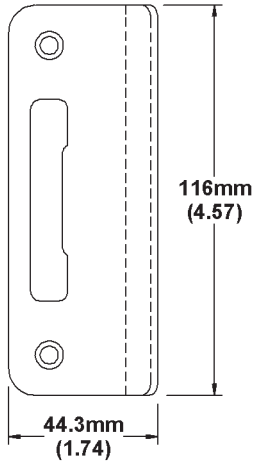
	Brass Finished	Nickel
p7012019e004	8784775	8784783

Strikes

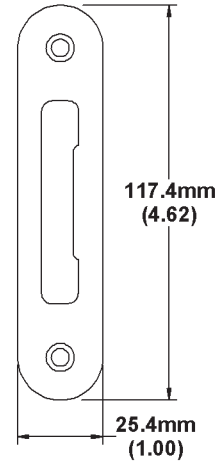
Tongue Strikes



p7012008e007



p7012008e009



p7012008e011

Tongue Strike - Flat

	Brass	Stainless Steel	Brushed Chrome (F41)	Matte Black (F9714)	Satin Nickel (F42)	Rustic Umber (F8709)
p7012008e007	8784699	8784707	8786559	8786575	2127486	2245597

Tongue Strike - Curved Lip

	Brass	Stainless Steel	Rustic Umber (F8709)
p7012008e009	8784675	1964522	2163006

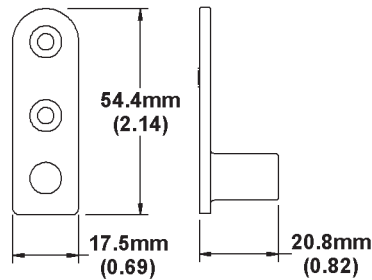
Tongue Strike - Radius Lip

	Brass	Stainless Steel	Rustic Umber (F8709)
p7012008e011	2025181	2025199	2671238

Rod Guides

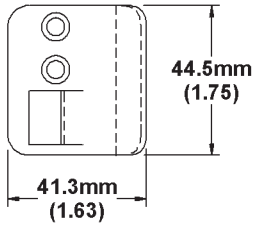
Rod Guide

	Standard 8mm	Standard 9.9mm
Black	1900916	1900908

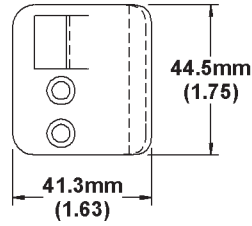


Standard

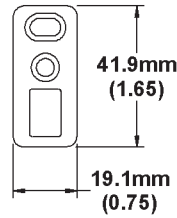
Shootbolt Strikes



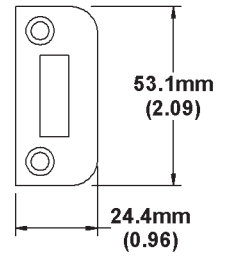
p7012010e037



p7012010e038



p7012010e032



p7012010e057

Shootbolt Strike - Left Handed for Single Door / Curved Lip

	Brass	Stainless Steel
p7012010e037	8784095	8784091

Shootbolt Strike - Right Handed for Single Door / Curved Lip

	Brass	Stainless Steel
p7012010e038		8783923

Shootbolt Strike - For Single Door

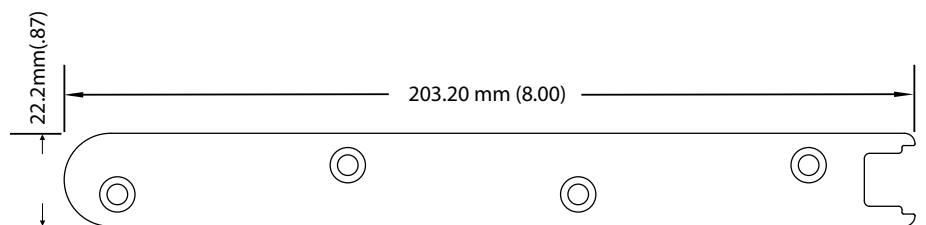
	Brass	Stainless Steel
p7012010e032	2135259	2098911

