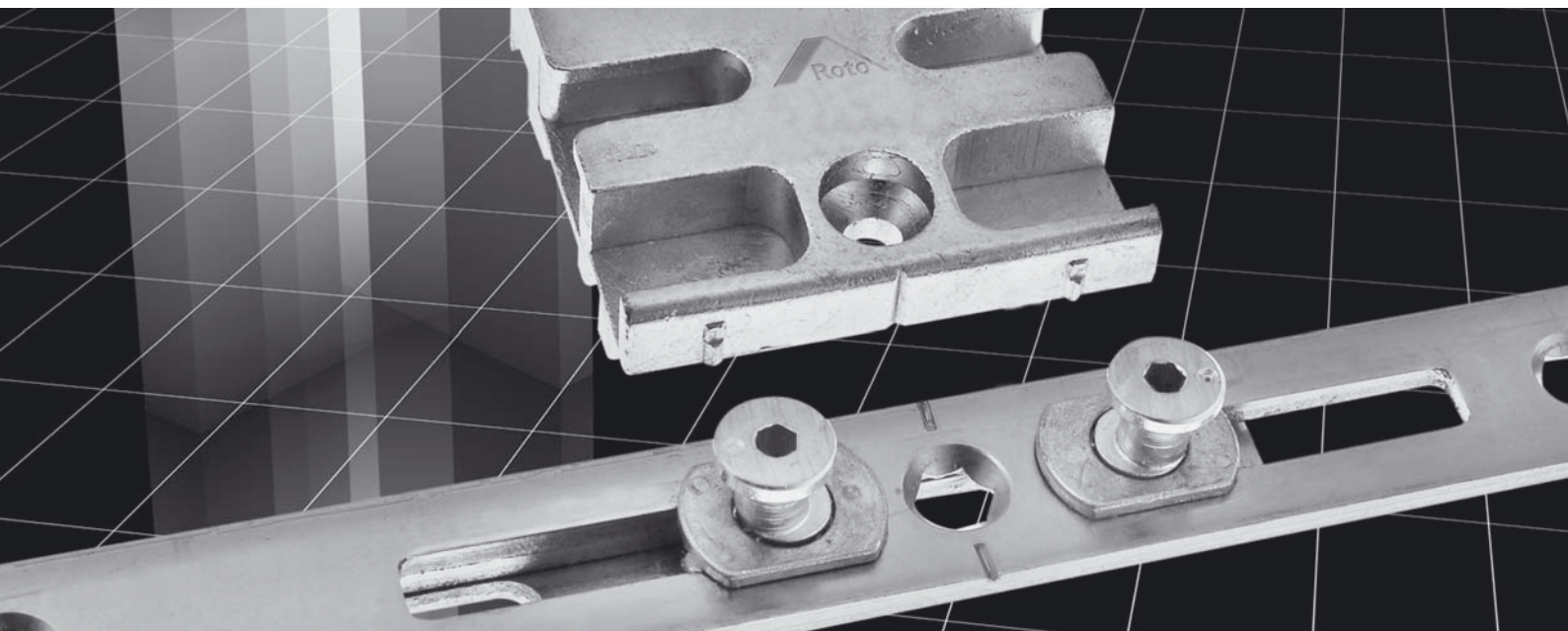


## Casement Window Hardware

Twin-cam Security Lock (TSL)



**Liability exclusion**

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**Imprint**

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## Product Liability and Warranty

### 1. Product information and appropriate use

According to this definition, fastening systems are fittings for windows/doors made of timber, PVC-u or aluminium, and corresponding combinations of materials, the principal function of which is to lock windows/doors.

Locking is understood to mean holding a window/door closed in such a way that it cannot be opened by being pulled or pushed, but can be opened in a straightforward manner, such as by the operation of a handle.

All locking elements engage into corresponding recesses in the window/door frame, or in locking plates, etc.

All locking elements are moved by the operation of the handle for locking and unlocking.

The fastening systems are not designed to tolerate variations in form and variations in the seal, arising from temperature differences or modifications to the construction.

The overall fitting (fastening system) in each case must be assembled from original ROTO components only. Using components which are not part of the system may result in damage which excludes liability.

In order to ensure appropriate use, correct combination with permissible fittings and means of locking (such as keys, cylinders) and accessories (such as locking plates) during assembly, fitting must be made in accordance with installation instructions or with accepted DIN standards, including those for maintenance.

Special fittings are required for windows/doors in humid rooms and for use in environments with aggressive, corrosive air content.

Binding legal provisions must be observed.

