



# Hængsler i kunststof



# Hængsler i kunststof

**CFA.**

Side 1-3

---



**CFA-SL**

Side 4

---



**CFA X.**

Side 5-6

---



**CFA-F**

Side 7

---



**CFA-ERS**

Side 8

---



**CFT.**

Side 9

---



**CFTX.**

Side 10

---



**CFQ.**

Side 11

---



**CFL.**

Side 12

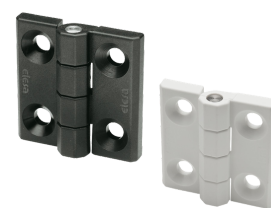
---



**CFM.**

Side 13-14

---



# CFMR.

Side 15

---



# CFM-L

Side 16

---



# CFM-SL

Side 17

---



# CFM-CLEAN

Side 18

---



# CFMQ

Side 19

---



# CFMY

Side 20

---



# CFMX

Side 21

---



# CFMW.

Side 22-23

---



# CFM-VD

Side 24

---



# CFM-MD

Side 25

---



# CFM-TR

Side 26-27

---



# CFM-TR-G

Side 28-29

---



# CFH.

Side 30

---



# CFR.

Side 31

---



# CFD.

Side 32-33

---



# CFE.

Side 34-35

---



# CFF.

Side 36-37

---



# CFG.

Side 38-39

---



# CFG-ERS

Side 40-41

---



# CFI.

Side 42-43

---



# CFB.

Side 44

---



# CFC.

Side 45

---



# CFN.

Side 46-47

---



# CFO.

Side 48-49

---



# CFV.

Side 50

---



# CFVT.

Side 51-52

---



# CFU.

Side 53

---



# CFP.

Side 54

---



## Hinges

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish. Grey RAL 7040 (C33) only for CFA-SH execution.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

- **CFA-B**: nickel-plated brass bosses with threaded hole.
- **CFA-p**: nickel-plated steel threaded studs.
- **CFA-SH**: pass-through holes for countersunk head screws.
- **CFA-TI-SH**: pass-through holes for countersunk head screws and rear housing to accommodate the head of threaded inserts.
- **CFA-CH**: pass-through holes for cylindrical head screws.
- **CFA-B-p**: nickel-plated brass bosses with threaded hole and nickel-plated steel threaded studs.
- **CFA-B-SH**: nickel-plated brass bosses with threaded hole and pass-through holes for countersunk head screws.
- **CFA-B-CH**: nickel-plated brass bosses with threaded hole and pass-through holes for cylindrical head screws.
- **CFA-p-SH**: nickel-plated steel threaded studs pass-through holes for countersunk head screws.
- **CFA-p-CH**: nickel-plated steel threaded studs and pass-through holes for cylindrical head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 215° (-35° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

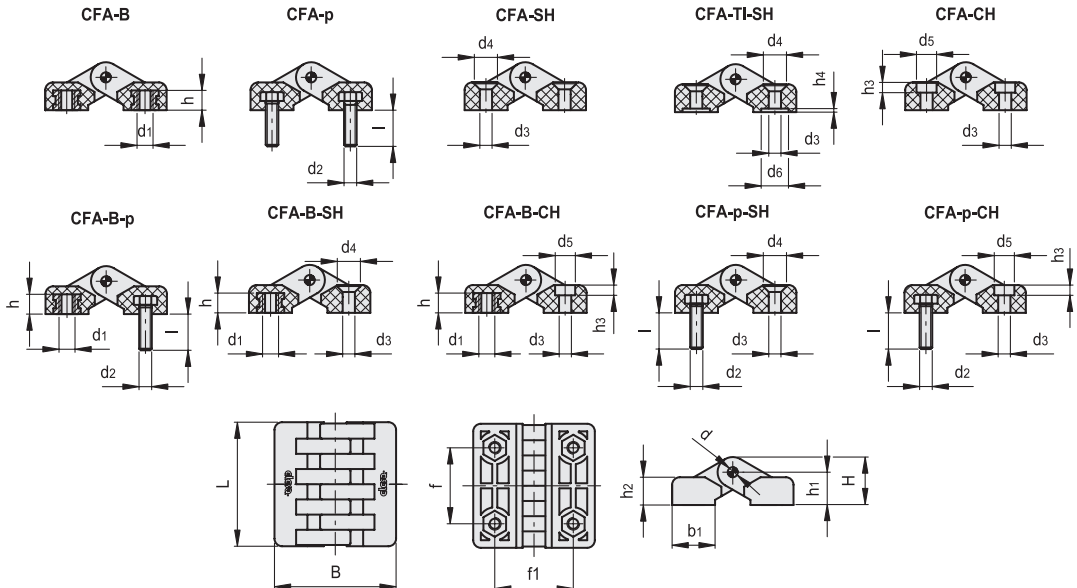
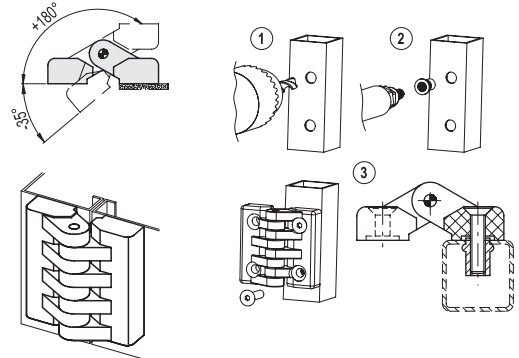
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

#### ASSEMBLY INSTRUCTIONS FOR CFA-TI-SH

1. Drill a hole in the door/doorframe with a diameter corresponding to the threaded insert used.
2. Fix the threaded insert on the door/doorframe with a riveter.
3. Fit the hinge on the door/doorframe tightening the screw into the threaded insert.



FMMdesign



CFA-B

Code	Description	L	B	d1	h	f±0.25	f1±0.25	H	h1	h2	b1	d	C# [Nm]	⚖️
422391	CFA.40 B-M4	39.5	38.5	M4	6.5	25	25	14	9.5	9.5	14	3	5	23
422111	CFA.49 B-M5	49.5	48	M5	8.5	30	31	19	13	11	17	4	5	39
422113	CFA.49 B-M6	49.5	48	M6	8	30	31	19	13	11	17	4	5	38
422211	CFA.65 B-M6	65	64	M6	9	40	40	23	15	13.5	24	5	5	85
422311	CFA.97 B-M10	96.5	97.5	M10	15	59.5	62.5	35	23	20.5	35	8	5	306

CFA-p

Code	Description	L	B	d2	l	f±0.25	f1±0.25	H	h1	h2	b1	d	C# [Nm]	⚖️
422121	CFA.49 p-M5x14	49.5	48	M5	14	30	31	19	13	11	17	4	5	45
422221	CFA.65 p-M6x18	65	64	M6	18	40	40	23	15	13.5	24	5	5	90
422321	CFA.97 p-M10x20	96.5	97.5	M10	20	59.5	62.5	35	23	20.5	35	8	5	330

CFA-SH

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	d	d3	d4	C# [Nm]	⚖️
422411	CFA.40 SH-4	39.5	38.5	25	25	14	9.5	9.5	14	3	4.5	8.5	1	14
422131	CFA.49 SH-5	49.5	48	30	31	19	13	11	17	4	5.5	10	2	29
422231	CFA.65 SH-6	65	64	40	40	23	15	13.5	24	5	6.5	12.5	3	62
422331	CFA.97 SH-10	96.5	97.5	59.5	62.5	35	23	20.5	35	8	10.5	20	5	221

CFA-TI-SH

Code	Description	L	B	d6	f±0.25	f1±0.25	H	h1	h2	h4	b1	d	d3	d4	d6	C# [Nm]	⚖️
422416	CFA.40 TI-SH-4	39.5	38.5	10	25	25	14	9.5	9.5	1.3	14	3	4.5	8.5	-	1	14
422136	CFA.49 TI-SH-5	49.5	48	11	30	31	19	13	11	1.5	17	4	5.5	10	11	2	29
422237	CFA.65 TI-SH-6	65	64	13	40	40	23	15	13.5	1.8	24	5	6.5	12.5	13	3	62

CFA-CH

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	h3	b1	d	d3	d5	C# [Nm]	⚖️
422412	CFA.40 CH-4	39.5	38.5	25	25	14	9.5	9.5	4.5	14	3	4.5	8.5	1	14
422132	CFA.49 CH-5	49.5	48	30	31	19	13	11	5.5	17	4	5.5	10	2	29
422232	CFA.65 CH-6	65	64	40	40	23	15	13.5	6.5	24	5	6.5	11	5	62
422332	CFA.97 CH-10	96.5	97.5	59.5	62.5	35	23	20.5	10.5	35	8	10.5	17	5	221

CFA-B-p

Code	Description	L	B	d1	h	d2	l	f±0.25	f1±0.25	H	h1	h2	b1	d	C# [Nm]	⚖️
422141	CFA.49 B-M5-p-M5x14	49.5	48	M5	8.5	M5	14	30	31	19	13	11	17	4	5	42
422241	CFA.65 B-M6-p-M6x18	65	64	M6	10.5	M6	18	40	40	23	15	13.5	24	5	5	88
422341	CFA.97 B-M10-p-M10x20	96.5	97.5	M10	15	M10	20	59.5	62.5	35	23	20.5	35	8	5	318

CFA-B-SH

Code	Description	L	B	d1	h	f±0.25	f1±0.25	H	h1	h2	b1	d	d3	d4	C [Nm] B#	C [Nm] SH#	⚖️
422151	CFA.49 B-M5-SH-5	49.5	48	M5	8.5	30	31	19	13	11	17	4	5.5	10	5	2	34
422251	CFA.65 B-M6-SH-6	65	64	M6	10.5	40	40	23	15	13.5	24	5	6.5	12.5	5	3	74
422351	CFA.97 B-M10-SH-10	96.5	97.5	M10	15	59.5	62.5	35	23	20.5	35	8	10.5	20	5	5	264

CFA-B-CH

Code	Description	L	B	d1	h	f±0.25	f1±0.25	H	h1	h2	h3	b1	d	d3	d5	C [Nm] B#	C [Nm] CH#	⚖️
422152	CFA.49 B-M5-CH-5	49.5	48	M5	8.5	30	31	19	13	11	5.5	17	4	5.5	10	5	2	34
422252	CFA.65 B-M6-CH-6	65	64	M6	10.5	40	40	23	15	13.5	6.5	24	5	6.5	11	5	5	74
422352	CFA.97 B-M10-CH-10	96.5	97.5	M10	15	59.5	62.5	35	23	20.5	10.5	35	8	10.5	17	5	5	264

# Suggested tightening torque for assembly screws.



Hinges 12

CFA-p-SH

Code	Description	L	B	d2	l	f±0.25	f1±0.25	H	h1	h2	b1	d	d3	d4	C [Nm] p#	C [Nm] SH#	Δ
422161	CFA.49 p-M5x14-SH-5	49.5	48	M5	14	30	31	19	13	11	17	4	5.5	10	5	2	37
422261	CFA.65 p-M6x18-SH-6	65	64	M6	18	40	40	23	15	13.5	24	5	6.5	12.5	5	3	76
422361	CFA.97 p-M10x20-SH-10	96.5	97.5	M10	20	59.5	62.5	35	23	20.5	35	8	10.5	20	5	5	276

CFA-p-CH

Code	Description	L	B	d2	l	f±0.25	f1±0.25	H	h1	h2	h3	b1	d	d3	d5	C [Nm] p#	C [Nm] CH#	Δ
422162	CFA.49 p-M5x14-CH-5	49.5	48	M5	14	30	31	19	13	11	5.5	17	4	5.5	10	5	2	37
422262	CFA.65 p-M6x18-CH-6	65	64	M6	18	40	40	23	15	13.5	6.5	24	5	6.5	11	5	5	76
422362	CFA.97 p-M10x20-CH-10	96.5	97.5	M10	20	59.5	62.5	35	23	20.5	10.5	35	8	10.5	17	5	5	276

CFA-SH-C33

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	d	d3	d4	C# [Nm]	Δ
422411-C33	CFA.40 SH-4-C33	39.5	38.5	25	25	14	9.5	9.5	14	3	4.5	8.5	1	14
422131-C33	CFA.49 SH-5-C33	49.5	48	30	31	19	13	11	17	4	5.5	10	2	29
422231-C33	CFA.65 SH-6-C33	65	64	40	40	23	15	13.5	24	5	6.5	12.5	3	62
422331-C33	CFA.97 SH-10-C33	96.5	97.5	59.5	62.5	35	23	20.5	35	8	10.5	20	5	221

# Suggested tightening torque for assembly screws.

Index C33: hinge RAL 7040 grey colour.

Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
Description						
CFA.40 B-M4	200	2050	240	2220	100	730
CFA.40 SH-4	130	2080	290	2030	280	1520
CFA.40 CH-4	137	1800	230	1760	180	1330
CFA.49 B-M5	400	3770	440	3070	170	1470
CFA.49 B-M6	330	3250	470	3250	110	1540
CFA.49 p-M5x14	370	3070	360	1970	200	1680
CFA.49 SH-5	300	2960	310	2880	320	2490
CFA.49 CH-5	360	3080	310	2530	250	1620
CFA.49 B-M5-p-M5x14	370	3070	360	1970	200	1470
CFA.49 B-M5-SH-5	400	2960	280	2880	170	1470
CFA.49 B-M5-CH-5	360	3080	320	2530	170	1470
CFA.49 p-M5x14-SH-5	370	2960	280	1970	200	1680
CFA.49 p-M5x14-CH-5	360	3070	320	1970	200	1620
CFA.65 B-M6	640	4570	690	5670	220	2280
CFA.65 p-M6x18	510	5890	460	6620	220	3190
CFA.65 SH-6	520	4760	720	6270	240	4180
CFA.65 CH-6	510	5280	490	5790	260	3190
CFA.65 B-M6-p-M6x18	510	4570	460	5670	220	2280
CFA.65 B-M6-SH-6	640	4570	690	5670	220	2280
CFA.65 B-M6-CH-6	510	4570	490	5670	220	2280
CFA.65 p-M6x18-SH-6	510	4760	460	6270	220	3190
CFA.65 p-M6x18-CH-6	510	5280	460	5790	220	3190
CFA.97 B-M10	970	7660	2120	17940	590	5210
CFA.97 p-M10x20	890	5950	1730	16190	460	3690
CFA.97 SH-10	1110	6730	1230	10460	510	4100
CFA.97 CH-10	1050	4860	2060	13670	540	4760
CFA.97 B-M10-p-M10x20	890	5950	1730	16190	460	3690
CFA.97 B-M10-SH-10	970	6730	1230	10460	510	4110
CFA.97 B-M10-CH-10	970	4860	2060	13670	540	4760
CFA.97 p-M10x20-SH-10	890	5950	1230	10460	460	3690
CFA.97 p-M10x20-CH-10	890	4860	1730	13670	460	3690

## Hinges with slotted holes of adjustment

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

Pass-through slotted holes for cylindrical head screws which allow the adjustment during assembly.

- **CFA-SL-H**: for horizontal adjustments.
- **CFA-SL-V**: for vertical adjustments.
- **CFA-SL-HV**: for both horizontal and vertical adjustments.

#### ROTATION ANGLE (APPROXIMATE VALUE)

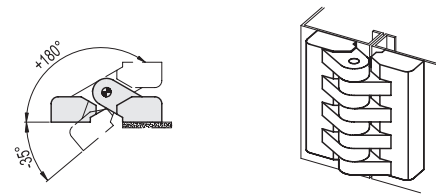
Max 215° (-35° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

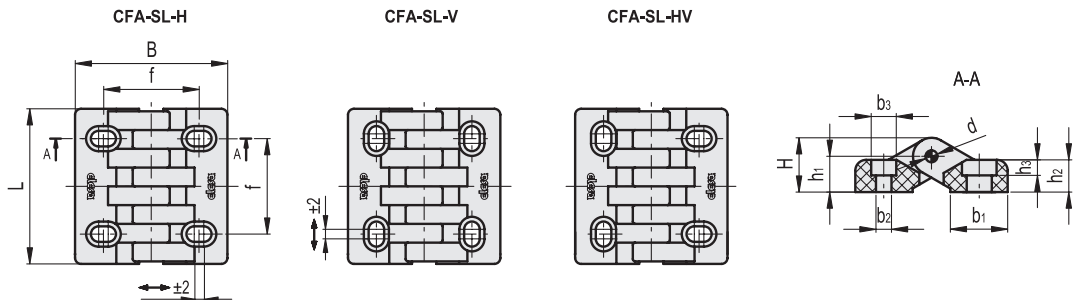
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



FAMdesign



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
Description						
CFA.65-SL	510	5280	490	5790	260	3190



Code	Description	L	B	f	H	h1	h2	h3	b1	b2	b3	d	C# [Nm]	⚖️
422272	CFA.65-SL-H	65	64	40	23	15	13.5	6.5	24	6.5	10.5	5	3	60
422276	CFA.65-SL-V	65	64	40	23	15	13.5	6.5	24	6.5	10.5	5	3	60
422280	CFA.65-SL-HV	65	64	40	23	15	13.5	6.5	24	6.5	10.5	5	3	60

# Suggested tightening torque for assembly screws.





## Hinges

### Technopolymer rotating pin

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

Acetal based (POM) technopolymer, black colour.

#### STANDARD EXECUTIONS

- **CFAx-B**: nickel-plated brass bosses with threaded hole.
- **CFAx-SH**: pass-through holes for countersunk head screws.
- **CFAx-CH**: pass-through holes for cylindrical head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 215° (-35° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

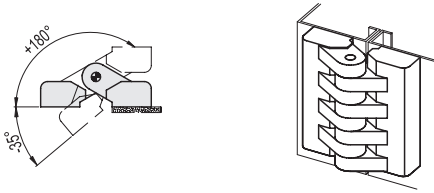
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

#### EXECUTION CFK.

False hinge made up of a single body without rotation pin. It can be used for blocking fixed panels, when you want to obtain the same general aesthetical effect.



FM design

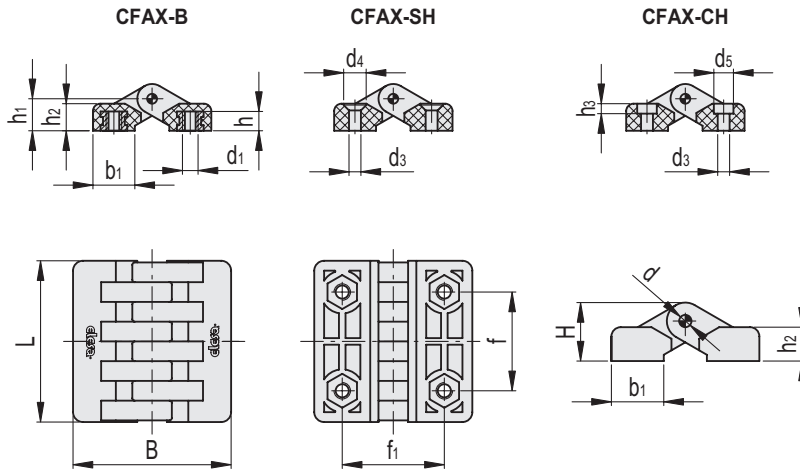


Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFAX.40 B-M4	200	1850	240	2000	100	560
CFAX.40 SH-4	130	1870	290	1800	280	1370
CFAX.40 CH-4	137	1340	230	1580	180	1200
CFAX.49 B-M5	400	2400	440	2760	170	1320
CFAX.49 SH-5	300	2660	310	2600	320	2240
CFAX.49 CH-5	360	2480	310	2270	250	1460
CFAX.65 B-M6	640	4000	690	4400	220	1400
CFAX.65 SH-6	520	4300	720	4800	240	3760
CFAX.65 CH-6	510	3700	490	5200	260	2870





Hinges 12



**CFAQ-B**

Code	Description	L	B	d1	h	f±0.25	f1±0.25	H	h1	h2	b1	d	C# [Nm]	⚖
422421	CFAQ.40 B-M4	39.5	38.5	M4	6.5	25	25	14	9.5	9.5	14	3	5	23
422431	CFAQ.49 B-M5	49.5	48	M5	8.5	30	31	19	13	11	17	4	5	39
422441	CFAQ.65 B-M6	65	64	M6	9	40	40	23	15	13.5	24	5	5	85

**CFAQ-SH**

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	d	d3	d4	C# [Nm]	⚖
422423	CFAQ.40 SH-4	39.5	38.5	25	25	14	9.5	9.5	14	3	4.5	8.5	1	14
422433	CFAQ.49 SH-5	49.5	48	30	31	19	13	11	17	4	5.5	10	2	29
422443	CFAQ.65 SH-6	65	64	40	40	23	15	13.5	24	5	6.5	12.5	3	62

**CFAQ-CH**

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	h3	b1	d	d3	d5	C# [Nm]	⚖
422425	CFAQ.40 CH-4	39.5	38.5	25	25	14	9.5	9.5	4.5	14	3	4.5	8.5	1	14
422435	CFAQ.49 CH-5	49.5	48	30	31	19	13	11	5.5	17	4	5.5	10	2	29
422445	CFAQ.65 CH-6	65	64	40	40	23	15	13.5	6.5	24	5	6.5	11	5	62

# Suggested tightening torque for assembly screws.

## Hinges with detent position at 90°

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

- **CFA-F-B**: nickel-plated brass bosses with threaded hole.
- **CFA-F-CH**: pass-through holes for cylindrical head screws.
- **CFA-F-SH**: pass-through holes for countersunk head screws.