Single Shootbolt Strike

	Brass	Stainless Steel
p7012010e057	2016559	2058724

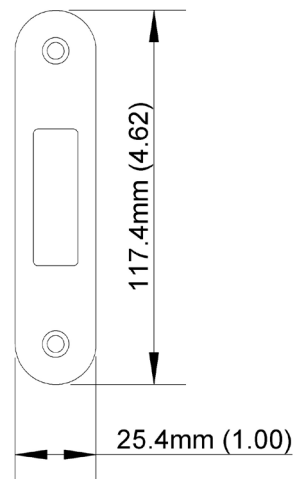
High Performance Support Plate

	Stainless Steel
p7012016e001	2512296



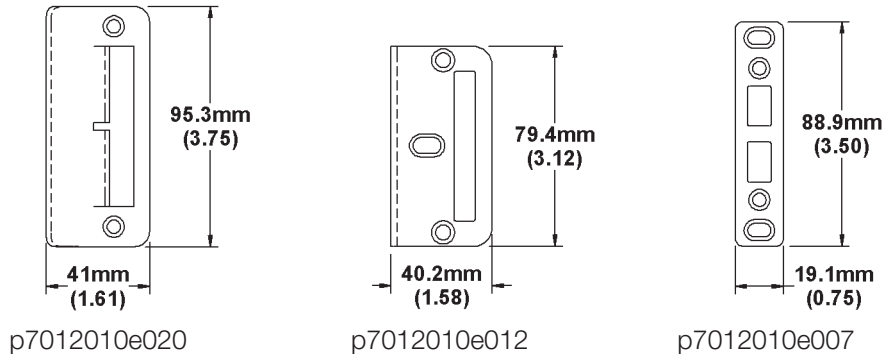
Swing Hook Strike

	Stainless Steel
p7012014e001	2736661



Strikes

Double Door Strikes



Double Shootbolt Strike

	Brass	Stainless Steel
p7012010e020	8789023	8789027

Rod Strike - Adjustable

	Brass	Stainless Steel	Rustic Umber (F8709)
p7012010e012	8783899	8783907	2621804

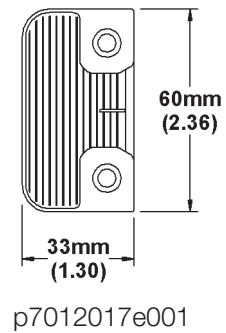
Shootbolt Strike - For Double Door

	Stainless Steel
p7012010e007	2098945

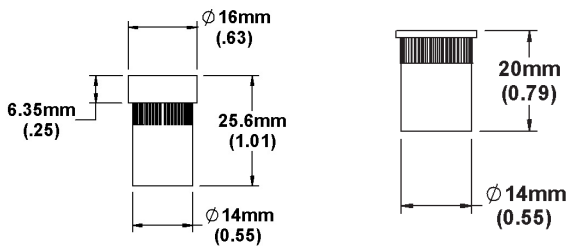
Roller Strike Plates

Roller Strike Plate

	Brass	Nickel
p7012017e001	8785003	8784999



Socket Strikes



Socket Strike - 1" Throw

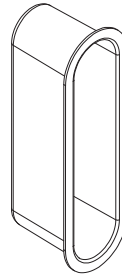
	Brass
p7012018e001	2024962

Socket Strike - 3/4" Throw

	Brass
p7012018e002	8784663

Dust Cap

	Part Number	Finish
for Latch & Deadbolt Strike or Tongue Strike	8786547	Black

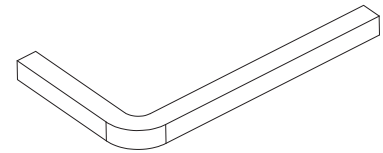
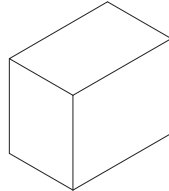


For Auto Release Roller
3mm
Hex Wrench

	Part Number	Finish
3mm Hex Wrench	8773799	N/A

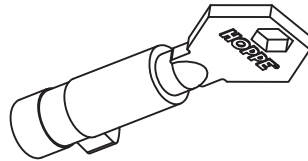
Foam Eurogroove Plug

	Part Number	Finish
	1963538	Black



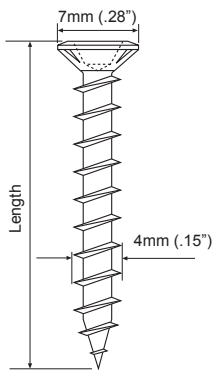
Construction Key

	Black	Finish
	2667482	Black



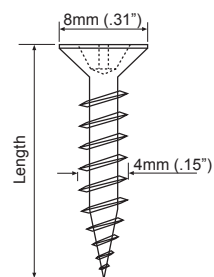
Construction Handle (For 8mm Hub)

	Part Number	Finish
	2426890	N/A



Screws for Vinyl Profiles

Part Number	Description	Length	Quantity Per Box
8785667	Stainless Steel Screw - 7mm Head Size	19mm (0.75)	1000



Screws for Wood Profiles

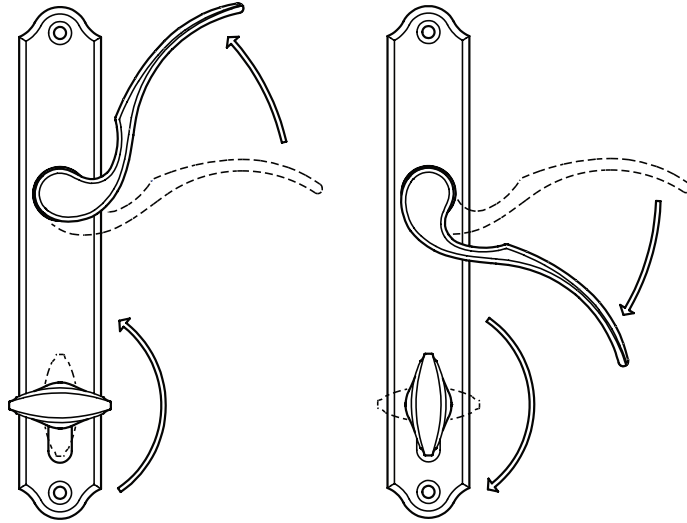
Part Number	Description	Length	Quantity Per Box
8785687	Stainless Steel Screws - 8mm Head Size	20mm (0.79)	1000
8785691	Stainless Steel Screws - 8mm Head Size	30mm (1.18)	1000
8785695	Stainless Steel Screws - 8mm Head Size	35mm (1.38)	1000
8785699	Stainless Steel Screws - 8mm Head Size	45mm (1.77)	500
8785703	Stainless Steel Screws - 8mm Head Size	60mm (2.36)	500