### 2. Misuse

The following cases in particular constitute misuse of fastening systems – i.e. inappropriate use of the product:

- if normal use is prevented by the introduction of other and/or unsuitable objects into the fastening system or into the locking plate.
- if obstructions are introduced into the opening area and thus prevent normal use.
- if the fastening system or locking plate are interfered or tampered with, with a resultant change to the construction, to the mode of operation or to the function.
- if the exposed locking elements are assembled or worked at a later stage, e.g. repainted, in a manner which has an adverse effect on their operation.
- if inappropriate loads, exceeding the normal force of a hand are brought to bear upon the handle linkage.
- if non-associated locking means, such as locking equipment with different dimensions or which is inserted incorrectly, are used.
- if tools or aids which have a leverage effect are used to operate the fastening system.
- if additional loads are imposed upon the window/door.

### 3. Product performance

Where product performance is not set down in concrete terms in our catalogues and promotional literature, the requirements to be imposed upon the individual fastening systems must be agreed with us.

The suitability of fastening systems for use is dependent upon, amongst other things, the frequency of operation, the mode of operation, environmental influences and maintenance.

Assembly of window/door fittings.

The manufacturer's specifications pertaining to the assembly of window/door fittings (such as the arrangement of handles or additional elements of the fitting) are binding.

### 4. Product maintenance

Security-relevant elements of fittings should be tested for stability and checked for wear on a regular basis. If required, the fixing screws should be tightened or components should be replaced.

Furthermore, the following maintenance should be carried out at least once a year – or more frequently, depending upon the demands imposed upon the equipment:

- all moving parts and all locking points of the fastening system should be greased and tested to ensure that they are functioning properly.
- only cleaning materials which do not have an adverse effect upon the anti-corrosion treatment on the components of the fitting should be used.

Work on the fastening systems and on the associated components of the fitting, or replacement of components, should be carried out by specialist enterprises only.

### 5. Obligations to provide information and instruction

The following documentation is available to designers, to specialist suppliers, to processing enterprises, to clients and to users for compliance with the obligations to provide information and instruction and for maintenance work in accordance with the "Product Liability Act":

- design documentation
- catalogues
- works drawings
- maintenance and servicing instructions

In order to ensure that fastening systems for windows/doors operate effectively:

- designers are obliged to request product information from the manufacturer and to observe that information.
- specialist suppliers are obliged to observe product information and, in particular, to request works drawings, maintenance and servicing instructions from the manufacturer and to supply these to the processing enterprises.
- processing enterprises are obliged to observe the product information and in particular to request maintenance and servicing instructions as well as operating instructions from the manufacturer and to pass these on to clients and users.

### 6. Use of related fittings

In terms of product information and proper use, misuse, performance, product maintenance and obligations to provide information and instruction, the variants possible within the individual fastening systems should be treated as appropriate, depending upon the features in question.

## General Design Description

Twin-cam Security Locking (TSL) from Roto is a major breakthrough in window locking systems, offering more than double the security of industry standard products and giving you a host of reassuring benefits:-

- Innovative design makes TSL one of the strongest and most reliable locking systems on the market.
- High quality materials and finishes give TSL exceptional corrosion resistance, whilst tight production control ensures that each product will last for years. TSL even carries a 10 year guarantee to give you added assurance.
- Secured By Design & BBA approval.
- Precision engineering gives TSL its smooth, effortless operation.
- With a simple turn of the handle, TSL's unique gearbox activates up to four pairs of high strength 'mushroom' cams. Each pair of cams closes together, utilising both sides of a security striker. This double action locking significantly enhances resistance to jemmying from all directions and strengthens the window's security.
- TSL suits all of the industry's popular window systems.
- TSL can be used to replace most standard locking espagnolettes to improve security.
- Low handle height versions available: ideal for side hung windows where a lower handle is required.

### Coating information

RotoSil is a surface protection process for window and door fittings developed and patented by ROTO, based upon galvanising, chrome plating and additional sealing.

RotoSil enables the hardware components to appear in a smooth silver tone. The quality requirements in accordance with RAL - RG 607/3 are exceeded, and the protection against acids has been improved substantially.



