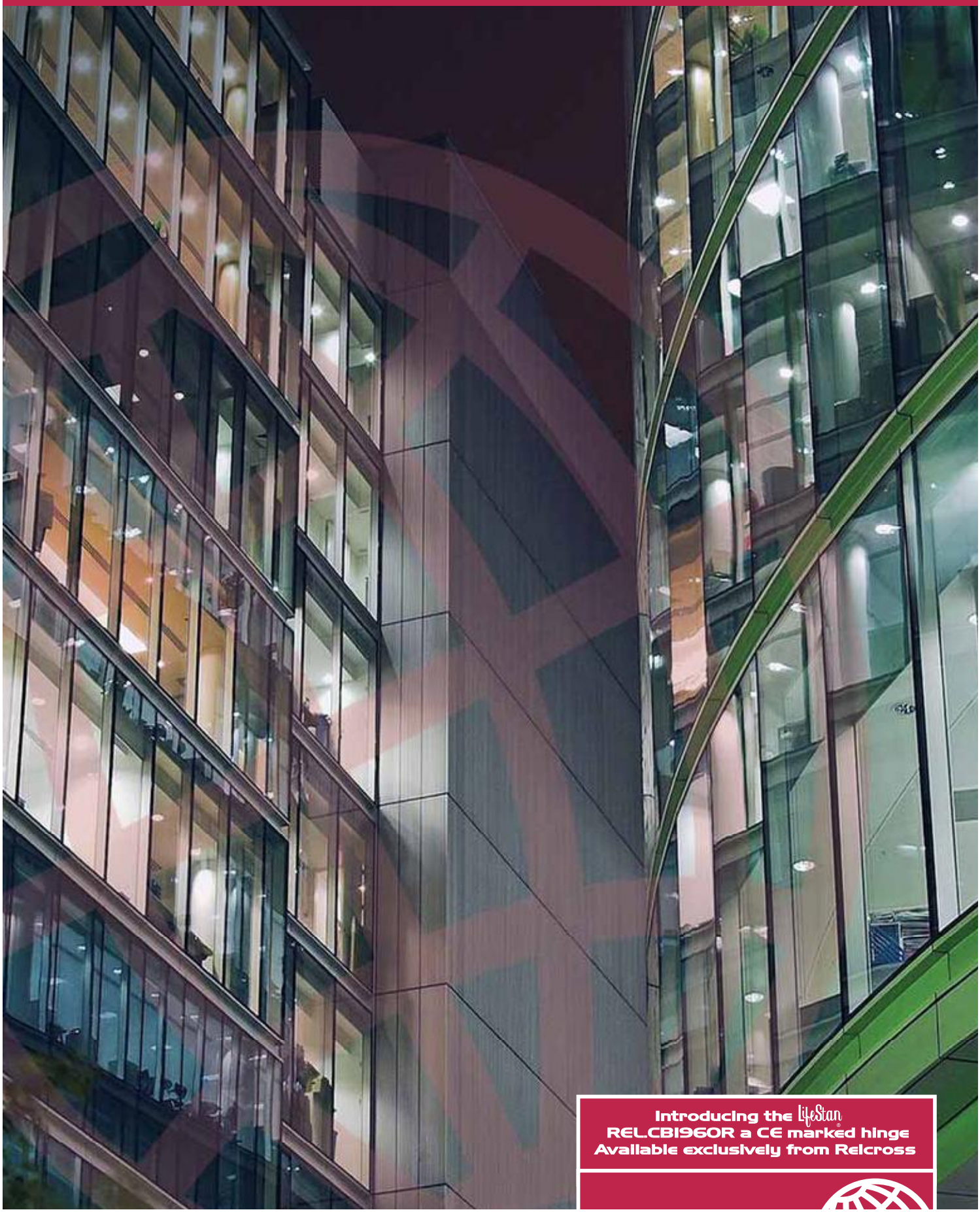
Relcross
Door, Security and Washroom Hardware

Hinges & Pivots

for Specifiers, Architectural Ironmongers & Door Hardware Specialists



Introducing the LifeStan® REL.CBI960R a CE marked hinge Available exclusively from Relcross

Continuous Geared Hinges

Hinge Construction - Basic Principles

This unique and innovative hinge is of a continuous geared design, manufactured in extruded 6063-T6 tempered aluminium alloy. The hinge consists of three interlocking extrusions in a 'pin-less' assembly intended for fixing to the full height of the door and frame. Each assembly consists of a frame blade, a door blade and a capping piece.

