

- ① GB FRIMEDA Lifting Anchor ring clutches
- ② D Transportanker Ringkupplungen System FRIMEDA
- ③ F Anneau de levage pour système FRIMEDA
- ④ NL FRIMEDA transportankers Ringkoppeling
- ⑤ PL Sprzęgi kotew transportowych FRIMEDA
- ⑥ CZ Přepravní úchyty s kulovou hlavou FRIMEDA



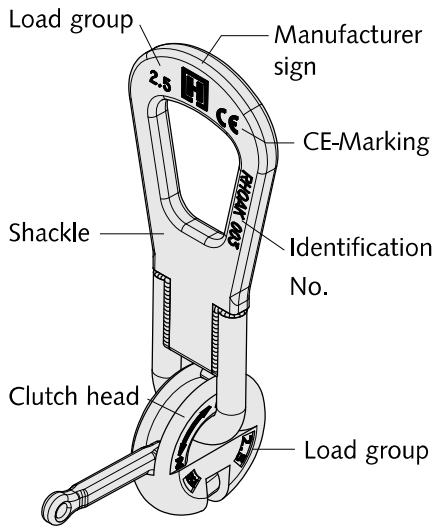
Assembly Instructions • Montageanleitung • Notice d'utilisation • Montagehandleiding
Instrukcja montażu • Montážní návod



HALFEN
YOUR BEST CONNECTIONS

Marking, load groups and classes

TPA-R1 Ring clutch with handle



TPA R1				
Designation	Load group	Load group colour	Load class – lifting anchors	Load capacity – ring clutch in all directions [kN] ①
TPA-R1 2,5	2,5	orange	0,7	7.0
			1,4	14.0
			2,0	20.0
			2,5	25.0
TPA-R1 5,0	5,0	black	3,0	30.0
			4,0	40.0
			5,0	50.0
TPA-R1 10,0	10,0	green	7,5	75.0
			10,0	100.0
TPA-R1 26,0	26,0	blue	12,5	125.0
			14,0	140.0
			17,5	175.0
			22,0	220.0
			26,0	260.0

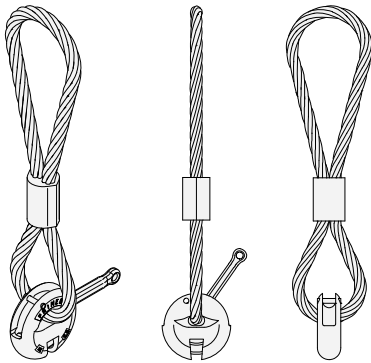
① Maximum load capacity of the ring clutch is determined by the lifting anchor's load capacity.



Before each use visually check all lifting equipment for correct application and damage-free condition. It is prohibited to use damaged lifting equipment.

Lifting ring clutch with cable loop

TPA-R2 Ring clutch with cable loop



The clutch heads and bolts are manufactured similar to the hand-operated ring clutch with shackle. The application follows the same rules.

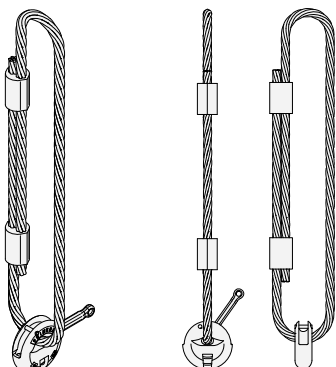
TPA R2/R3				
Designation	Load group	Load group colour	Load class – lifting anchors	Load capacity – ring clutch in all directions [kN] ①
TPA-R2 1,25	1,25	blue	1,25	12.5
TPA-R2 2,5	2,5	orange	0,7	7.0
			1,4	14.0
			2,0	20.0
			2,5	25.0
TPA-R2 5,0	5,0	black	3,0	30.0
			4,0	40.0
			5,0	50.0
TPA-R2 10,0	10,0	green	7,5	75.0
			10,0	100.0
TPA-R3 26,0	26,0	blue	12,5	125.0
			14,0	140.0
			17,0	170.0
			22,0	220.0
			26,0	260.0

① Maximum load capacity of the ring clutch is determined by the lifting anchor's load capacity.



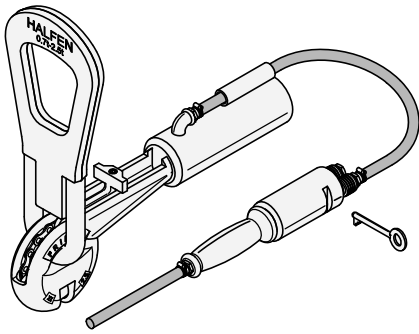
Before each use visually check all lifting equipment for correct application and damage-free condition. It is prohibited to use damaged lifting equipment.

TPA-R3 Ring clutch with cable loop

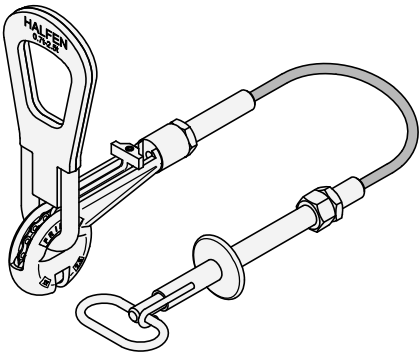


Lifting ring clutch with remote control

TPA-F1 Ring clutch with pneumatic remote release



TPA-F2 Ring clutch with manual remote release



Lifting ring clutches with hand-operated or pneumatic remote control are designed for releasing in difficult to access locations or from a safe distance. Connection and operating procedures follow the same rules as for the manual ring clutch. Uncoupling by hand-operated remote control; disengage release handle from the safety hook. Open clutch by pulling the release handle. Uncoupling by pneumatic remote control; open the clutch using the key in the hand valve.

TPA F1/F2				
Designation	Load group	Load group colour	Load class – lifting anchors	Load capacity – ring clutch in all directions
				[kN] ①
TPA-F1/F2 2,5	2,5	orange	0,7	7.0
			1,4	14.0
			2,0	20.0
			2,5	25.0
TPA-F1/F2 5,0	5,0	black	3,0	30.0
			4,0	40.0
			5,0	50.0
TPA-F1/F2 10,0	10,0	green	7,5	75.0
			10,0	100.0
			12,5	125.0
TPA-F1/F2 22,0	22,0	blue	14,0	140.0
			17,5	175.0
			22,0	220.0

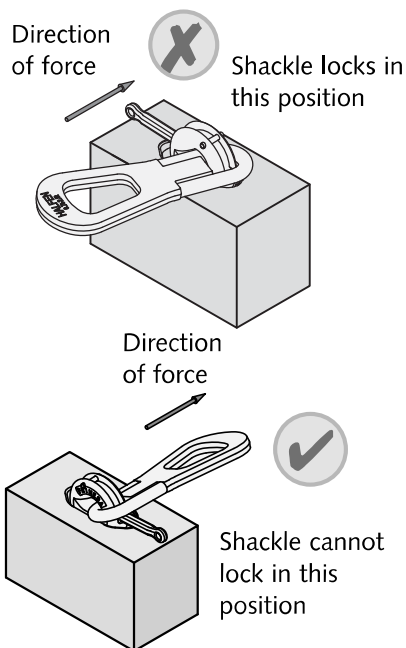
① Maximum load capacity of the ring clutch is determined by the lifting anchor's load capacity.



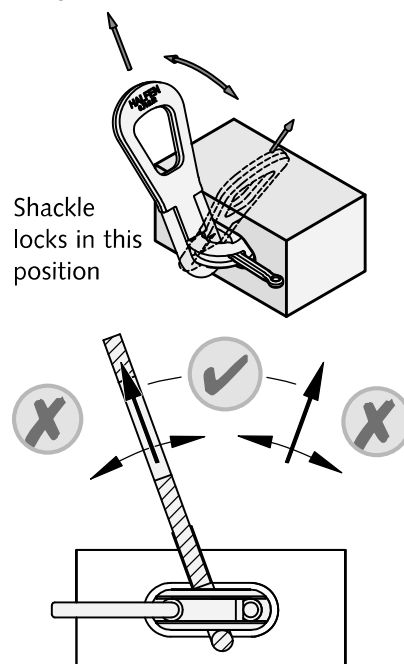
Before each use visually check all lifting equipment for correct application and damage-free condition. It is prohibited to use damaged lifting equipment.

Misuse of the FRIMEDA Ring Clutch

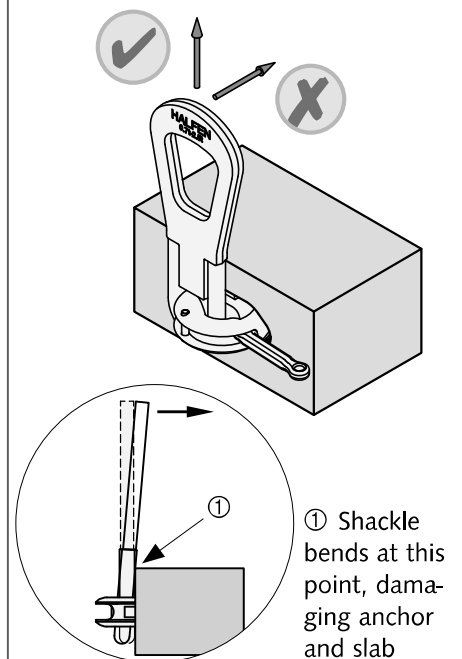
If the shackle is beneath the clutch head when subjected to the load, it may lock in the position illustrated. The round shackle will bend when under load.



In the upper position, the shackle may lock within the clutch housing. A narrow lifting cable angle will cause the shackle to bend. The problem can be overcome by turning the shackle through approx. 45°.

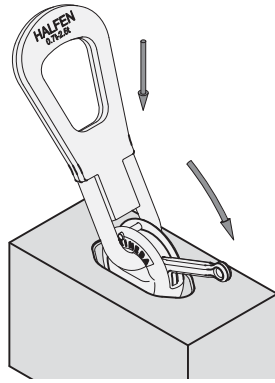


If the shackle is pulled towards the top surface of the slab when subjected to the load, it will bend at the edge of the slab.



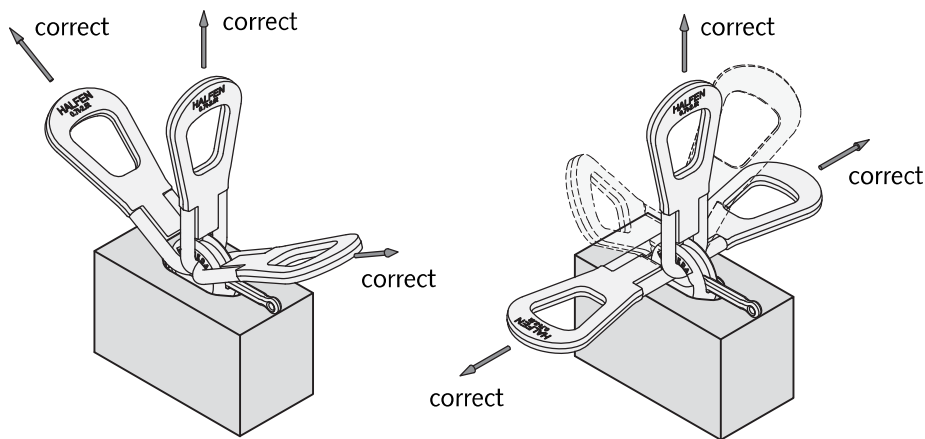
① Shackle bends at this point, damaging anchor and slab

1. Engaging



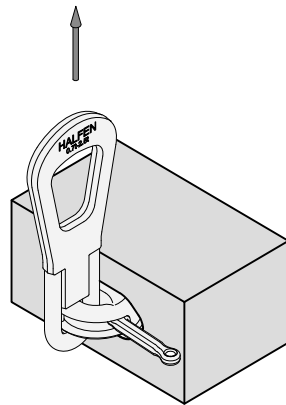
Insert the ring clutch into the recess of the concrete and close the locking bolt (slide) manually, pushing it to the limit position. Then start the lifting operation.

2. Lifting



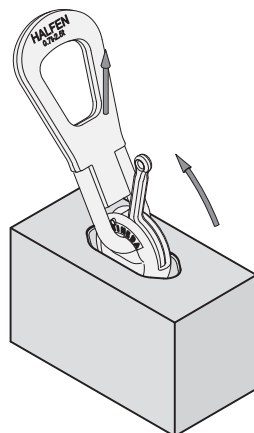
The ring clutch can be subjected to loads in any direction (do not exceed the load limits of the anchors!). Angled pull of up to 60° using a spreader beam is permissible.

3. Tilting slabs without tilting table



The FRIMEDA Rapid lift system can be used to move flat-cast precast units from a horizontal to a vertical position. The direction of pull is at 90° to the cast-in anchor. To avoid the concrete spalling, the erection anchor TPA-FA should be properly embedded in the unit.

4. Releasing



Push the bolt back by hand; the ring clutch can now be removed.

Checking of connection fittings

As with all load-carrying devices, ring clutches must be checked at least once a year by a qualified expert to ensure safe operation. There is no defined maximum working life for FRIMEDA Ring clutches.

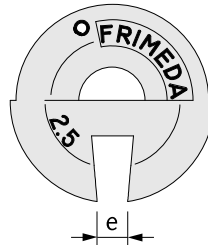
Users are expressly warned against using our products with products of other manufacturers. The correct function and safety of the ring clutches can only be guaranteed when using original FRIMEDA Ring

clutches with FRIMEDA Anchors.

When checking FRIMEDA Ring clutches, the following points must be observed:

Clutch head TPA-R1/R2/R3

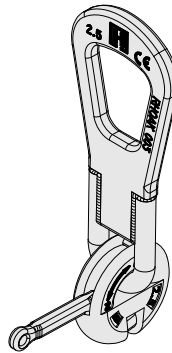
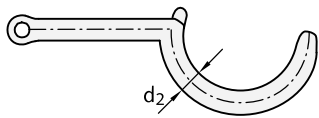
The ring clutch has to be decommissioned if the clutch head has been deformed or the mouth opening is enlarged; this can not be repaired. Refer to the table for allowable wear tolerances.



Load group	Nominal dimension e [mm]	Max. e [mm]
1,25	7.0 ±0.12	8
2,5	12.0 ±0.5	14
5,0	18.0 +0.5/-1.0	20
10,0	22.0 ±0.5	24
26,0	34.0 +2.0/-1.0	38

Replacing the locking bolt on ring clutches

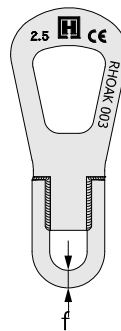
Ring clutches with worn or bent locking bolts must be decommissioned. Refer to the table for allowable wear tolerances.



Load group	Nominal dimension d ₂ [mm]	Min. d ₂ [mm]
1,25	8.0 +0.4/-0.6	7
2,5	13.0 +0.7/-0.4	12
5,0	16.5 +0.7/-0.4	15
10,0	23.5 +0.8/-0.4	22
26,0	32.0 +0.9/-0.5	30.5

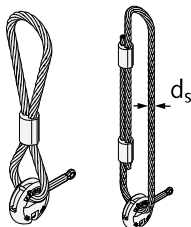
TPA-R1 Shackle

Clutches with visible signs of damage or excessive wear must be decommissioned immediately. Refer to the table for allowable wear tolerances.



Load group	Nominal dimension f [mm]	Min. f [mm]
2,5	14 ± 0.4	12.5
5,0	20 ± 0.6	18.5
10,0	26 ± 0.8	24
26,0	40 ± 1.0	38.0

TPA-R2/R3 Wire cables



cables, or more than 10 ruptured wires for cable-laid rope

- damage or severe wear to the cable connector or cable-end connector
- high number or ruptured wires

As the clutch head usually has a longer service life than the wire loop, clutch heads with worn wire cables can be replaced by HALFEN.

Wire cables should be checked for the following defects:

- kinking and buckling
- any broken braid
- signs of corrosion
- slackening of the outermost exposed layer in free length
- crushing in free lengths
- crushing in the loop with more than 4 ruptured wires for braided

Checking the wire cables has to include looking for signs of slipping between the cable and the ferrule. Wire cables must be kept away from any aggressive material to avoid corrosion; acids, alkaline fluids etc. Crane hooks must have a large radius. Sharp-edged hooks or hooks with small radii, can lead to unacceptable damage of the wire cables.

Decommission wire cables immediately if the following numbers of ruptured wire cables are visible:

Cable type	No. of visible ruptured wires over a length of		
	3d _s	6d _s	30d _s
Braided cable	4	6	16