#### FEATURES AND APPLICATIONS

CFA-F hinges are recommended when the opening of the door must not exceed the limit of 90°.

Once the hinge is fitted onto the machine/door, the teeth of the detent system remain inside the hinge. Thus the operator cannot reach them for the safety of his hands.

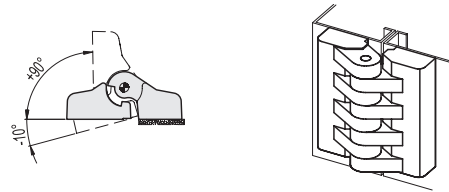
#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 100° (-10° and +90° being 0° the condition where the two interconnected surfaces are on the same plane).

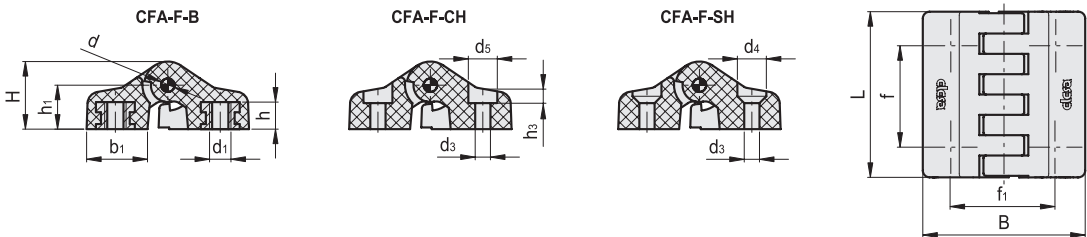
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



FIM design



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFA.49-F-B-M6	330	3250	470	3250	110	1540
CFA.49-F-CH-5	380	3600	370	3300	320	2490
CFA.49-F-SH-5	300	2960	310	2880	320	2490
CFA.65-F-B-M6	1150	5780	1550	7780	760	3820
CFA.65-F-CH-6	810	5410	1000	6550	720	3980
CFA.65-F-SH-6	840	5680	1010	7010	790	3960



Code	Description	L	B	d1	h	f±0.25	f1±0.25	H	h1	h3	b1	d	d3	d4	d5	C# [Nm]	⚠
422114	CFA.49-F-B-M6	49.5	48	M6	8	30.2	31	20	13	-	18	4	-	-	-	5	42
422135	CFA.49-F-CH-5	49.5	48	-	-	30.2	31	20	13	5.5	18	4	5.5	-	10	2	29
422133	CFA.49-F-SH-5	49.5	48	-	-	30.2	31	20	13	-	18	4	5.5	10	-	2	29
422212	CFA.65-F-B-M6	65	63.5	M6	9	40	40	25	16	-	24	5	-	-	-	5	84
422235	CFA.65-F-CH-6	65	63.5	-	-	40	40	25	16	6.5	24	5	6.5	-	11	3	62
422236	CFA.65-F-SH-6	65	63.5	-	-	40	40	25	16	-	24	5	6.5	12.5	-	3	62

# Suggested tightening torque for assembly screws.

## Hinges with friction brake

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

Black-oxide steel.

#### STANDARD EXECUTION

Pass-through holes for countersunk head screws.

#### ADJUSTABLE HANDLE FOR CLAMPING

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

Red writing "PUSH" tampoprinted on the lever body (avoid contact with solvents, alcohol or detergents containing alcohol).

Black-oxide steel retaining screw, AISI 302 stainless steel return spring.

Boss with threaded blind hole in black-oxide steel (CFA.49 and CFA.65) or brass (CFA.97).

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 215° (-35° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

#### FEATURES AND APPLICATIONS

CFA-ERS hinge with friction brake allows to adjust the door open and close desired positions, and also the door clamping in any position within the rotation angle of 215°.

#### INSTRUCTIONS OF USE

The friction effect is obtained by clamping the two hinged bodies using the special adjustable handle.

To operate the adjusting mechanism, push down the lever (PUSH). By releasing the lever, the spring releases the tothing, thus the handle can return to its starting position and the lever can rotate freely together with the door without obstructing the movement, even in case of accidental shock.

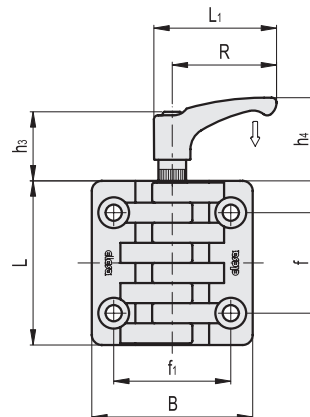
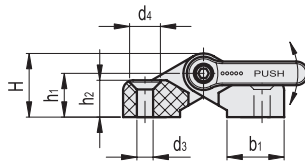
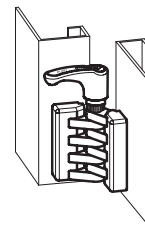
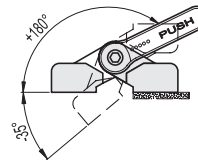
The high number of teeth within the adjustable handle guarantees rotation even in case of very limited movement of the lever arm.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

For strength data, see the correspondent products of the series CFA. (see page 1370).



FAMdesign



Code	Description	L	B	L1	f±0.25	f1±0.25	H	h1	h2	h3	h4	b1	R	d3	d4	⚖️
422134	CFA.49-ERS-SH-5	49.5	48	52	30	31	19	13	11	29	36	17	44	5.5	10	40
422234	CFA.65-ERS-SH-6	65	64	52	40	40	23	15	13.5	29	36	24	44	6.5	11.5	75
422334	CFA.97-ERS-SH-10	96.5	97.5	73.5	59.5	62.5	35	23	20.5	37	48	35	63	10.5	20	240



## Hinges with screw-covers

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

Acetal based (POM) technopolymer, black colour.

#### SCREW-COVERS

Polyester based (PBT) technopolymer, black colour, glossy finish, snap-in assembly.

#### STANDARD EXECUTIONS

- **CFT-SH**: pass-through holes for countersunk head screws.
- **CFT-EH**: hexagonal pass-through holes for cylindrical head screws, hexagonal head nuts or screws. CFT. hinge with boss or stud can be obtained by means of hexagonal head nuts or screws fitted into the assembly hole.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 200° (-20° and +180° being 0° the condition where the interconnected surfaces are on the same plane).

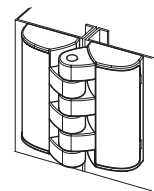
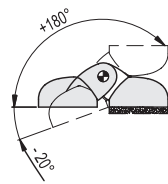
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

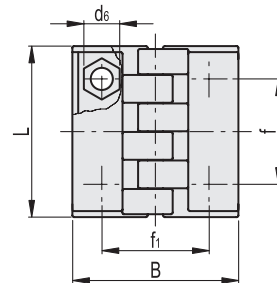
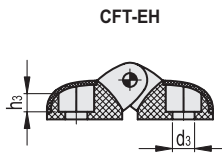
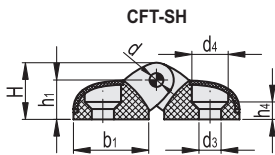
Screw-covers in different RAL colours.



ELESA Original design 2009



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFT.40	300	1500	300	1500	200	750
CFT.49	500	2900	400	3000	300	1600
CFT.65	800	4500	800	4400	500	2200



Code	Description	L	B	f±0.25	f1±0.25	H	h1	h3	h4	b1	d	d3	d4	d6	C# [Nm]	⚖️
427112-C9	CFT.40 SH-4-C9	39.5	38	25	25	13	9	-	4.5	17.5	3	4.5	8.5	-	2	11
427132-C9	CFT.49 SH-5-C9	49.5	48	30.5	31	16.5	11.5	-	5	21.5	4	5.5	10.5	-	2	24
427152-C9	CFT.65 SH-6-C9	65	63	40	40	21.5	15	-	10	29	5	6.5	12.5	-	2	50
427111-C9	CFT.40 EH-4-C9	39.5	38	25	25	13	9	4	-	17.5	3	4.5	-	7	2	11
427131-C9	CFT.49 EH-5-C9	49.5	48	30.5	31	16.5	11.5	5	-	21.5	4	5.5	-	8.5	2	24
427133-C9	CFT.49 EH-6-C9 *	49.5	48	30.5	31	16.5	11.5	5	-	21.5	4	6.5	-	10	2	24
427151-C9	CFT.65 EH-6-C9	65	63	40	40	21.5	15	7	-	29	5	6.5	-	10	2	50

\* In case of assembly with cylindrical screw, use a shorted head screw.

# Suggested tightening torque for assembly screws.



## Hinges

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour or RAL 9016 white (C16), matte finish.

#### ROTATING PIN

Acetal resin based (POM) technopolymer, black colour or RAL 9016 white (C16), matte finish.

#### STANDARD EXECUTIONS

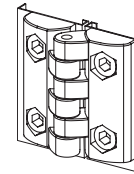
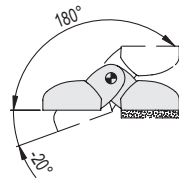
- **CFTX-SH**: pass-through holes for countersunk head screws.
- **CFTX-EH**: hexagonal pass-through holes for cylindrical head screws. This hinge with boss or stud can be obtained by means of hexagonal head nuts or screws fitted into the assembly hole.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 200° (-20° and +180° being 0° the condition where the interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).

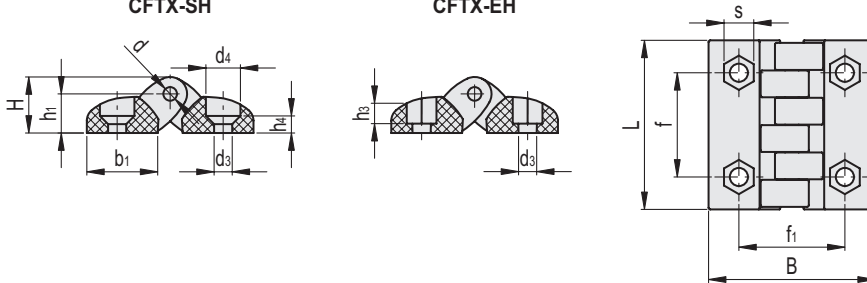


ELESA Original design

Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFTX.40	300	1500	300	1500	200	750
CFTX.49	500	2900	400	3000	300	1600
CFTX.65	800	4500	800	4400	500	2200

CFTX-SH

CFTX-EH



Code	Description	Code	Description	L	B	f±0.25	f1±0.25	H	h1	h3	h4	b1	d	d3	d4	s	C# [Nm]
427211	CFTX.40 SH-4	427216	CFTX.40 SH-4-C16	39.5	38.5	25	25	13	9	-	4.5	16.5	3	4.5	8.5	-	2 9
427231	CFTX.49 SH-5	427236	CFTX.49 SH-5-C16	49.5	49	30.5	31	16.5	11.5	-	5	21	4	5.5	10.5	-	2 22
427251	CFTX.65 SH-6	427256	CFTX.65 SH-6-C16	65	64	40	40	21.5	15	-	9	27.5	5	6.5	12.5	-	2 48
427201	CFTX.40 EH-4	427206	CFTX.40 EH-4-C16	39.5	39.5	25	25	13	9	4.5	-	16.5	3	4.5	-	7	2 9
427221	CFTX.49 EH-5	427226	CFTX.49 EH-5-C16	49.5	49	30.5	31	16.5	11.5	6	-	21	4	5.5	-	8	2 22
427222	CFTX.49 EH-6	427227	CFTX.49 EH-6-C16	49.5	49	30.5	31	16.5	11.5	6	-	21	4	6.5	-	10	2 22
427241	CFTX.65 EH-6	427246	CFTX.65 EH-6-C16	65	64	40	40	21.5	15	7.5	-	27.5	5	6.5	-	10	2 48

# Suggested torque for screw assembly.

## Hinges with screw-covers

### Technopolymer

#### MATERIAL

Acetal resin based (POM) technopolymer, black colour, matte finish.

#### ROTATING PIN

Acetal based (POM) technopolymer, black colour.

#### SCREW-COVERS

Polyester based (PBT) technopolymer, black colour, matte finish, snap-in assembly.

#### STANDARD EXECUTIONS

- **CFQ-SH**: pass-through holes for countersunk head screws.
- **CFQ-CH**: pass-through holes for cylindrical head screws.
- **CFQ-EH**: pass-through holes for hexagonal head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

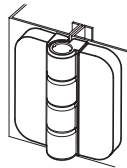
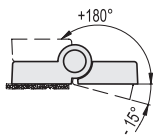
Max 195° (-15° and +180° being 0° the condition where the interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

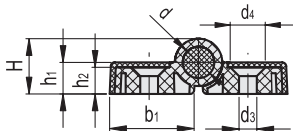


FMMdesign

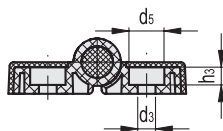


Resistance tests					
AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
300	1220	350	1970	290	720

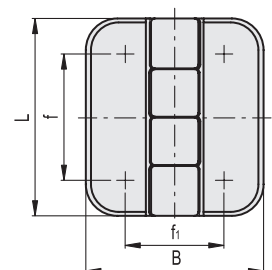
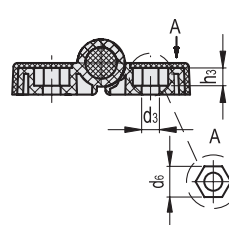
CFQ-SH



CFQ-CH



CFQ-EH



Code	Description	L	B	f	f1	H	h1	h2	h3	b1	d	d3	d4	d5	d6	C# [Nm]	⚠
426331-C9	CFQ.50 SH-4-C9	50	45	32	25	14	8	7	-	21.5	8	4.5	8.5	-	-	1.5	17
426332-C9	CFQ.50 CH-4-C9	50	45	32	25	14	8	7	4.5	21.5	8	4.5	-	8.5	-	1.5	17
426333-C9	CFQ.50 EH-4-C9	50	45	32	25	14	8	7	4.5	21.5	8	4.5	-	-	7	1.5	17

# Suggested tightening torque for assembly screws.

## Hinges

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

Pass-through holes for cylindrical head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

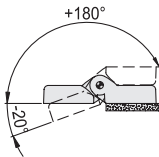
Max 200° (-20° and +180° being 0° the condition where the interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

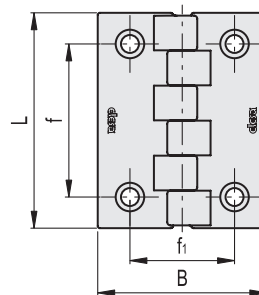
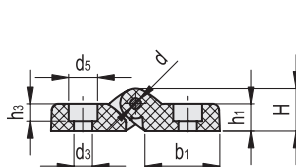
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



ELESA Original design



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFL.102 CH-6	4000	10000	4500	10000	2000	4000
CFL.102 CH-8	3500	9000	4500	10000	2000	4000



Code	Description	L	B	f±0.25	f1±0.25	H	h1	h3	b1	d	d3	d5	C# [Nm]	⚖️
425201	CFL.102 CH-6	102	80	72.5	49.5	20.5	13	6.5	35.5	5	6.5	10.5	5	110
425202	CFL.102 CH-8	102	80	72.5	49.5	20.5	13	8	35.5	5	8.5	13.5	5	106

# Suggested tightening torque for assembly screws.





## Hinges

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

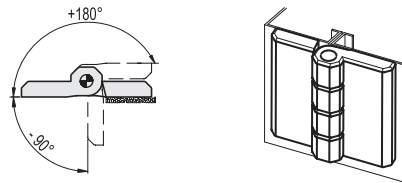
- **CFM-p**: nickel-plated steel threaded studs.
- **CFM-SH**: pass-through holes for countersunk head screws.
- **CFM-CH**: pass-through holes for cylindrical head screws with washer type UNI 6592.
- **CFM-p-SH**: nickel-plated steel threaded studs and pass-through holes for countersunk head screws.
- **CFM-p-CH**: nickel-plated steel threaded studs and pass-through holes for cylindrical head screws with UNI 6592 washer.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

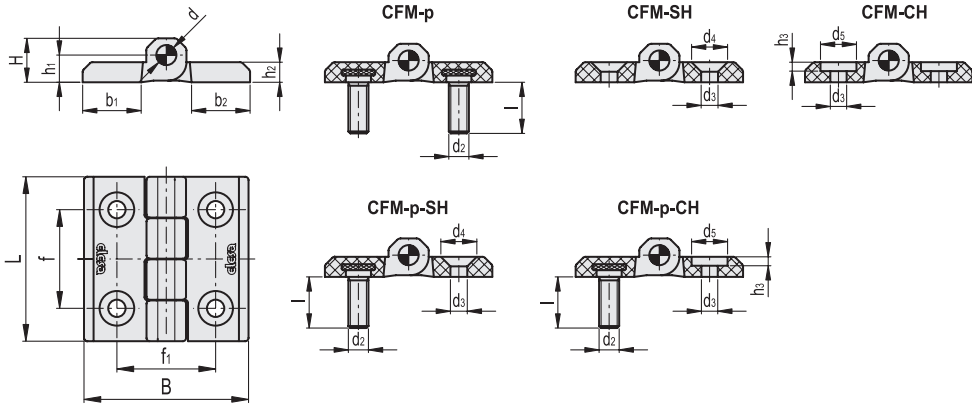
To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFM.30 SH-4	1400	1700	1000
CFM.30 CH-4	1300	1700	850
CFM.40 p-M5x12	2000	1900	1000
CFM.40 SH-5	1900	1900	1280
CFM.40 CH-5	1900	1600	1000
CFM.40 p-M5x12-SH-5	1900	1900	1000
CFM.40 p-M5x12-CH-5	1900	1600	1000
CFM.50 p-M6x12	2340	2560	2100
CFM.50 SH-6	2630	2400	1720
CFM.50 CH-6	2860	2410	1360
CFM.50 p-M6x12-SH-6	2340	2400	1720
CFM.50 p-M6x12-CH-6	2340	2410	1360
CFM.60 p-M8x14.5	3000	3940	2130
CFM.60 SH-6	3320	2960	3070
CFM.60 SH-8	3320	2960	3070
CFM.60 CH-8	3440	2810	2170
CFM.60 p-M8x14.5-SH-8	3000	2960	2130
CFM.60 p-M8x14.5-CH-8	3000	2810	2130

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.





