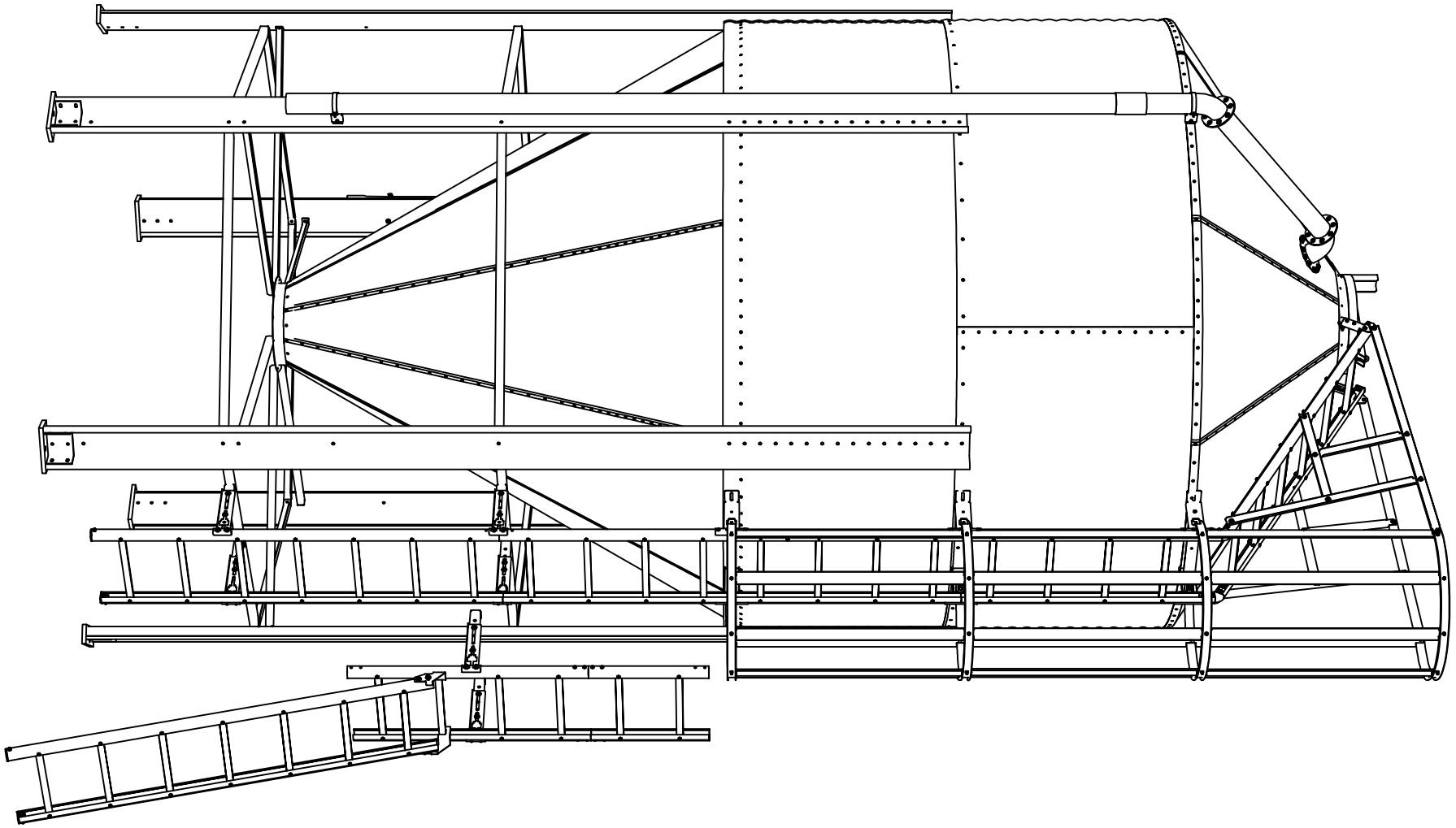


ASSEMBLY MANUAL SILO SG320T60

MANSG320T60IN

This manual has been prepared to help you to use and assemble your silo and accessories correctly. We recommend that you follow them closely to avoid risks incurred from faulty assembly or from using the equipment incorrectly. Failure to follow the instructions can lead to significant personal injury or even death. **Please use caution to ensure your safety.**

This product **should be inspected** as soon as it is received. The client is responsible for ensuring that all the quantities are correct and the material is in perfect condition. Any damage or discrepancy between the quantities listed on the Packing List should be described in your claims report to the shipping company. Our responsibility for damage or missing items in the product ends as soon as the client has signed the correct receipt for it. In any case, it is important to retain all papers and documentation associated with the silo and/or its components.

Until assembly time, the product **should be stored** in a protected location with the lowest humidity possible and protected from direct contact with the floor. Never leave the material out in the weather.

The **guarantee** supplied with the equipment you have purchased is only valid when assembled, used, and maintained correctly.

As manufacturers, our primary concern is the safety of our customers, their employees and livestock. Remember, safety is everyone's responsibility, and that is why it is important for you as proprietor and operator to know and understand the risks and precautions that should be used when operating this equipment. It is equally important that everyone who works or operates in or near the silo area be informed about the risks.

Before Starting:

Decide where you are going to build your silo. Make sure that it is a safe location and above all, use extreme caution if there is the possibility that electric lines might have contact with your silo. Review all the tools that you will need to use during the assembly, and test them to make sure that their security measures are in place and that they are functioning correctly.

During Assembly:

All personnel involved in the assembly and construction of the silo should always wear personal protective equipment. This includes wearing gloves, protective footwear with steel toecaps, helmet, ear protectors, protective glasses and if necessary, respirator masks.

Ground all electrical devices.

Keep in mind that many of the components of your silo are extremely heavy. It is important to use correct lifting techniques that prevent muscle injuries when lifting and moving these pieces. Avoid excessive overloads.

Despite all the care taken during manufacturing, it is not always possible to avoid all the corners and edges that can cause you significant injury. To avoid injury, always handle the pieces with safety gloves and use extreme care.

Make sure that there is no moving component that could take you by surprise during the assembly.

When assembling the silo on its side, it could roll at any time and potentially trap an assembler. For this reason, the silo should always be correctly anchored to the ground.

When effecting any operation in the upper parts of the silo, it is important to do so only with tools that have suspension systems to keep them from falling.

Flag any areas where there is risk of possible danger.

During operation:

Always have telephones on hand ready to contact emergency services.

Make sure that all the safety systems are in perfect working condition and placed correctly.

Keep the silo and its surroundings clean, avoiding any accumulation of decomposing feed and any type of scrap.

Maintain the construction in good condition. Always replace any pieces in poor condition and never use any material that has not been supplied by the silo manufacturer, as this could result in problems using the material that have not been anticipated by our calculations.

Do not undertake any modification without authorization, as this could affect the operation, safety, or the lifetime of the equipment.

To avoid possible electric shock, it is very important to maintain all the electric protective mechanisms of the devices installed on the site. Make sure that all the electric systems are properly grounded.

You should be alert to any danger signals while you are still in the work zone of the site.

When making any repair or maintenance procedure on the silo, all electrical devices should be disconnected, and their circuits should be locked so that no accidental start-ups can take place. If your silo comes with a door in the cylinder, never attempt to open it when the silo is loaded.

When making repairs or effecting maintenance procedures on the inside of the silo, it must be completely empty. Bear in mind that entering a loaded silo represents a real danger of serious injury including death.

In case it is necessary to go into the silo, **the following conditions must be in place**:

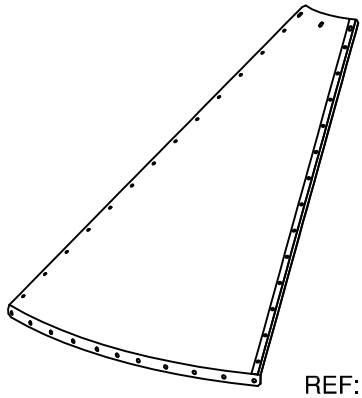
1. The electric power supply has been disconnected and appropriate measures have been taken to prevent an accidental connection.
2. The centre of the silo has been secured.
3. A harness and safety cord are in place appropriately attached.
4. Breathing equipment is available.
5. During the whole time that an operator is inside the silo there should be another on the outside.

If your silo comes equipped with a ladder, it may be used in two different configurations. One with the ladder in fixed position that can only be climbed when there is some protection that prevents access to the silo zone. The other option is to use the hand ladder, which can always be climbed, but has no protection to prevent access to the silo zone. In whichever case**, extreme caution should be used when ascending the silo:**

1. the maximum load for the ladder is 200 kg.
2. Never climb the silo if you observe any damage or incorrect installation of the ladder.
3. Keep the scored surface of the ladder rungs clean and free of any encrusted material.
4. Always remember: ascending a silo is not without risks. For this reason, when you ascend the silo you should wear adequate anti-slip footwear, gloves, and a safety harness.
5. When ascending or descending the silo, always look at the ladder and make sure that you have a good grip.
6. Never ascend the silo if your physical condition is not adequate for the task (fatigue, sleepiness, illness are among the effects of medicines, alcohol, and drugs.)
7. The hand ladder is exclusively to access the fixed ladder of the silo. When using it position it at the most vertical angle possible and never use it in the horizontal position as a gateway.
8. To access the roof, be sure to step only on the ladder rungs. Never step on any of the sectors of the roof.

To assemble the silo the following tools will be needed:

1. Adjustable Wrench
2. Ratchet with extension and set of nozzles
3. Set of fixed wrenches no. 13, 17, and 19.
4. Flat point screw removers
5. 2 35/40 cm pincers (S525).
6. Hammer
7. Drill (at least 450W power) with 14mm bit
8. Concrete drill with 24 mm bit
9. High-impact screw driver with no 13, 17, and 19 size heads



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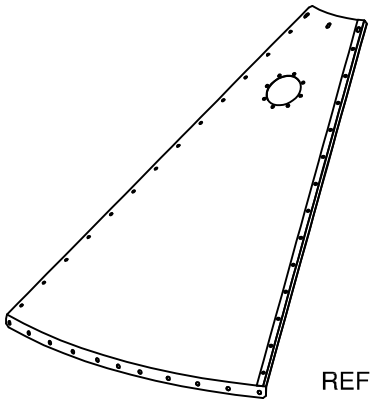

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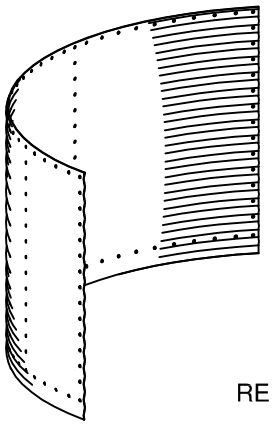

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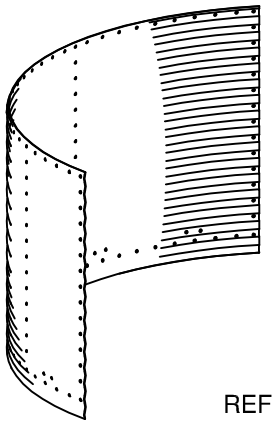

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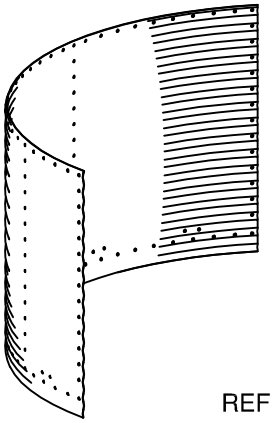

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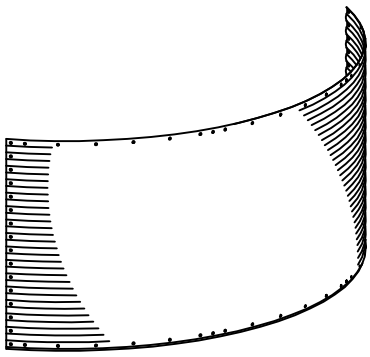

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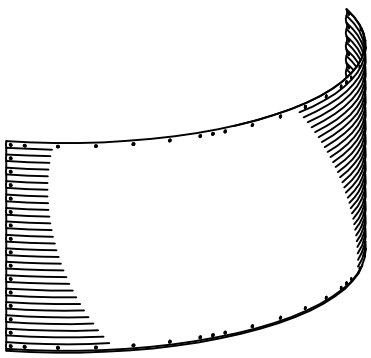

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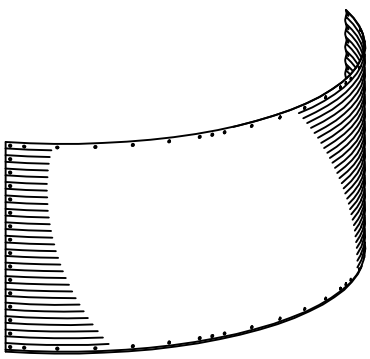

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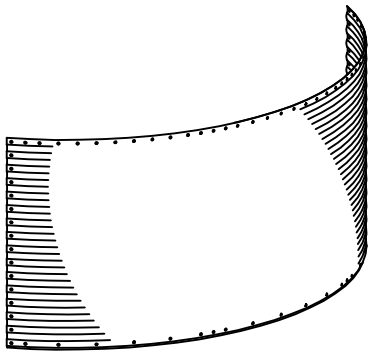

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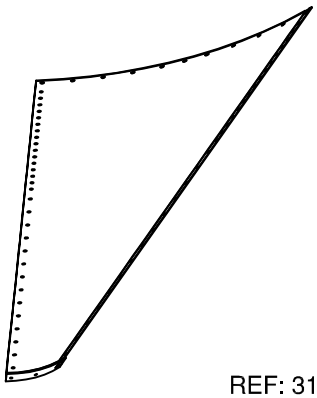

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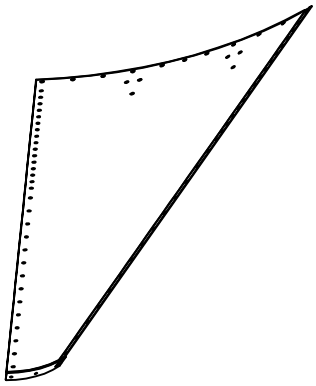

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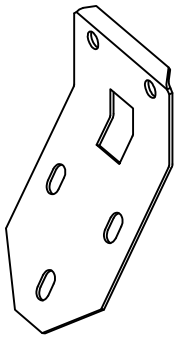

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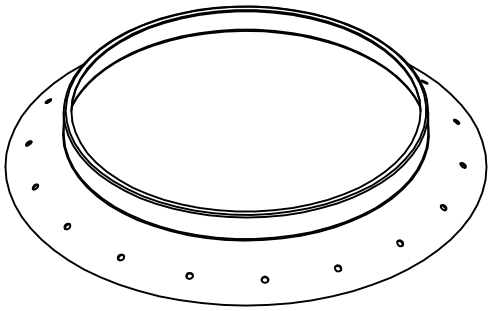

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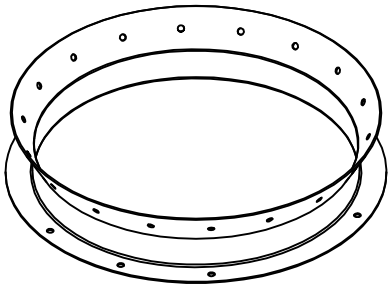

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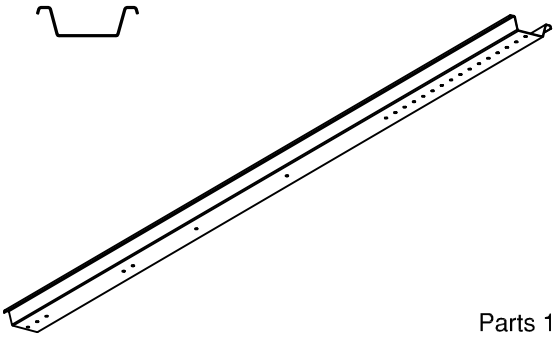

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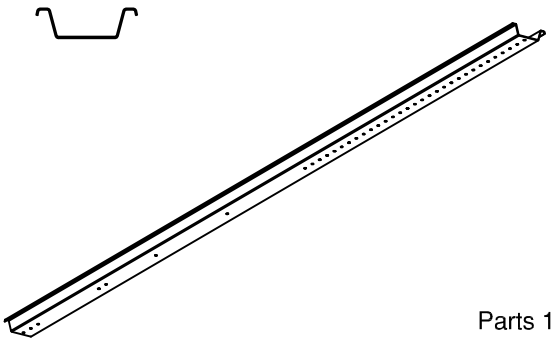

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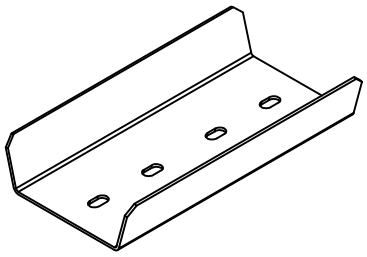

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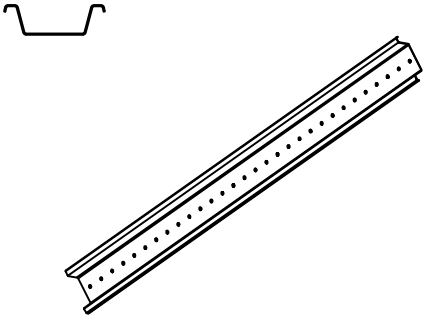

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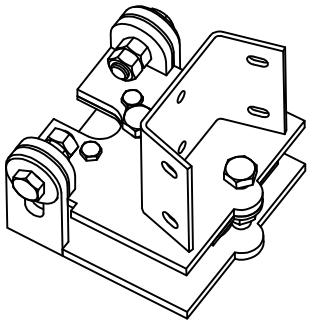

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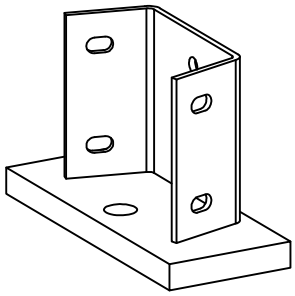

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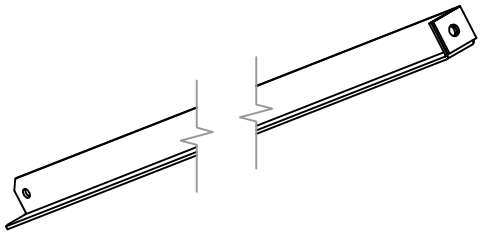

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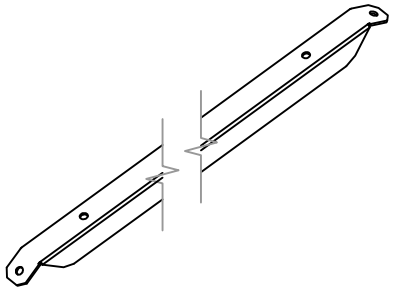

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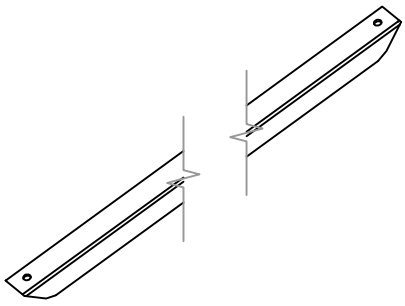

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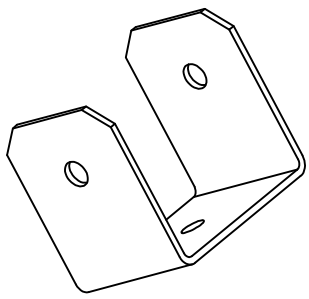

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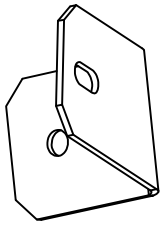

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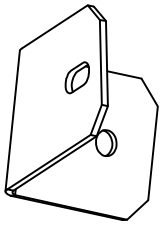

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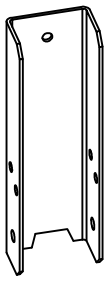

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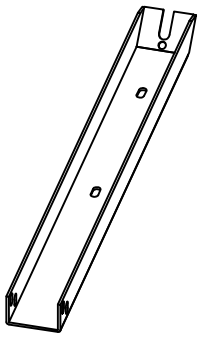

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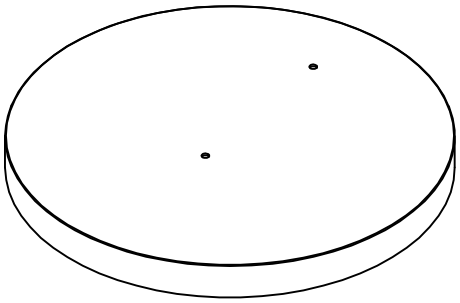

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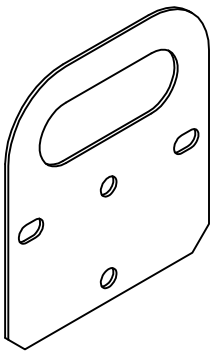

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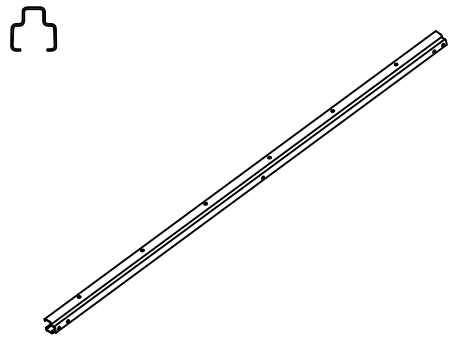

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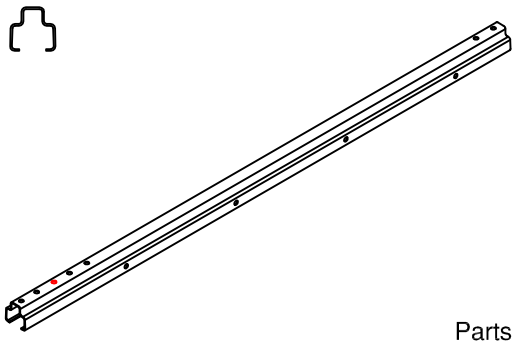

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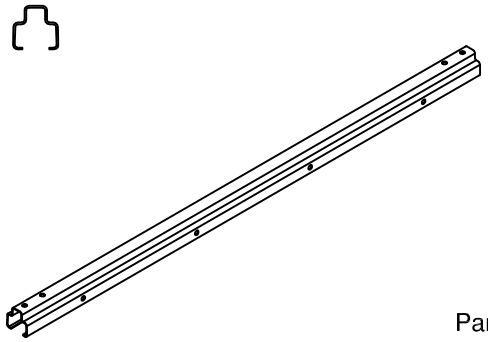

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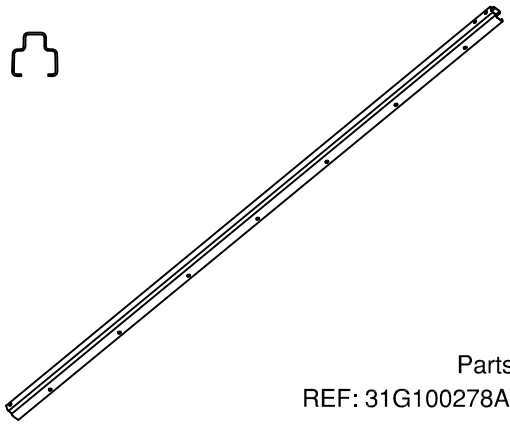

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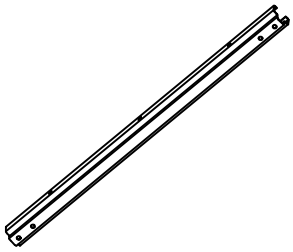

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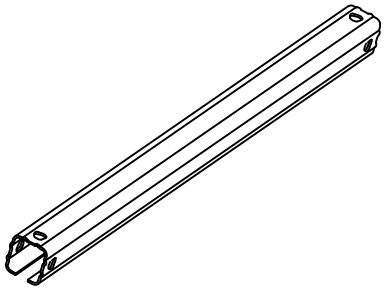

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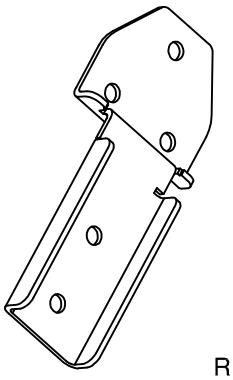

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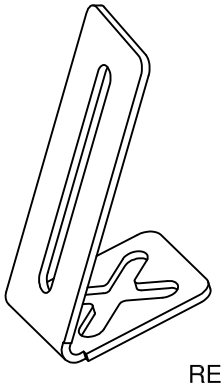

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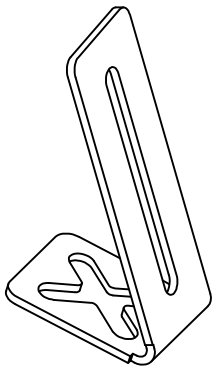

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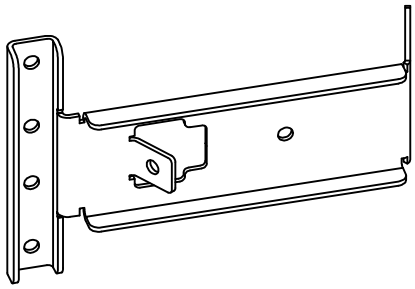

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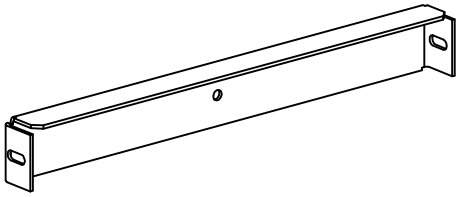

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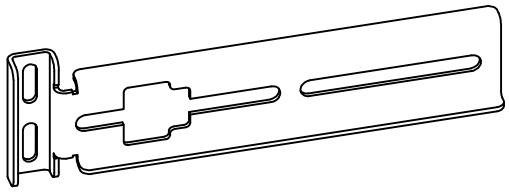

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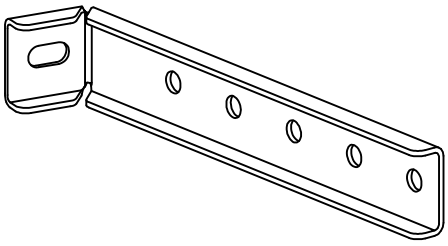

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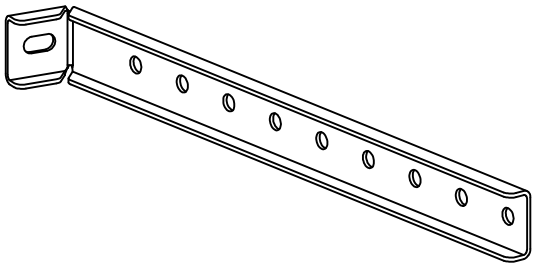

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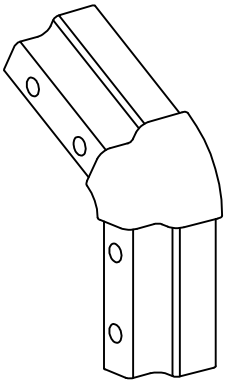

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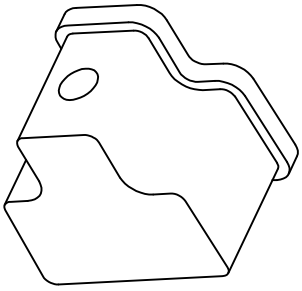

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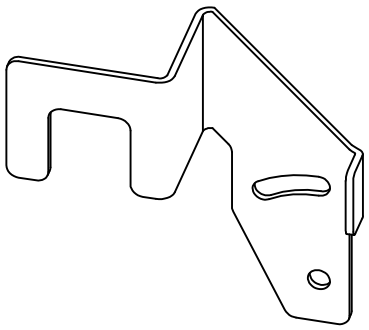

Parts 47
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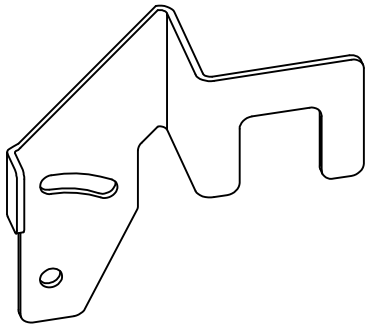

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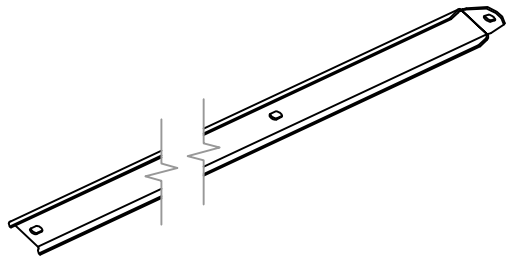

Parts 49
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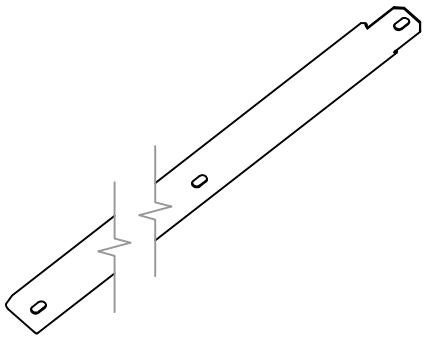

Parts 50
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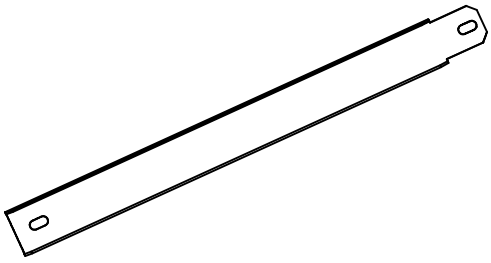

Parts 51
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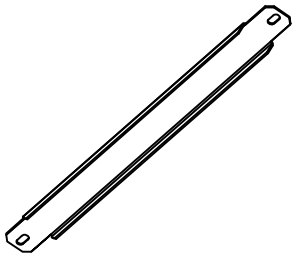

Parts 52
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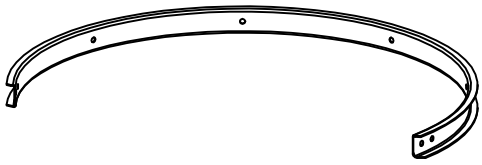

Parts 53
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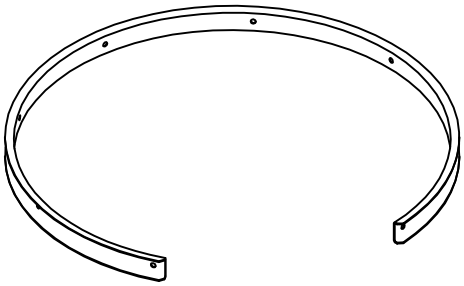

Parts 54
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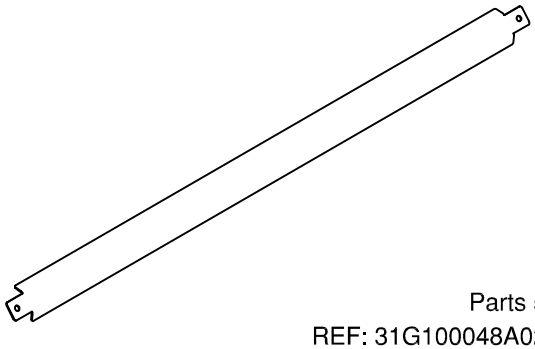

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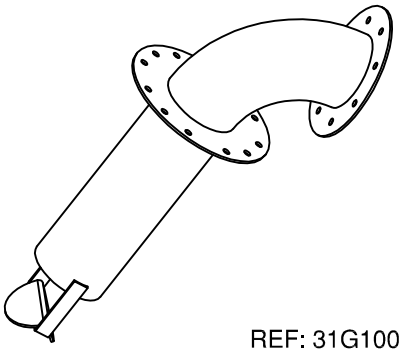

Parts 56
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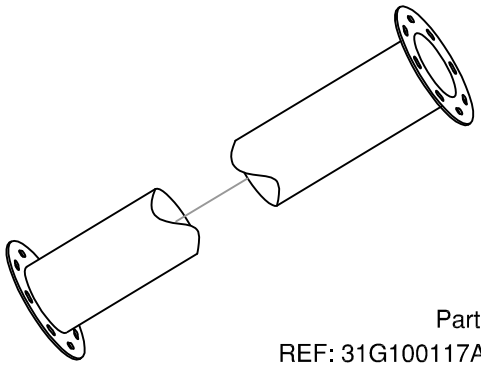

Parts 57
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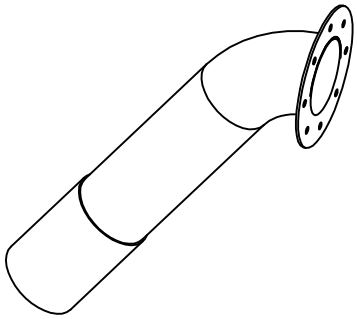

Parts 58
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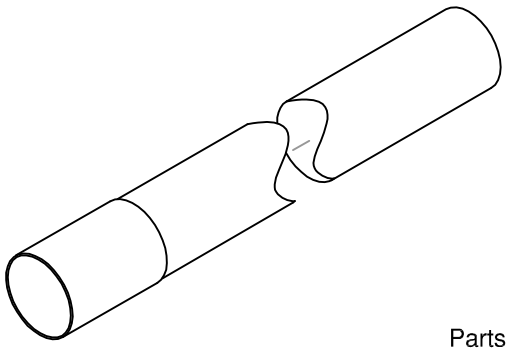

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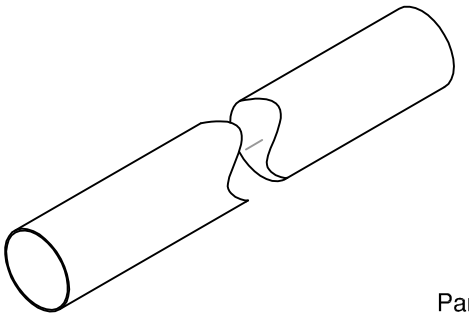

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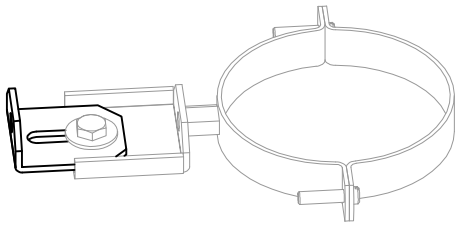

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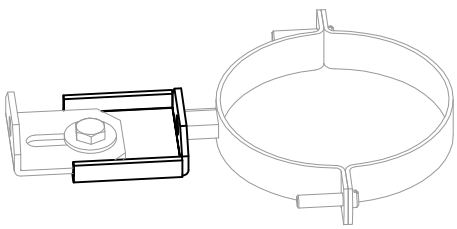

Parts 62
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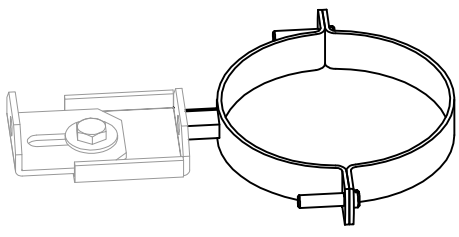