Tested and Proven

This hinge has been tested successfully under positive pressure fire test conditions to satisfy a wide range of UK fire performance requirements. The hinge also provides for security enhancement features and assists in the attainment of other performance requirements where air infiltration is a consideration (e.g weather sealing). Other variants provide for 'finger safe' features preventing the trapping of fingers in the gap between the heel of the door and the door frame. A Hospital Tip (anti-ligature) feature is available for full mortice versions.

Flexibility In Design

- All aluminium components are clear or dark bronze anodized after milling and preparation to receive fixings, to provide for a hard and durable surface finish with excellent corrosion resistant properties. (other finishes are available to special order)
- The design of the blades varies to suit a number of applications. Various blade designs are held together using a common capping section providing an extensive range of standard and special designs for full mortice, half mortice and full surface applications
- The load bearing properties of the hinge are varied by the use of Delrin ® - Teflon ® bearings manufactured to a patented process providing medium and heavy duty options
- All hinge designs allow doors to open 180°. However, in some locations wall or frame decoration may prevent use of this facility. Special extended throw options are available for both full mortice and half mortice designs

Continuous Hinge Selection Guide (for Doors <3048mm x 914mm x 44mm & 54mm)

		Medium Duty			
Class Code Clear or Dark Bronze Anodized	**Adjusted Door Weight / Kilos** (not exceeding)	127kg	127kg	145kg	182kg
	Hinge Length / Door Height (not exceeding)	2108mm	2159mm	2413mm	3048mm
REL.FMF01 Full Mortice - Flanged		✔	✔	✔	✔
REL.FF02 Full Surface		✔	✔	✔	✔
REL.HMS01 Half Mortice - Safety (no UK Fire Certification)		✔	✔	✔	✔
		Heavy Duty			
Class Code Clear or Dark Bronze Anodized	**Adjusted Door Weight / Kilos** (not exceeding)	245kg	245kg	281kg	354kg
	Hinge Length / Door Height (not exceeding)	2108mm	2159mm	2413mm	3048mm
REL.FMF01.HD Full Mortice - Flanged		✔	✔	✔	✔
REL.FF02.HD Full Surface		✔	✔	✔	✔
REL.HMS01.HD Half Mortice - Safety (no UK Fire Certification)		✔	✔	✔	✔

All hinges are manufactured to template hole and template bearing positions.

UK Fire Certification in accordance with BS 476 parts 20 & 22:1987 including single action pairs of doors. For use on **FD30S** and **FD60S** fire resisting door sets. WFRC No.139560.

Performance & Durability

In the absence of an applicable standard for continuous geared hinges in the UK, we are reliant upon ANSI for confirmation of our hinge's mechanical capabilities – ANSI/BHMA A156.26-2000:

Medium Duty Hinges 350,000 cycles (68 kilo door) Grade 3
150,000 cycles (136 kilo door) Grade 3

Heavy Duty Hinges 2.5M cycles (68 kilo door) Grade 1
1M cycles (136 kilo door) Grade1
500,000 cycles (272 kilo door) Grade 1

Creating the Hinge Code

Read off the class code and use the appropriate hinge type, i.e. medium or heavy duty followed by the hinge length as a suffix to the code.

For example:

REL.FMF01.C.2159 signifies a medium duty full mortice flanged hinge @ 2159mm in length - Clear Coated Anodized Aluminium.

Finishes

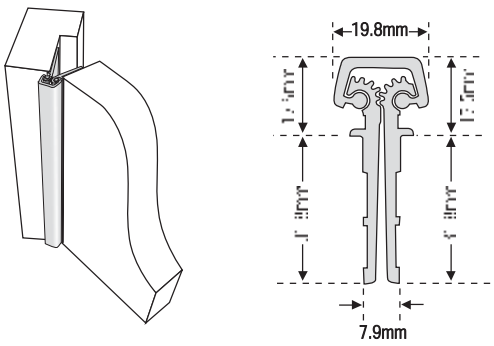
C - Clear Coated Anodized Aluminium
D - Dark Bronze Anodized Aluminium

Continuous Geared Hinges

REL.FMF01 -
Full Mortice Flanged Continuous Hinge

This hinge is designed primarily for new build situations but is suitable equally for retrofit situations where an upgrade is desirable. Full mortice flange type hinges may be recessed, semi recessed or surface mounted, the sectional drawing below shows a surface mounted installation where no timber has been removed from either the door or the frame.

When used in any of these applications the face of the door leaf is positioned to be flush with the face of the frame nosing. Where required, (e.g when using bolted assembly hollow metal frames) short leaf inset hinges (**REL.FMF06**) with offset flanges may be used. See **www.relcross.co.uk** for more information and variants of this application.

