

Installation instructions Mast with accessories

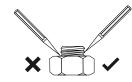
These instructions are intended to ensure a safe and correct installation of our masts. Please follow the instructions carefully to guarantee a secure and stable installation.

Note:



Follow **current safety regulations** during lifting and assembly

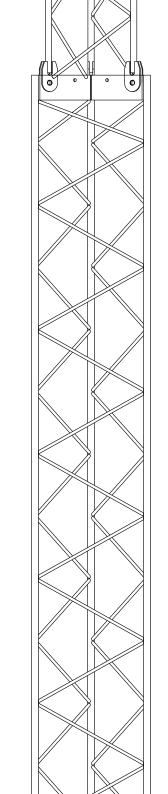
Always use a torque wrench during assembly



After the nuts are tightened, **all threads should be secured** with a punch mark.

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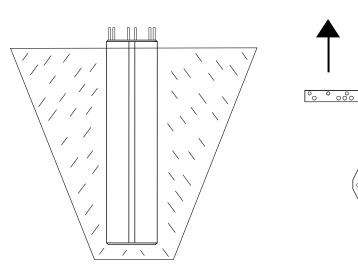
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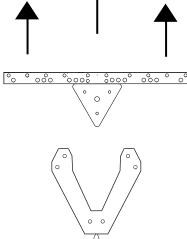


INSTALLATION INSTRUCTIONS

1. Foundation installation

- 1. Dig a hole and lift the foundation as instructed.
- 2. Place the foundation so that approximately 100 mm of the concrete is visible above the **finished** ground level.
- 3. Align the foundation's opening towards the area to be illuminated to ensure proper installation of any equipment at the top of the mast.
- 4. Position the cable in the open side of the foundation.
- 5. Refill with material according to applicable construction standards.
- 6. Compact the material following applicable construction standards.





2. Assembly of mast sections

- 1. Carefully extract the mast sections without damaging the hot-dip galvanization.
- 2. Assemble the sections lying down using the provided joint bolt kits without fully tightening.
- 3. Use a straightedge or spirit level to ensure the mast is straight before fully tightening the bolts.
- 4. Tighten the bolts to the torque specified below and lock the threads with a punch mark.

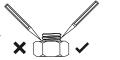
| Joint | Bolt kit (Art. No) | No. of bolts | Bolt type | Torque |
|----------|--------------------|--------------|-------------------|--------|
| 230/340 | 13230450 | 3 pcs | M20 x 45 8.8 VFZ | 400 Nm |
| 340/450 | 13230450 | 3 pcs | M20 x 45 8.8 VFZ | 400 Nm |
| 450/560 | 13450560 | 3 pcs | M24 x 60 8.8 VFZ | 700 Nm |
| 560/690 | 13560890 | 3 pcs | M24 x 100 8.8 VFZ | 700 Nm |
| 690/890 | 13560890 | 3 pcs | M24 x 100 8.8 VFZ | 700 Nm |
| 890/1160 | 13560890 | 3 pcs | M24 x 100 8.8 VFZ | 700 Nm |





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IMPORTANT! Use a torque wrench during installation. Punch mark for all threads in the construction must be performed after tightening.



INSTALLATION INSTRUCTIONS

3. Mounting a foundation adapter on the mast

Adapters are required for masts with bottom sections 230/340/450.

- 1. Attach the adapter to an assembled mast lying down.
- 2. Fit the mast forks over the adapter so the holes align.
- 3. Assemble the adapter and mast using the provided joint bolt kit. Tighten the bolts to the torque specified below and lock the threads with a punch mark.

| Bolt kit (Art. No) | No. of bolts | Bolt type | Torque |
|--------------------|--------------|------------------|--------|
| 13230450 | 3 pcs | M20 x 45 8.8 VFZ | 400 Nm |