Parts 63
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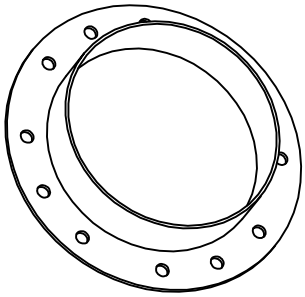

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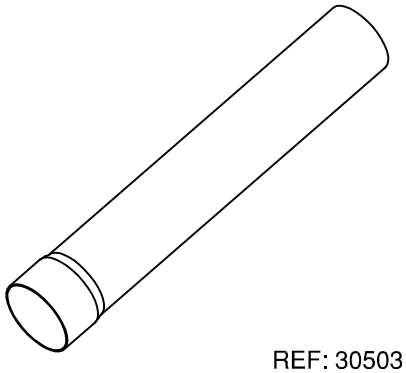

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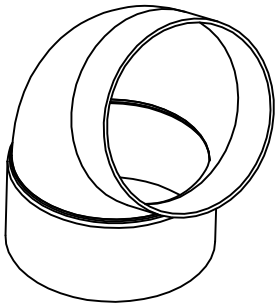

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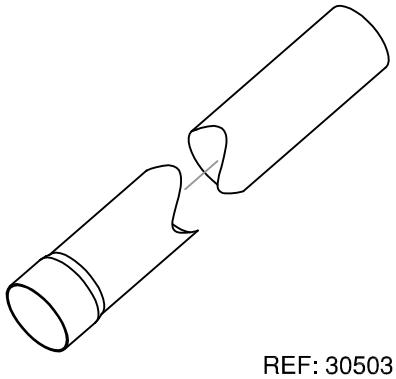

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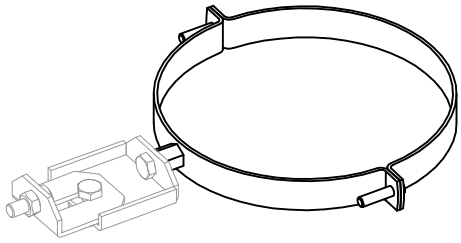

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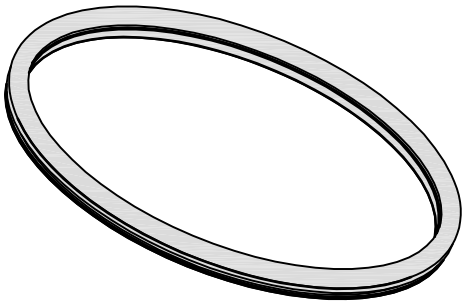
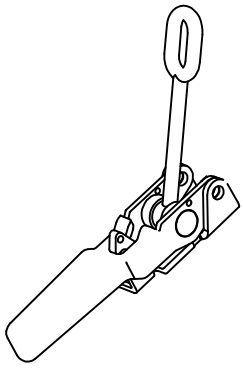


Parts 69
REF: 3000067143



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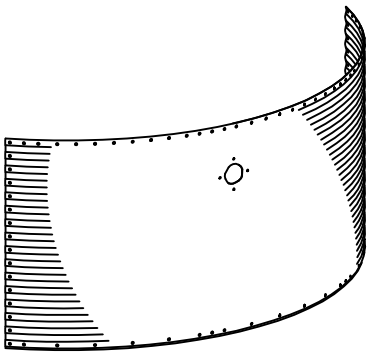

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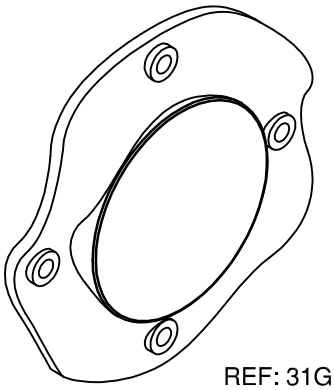

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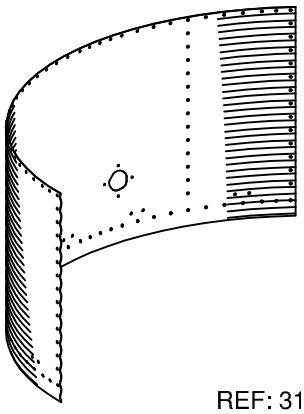

Parts 74
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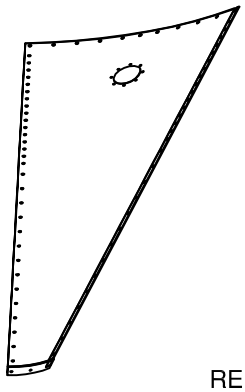

Parts 75
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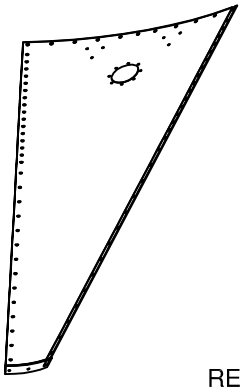

Parts 76
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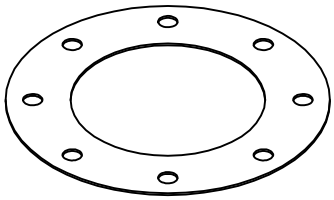

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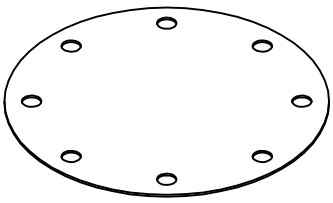

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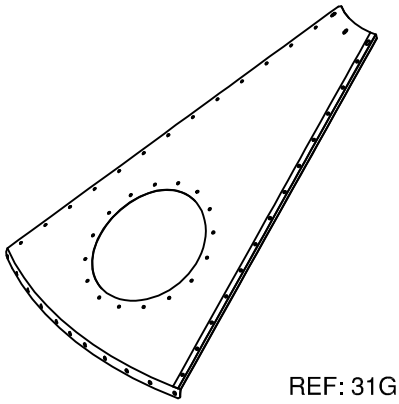

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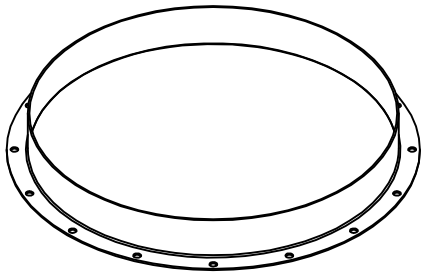

Parts 81
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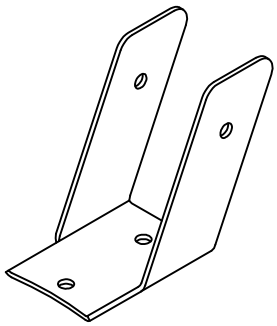

Parts 82
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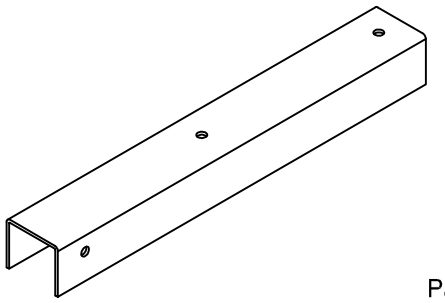

Parts 83
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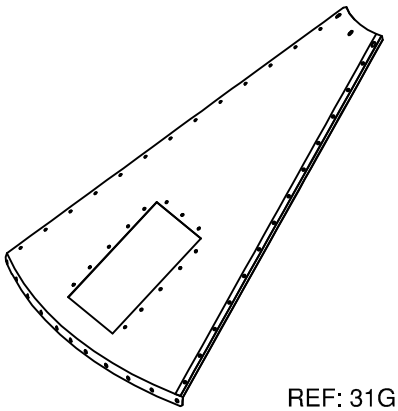

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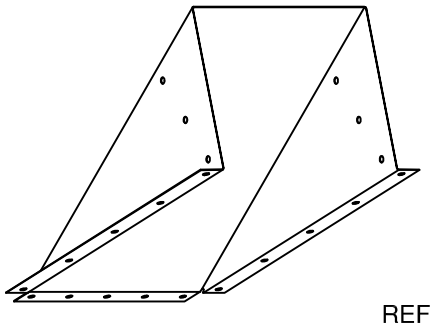

Parts 86
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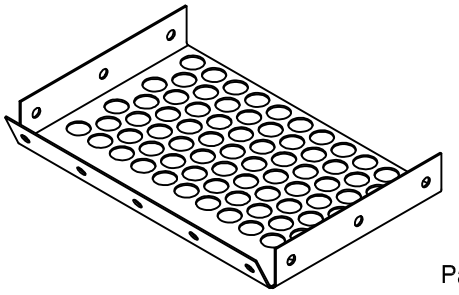

Parts 85
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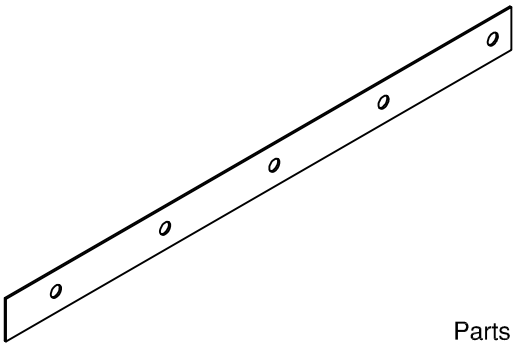

Parts 88
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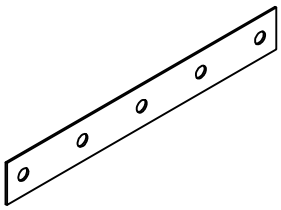

Parts 87
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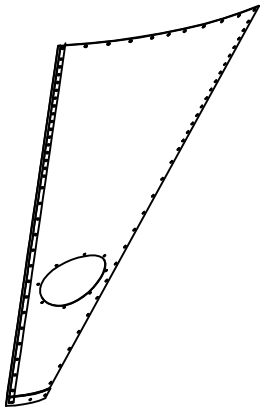

Parts 90
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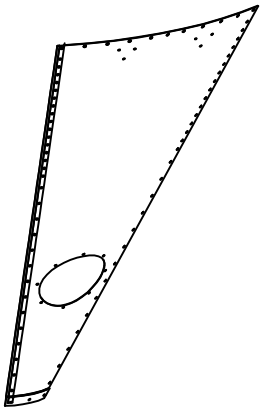

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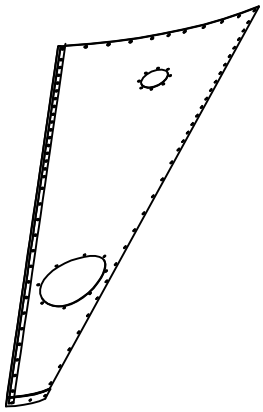

Parts 92
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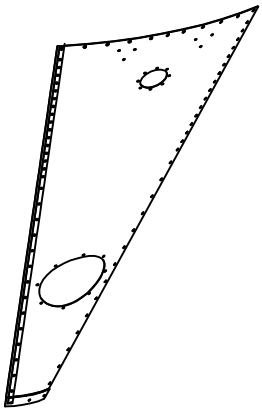

Parts 91
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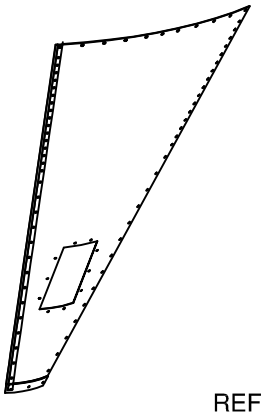

Parts 94
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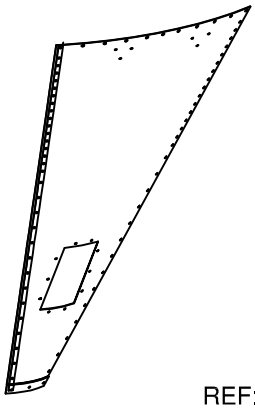

Parts 93
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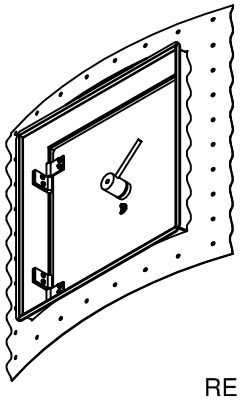

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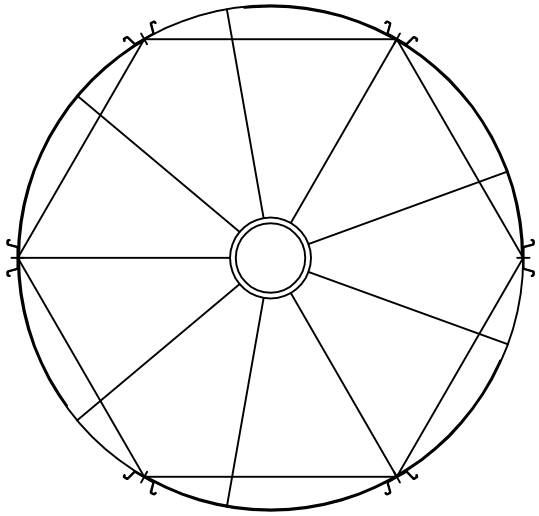
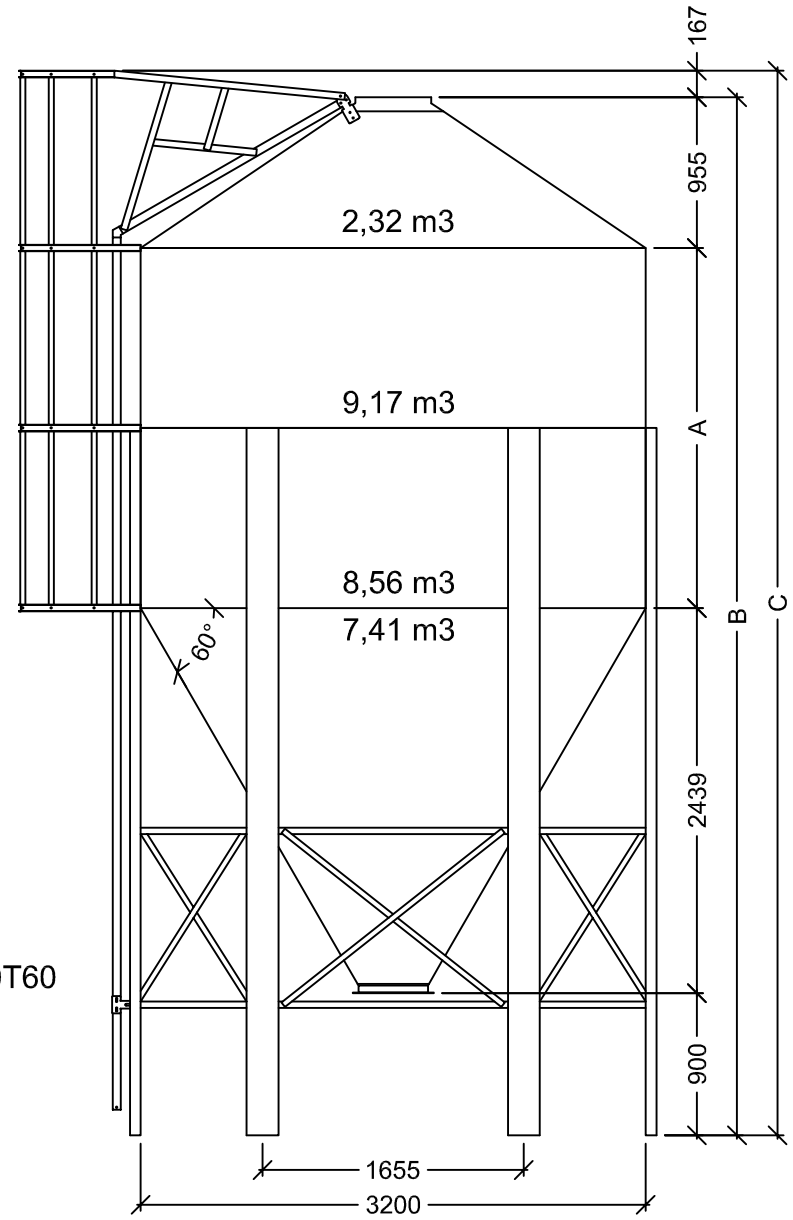


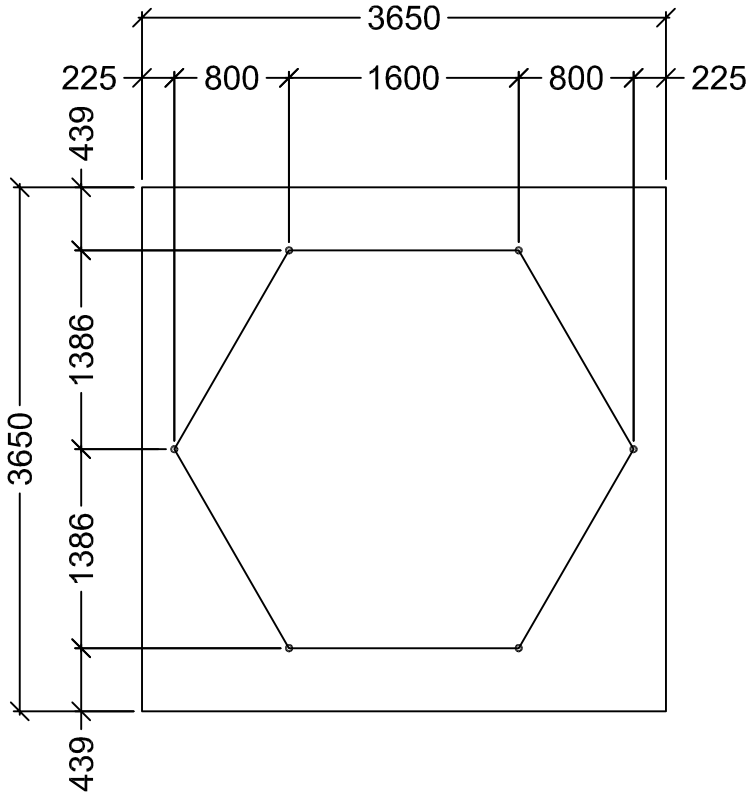
TOP VIEW SG320T60



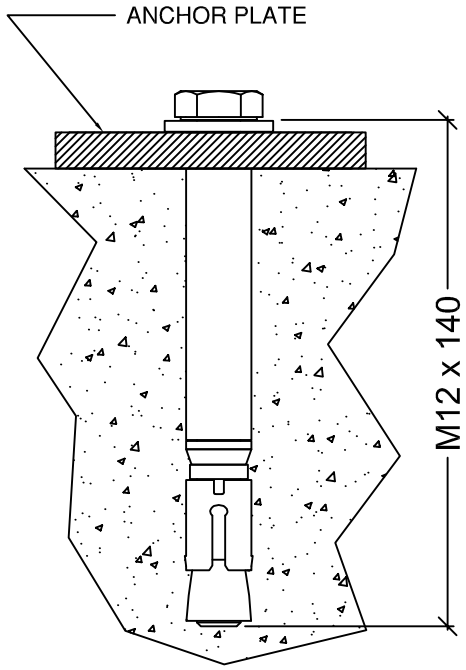
RAISED FRONT VIEW SG320T60

SILO SG320T60					
MODEL	CAPACITY (m3)	A (m)	B (m)	C (m)	WEIGHT (Kg)*
SG320T60/1	18,29 m3	1,140 m	5,434 m	5,601 m	797 Kg
SG320T60/2	27,46 m3	2,280 m	6,574 m	6,741 m	910 Kg
SG320T60/3	36,63 m3	3,420 m	7,714 m	7,881 m	1106 Kg
SG320T60/4	45,80 m3	4,560 m	8,854 m	9,021 m	1267 Kg
SG320T60/5	54,97 m3	5,700 m	9,994 m	10,161 m	1427 Kg

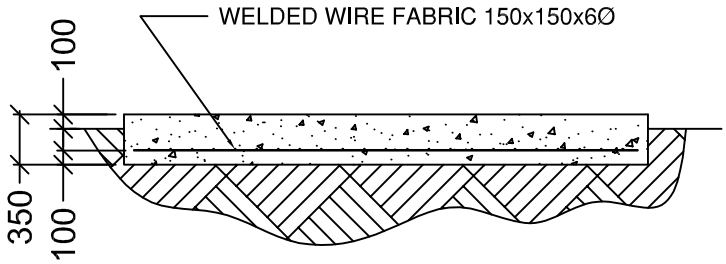
*Maximum weight including ladder and safety cage



ANCHOR BOLTS DISTRIBUTION
IN FOUNDATION



EXPANSION ANCHOR FOR
FASTENING TO CONCRETE



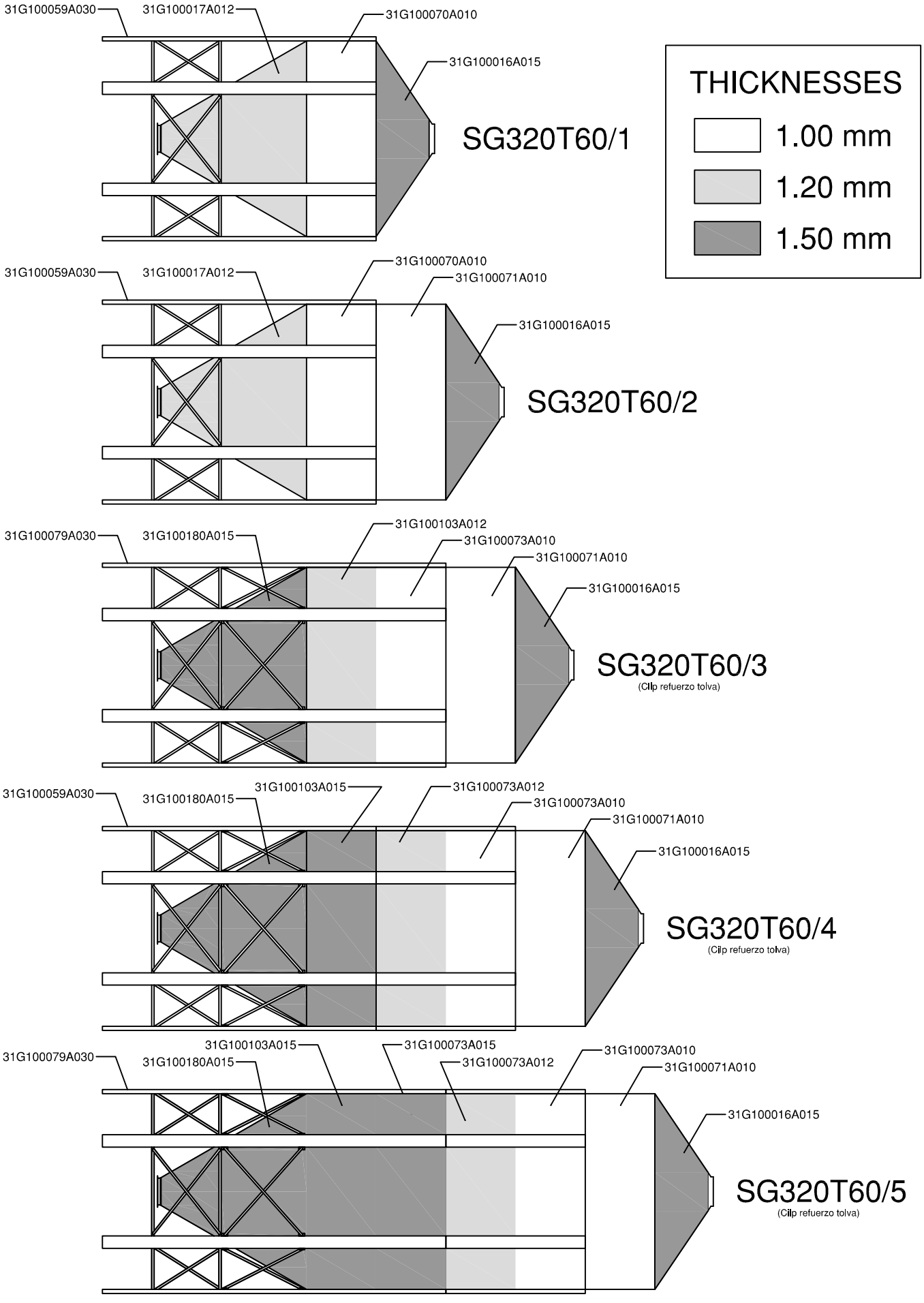
FOUNDATION CROSS SECTION

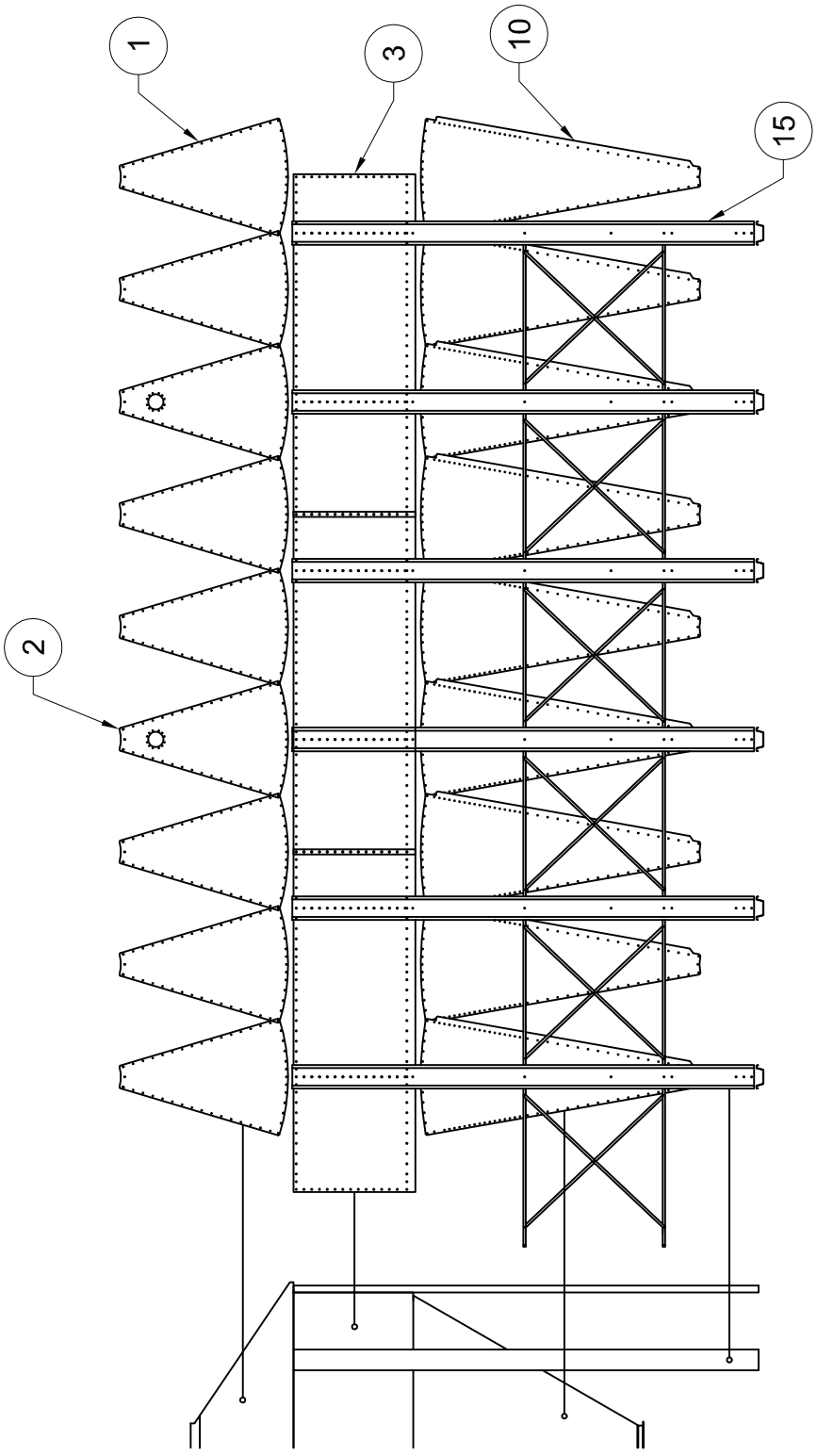
FOUNDATION

All instruction shall be considerated as recomendations only because the installation may vary according to local conditions.

Foundation recomendations are based on a minimum **2 kg/cm2** ground resistance and on a concrete resistance of **250 kg/cm2** at 28 days.

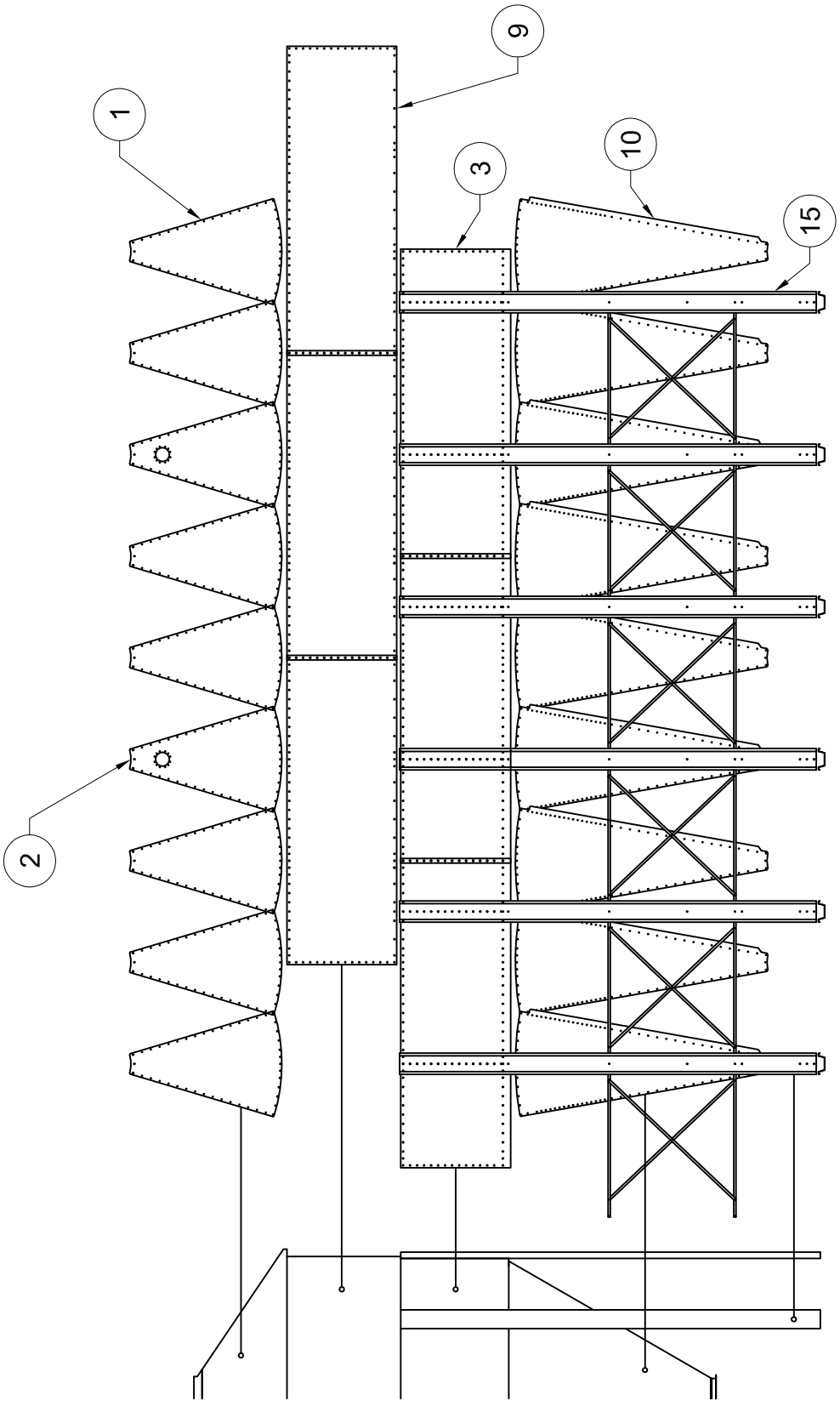
The foundation site must be free of vegetation and debris and well drained.


31G100059A030
31G100017A012
31G100070A010
31G100016A015
SG320T60/1
THICKNESSES
1.00 mm
1.20 mm
1.50 mm
31G100059A030
31G100017A012
31G100070A010
31G100071A010
31G100016A015
SG320T60/2
31G100079A030
31G100180A015
31G100103A012
31G100073A010
31G100071A010
31G100016A015
SG320T60/3
(Cilp refuerzo tolva)
31G100059A030
31G100180A015
31G100103A015
31G100073A012
31G100073A010
31G100071A010
31G100016A015
SG320T60/4
(Cilp refuerzo tolva)
31G100079A030
31G100180A015
31G100103A015
31G100073A015
31G100073A012
31G100073A010
31G100071A010
31G100016A015
SG320T60/5
(Cilp refuerzo tolva)



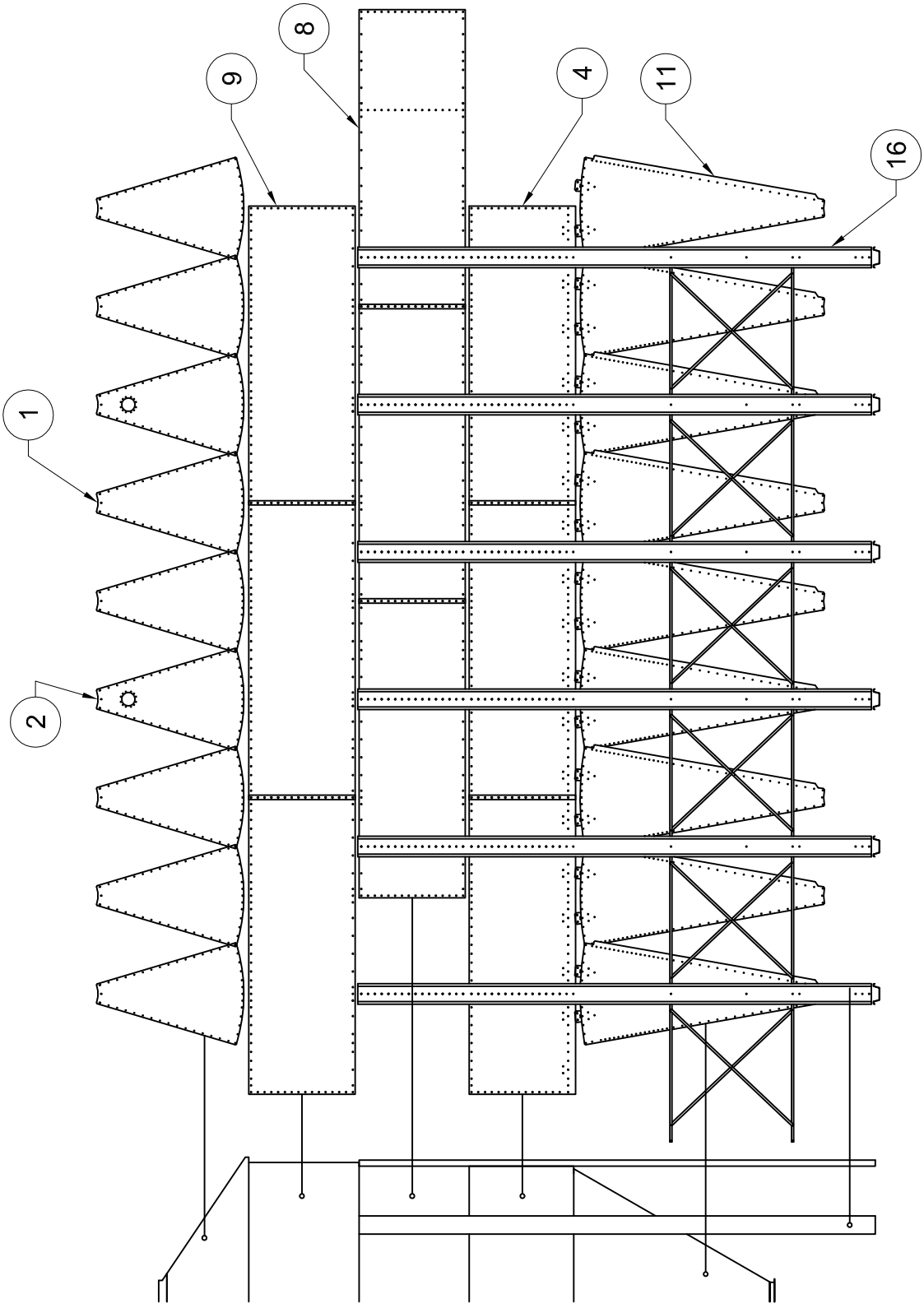
SG320T60/1

Care should be given to the positioning of the vertical sets at each level with respect to those of other levels, axes of hopper sectors, axes of roof sectors, and feet. Before beginning the assembly of a new level, be certain that is the correct position.