CFM-p

Code	Description	L	B	d2	l	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	C# [Nm]	⚖️
425521	CFM.40-p-M5x12	40	40	M5	12	25	25	9	5.5	5	14	14	4	5	26
425621	CFM.50-p-M6x12	50	50	M6	12	30	30	11.5	6.5	6	18	18	6	5	50
425721	CFM.60-p-M8x14.5	60	60	M8	14.5	36	36	15	8.5	8	21	21	8	5	101

CFM-SH

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	⚖️
425411	CFM.30-SH-4	30	30	18	18	7	4	3.5	10.5	10.5	2.5	4.5	8.5	3	11
425511	CFM.40-SH-5	40	40	25	25	9	5.5	5	14	14	4	5.5	10.5	3	14
425611	CFM.50-SH-6	50	50	30	30	11.5	6.5	6	18	18	6	6.5	12.5	5	30
425710	CFM.60-SH-6	60	60	36	36	15	8.5	8	21	21	6	6.5	12.5	5	58
425711	CFM.60-SH-8	60	60	36	36	15	8.5	8	21	21	8	8.5	16.5	5	57

CFM-CH

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	h3	b1	b2	d	d3	d5	C# [Nm]	⚖️
425412	CFM.30-CH-4	30	30	18	18	7	4	3.5	1.3	10.5	10.5	2.5	4.5	7.5	3	11
425512	CFM.40-CH-5	40	40	25	25	9	5.5	5	1.7	14	14	4	5.5	10.5	5	14
425612	CFM.50-CH-6	50	50	30	30	11.5	6.5	6	3	18	18	6	6.5	12.5	5	30
425712	CFM.60-CH-8	60	60	36	36	15	8.5	8	4	21	21	8	8.5	16.5	5	57

CFM-p-SH

Code	Description	L	B	d2	l	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C [Nm] p#	C [Nm] SH#	⚖️
425531	CFM.40-p-M5x12-SH-5	40	40	M5	12	25	25	9	5.5	5	14	14	4	5.5	10.5	5	3	20
425631	CFM.50-p-M6x12-SH-6	50	50	M6	12	30	30	11.5	6.5	6	18	18	6	6.5	12.5	5	5	40
425731	CFM.60-p-M8x14.5-SH-8	60	60	M8	14.5	36	36	15	8.5	8	21	21	8	8.5	16.5	5	5	79

CFM-p-CH

Code	Description	L	B	d2	l	f±0.25	f1±0.25	H	h1	h2	h3	b1	b2	d	d3	d5	C [Nm] p#	C [Nm] CH#	⚖️
425532	CFM.40-p-M5x12-CH-5	40	40	M5	12	25	25	9	5.5	5	1.7	14	14	4	5.5	10.5	5	5	20
425632	CFM.50-p-M6x12-CH-6	50	50	M6	12	30	30	11.5	6.5	6	3	18	18	6	6.5	12.5	5	5	40
425732	CFM.60-p-M8x14.5-CH-8	60	60	M8	14.5	36	36	15	8.5	8	4	21	21	8	8.5	16.5	5	5	79

# Suggested tightening torque for assembly screws.



## Spring hinges

for automatic return, SUPER-technopolymer

### MATERIAL

Glass-fibre reinforced polyamide (PA) SUPER-technopolymer body, black colour, matte finish.

### ROTATING PIN

Aluminium.

Pin housing end caps made out of acetal based (POM) technopolymer, black colour.

### RETURN SPRING

Stainless steel.

### STANDARD EXECUTIONS

Pass-through holes for M6 cylindrical head screws.

- **CFMR-NC-020**: max return torque 0.20Nm (at 180°), holding torque 0.07Nm (at 0°).
- **CFMR-NC-035**: max return torque 0.35Nm (at 180°), holding torque 0.12Nm (at 0°).
- **CFMR-NC-070**: max return torque 0.70Nm (at 180°), holding torque 0.25Nm (at 0°).
- **CFMR-NO-020**: max return torque 0.20Nm (at 0°), holding torque 0.07Nm (at 180°).
- **CFMR-NO-035**: max return torque 0.35Nm (at 0°), holding torque 0.12Nm (at 180°).
- **CFMR-NO-070**: max return torque 0.70Nm (at 0°), holding torque 0.25Nm (at 180°).
- **CFMR-NS**: complementary hinge, no return spring.

### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

The hinge can reach -90° but this condition must not be used for CFMR-NO execution.

Do not exceed the rotation limit angle so as not to prejudice the correct operation of the return spring.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).

### FEATURES AND PERFORMANCES

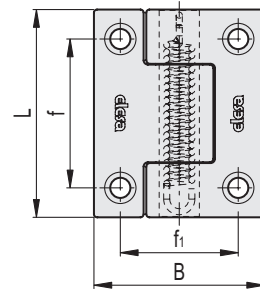
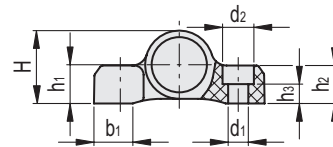
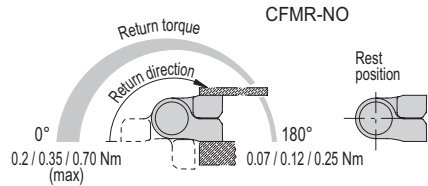
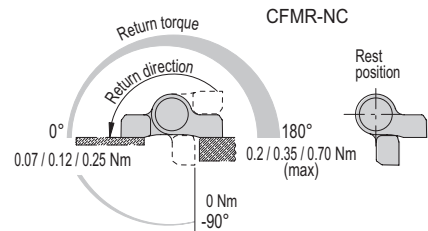
CFMR hinge is used for the automatic re-closing or re-opening of the door by the return spring.

The torque varies progressively with the opening/closing angle of the hinge.

In special stress resistance tests, the return spring has exceeded 100,000 cycles while keeping the torque values unchanged.

Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFMR.	2100	3500	1900

The max static load is the value above which the material may break thus prejudicing the hinge functionality. Obviously, a suitable factor, according to the importance and the safety level of the specific application must be applied to this value.



Code	Description	L	B	d1	d2	f	f1	H	h1	h2	h3	b1	C# [Nm]	⚖️
425843	CFMR.67-NC-020	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	67
425841	CFMR.67-NC-035	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	67
425845	CFMR.67-NC-070	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	67
425853	CFMR.67-NO-020	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	67
425852	CFMR.67-NO-035	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	67
425855	CFMR.67-NO-070	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	67
425840	CFMR.67-NS	67	55	6.5	10	48	38	24	12.5	12.5	6.3	12.5	6	61

# Maximum tightening torque for screw assembly.



## Horizontally elongated hinges

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

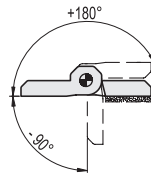
- **CFM-L-A:** pass-through holes for countersunk-head screws, hinge bodies with the same dimensions.
- **CFM-L-B:** pass-through holes for countersunk-head screws, hinge bodies with different dimensions.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).

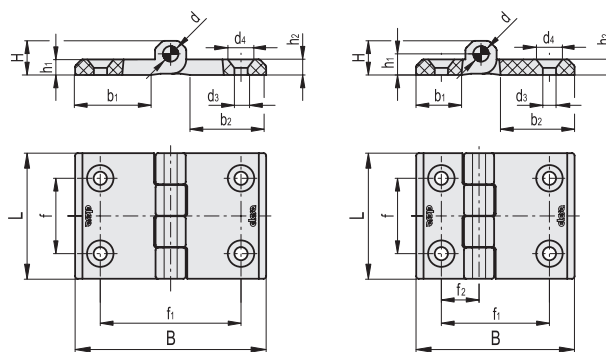


	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Resistance tests			
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFM-L-A.50-76 SH-6	600	1500	1000
CFM-L-A.60-120 SH-8	900	2300	700
CFM-L-B.50-63 SH-6	800	1600	1000
CFM-L-B.60-90 SH-8	1000	2000	800

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.

CFM-L-A

CFM-L-B



#### CFM-L-A

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	⚖️
425856	CFM-L-A.50-76-SH-6	50	76	30	56	11.5	6.5	6	31	31	6	6.5	12.5	5	42
425818	CFM-L-A.60-120-SH-8	60	120	36	90	15	8.5	8	51	51	8	8.5	16.5	5	98

#### CFM-L-B

Code	Description	L	B	f±0.25	f1±0.25	f2±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	⚖️
425851	CFM-L-B.50-63-SH-6	50	63	30	43	15	11.5	6.5	6	18	31	6	6.5	12.5	5	37
425815	CFM-L-B.60-90-SH-8	60	90	36	63	18	15	8.5	8	21	51	8	8.5	16.5	5	80

# Suggested tightening torque for assembly screws.



## Hinge with slotted holes

**SUPER-technopolymer**

### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

### ROTATING PIN

AISI 303 stainless steel.

### STANDARD EXECUTION

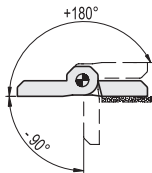
Slots with pass-through hole for lowered cylindrical-head screws according to UNI 9327 that allow adjustment during fixing.

### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

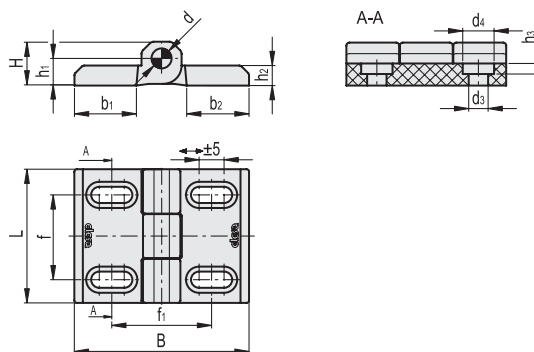
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFM.60-SL-CH-6	960	1200	1360

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.



Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	h3	b1	b2	d	d3	d4	C# [Nm]	
425822	CFM.60-SL-CH-6	60	70	34	40	14.5	8	7.5	4	26	26	8	6.5	10.5	4	61

# Suggested tightening torque for assembly screws.



## Hinges

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, white colour similar to RAL 9002, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

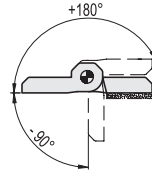
Pass-through holes for countersunk head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

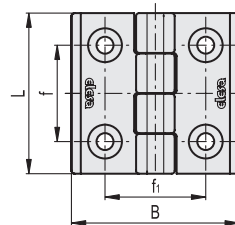
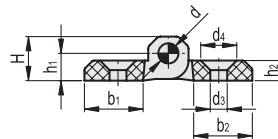
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFM.30-SH-4-CLEAN	1400	1700	1000
CFM.40-SH-5-CLEAN	1900	1900	1280
CFM.50-SH-6-CLEAN	2630	2400	1720
CFM.60-SH-8-CLEAN	3320	2960	3070

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.



Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	
425441	CFM.30-SH-4-CLEAN	30	30	18	18	7	4	3.5	10.5	10.5	2.5	4.5	8.5	3	11
425541	CFM.40-SH-5-CLEAN	40	40	25	25	9	5.5	5	14	14	4	5.5	10.5	3	14
425641	CFM.50-SH-6-CLEAN	50	50	30	30	11.5	6.5	6	18	18	6	6.5	12.5	5	30
425741	CFM.60-SH-8-CLEAN	60	60	36	36	15	8.5	8	21	21	8	8.5	16.5	5	57

# Suggested tightening torque for assembly screws.

## Hinges

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

Pass-through holes for cylindrical head screws with washer type UNI 6592.

#### FEATURES AND APPLICATIONS

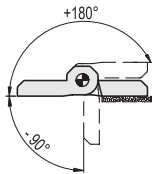
CFMQ hinge can be assembled with CFSQ hinge with built-in safety switch.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

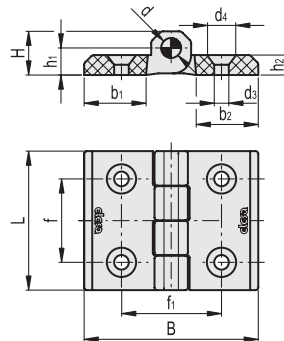
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).



	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Resistance tests			
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFMQ.60-45-SH-6	2920	3010	1310

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.



Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	
425812	CFMQ.60-45-SH-6	60	70	34	45	14.5	8	7.5	26	26	8	6.5	12.5	5	62

# Suggested tightening torque for assembly screws.

## Hinges for removable doors

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ROTATING PIN

Self-lubricating glass-fibre reinforced polyamide based (PA) technopolymer, black colour.

#### STANDARD EXECUTIONS

Pass-through holes for countersunk head screws.

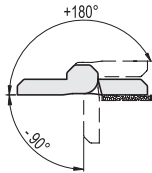
- **CFMY-D**: rotation pin fitted on the right hinge body.
- **CFMY-S**: rotation pin fitted on the left hinge body.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

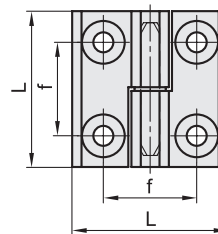
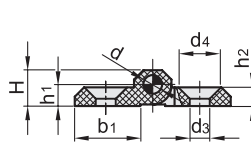


CFMY-D

CFMY-S



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFMY.60	2050	1600	1250



Code	Description	L	f±0.25	H	h1	h2	b1	d	d3	d4	C# [Nm]	⚖️
425981	CFMY.40 SH-4-D	40	25	9	5.5	5	14	4	4.5	8.5	3	14
425982	CFMY.40 SH-4-S	40	25	9	5.5	5	14	4	4.5	8.5	3	14
425971	CFMY.50 SH-6-D	50	30	11.5	6.5	6	18	6	6.5	12.5	5	30
425972	CFMY.50 SH-6-S	50	30	11.5	6.5	6	18	6	6.5	12.5	5	30
425965	CFMY.60 SH-6-D	60	36	15	8.5	8	26	6	6.5	12.5	5	41
425966	CFMY.60 SH-6-S	60	36	15	8.5	8	26	6	6.5	12.5	5	41
425961	CFMY.60-SH-8-D	60	36	15	8.5	8	26	8	8.5	16.5	5	41
425962	CFMY.60-SH-8-S	60	36	15	8.5	8	26	8	8.5	16.5	5	41

# Suggested tightening torque for assembly screws.



## Hinges

### SUPER-technopolymer rotating pin

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ROTATING PIN

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer.

#### STANDARD EXECUTIONS

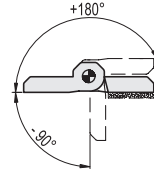
- **CFMX-SH**: pass-through holes for countersunk head screws.
- **CFMX-CH**: pass-through holes for cylindrical head screws with washer type UNI 6592 / ISO 7089.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

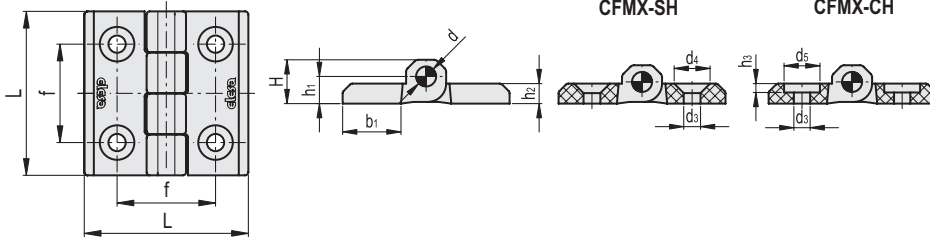
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFMX.30 SH-4	1050	1275	750
CFMX.30 CH-4	975	1275	650
CFMX.40 SH-5	1425	1425	960
CFMX.40 CH-5	1425	1200	750
CFMX.50 SH-6	2360	2160	1550
CFMX.50 CH-6	2580	2170	1220
CFMX.60 SH-6	3000	2660	2700
CFMX.60 SH-8	3000	2660	2700
CFMX.60 CH-8	3100	2530	1950

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.



#### CFMX-SH

Code	Description	L	f±0.25	H	h1	h2	b1	d	d3	d4	C# [Nm]	⚖
425882	CFMX.30 SH-4	30	18	7	4	3.5	10.5	2.5	4.5	8.5	2	5
425892	CFMX.40 SH-5	40	25	9	5.5	5	14	4	5.5	10.5	3	13
425902	CFMX.50 SH-6	50	30	11.5	6.5	6	18	6	6.5	12.5	5	23
425912	CFMX.60 SH-6	60	36	15	8.5	8	21	6	6.5	12.5	5	44
425916	CFMX.60 SH-8	60	36	15	8.5	8	21	8	8.5	16.5	5	44

#### CFMX-CH

Code	Description	L	f±0.25	H	h1	h2	h3	b1	d	d3	d5	C# [Nm]	⚖
425881	CFMX.30 CH-4	30	18	7	4	3.5	1.3	10.5	2.5	4.5	7.5	2	5
425891	CFMX.40 CH-5	40	25	9	5.5	5	1.7	14	4	5.5	10.5	3	13
425901	CFMX.50 CH-6	50	30	11.5	6.5	6	3	18	6	6.5	12.5	5	23
425915	CFMX.60 CH-8	60	36	15	8.5	8	4	21	8	8.5	16.5	5	44

# Suggested tightening torque for assembly screws.

## Hinges

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide (PA) SUPER-technopolymer, black or grey colour RAL 7040 (C33), matte finish.

#### ROTATING PIN

Glass-fibre reinforced polyamide based (PA) technopolymer, black or grey colour RAL 7040 (C33).

#### ASSEMBLY KIT (SEE ASSEMBLY):

- n°4 technopolymer covers (fig.1).
- n°4 technopolymer bushings (fig.2 and fig.3).

#### MOUNTING

CFMW. hinge can be assembled in three different modes:

- With M6 UNI 5933 ISO 10642 countersunk-head screw (not supplied) and screw cover supplied in the kit (fig. 1) to avoid free access to screws.
- With cylindrical-head screw with hexagon socket M6 UNI 5931 ISO 4762 (not supplied) to set with the bushing supplied in the kit (fig.2).
- With M6 UNI 5588 ISO 4032 nut (not supplied) and the bushing supplied in the kit (fig.3). This kind of assembly makes the hinge totally tamper-proof preventing any tampering.

#### FEATURES AND APPLICATIONS

The different assembly options make this product easy to install on the most common aluminium profiles (30 mm minimum side). CFMW. hinge can be assembled with CFSW. hinge with built-in safety switch. CFSW. (see page ).

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 180° (0° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

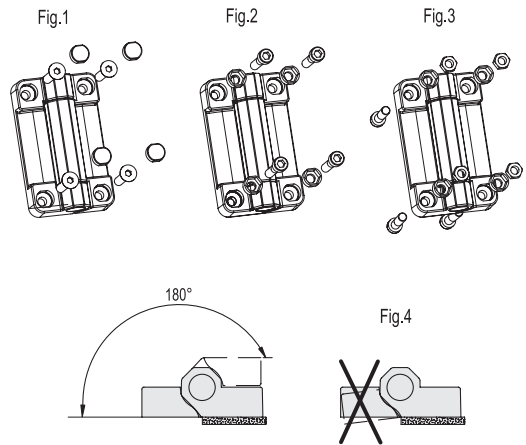
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

The condition where the two interconnected surfaces are on the same plane is to be strictly verified because the hinge must not be stressed by any negative angle (fig.4).

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).



ELESA Original design



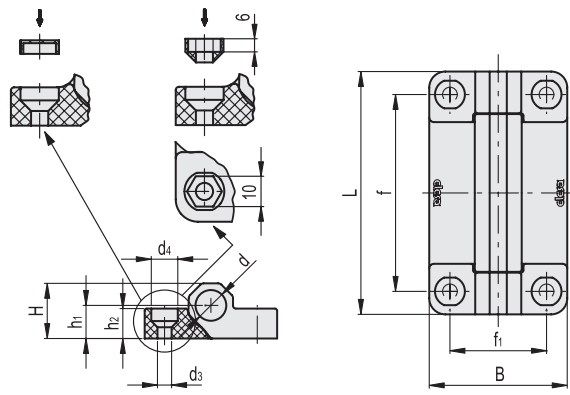
	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
Resistance tests			
Description	Max. limit stati load Sa [N]	Max. limit stati load Sr [N]	Max. limit stati load S90 [N]
CFMW.70	2100	2800	1300
CFMW.110	2100	2800	1300

The max static load is the value above which the material may break thus prejudicing the hinge functionality use. Obviously, a suitable factor, according to the importance and the safety level of the specific application must be applied to this value.





Hinges 12



Code	Description	Code	Description	L	B	$f_{\pm 0.25}$	$f1_{\pm 0.25}$	H	h1	h2	d	d3	d4	C# [Nm]	$\Delta$
425951	CFMW.70-SH-6	425951-C33	CFMW.70-SH-6-C33	70	60	50	42	25	15	15	13.5	6.5	12	5	80
425956	CFMW.110-SH-6	425956-C33	CFMW.110-SH-6-C33	110	60	91	42	25	15	15	12	6.5	12	5	125

# Suggested tightening torque for assembly screws.

## Hinges

### Visually Detectable technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, RAL 5005 blue colour, matte finish.

Produced from FDA compliant raw material (FDA CFR.21 and EU 10/2011).

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

Pass-through holes for countersunk head screws.

#### FEATURES AND APPLICATIONS

The RAL 5005 blue colour is easily visible in case of accidental food contamination.

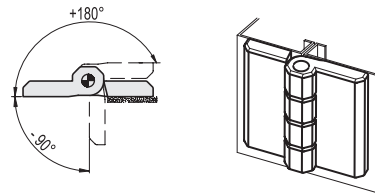
Particularly suitable for applications in the food and pharmaceutical industries.