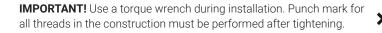


4. Installation of mast on V-foundation

- 1. Thread the lower nuts onto the bottom of the foundation bolts and place washers on top.
- 2. Lift the mast as instructed and position it on the foundation, aligning it over the bolts.
- 3. Place a washer on each bolt and thread on the upper nuts without fully tightening.
- 4. Adjust the mast using the lower nuts until it is level. Ensure it rests on all nuts to prevent skewing during tightening.
- 5. Tighten the bolts to the torque specified below and lock the threads with a punch mark.

| V-foundation | Nut kit (Art. No) | No. of nuts/washers | Nut type | Torque |
|--------------|-------------------|---------------------|----------|--------|
| 340/450 | 13545000 | 6 pcs | M20 VFZ | 220 Nm |
| 560-1160 | 13589000 | 6 pcs | M24 VFZ | 380 Nm |





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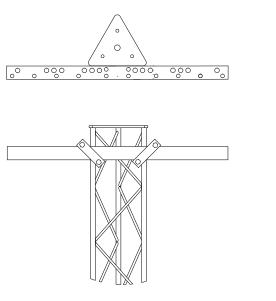
INSTALLATION INSTRUCTIONS

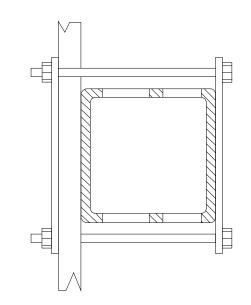
5. Mounting of floodlight beam

The beam is available in lengths of 1, 2, or 3 meters and fits mast sections 230–560.

- 1. If possible, mount the beam on an assembled mast lying down.
- 2. Position the beam in line with the foundation opening so it faces the area to be illuminated.
- 3. Align the beam so that the perforated holes match the illustrated image.
- 4. Use the included bolt kit containing flat bars and bolts to clamp the beam onto the mast's outer round bars.
- 5. Tighten the bolts to the torque specified below and lock the threads with a punch mark.

| Bolt kit (Art. No) | No. of flat bars | No. of bolts | Bolt type | Socket | Torque |
|--------------------|------------------|--------------|-----------|--------|--------|
| 13231162 | 2 pcs | 4 pcs | M12 x 130 | 19 mm | 55 Nm |

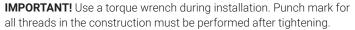




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INSTALLATION INSTRUCTIONS

6. Mounting of 360° rotable bracket

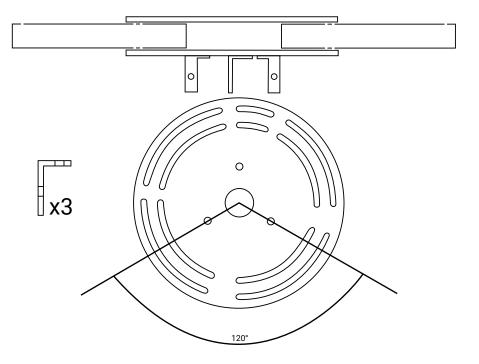
All bolts required are included in the bolt kit with article number 13231160.

1. If possible, mount the bracket on an assembled mast lying down.

For mounting plates on top section 340 >

- Install angle brackets in sequence according to the illustration. Use the provided bolt kit, tighten the bolts to the torque specified below and lock the threads with a punch mark.
- 2. Attach the plates to the mast top using the provided bolts without fully tightening.
- 3. Spread the plates to allow the arms to be inserted and secured with the provided bolts.
- 4. First, tighten the bolts on the arms, then tighten the through bolts on the plates to the torque specified below. Lock the threads with a punch mark after tightening.

| Component | Bolt kit (Art. No) | Bolts/angles | Quantity | Torque |
|--------------------|--------------------|---------------|-------------|--------|
| Plates on 230 | 13231160 | M12 x 100 | 3 pcs | 86 Nm |
| Plates on 340 > | 13231160 | Angle bracket | 3 pcs | - |
| | | M12 x 100 | б рсѕ | 86 Nm |
| Arm for floodlight | 13231160 | M10 x 90 | 2 pcs / arm | 50 Nm |











IMPORTANT! Use a torque wrench during installation. Punch mark for all threads in the construction must be performed after tightening.