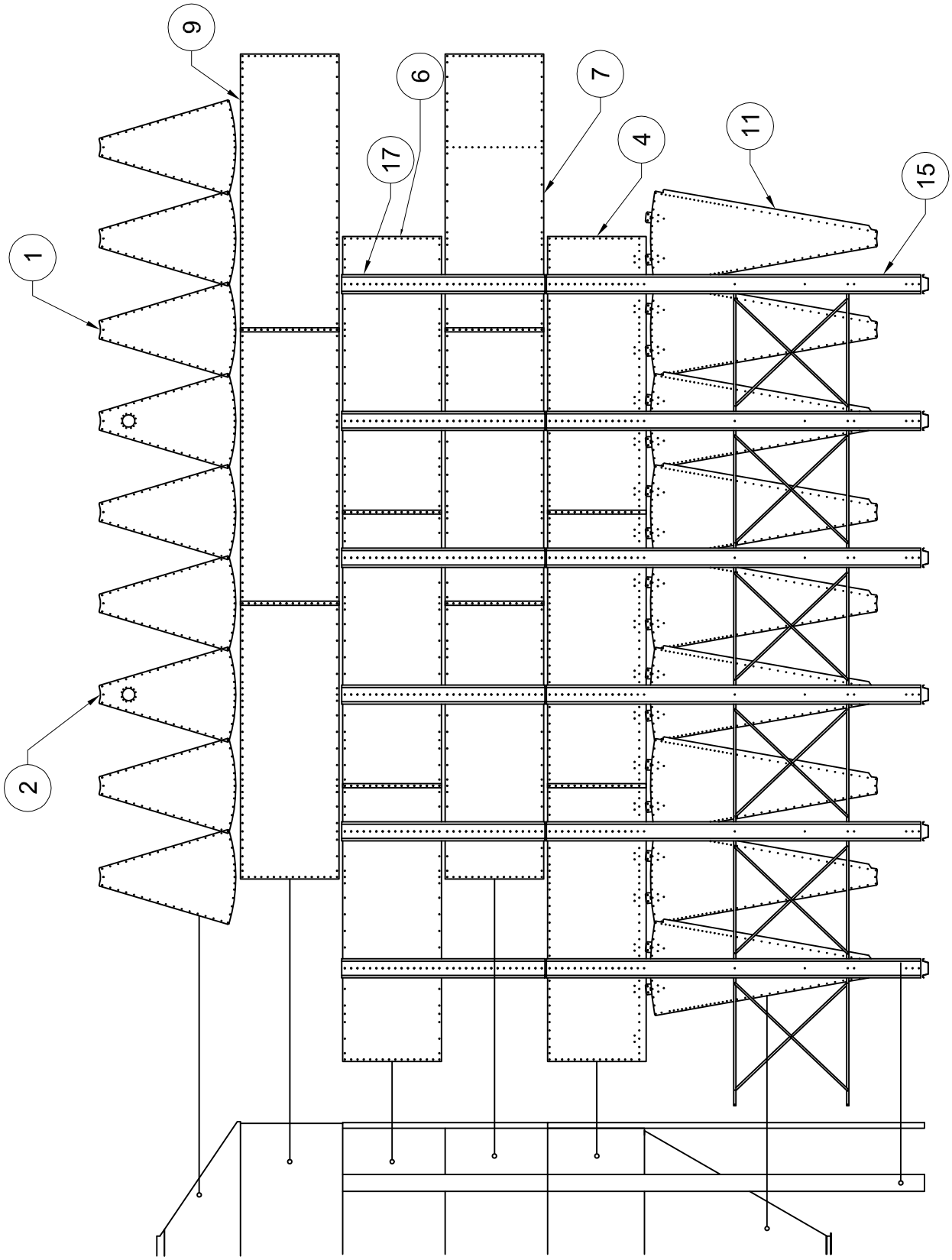
SG320T60/2

Care should be given to the positioning of the vertical sets at each level with respect to those of other levels, axes of hopper sectors, axes of roof sectors, and feet. Before beginning the assembly of a new level, be certain that is the correct position.



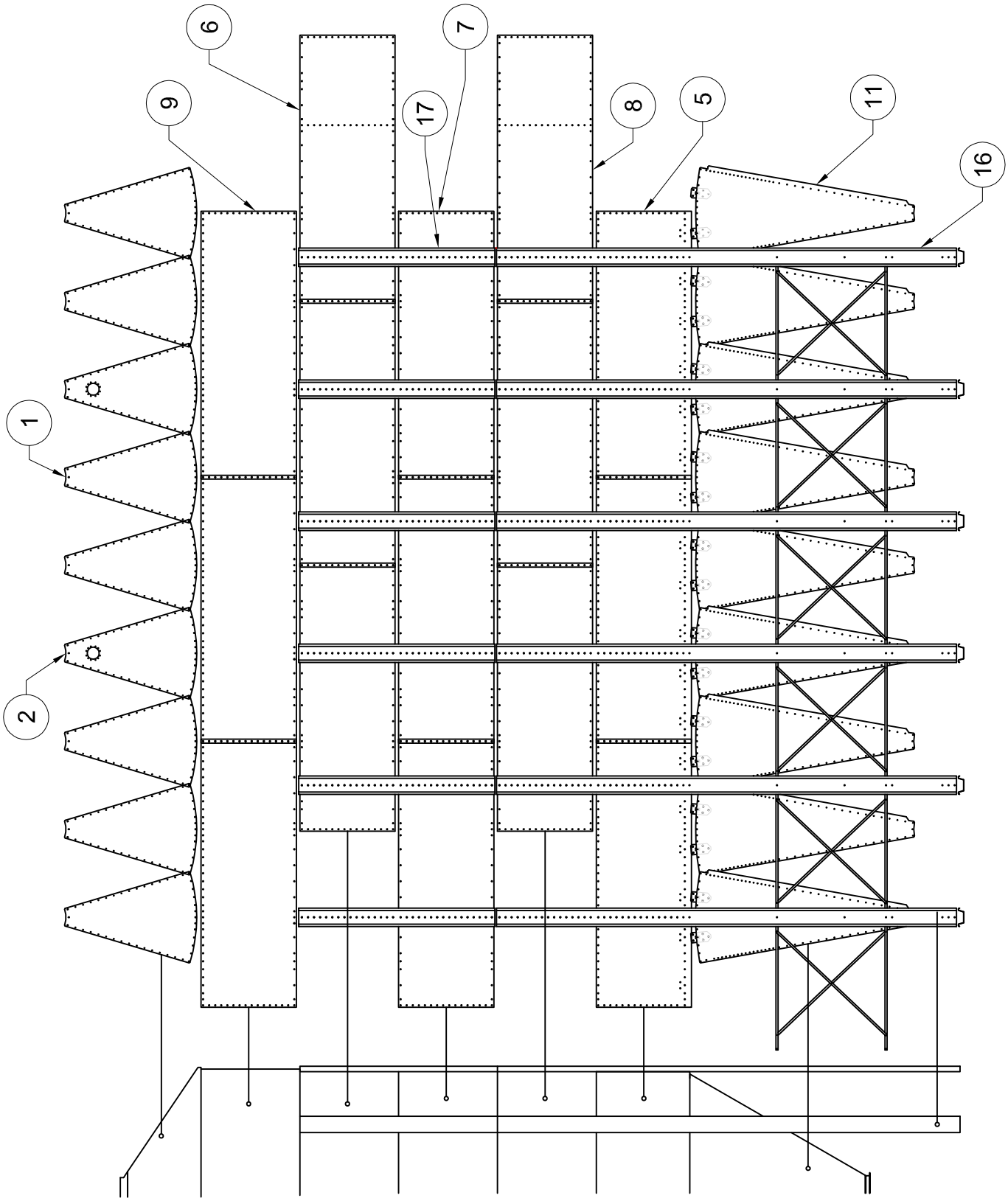
SG320T60/3

Care should be given to the positioning of the vertical sets at each level with respect to those of other levels, axes of hopper sectors, axes of roof sectors, and feet. Before beginning the assembly of a new level, be certain that is the correct position.



SG320T60/4

Care should be given to the positioning of the vertical sets at each level with respect to those of other levels, axes of hopper sectors, axes of roof sectors, and feet. Before beginning the assembly of a new level, be certain that is the correct position.

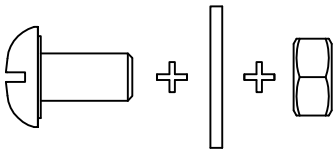


SG320T60/5

Care should be given to the positioning of the vertical sets at each level with respect to those of other levels, axes of hopper sectors, axes of roof sectors, and feet. Before beginning the assembly of a new level, be certain that is the correct position.

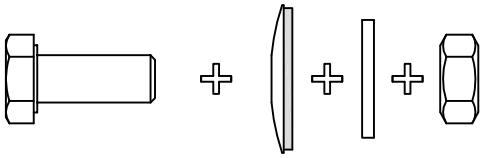
Join type 1

Round head screw M8x15 +
metal washer +
hexagonal nut M8



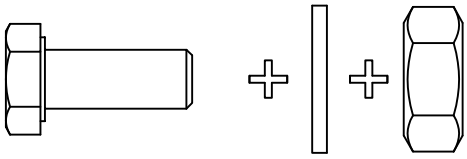
Join type 2

Hexagonal head screw M8x20 +
rubber washer +
metal washer +
hexagonal nut M8



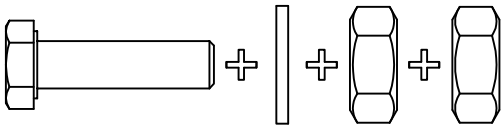
Join type 3

Hexagonal head screw M8x30 +
metal washer +
hexagonal nut M8



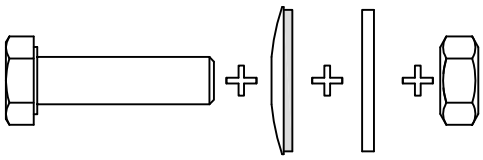
Join type 4

Hexagonal head screw M8x30 +
hexagonal nut M8 +
hexagonal nut M8



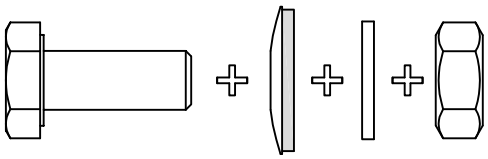
Join type 5

Hexagonal head screw M8x30 +
rubber washer +
metal washer +
hexagonal nut M8



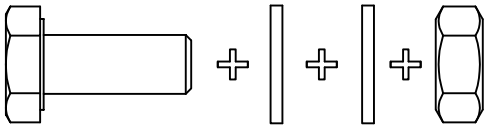
Join type 6

Hexagonal head screw M10x25 +
rubber washer +
metal washer +
hexagonal nut M10

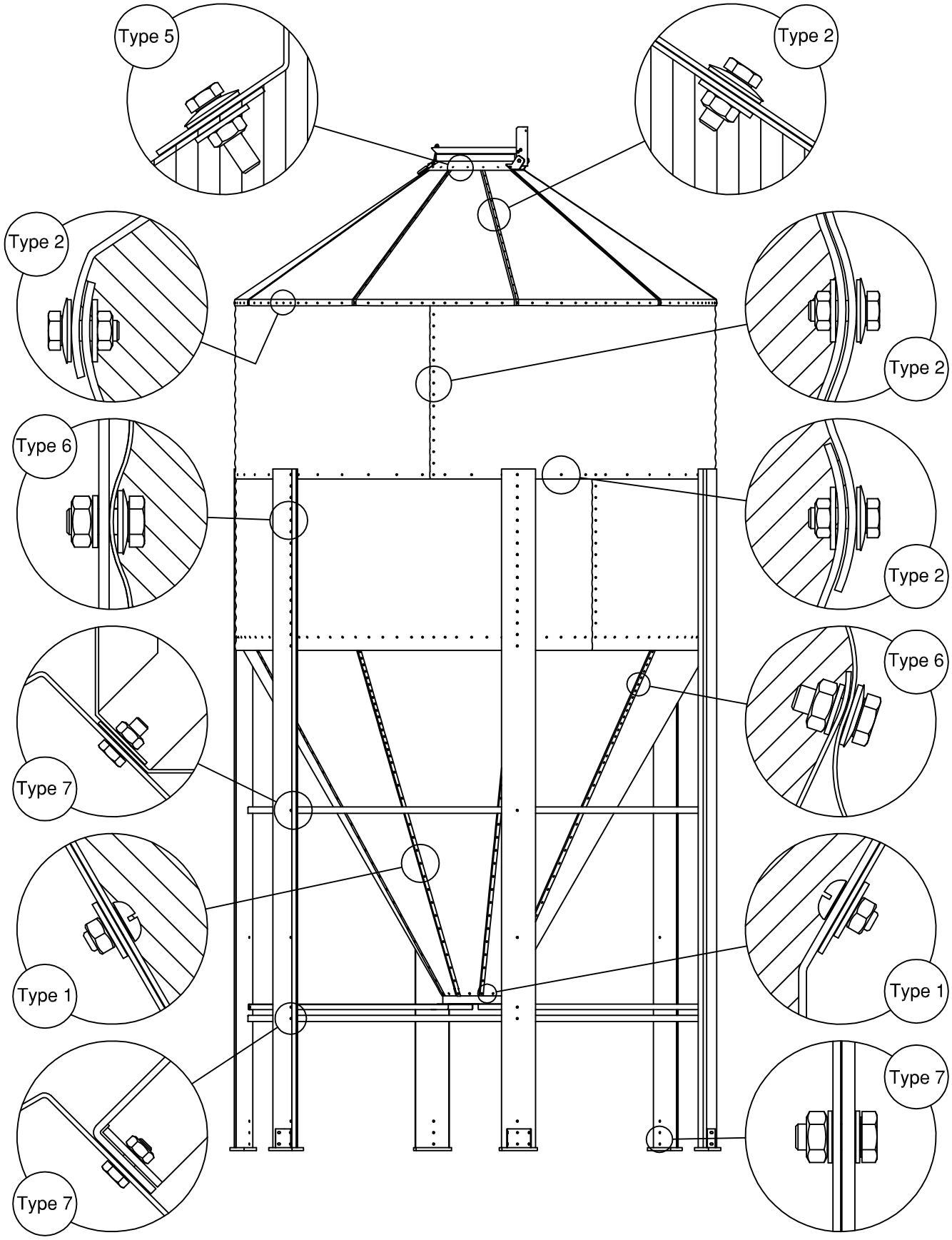


Join type 7

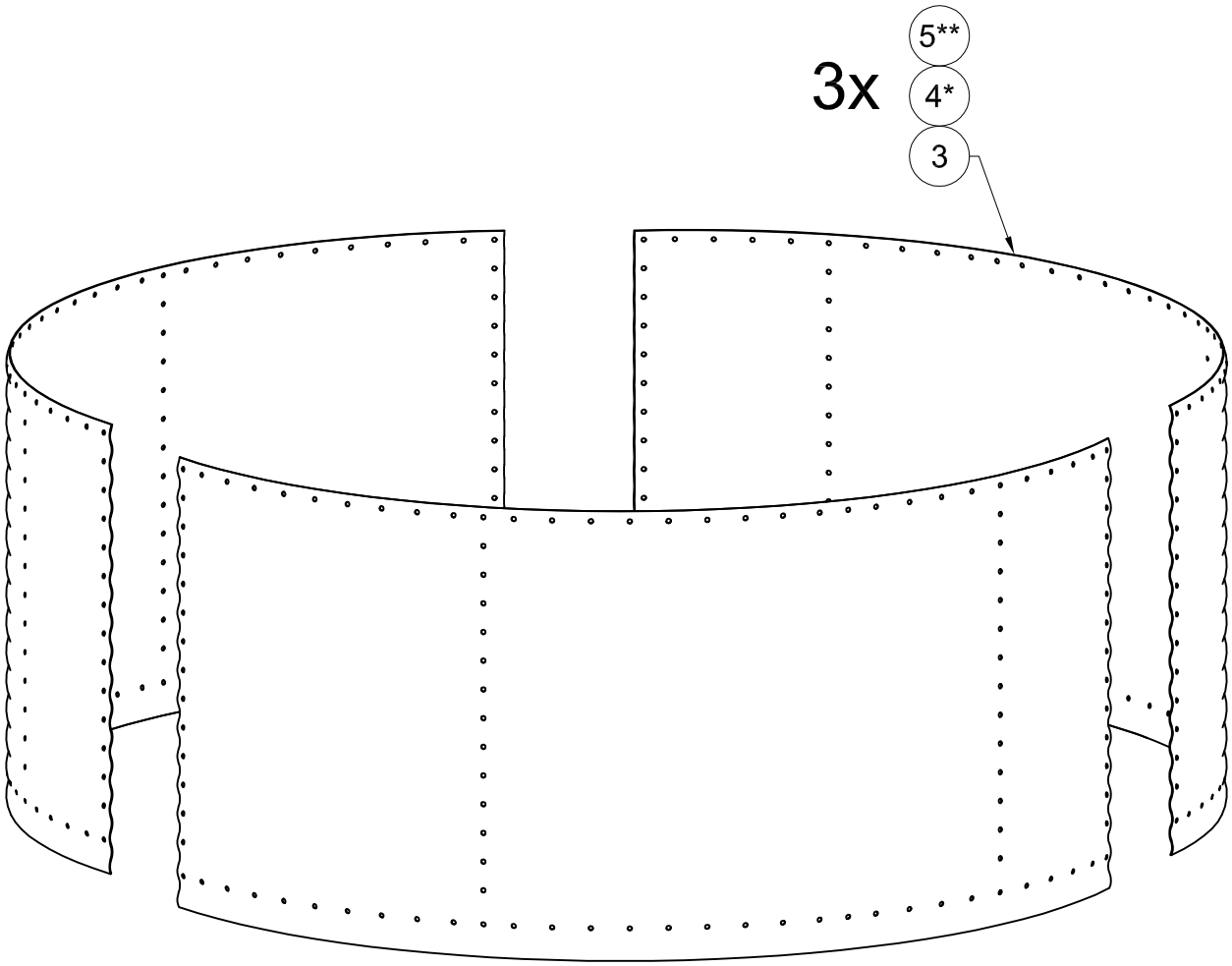
Hexagonal head screw M10x25 +
metal washer +
metal washer +
hexagonal nut M10



All bolts are to be tightened from the nut side only. Do not allow bolt heads to spin to avoid damages in rubber joints.
Drift punches can be used to align holes.
Before inserting the screws should be checked that in this position,both the type of joint as the direction in which you enter the screw is correct. Make sure all bolts are consistent with the pattern on the next page.
IMPORTANT: Tighten bolts with a torque wrench between 13Nm y 26Nm.

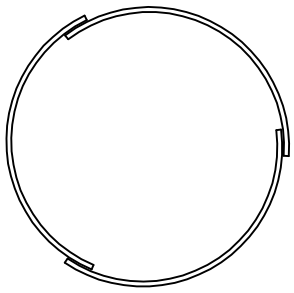


Types of joint shown by their differents positions.
Bolts, nuts and washers specifications.

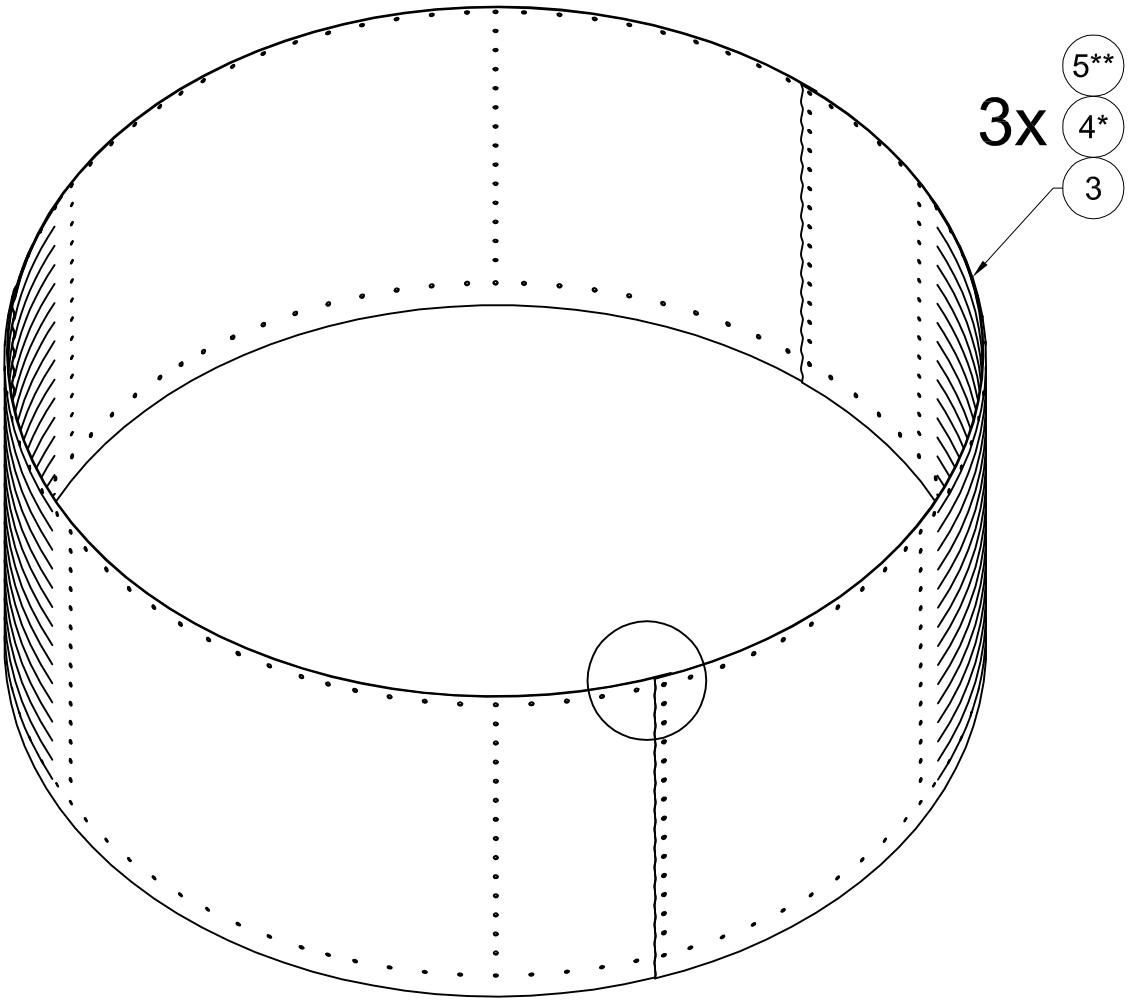


(*) = SG320T60/3, (**) = SG320T60/4, SG320T60/5

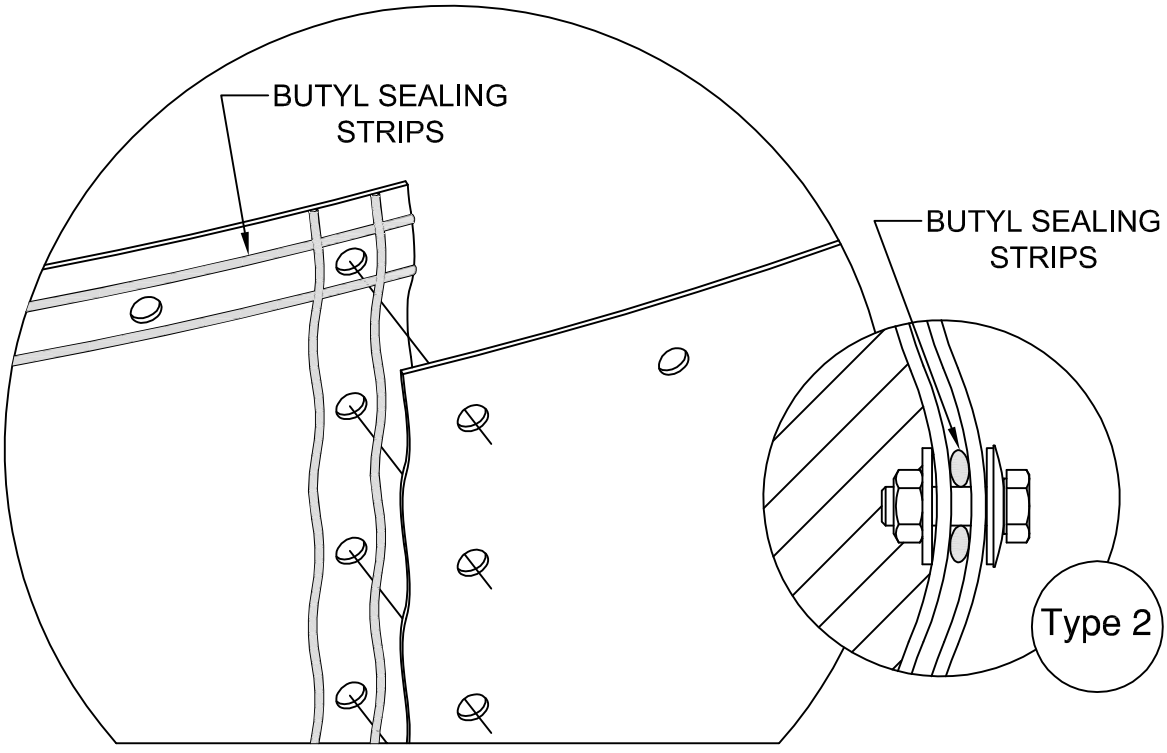
IMPORTANT: Overlap sidewall sheets on right position

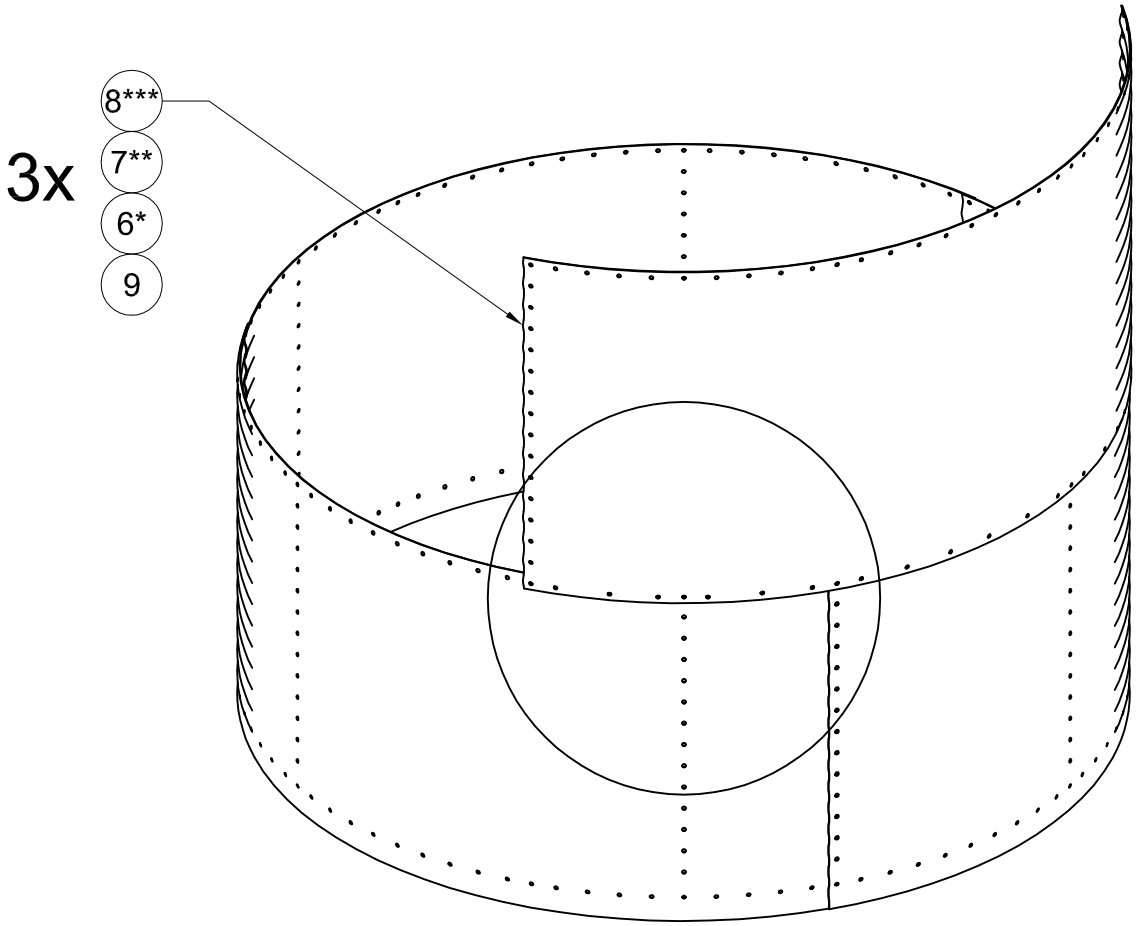


The order of correct assembly is: lower level, intermediate level, upper level. Always begin assembly with the bottom ring. Bottom-level plates can be easily distinguished from those of other levels because they have intermediate lines of screw holes to locate the feet of the silo.
It is important to overlap the plates in the correct position, only as per instructions in the figure above.
During assembly of the first level, use two long screwdrivers to set the plates in relation to each other, and to make them easier to connect.
Zones where sealing strips are to be placed should be properly degreased to facilitate adhesion.
Insert the screws in the right direction and follow the instructions on page 11 for correct tightening.