Optional Items

Gear Operations Handle Instructions

Handles and backplates may vary

Operational Stickers



LOCKING THE DOOR

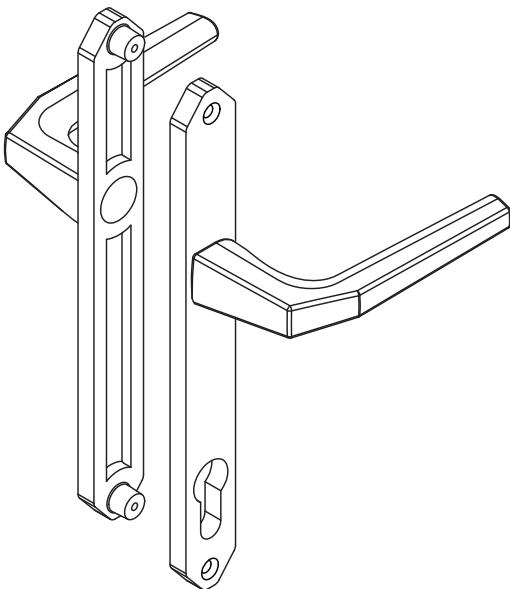
1. Lift Lever to engage multipoint
2. Turn Thumbturn to extend deadbolt

UNLOCKING THE DOOR

1. Turn Thumbturn to retract deadbolt
2. Push Down on Lever to disengage multipoints

	Part Number	Finish
Right Hand	40005155	Clear
Left Hand	40005161	Clear

Construction Handle Set



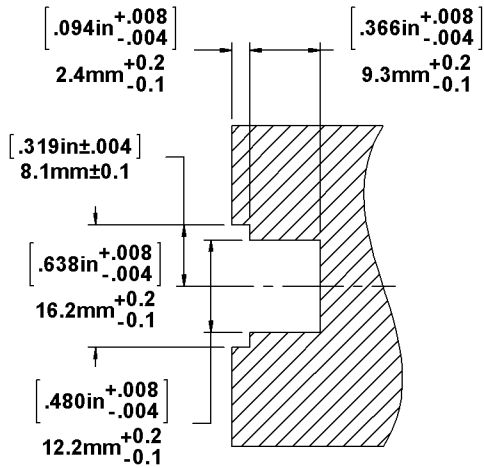
Complete Interior and Exterior Trim for security and weather resistance during the construction phase

Construction Handle Set

Part Number	Description
2604801	Construction Handle Set
2605353	Construction Handle Set with Construction Key