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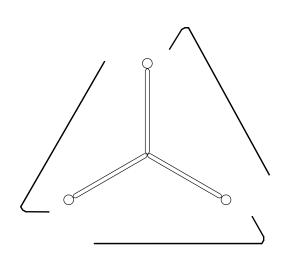
INSTALLATION INSTRUCTIONS

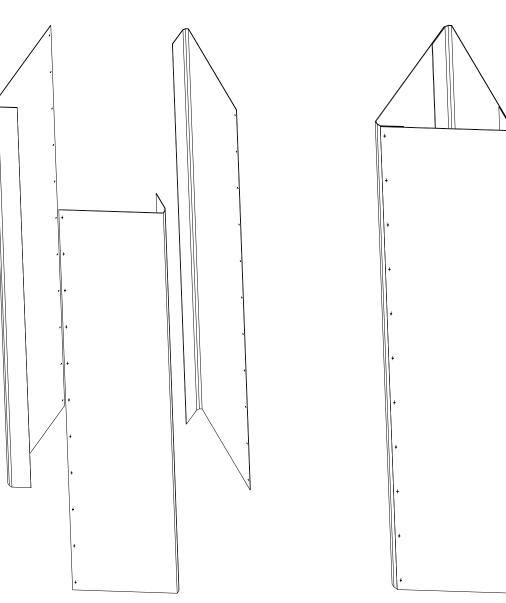
7. Mounting of climbing protection

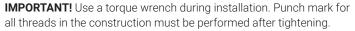
The panels cover all three sides of the mast and are supplied in sizes tailored to each mast section.

- 1. Place the first panel against the side of the mast that faces the area to be illuminated, with the bent edge on the right-hand side.
- 2. Position the remaining panels so that the bent edge fits inside the flat side of the adjacent panel, as shown in the illustration.
- 3. Use the provided self-drilling screws to secure the panels, with 11 screws per joint.

| Screw type | Screws per joint | Total screws |
|---------------|------------------|--------------|
| Self-drilling | 11 pcs | 33 pcs |







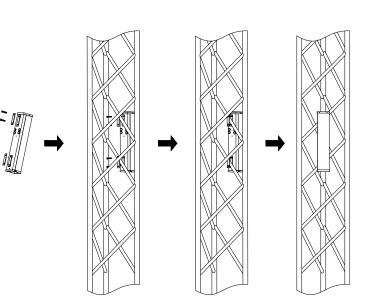


INSTALLATION INSTRUCTIONS

8. Mounting of fuse box 600 mm

Position the fuse box with its lower edge 2.7 m above ground to avoid interference with the installation of any

- 1. Loosen the bolts and brackets on the back of the fuse box.
- 2. Position the fuse box on one flat side of the mast and ensure all bolt holes are visible.
- 3. Ensure there is sufficient space for cables to be inserted without damaging the insulation.
- 4. Place the brackets inside the mast's diagonal rods and tighten all four bolts to secure the fuse box. Cross-tighten to avoid misalignment.

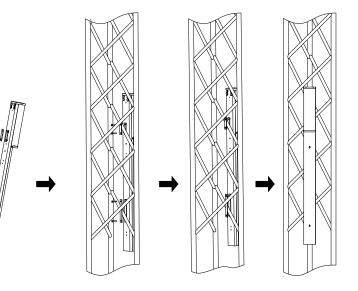


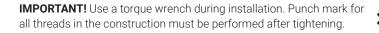


Position the fuse box just above ground level. If the mast is equipped with climbing guards, drilling will be required.