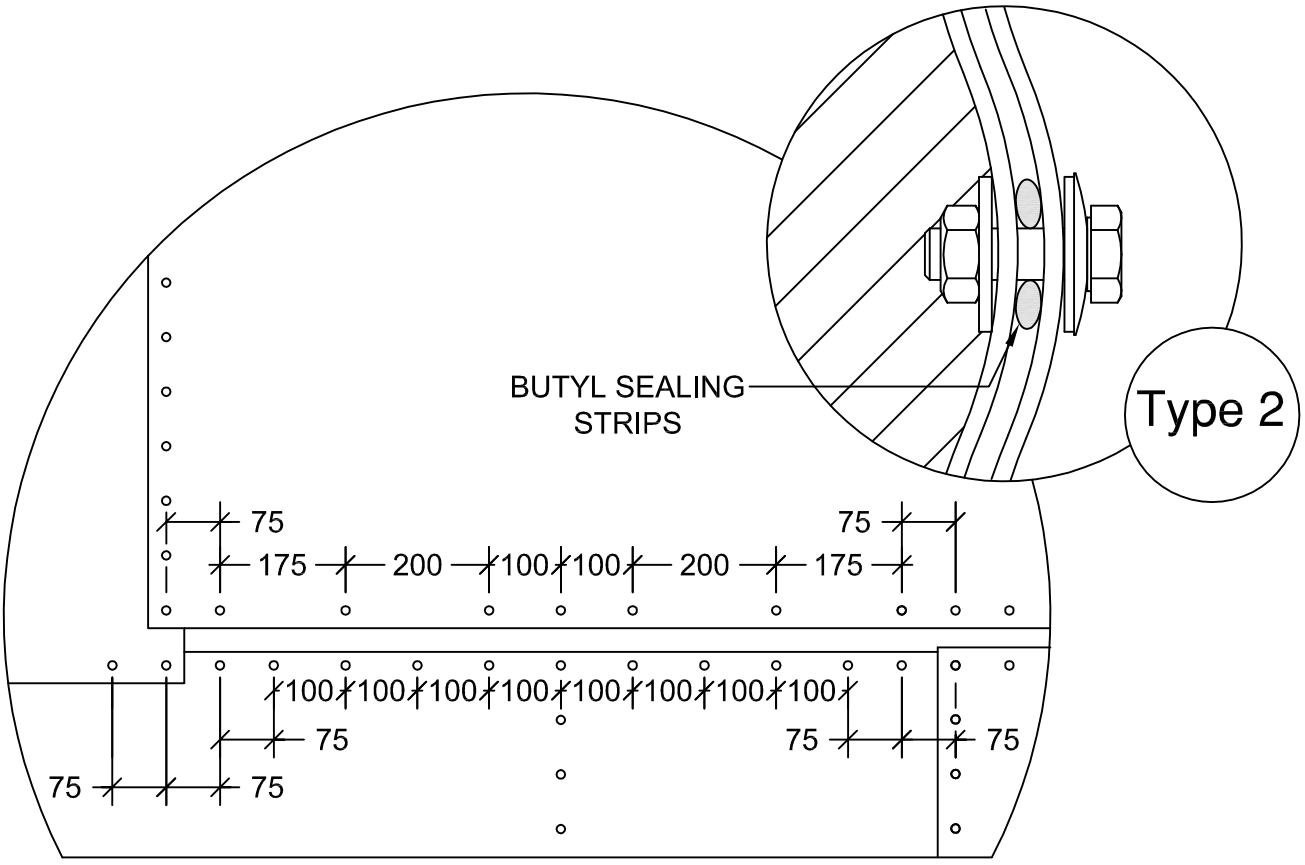


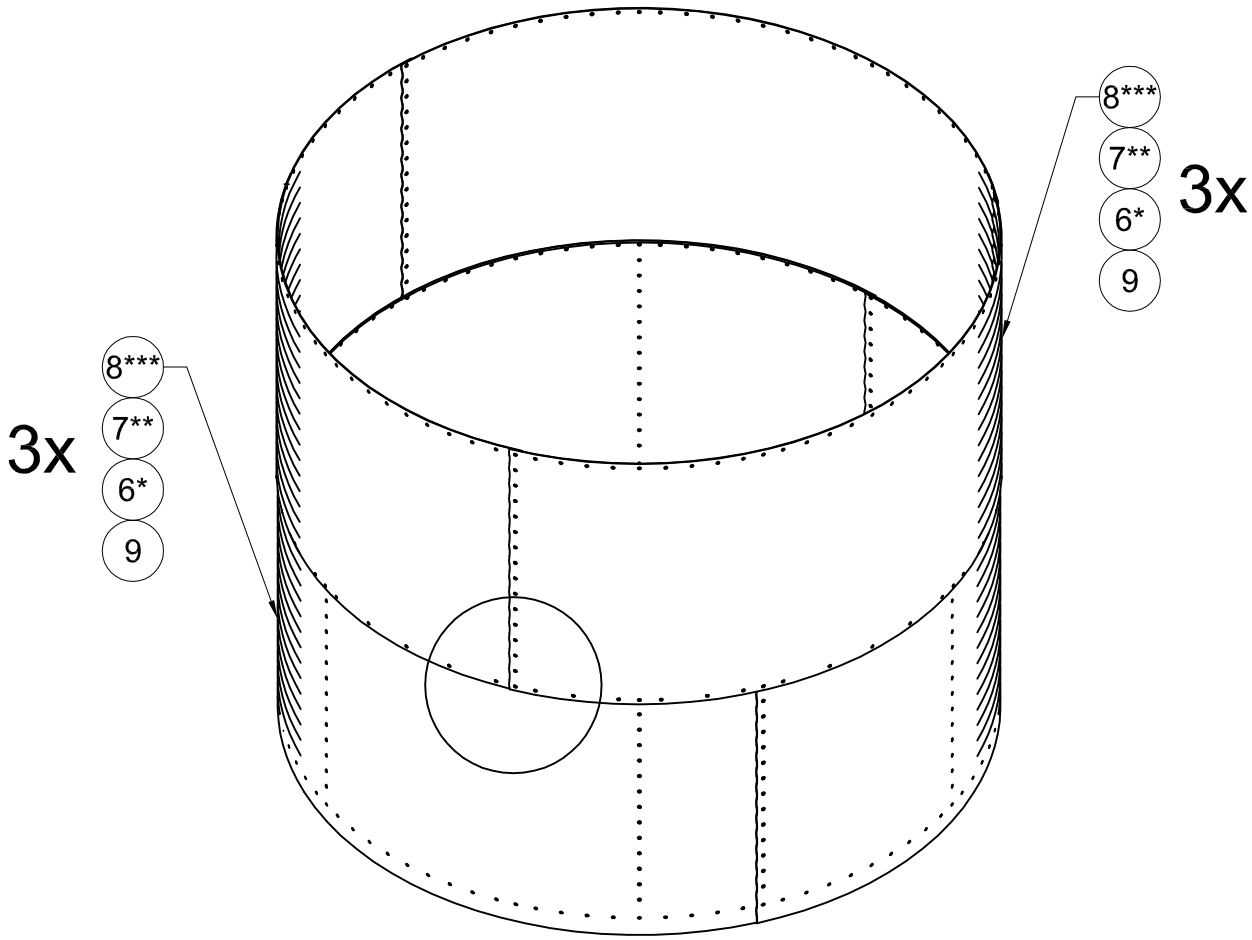
(*) = SG320T60/3, (**) = SG320T60/4, SG320T60/5



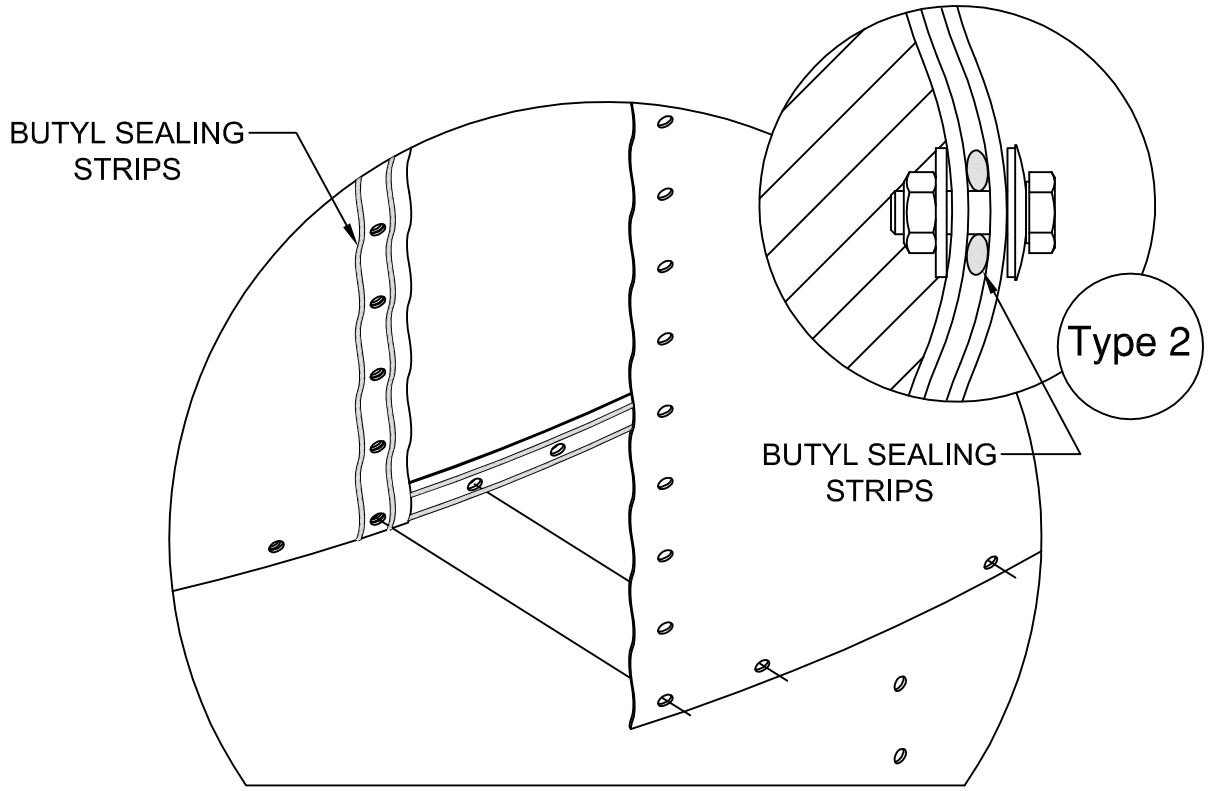


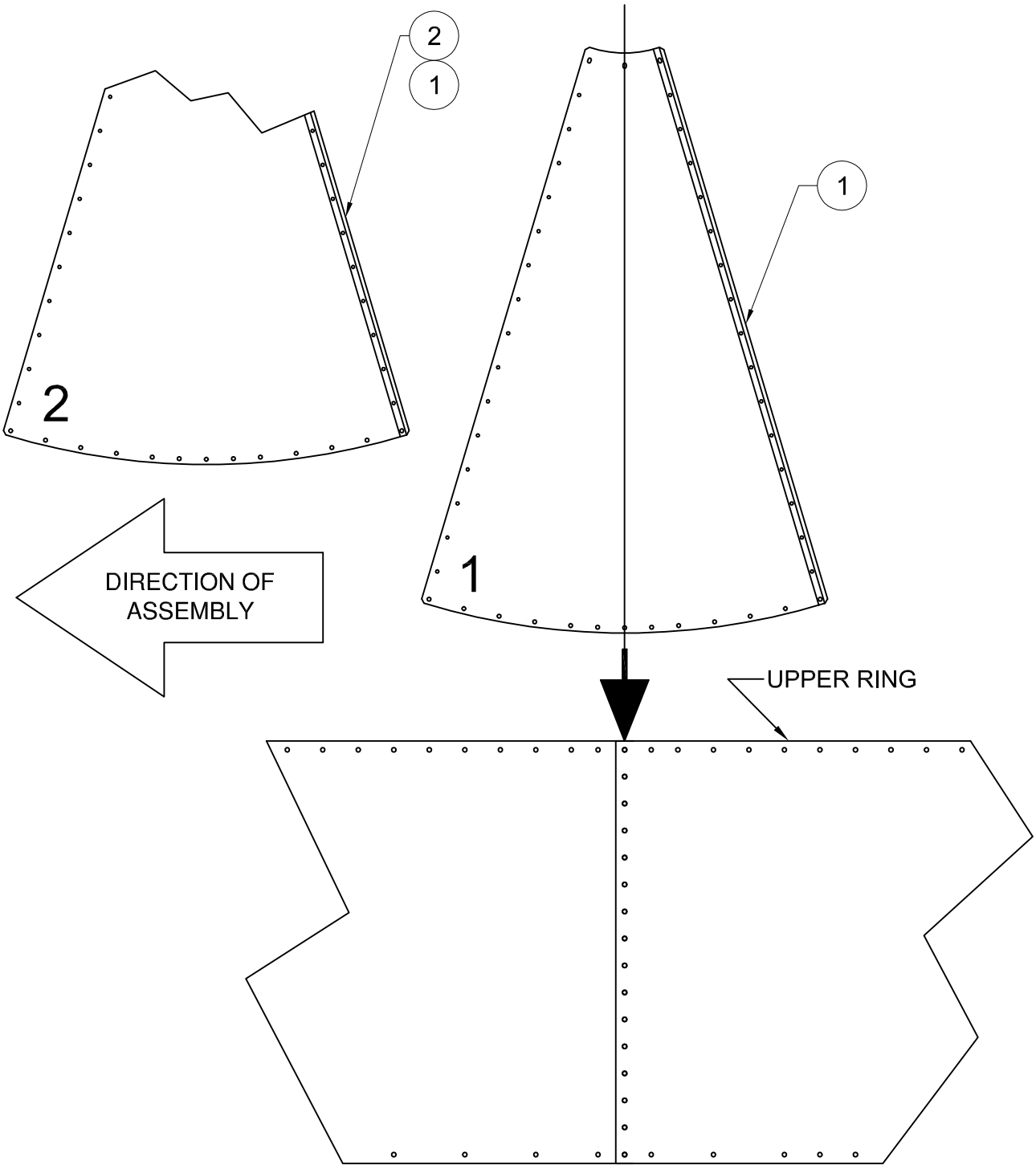
(*) = SG320T60/3, (**) = SG320T60/4, (***) = SG320T60/5



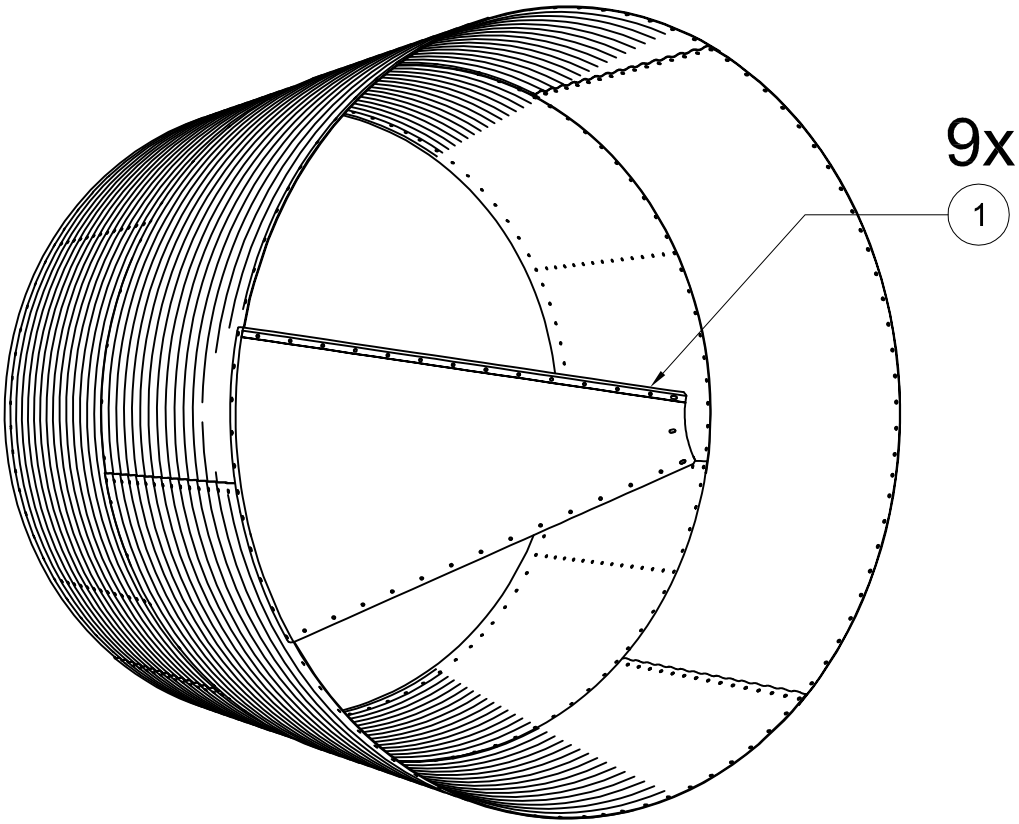


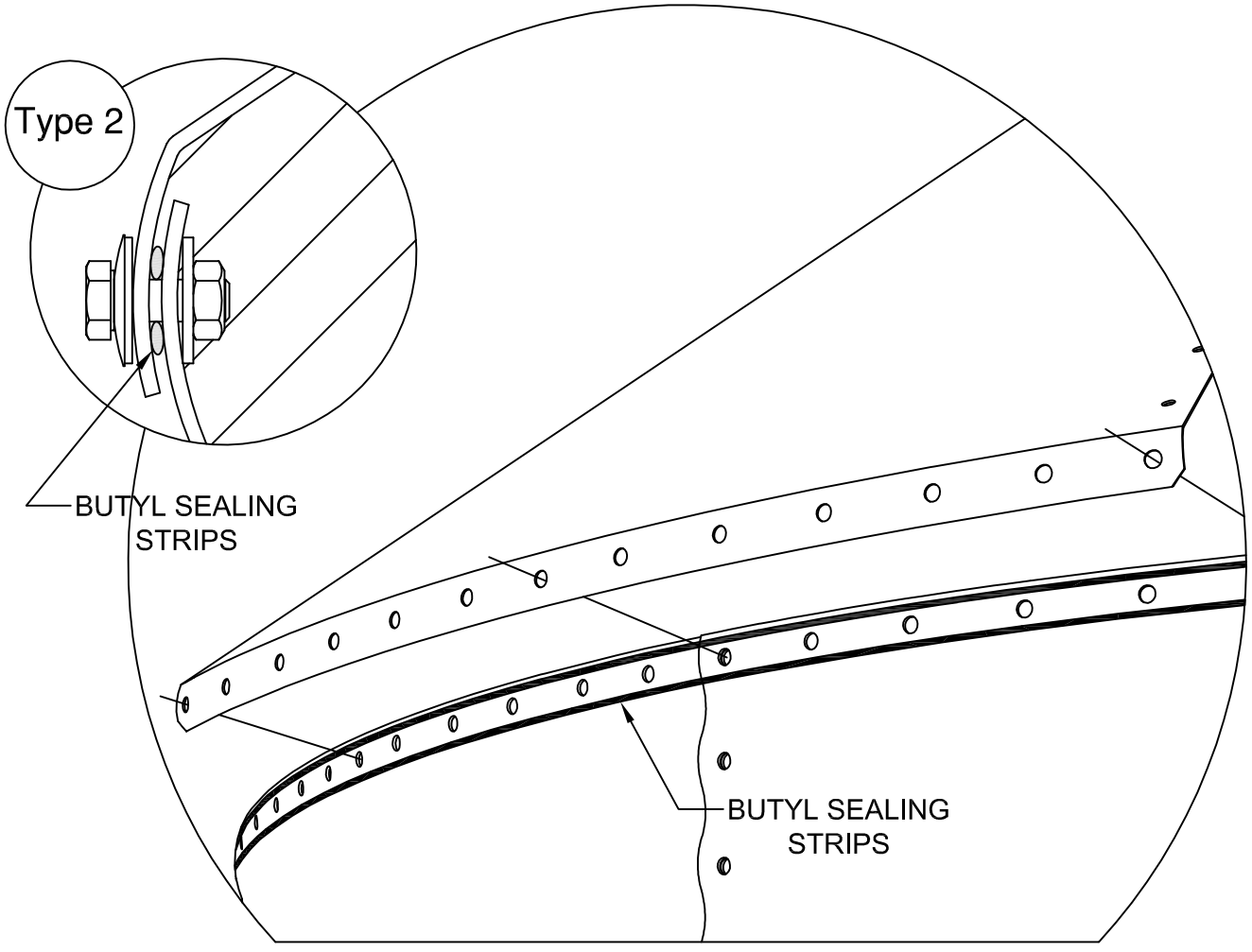
(*) = SG275T60/3, (**) = SG275T60/4, (***) = SG275T60/5

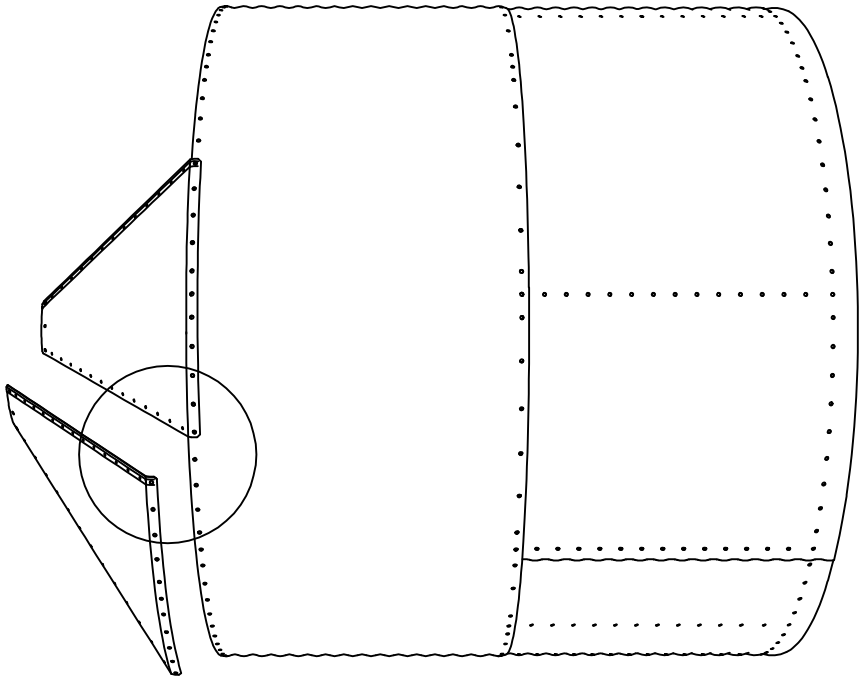


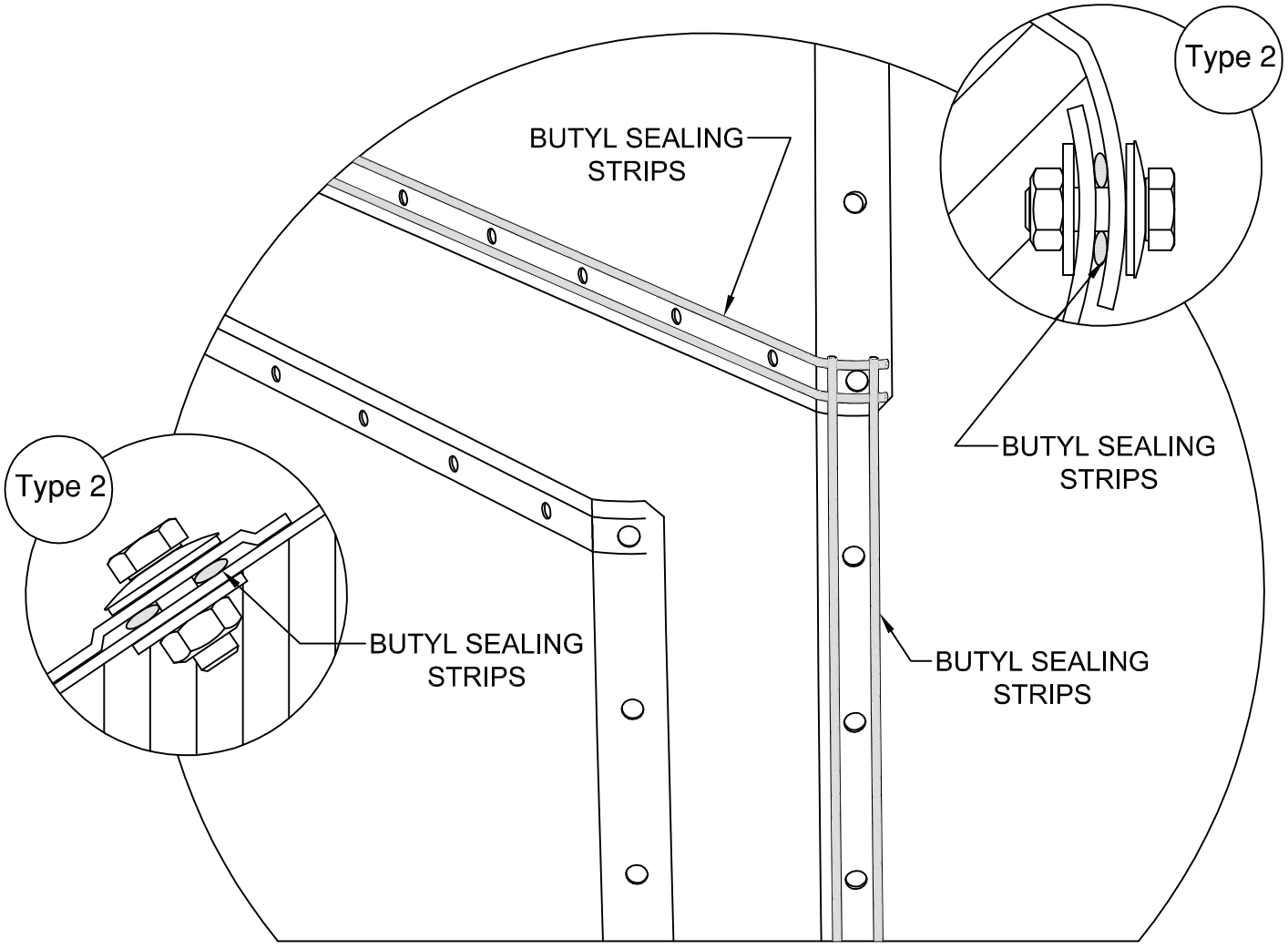


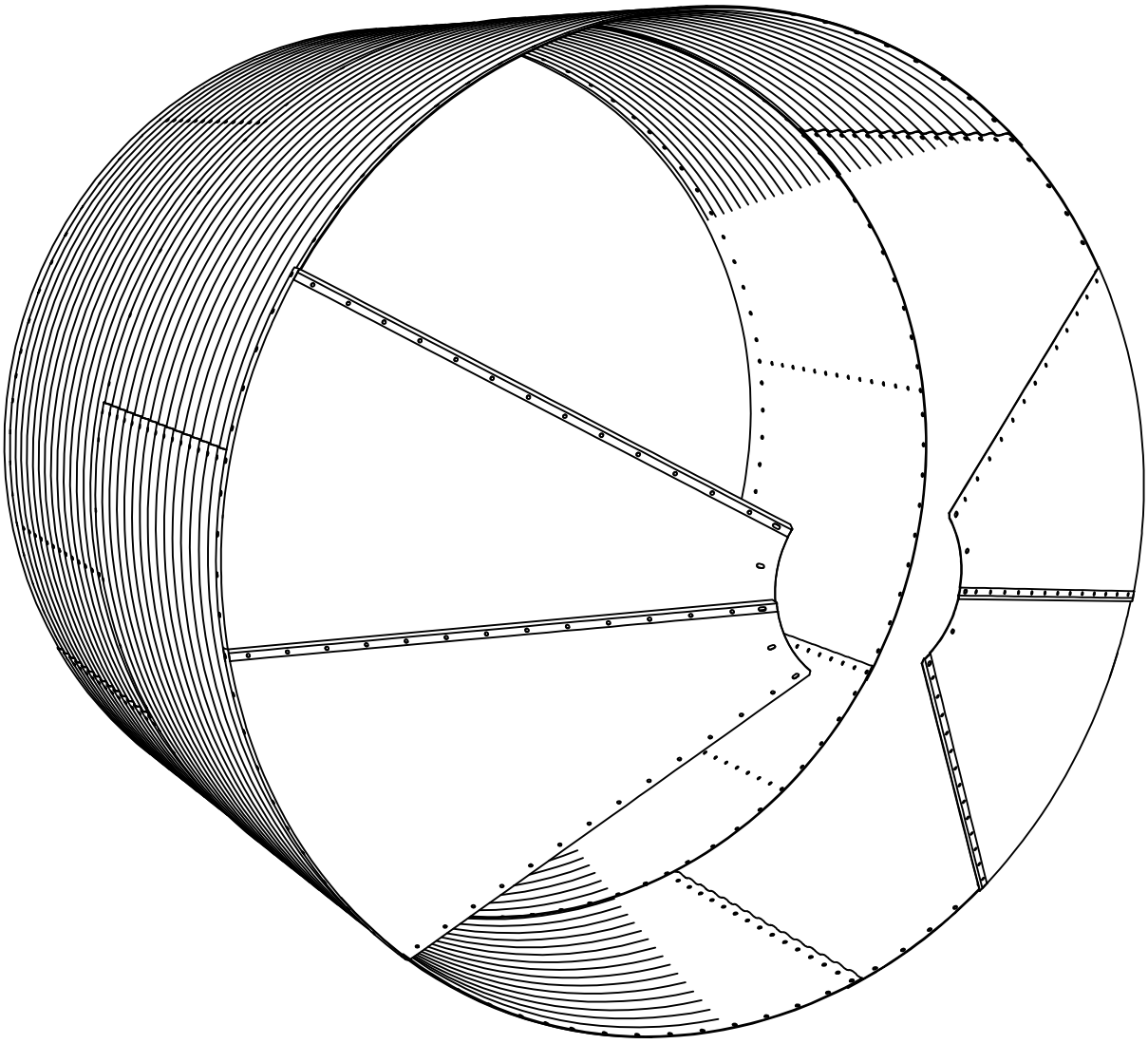
To begin the assembly of the roof, align the center of one roof sector with any one of the three vertical joints from the seal of the upper ring. It is important to overlap the sectors in the correct position, only and per the instructions in the figures included. In the case of enabling the pneumatic load, assembly should begin from the roof in the same way and always with a blind sector. Once positioned, that first sector should follow the general schematic (page 10).
Zones where butyl sealing strips are to be placed should be properly degreased to ensure complete adhesion.
Insert the screws in the right direction and follow the instructions indicated on page 11 for correct tightening.


9x
1

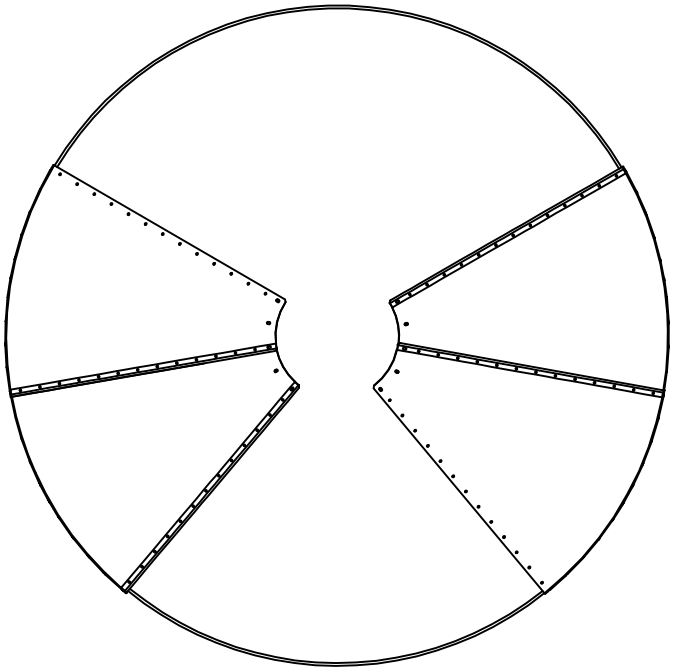

Type 2
BUTYL SEALING STRIPS
BUTYL SEALING STRIPS

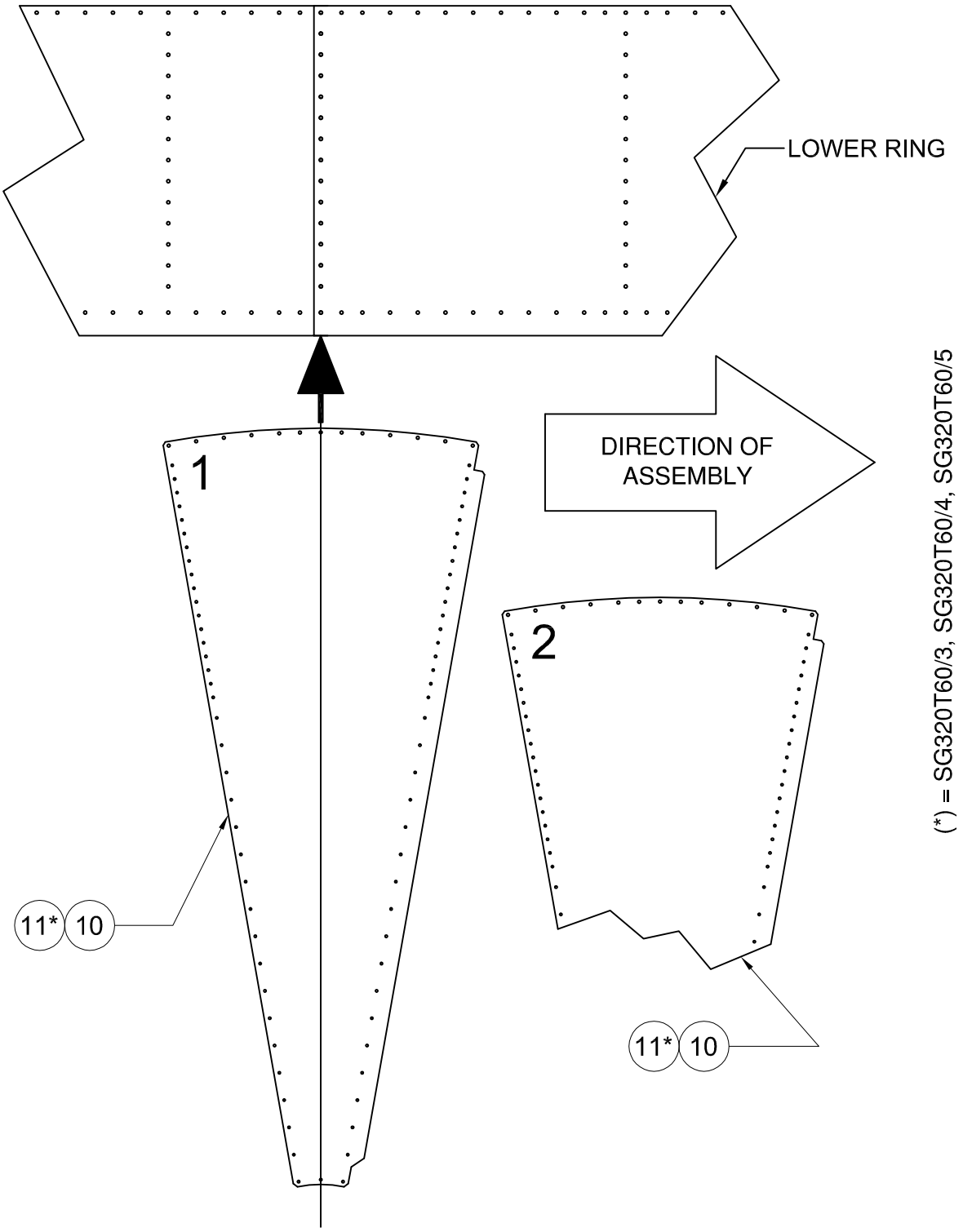



Type 2
BUTYL SEALING STRIPS
BUTYL SEALING STRIPS
Type 2
BUTYL SEALING STRIPS
BUTYL SEALING STRIPS



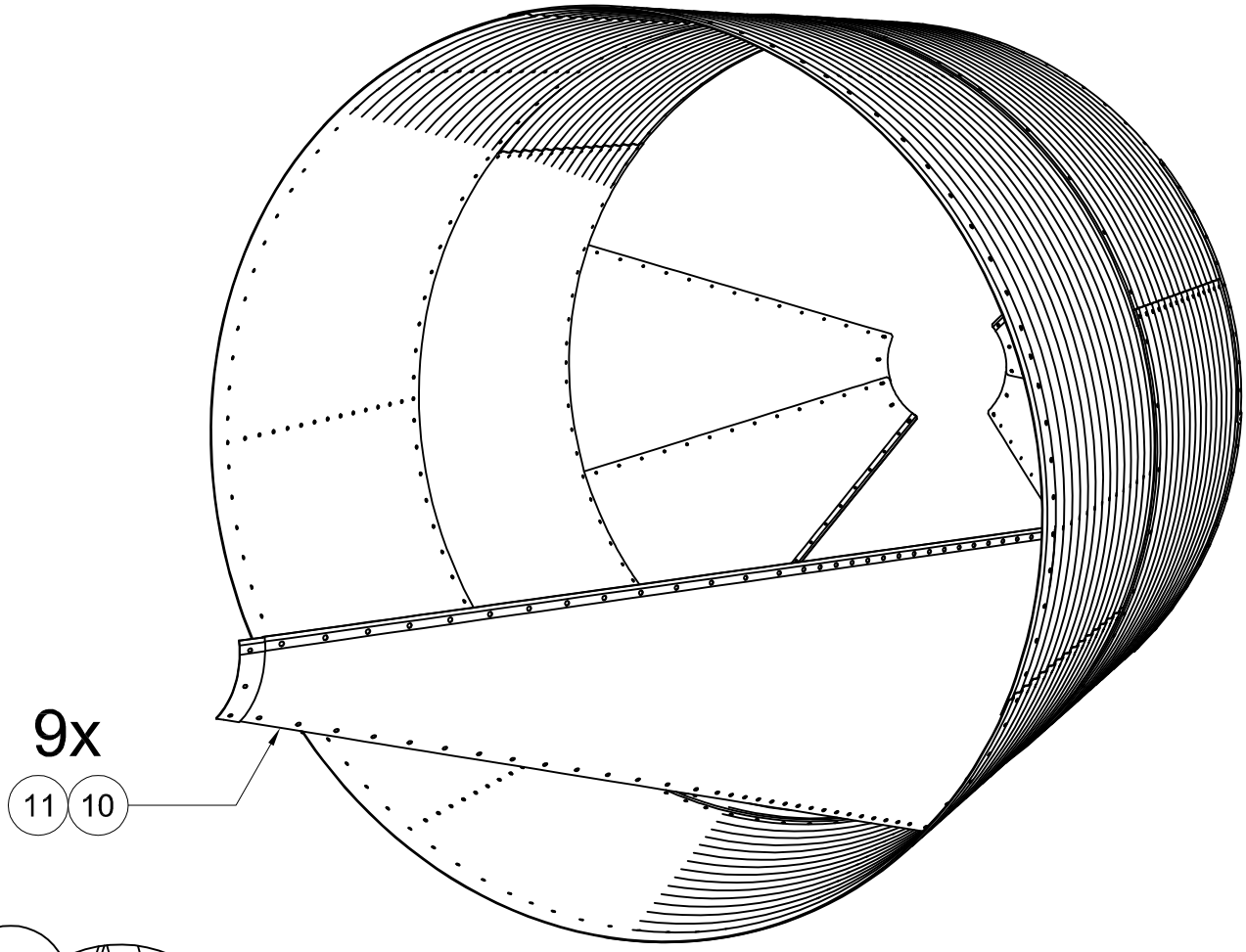
If the assembly is being done directly over the floor, we recommend that you assemble the roof and the hopper at the same time, in such a way that assembly can proceed without having to rotate the silo multiple times during assembly. Assemble the two sectors exactly and only as they are represented in the figures, then follow them with the two opposite sectors. Once the four sectors of the roof are assembled, assembly of the four corresponding sectors of the hopper can proceed when the silo is rotated 90 degrees.