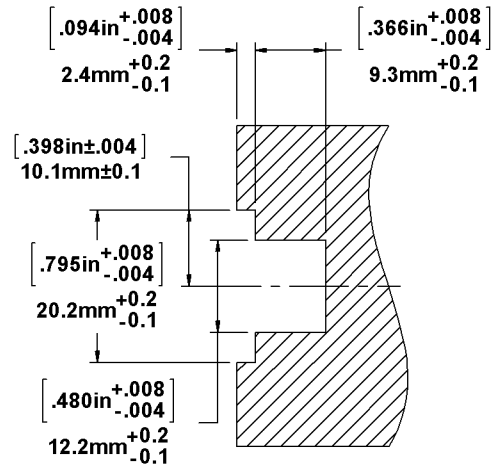
Wood

16mm Eurogrooves



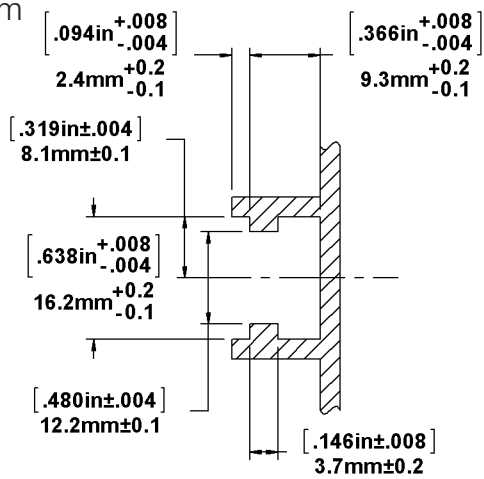
Generic Profile Shown

20mm Eurogrooves

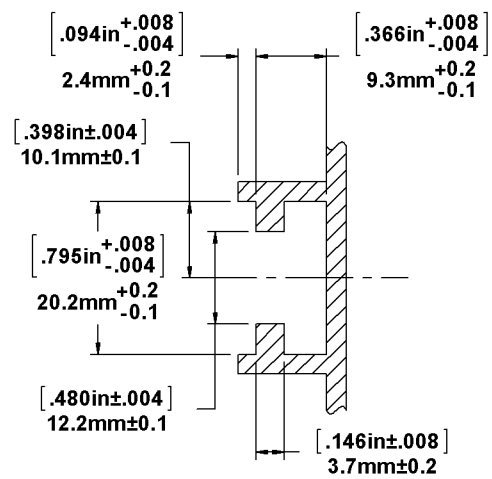


Generic Profile Shown

Aluminum

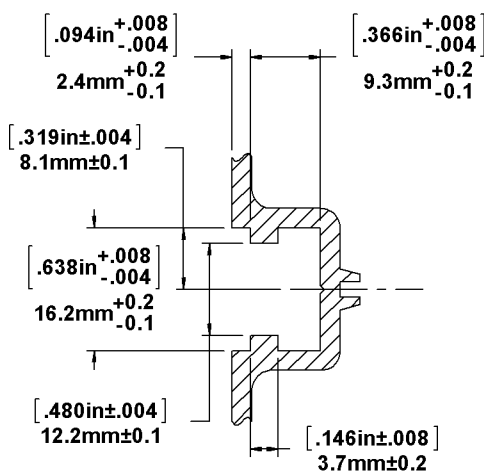


Generic Profile Shown

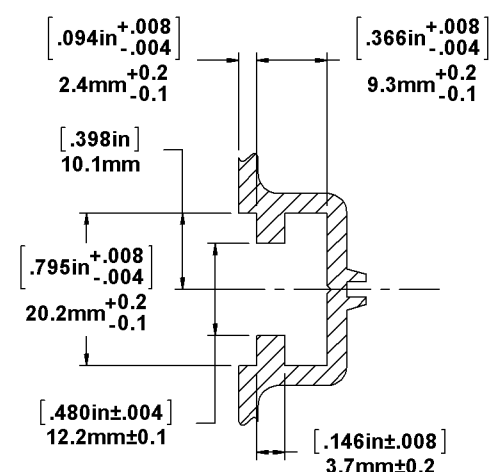


Generic Profile Shown

UPVC



Generic Profile Shown



Generic Profile Shown

How to Order

To help you determine which multipoint locking system would be right for your application, we will need you to answer the following questions:

1. Is your door aluminum, wood, fiberglass or UPVC?
2. If wood, is it prime or clad?
3. If UPVC, whose profile system?
4. If wood, is the door flush or rebated?
5. Is the door inswing or outswing?
6. Is the door French (double) or single swing?
7. Do you want a multipoint or single point system?
8. What is the door thickness?
9. What is the panel height from bottom of door panel?
10. What is the lock stile width or what backset do you need? 35mm (1.38), 45mm (1.77), 60mm (2.38) or 70mm (2.75)?
11. What deadbolt throw size do you want? 14mm (0.55) or 25.4mm (1.00)?
12. What type of locking system are you interested in?
See version descriptions starting on page 12.
 - Swing Hook
 - Swing Hook + Shootbolt
 - Tongue
 - Tongue + Shootbolt
 - Two Roller
 - Four Roller
 - Single Point
 - Tongue + Shootbolt
 - Roller + Shootbolt
 - Roundbolt
 - Inactive Rod
 - Shootbolt
 - Inactive
13. If tongue version, which tongue location is needed for the gear?
620mm (24.41) used when customer uses both Tongue/Shootbolt or Tongue system, so both doors have the same route prep.
671mm (26.42) allows strike to be located over an Inactive Shootbolt system on a double door.
753mm (29.65) best for getting Tongue closest to the bottom corner of the door.
14. What is the faceplate width? 16mm (.63) or 20mm (.79)
15. What type of strike plates are needed? See chart on opposite page for handing.
 - Curved Lip or Flat Strike
 - Handed or non handed, as viewed from outside
 - Finish or color
16. Do you require our stainless steel mounting screws?
 - See page 47 for screw sizes
 - NOTE: stainless steel screws must be used for mounting the HLS®9000 gear systems.
 - When replacing an existing gear system, please contact your representative directly.

