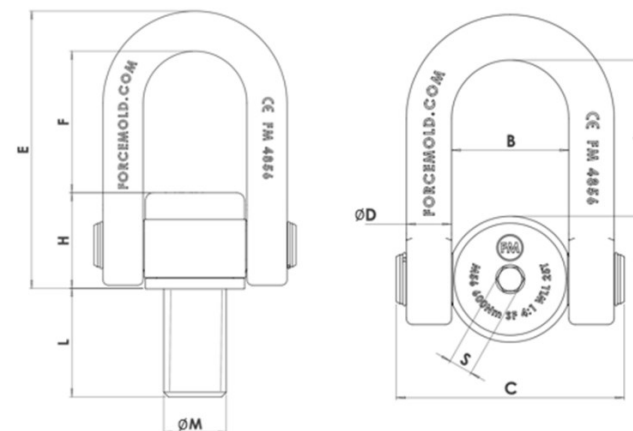


FORCE|MOLD

FM-SERIES

Double Swiveling Rings

**PRODUCT DESCRIPTION**

Anchor points for lifting loads.
Adjustable 360°.

CERTIFICATION-QUALITY

Machinery Directive 2006/42/EC.
Delivered with EC declaration of conformity.

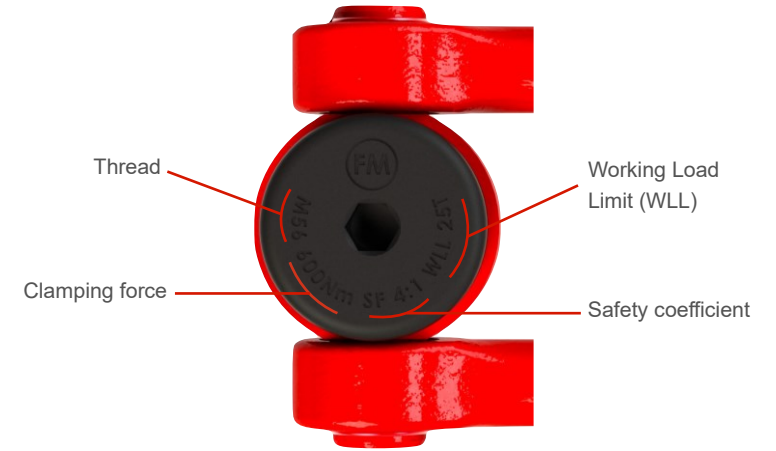
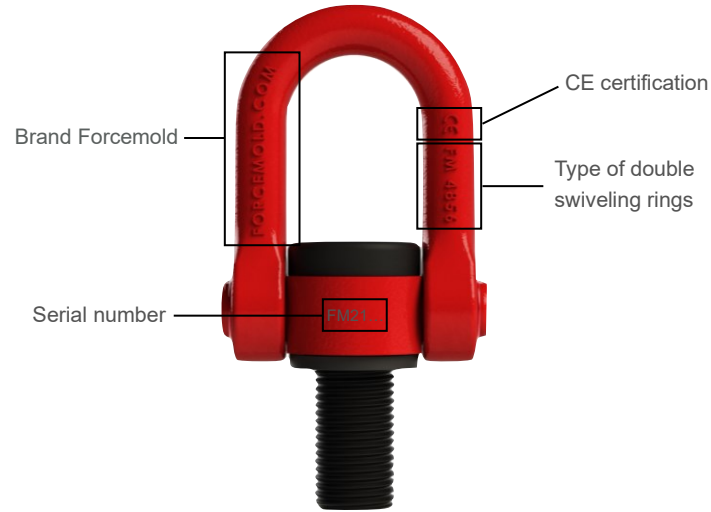
| Item No. | Size: (6H) ØM | Working Load Limit SF 4:1 | Dimensions (mm) | | | | | | | | | Torque (Nm) | Total Weight (Kg) |
|----------|------------------|------------------------------|-----------------|-----|----|-----|----|-----|-----|----|----|-------------|-------------------|
| | | | L | A | B | C | ØD | E | F | H | S | | |
| FM 08 | M8 x 1,25 | 0,5T | 13 | 50 | 37 | 72 | 14 | 100 | 50 | 36 | 10 | 8 | 0,73 |
| FM 10 | M10 x 1,5 | 0,9T | 19 | 50 | 37 | 72 | 14 | 100 | 50 | 36 | 10 | 10 | 0,75 |
| FM 12 | M12 x 1,75 | 1,3T | 23 | 50 | 37 | 72 | 14 | 100 | 50 | 36 | 10 | 15 | 0,78 |
| FM 16 | M16 x 2 | 2,3T | 31 | 50 | 37 | 72 | 14 | 100 | 50 | 36 | 10 | 50 | 0,80 |
| FM 20 | M20 x 2,5 | 3,2T | 26 | 73 | 54 | 100 | 20 | 145 | 76 | 49 | 12 | 100 | 2,10 |
| FM 24 | M24 x 3 | 5,5T | 37 | 73 | 54 | 100 | 20 | 145 | 76 | 49 | 12 | 160 | 2,20 |
| FM 30 | M30 x 3,5 | 8,5T | 46 | 99 | 73 | 146 | 30 | 200 | 111 | 70 | 17 | 250 | 6,10 |
| FM 36 | M36 x 4 | 12T | 55 | 99 | 73 | 146 | 30 | 200 | 111 | 70 | 17 | 320 | 6,30 |
| FM 42 | M42 x 4,5 | 15T | 63 | 99 | 73 | 146 | 30 | 200 | 111 | 70 | 17 | 400 | 6,50 |
| FM 48 | M48 x 5 | 20T | 74 | 124 | 93 | 181 | 36 | 250 | 120 | 86 | 19 | 600 | 12,30 |
| FM 56 | M56 x 5,5 | 25T | 85 | 124 | 93 | 181 | 36 | 250 | 120 | 86 | 19 | 600 | 12,80 |