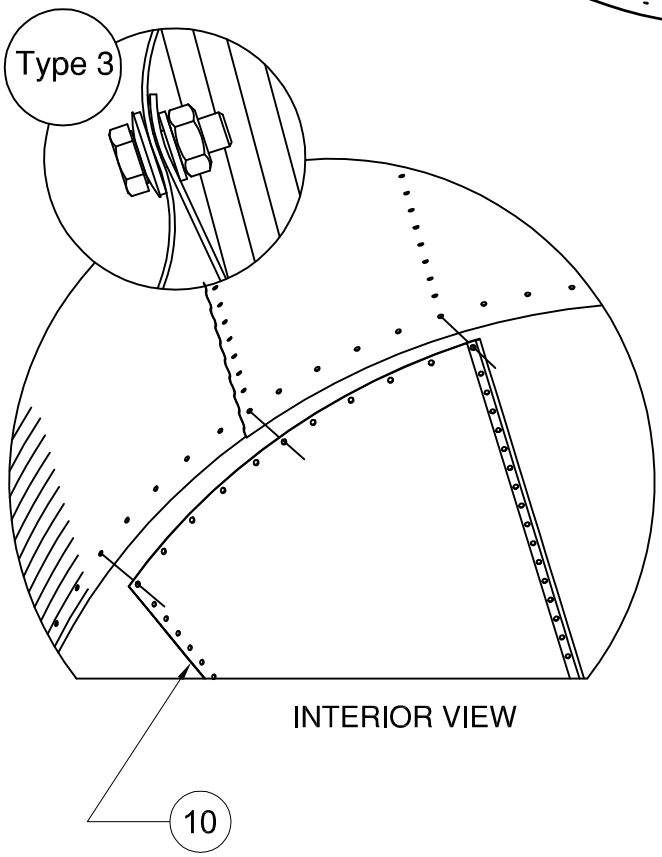




To begin assembly of the silo hopper, connect the center of one sector of the hopper to any one of the three vertical seams of joints in the lower ring. It is important to overlap the sectors in the correct position, only and exactly as it is shown in the adjoining figures.
Once in position, the first sector should follow the general schematic (page 10). Zones where butyl sealing strips are to be placed should be degreased properly to ensure good adhesion.

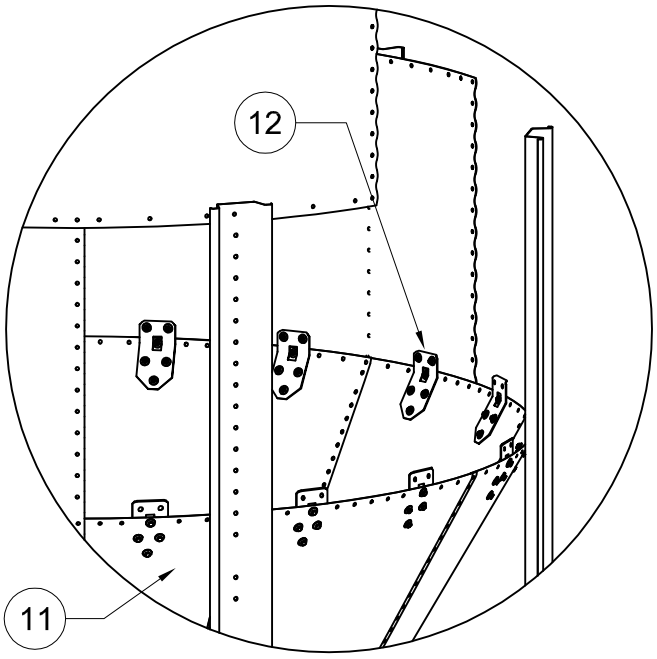
Insert the screws in the right direction, and follow the instructions indicated on page 11 to tighten them correctly.

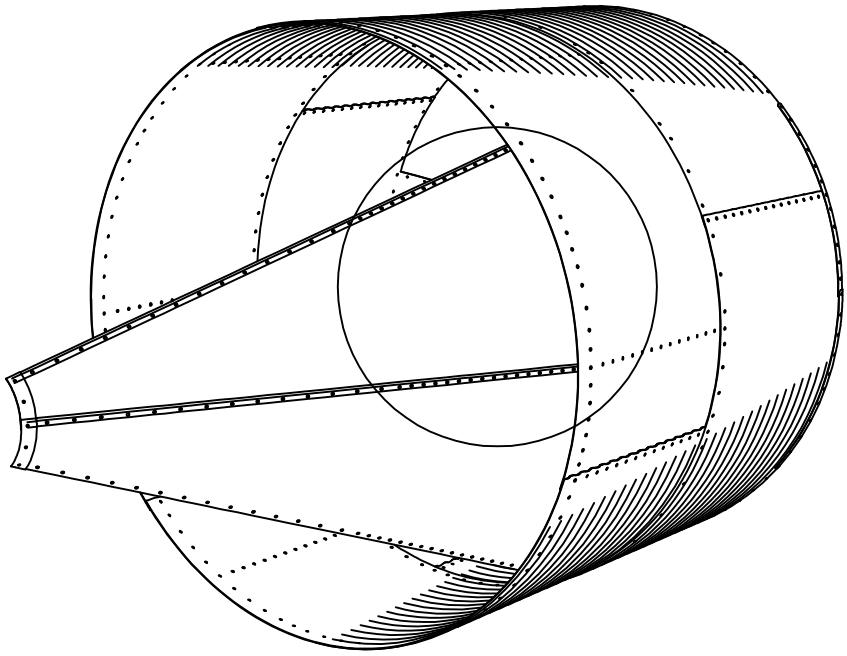


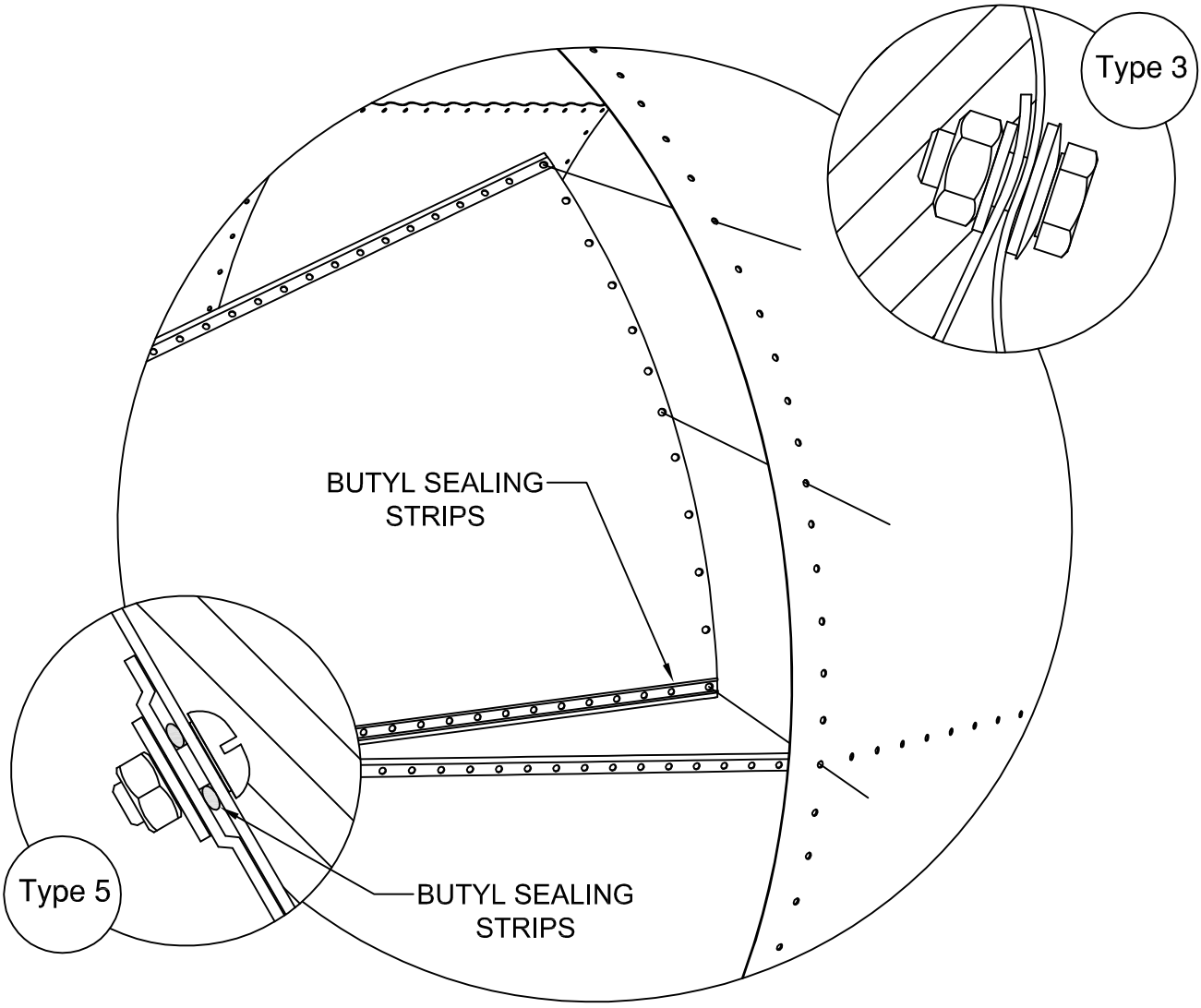


INTERIOR VIEW

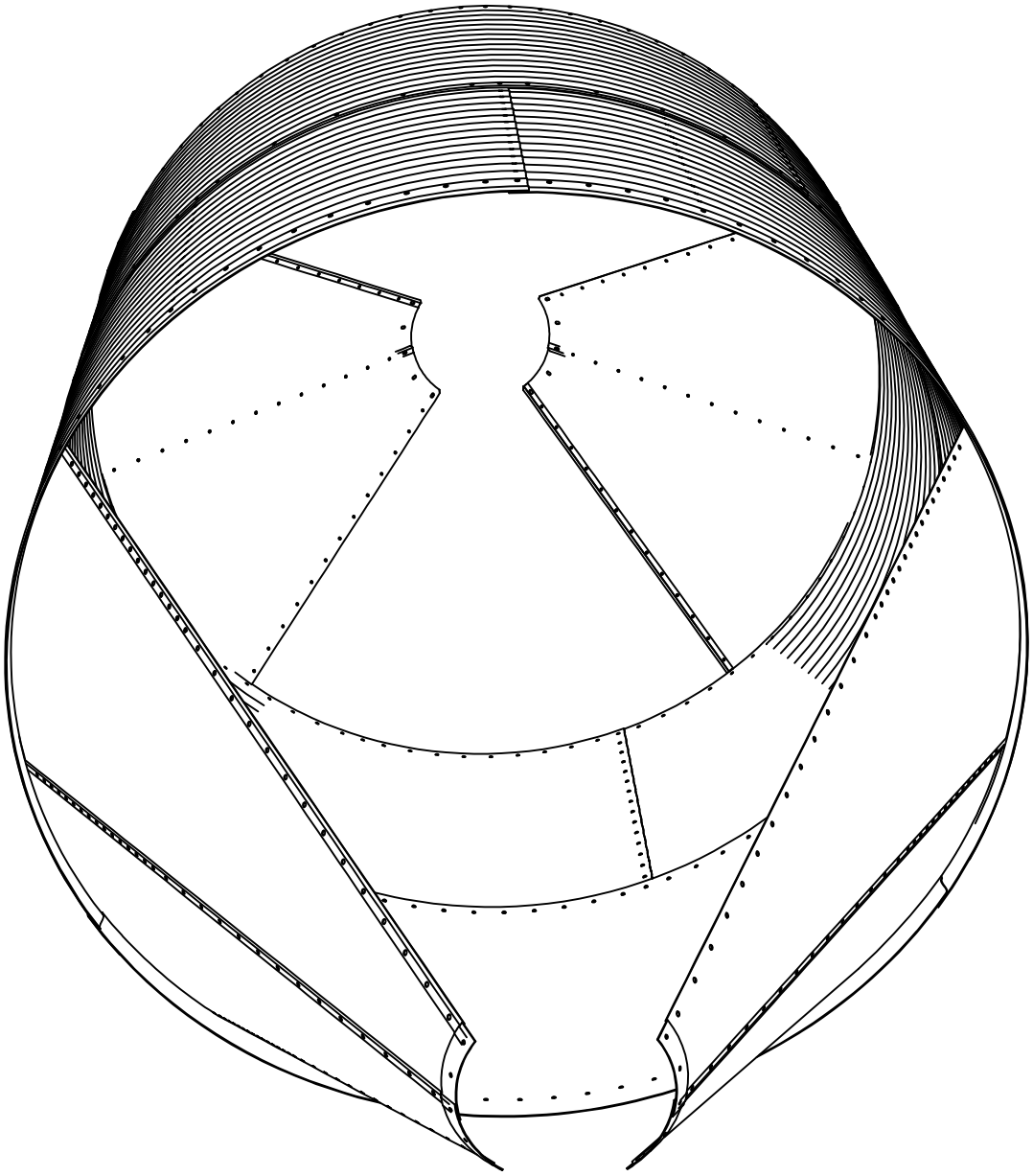
SG320T60/3
SG320T60/4
SG320T60/5

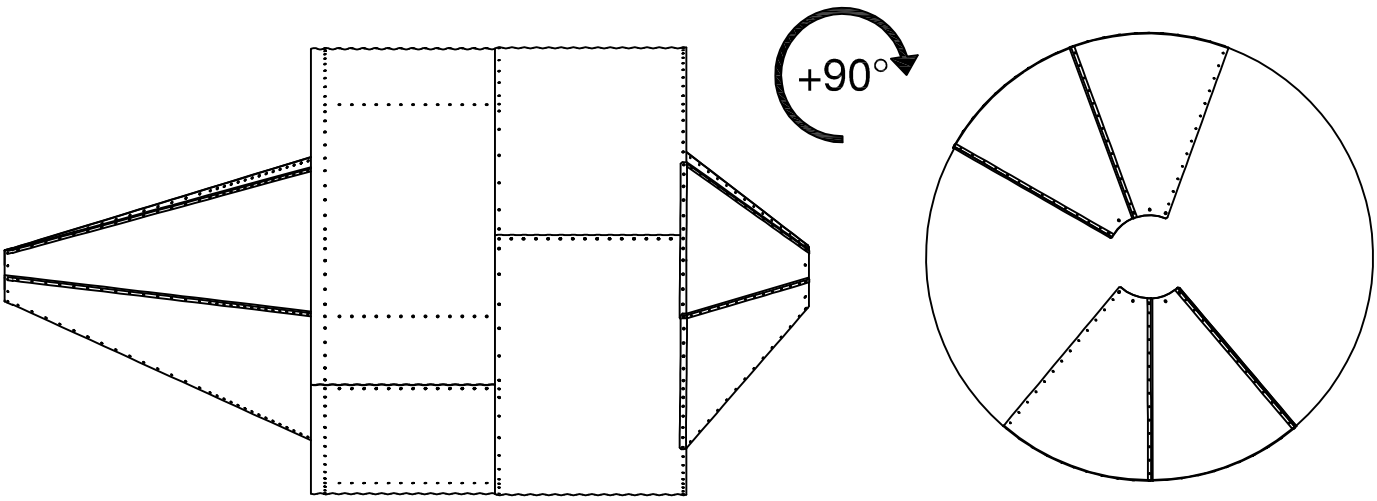


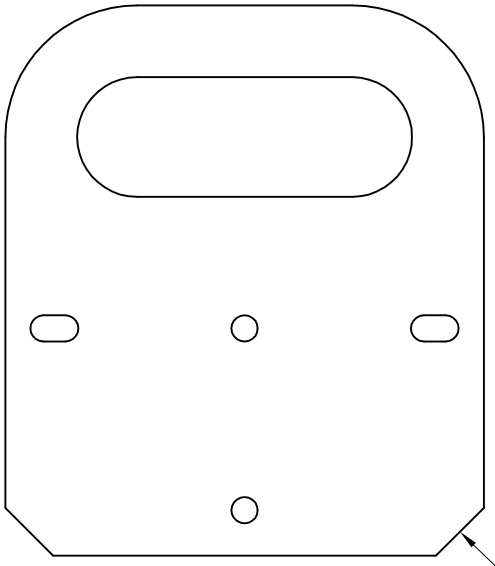




EXTERIOR VIEW



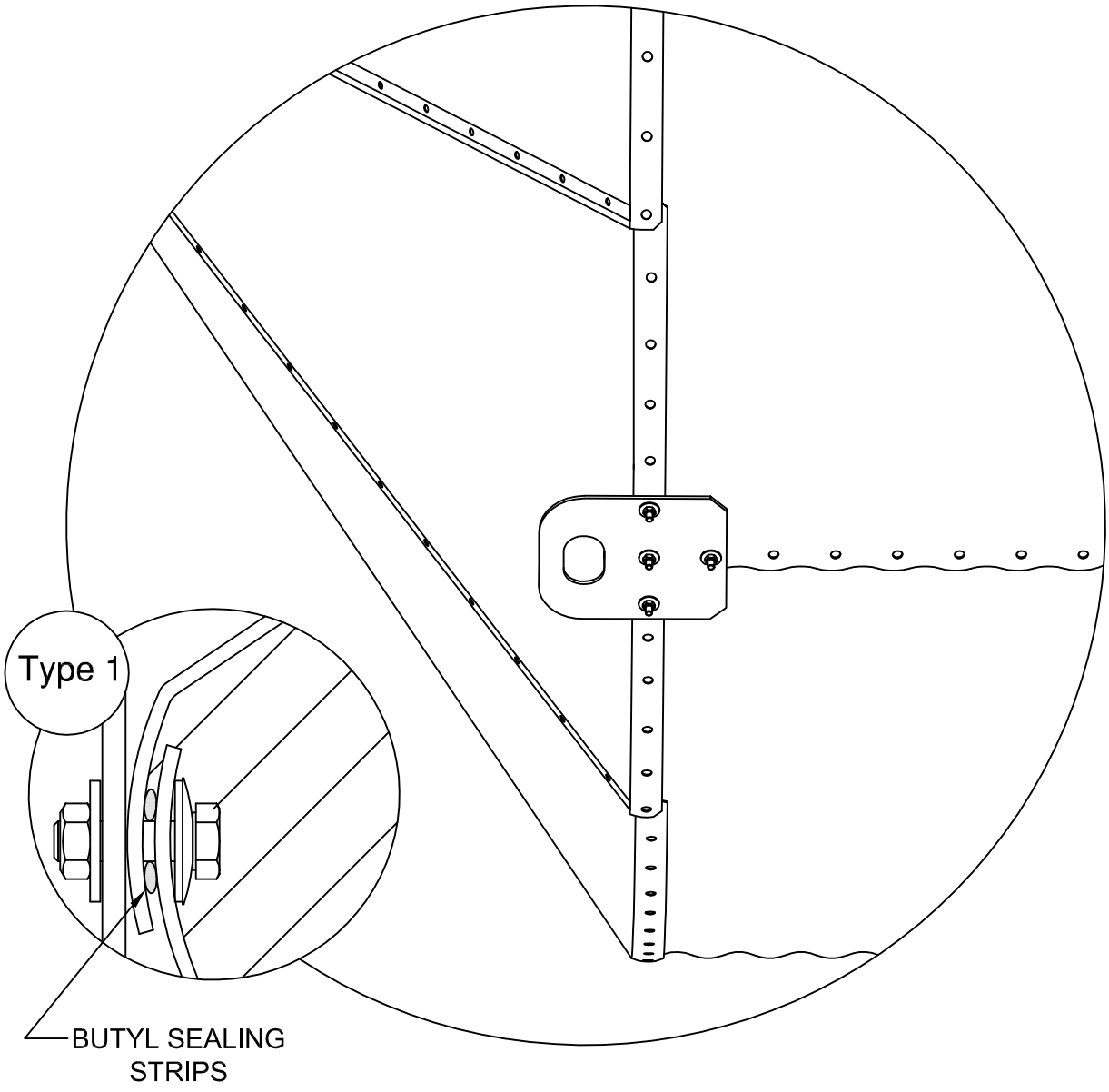

+90°

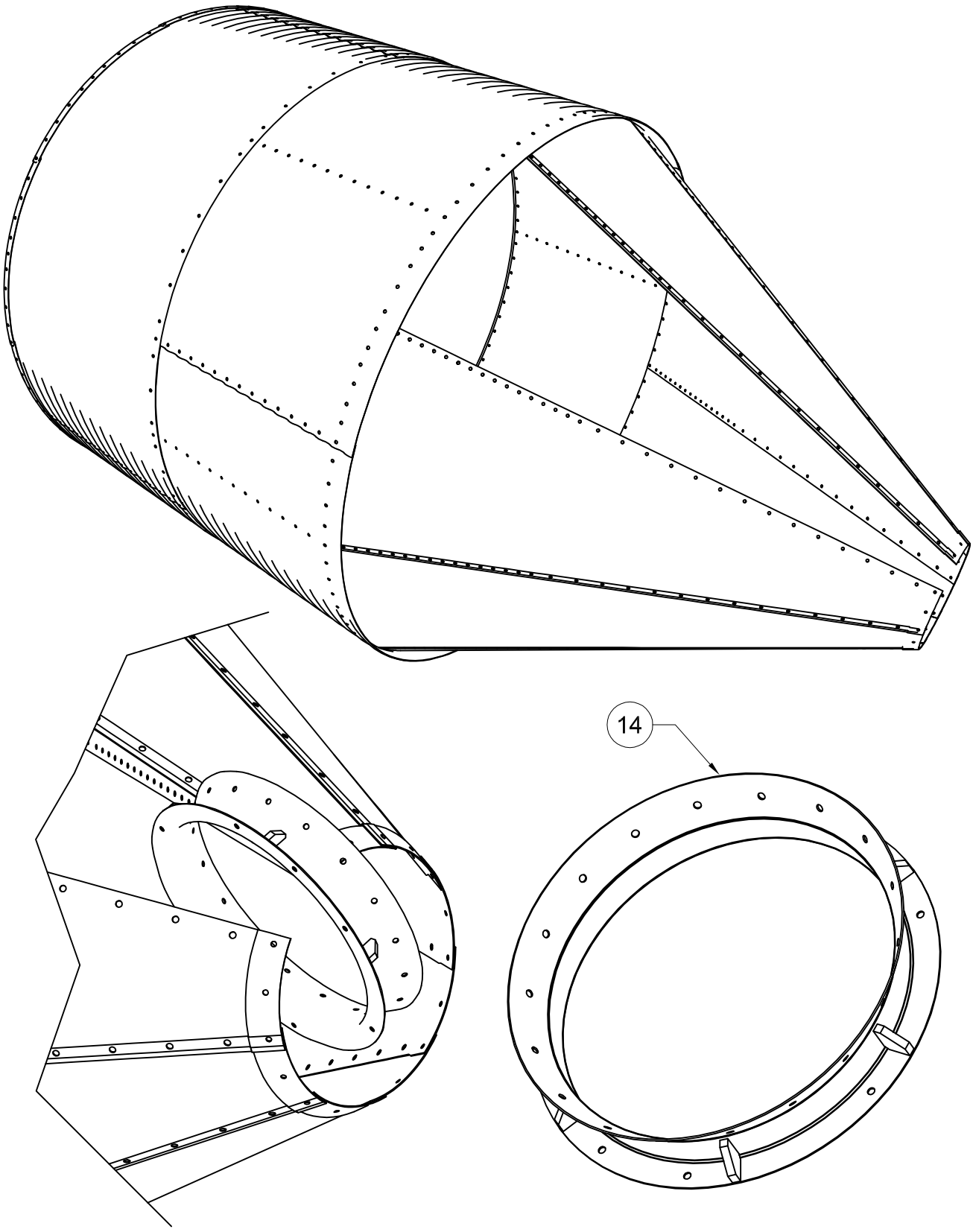


3x

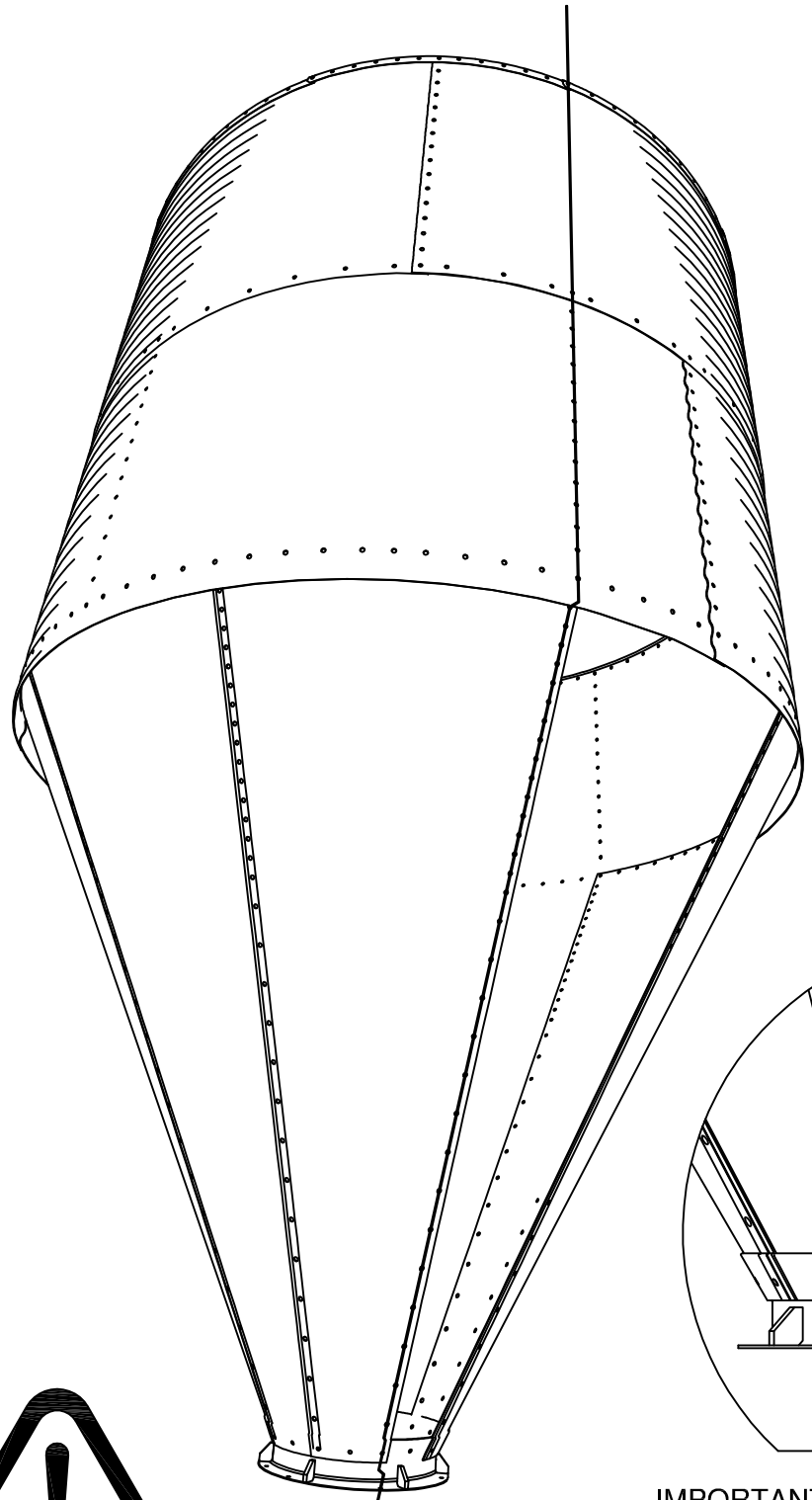
30

If your silo includes a lifting kit, put the lift plates into position at this point in your assembly. For assembly, use a mechanical joint like the one in the figure below with the head of the screw on the inside of the silo.
The lifting plates should be equidistant from each other, in such a way that they will fit in each one of the vertical seams of the upper ring.

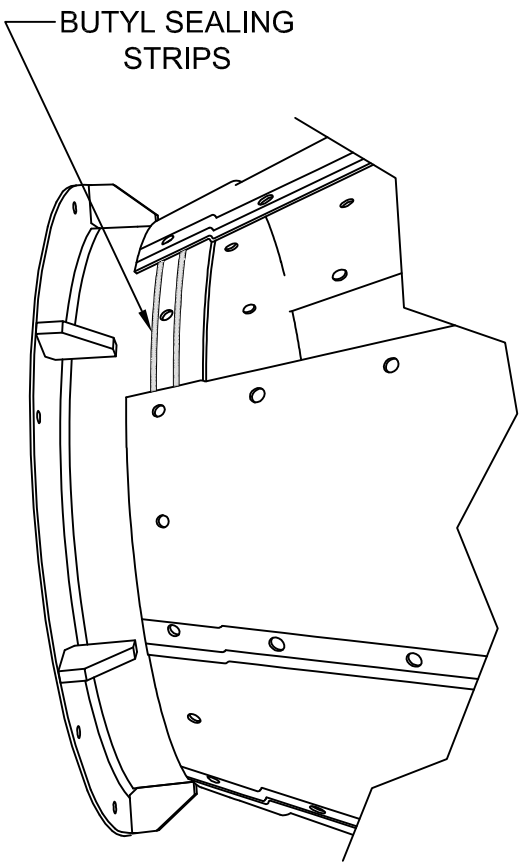


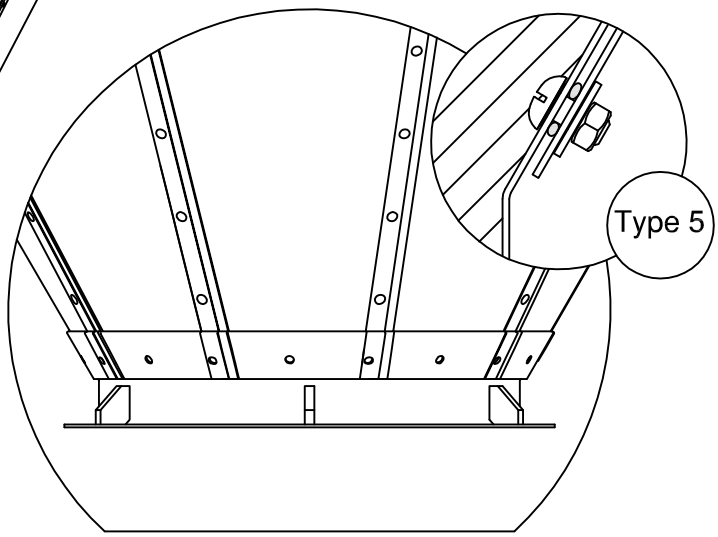


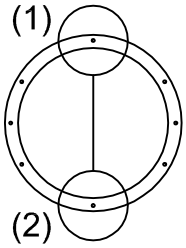
Complete the assembly of the silo roof. The silo hopper is not ready to be closed until it has been introduced through the ring of the outlet port. Once connected, the outlet port can begin to completely close the silo hopper. All areas where butyl sealing strip are to be placed should be properly degreased to ensure a good adhesion.
Insert the screws in the right direction and follow the instructions indicated on page 11 for tightening them correctly.



(fig 2)

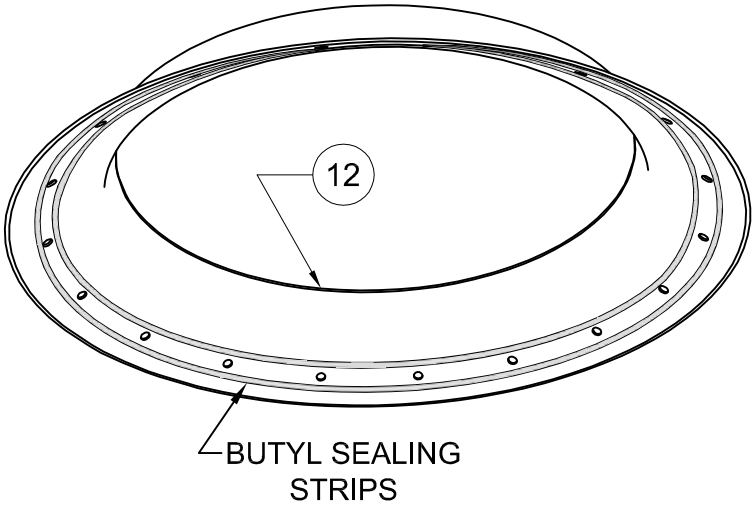




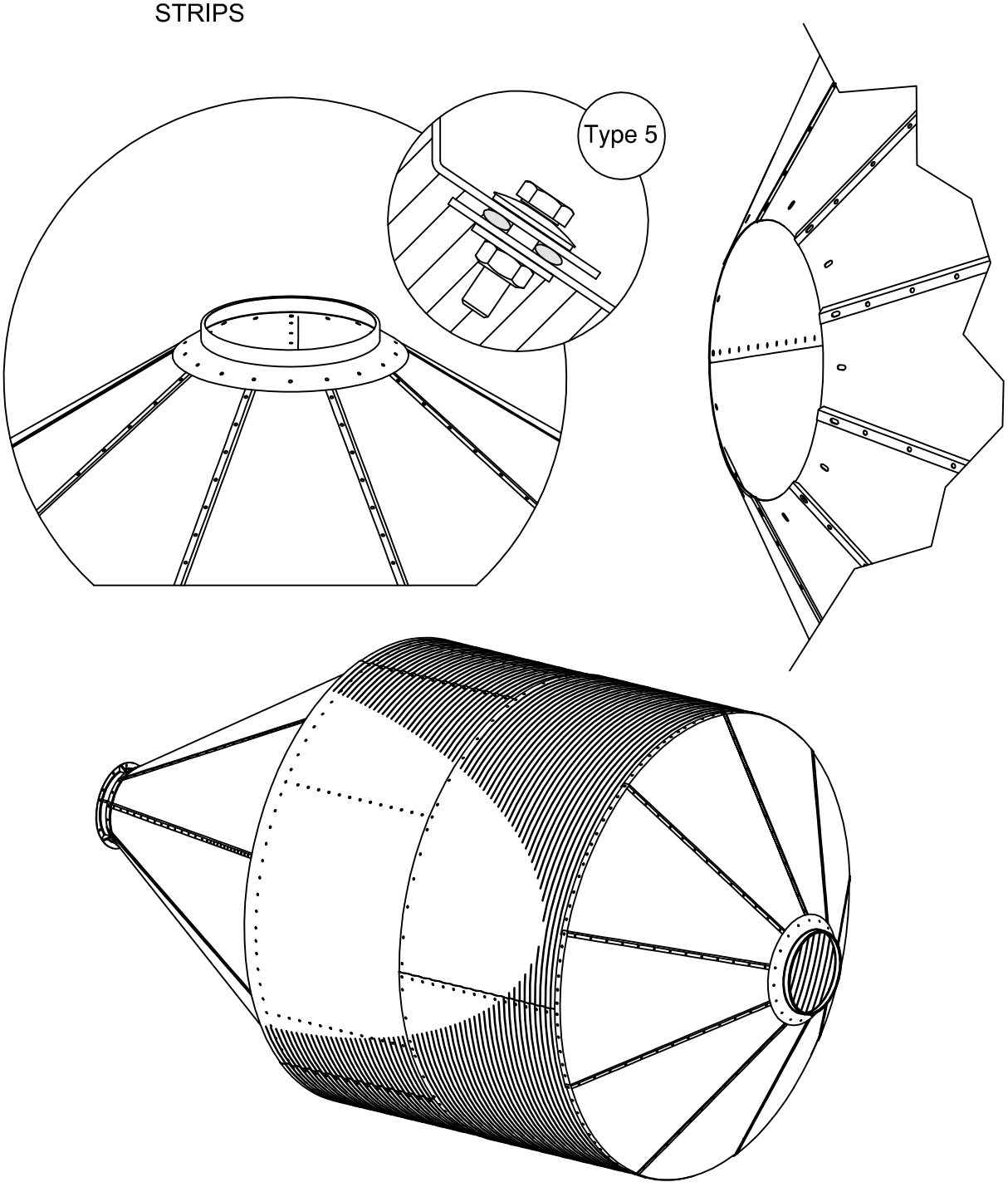


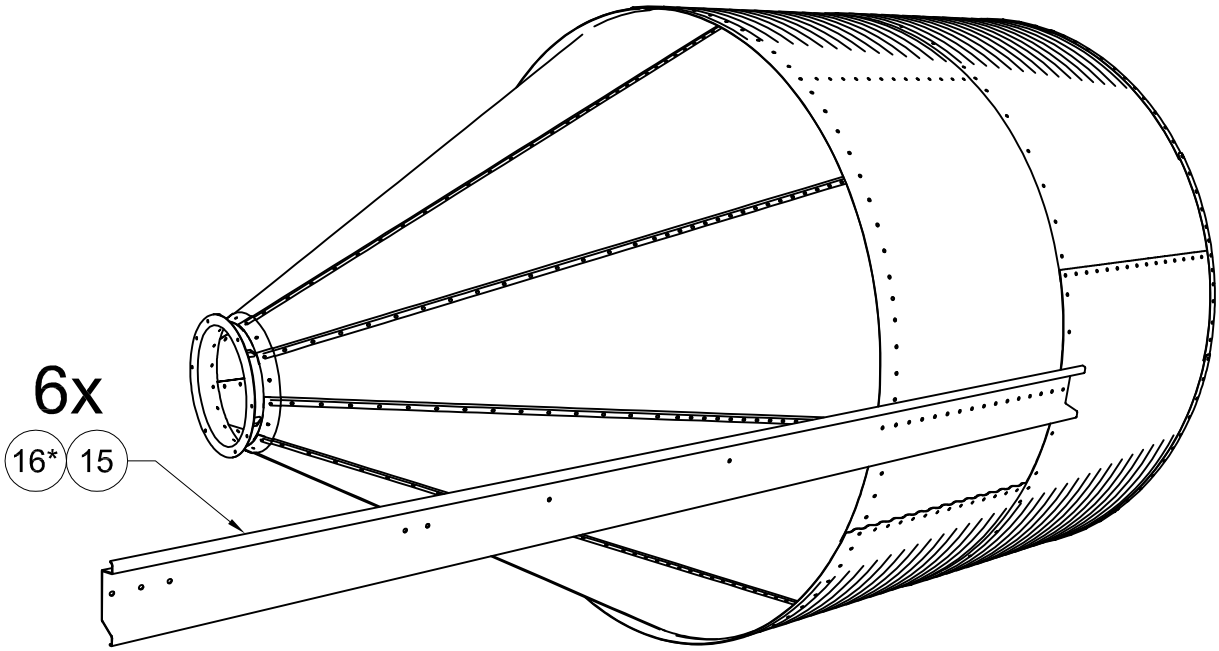
(fig 1)

IMPORTANT:
To assemble the outlet port, align one of the two screw holes indicated in figure number (1) with one line of the screws attaching the hopper feet exactly as indicated in figure number two (2).
All areas where butyl sealing strips are to be placed should be degreased properly to ensure a good adhesion.
Insert the screws in the right direction and follow the instructions indicated on page 11 for tightening them correctly.

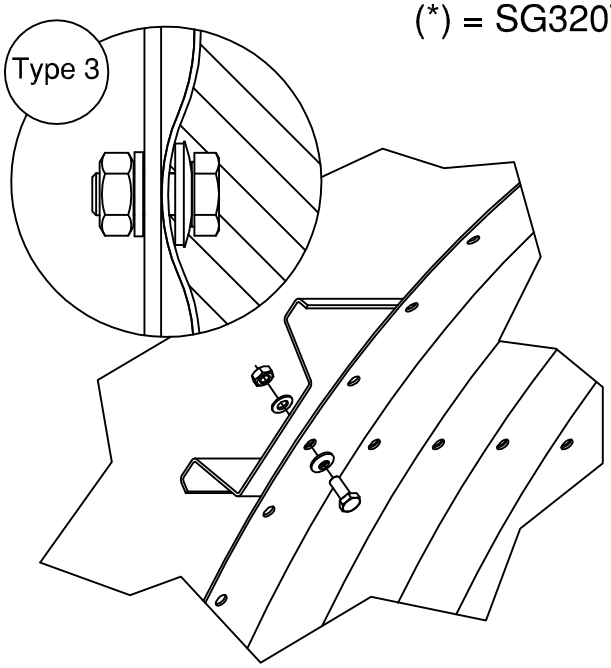


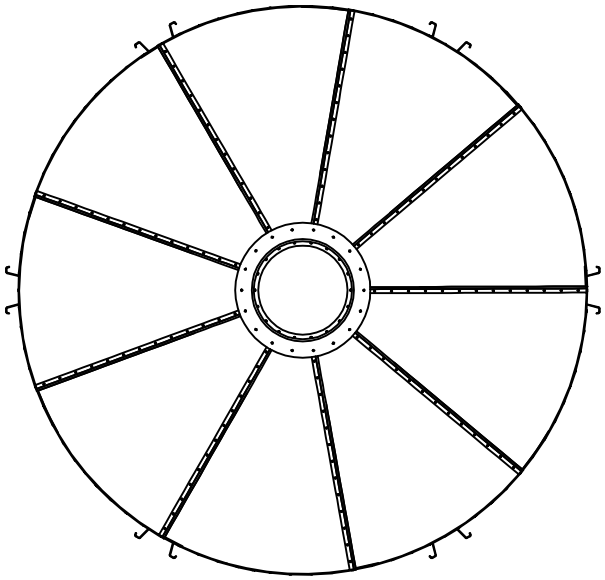
Complete the assembly of the silo body by assembling the loading door (31G100075A020). All areas where butyl sealing strips are to be placed should be properly degreased to ensure a good adhesion. Insert the screws in the right direction and follow the instructions indicated on page 11 for tightening them correctly.

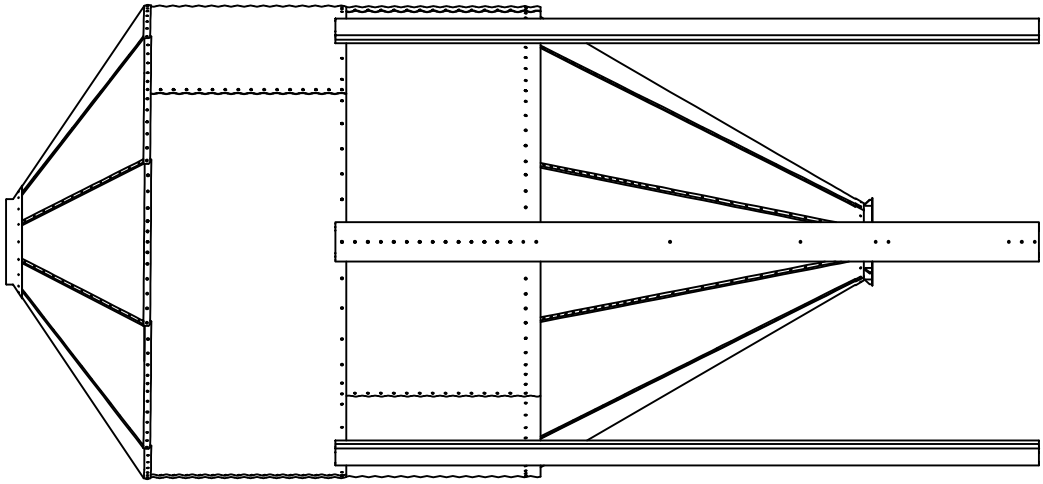


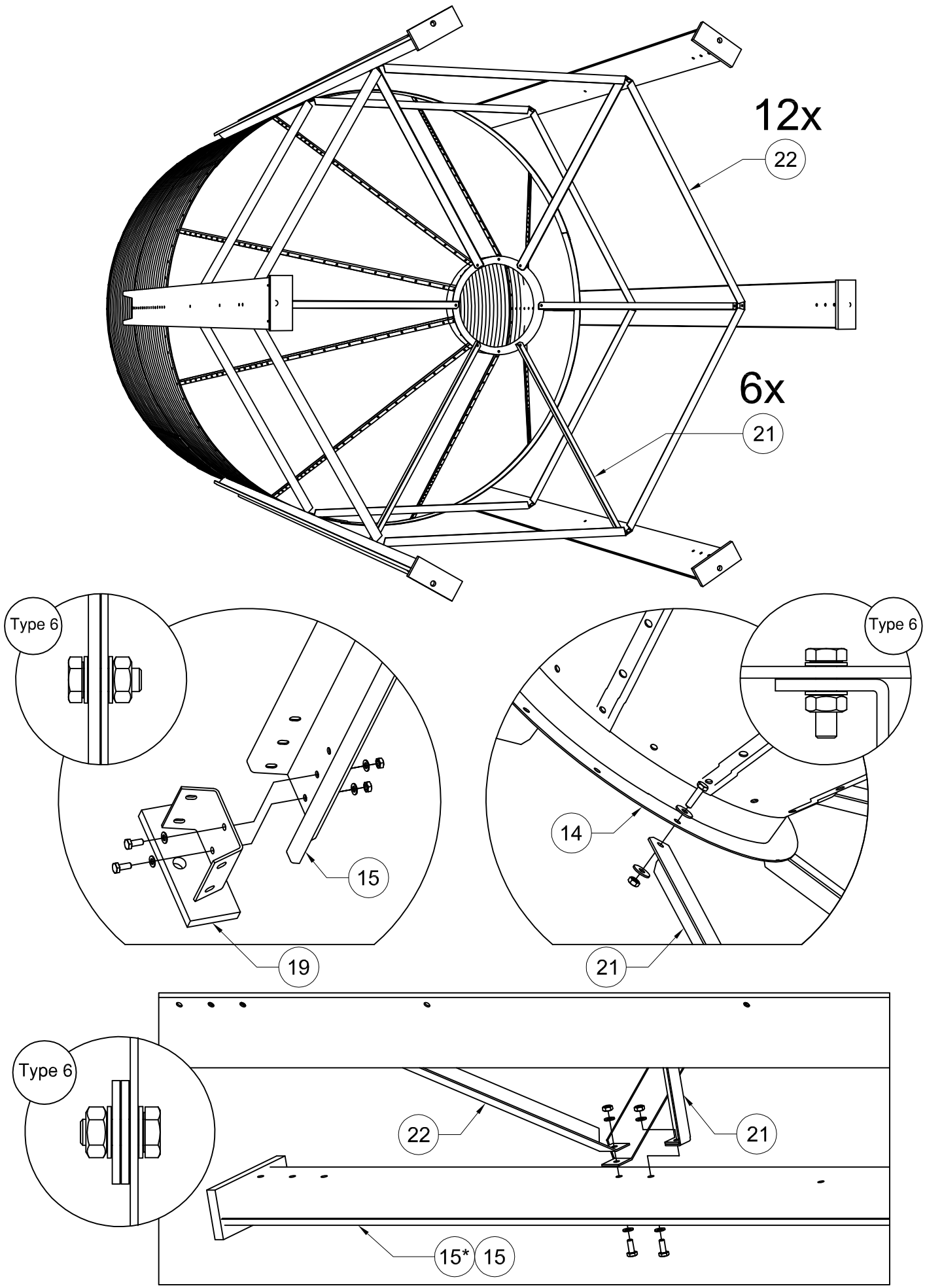


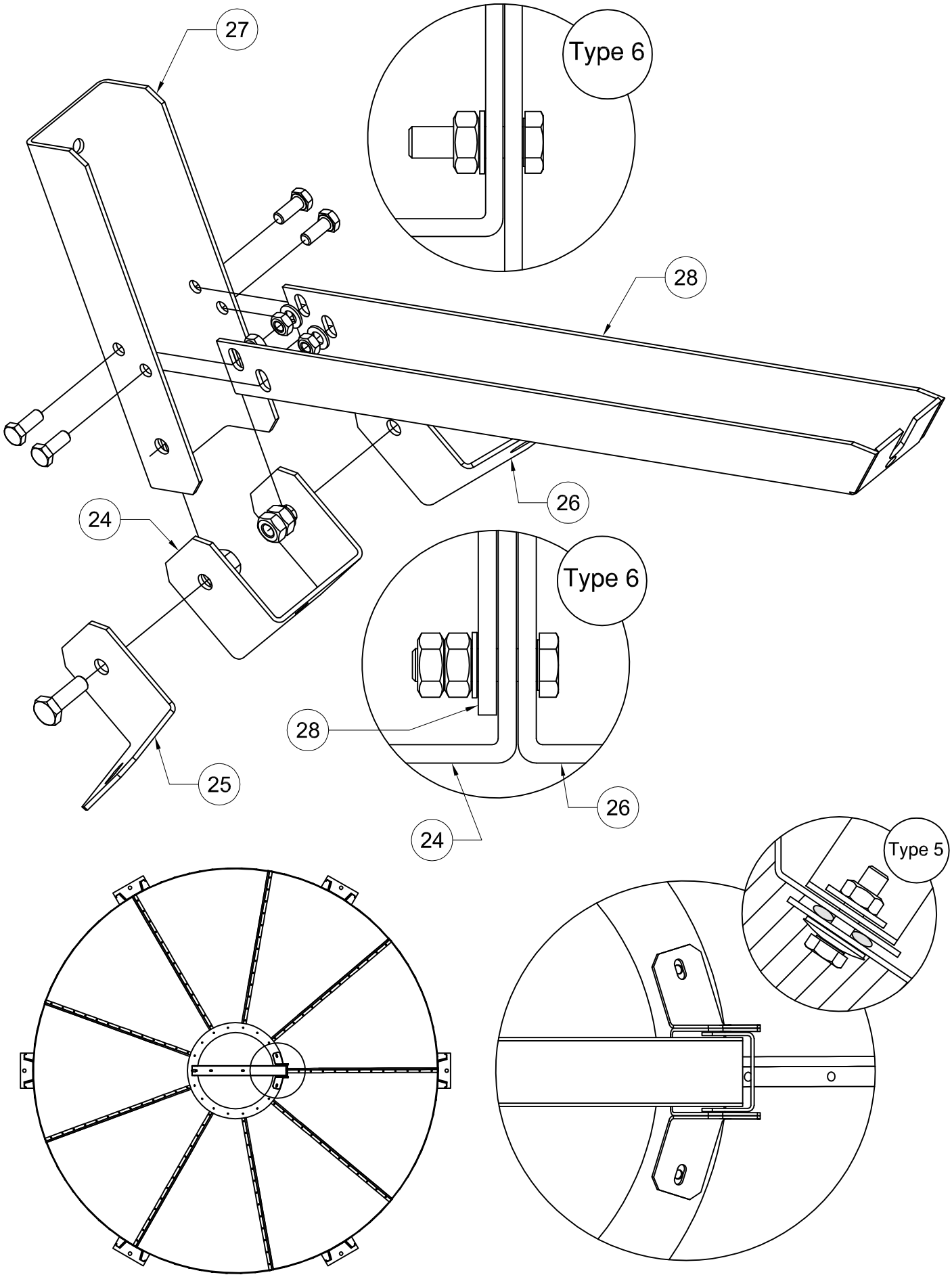
(*) = SG320T60/3, SG320T60/5

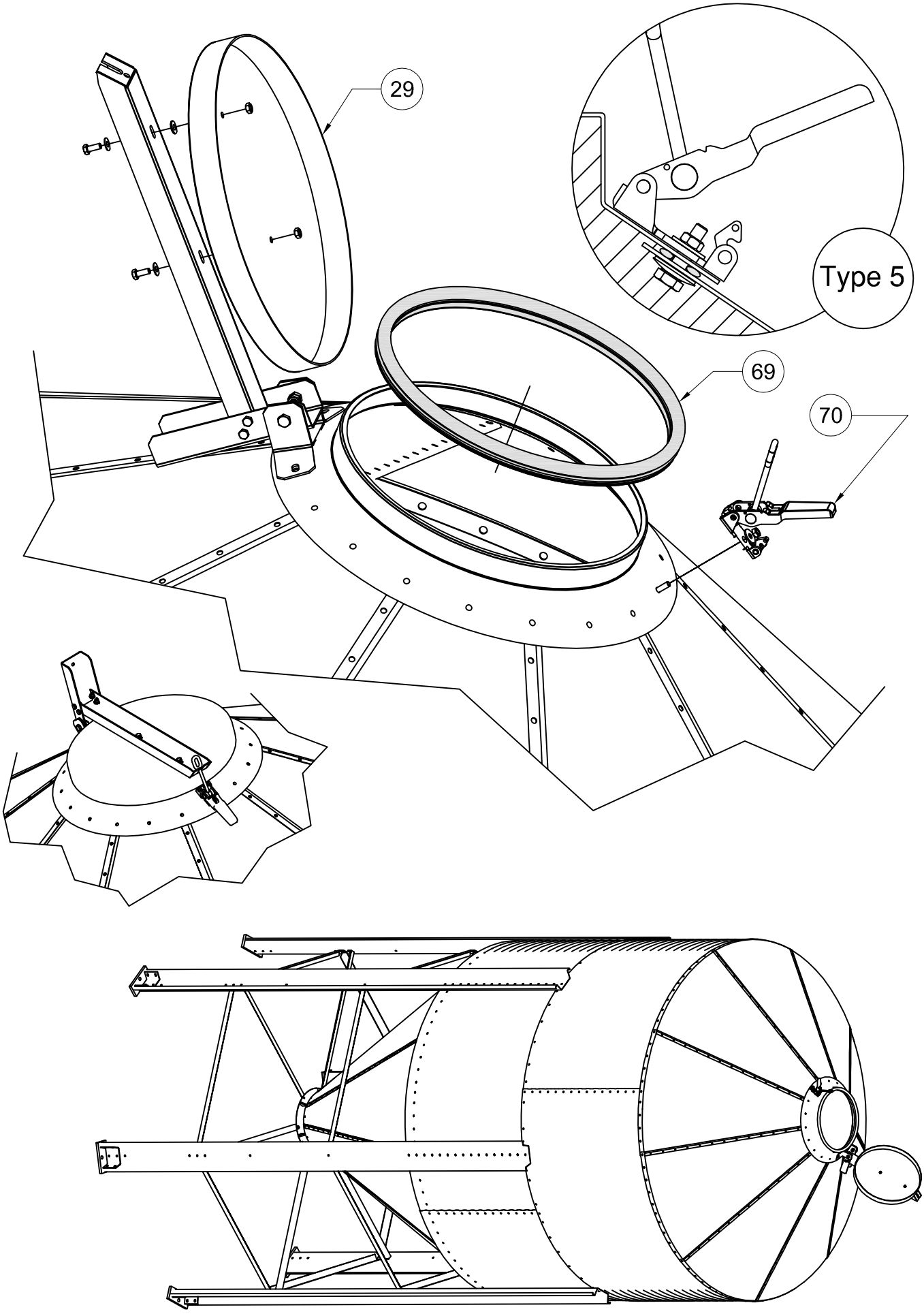




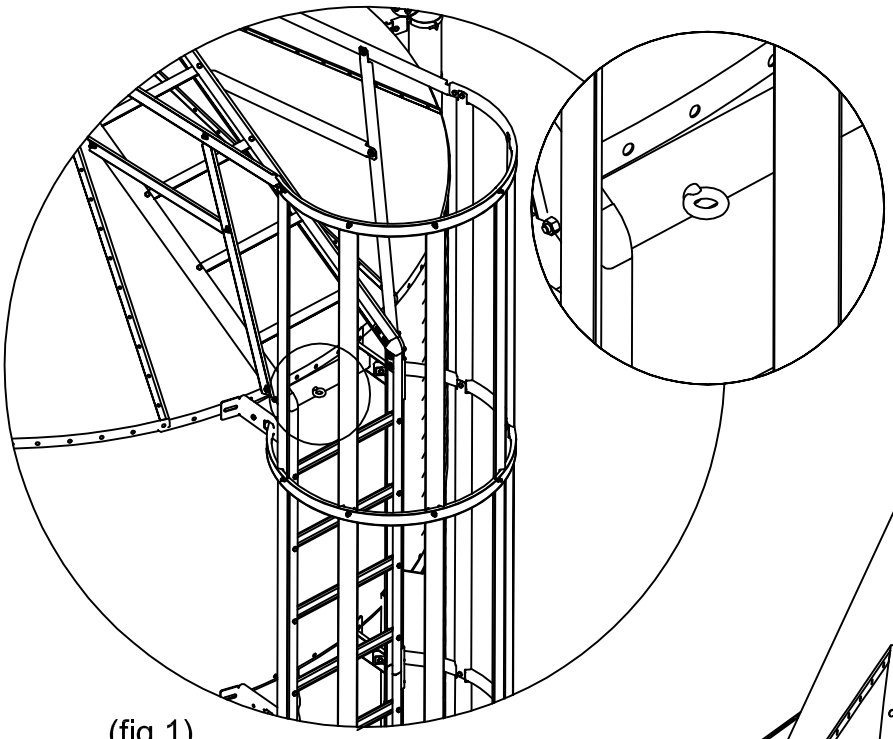



12x
22
6x
21
Type 6
15
19
Type 6
14
21
Type 6
22
21
15*
15

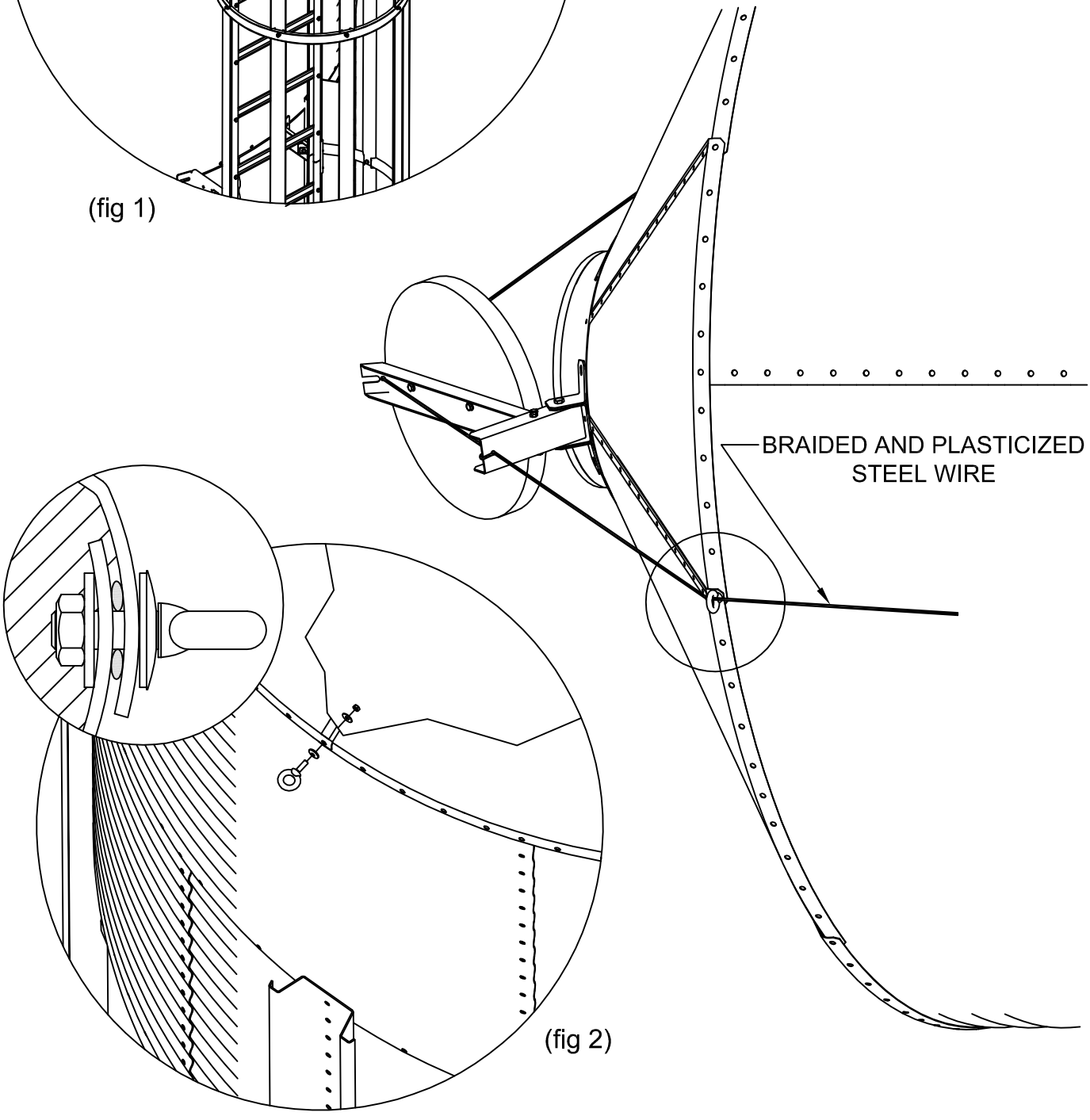

27
Type 6
28
26
24
Type 6
28
25
26
24
Type 5


29
Type 5
69
70

Assembly of the aperture cable will depend on whether or not your silo includes a ladder. If the silo has a ladder use one of the eye-bolt grommets as shown in figure number one (1) and the other as in figure number two (2). In case your silo does not include a ladder, the two eye bolt grommets will appear as in figure number two (2).



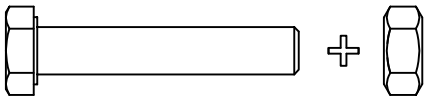
(fig 1)



(fig 2)

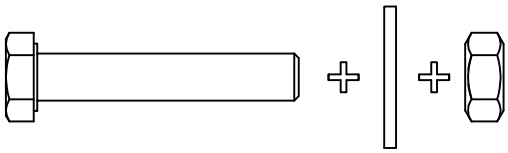
Join type 8

Hexagonal head screw M8x60 +
hexagonal nut M8

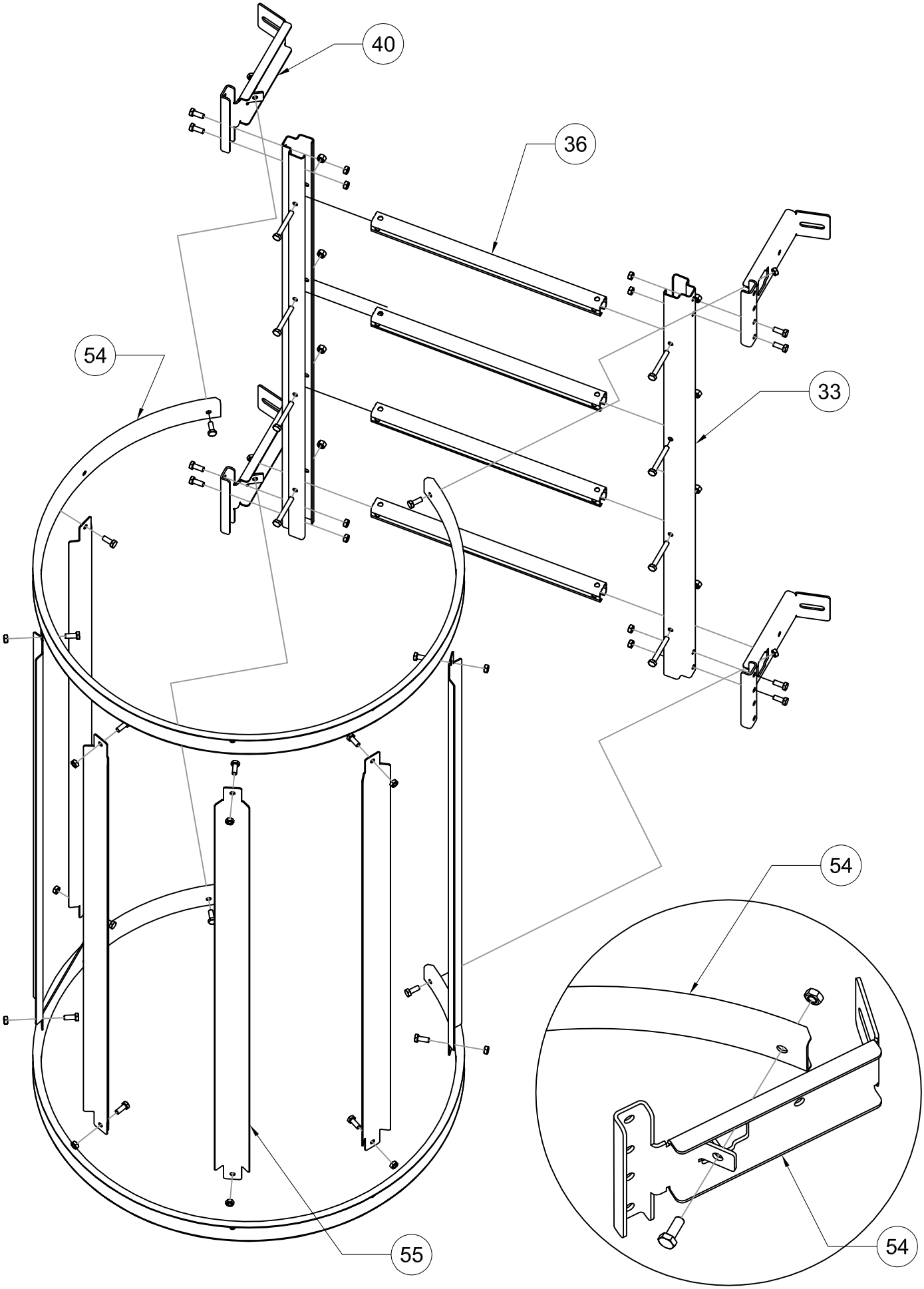


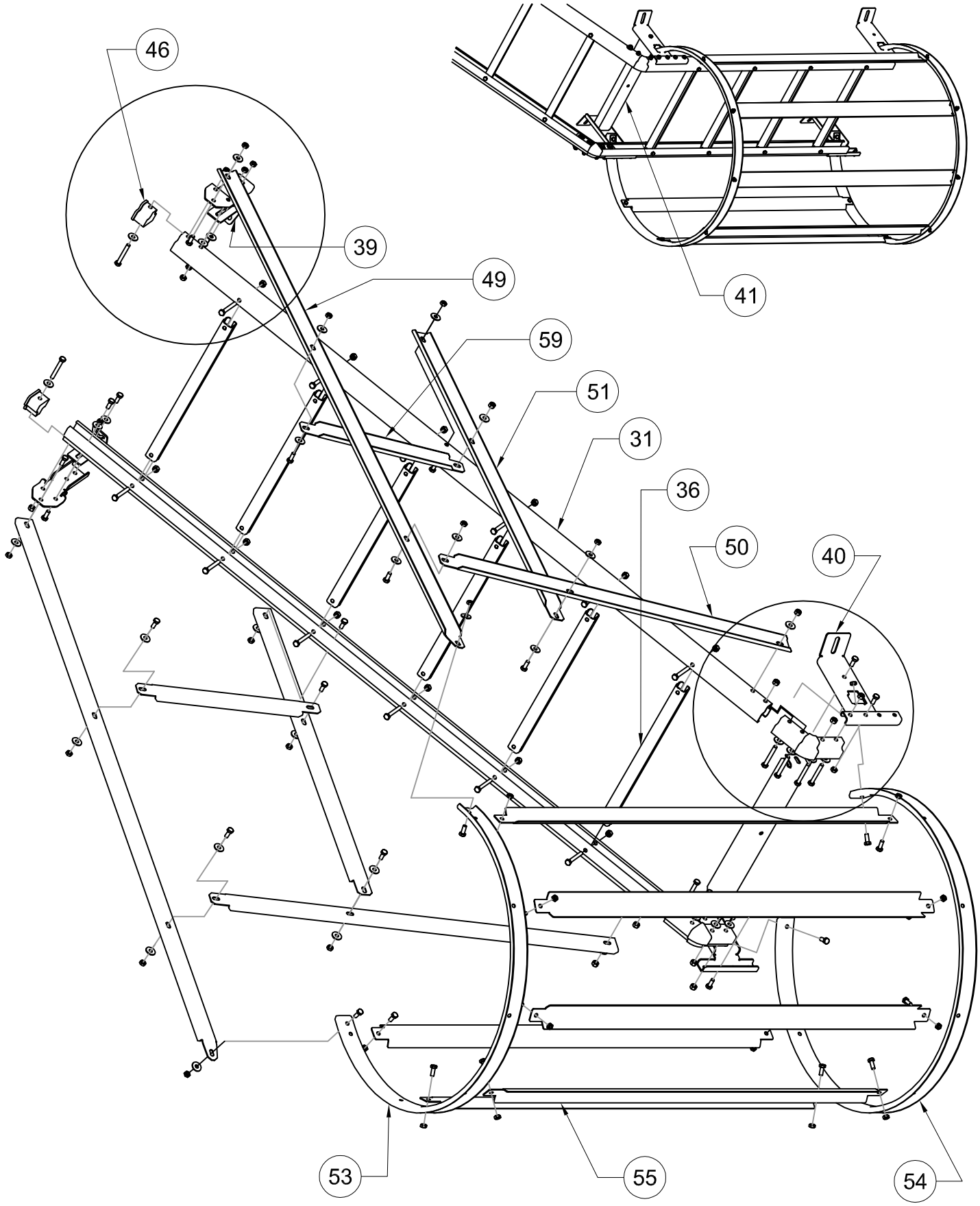
Join type 9

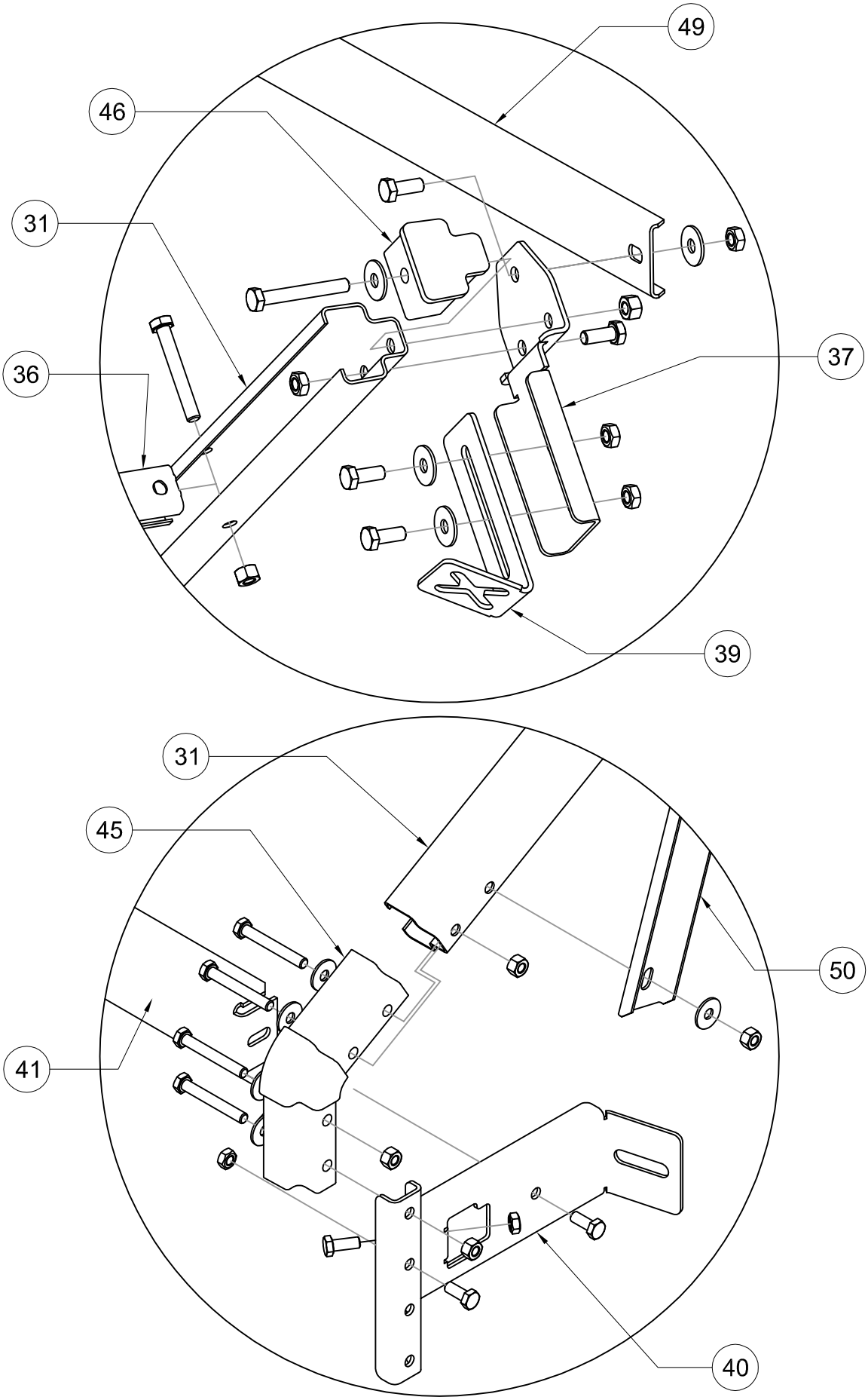
Hexagonal head screw M8x60 +
metal washer +
hexagonal nut M8



All bolts are to be tightened from the nut side only. Do not allow bolt heads to spin to avoid damages in rubber joints.
Drift punches can be used to align holes.
Before inserting the screws should be checked that in this position,both the type of joint as the direction in which you enter the screw is correct. Make sure all bolts are consistent with the pattern on the next page.
IMPORTANT: Tighten bolts with a torque wrench between 13Nm y 26Nm.