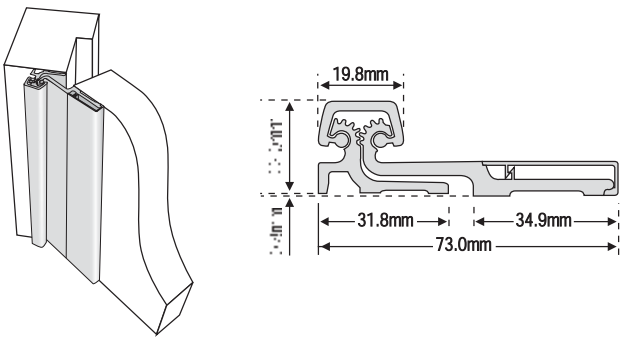


The flange detail used with some hinge designs assists with the accurate location of the hinge and provides for enhanced security and weather sealing performances. Intumescent sealing must be used when fitting these hinges to timber fire rated door sets. Please refer to the sales office for full details of intumescent requirements.

REL.FF02 -
Full Surface Continuous Hinge

Designed mainly for upgrading existing doorsets. Hinge leaves are applied to the exposed surfaces of the door and the frame.

Full surface hinges are fitted to the face of the door leaf and the frame allowing for the lateral adjustment of doors.



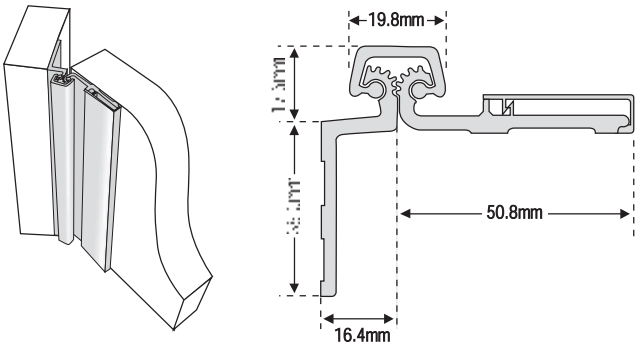
These hinge designs allow for unbroken sealing to the door leaf edges and / or the frame reveal. See **www.relcross.co.uk** for more information and variants of this application.

REL.HMS01 -
Half Mortice (Safety) Continuous Hinge

The standard half mortice option is designed specifically for upgrading existing doorsets although it can be used where a through bolt fixing is desirable on new installations. The safety version (shown here) is ideal for new build situations where young fingers are at risk.

One hinge leaf is applied to the exposed surface of the door and the frame leaf is applied to the concealed surface of the frame.

Half mortice hinges provide for traditional fixing to timber or metal frames with face fixing through the door leaf. This design allows for extensive lateral adjustment of the door leaf to provide for optimum setting of operating tolerances. The half mortice design is recommended for use with some mineral core door leaf constructions that provide for limited edge screw fixings. The design will also allow for unbroken sealing systems fixed to the door leaf edges.



Half mortice hinges are available as a safety hinge when used without a doorstop to the hanging jamb. The same design of hinge can be used with a frame incorporating a door stop with the door leaf repositioned to suit. This allows for the door leaf to be set back within the frame partition thickness.

A further half mortice design option provides for an extended throw facility if required. See **www.relcross.co.uk** for more information and variants of this application.

Continuous Geared Hinges - Load Bearing Capacity

	Hinge Length	No. of Bearings	Max Door Weight* kg
Medium Duty (O)	2108mm	14	127
	2159mm	14	127
	2413mm	16	145
	3048mm	20	182
Heavy Duty (HD)	2108mm	27	245
	2159mm	27	245
	2413mm	31	281
	3048mm	39	354

*** Adjusted**

HINGES & PIVOTS

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Concealed Bearing Hinges – (REL.CB1960R - CE Marked 1720-CPD-0020)

Stability & Durability

The Patented 'Two Piece LifeStan® Bearing System' hinge design provides the following stability and durability features:

- Template/jig drilled fixing holes allow off-site preparation of the door and frame
- Unadjusted door weights up to 68 kilos – Adjusted door weights up to 120 kilos
- Independent cycle test performance up to 1.5M cycles (reduces the adjusted load bearing capacity to 68 kilos - size 114mm x 102mm)
- Aesthetically pleasing 'clean' barrel lines permit inclusion in all architectural specifications
- Limited LifeSpan® warranty for the life of the building
- Maintenance free, long life operation. No oil, no grease, no lubrication
- Appropriate for use with all LCN door closers – i.e. with back-check feature

Security & Safety

All concealed bearing hinges (**REL.CB1960R**) can be specified to include the security variants **NRP** (Non-removable Pin) feature and/or the **SEC** (Security Stud) feature providing additional security at the opening face of all security door installations.