#### ROTATION ANGLE (APPROXIMATE VALUE)

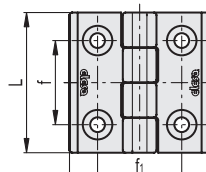
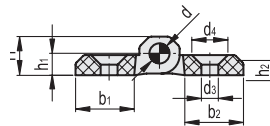
Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFM.40 SH-5-VD	100	1600	200	1900	200	1200
CFM.50 SH-6-VD	100	2100	200	3100	200	2000



#### STAINLESS STEEL

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	
199511	CFM.40-SH-5-VD	40	40	25	25	9	5.5	5	14	14	4	5.5	10.5	3	14
199611	CFM.50-SH-6-VD	50	50	30	30	11.5	6.5	6	18	18	6	6.5	12.5	5	30

# Suggested tightening torque for assembly screws.



## Hinges

### Metal Detectable technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, RAL 5001 blue colour, matte finish.

Produced from FDA compliant raw material (FDA CFR.21 and EU 10/2011).

The special technopolymer contains additives detectable by means of metal detectors.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

Pass-through holes for countersunk head screws.

#### FEATURES AND APPLICATIONS

The RAL 5001 blue colour is easily visible in case of accidental food contamination. Furthermore the material additives are metal detectable at a cubic particle size of 5mm per side.

In order to improve the detection, the metal detector calibration must take into account the food/substance type at risk of contamination considering the moisture contained in it.

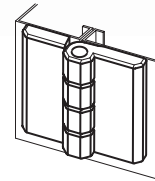
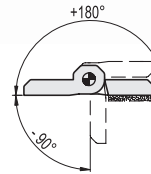
Particularly suitable for applications in the food and pharmaceutical industries.

#### ROTATION ANGLE (APPROXIMATE VALUE)

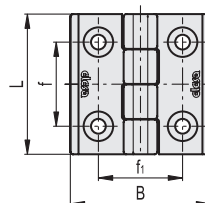
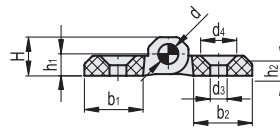
Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFM.40 SH-5-MD	50	1100	100	1800	100	950
CFM.50 SH-6-MD	50	1900	100	3000	100	1200



STAINLESS STEEL

Code	Description	L	B	f±0.25	f1±0.25	H	h1	h2	b1	b2	d	d3	d4	C# [Nm]	
197511	CFM.40 SH-5-MD	40	40	25	25	9	5.5	5	14	14	4	5.5	10.5	2	14
197611	CFM.50 SH-6-MD	50	50	30	30	11.5	6.5	6	18	18	6	6.5	12.5	5	30

# Suggested tightening torque for assembly screws.

## Hinges

### SUPER-Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

Pass-through holes for countersunk head screws.

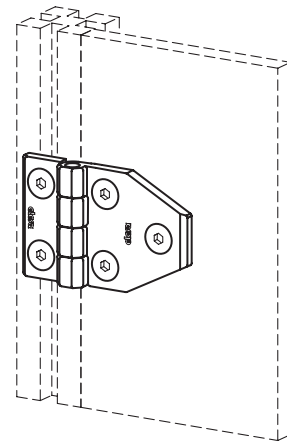
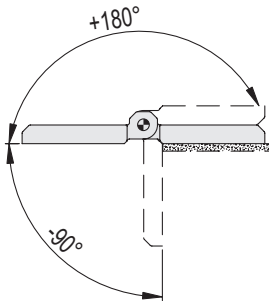
- **CFM-TR-A:** hinge body frame side identical to the hinge body door side.
- **CFM-TR-B:** hinge body frame side different to the hinge body door side.

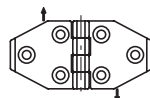
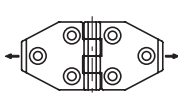
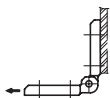
#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

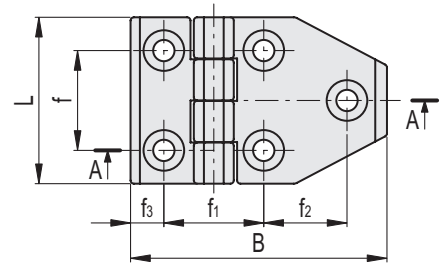
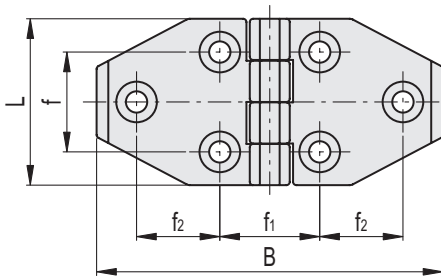
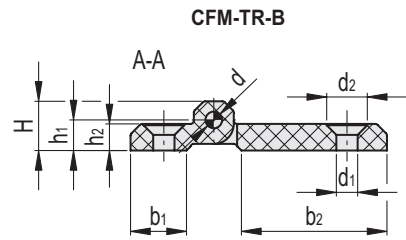
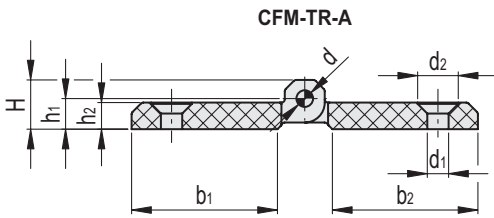
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page 952).



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
			
Description	Max limit static load Sa [N]	Max limit static load Sr [N]	Max limit static load S90 [N]
CFM-TR-A.40-SH-5	1800	2000	1400
CFM-TR-A.50-SH-6	2700	3300	2200
CFM-TR-A.60-SH-6	3700	4200	3000
CFM-TR-B.40-SH-5	1500	1800	1200
CFM-TR-B.50-SH-6	2100	3000	1500
CFM-TR-B.60-SH-6	2800	3800	2300

The max static load is the value beyond which the material may break thus prejudicing the hinge performance. Obviously, a suitable coefficient must be applied to this value, according to the importance and the safety level of the specific application.



CFM-TR-A

Code	Description	L	B	f	f1	f2	H	h1	h2	b1	b2	d	d1	d2	C# [Nm]	⚖️
426006	CFM-TR-A.40-SH-5	40	88	25	25	20	9	5.5	5	38.5	38.5	4	5.5	10.5	3	26
426016	CFM-TR-A.50-SH-6	50	104	30	30	25	11.5	6.5	6	45	45	6	6.5	12.5	5	28
426026	CFM-TR-A.60-SH-6	60	120	36	36	30	15	8.5	8	51.5	51.5	8	6.5	12.5	5	91

CFM-TR-B

Code	Description	L	B	f	f1	f2	f3	H	h1	h2	b1	b2	d	d1	d2	C# [Nm]	⚖️
426001	CFM-TR-B.40-SH-5	40	64	25	25	20	7.5	9	5.5	5	14	38.5	4	5.5	10.5	3	21
426011	CFM-TR-B.50-SH-6	50	77	30	30	25	10.5	11.5	6.5	6	18	45	6	6.5	12.5	5	40
426021	CFM-TR-B.60-SH-6	60	90	36	36	30	12.5	15	8.5	8	21	51.5	8	6.5	12.5	5	78

# Suggested tightening torque for assembly screws.

## Hinges for mounting on glass or panels

### SUPER-Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### FLAT WASHER

A4 UNI 6593-MT stainless steel.

#### STEP WASHER

NBR rubber, hardness 70 Shore A.  
Produced from FDA compliant raw material (FDA CFR.21 and EU 10/2011).

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

Frame side: pass-through holes for countersunk head screws.  
Panel side: pass-through hole for round head square neck bolts according to UNI 5732 (choose the correct screw length depending on the thickness of the glass or of the panel).

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 270° (-90° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page 952).

#### ASSEMBLY INSTRUCTIONS ON GLASS OR PANELS

1. Drill a hole  $\varnothing 10.5^{+0.2}$  in the glass or in the panel (min. thickness 4 mm).
2. Place the hinge frontally centring the matching part (d3) in the hole and insert the screw.
3. On the opposite side, insert the step washer, flat washer and tighten with a nut (Fig.1).

At least two hinges need to be mounted for correct operation.

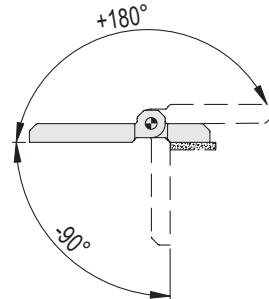
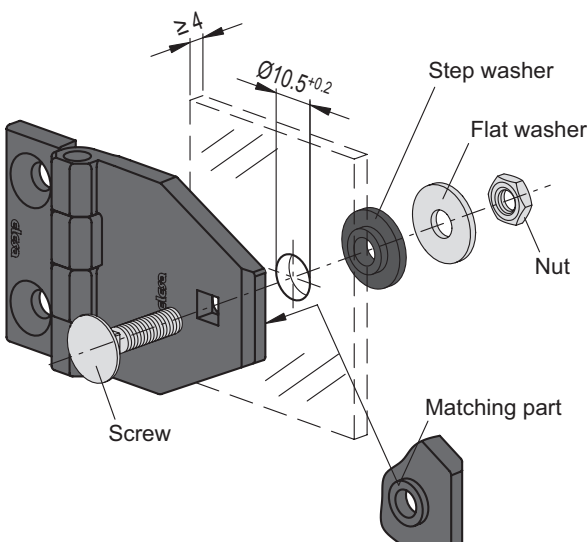


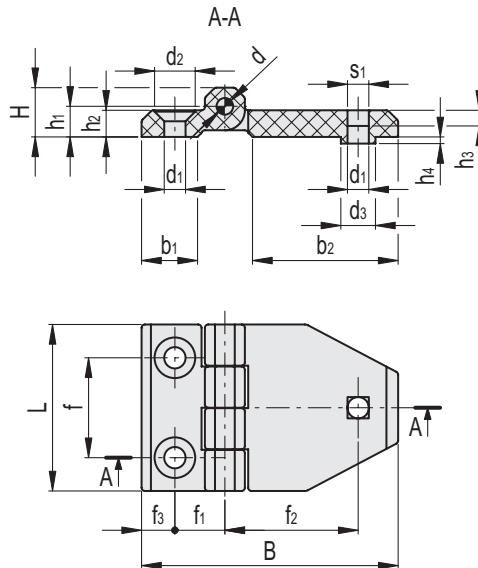
Fig. 1





Resistance tests	AXIAL STRESS		RADIAL STRESS		Load at breakage R90 [N]	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFM-TR-G-B.40-SH-5	300	750	420	2500	420	1000
CFM-TR-G-B.50-SH-6	270	1040	480	3500	480	1000
CFM-TR-G-B.60-SH-6	250	1200	370	5000	370	2500

The maximum operating load values of the different hinges shown in the tables are merely indicative. They are the result of tests carried out in our laboratories at controlled temperature and humidity (23°C - 50% RH), under specific conditions of use and for a limited period of time. In any case, it is advisable to verify correct operation during installation of the structure.



Code	Description	L	B	f	f1	f2	f3	H	h1	h2	h3	h4	b1	b2	d	d1	d2	d3	s1	C# [Nm]	⚖️
426051	CFM-TR-G-B.40-SH-5	40	64	25	12.5	32.5	7.5	9	5.5	5	4.1	2	14	38.5	4	5.5	10.5	10.5	5.6	3	27
426061	CFM-TR-G-B.50-SH-6	50	77	30	15	39.5	10.5	11.5	6.5	6	4.7	2	18	45	6	6.5	12.5	10.5	6.6	5	46
426071	CFM-TR-G-B.60-SH-6	60	90	36	18	47.5	12.5	15	8.5	8	4.7	2	21	51.5	8	6.5	12.5	10.5	6.6	5	83

# Recommended torque flat countersunk head assembly screws. The tightening torque of the nut varies depending on the material and thickness of the panel.



## Hinges

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

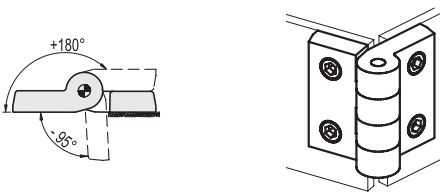
Pass-through holes for cylindrical head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 275° (-95° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

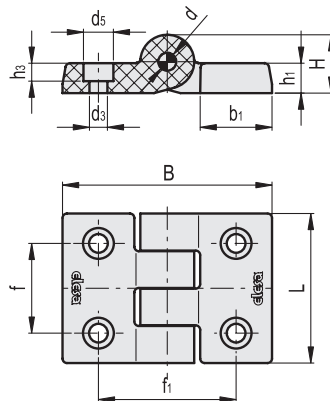
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



FAMdesign

Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFH.50	200	2440	380	3830	190	1950



Code	Description	L	B	f±0.25	f1±0.25	H	h1	h3	b1	d	d3	d5	C# [Nm]	⚖️
424021	CFH.50 CH-6	50	69.5	30	45.5	19.5	10	6.5	24	6	6.5	10	3	46
424031	CFH.50 CH-8	50	69.5	30	45.5	19.5	10	4.5	24	6	8.5	13	3	42

# Suggested tightening torque for assembly screws.



## Hinge with adjusting inserts

### SUPER-technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) SUPER-technopolymer, black colour, matte finish.

#### ADJUSTING INSERTS

Technopolymer, black colour.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

Pass-through holes for M6 countersunk-head screws.

#### FEATURES AND APPLICATIONS

The adjusting inserts (ELESA patent) are designed to compensate limited misalignments of doors. Vertical and horizontal adjustments are both possible by simply setting the orientation of the inserts, thus obtaining the perfect alignment between the door and the frame.

The knurling on the hinge body and on the rear of the inserts keep the precise position during the assembly of the hinge.

This hinge can be used to compensate vertical, horizontal or both misalignments.

#### ROTATION ANGLE (APPROXIMATE VALUE)

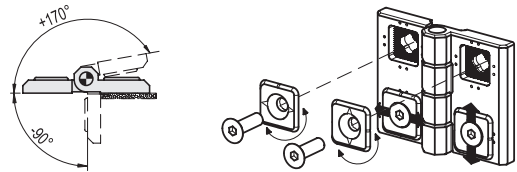
Max 260° (-90° and +170° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

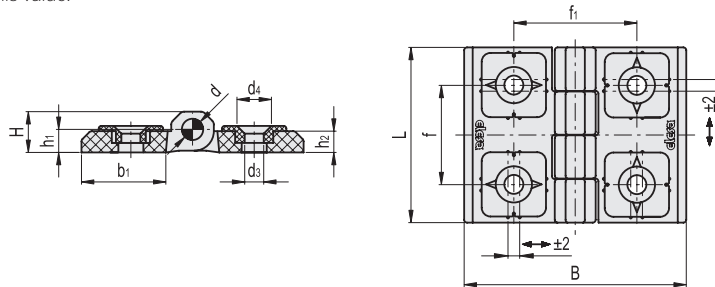


FMM design



Resistance tests	AXIAL STRESS	RADIAL STRESS	90° ANGLED STRESS
	Max. limit stati load	Max. limit stati load	Max. limit stati load
Description	Sa [N]	Sr [N]	S90 [N]
CFR.60 SH-6	1800	2700	2130

The max static load is the value above which the material may break thus prejudicing the hinge functionality use. Obviously, a suitable factor, according to the importance and the safety level of the specific application must be applied to this value.



Code	Description	L	B	f	f1	H	h1	h2	b1	d	d3	d4	C# [Nm]	
426431	CFR.60 SH-6	60	75	34	42	16	9,5	8	29,5	8	6,5	12,5	5	72

# Suggested tightening torque for assembly screws.

## Hinges for thin doors

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

- **CFD-B**: nickel-plated brass bosses with threaded hole.
- **CFD-p**: nickel-plated brass threaded studs in the wide body, nickel-plated steel threaded studs in the narrow body.
- **CFD-p-B**: nickel-plated brass threaded studs and nickel-plated brass bosses with threaded hole.
- **CFD-B-p**: nickel-plated brass bosses with threaded hole and nickel-plated steel threaded studs.
- **CFD-CH-B**: pass-through holes for cylindrical head screws and nickel-plated brass bosses with threaded hole.
- **CFD-CH-p**: pass-through holes for cylindrical head screws and nickel-plated steel threaded studs.

#### FEATURES AND APPLICATIONS

The hinge is made up of two bodies with different dimensions (a narrow one and a larger one) and can be assembled for example on structures with thin frame or door.

#### ROTATION ANGLE (APPROXIMATE VALUE)

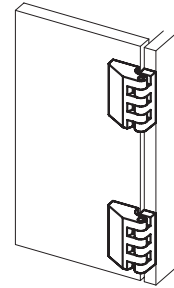
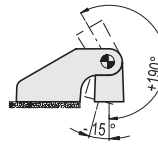
Max 205° (-15° and +190° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

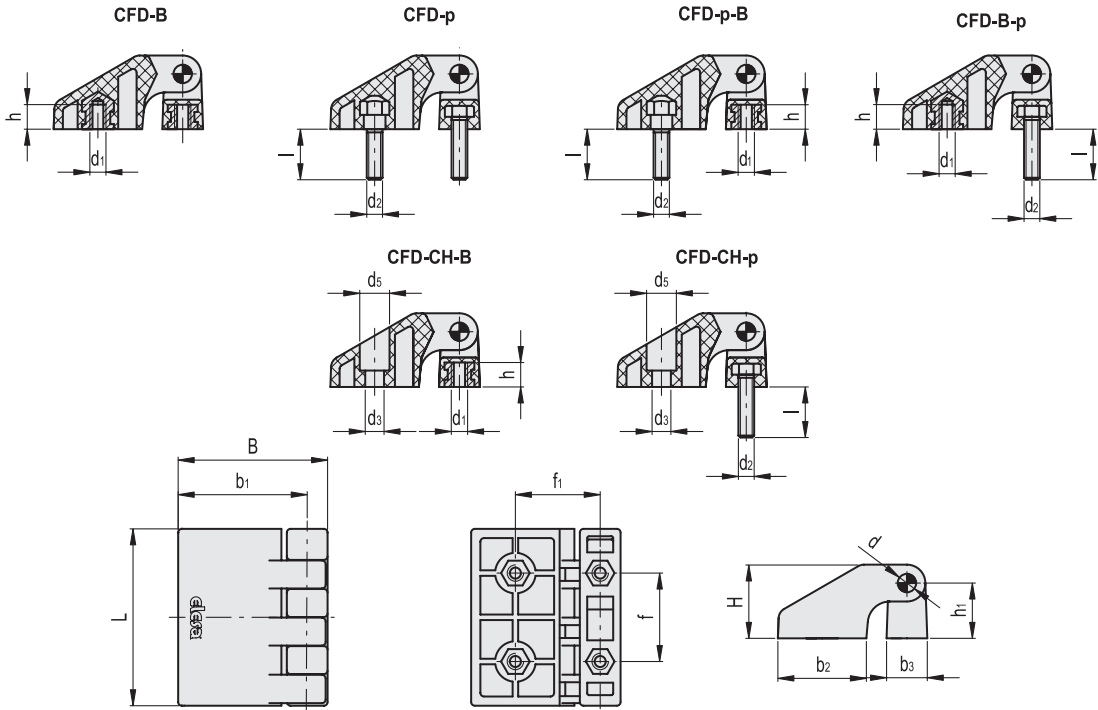


FMA design



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFD.30 B-M3	60	690	70	490	60	500
CFD.30 p-M3x13	70	750	40	340	30	390
CFD.30 p-M3x13-B-M3	60	690	40	340	30	390
CFD.30 B-M3-p-M3x13	60	690	40	340	30	390
CFD.30 CH-3-B-M3	100	830	110	720	70	670
CFD.30 CH-3-p-M3x13	60	730	50	450	30	350
CFD.40 B-M4	160	1710	150	1340	100	700
CFD.40 p-M4x18	110	1230	140	880	50	730
CFD.40 p-M4x18-B-M4	110	1230	140	880	50	700
CFD.40 B-M4-p-M4x18	110	1230	140	880	50	700
CFD.40 CH-4-B-M4	120	1620	150	1220	130	1110
CFD.40 CH-4-p-M4x18	150	1480	140	820	100	860
CFD.48 B-M5	260	2440	260	1700	120	1640
CFD.48 p-M5x17	290	1770	240	1840	110	1740
CFD.48 p-M5x17-B-M5	260	1770	240	1700	110	1640
CFD.48 B-M5-p-M5x17	260	1770	240	1700	110	1640
CFD.48 CH-5-B-M5	330	2530	240	1890	290	1870
CFD.48 CH-5-p-M5x17	150	2170	120	1200	110	970
CFD.66 B-M6	450	4130	320	2520	220	2250
CFD.66 p-M6x16	470	3260	260	1700	240	1580
CFD.66 p-M6x16-B-M6	450	3260	260	1700	220	1580
CFD.66 B-M6-p-M6x16	450	3260	260	1700	220	1580
CFD.66 CH-6-B-M6	430	3660	410	2610	310	2830
CFD.66 CH-6-p-M6x16	350	3090	280	1770	180	1610