40
36
54
33
54
55
54


46
39
49
59
51
31
36
50
40
41
53
55
54


49
46
31
36
37
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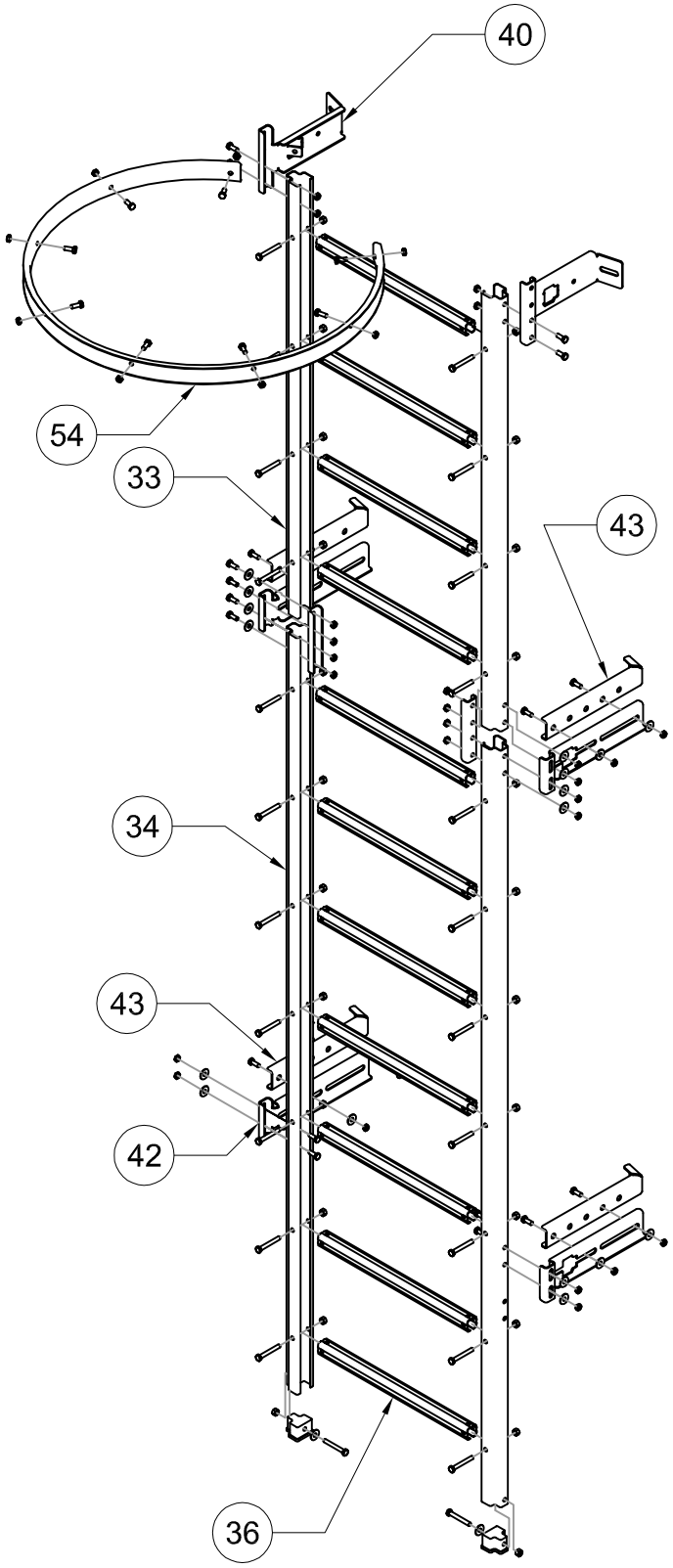
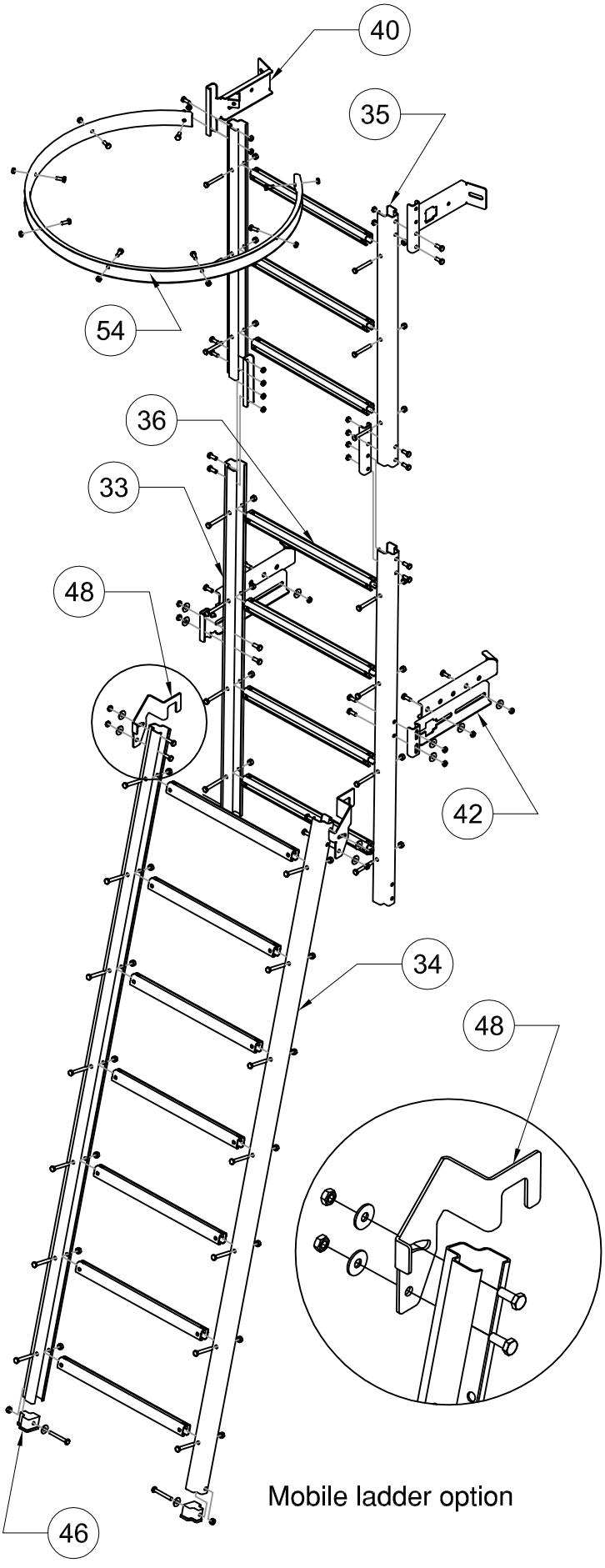
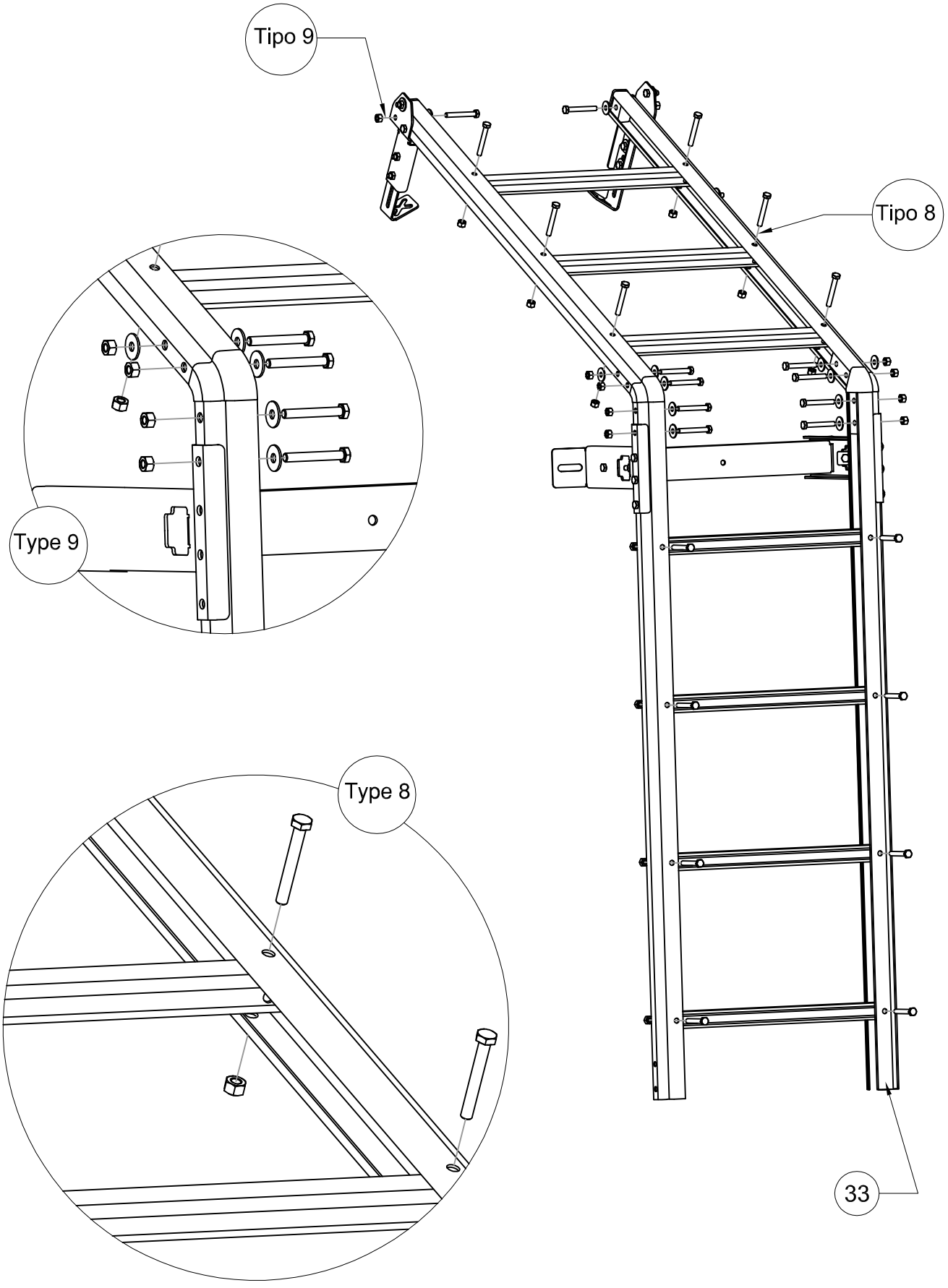
31
45
50
41
40

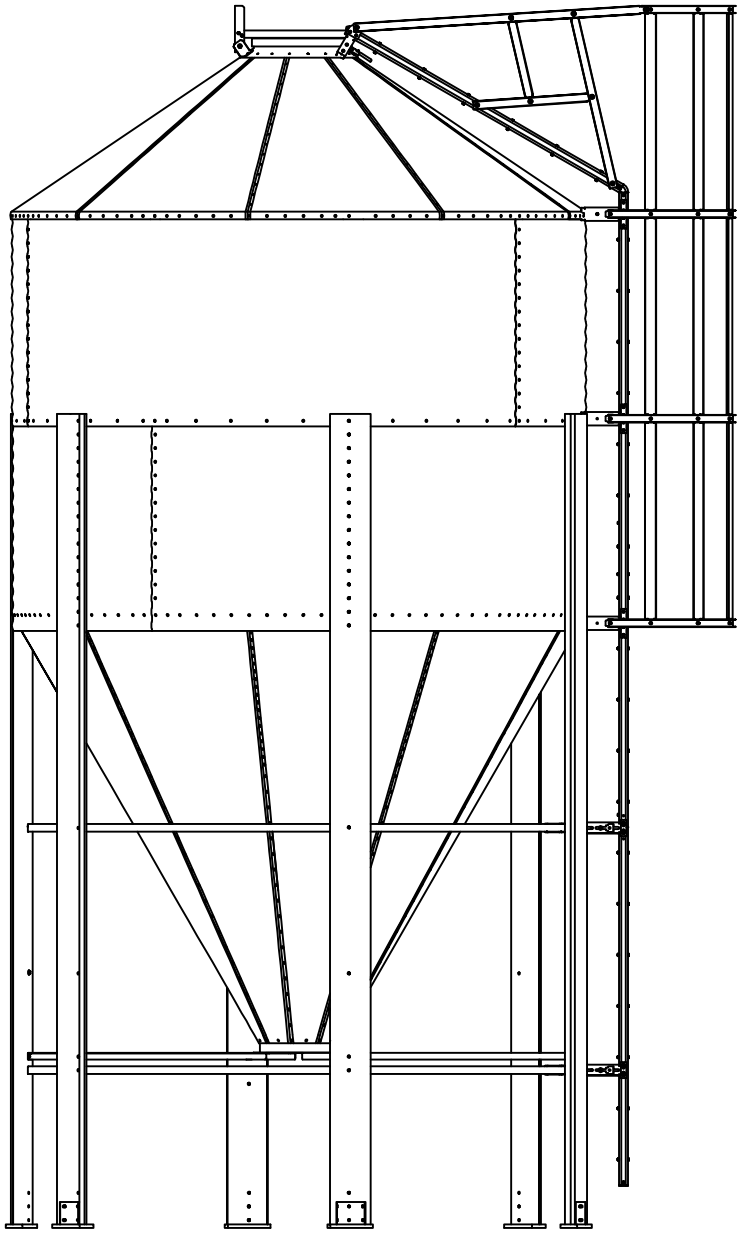


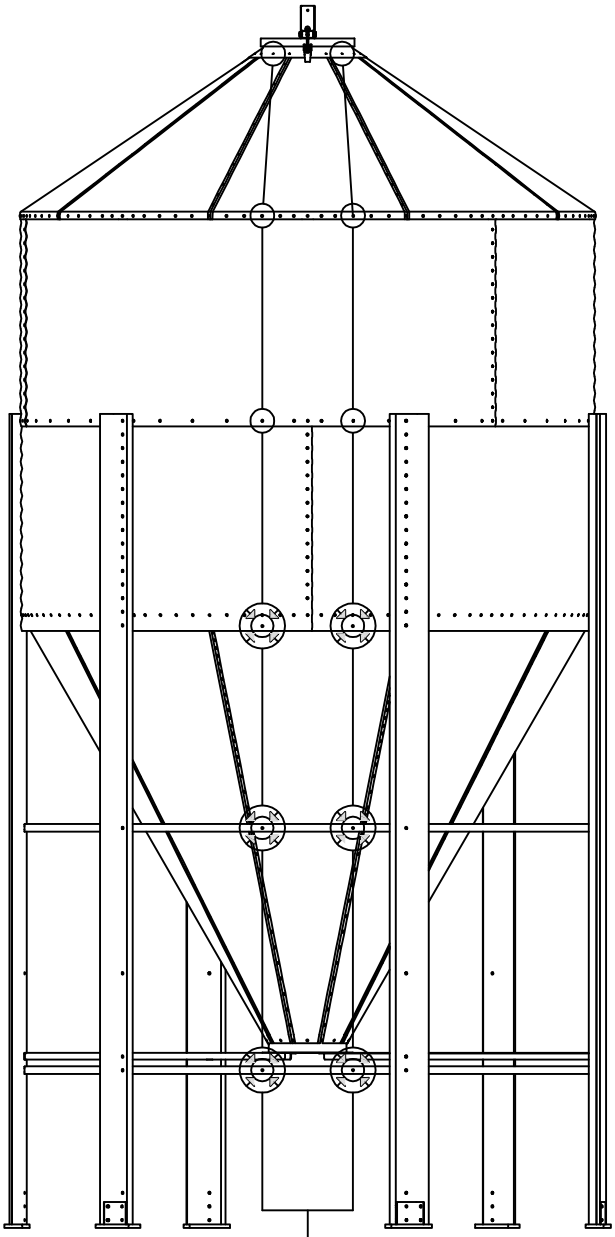
Mobile ladder option

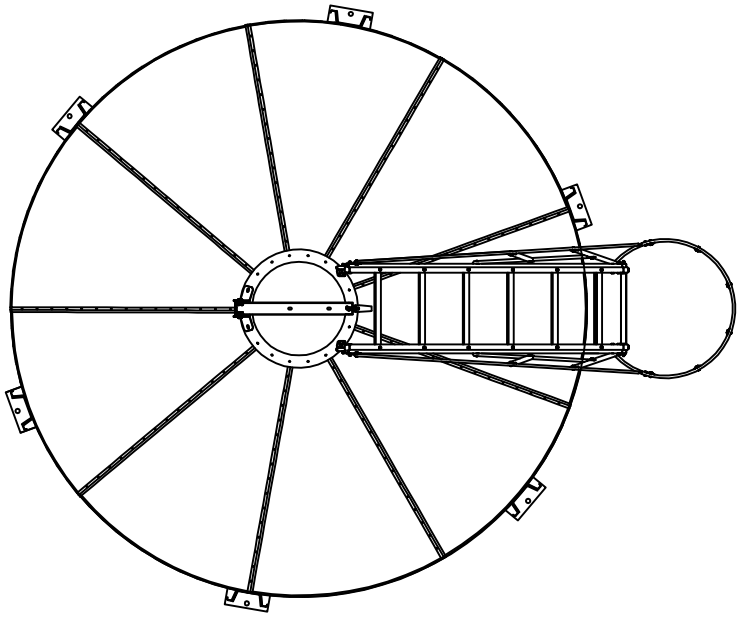


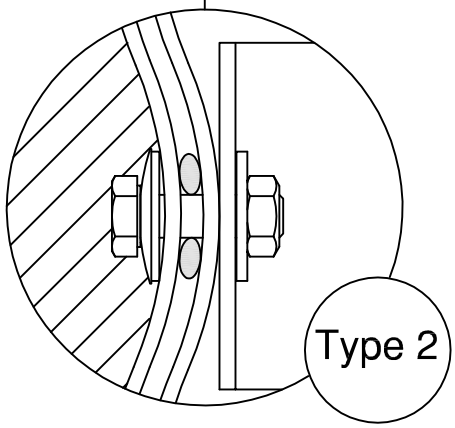
Mobile ladder option

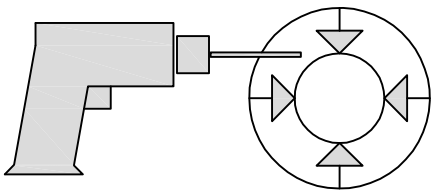

Tipo 9
Tipo 8
Type 9
Type 8
33

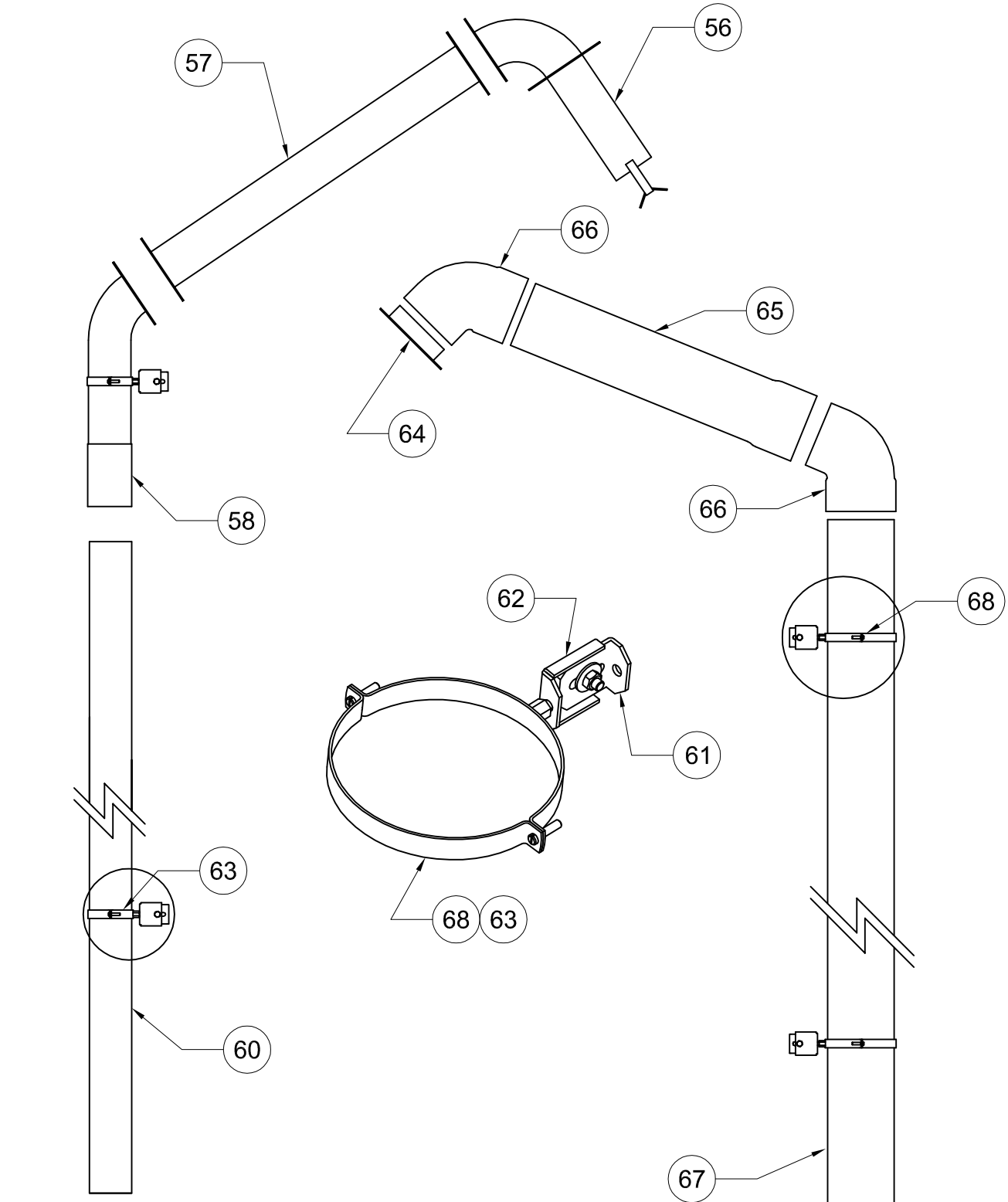






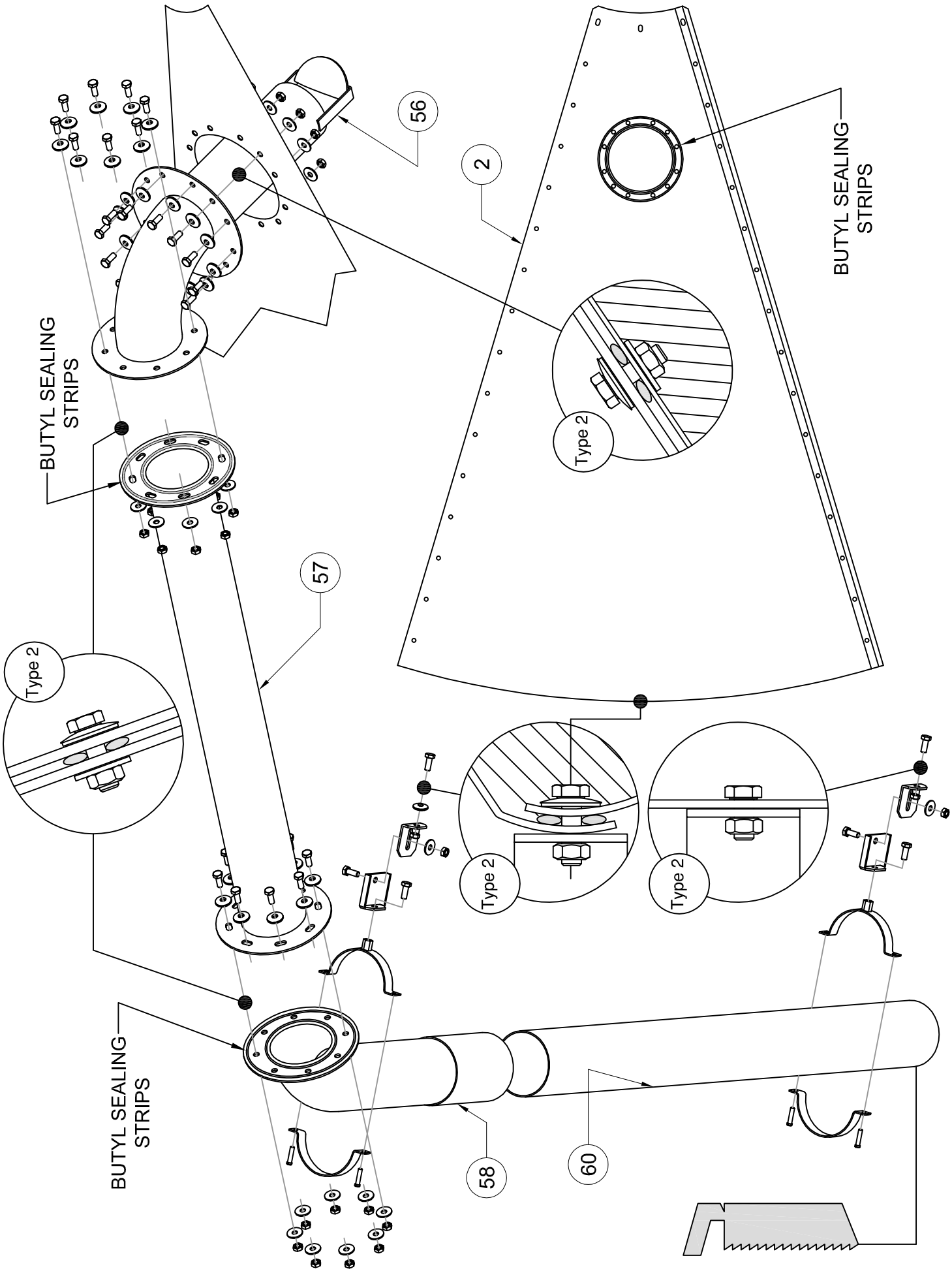

Type 2

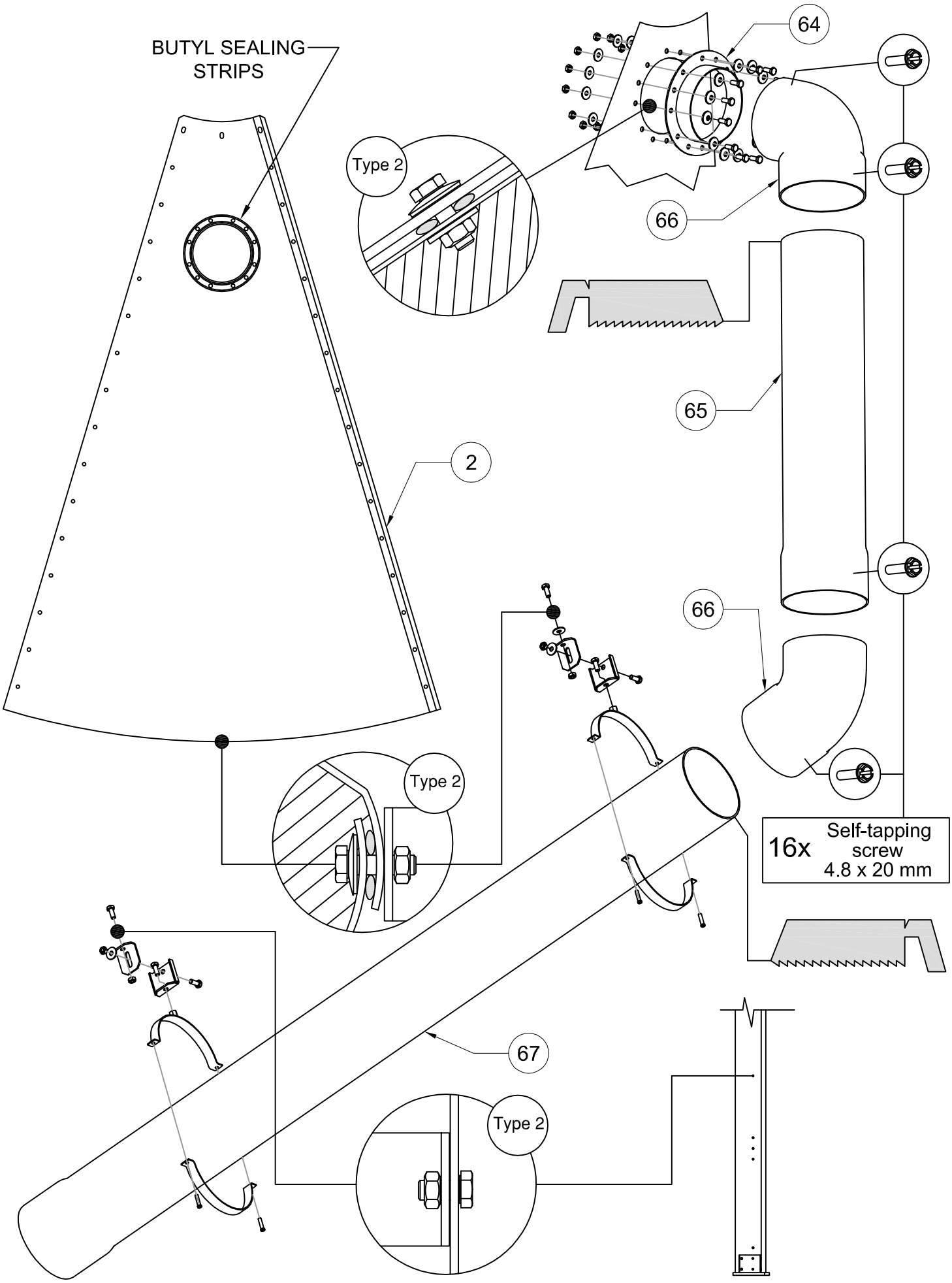


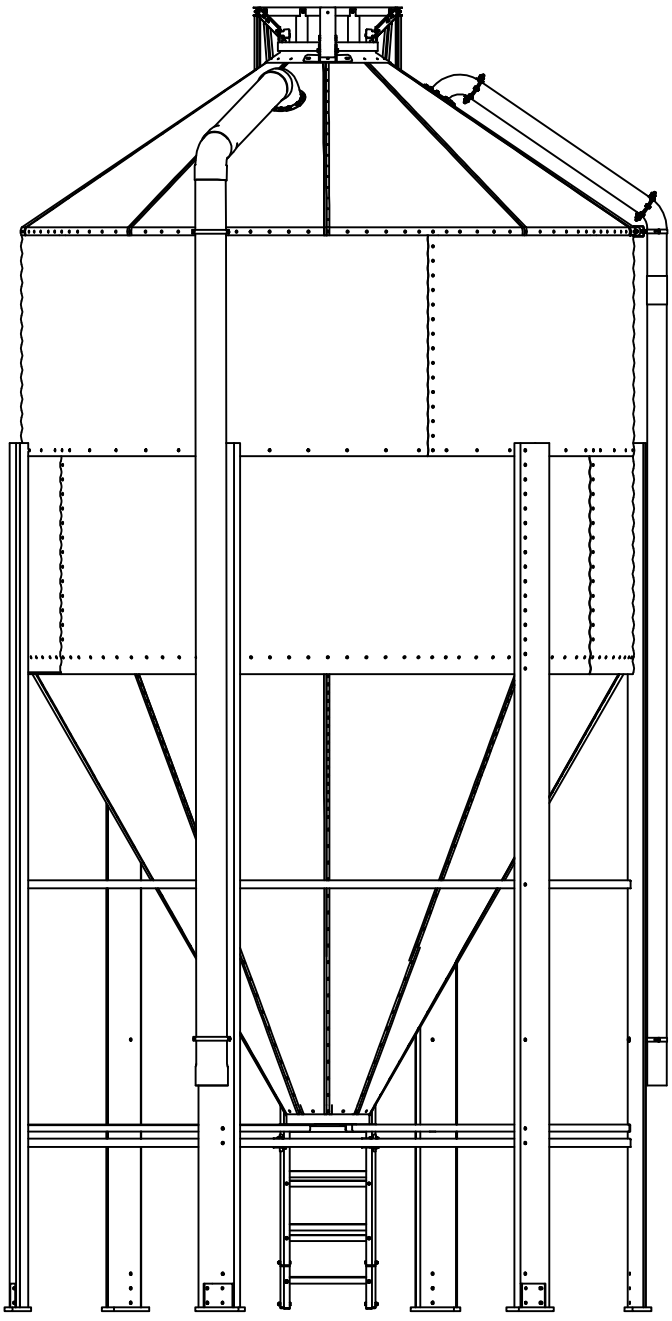


Pneumatic system
filler tube Ø100 mm

Pneumatic system
decompressionchimney Ø160 mm


56
2
BUTYL SEALING STRIPS
BUTYL SEALING STRIPS
Type 2
57
Type 2
Type 2
Type 2
BUTYL SEALING STRIPS
58
60

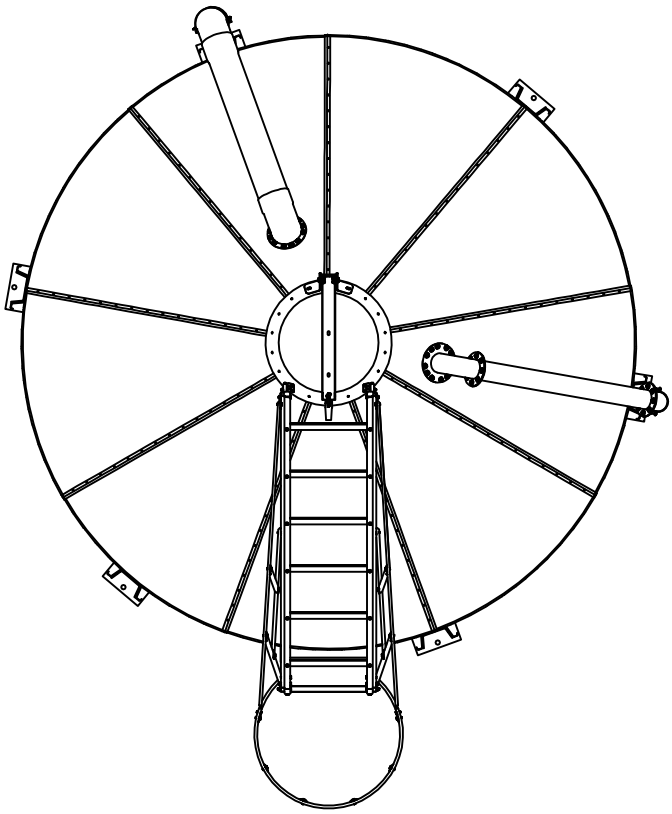

BUTYL SEALING STRIPS
64
Type 2
66
65
2
66
Type 2
16x Self-tapping screw 4.8 x 20 mm
67
Type 2

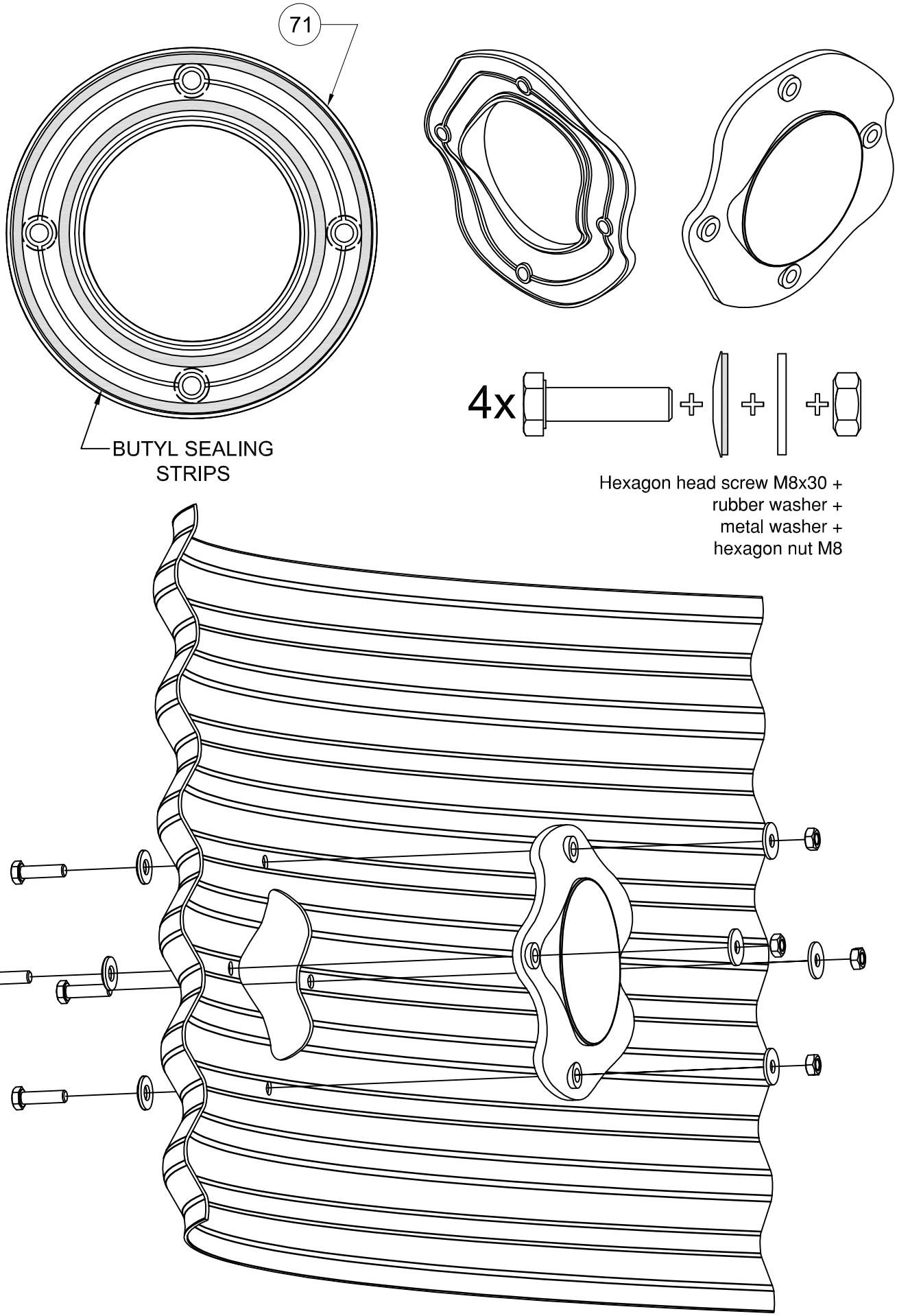


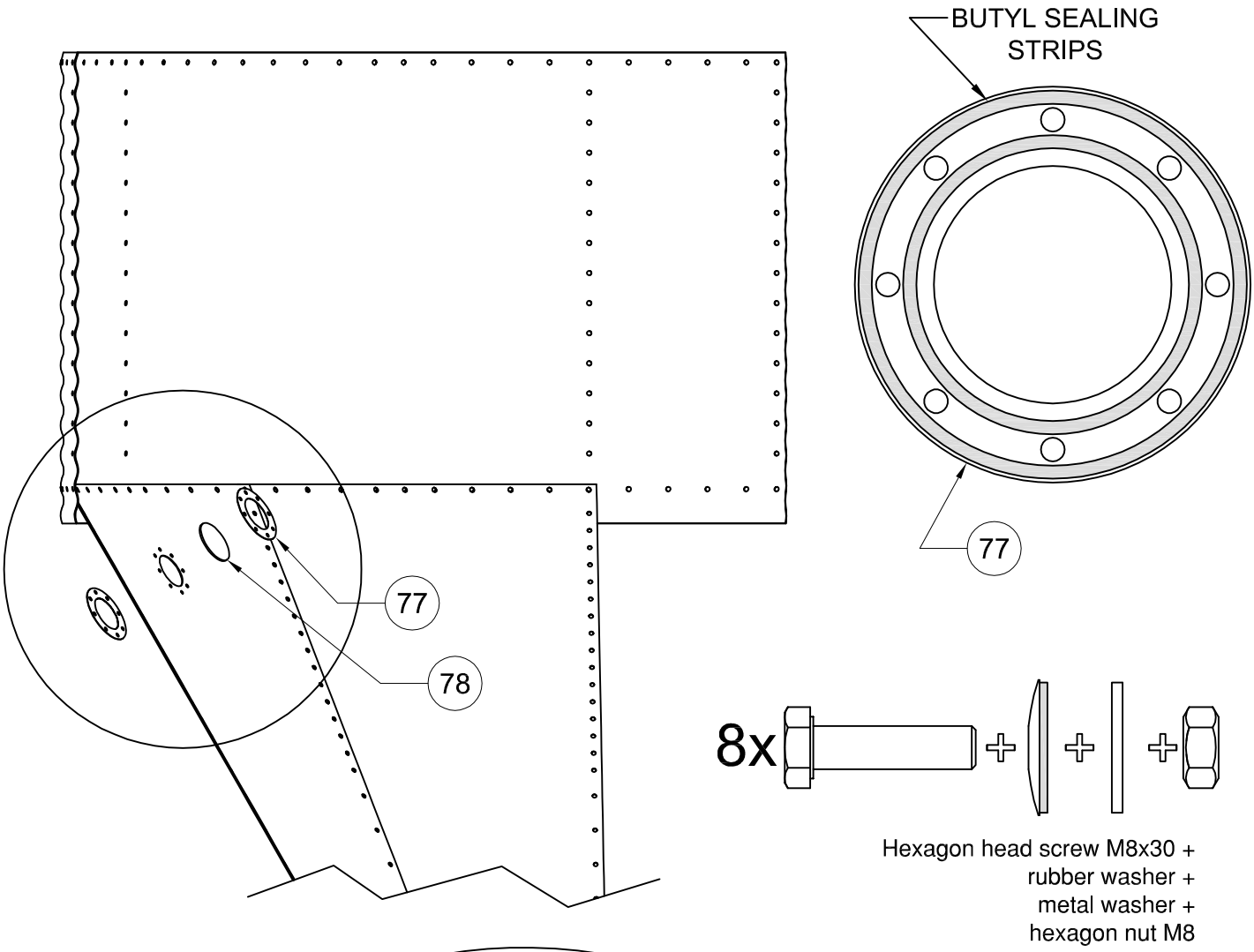
Max filling pressure

1.2 bar

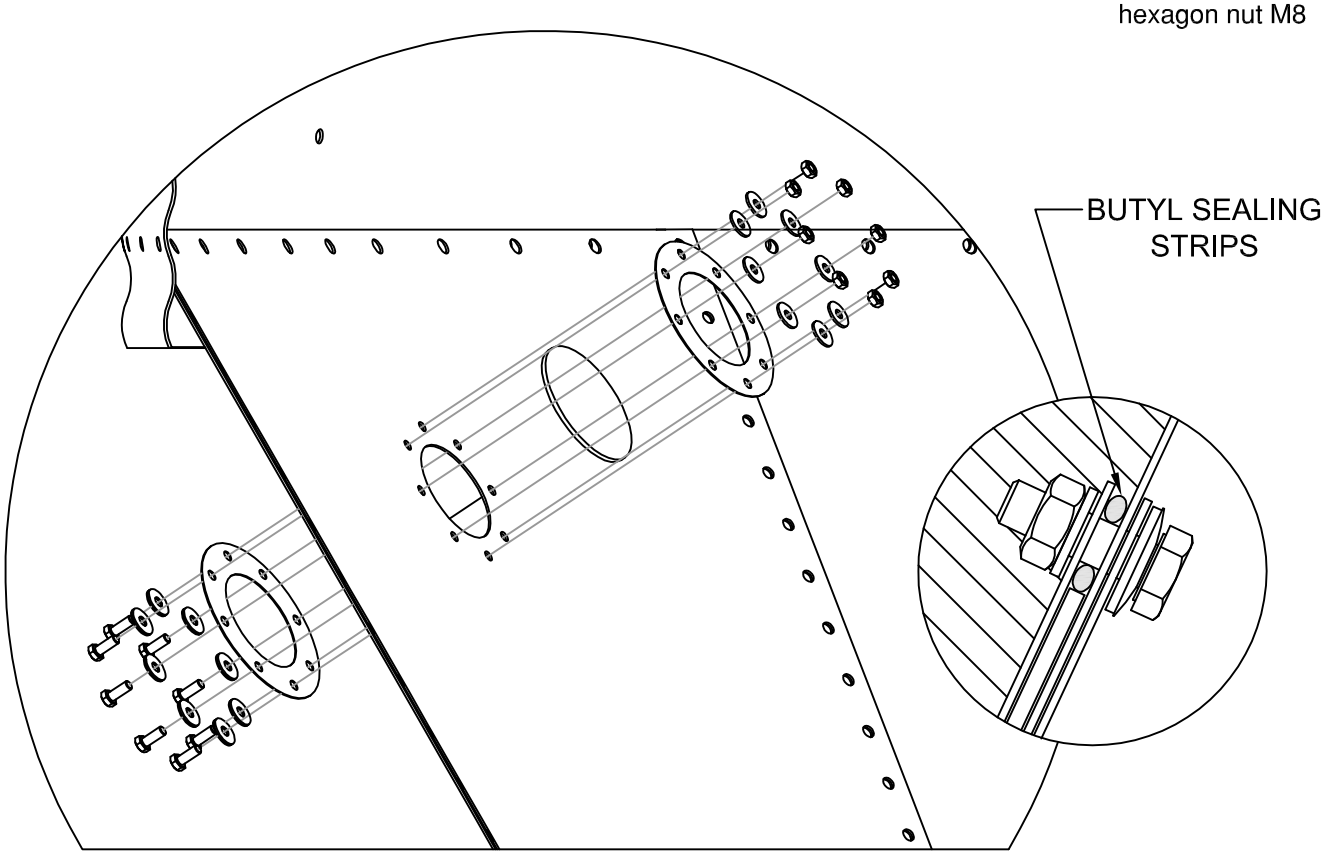
Be sure don´t work over pressure

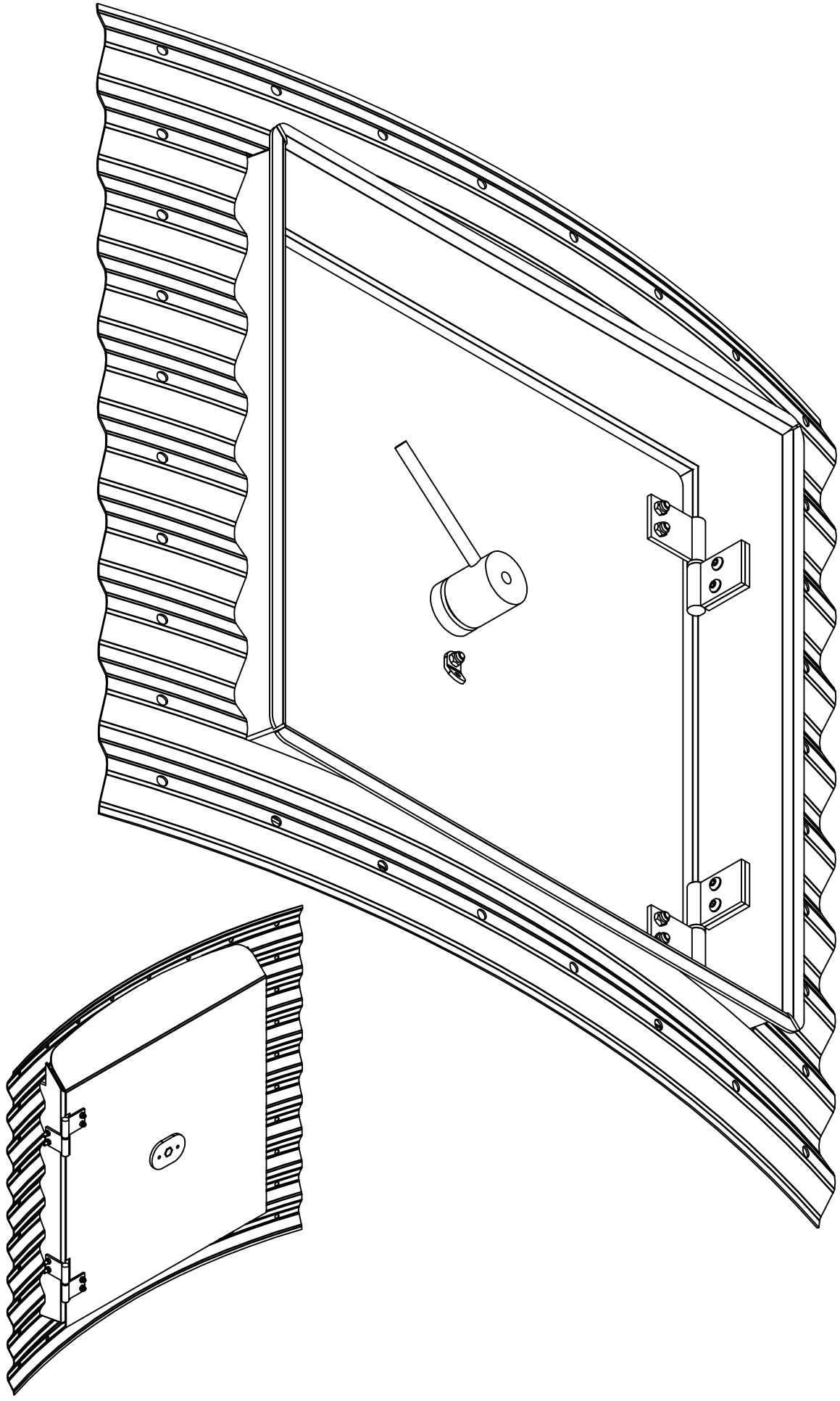


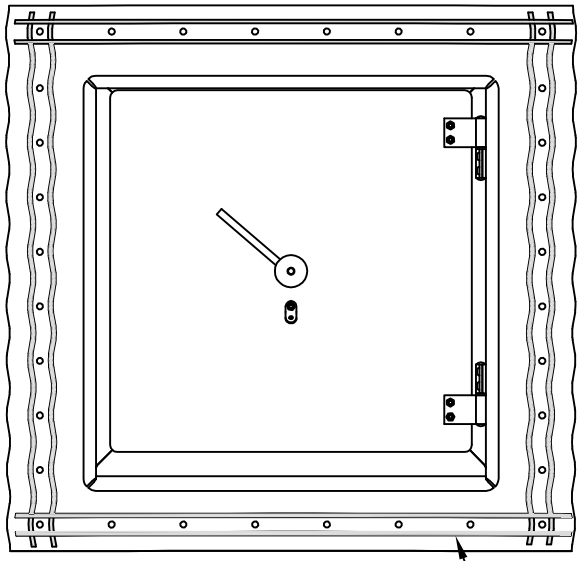

71
BUTYL SEALING STRIPS
4x
Hexagon head screw M8x30 +
rubber washer +
metal washer +
hexagon nut M8

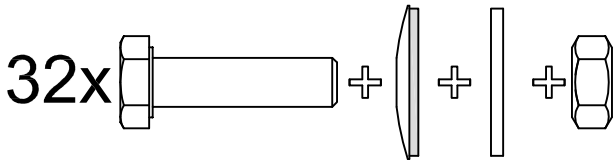


Hexagon head screw M8x30 +
rubber washer +
metal washer +
hexagon nut M8



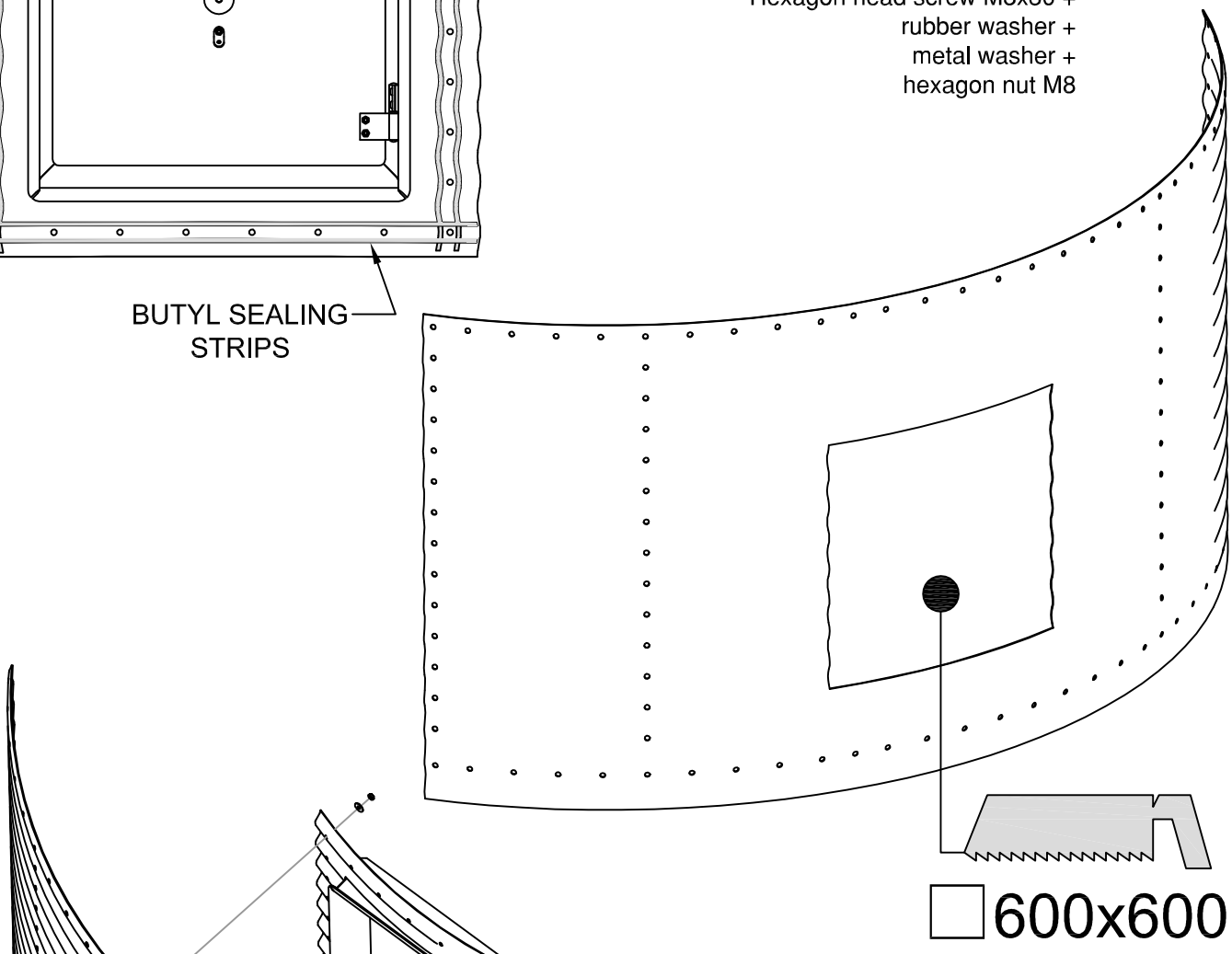




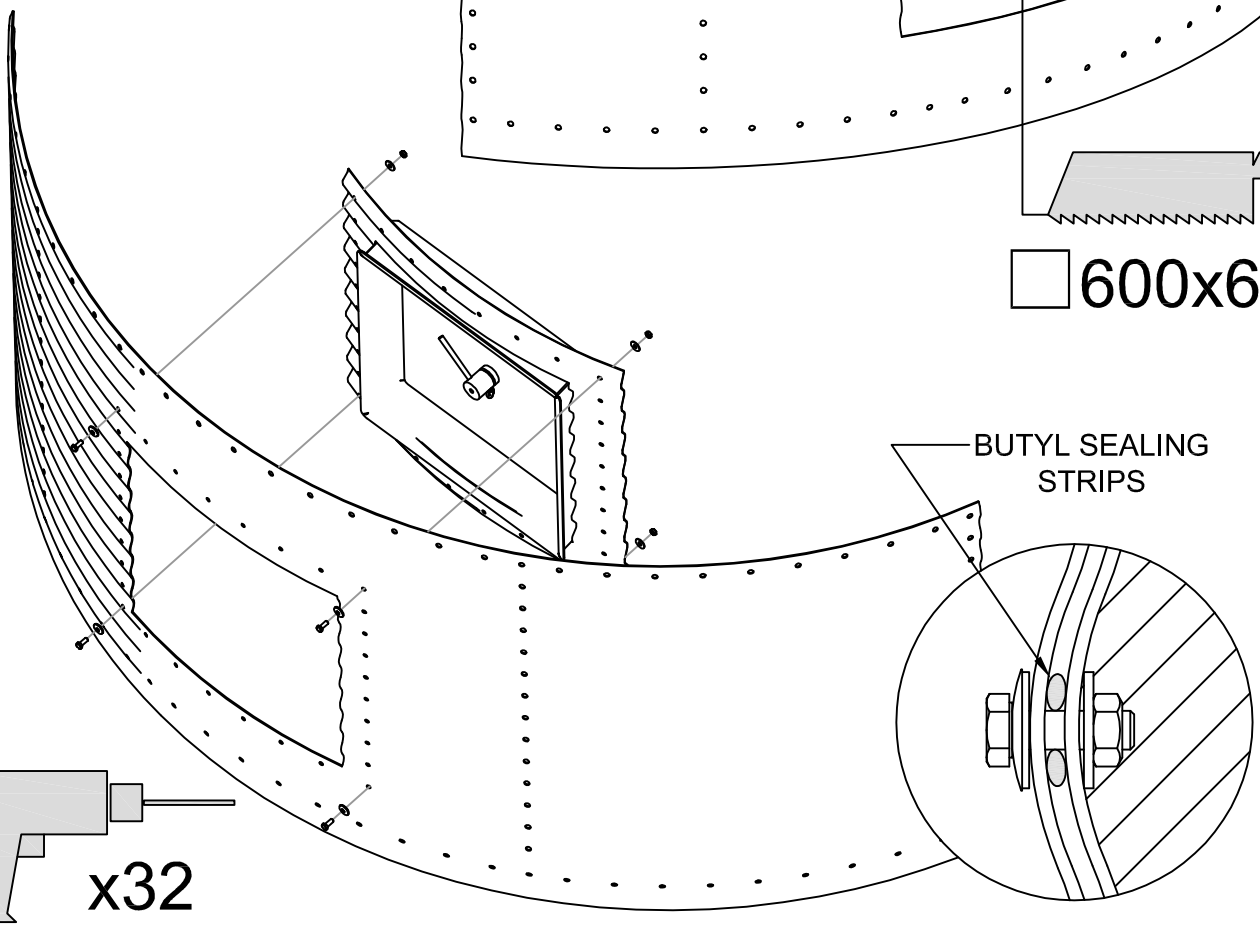


Hexagon head screw M8x30 +
rubber washer +
metal washer +
hexagon nut M8

BUTYL SEALING
STRIPS



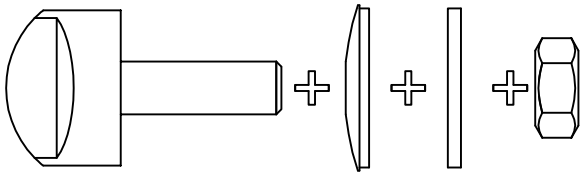
□600x600



x32

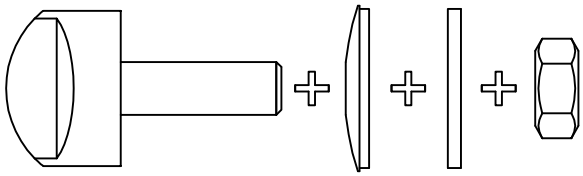
Join type 1

Plasticized head screw M8x25 +
rubber washer +
metal washer +
hexagonal nut M8



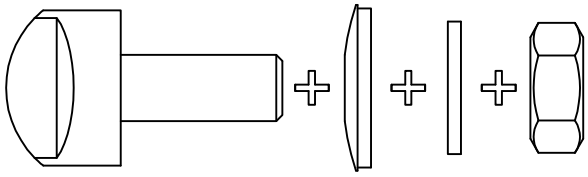
Join type 2

Plasticized head screw M8x25 +
rubber washer +
metal washer +
hexagonal nut M8



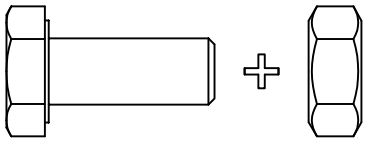
Join type 3

Plasticized head screw M10x25 +
rubber washer +
metal washer +
hexagonal nut M10



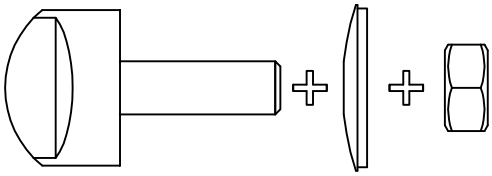
Join type 4

Hexagonal head screw M10x25 +
hexagonal nut M10



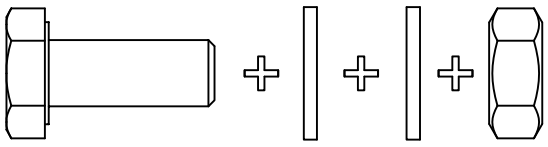
Join type 5

Plasticized head screw M8x25 +
rubber washer +
hexagonal nut M8



Join type 6

Hexagonal head screw M10x25 +
metal washer +
metal washer +
hexagonal nut M10

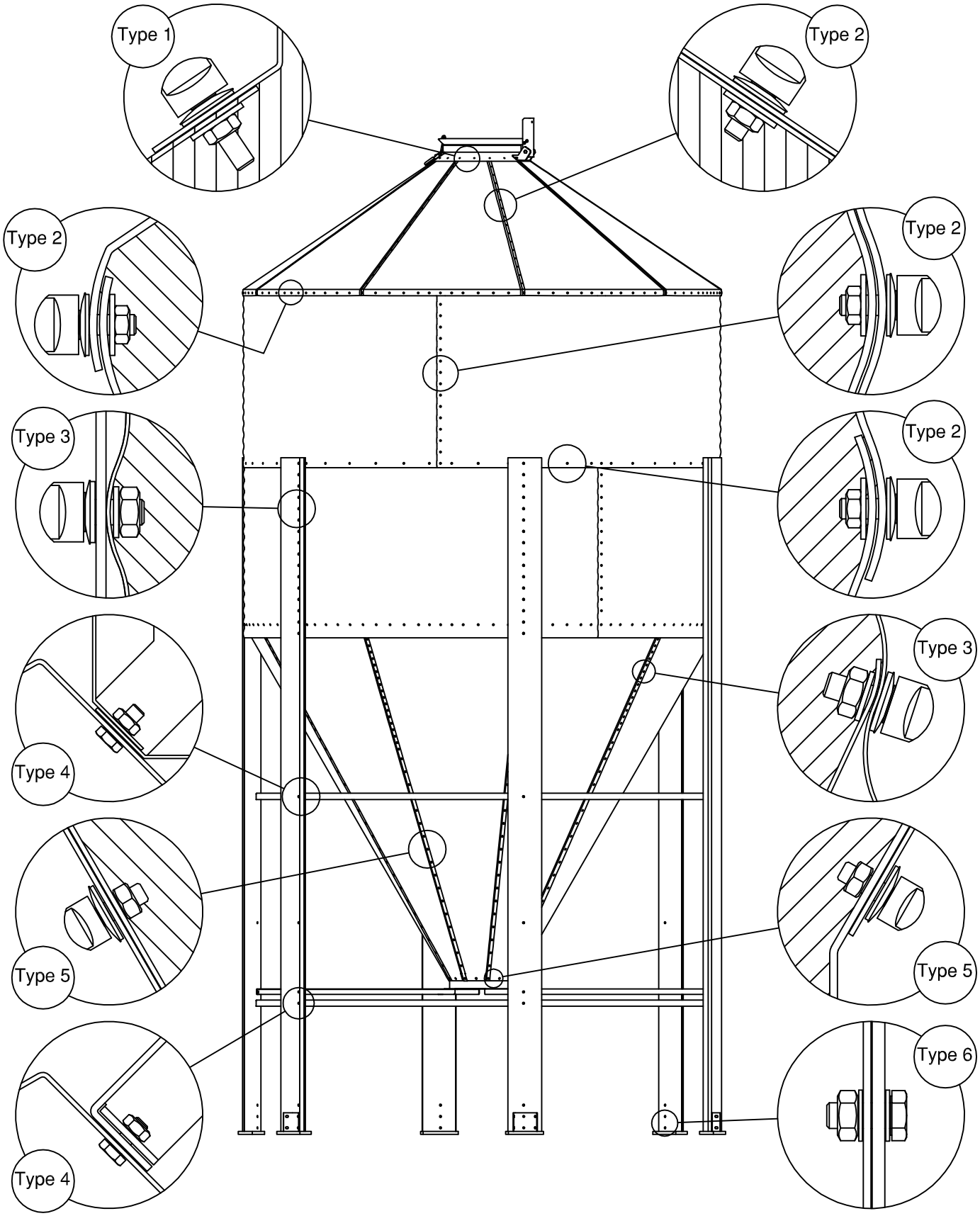


All bolts are to be tightened from the nut side only. Do not allow bolt heads to spin to avoid damages in rubber joints.

Drift punches can be used to align holes.

Before inserting the screws should be checked that in this position,both the type of joint as the direction in which you enter the screw is correct. Make sure all bolts are consistent with the pattern on the next page.

IMPORTANT: Tighten bolts with a torque wrench between 13Nm y 26Nm.



Types of joint shown by their differents positions.
Bolts, nuts and washers specifications.