Technical Drawings available upon request

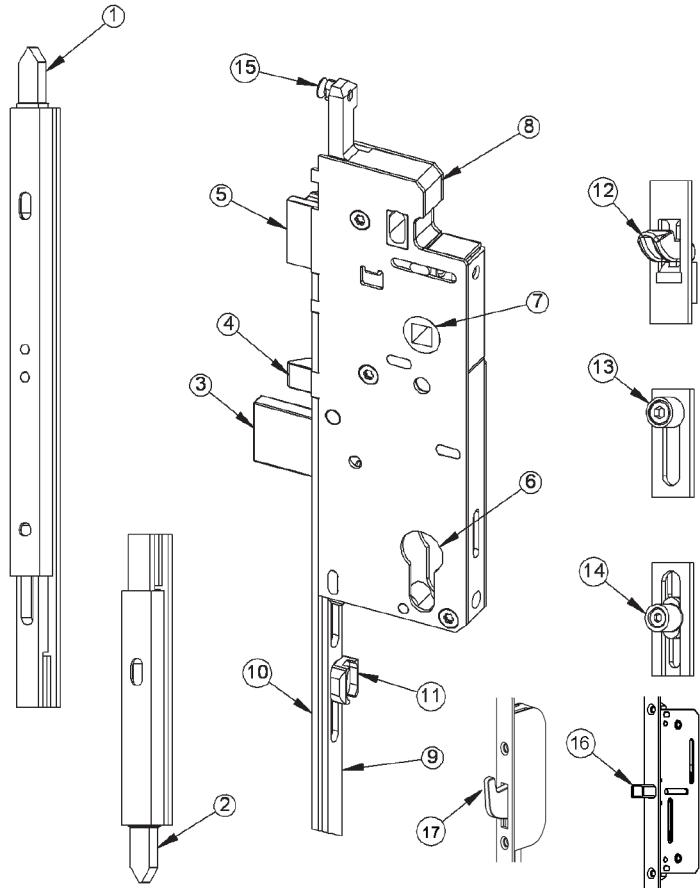
HLS® One

Want a faster, easier way to order? HLS® One features the most popular HLS®9000 locking systems in this catalog pre-configured and packaged in one box. One SKU includes locks, strikes, fasteners and installation instructions. Three-point and five-point locking systems are available, even for French doors. Visit www.us.hoppe.com to learn more.

HLS®9000 Multipoint Hardware System Terminology

TERMINOLOGY:

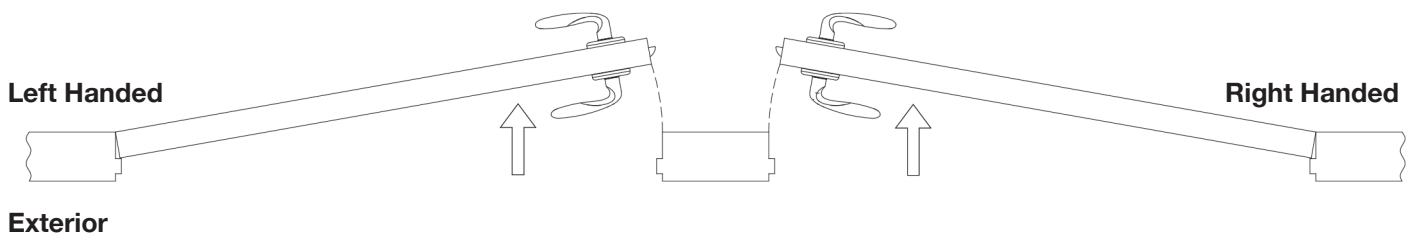
1. Top Shootbolt
2. Bottom Shootbolt
3. Deadbolt
4. Mishandling Device
5. Latch Bolt
6. Cylinder Hole
7. Handle Hole
8. Lockcase
9. Drive Rail
10. Faceplate
11. Screw Support
12. Tongue
13. Roller
14. Auto-Release Roller
15. Top Extension Phillips Machine Screw
16. Roundbolt
17. Swing Hook



Note:

All options are shown for the sake of terminology. The gear system you have will NOT contain all of the components as shown in the diagram below.

Handing

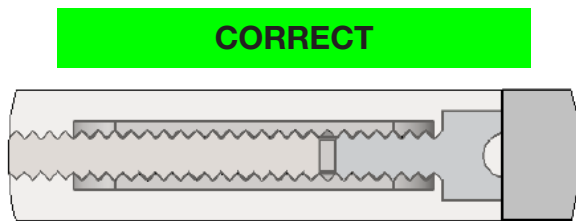


Door handing is always determined from the exterior.
When hinges are on the left, the door is LH; when the hinges are on the right, door is RH.
Inswing or outswing does not determine handing.

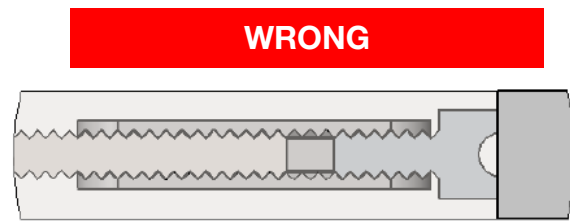
HLS9000 ACTIVE Top Shootbolt Extension Installation Procedure

After installing the Active Gear/Bottom Extension, the Middle Extension, and cutting the Top Shootbolt Extension to length:

1. Insert the Drive Rail Serrations into the Coupler as shown and slide the Top Extension Faceplate flush against the Middle Extension Faceplate. The Top Shootbolt should now be fully retracted into the Shootbolt Housing.



Drive Rail Serrations are fully engaged in Coupler



Drive Rail Serrations are not fully engaged in Coupler (Gap between serrated ends must be less than 3 teeth)

2. Install the Cover Plate to reinforce the connection between the Middle Extension and Top Shootbolt Extension.

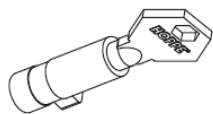


Cover Plate
HOPPE p/n 2875118

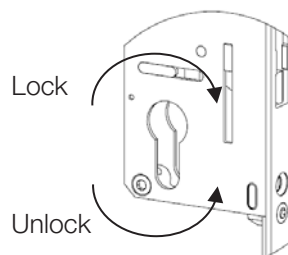
3. Install remaining screws to fix the extension to the door
 - a. To inspect for proper installation, use a Construction Handle to activate the Gear/Bottom Extension. The Multipoints should now be extended. Insert a Construction Key into the Gear/Bottom Extension and turn to lock as shown. Proper installation is indicated by:
 - i. The Construction Key will turn freely
 - ii. The Construction Handle will be locked (cannot rotate to retract Shootbolts)



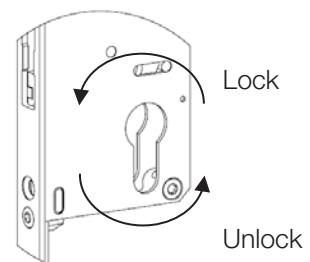
Construction Handle
HOPPE p/n 2426890



Construction Key
HOPPE p/n 2667482

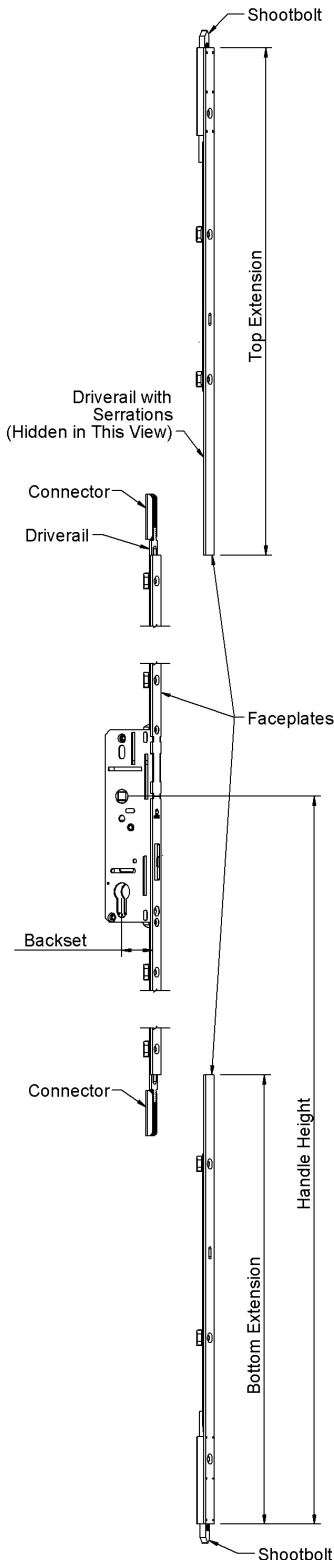


OR



- b. Unlock the Gear/Bottom Extension by turning the Construction Key as shown above.

Inactive Assembly Instructions



We recommend assembly of the inactive gear in the activated (locked) position. To be consistent in the operation and assembly, you should assemble the gear operator as follows:

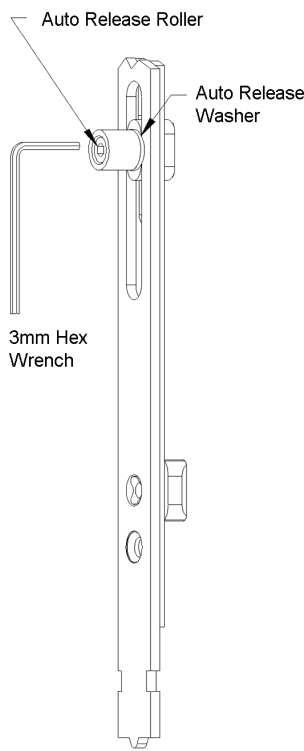
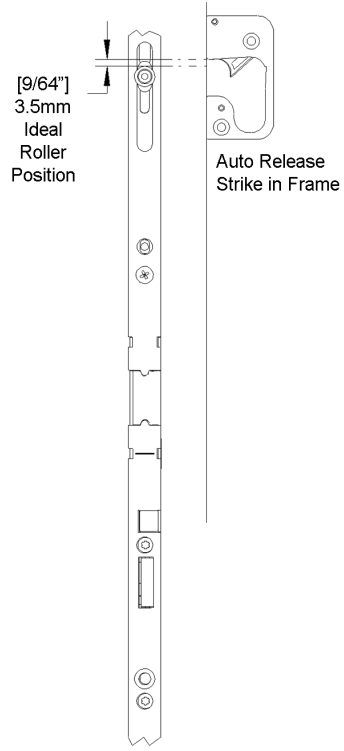
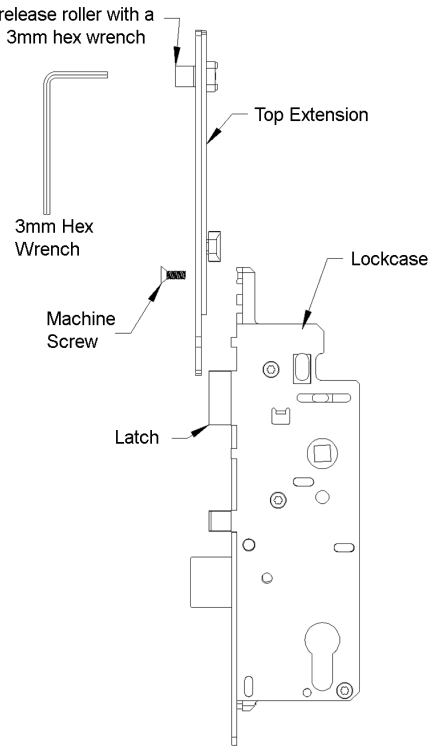
Install main gear body assembly into stile using either method:

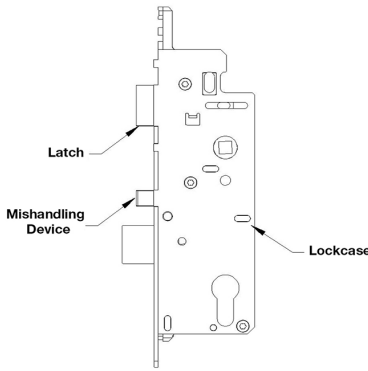
- a. If using a jig to center the gear on the handle hole, slide into place and screw down.
- b. If aligning off the bottom, extend the bottom shootbolt mechanism all the way out. Butt the gear against the bottom extension, and then screw the gear in place.

1. Operate and extend the shootbolt mechanism with the handle. Then lock the thumb-turn mechanism (cylinder). The thumb-turn mechanism will spin freely after it hits the locking point. If the thumbturn mechanism feels as though it has hit the locking point but does not spin freely, the mechanism is not working properly.
2. Connect the drive rail of the bottom extension to the connector of the main gear. Make sure the teeth are fully engaged (seated into the connector). The shootbolts should extend $\frac{3}{4}$ " or 1" (model options). Screw the bottom extension to the stile. Repeat this to the top extension.

Note: Tolerance – There is an allowance of up to $\frac{1}{8}$ " (3mm) between the gear and extensions.
3. Finish screwing the inactive system onto the stile. Be sure you install screws only to the holes that will not be filled when the astragal is applied.
4. Unlock the thumb-turn mechanism. Operate the handle set to retract and extend the shootbolts. The shootbolt mechanisms should operate freely.
5. Now try to operate the shootbolts while the lock is engaged. The shootbolts should not retract.

Hardware Adjustment Sheet HLS®9000

<p>Adjustment of Automatic Roller</p>  <p>Auto Release roller is adjusted for vertical movement in the slot. There is not a horizontal adjustment.</p>	<p>Positioning of Automatic Roller</p> <p>Front View Gear and Extension</p>  <p>Loosen screw to adjust position of auto release roller, then tighten to fix position.</p>	<p>Converting to Semi-Automatic System</p> <p>Remove the auto release roller with a 3mm hex wrench</p>  <p>Converting to Manual System</p> <ol style="list-style-type: none"> 1. Remove the auto release roller with 3mm hex wrench 2. Remove the pressure spring from the back side of the lower driverail with a screwdriver.
---	--	---



Reversing Latch and Mishandling Device

1. Pull and rotate latch and mishandling device 180* with hand and release back into lockcase

Part Number	Description	Locking Type	Backset	Handle Height/Length
2794799	M/45/25/420/R200/RB315/T165/SB	Multi-Function	45mm	420mm / 840mm
2794781	M/45/25/420/T250/T250	Tongue	45mm	420mm / 840mm
2794764	M/45/25/420/T250/SB	Tongue / Shootbolt	45mm	420mm / 840mm
2794772	M/45/25/420/T250/T165/SB	2 Tongue / Shootbolt	45mm	420mm / 840mm
2794801	M/70/25/420/T250/T165/SB	2 Tongue / Shootbolt	70mm	420mm / 840mm
2794756	M/45/25/420/SB	Shootbolt Only Both Ends	45mm	420mm / 840mm
2794748	M/45/25/420/RB315/RB294.5	Roundbolt	45mm	420mm / 840mm
2794730	M/45/25/420/R247/261	2 Roller	45mm	420mm / 840mm
2793366	IA/45/420/840/SB	Inactive	45mm	420mm / 840mm

Part Number includes the sales gear mounted in wood stile and travel case.

Handle set is specified by customer.

Multi-function version shown includes shootbolt, roundbolt and tongue functions.

For more details on obtaining sales tools above, contract your local representative



Glossary

Active Door Set

Handle set used on the active panel. This set will always include a cylinder.

Active Panel

When a door is referred to as “active” it means it is the primary functioning door usually in a pair of French doors. This will be the door that opens first.

Astragal

Decorative center section of wood or other material that is attached to the inactive panel and serves as a jamb.

Auto Release Roller

Activated the multipoint to engage the locking point into the frame of the door.

Auto Release Striker

The strike in the frame of the door which catches the auto release pin after the multipoint is activated.

Backplate

Decorative plate which mounts to the face of the door with holes to accept the handle and cylinder, or thumb turn.

Backplate Screw

Screws that attach one backplate to the other. The screws enter through screw holes on the interior plate, travel through the door and attach directly to the exterior plate. Available in a variety of lengths to accommodate different door thicknesses.

Backset

Distance from the surface of the lock faceplate to the center of the handle hole. This distance establishes where the handle will be mounted to the face of the door.

Cylinder

The device used to lock a multipoint system and is activated with a key or thumbturn.

Deadbolt

The center locking point on the door which is engaged with the other locking points when the handle is lifted.

Driverail

The vertical moving mechanism of multipoint hardware behind the faceplate. The driverail carries the motion from the gear to the multipoints to activate them. This can be achieved through a single part or through multiple parts hooked together such as extensions and corner drives. The driverail is hidden by the faceplate.

Engage

A term used to describe the activating of the multipoint hardware. When the multipoints have been activated into position, the system is said to be engaged.

Eurogroove

Routed groove in the edge of the door, usually centered, but may be offset to one side in which the drive rail and faceplate of the multipoint hardware are mounted.

Extension

Sections of operating drive rail that can be attached to the gear to reach the needed height of a door.

Faceplate

Flat piece of metal that covers the drive rail and multipoints along the entire length of the door sitting flush with the edge.

Flushbolt

A bolt mortised into a door that holds the door closed when the bolt is projected into the head or sill of the doorframe.

Fixed Dummy

Handle set is usually “fixed” in place. Handles serve only as pull handles and do not operate. Usually used on inactive panels where a mortise flush bolt has been used. These sets have no cylinder holes in either backplate.

Frame

The outer casing of a door which mounts directly into the rough opening of a wall.

Gear

Main functioning body of multipoint or single point hardware containing hub for handle operation and deadbolt (on active gear).

Handle Height

The distance from the bottom of the door panel to the center of the handle hole.

Handle Set

Kit which includes handles, backplates and screws and may also include a cylinder.

Inactive Door Set

Handle set used on the inactive panel. This set will have a thumbturn on the inside and will not have a cylinder or cylinder hole on the outside.

Inactive Hardware

Hardware used on the inactive panel, no latch or deadbolt.

Inactive Panel

When a door is referred to as “inactive” it means it is the secondary functioning door in a pair of French doors. This door can only be opened after the “active” panel has been opened.

Jamb

See frame.

Latch

The catch for the door.

Lockcase

The main body of the multipoint gear.

Machine Screw

Screw that is used with a tapped hole.

Mishandling Device

Prevents locking points from accidentally firing and potentially damaging door trim.

Mortise

Edge pocket for lockcase or additional locking points.

Mortise Lock

Any hardware containing a gearbox that requires pocket routing in the edge of a door in order to be mounted or installed.

Multipoint Hardware

Any hardware that has multiple locking points which simultaneously lock into place through the action of a continuous travel drive rail activated by a handle.

Profile

A UPVC or aluminum extrusion used in door manufacturing. The shape/style of each extrusion differs between each extruder and therefore requires different hardware—particularly hinges and strike plates.

Rebate

A deep notch formed in or near one edge of board, so that a door can be closed against it.

Roller

Small cylindrical cam locking point that is connected to the drive rail and secures inside a strike plate by an upward and downward movement along the surface of the faceplate.

Roundbolt

Bullet shaped locking point that retracts flush inside the backplate until engaged, at which point it deadbolts the door inside a strike plate. No upward or downward movement. This version requires additional mortising for the roundbolt lockcases.

Screw Support

A support on the backside of the gear for the screws which helps prevent flexing or bending of the gear once installed in the edge of the door.

Shootbolt

Arrow shaped locking point that retracts into the eurogroove until engaged, at which point it extends out and locks into strike plates in the head and sill of the frame.

Sill

Bottom portion of an opening that rests on the foundation and supports the frame structure.

Single Point

A mortise lock consisting of a latch and deadbolt only.

Spindle

Metal shafts used to mount the handles to the door. Available in different lengths to accommodate a variety of door thicknesses.

Stile

Upright or vertical piece of the framework of a wood flush door.

Strike Plates

Plates that the locking points (roller, tongue, swinghook, deadbolt or latch) lock into. Different strike plates are required for different versions of locking points and profile designs.

Swinghook

Hook shaped locking point that retracts into the faceplate until engaged when it extends the reach into the jamb.

Threshold

The horizontal bottom portion of the door frame, also called the sill.

Throw

Distance a locking point travels from surface of faceplate to point of full extension.

Tongue

Triangular shaped locking point that retracts flush inside the faceplate until engaged, at which point it extends out to lock into a strike plate.

Wood Screw

Screw with a tapered shaft that drills its own hole into the wood.



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1-888-485-4885
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