All concealed bearing hinges (**REL.CB1960R**) can be modified to include the 'anti-ligature' variant **HT** (Hospital Tip) that limits the risk of self-harm when used on projects where such considerations might apply.

Disability

All concealed bearing hinges (**REL.CB1960R**) incorporate the smooth low operating force feature – a function of the self lubricating properties of The Patented 'Two Piece LifeStan® Bearing System' – making this hinge an ideal choice where a low coefficient of friction is a requirement, i.e. doors on accessible routes.

Fire Performance

UK Fire Approval: BTC Report 15425F
BS EN1634 part 1: 2000 E30 & E60 Fire Doors or BS 476 part 22: 1987 FD30 & FD60 Fire Doors - as defined in the above report.

In summary:

REL.CB1960R hinges are assessed for use on previously tested and/or assessed 30 minute and 60 minute fire resisting timber doors of leaf sizes:

2100mm high x 900mm wide (E30/E60 & FD30/FD60)

- providing the conditions and limitations defined in BTC Report 15425F are complied with. The doors to which hinges are fitted must have been tested or assessed for fire resistance according to BS EN1634 part 1: 2000 & BS 476: part 22:1987. The maximum door size is dependent upon the test evidence for doors used with a similar sized hinge. Compliance limitations regarding leaf thickness and associated intumescent protection (as defined in BTC Report 15425F) is essential. This information is freely available from the Sales Office upon request.

Test reports and assessment reports are strictly confidential and are available for inspection at our offices by prior arrangement.

Continuous Hinges –

Stability & Durability

The continuous hinge design provides the following stability and durability features:

- Template/jig drilled fixing holes allow off-site preparation of the door and frame
- Multiple fixings that distribute load stresses uniformly along the full length of the door and frame
- Adjusted door weights (a function of the door's height) up to 354 kilos
- Independent cycle test performance up to 2.5M cycles (reduces the adjusted load bearing capacity to 68 kilos)
- Assistance with the alignment of doors and frames reducing the risk of binding and consequent wear resulting in the virtual elimination of door sag

Vanity, Security & Safety

The full height continuous intermeshing gear with capping piece design eliminates gaps that occur between the door leaf and the frame when doors are hung on traditional hinges. This sight proof feature provides a privacy function desirable for both vanity and security purposes.

Various 'Safety' versions of the hinge can be used without a frame door stop providing sufficient space between the frame mounted hinge blade and the door mounted hinge blade to prevent entrapment of young fingers. The slightly rounded 'soft-edge' profile of the hinge knuckle reduces the risk of injury in the event of impact with the hinge.

Hinges can be modified to include the 'anti-ligature' variant that limits the risk of self-harm when used on projects where such considerations might apply.

Disability

All our continuous hinge designs can incorporate a number of features that are of assistance to the physically and visually impaired. The smooth low operating force feature, a function of the self lubricating properties of the patented bearing system, makes this hinge an ideal choice where a low coefficient of friction is a requirement, i.e. doors on accessible routes.

Additionally, the full height capping piece (or knuckle) can be finished to contrast with the door leaf and the frame to provide a navigational reference for users with impaired vision.

Acoustics, Smoke & Weather Sealing

The full height continuous intermeshing gear with capping piece design restricts the flow of air at the hanging stiles contributing to the acoustic, smoke and weather sealing performance of the door set.

Full surface versions provide 'clean' uninterrupted edges at the heel of the door and at the frame reveal. This allows the installation of a continuous sealing system that may be otherwise interrupted by the use of traditional full mortice hinges and other door hardware.

Fire Performance

Various versions of the hinge (as marked herein) have been tested successfully in the United Kingdom in accordance with the requirements of BS 476 parts 20 & 22:1987. FD30S & FD60S applications.

Where identified as fire rated, continuous hinges provide for a performance up to 3 Hour (A-Label) Fire listing for all 3048mm x 1220mm and 3048mm x 2440mm door and frame assemblies. Fire listing certifications apply to all approved hollow metal and wood door assemblies in drywall or masonry wall constructions.

NOTE 1: 'FirePins' are required on 3-Hour (A-Label) assemblies.
NOTE 2: BS 476 part 20 & 22:1987 test data relates to the use of identified hinge types for FD30S (Half Hour) and FD60S (One Hour) applications when used with approved wood doors and frames.

Relcross
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