Code	Description	L	B	d1	h	d2	l	f±0.25	f1±0.25	H	h1	b1	b2	b3	d	d3	d5	C			
																		[Nm]	[Nm]	[Nm]	
																		B#	p#	CH#	△
422711	CFD.30 B-M3	30.5	26.5	M3	4	-	-	15	15	12.5	9.5	22.5	15	7	2.5	-	-	1	-	-	8
422721	CFD.30 p-M3x13	30.5	26.5	-	-	M3	13	15	15	12.5	9.5	22.5	15	7	2.5	-	-	-	1	-	11
422731	CFD.30 p-M3x13-B-M3	30.5	26.5	M3	4	-	13	15	15	12.5	9.5	22.5	15	7	2.5	-	-	1	1	-	10
422741	CFD.30 B-M3-p-M3x13	30.5	26.5	-	4	M3	13	15	15	12.5	9.5	22.5	15	7	2.5	-	-	1	1	-	9
422751	CFD.30 CH-3-B-M3	30.5	26.5	M3	4	-	-	15	15	12.5	9.5	22.5	15	7	2.5	3.5	6	1	-	0.5	7
422761	CFD.30 CH-3-p-M3x13	30.5	26.5	-	-	M3	13	15	15	12.5	9.5	22.5	15	7	2.5	3.5	6	-	1	0.5	8
422811	CFD.40 B-M4	40.5	34	M4	5.5	-	-	20	20.2	16.5	12.5	29.5	20	9.5	4	-	-	4	-	-	19
422821	CFD.40 p-M4x18	40.5	34	-	-	M4	18	20	20.2	16.5	12.5	29.5	20	9.5	4	-	-	-	1.5	-	26
422831	CFD.40 p-M4x18-B-M4	40.5	34	M4	5.5	M4	18	20	20.2	16.5	12.5	29.5	20	9.5	4	-	-	4	1.5	-	23
422841	CFD.40 B-M4-p-M4x18	40.5	34	-	5.5	M4	18	20	20.2	16.5	12.5	29.5	20	9.5	4	-	-	4	1.5	-	21
422851	CFD.40 CH-4-B-M4	40.5	34	M4	5.5	-	-	20	20.2	16.5	12.5	29.5	20	9.5	4	4.5	7.5	4	-	1	16
422861	CFD.40 CH-4-p-M4x18	40.5	34	-	-	M4	18	20	20.2	16.5	12.5	29.5	20	9.5	4	4.5	7.5	-	1.5	1	19
422911	CFD.48 B-M5	48.5	40.5	M5	6.5	-	-	24	23	20	15	35	24	11.5	5	-	-	5	-	-	33
422921	CFD.48 p-M5x17	48.5	40.5	-	-	M5	17	24	23	20	15	35	24	11.5	5	-	-	-	3	-	46
422931	CFD.48 p-M5x17-B-M5	48.5	40.5	M5	6.5	M5	17	24	23	20	15	35	24	11.5	5	-	-	5	3	-	41
422941	CFD.48 B-M5-p-M5x17	48.5	40.5	-	6.5	M5	17	24	23	20	15	35	24	11.5	5	-	-	5	3	-	38
422951	CFD.48 CH-5-B-M5	48.5	40.5	M5	6.5	-	-	24	23	20	15	35	24	11.5	5	5.5	9	-	-	2	27
422961	CFD.48 CH-5-p-M5x17	48.5	40.5	-	-	M5	17	24	23	20	15	35	24	11.5	5	5.5	9	-	3	2	31
423011	CFD.66 B-M6	66	56	M6	9	-	-	33	31.8	27.5	21	48.5	33	15	6	-	-	5	-	-	76
423021	CFD.66 p-M6x16	66	56	-	-	M6	16	33	31.8	27.5	21	48.5	33	15	6	-	-	-	5	-	95
423031	CFD.66 p-M6x16-B-M6	66	56	M6	9	M6	16	33	31.8	27.5	21	48.5	33	15	6	-	-	5	5	-	90
423041	CFD.66 B-M6-p-M6x16	66	56	-	9	M6	16	33	31.8	27.5	21	48.5	33	15	6	-	-	5	5	-	82
423051	CFD.66 CH-6-B-M6	66	56	M6	9	-	-	33	31.8	27.5	21	48.5	33	15	6	6.5	10.5	5	-	5	66
423061	CFD.66 CH-6-p-M6x16	66	56	-	-	M6	16	33	31.8	27.5	21	48.5	33	15	6	6.5	10.5	-	5	5	71

# Suggested tightening torque for assembly screws.



## Hinges

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

- **CFE-B**: nickel-plated brass bosses with threaded hole.
- **CFE-p**: nickel-plated brass threaded studs.
- **CFE-CH**: pass-through holes for cylindrical head screws.
- **CFE-B-p**: nickel-plated brass bosses with threaded hole and nickel-plated brass threaded studs.
- **CFE-B-CH**: nickel-plated brass bosses with threaded hole and pass-through holes for cylindrical head screws.
- **CFE-p-CH**: nickel-plated brass threaded studs and pass-through holes for cylindrical head screws.

#### APPLICATIONS

This hinge has been developed in particular for doors provided with gaskets.

#### ROTATION ANGLE (APPROXIMATE VALUE)

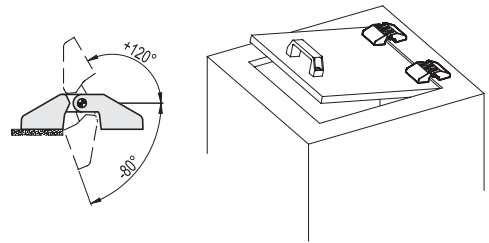
Max 200° (-80° and +120° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

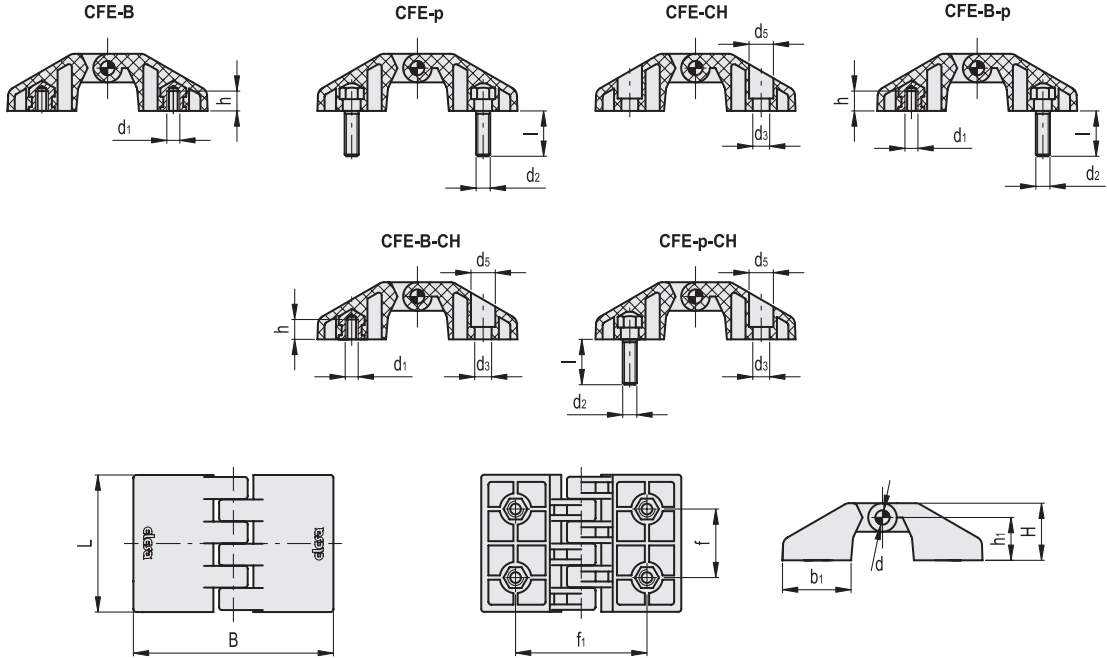
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



F.M design



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFE.30 B-M3	50	660	140	1040	50	310
CFE.30 p-M3x13	40	460	110	1040	60	560
CFE.30 CH-3	50	640	120	980	20	300
CFE.30 B-M3-p-M3x13	40	460	110	1040	50	310
CFE.30 B-M3-CH-3	50	640	120	980	20	300
CFE.30 p-M3x13-CH-3	40	460	110	980	20	300
CFE.40 B-M4	90	1110	230	1920	60	590
CFE.40 p-M4x18	90	1110	300	2440	60	590
CFE.40 CH-4	150	1580	370	2460	80	1210
CFE.40 B-M4-p-M4x18	90	1110	230	1920	60	590
CFE.40 B-M4-CH-4	90	1110	230	1920	60	590
CFE.40 p-M4x18-CH-4	90	1110	300	2440	60	590
CFE.48 B-M5	160	1260	440	2890	190	1290
CFE.48 p-M5x17	190	1900	310	2870	160	1190
CFE.48 CH-5	300	2160	410	2850	150	1440
CFE.48 B-M5-p-M5x17	160	1260	310	2870	160	1190
CFE.48 B-M5-CH-5	160	1260	410	2850	150	1290
CFE.48 p-M5x17-CH-5	190	1900	310	2850	150	1190
CFE.66 B-M6	530	4160	500	2480	310	2250
CFE.66 p-M6x16	240	2670	700	3490	270	1830
CFE.66 CH-6	440	3160	690	3450	260	2920
CFE.66 B-M6-p-M6x16	240	2670	500	2480	270	1830
CFE.66 B-M6-CH-6	440	3160	500	2480	260	2250
CFE.66 p-M6x16-CH-6	240	2670	690	3450	260	1830



Code	Description	L	B	d1	h	d2	l	f±0.25	f1±0.25	H	h1	b1	d	d3	d5	C [Nm] B#	C [Nm] p#	C [Nm] CH#	⚖️
423111	CFE.30 B-M3	30.5	45.5	M3	4	-	-	15	30	12.5	9.5	15	2.5	-	-	1	-	-	11
423121	CFE.30 p-M3x13	30.5	45.5	-	-	M3	13	15	30	12.5	9.5	15	2.5	-	-	-	1	-	14
423131	CFE.30 CH-3	30.5	45.5	-	-	-	-	15	30	12.5	9.5	15	2.5	3.5	6	-	-	0.5	8
423141	CFE.30 B-M3-p-M3x13	30.5	45.5	M3	4	M3	13	15	30	12.5	9.5	15	2.5	-	-	1	1	-	13
423151	CFE.30 B-M3-CH-3	30.5	45.5	M3	4	-	-	15	30	12.5	9.5	15	2.5	3.5	6	1	-	0.5	10
423161	CFE.30 p-M3x13-CH-3	30.5	45.5	-	-	M3	13	15	30	12.5	9.5	15	2.5	3.5	6	-	1	0.5	11
423211	CFE.40 B-M4	40.5	59	M4	5.5	-	-	20	40.4	16.5	12.5	20	4	-	-	4	-	-	26
423221	CFE.40 p-M4x18	40.5	59	-	-	M4	18	20	40.4	16.5	12.5	20	4	-	-	-	2	-	34
423231	CFE.40 CH-4	40.5	59	-	-	-	-	20	40.4	16.5	12.5	20	4	4.5	7.5	-	-	1	19
423241	CFE.40 B-M4-p-M4x18	40.5	59	M4	5.5	M4	18	20	40.4	16.5	12.5	20	4	-	-	4	2	-	30
423251	CFE.40 B-M4-CH-4	40.5	59	M4	5.5	-	-	20	40.4	16.5	12.5	20	4	4.5	7.5	4	-	1	21
423261	CFE.40 p-M4x18-CH-4	40.5	59	-	-	M4	18	20	40.4	16.5	12.5	20	4	4.5	7.5	-	2	1	26
423311	CFE.48 B-M5	48.5	70	M5	6.5	-	-	24	46	20	15	24	5	-	-	5	-	-	44
423321	CFE.48 p-M5x17	48.5	70	-	-	M5	17	24	46	20	15	24	5	-	-	-	5	-	58
423331	CFE.48 CH-5	48.5	70	-	-	-	-	24	46	20	15	24	5	5.5	9	-	-	2	31
423341	CFE.48 B-M5-p-M5x17	48.5	70	M5	6.5	M5	17	24	46	20	15	24	5	-	-	5	5	-	51
423351	CFE.48 B-M5-CH-5	48.5	70	M5	6.5	-	-	24	46	20	15	24	5	5.5	9	5	-	2	38
423361	CFE.48 p-M5x17-CH-5	48.5	70	-	-	M5	17	24	46	20	15	24	5	5.5	9	-	5	2	45
423411	CFE.66 B-M6	66	97	M6	10	-	-	33	63.7	27.5	21	33	6	-	-	5	-	-	103
423421	CFE.66 p-M6x16	66	97	-	-	M6	16	33	63.7	27.5	21	33	6	-	-	-	5	-	124
423431	CFE.66 CH-6	66	97	-	-	-	-	33	63.7	27.5	21	33	6	6.5	10.5	-	-	5	77
423441	CFE.66 B-M6-p-M6x16	66	97	M6	10	M6	16	33	63.7	27.5	21	33	6	-	-	5	5	-	115
423451	CFE.66 B-M6-CH-6	66	97	M6	10	-	-	33	63.7	27.5	21	33	6	6.5	10.5	5	-	5	90
423461	CFE.66 p-M6x16-CH-6	66	97	-	-	M6	16	33	63.7	27.5	21	33	6	6.5	10.5	-	5	5	100

# Suggested tightening torque for assembly screws.



## Hinges for thin doors

### Technopolymer

#### MATERIAL

High-resilience polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

- **CFF-B**: nickel-plated brass bosses with threaded hole.
- **CFF-p**: nickel-plated steel threaded studs.
- **CFF-B-p**: nickel-plated brass bosses with threaded hole and nickel-plated steel threaded studs.

#### ROTATION ANGLE (APPROXIMATE VALUE)

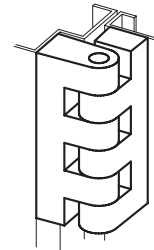
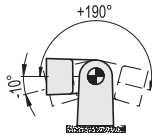
Max 200° (-10° and +190° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



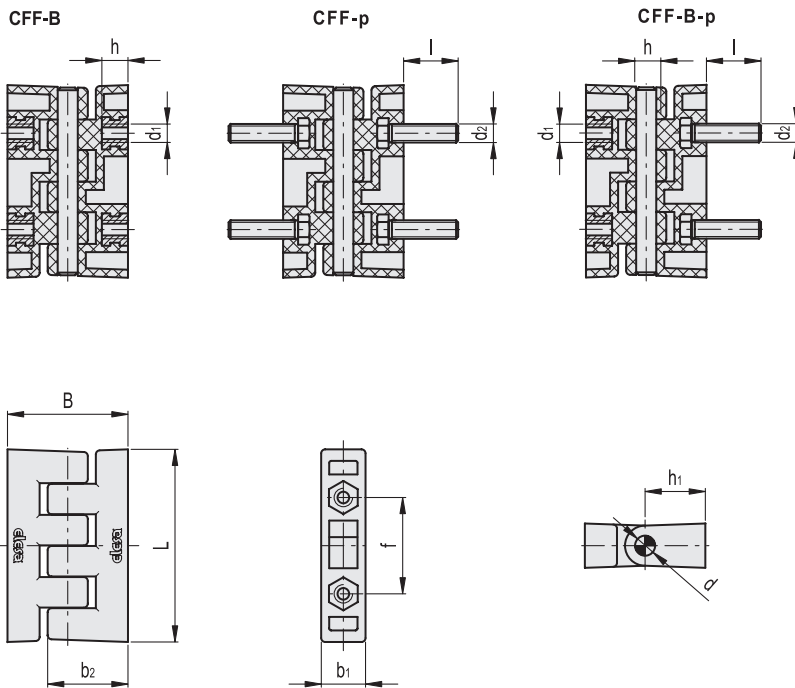
FMM design



Resistance tests	AXIAL STRESS		RADIAL STRESS		RADIAL STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
Description						
CFF.30 B-M3	100	1030	150	1190	90	600
CFF.30 p-M3x13	120	900	160	1020	80	560
CFF.30 B-M3-p-M3x13	100	900	150	1020	80	560
CFF.40 B-M4	180	1780	290	1950	150	1160
CFF.40 p-M4x18	170	1490	140	1220	120	710
CFF.40 B-M4-p-M4x18	170	1490	140	1220	120	710
CFF.48 B-M5	370	3250	480	2890	150	1870
CFF.48 p-M5x17	220	2200	370	2480	140	1200
CFF.48 B-M5-p-M5x17	220	2200	370	2480	140	1200
CFF.66 B-M6	310	4660	860	4880	340	2770
CFF.66 p-M6x16	310	2410	590	3520	220	1420
CFF.66 B-M6-p-M6x16	310	2410	590	3520	220	1420







Code	Description	L	B	d1	h	d2	l	f±0.25	h1	b1	b2	d	C [Nm] B#	C [Nm] p#	△
423511	CFF.30 B-M3	30.5	19	M3	4	-	-	15	9	7	12.5	2.5	1	-	6
423521	CFF.30 p-M3x13	30.5	19	-	-	M3	13	15	9	7	12.5	2.5	-	0.5	8
423531	CFF.30 B-M3-p-M3x13	30.5	19	M3	4	M3	13	15	9	7	12.5	2.5	1	0.5	7
423611	CFF.40 B-M4	40.5	24	M4	5.5	-	-	20	12	9.5	16.5	4	4	-	14
423621	CFF.40 p-M4x18	40.5	24	-	-	M4	18	20	12	9.5	16.5	4	-	1.5	20
423631	CFF.40 B-M4-p-M4x18	40.5	24	M4	5.5	M4	18	20	12	9.5	16.5	4	4	1.5	17
423711	CFF.48 B-M5	48.5	30	M5	6.5	-	-	24	15	11.5	20	5	5	-	23
423721	CFF.48 p-M5x17	48.5	30	-	-	M5	17	24	15	11.5	20	5	-	4	33
423731	CFF.48 B-M5-p-M5x17	48.5	30	M5	6.5	M5	17	24	15	11.5	20	5	5	4	28
423811	CFF.66 B-M6	66	42	M6	9	-	-	33	21	15	27.5	6	5	-	54
423821	CFF.66 p-M6x16	66	42	-	-	M6	16	33	21	15	27.5	6	-	4	64
423831	CFF.66 B-M6-p-M6x16	66	42	M6	9	M6	18	33	21	15	27.5	6	5	4	59

# Suggested tightening torque for assembly screws.

## Hinges for profiles

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black or grey colour RAL 7040 (C33), matte finish.

#### ROTATING PIN

Nickel-plated steel.

#### STANDARD EXECUTION

Pass-through holes for M6 countersunk head screws.

#### TECHNOPOLYMER CENTERING INSERTS (SUPPLIED)

For profiles with slot dimensions from 6 to 12 mm.

#### FEATURES AND APPLICATIONS

This type of hinge can be used with aluminium profiles from 30 up to 60 mm, also combining different dimensions.

#### ROTATION ANGLE (APPROXIMATE VALUE)

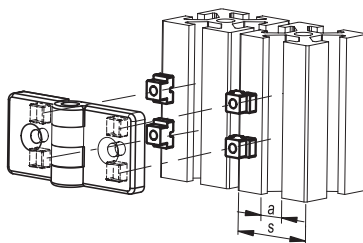
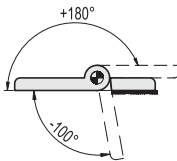
Max 280° (-100° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).







Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

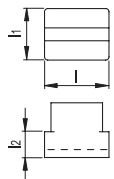


FMMdesign

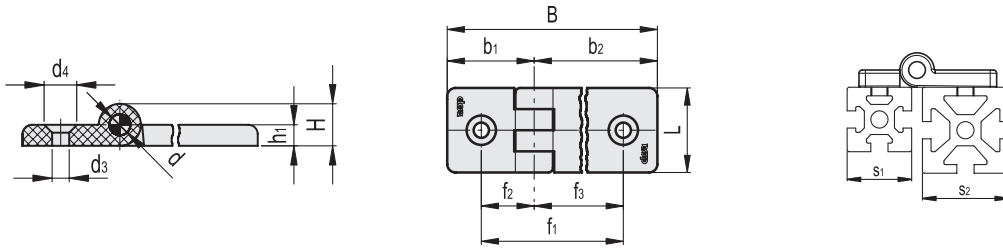


Profile dimension		Insert orientation	Insert colour
s	a		
30	6		Light grey
	8		
40÷45	8		Dark grey
	10		
50÷60	10		Black
	12		

Centering inserts			
Dimensions			Colour
l	l1	l2	
8	6	2	Light grey
10	8	4	Dark grey
12	10	5	Black



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFG.30/30 SH-6	440	2570	1850	3710	300	1700
CFG.30/40 SH-6	320	2280	1750	3490	590	870
CFG.30/45 SH-6	240	2150	1760	3520	190	780
CFG.30/60 SH-6	280	1510	1600	3190	180	850
CFG.40/40 SH-6	320	2280	1750	3490	220	870
CFG.40/45 SH-6	240	2150	1750	3490	390	780
CFG.40/60 SH-6	280	1510	1600	3190	180	850
CFG.45/45 SH-6	240	2150	1760	3520	190	780
CFG.45/60 SH-6	240	1510	1600	3190	180	780
CFG.60/60 SH-6	280	1510	1600	3190	180	850



CFG.

Code	Description	s1	s2	L	B	f1 ±0.25	f2	f3	H	h1	b1	b2	d	d3	d4	C# [Nm]	⚖
423911	CFG.30/30 SH-6	30	30	36	54	35	17.5	17.5	16	8	27	27	8	6.5	12.5	5	32
423912	CFG.30/40 SH-6	30	40	36	64	40	17.5	22.5	16	8	27	37	8	6.5	12.5	5	34
423913	CFG.30/45 SH-6	30	45	36	69	42.5	17.5	25	16	8	27	42	8	6.5	12.5	5	35
423914	CFG.30/60 SH-6	30	60	36	84	50	17.5	32.5	16	8	27	57	8	6.5	12.5	5	38
423921	CFG.40/40 SH-6	40	40	36	74	45	22.5	22.5	16	8	37	37	8	6.5	12.5	5	36
423922	CFG.40/45 SH-6	40	45	36	79	47.5	22.5	25	16	8	37	42	8	6.5	12.5	5	37
423923	CFG.40/60 SH-6	40	60	36	94	55	22.5	32.5	16	8	37	57	8	6.5	12.5	5	40
423931	CFG.45/45 SH-6	45	45	36	84	50	25	25	16	8	42	42	8	6.5	12.5	5	38
423932	CFG.45/60 SH-6	45	60	36	99	57.5	25	32.5	16	8	42	57	8	6.5	12.5	5	41
423941	CFG.60/60 SH-6	60	60	36	114	65	32.5	32.5	16	8	57	57	8	6.5	12.5	5	45

CFG-C33

Code	Description	s1	s2	L	B	f1 ±0.25	f2	f3	H	h1	b1	b2	d	d3	d4	C# [Nm]	⚖
423911-C33	CFG.30/30 SH-6-C33	30	30	36	54	35	17.5	17.5	16	8	27	27	8	6.5	12.5	5	32
423912-C33	CFG.30/40 SH-6-C33	30	40	36	64	40	17.5	22.5	16	8	27	37	8	6.5	12.5	5	34
423913-C33	CFG.30/45 SH-6-C33	30	45	36	69	42.5	17.5	25	16	8	27	42	8	6.5	12.5	5	35
423914-C33	CFG.30/60 SH-6-C33	30	60	36	84	50	17.5	32.5	16	8	27	57	8	6.5	12.5	5	38
423921-C33	CFG.40/40 SH-6-C33	40	40	36	74	45	22.5	22.5	16	8	37	37	8	6.5	12.5	5	36
423922-C33	CFG.40/45 SH-6-C33	40	45	36	79	47.5	22.5	25	16	8	37	42	8	6.5	12.5	5	37
423923-C33	CFG.40/60 SH-6-C33	40	60	36	94	55	22.5	32.5	16	8	37	57	8	6.5	12.5	5	40
423931-C33	CFG.45/45 SH-6-C33	45	45	36	94	50	25	25	16	8	42	42	8	6.5	12.5	5	38
423932-C33	CFG.45/60 SH-6-C33	45	60	36	99	57.5	25	32.5	16	8	42	57	8	6.5	12.5	5	41
423941-C33	CFG.60/60 SH-6-C33	60	60	36	114	65	32.5	32.5	16	8	57	57	8	6.5	12.5	5	45

# Suggested tightening torque for assembly screws.



## Hinges for profiles with friction locking

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black or grey colour RAL 7040 (C33), matte finish.

#### ROTATING PIN

Zinc-plated steel.

#### STANDARD EXECUTION

Pass-through holes for M6 countersunk head screws.

#### TECHNOPOLYMER CENTERING INSERTS (SUPPLIED)

For profiles with slot dimensions from 6 to 12 mm.

#### ADJUSTABLE HANDLE FOR CLAMPING

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

Red writing "PUSH" tampoprinted on the lever body (avoid contact with solvents, alcohol or detergents containing alcohol).

Black-oxide steel retaining screw, AISI 302 stainless steel return spring.

Boss with threaded blind hole in black-oxide steel.

#### WASHER

Zinc-plated, positioned between the adjustable handle and the hinge body.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 280° (-100° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page -).

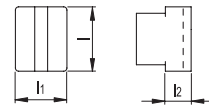
#### FEATURES AND APPLICATIONS

The CFG-ERS hinge with friction locking enables the locking of a door in any desired position within a field of rotation of 280° with a force proportional to the torque applied to the ERS lever.

This type of hinge can be used with profiles from 30 up to 60 mm, also combining different dimensions.

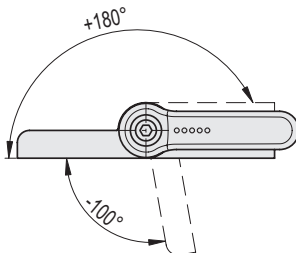
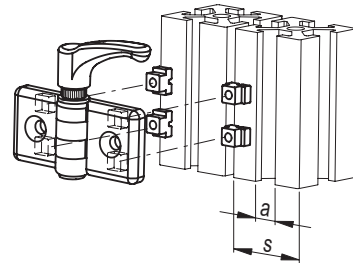


FMMdesign









#### INSTRUCTIONS OF USE

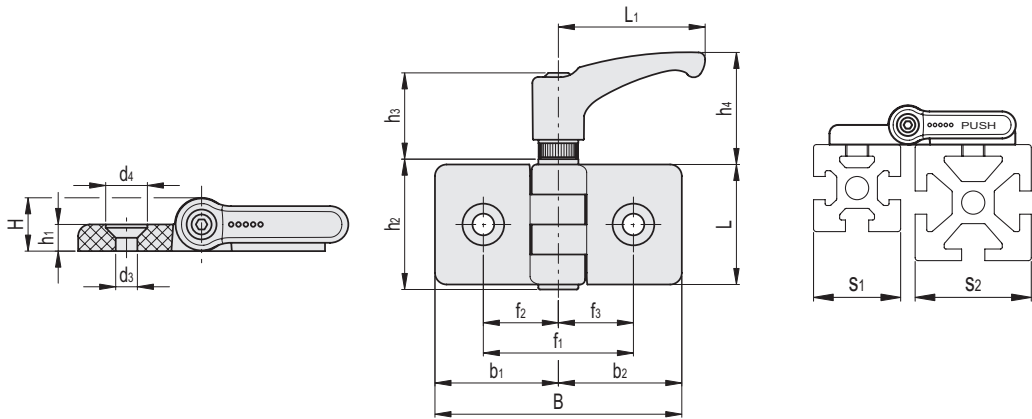
The friction effect is obtained by clamping the two hinged bodies using the special adjustable handle. To operate the adjusting mechanism, push down the lever (PUSH). By releasing the lever, the spring releases the tothing, thus the handle can return to its starting position and the lever can rotate freely together with the door without obstructing the movement, even in case of accidental shock. The high number of teeth within the adjustable handle guarantees rotation even in case of very limited movement of the lever arm.



Centering inserts			
Dimensions			Colour
l	l <sub>1</sub>	l <sub>2</sub>	
8	6	2	Light grey
10	8	4	Dark grey
12	10	5	Black

Profile dimension		Insert orientation	Insert colour
s	a		
30	6		Light grey
	8		
40÷45	8		Dark grey
	10		
50÷60	10		Black
	12		

Resistance tests	Axial Stress		Radial Stress		90° Angled Stress	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFG.30/30 SH-6	440	2570	1850	3710	300	1700
CFG.30/40 SH-6	320	2280	1750	3490	590	870
CFG.30/45 SH-6	240	2150	1760	3520	190	780
CFG.30/60 SH-6	280	1510	1600	3190	180	850
CFG.40/40 SH-6	320	2280	1750	3490	220	870
CFG.40/45 SH-6	240	2150	1750	3490	390	780
CFG.40/60 SH-6	280	1510	1600	3190	180	850
CFG.45/45 SH-6	240	2150	1760	3520	190	780
CFG.45/60 SH-6	240	1510	1600	3190	180	780
CFG.60/60 SH-6	280	1510	1600	3190	180	850



CFG-ERS

Code	Description	s1	s2	L	B	L1	f1 ±0.25	f2	f3	H	h1	h2	h3	h4	b1	b2	d3	d4	C# [Nm]		
423916	CFG.30/30-ERS-SH-6	30	30	36	54	44	35	17.5	17.5	16	8	38.5	29	38	27	27	6.5	12.5	5	50	
423917	CFG.30/40-ERS-SH-6	30	40	36	64	44	40	17.5	22.5	16	8	38.5	29	38	27	37	6.5	12.5	5	52	
423918	CFG.30/45-ERS-SH-6	30	45	36	69	44	42.5	17.5	25	16	8	38.5	29	38	27	42	6.5	12.5	5	53	
423919	CFG.30/60-ERS-SH-6	30	60	36	84	44	50	17.5	32.5	16	8	38.5	29	38	27	57	6.5	12.5	5	57	
423926	CFG.40/40-ERS-SH-6	40	40	36	74	44	45	22.5	22.5	16	8	38.5	29	38	37	37	6.5	12.5	5	55	
423927	CFG.40/45-ERS-SH-6	40	45	36	79	44	47.5	22.5	25	16	8	38.5	29	38	37	42	6.5	12.5	5	55	
423928	CFG.40/60-ERS-SH-6	40	60	36	94	44	55	22.5	32.5	16	8	38.5	29	38	37	57	6.5	12.5	5	59	
423936	CFG.45/45-ERS-SH-6	45	45	36	84	44	50	25	25	16	8	38.5	29	38	42	42	6.5	12.5	5	55	
423937	CFG.45/60-ERS-SH-6	45	60	36	99	44	57.5	25	32.5	16	8	38.5	29	38	42	57	6.5	12.5	5	60	
423946	CFG.60/60-ERS-SH-6	60	60	36	114	44	65	32.5	32.5	16	8	38.5	29	38	57	57	6.5	12.5	5	65	

CFG-ERS-C33

Code	Description	s1	s2	L	B	L1	f1 ±0.25	f2	f3	H	h1	h2	h3	h4	b1	b2	d3	d4	C# [Nm]		
423916-C33	CFG.30/30-ERS-SH-6-C33	30	30	36	54	44	35	17.5	17.5	16	8	38.5	29	38	27	27	6.5	12.5	5	50	
423917-C33	CFG.30/40-ERS-SH-6-C33	30	40	36	64	44	40	17.5	22.5	16	8	38.5	29	38	27	37	6.5	12.5	5	52	
423918-C33	CFG.30/45-ERS-SH-6-C33	30	45	36	69	44	42.5	17.5	25	16	8	38.5	29	38	27	42	6.5	12.5	5	53	
423919-C33	CFG.30/60-ERS-SH-6-C33	30	60	36	84	44	50	17.5	32.5	16	8	38.5	29	38	27	57	6.5	12.5	5	57	
423926-C33	CFG.40/40-ERS-SH-6-C33	40	40	36	74	44	45	22.5	22.5	16	8	38.5	29	38	37	37	6.5	12.5	5	55	
423927-C33	CFG.40/45-ERS-SH-6-C33	40	45	36	79	44	47.5	22.5	25	16	8	38.5	29	38	37	42	6.5	12.5	5	55	
423928-C33	CFG.40/60-ERS-SH-6-C33	40	60	36	94	44	55	22.5	32.5	16	8	38.5	29	38	37	57	6.5	12.5	5	59	
423936-C33	CFG.45/45-ERS-SH-6-C33	45	45	36	84	44	50	25	25	16	8	38.5	29	38	42	42	6.5	12.5	5	55	
423937-C33	CFG.45/60-ERS-SH-6-C33	45	60	36	99	44	57.5	25	32.5	16	8	38.5	29	38	42	57	6.5	12.5	5	60	
423946-C33	CFG.60/60-ERS-SH-6-C33	60	60	36	114	44	65	32.5	32.5	16	8	38.5	29	38	57	57	6.5	12.5	5	65	

# Suggested tightening torque for assembly screws.



## Double hinges for profiles

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black or grey colour RAL 7040 (C33), matte finish.

#### ROTATING PINS

Nickel-plated steel.

#### STANDARD EXECUTION

Pass-through holes for M6 countersunk head screws.

#### TECHNOPOLYMER CENTERING INSERTS (SUPPLIED)

For profiles with slot dimensions from 6 to 12 mm.

#### FEATURES AND APPLICATIONS

This type of hinge is recommended when, for example, one central frame is connected with two lateral doors. It can be used with aluminium profiles from 30 up to 60 mm, also combining different dimensions.

#### ROTATION ANGLE (APPROXIMATE VALUE)

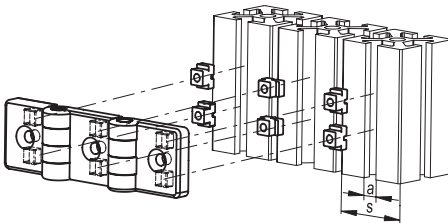
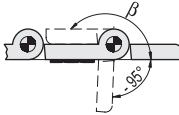
Max 260°/275° (-95° and +165°/180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

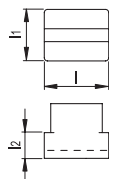


FMMdesign

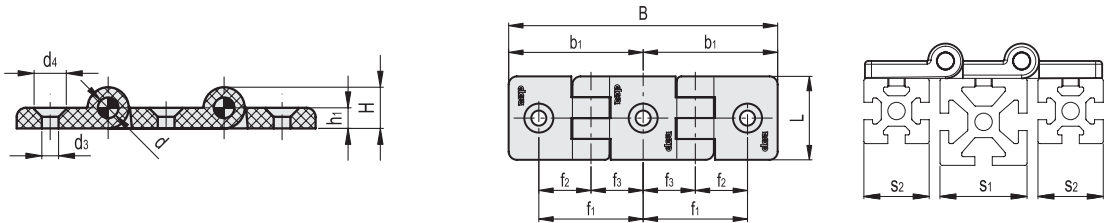


Profile dimension		Insert orientation	Insert colour
s	a		
30	6		Light grey
	8		
40÷45	8		Dark grey
	10		
50÷60	10		Black
	12		

Centering inserts			
Dimensions			Colour
l	l1	l2	
8	6	2	Light grey
10	8	4	Dark grey
12	10	5	Black



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFI.30-30/30 SH-6	440	2570	1850	3710	300	1700
CFI.30-40/40 SH-6	320	2280	1750	3490	220	870
CFI.40-30/30 SH-6	320	2280	1750	3490	220	870
CFI.40-40/40 SH-6	320	2280	1750	3490	220	870
CFI.45-30/30 SH-6	240	2150	1760	3520	190	780
CFI.45-40/40 SH-6	240	2150	1750	3490	190	780
CFI.45-45/45 SH-6	240	2150	1760	3520	190	780
CFI.60-30/30 SH-6	280	1510	1600	3190	180	850
CFI.60-40/40 SH-6	280	1510	1600	3190	180	850
CFI.60-45/45 SH-6	240	1510	1600	3190	180	780



CFI.

Code	Description	s1	s2	L	B	f1±0.25	f2	f3	H	h1	b1	d	d3	d4	B	C# [Nm]		
424111	CFI.30-30/30 SH-6	30	30	36	89	35	17.5	17.5	16	8	44.5	8	6.5	12.5	180°	5	59	
424121	CFI.30-40/40 SH-6	30	40	36	109	40	22.5	17.5	16	8	54.5	8	6.5	12.5	165°	5	63	
424211	CFI.40-30/30 SH-6	40	30	36	99	40	17.5	22.5	16	8	49.5	8	6.5	12.5	180°	5	62	
424221	CFI.40-40/40 SH-6	40	40	36	119	45	22.5	22.5	16	8	59.5	8	6.5	12.5	180°	5	66	
424311	CFI.45-30/30 SH-6	45	30	36	104	42.5	17.5	25	16	8	52	8	6.5	12.5	180°	5	63	
424321	CFI.45-40/40 SH-6	45	40	36	124	47.5	22.5	25	16	8	62	8	6.5	12.5	180°	5	67	
424331	CFI.45-45/45 SH-6	45	45	36	134	50	25	25	16	8	67	8	6.5	12.5	180°	5	69	
424411	CFI.60-30/30 SH-6	60	30	36	119	50	17.5	32.5	16	8	59.5	8	6.5	12.5	180°	5	67	
424421	CFI.60-40/40 SH-6	60	40	36	139	55	22.5	32.5	16	8	69.5	8	6.5	12.5	180°	5	71	
424431	CFI.60-45/45 SH-6	60	45	36	149	57.5	25	32.5	16	8	74.5	8	6.5	12.5	180°	5	73	

CFI-C33

Code	Description	s1	s2	L	B	f1±0.25	f2	f3	H	h1	b1	d	d3	d4	B	C# [Nm]		
424111-C33	CFI.30-30/30 SH-6-C33	30	30	36	89	35	17.5	17.5	16	8	44.5	8	6.5	12.5	180°	5	59	
424121-C33	CFI.30-40/40 SH-6-C33	30	40	36	109	40	22.5	17.5	16	8	54.5	8	6.5	12.5	180°	5	63	
424211-C33	CFI.40-30/30 SH-6-C33	40	30	36	99	40	17.5	22.5	16	8	49.5	8	6.5	12.5	180°	5	62	
424221-C33	CFI.40-40/40 SH-6-C33	40	40	36	119	45	22.5	22.5	16	8	59.5	8	6.5	12.5	180°	5	66	
424311-C33	CFI.45-30/30 SH-6-C33	45	30	36	104	42.5	17.5	25	16	8	52	8	6.5	12.5	180°	5	63	
424321-C33	CFI.45-40/40 SH-6-C33	45	40	36	124	47.5	22.5	25	16	8	62	8	6.5	12.5	180°	5	67	
424331-C33	CFI.45-45/45 SH-6-C33	45	45	36	134	50	25	25	16	8	67	8	6.5	12.5	180°	5	69	
424411-C33	CFI.60-30/30 SH-6-C33	60	30	36	119	50	17.5	32.5	16	8	59.5	8	6.5	12.5	180°	5	67	
424421-C33	CFI.60-40/40 SH-6-C33	60	40	36	139	55	22.5	32.5	16	8	69.5	8	6.5	12.5	180°	5	71	
424431-C33	CFI.60-45/45 SH-6-C33	60	45	36	149	57.5	25	32.5	16	8	74.5	8	6.5	12.5	180°	5	73	

# Suggested tightening torque for assembly screws.



## Hinge for thin doors

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTION

Pass-through holes for M6 countersunk head screws and referring pins for an accurate positioning of the hinge body.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 200° (-10° and +190° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

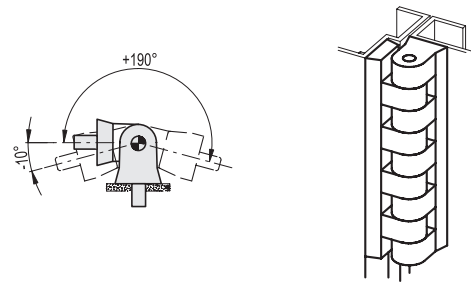
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

#### ASSEMBLY INSTRUCTIONS

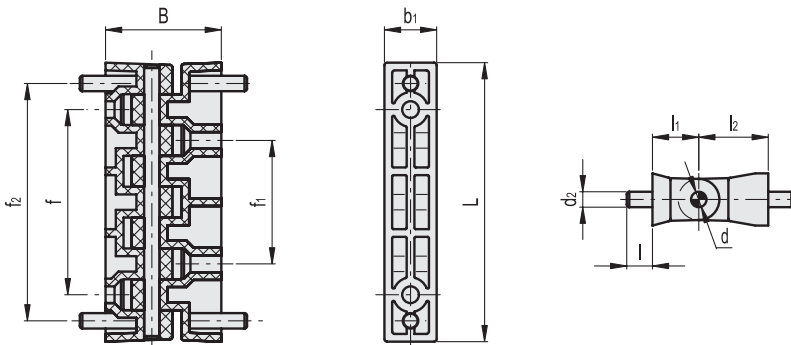
1. Remove the rotation pin and fit the two separated bodies of the hinge on the door and on the frame.
2. Assemble the two elements together matching the right alignment of the hinge and insert the rotation pin.