## Order Details

### Standard TSL - 8mm cam height, 20mm backset

App. range (mm)	TSL	Faceplate	Part number
300 - 399	300	300mm	367 071
401 - 550	400	400mm	367 072
551 - 750	600	550mm	367 073
751 - 850	800	750mm	367 074
851 - 950	900	850mm	367 115
951 - 1050	1000	950mm	367 116
1051 - 1150	1100	1050mm	367 117
1151 - 1600	1200	1150mm	367 118

### Standard TSL - 8mm cam height, 22mm backset

300 - 399	300	300mm	367 127
401 - 550	400	400mm	367 128
551 - 750	600	550mm	367 129
751 - 850	800	750mm	367 130
851 - 950	900	850mm	367 131
951 - 1050	1000	950mm	367 132
1051 - 1150	1100	1050mm	367 133
1151 - 1600	1200	1150mm	367 134

### Standard TSL - 9.5mm cam height, 20mm backset

300 - 399	300	300 mm	367 119
401 - 550	400	400 mm	367 120
551 - 750	600	550 mm	367 121
751 - 850	800	750 mm	367 122
851 - 950	900	850 mm	367 123
951 - 1050	1000	950 mm	367 124
1051 - 1150	1100	1050 mm	367 125
1151 - 1600	1200	1150 mm	367 126

### Standard TSL - 9.5mm cam height, 22mm backset

300 - 399	300	300 mm	367 135
401 - 550	400	400 mm	367 136
551 - 750	600	550 mm	367 137
751 - 850	800	750 mm	367 138
851 - 950	900	850 mm	367 139
951 - 1050	1000	950 mm	367 140
1051 - 1150	1100	1050 mm	367 141
1151 - 1600	1200	1150 mm	367 142

### Standard TSL - 10.5mm cam height, 20mm backset

300 - 399	300	300 mm	487 458
401 - 550	400	400 mm	487 459
551 - 750	600	550 mm	487 460
751 - 850	800	750 mm	487 461
851 - 950	900	850 mm	487 462
951 - 1050	1000	950 mm	487 463
1051 - 1150	1100	1050 mm	487 464
1151 - 1600	1200	1150 mm	487 475

### Standard TSL - 10.5mm cam height, 22mm backset

300 - 399	300	300 mm	392 155
401 - 550	400	400 mm	392 156
551 - 750	600	550 mm	392 157
751 - 850	800	750 mm	392 158
851 - 950	900	850 mm	392 159
951 - 1050	1000	950 mm	392 160
1051 - 1150	1100	1050 mm	392 161
1151 - 1600	1200	1150 mm	392 162

### Low handle TSL - 8mm cam height, 20mm backset

App. range (mm)	TSL	Faceplate	Part number
851 - 950	900	850mm	441 782
951 - 1050	1000	950mm	441 784
1051 - 1150	1100	1050mm	441 785
1151 - 1600	1200	1150mm	441 786

### Low handle TSL - 8mm cam height, 22mm backset

851 - 950	900	850mm	441 791
951 - 1050	1000	950mm	441 792
1051 - 1150	1100	1050mm	441 793
1151 - 1600	1200	1150mm	441 794

### Low handle TSL - 9.5mm cam height, 20mm backset

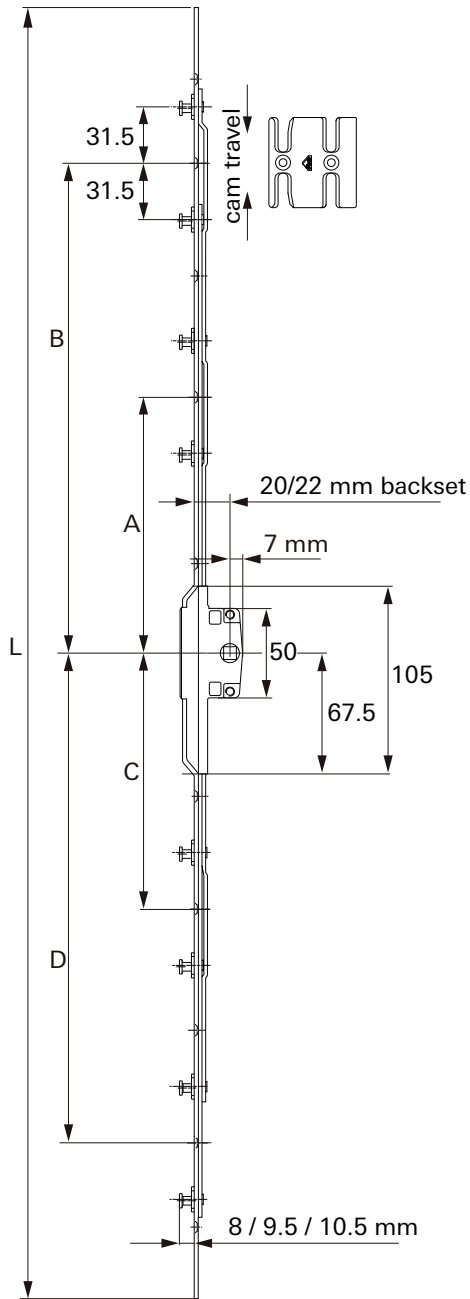
851 - 950	900	850 mm	441 787
951 - 1050	1000	950 mm	441 788
1051 - 1150	1100	1050 mm	441 789
1151 - 1600	1200	1150 mm	441 790

### Low handle TSL - 9.5mm cam height, 22mm backset

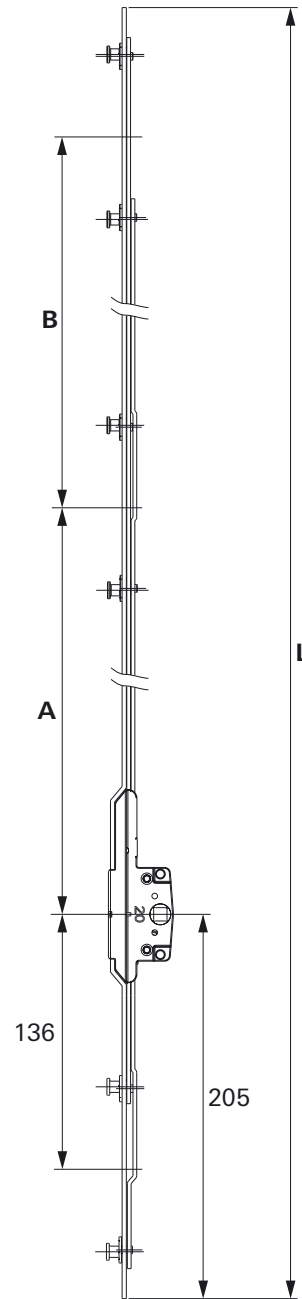
851 - 950	900	850 mm	441 795
951 - 1050	1000	950 mm	441 796
1051 - 1150	1100	1050 mm	441 797
1151 - 1600	1200	1150 mm	441 798

# Technical Details

## Standard TSL



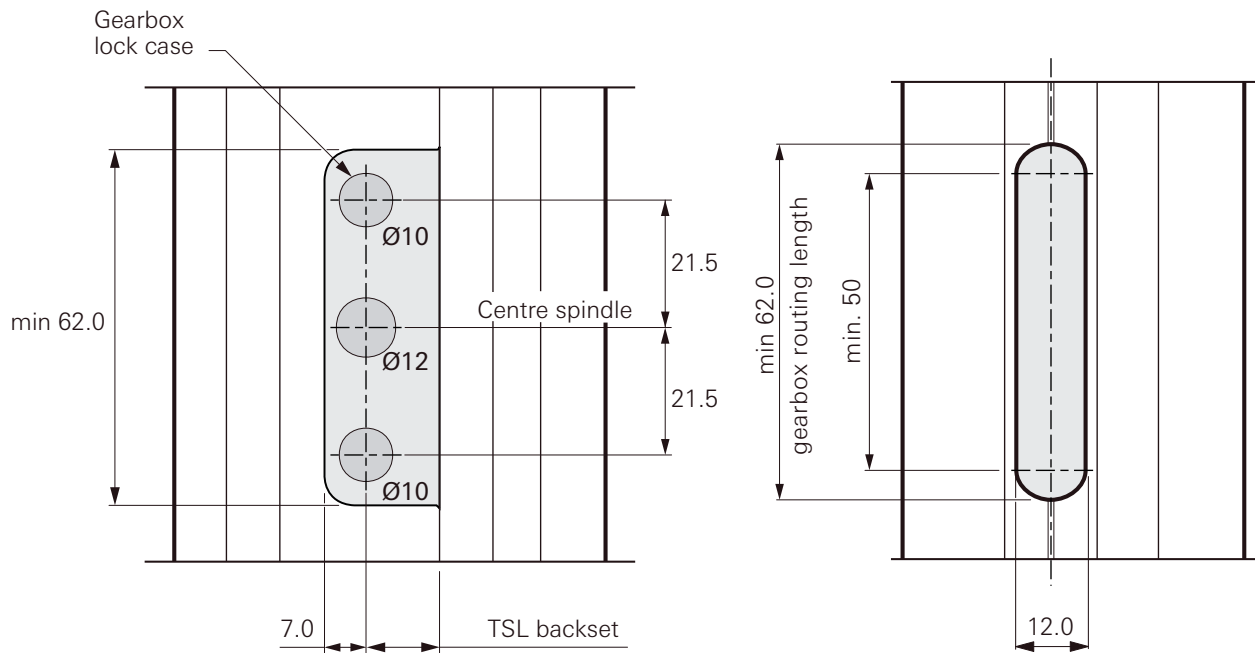
## Low handle TSL



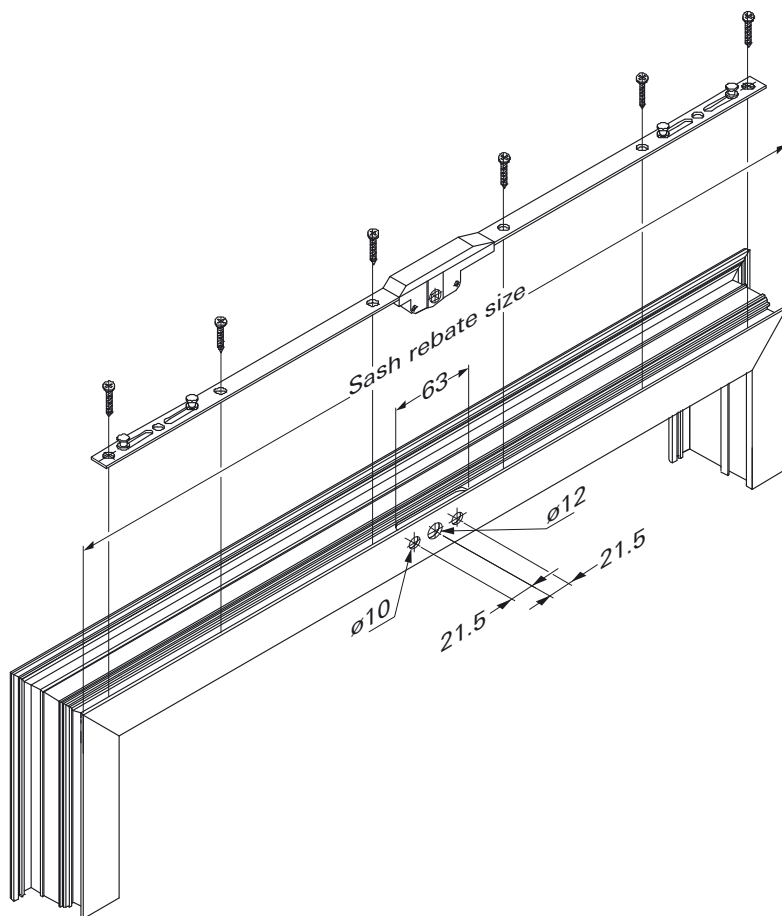
TSL	L	A	B	C	D
300	300	110	without	110	without
400	400	143	without	143	without
600	550	213	without	213	without
800	750	143	313	143	313
900	850	143	363	143	363
1000	950	143	413	143	413
1100	1050	143	463	143	463
1200	1150	143	513	143	513

TSL	L	A	B
900	850	220	356
1000	950	270	406
1100	1050	320	456
1200	1150	370	506

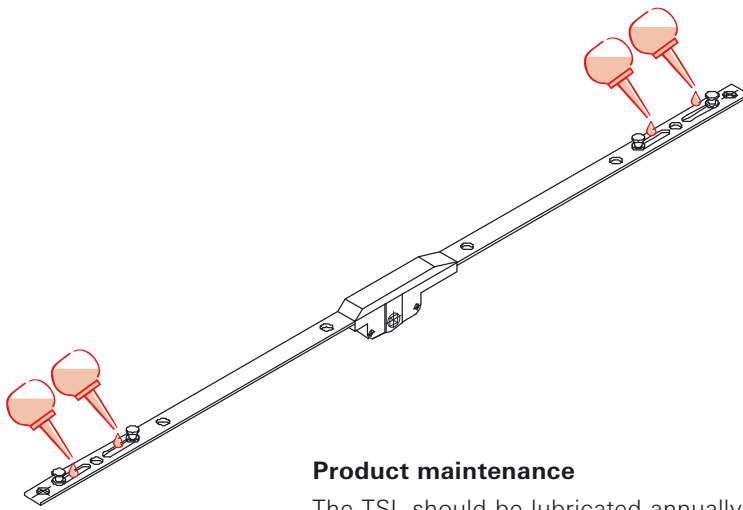
## Routing Information



This image shows a standard TSL with four cams, larger sizes incorporate eight cams.



## Maintenance



### **Product maintenance**

The TSL should be lubricated annually or more often if required, using bearing grease or light machine oil. Roto advises against the use of spray lubricants, such as WD-40, because solvents present in these products can attack the surface coating on the hardware.



## Notes





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