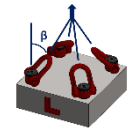
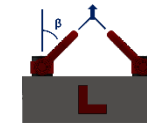
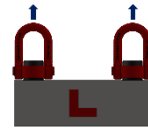
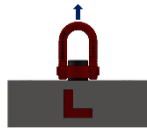
If changes, repairs and/or treatments are made to the product, the terms of guarantee are no longer applicable and the manufacturer declines all responsibility.



For any lifting not shown in the lifting angle table, please contact the manufacturer.



Lifting Method



| N° of lifting rings | | 1 | 1 | 2 | 2 | 2 | 2 | 4 | 4 |
|-------------------------------|-------|-----|-----|-----|-----|---------------------|----------------------|---------------------|----------------------|
| Inclination Angle β (°) | | 0 | 90 | 0 | 90 | $0 < \beta \leq 45$ | $45 < \beta \leq 60$ | $0 < \beta \leq 45$ | $45 < \beta \leq 60$ |
| Ton-force Factor | | 1 | 1 | 2 | 2 | 1,4 | 1 | 2,1 | 1,5 |
| Working Load Limit (tnf) | FM 08 | 0,5 | 0,5 | 1 | 1 | 0,7 | 0,5 | 1,05 | 0,75 |
| | FM 10 | 0,9 | 0,9 | 1,8 | 1,8 | 1,26 | 0,9 | 1,89 | 1,35 |
| | FM 12 | 1,3 | 1,3 | 2,6 | 2,6 | 1,82 | 1,3 | 2,73 | 1,95 |
| | FM 16 | 2,3 | 2,3 | 4,6 | 4,6 | 3,22 | 2,3 | 4,83 | 3,45 |
| | FM 20 | 3,2 | 3,2 | 6,4 | 6,4 | 4,48 | 3,2 | 6,72 | 4,8 |
| | FM 24 | 5,5 | 5,5 | 11 | 11 | 7,7 | 5,5 | 11,55 | 8,25 |
| | FM 30 | 8,5 | 8,5 | 17 | 17 | 11,9 | 8,5 | 17,85 | 12,75 |
| | FM 36 | 12 | 12 | 24 | 24 | 16,8 | 12 | 25,2 | 18 |
| | FM 42 | 15 | 15 | 30 | 30 | 21 | 15 | 31,5 | 22,5 |
| | FM 48 | 20 | 20 | 40 | 40 | 28 | 20 | 42 | 30 |
| FM 56 | 25 | 25 | 50 | 50 | 35 | 25 | 52,5 | 37,5 | |

ASSEMBLY

Assembly absolutely must be done by qualified and trained people following to current European standards on the place of use.

The following point must be carried out:

- ✓ Tightened bolt with the torque value recommended (do not exceed it).
- ✓ Contact between the whole bolt face and the piece to lift.

Use a calibrated torque wrench set to the torque value recommended and avoid abrupt tightening.

Every swiveling part must stay movable in every direction without meeting any obstacles.

Take the center of gravity into account.

Make sure of the right orientation of the ring in lifting direction.



CONDITIONS OF USE (SAFETY AND OPERATING INSTRUCTIONS)

Lifting operations with this product must be carried out by qualified and trained people following to current European standards on the place of use.

FM-series lifting rings must not be used for operations which defer from the ones that are intended.

The following point must be respected:

- ✓ No lifting of persons
- ✓ Not going under a suspended load
- ✓ Not putting in danger operators in the handling area
- ✓ Avoid any dangerous operations during handlings (ex: shocks, tugs, vibrations)
- ✓ Scrupulous respect of WLL
- ✓ Thread (diameter and/or length) adapted to the material into which it will be screwed (see table)
- ✓ Threaded hole perpendicular to the surface
- ✓ Surface suitable in terms of flatness and dimensions
- ✓ Threaded hole cleaned and compliant with recommended threaded tolerances (6g)
- ✓ Avoid using in this kind of environment: corrosive, explosive, chemical, sandy, acid, moisture
- ✓ Using lifting angle table (table above) for lifting with angle
- ✓ Safety measurement required for risky lifting (for people who undergo the risk)

FM-series lifting rings can be used up to 20,000 load cycles on normal conditions. Be aware that multiple load cycles can occur during a single lifting operation. For high load cycle application use lifting ring with higher WLL.



| Ambient Temperature | Load Limit Reduction |
|---------------------|----------------------|
| Below -40°C | Not Permitted |
| From -40°C to -20°C | -20% |
| From 200°C to 300°C | -10% |
| From 300°C to 400°C | -25% |
| Over 400°C | Not Permitted |



It is the user's responsibility to ensure that any supports and accessories in contact with the device comply with the current European standards on the place of use and are compatible with WLL. The user is responsible for calculating the resistance of the material of the part to lift. Before any lift, the user is responsible for the lifting configuration, taking all parameters into account.

CONTROL AND MAINTENANCE

Control absolutely must be done by qualified and trained people following to current European standards on the place of use (refer to local legislation in force).

Visually check suitability before each use and annual suitability audit.

The following point must be checked:

- ✓ Unusual wear, corrosion, cracks or visible deformations (ex: bending)
- ✓ Clearly readable markings (brand, serial number, CE certification, type, thread, clamping force, safety coefficient and WLL)
- ✓ The ring diameter has not been reduced more than 10% of the original diameter
- ✓ Free ring swiveling in all directions expected
- ✓ Thread conditions
- ✓ Completely bolted and tightened to the structure (torque value)

If these checks give negative outcome, the double swiveling ring must not be use anymore and must be replaced.



Do not disassemble the product.

STORAGE

The device must be stored in a suitable environment (ex: dry, non-corrosive, neither too hot nor too cold).

DISPOSAL

The product packaging must be sent for normal recycling. The product must be recovered as metal scrap.