FMM design



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFB.108 SH-6	610	6020	640	5020	520	2200



Code	Description	L	B	d2	l	f±0.25	f1±0.25	f2±0.25	l1	l2	b1	d	Th-rough holes	C# [Nm]	⚖️
422511	CFB.108 SH-6	109	45	6	10	72.5	48.2	92.7	18	27	20.5	6	6.5	3	85

# Suggested tightening torque for assembly screws.





## Thin hinge

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATION PIN AND END-CAPS

Acetal resin based (POM) technopolymer.

#### STANDARD EXECUTION

Pass-through holes for self-tapping countersunk head screws diameter 4.8 mm.

#### FEATURES AND APPLICATIONS

Completely made of technopolymer and without metal parts, the hinge is suitable for application on machines and equipment in those sectors where laws or particular hygienic, climatic and environmental factors make it mandatory to use corrosion resistant materials.

By replacing the technopolymer rotation pin with a metal one with an appropriate form, the hinge is suitable to control a safety micro switch mounted on the structure where the hinge is situated.

#### ROTATION ANGLE (APPROXIMATE VALUE)

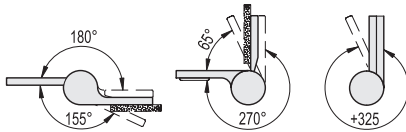
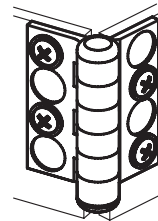
CFC. hinges have a max rotation angle of 325°. Depending on the type of assembly, the rotation angle of the door can be lower.

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

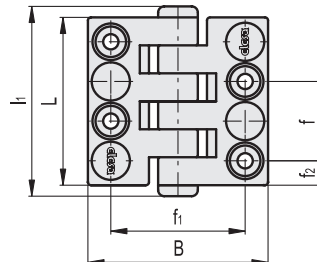
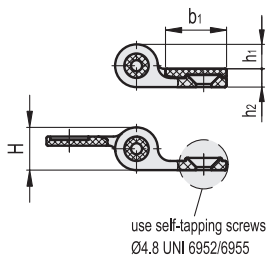
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



FAMdesign



Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
Description	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
CFC.55 SH-5	750	1500	890	1770	180	270



Code	Description	L	B	f±0.25	f1±0.25	f2	H	h1	h2	li	b1	Through holes	C# [Nm]	
422611	CFC.55 SH-5	55	59	26.1	43.7	8	14	8	6	62	20	4.8	5	20

# Suggested tightening torque for assembly screws.



## In line lift-off hinges

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

#### AJUSTABLE PIN WITH OCTAGONAL SLOT

Acetal based (POM) technopolymer, black colour.

#### STANDARD EXECUTIONS

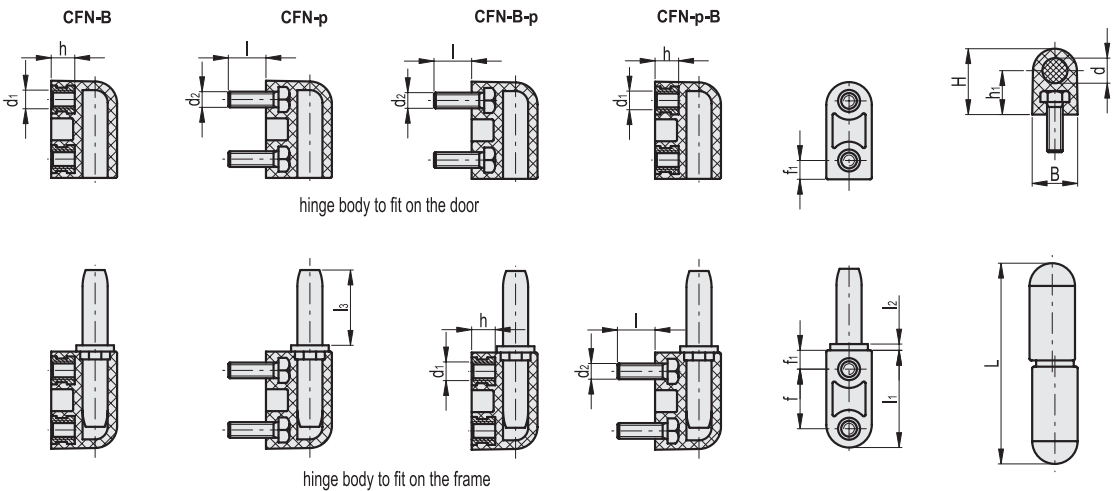
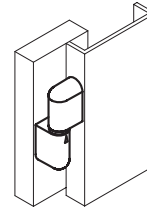
- **CFN-B**: nickel-plated brass bosses with threaded hole.
- **CFN-p**: nickel-plated steel threaded studs.
- **CFN-B-p**: nickel-plated brass bosses with threaded hole and nickel-plated steel threaded studs.
- **CFN-p-B**: nickel-plated steel threaded studs and nickel-plated brass bosses with threaded hole.

#### FEATURES

CFN. in line lift-off hinges (ELESA patent) have been designed to adjust possible misalignments between the door and the frame. To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



FMMdesign



Code	Description	L	B	d1	h	d2	l	f	f1	H	h1	l1	l2	l3	d	C# [Nm]	⚖️
426111	CFN.65 B-M5	64	14.5	M5	8	-	-	19	6	21	14	31	2	24	8	5	24
426121	CFN.65 p-M5x12	64	14.5	-	-	M5	12	19	6	21	14	31	2	24	8	5	30
426131	CFN.65 B-M5-p-M5x12	64	14.5	M5	8	M5	12	19	6	21	14	31	2	24	8	5	27
426141	CFN.65 p-M5x12-B-M5	64	14.5	M5	8	M5	12	19	6	21	14	31	2	24	8	5	27

# Suggested tightening torque for assembly screws.

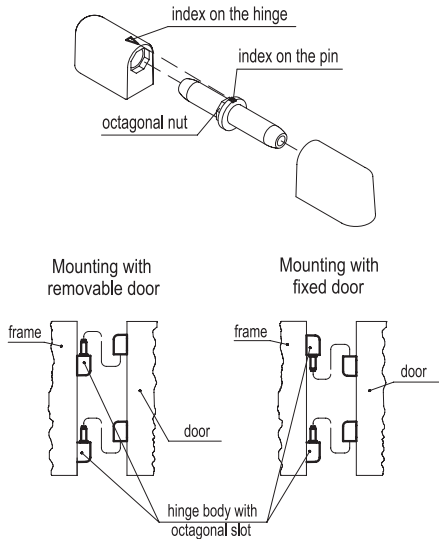


Resistance tests			
AXIAL STRESS		RADIAL STRESS	
Parallel planes	Perpendicular planes	Parallel planes	Perpendicular planes
Maximum working load Ea [N]		Maximum working load Er [N]	
590		200	

The elastic deformation, which occurs on the hinge for values of load exceeding the ones indicated in the table, makes the load at breakage meaningless.

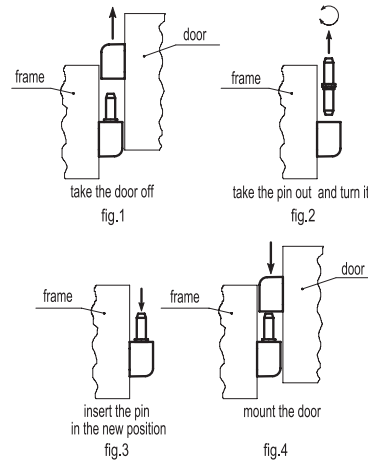
**ASSEMBLY INSTRUCTIONS**

1. Fit the hinge bodies with octagonal slot on the frame and the other two bodies with cylindrical slot on the door.
2. Insert the pins with octagonal slot in the two bodies fitted on the frame by matching the indexes engraved on the pin and on the hinge.
3. Mount the door by matching the hinge bodies on the pins.



**OFF LINE ADJUSTMENTS**

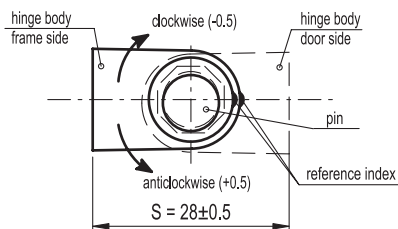
The pin has an octagonal slot which allows different positions for the adjustment of off line door (fig. 1-2-3-4). To have the door in line with the frame, it can be necessary to adjust the pins of both hinges.



**ADJUSTMENT OF THE DOOR**

In case the door is off line with the frame, the inclination of the door can be adjusted by turning the octagonal slot of the pins clockwise or anticlockwise.

By turning the pin anticlockwise, the distance S increases (+0.5) while by turning the pin clockwise, it decreases (-0.5).



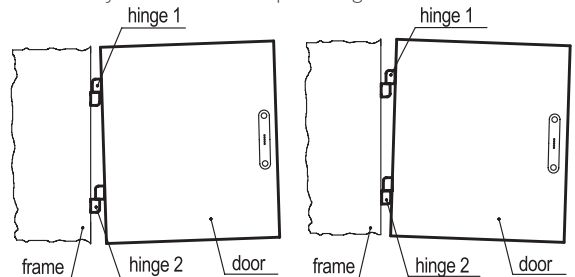
**ADJUSTMENT EXAMPLES**

If the door is off line on the bottom side.

In order to have the door in line with the frame, turn the pin of hinge 1 anticlockwise by 45° or 90° and the pin of hinge 2 clockwise.

If the door is off line on the top side.

In order to have the door in line with the frame, turn the pin of hinge 1 clockwise by 45° or 90° and the pin of hinge 2 anticlockwise.



## Offset lift-off hinge

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

#### AJUSTABLE PIN WITH OCTAGONAL SLOT

Acetal based (POM) technopolymer, black colour.

#### SCREW-COVERS

Polyester based (PBT) technopolymer, black colour, glossy finish, snap-in assembly.

#### COVERS FOR PIN SLOT

Technopolymer, black colour, matte finish; to be fitted after assembly.

#### HINGE ASSEMBLY ON FRAME AND DOOR

Pass-through holes for hexagonal head screws, cylindrical head screws with hexagon socket or M5 hexagonal nuts (UNI 5588).

#### FEATURES AND APPLICATIONS

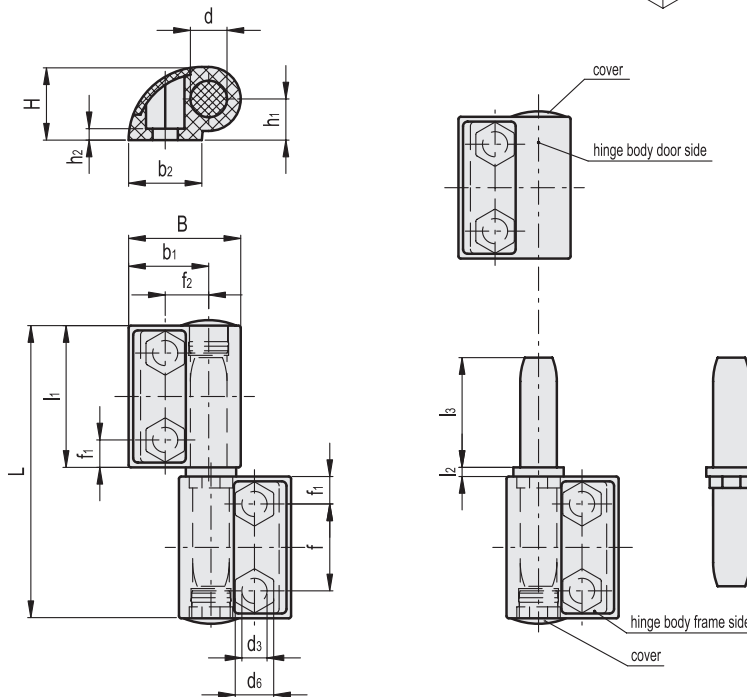
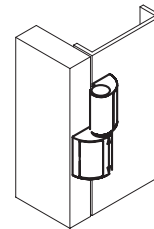
CFO. offset lift-off hinges (ELESA patent) have been designed to adjust possible misalignments between the door and the frame. They can be mounted on doors which open on the right or on the left side. Each body of the hinge has a slot for fitting the pin: the opposite side can be closed with the supplied cover. To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).

#### SPECIAL EXECUTIONS ON REQUEST

Screw-covers in different RAL colours.



FMMdesign



Code	Description	L	B	f	f <sub>1</sub>	f <sub>2</sub>	H	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	b <sub>1</sub>	b <sub>2</sub>	d	d <sub>3</sub>	d <sub>6</sub>	C# [Nm]		
426211-C9	CFO.65 EH-5-C9	64	24.5	19	6	9.5	16	9	2.5	31	2	24	17.5	16	8	5.5	8.5	5	25	

# Suggested tightening torque for assembly screws.

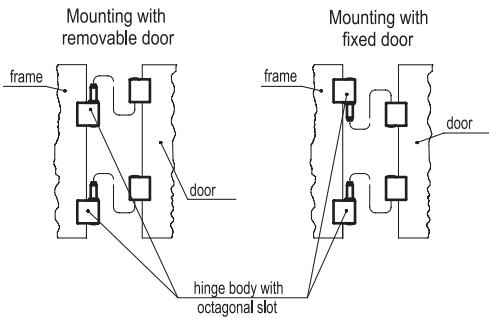
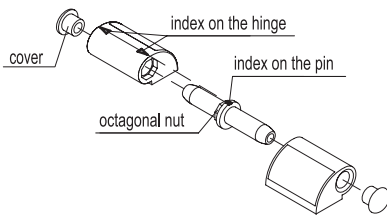


Resistance tests			
AXIAL STRESS		RADIAL STRESS	
Parallel planes	Perpendicular planes	Parallel planes	Perpendicular planes
Maximum working load Ea [N]		Maximum working load Er [N]	
290		200	

The elastic deformation, which occurs on the hinge for values of load exceeding the ones indicated in the table, makes the load at breakage meaningless.

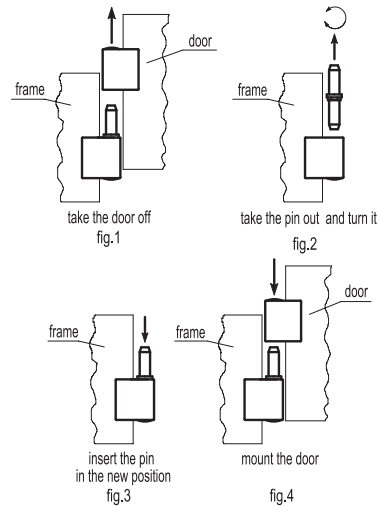
**ASSEMBLY INSTRUCTIONS**

1. Fit the hinge bodies with octagonal slot on the frame and the other two bodies with cylindrical slot on the door.
2. Insert the pins with octagonal slot in the two bodies fitted on the frame by matching the indexes engraved on the pin and on the hinge.
3. Mount the door by matching the hinge bodies on the pins.



**OFF LINE ADJUSTMENTS**

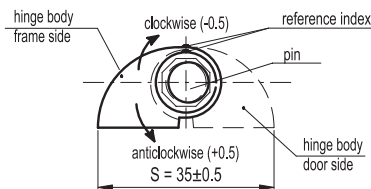
The pin has an octagonal slot which allows different positions for the adjustment of off line door (fig. 1-2-3-4). To have the door in line with the frame, it can be necessary to adjust the pins of both hinges.



**ADJUSTMENT OF THE DOOR**

In case the door is off line with the frame, the inclination of the door can be adjusted by turning the octagonal slot of the pins clockwise or anticlockwise.

By turning the pin anticlockwise, the distance S increases (+0.5) while by turning the pin clockwise, it decreases (-0.5).



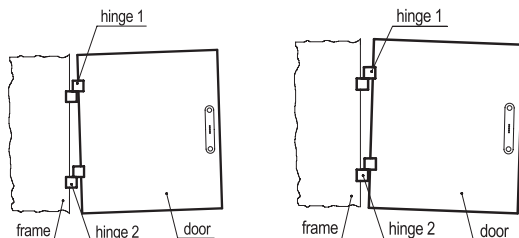
**ADJUSTMENT EXAMPLES**

If the door is off line on the bottom side.

In order to have the door in line with the frame, turn the pin of hinge 1 anticlockwise by 45° or 90° and the pin of hinge 2 clockwise.

If the door is off line on the top side.

In order to have the door in line with the frame, turn the pin of hinge 1 anticlockwise by 45° or 90° and the pin of hinge 2 clockwise.



## Detent hinges

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

#### ROTATING PIN

AISI 303 stainless steel.

#### STANDARD EXECUTIONS

- **CFV-SH**: pass-through holes for countersunk head screws.
- **CFV-EH**: pass-through holes for hexagonal head screws.

#### ROTATION ANGLE (APPROXIMATE VALUE)

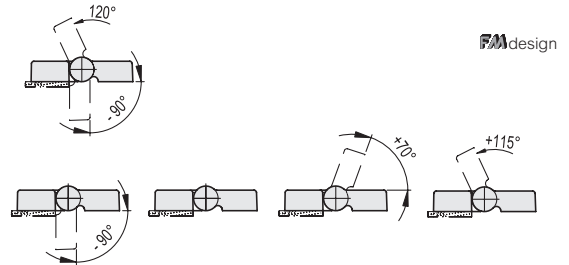
Max 210° (-90° and +120° being 0° the condition where the interconnected surfaces are on the same plane).  
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

The detent device (ELESA patent) allows four different detent positions of the door (-90°, 0°, +70°, +115°).  
To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).

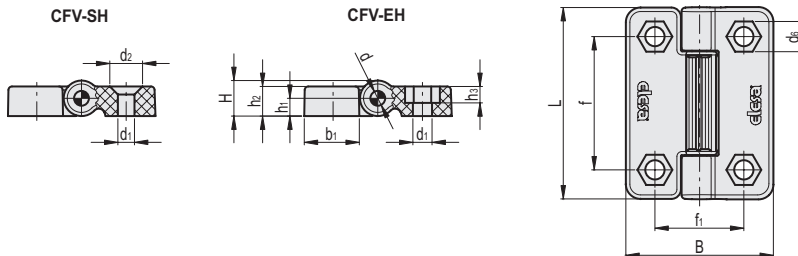
#### RESISTANT TORQUE

All detent positions guarantee a resistant torque of about 3 Nm (which is the torque that must be applied to free the detent device of the hinge).

The hinge had been tested with more than 20.000 opening and closing cycles and the value of the resistant torque was unchanged.



Resistance tests	AXIAL STRESS		RADIAL STRESS		70° and 115° ANGLED STRESS		90° ANGLED STRESS		Resistant torque
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E70 e E115 [N]	Load at breakage R70 e R115 [N]	Maximum working load E90 [N]	Load at breakage R90 [N]	
CFV.65 SH-6	1320	4480	2070	5060	2150	3170	1630	3380	3
CFV.65 EH-6	1520	3840	1940	4900	1430	3660	970	3140	3



Code	Description	L	B	f	f1	H	h1	h2	h3	b1	d	d1	d2	d6	C# [Nm]	⚖️
427626	CFV.65 SH-6	65	49.5	45	30	12	6	10	-	18.5	5	6.5	12.5	-	4	38
427621	CFV.65 EH-6	65	49.5	45	30	12	6	10	5	18.5	5	6.5	-	10	4	38

# Suggested tightening torque for assembly screws.



## Detent hinges

### Technopolymer

#### MATERIAL

Glass-fibre reinforced polyamide based (PA) technopolymer body, black colour, matte finish, UV resistant.

#### SPRINGS

Stainless steel.

#### STANDARD EXECUTIONS

Assembly by means of pass-through holes for M5 cylindrical head screws.

Without screw-covers.

- **CFVT-CH**: without detent (free rotation).
- **CFVT-CH-80**: detent with angle  $-70^\circ / -7^\circ / 80^\circ$ , resistant torque 0.7 Nm or 1.2 Nm or 1.7 Nm.
- **CFVT-CH-115**: detent with angle  $-70^\circ / -7^\circ / 115^\circ$ , resistant torque 0.7 Nm or 1.2 Nm or 1.7 Nm.
- **CFVT-CH-150**: detent with angle  $-70^\circ / -7^\circ / 150^\circ$ , resistant torque 0.7 Nm or 1.2 Nm or 1.7 Nm.

#### SCREW-COVER (ACCESSORY TO BE ORDERED SEPARATELY).

Polyester based (PBT) technopolymer, black colour, matte finish, easy detent assembly. (see table CA.CFVT.)



ELESA Original design

Code	Description	Cap for
427702	CA.CFVT.53-C9	CFVT.53

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max rotation angle: about  $255^\circ$  ( $-75^\circ$  and  $+180^\circ$  being  $0^\circ$  the condition where the two interconnected surfaces are on the same plane).  
Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

#### RESISTANT TORQUE

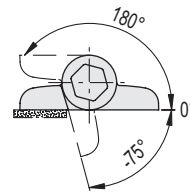
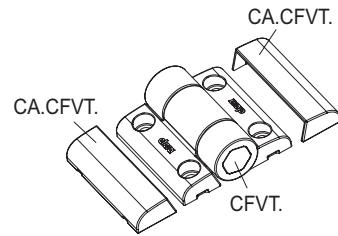
The resistant torque corresponds to the torque that must be applied to free the detent hinge.  
The hinge has been tested with more than 20.000 opening and closing cycles and the values of the resistant torque were unchanged.

#### FEATURES AND APPLICATIONS

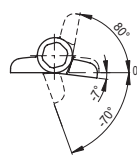
The internal detent device (ELESA patent) allows three different detent positions of the door depending on the execution.  
When the hinge is in a range of  $\pm 25^\circ$  with respect to a detent position, it reaches one of these positions (Fig.1) thanks to the internal device.  
Value detected in special tests without load application.  
To choose the convenient type and the right number of hinges for your application, see the Guidelines (see page 952).

#### ACCESSORIES ON REQUEST

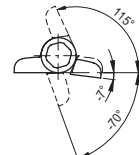
Polyester based (PBT) technopolymer screw-covers, black colour, matte finish, easy snap-in assembly. (see table CA.CFVT.)



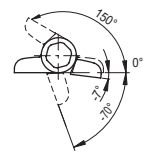
CFVT-CH-80



CFVT-CH-115



CFVT-CH-150

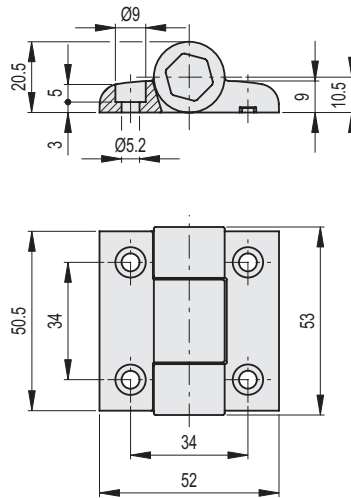


Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS	
	Maximum working load Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]
Description						
CFVT	400	2100	400	1900	250	1800





Hinges 12



Code	Description	Detent angle	Resistant torque* [Nm]	C# [Nm]	⚖️
427701	CFVT.53 CH-5	-	-	4	32
427704	CFVT.53 CH-5-80-0.7	-70° / 0° / +80°	0.7	4	34
427706	CFVT.53 CH-5-80-1.1	-70° / 0° / +80°	1.1	4	34
427708	CFVT.53 CH-5-80-1.7	-70° / 0° / +80°	1.7	4	34
427714	CFVT.53 CH-5-115-0.7	-70° / 0° / +115°	0.7	4	34
427716	CFVT.53 CH-5-115-1.1	-70° / 0° / +115°	1.1	4	34
427718	CFVT.53 CH-5-115-1.7	-70° / 0° / +115°	1.7	4	34
427724	CFVT.53 CH-5-150-0.7	-70° / 0° / +150°	0.7	4	34
427726	CFVT.53 CH-5-150-1.1	-70° / 0° / +150°	1.1	4	34
427728	CFVT.53 CH-5-150-1.7	-70° / 0° / +150°	1.7	4	34

\* Torque to be applied to free the detent device of the hinge with tolerance ± 20%

# Suggested torque for screw assembly.



## Hinges with adjustable friction

### Technopolymer

#### MATERIAL

Acetal based (POM) technopolymer. Flammability class UL94-HB.

#### PIN

Polycarbonate based (PC) technopolymer, black colour (white for CLEAN execution), Flammability class UL94-V2.

#### ADJUSTING BOSS AND SCREW

AISI 304 stainless steel screw.

AISI 303 stainless steel adjusting boss.

#### STANDARD EXECUTIONS

Assembly by means of pass-through holes for cylindrical head screws.

- **CFU**: black colour, matte finish.

- **CFU-CLEAN**: white colour similar to RAL 9002, matte finish.

#### FEATURES AND APPLICATIONS

The main feature of CFU. hinge is the possibility to adjust the resistant torque of the door on which it is assembled, facilitating the door clamping in the various positions of opening, partial opening and closing.

To adjust the friction force, simply turn the screw on the hinge body, clockwise to increase the friction and anti-clockwise to reduce it.

#### ROTATION ANGLE (APPROXIMATE VALUE)

Max 275° (-95° and +180° being 0° the condition where the two interconnected surfaces are on the same plane).

Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.

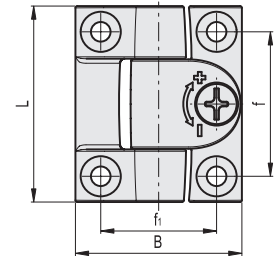
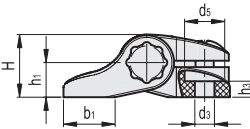
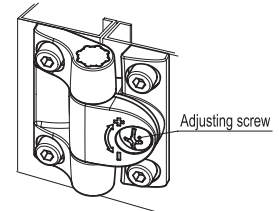
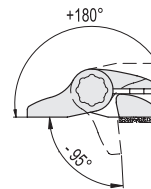
#### RESISTANT TORQUE

The resistant torque values of 1.4 and 4 Nm can be obtained by applying a maximum tightening torque of 0.8 Nm (CFU.40) and 4 Nm (CFU.60) on the adjusting screw.

The hinge had been tested with more than 60.000 opening and closing cycles and the values of the resistant torque was unchanged. To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page 1368).



ELESA Original design



Code	Description	Code	Description	L	B	f±0.25	f1±0.25	H	h1	h3	b1	d3	d5	C# [Nm]	⚖️
427512	CFU.40 CH-4	427513	CFU.40 CH-4 CLEAN	43	36.5	31.7	25.5	14	7.5	3.5	11.5	4.5	9	1	26
427522	CFU.60 CH-6	427523	CFU.60 CH-6 CLEAN	63.5	56.5	47.5	38	21	11.5	6.5	17.5	6.5	12.5	3	49

# Suggested tightening torque for assembly screws.

Resistance tests	AXIAL STRESS		RADIAL STRESS		90° ANGLED STRESS		Resistant torque
	Maximum working load* Ea [N]	Load at breakage Ra [N]	Maximum working load Er [N]	Load at breakage Rr [N]	Maximum working load E90 [N]	Load at breakage R90 [N]	
CFU.40 CH-4	300	900	300	1500	230	1000	1.4
CFU.60 CH-6	600	2350	400	3200	350	2500	4

\* Elastic deformation 1 mm.



## Detent hinges

### screw-covers, technopolymer

#### MATERIAL

Acetal resin based (POM) technopolymer, black colour, matte finish.

#### ROTATING PIN

Acetal based (POM) technopolymer, black colour.

#### SCREW-COVERS

Polyester based (PBT) technopolymer, black colour, matte finish, snap-in assembly.

#### STANDARD EXECUTIONS

- **CFP-SH**: pass-through holes for countersunk head screws.
- **CFP-CH**: pass-through holes for cylindrical head screws.
- **CFP-EH**: pass-through holes for hexagonal head screws.

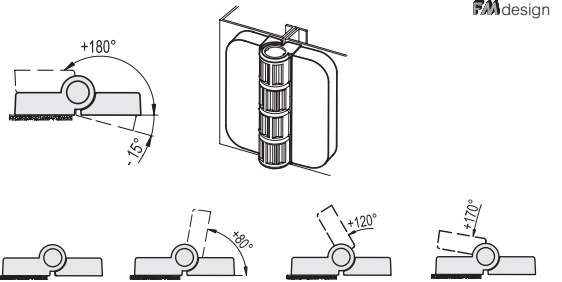
#### ROTATION ANGLE (APPROXIMATE VALUE)

- Max 195° (-15° and +180° being 0° the condition where the interconnected surfaces are on the same plane).
- Do not exceed the rotation angle limit so as not to prejudice the hinge mechanical performance.
- This hinge can be used combined with the hinge type CFQ, with the same design, without detent position.
- The detent device (ELESA patent) allows four different detent positions of the door (0°; +80°; +120°; +170°).
- To choose the convenient type and the right number of hinges for your application, see the Guidelines (on page ).

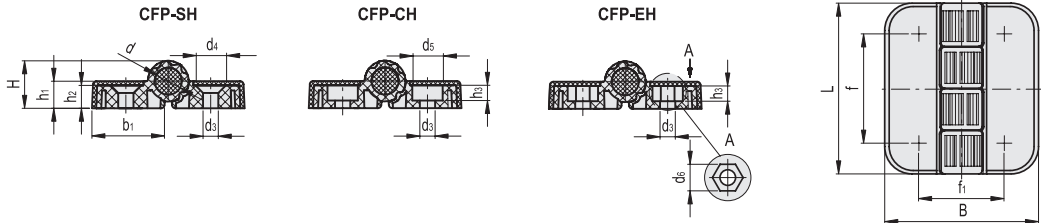
#### RESISTANT TORQUE

All detent positions guarantee a resistant torque of about 1.1 Nm (which is the torque that must be applied to free the detent device of the hinge).

The hinge had been tested with more than 10.000 opening and closing cycles and the value of the resistant torque was unchanged.



AXIAL STRESS		RADIAL STRESS		80° AND 90° ANGLED STRESS		120° ANGLED STRESS		170° ANGLED STRESS		Resistant torque
Maximum working load	Load at breakage	Maximum working load	Load at breakage	Maximum working load	Load at breakage	Maximum working load	Load at breakage	Maximum working load	Load at breakage	[Nm]
Ea [N]	Ra [N]	Er [N]	Rr [N]	E80 e E90 [N]	R80 e R90 [N]	E120 [N]	R120 [N]	E170 [N]	R170 [N]	1.1
300	1220	350	1970	345	620	285	855	400	1410	1.1



Code	Description	L	B	f	f1	H	h1	h2	h3	b1	d	d3	d4	d5	d6	C# [Nm]	⚙️
426311-C9	CFP.50 SH-4-C9	50	45	32	25	14	8	7	-	21.5	8	4.5	8.5	-	-	1.5	17
426312-C9	CFP.50 CH-4-C9	50	45	32	25	14	8	7	4.5	21.5	8	4.5	-	8.5	-	1.5	17
426313-C9	CFP.50 EH-4-C9	50	45	32	25	14	8	7	4.5	21.5	8	4.5	-	-	7	1.5	17

# Suggested tightening torque for assembly screws.



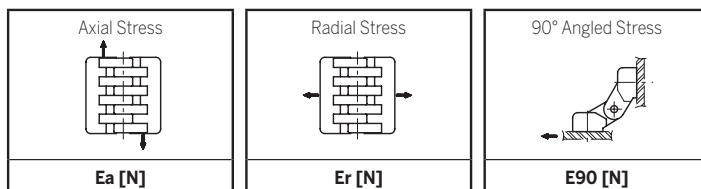
# Guidelines for the correct application of plastic hinges

Materials of different type are used in accordance with the different structure and functionality of the hinges:

- High-resilience elastomer based technopolymer.
- Glass-fibre reinforced polyamide based or acetal based technopolymer.
- High-rigidity SUPER-technopolymer.

Resistance tests: two values are supplied for each product code:

- **Maximum working load (Ea, Er, E90)** is the value under which any elastic deformation that may occur is not permanent thus ensuring the hinge functionality.
- **Load at breakage (Ra, Rr, R90)** above which the plastic material can break.



For materials with high rigidity (SUPER-technopolymer) which are not significantly deformed even with loads very close to loads at breakage, only the max limit static load is given (Sa, Sr, S90). Therefore, the technical designer, when calculating the admissible load, will have to use a suitable factor according to the importance and the safety level of the specific situation.

All the values shown in the tables (**Ea, Er, E90 e Sa, Sr, S90**) are the result of tests for the corresponding stresses carried out in our laboratories under controlled temperature and humidity (23° C - 50% R.H.) under given conditions of use and for a limited period of time.

When assessing the safety factor to apply, the technical designer shall take into consideration the actual conditions of use if they are different from the laboratory ones.

In order to help the technical designer to choose the right hinge and check its suitability to the specific application, we suggest asking for test samples and submitting the chosen product to tests in order to check its suitability.

The methods for calculating and interpreting the resistance values described in this catalogue have been updated in accordance with the latest improvements achieved.

Hinges CFN, and CFO, series: **E90** stress is not applicable, due to their geometry and structure.

CFSQ, and CFSW, hinges with built-in safety switch: being safety devices with specific properties, they require a specific argumentation which is illustrated in the product datasheet.

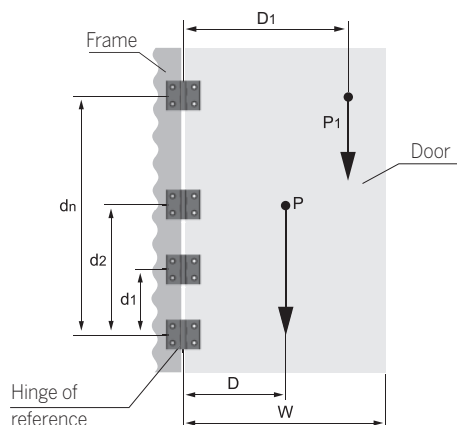
## LOAD SUITABILITY CHECK Hinged door on a vertical axis

- P** = weight of the door [Newton]
  - P1** = additional extra load [Newton]
  - W** = width of the door
  - D** = distance [metres] between the centre of gravity of the door and the hinge axis. In normal conditions  $D = W/2$
  - D1** = distance [metres] between the hinge axis and the additional extra load application point
  - N** = number of hinges
  - dT** = sum of the distances in metres of all the hinges from the hinge of reference ( $dT = d1+d2+...+dn$ ).  
In case of only two hinges assembled, dT is simply the distance between them.
- The three conditions must be satisfied.

$$\frac{(P+P1)}{N} \leq Ea$$

$$\frac{[(P \cdot D) + (P1 \cdot D1)]}{dT} \leq Er \text{ (closed door)}$$

$$\frac{[(P \cdot D) + (P1 \cdot D1)]}{dT} \leq E90 \text{ (90° open door°)}$$



## Suggestions for a correct assembly

The correct assembly of the hinges requires a drilling on the mounting wall with diameter not wider than 0,5 mm of the diameter of the assembling screw in order to leave the least clearance possible. The suggested tightening torque should not be exceeded.



### EXAMPLE

- P** = 10 Kg = **98 N** (10·9.81) weight of the door  
**P1** = 2 Kg = **20 N** (2·9.81) weight of the additional extra load applied (for example: handle, lock, machine control panel fitted onto the door)  
**W** = 1 m width of the door  
**D** = W/2 = 1/2 = **0.5 m** distance between the centre of gravity of the door and the hinge axis  
**D1** = **0.90 m** distance between the hinge axis and the additional extra load application point  
**N** = **2** (evaluating use of two hinges)  
**dT** = **1.3 m** (in this case it is simply the distance between the two hinges)

$$\frac{(P+P1)}{N} = \frac{(98+20)}{2} = 59N \leq E_a$$

$$\frac{[(P \cdot D) + (P1 \cdot D1)]}{dT} = \frac{[(98 \cdot 0.5) + (20 \cdot 0.9)]}{1.3} = 51N \leq E_r$$

$$\frac{[(P \cdot D) + (P1 \cdot D1)]}{dT} = \frac{[(98 \cdot 0.5) + (20 \cdot 0.9)]}{1.3} = 51N \leq E_{90}$$

The suitable hinge can be chosen among those which present  $E_a$ ,  $E_r$ ,  $E_{90}$  values higher than the calculated ones.

Take CFD., series for example, the suitable hinges are CFD.30 B-M3 and CFD.30 CH-B-M3, CFD.40 B-M4, CFD.40 CH-4-B-M4 and CFD.40 CH-4-p-M4x18, all CFD.48 and CFD.66.

Hinges CFD series satisfying the three conditions indicated in the example above.

Resistance tests	Axial stress		Radial stress		90° Angled Stress		
	Maximum working load	Load at breakage	Maximum working load	Load at breakage	Maximum working load	Load at breakage	
	Ea [N]	Ra [N]	Er [N]	Rr [N]	E90 [N]	R90 [N]	
Code	Description						
422711	CFD.30 B-M3	60	690	70	490	60	500
422721	CFD.30 p-M3x13	70	750	40	340	30	390
422731	CFD.30 p-M3x13-B-M3	60	690	40	340	30	390
422741	CFD.30 B-M3-p-M3x13	60	690	40	340	30	390
422751	CFD.30 CH-3-B-M3	100	830	110	720	70	670
422761	CFD.30 CH-3-p-M3x13	60	730	50	450	30	350
422811	CFD.40 B-M4	160	1710	150	1340	100	700
422821	CFD.40 p-M4x18	110	1230	140	880	50	730
422831	CFD.40 p-M4x18-B-M4	110	1230	140	880	50	700
422841	CFD.40 B-M4-p-M4x18	110	1230	140	880	50	700
422851	CFD.40 CH-4-B-M4	120	162	150	1220	130	1110
422861	CFD.40 CH-4-p-M4x18	150	1480	140	820	100	860
422911	CFD.48 B-M5	260	2440	260	1700	120	1640
422921	CFD.48 p-M5x17	290	1770	240	1840	110	1740
422931	CFD.48 p-M5x17-B-M5	260	1770	240	1700	110	1640
422941	CFD.48 B-M5-p-M5x17	260	1770	240	1700	110	1640
422951	CFD.48 CH-5-B-M5	330	2530	240	1890	290	1870
422961	CFD.48 CH-5-p-M5x17	150	2170	120	1200	110	970
423011	CFD.66 B-M6	450	4130	320	2520	220	2250
423021	CFD.66 p-M6x16	470	3260	260	1700	240	1580
423031	CFD.66 p-M6x16-B-M6	450	3260	260	1700	220	1580
423041	CFD.66 B-M6-p-M6x16	450	3260	260	1700	220	1580
423051	CFD.66 CH-6-B-M6	430	3660	410	2610	310	2830
423061	CFD.66 CH-6-p-M6x16	350	3090	280	1770	180	1610









ELESA+GANTER er også håndhjul, stjernegreb og fingerskruer, låse og hængsler, fødder, rørklemmer, justérenheder, mekaniske tællere, skueglas, magneter, hjul, propper og filtre.  
Rekvirér det store hovedkatalog på [www.klee.dk](http://www.klee.dk) eller tlf. 43 86 83 33.



Copyright BRD. KLEE A/S. Der tages forbehold for trykfej og ændringer i produktspecifikationer.