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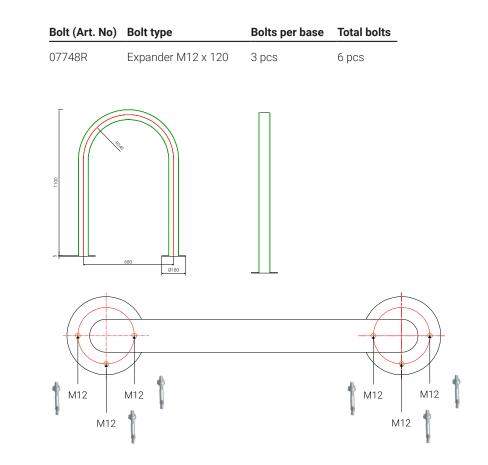
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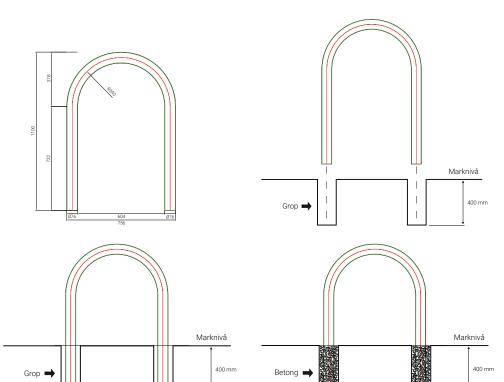
9. Installation of collision protection for casting

- 1. Dig two holes, each 400 mm deep, with a center-to-center distance of 680 mm.
- 2. Lower the collision protection into the holes and secure it so that it stands upright.
- 3. Fill the holes with concrete.

Installation of collision protection for bolting

- 1. Place the collision protection at the desired location.
- 2. Mark the holes and drill with an appropriate drill size.
- 3. Bolt the collision protection in place using the provided expansion bolts.





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10. Lift instructions for V-foundation

Use one long and one short lifting strap to achieve the correct angle of the foundation during lifting.

- 1. Attach the longer strap to the lower wire loop.
- 2. Attach the **shorter strap** to the upper **wire loop**.
- 3. Lift carefully and guide the foundation into the hole.
- 4. Ensure that the lowering process is controlled and that the foundation is in the correct position before releasing it.





INSTALLATION INSTRUCTIONS

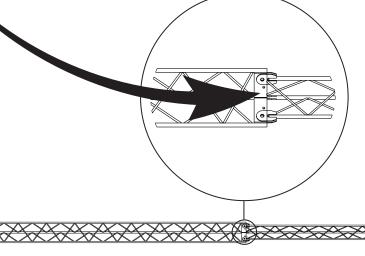
11. Lifting instructions for raising the

Raising of masts is usually performed using a boom lift on a truck.

- 1. Check that the mast is straight by using a straightedge or a long spirit level.
- 2. Ensure that all bolted connections are tightened to the correct torque and that indentation locking has been completed.
- 3. Attach soft lifting straps to the flat bars, ensuring that the mast's round rods are **not** used for lifting.
- 4. Lift carefully until the mast is hanging in a completely vertical position.
- 5. Guide the mast with precision and lower it onto the foundation bolts.









INSTALLATION INSTRUCTIONS



12. Checklist for mast installation

| | Inspection | OK | NOT OK | N/A | Comments |
|-----|--|----|--------|-----|----------|
| 1. | Reception Inspection | | | | |
| 2. | Foundation Inspection (condition/position) | | | | |
| 3. | Mast sections straight (horizontal) | | | | |
| 4. | Mast sections straight (vertical) | | | | |
| 5. | Mechanical damage | | | | |
| 6. | Surface damage | | | | |
| 7. | Torque wrench calibrated | | | | |
| 8. | Foundation nuts tightened to the correct torque | | | | |
| 9. | Joint bolts tightened to the correct torque | | | | |
| 10. | Other bolts tightened to the correct torque | | | | |
| 11. | Punch mark on all threads | | | | |
| 12. | Floodlight beam installed according to instructions | | | | |
| 13. | 360° rotable bracket installed according to instructions | | | | |
| 14. | Other accessories installed according to instructions | | | | |

Project:

Installers on site, signature:

Date: