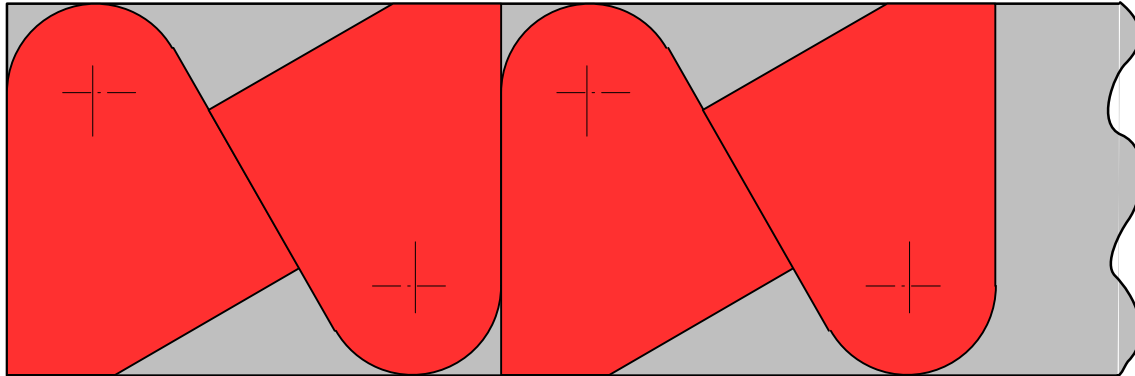


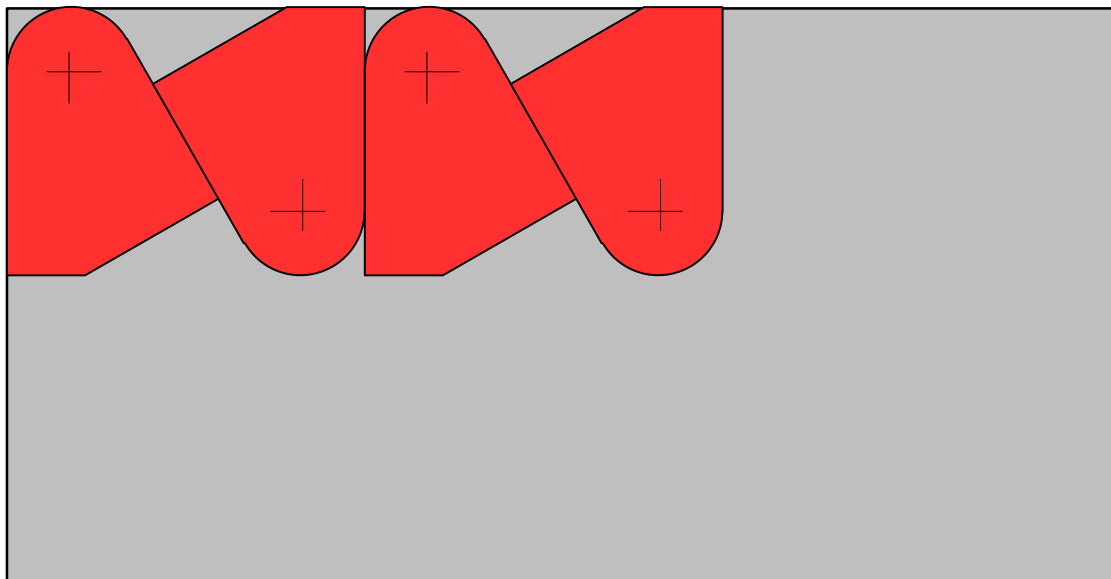
1 Manufacture of buckets

1.1 Manufacture of buckets for belt bucket elevators

1.1.1 Manufacture of the side plates



The side plates are cut out of a metal strip.

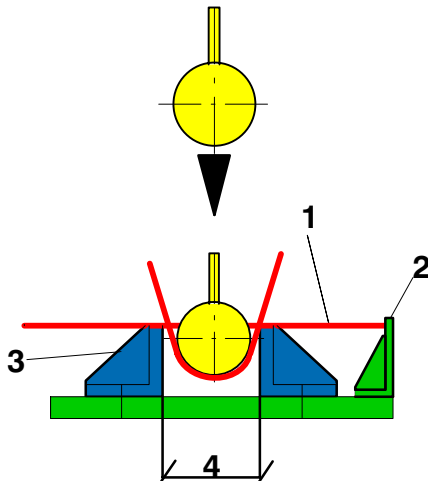


The side plates can also be manufactured of sheet-metal plates by means of plasma cutting or oxy-acetylene cutting.



Take care that the radius corresponds exactly to the indications on the respective drawings.

1.1.2 Manufacture of the body plates



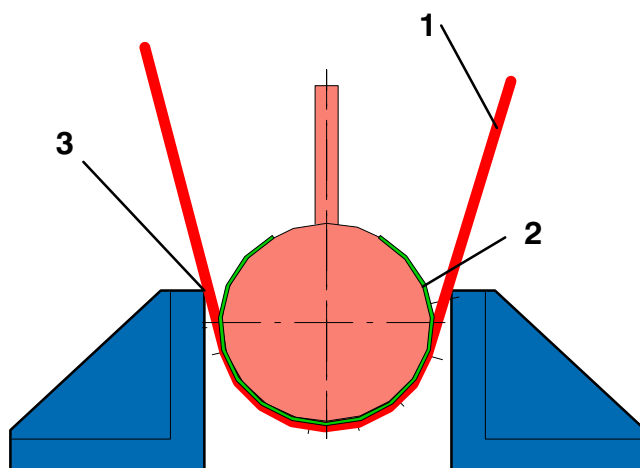
Prior to bending, the plates which have been cut out are perforated. For this purpose, the plates are pushed into a bending device by means of a press. The inner width (IW) of this device corresponds to the diameter of the bending shaft plus 10 to 25 mm.

1 Body plate

2 End stop

3 adjustable

4 Inner width



The diameter of the bending shaft is approx. 10 to 25 mm smaller than the diameter of the bottom of the bucket. The bending shaft diameter is enlarged by extension tubes. Depending on the hardness of the plate, tubes of sheet metal with a thickness between 1 to 5 mm are used.

1 Body plate

2 Extension tube

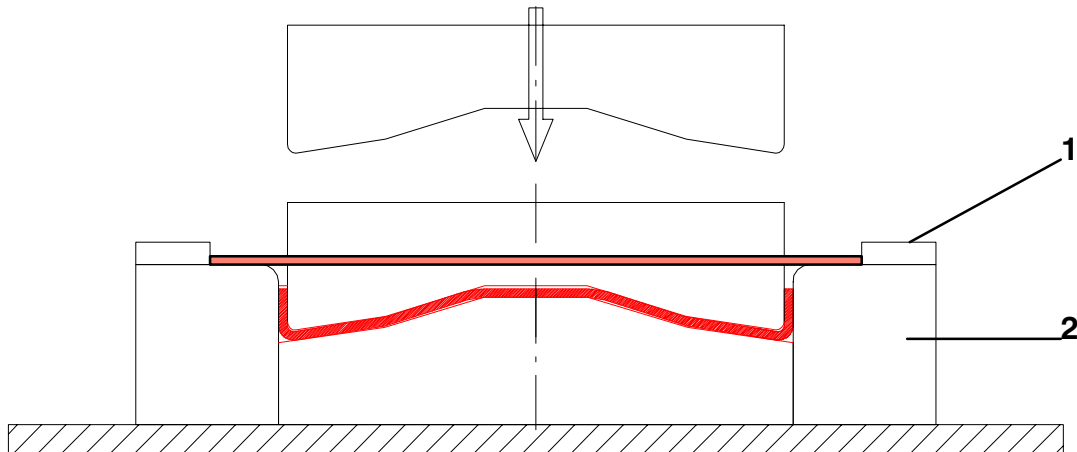
3 Radius to be lubricated



The body plate must be bent until its form corresponds exactly to the one of the side plate

1.1.3 Manufacture of the profile plates

The profile plates are to be manufactured either in a press or in a CNC-press break. If the bending is carried out manually, the repeat accuracy cannot be assured.



Prior to pressing, the plates are perforated. Then, they are profiled in the press in one work cycle.

1 End stop

2 Mold



The profile plates are checked regarding their accuracy to size by means of a template. The dimensions and the permissible tolerances can be taken from the drawings no. 303715-4 and 304133-4.



In the area of the holes, the profile strip must be mounted onto the bucket without any clearance between strip and bucket

1.1.4 How to weld the buckets



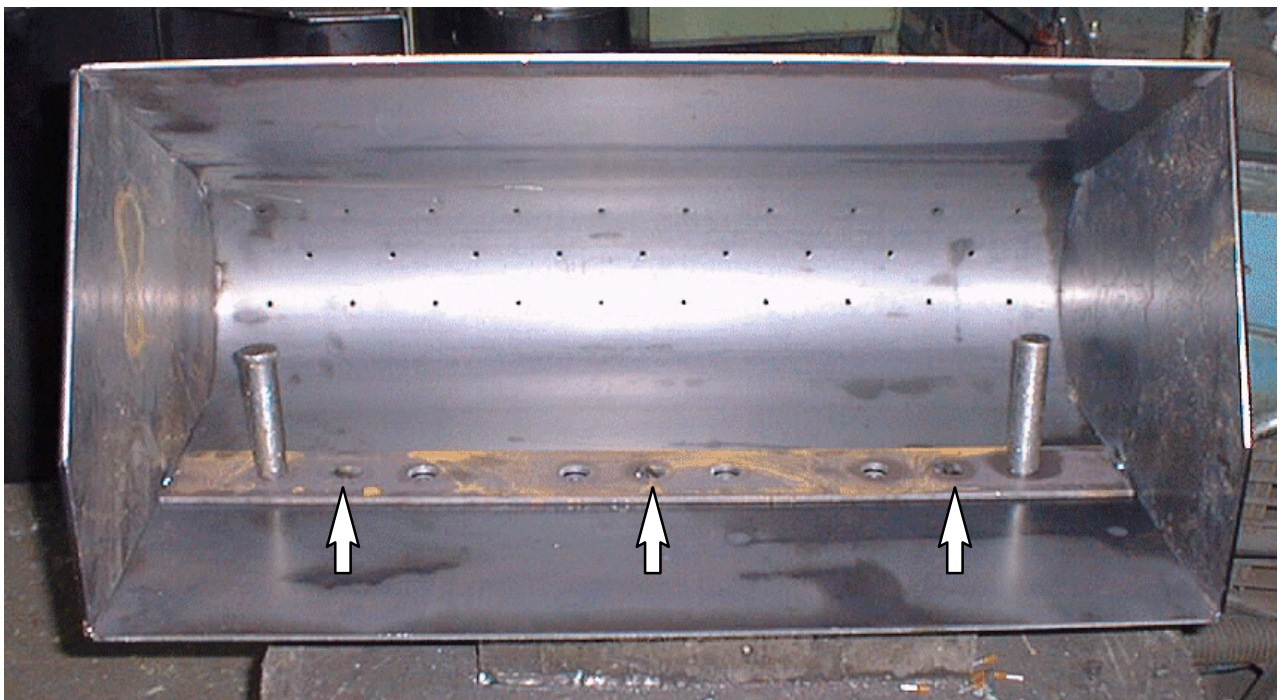
The side plates must be tack-welded to the body plates. Take care that these ones, if possible, do not have to be pulled for this purpose.



By means of a drift pin, the profile plate is put in position and tack-welded. In the area of the holes, it must be mounted without any clearance.



By means of drift pins, the reinforcing flat bar is adjusted and tack-welded from the inside. The flat bar must be mounted without any clearance. If necessary, the flat bar must be adjusted by means of a screw clamp or a pressing lever.



After tack-welding, the flat bar must be connected to the body plate by means of plug-welding.

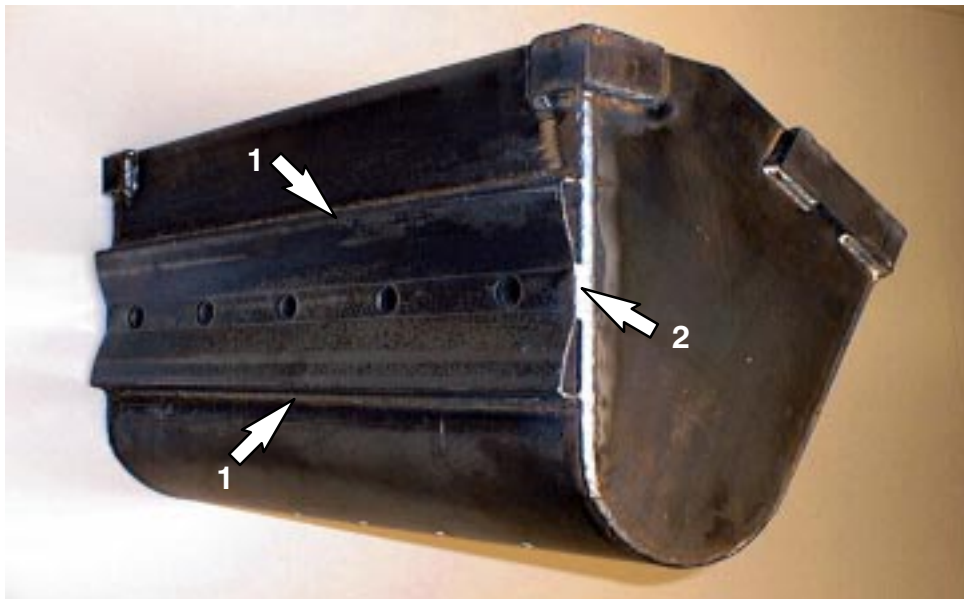
1.1.5 How to weld the buckets



The inside and outside of the bucket is to be welded according to the indications on the drawing. If necessary, a hardfacing is additionally applied at the scooping edge.

1 Plug-welding

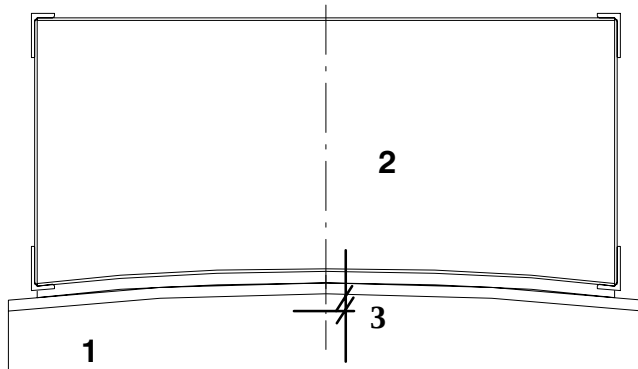
2 Fillet weld



1 From the outside, the profile plate is to be through-welded.

2 Laterally, the profile plate is only welded to the bucket where it directly touches it.

1.1.6 How to crown the buckets



For guiding the belt, the drive and tension drums are crowned. The contour of the back side of the buckets must correspond to that one of the drums. Otherwise a fatigue of material would occur due to the bending stress.

1 Bucket elevator drum

2 Bucket

3 Crowning

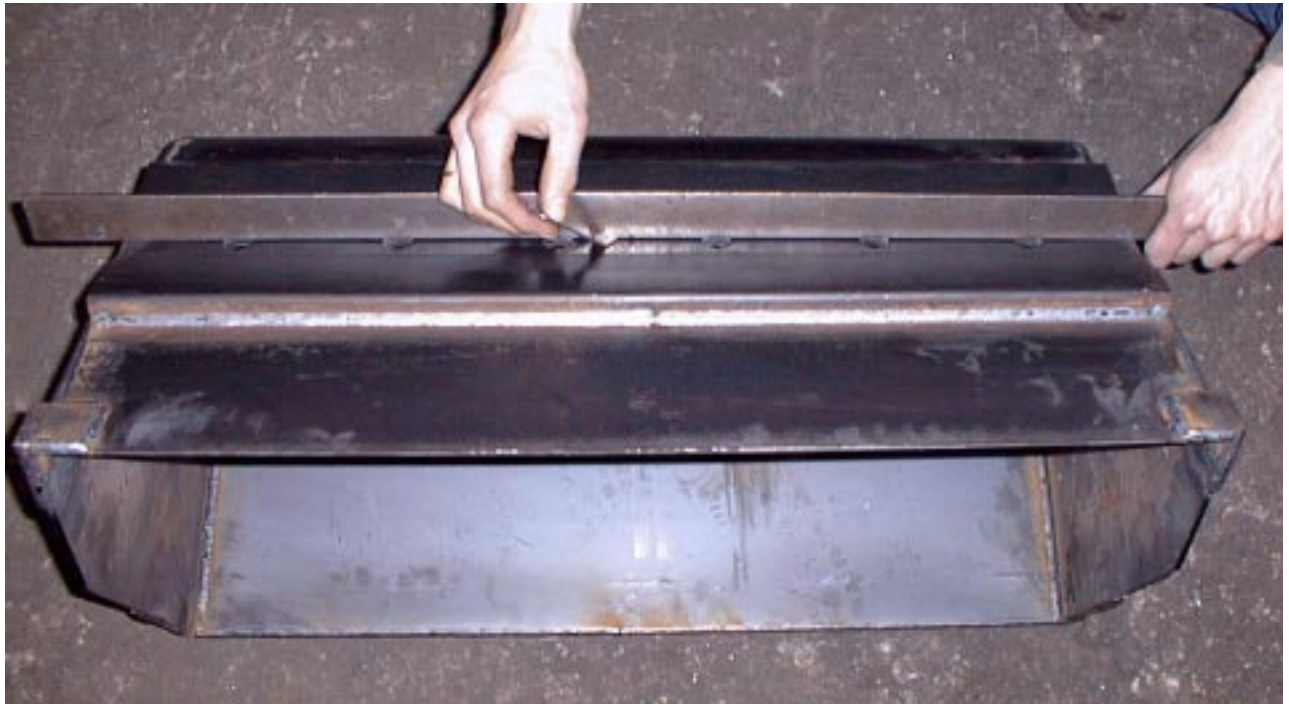


After having been welded, the buckets are crowned by bending them in a press. For this purpose, the bucket is to be fastened in such a way that the profile plate is pushed vertically. The bucket is only pushed in its center. This procedure results in a contour which is exact enough.

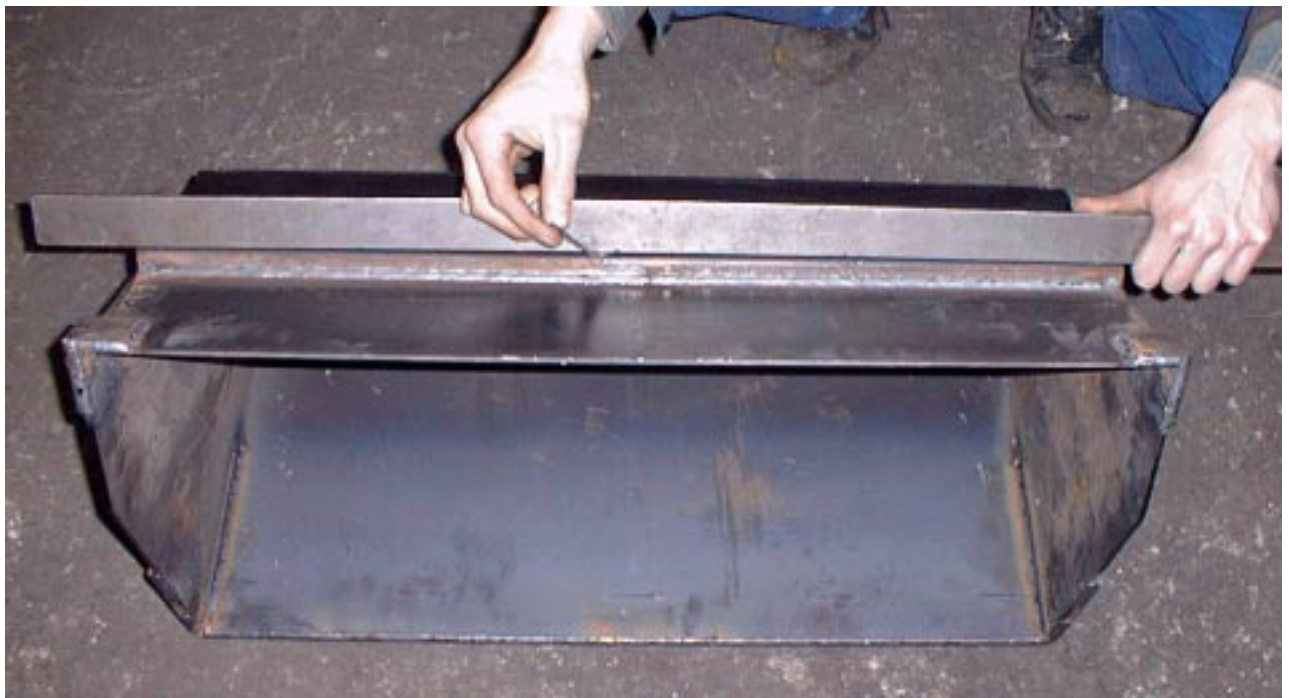
The crownings for the different bucket sizes are indicated on the drawing no. 252433-4-E



Side view of the press model for the crowning of the back side of the buckets. A molded body of the same contour as the profile plate is used.



The crowning in the area of the series of holes is checked by means of a ruler.



The crowning is checked by means of a ruler in the area of the bending of the profile plate. The crowning depends on the width of the buckets and can be taken from the drawing no. 252433-4-E.

1.1.7 Preparation for dispatch



The profile plate must be free of welding spatters and burrs and is to be provided with a protective coating.



The buckets are stacked on pallets. Strips of wood are placed between the bucket layers. The whole stack is lashed onto the pallet by means of steel band.

2 Manufacture of the bucket elevator shaft casings

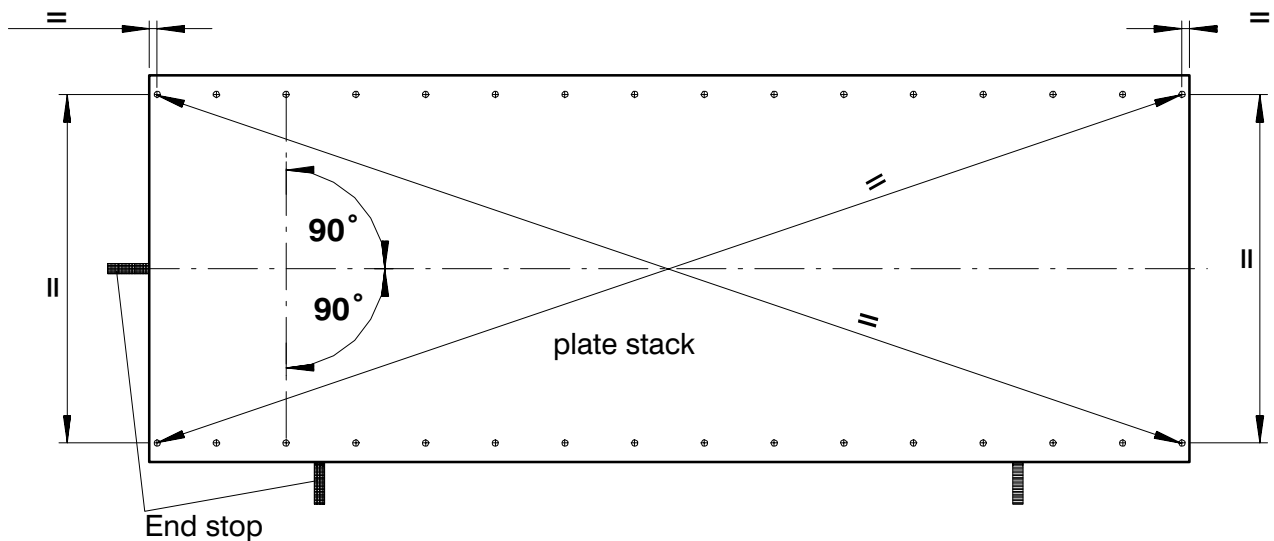
2.1 Four-part shaft casing

2.1.1 Cutting of the shaft casing plates

The shaft casing plates must be cut at right angles and true to size.

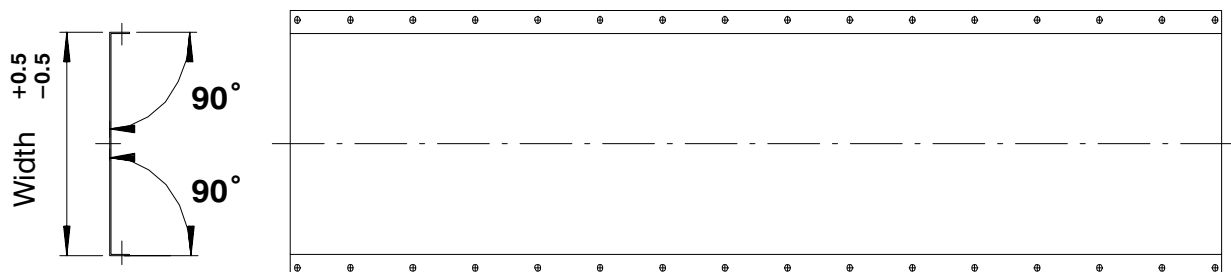
2.1.2 Fitting of the series of holes

The series of holes are fitted true to size by means of automatic plate-working machines or NC punching machines.



Alternatively, the whole plate stack can be bored at the same time. The bore holes are to be exactly marked and checked according to the drawing.

2.1.3 Bending of the top plates

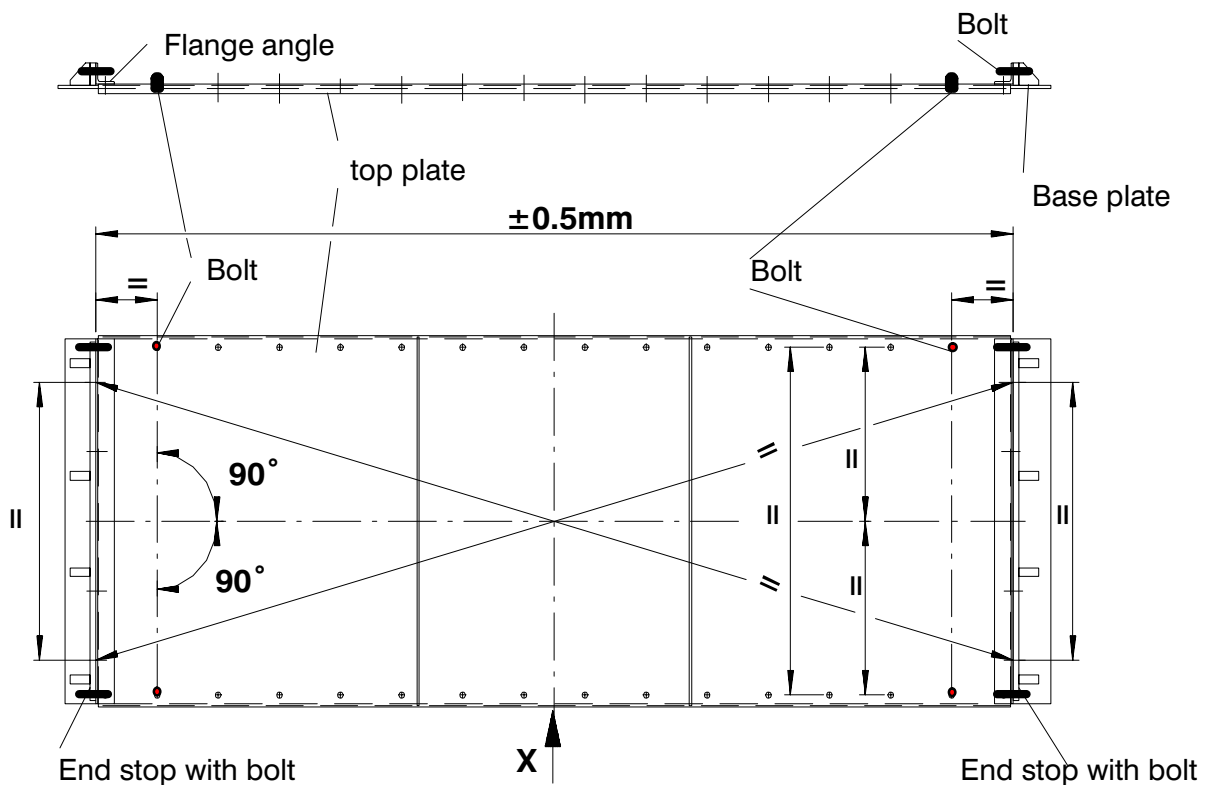


Please ensure that the top plates are exactly bent at right angles and true to size.

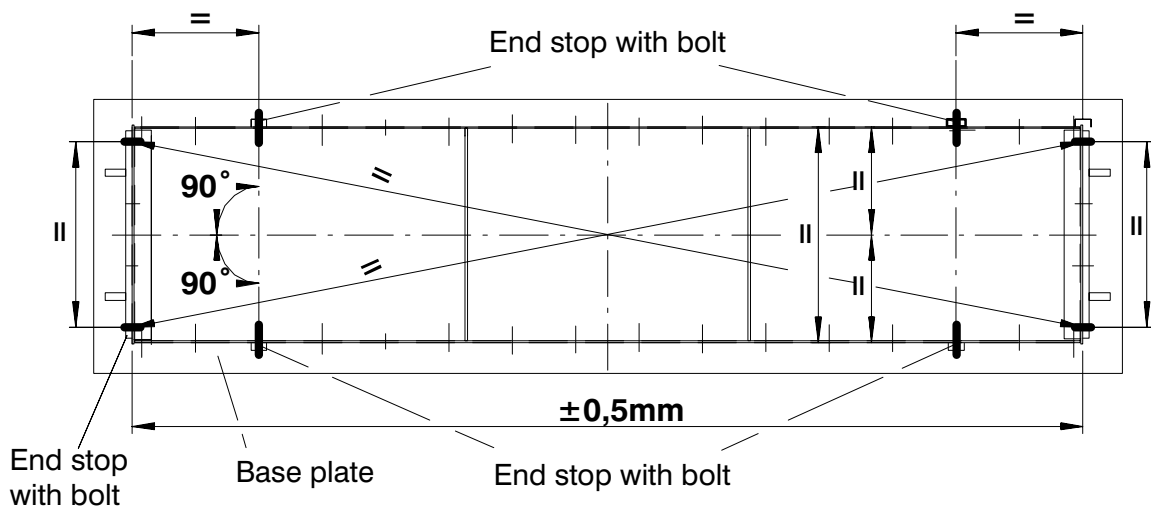
2.1.4 Tack-welding of the flange angles

For tack-welding the flanges, a welding template must be manufactured. The plates and flange angles are fastened in this template by means of end stops and bolts. During tack-welding, the angles must be fixed in position.

2.1.5 Welding template for flange angles: top plate



2.1.6 Welding template for flange angles: side plates of the casing



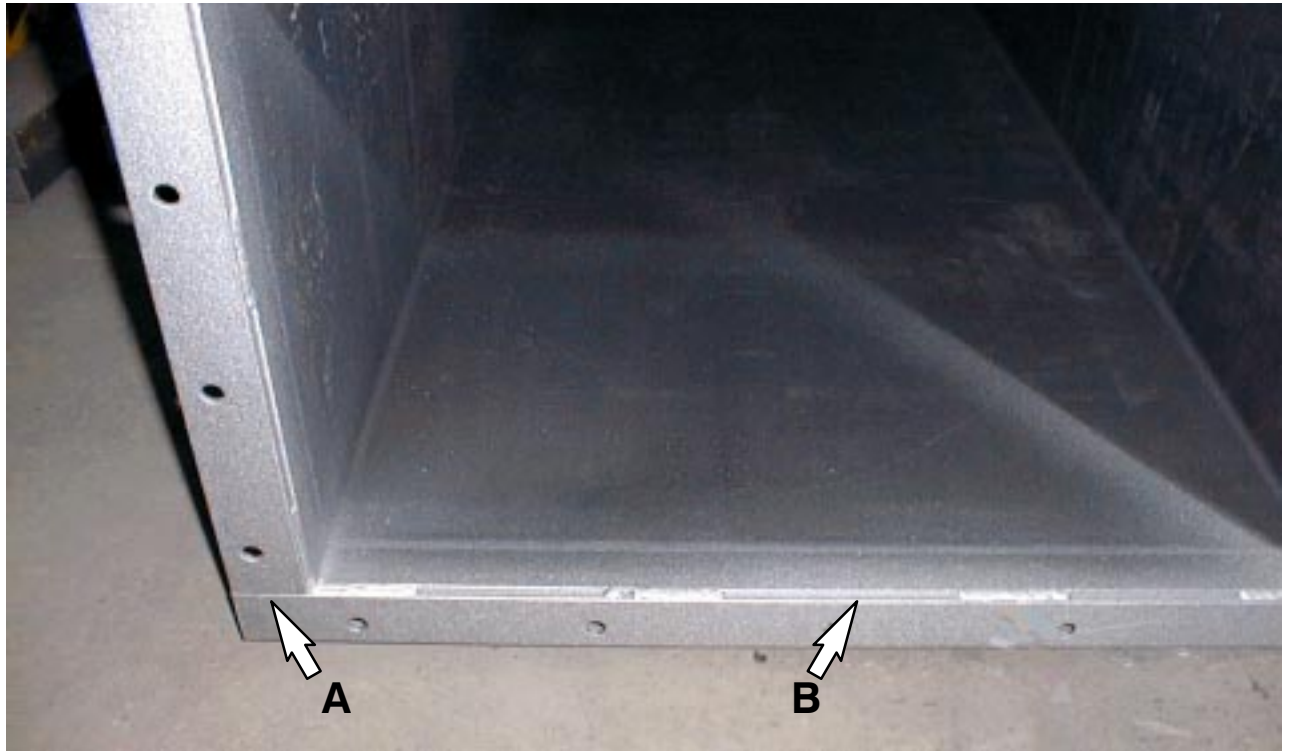
2.1.7 Welding of the shaft casings



On the outside, the shaft casing flanges are through-welded.



The reinforcing flanges are intermittently welded on both sides. The lengths of the welding joint and of the gap are shown on the respective drawing.



A This area is not welded.

B On the inside, the flanges are intermittently welded.

2.1.8 Assembly of shaft casings



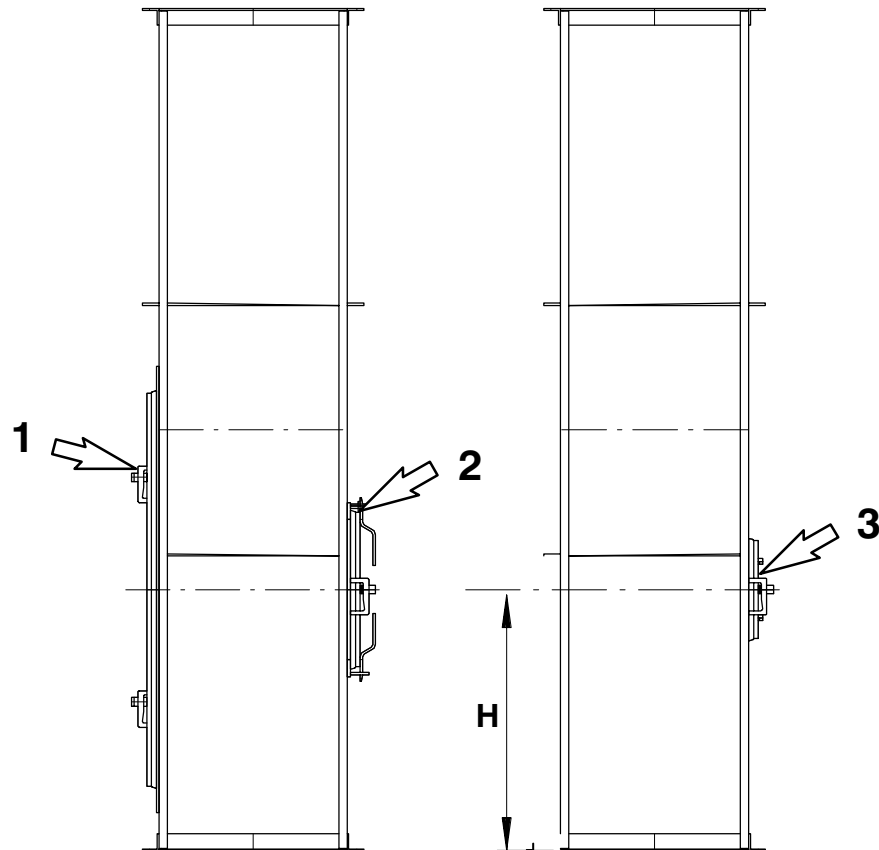
When assembling the shaft casings, take care that the sealing cord is always located within the series of holes. The sealing cord is laid in thick paint.



Before starting assembly work, the screw points of the top parts and lateral parts are painted.

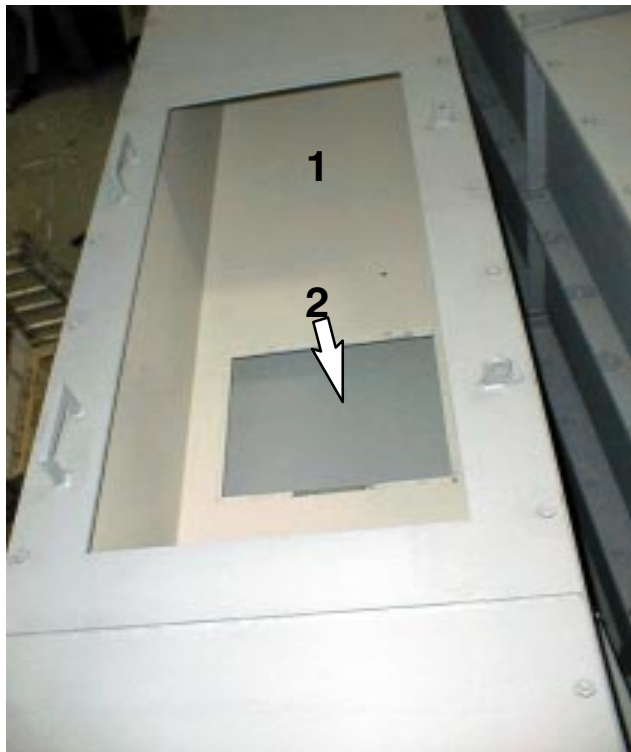
2.1.9 Mounting of the assembly doors

3 openings are planned in total.



The large assembly door 1 is located at one shaft casing and the smaller door 2 is located opposite to it on the same level. The small inspection hatch 3 is located at the other shaft casing.

The position H of the openings at the shaft casing is shown on the GA-drawing of the bucket elevator. It is the same for all 3 openings.



Shaft casing with a large and a small assembly doorframe. On the outside, the doorframes are through-welded. The large assembly door 1 can be arranged lengthwise, whereas the smaller assembly door 2 must always be arranged crosswise.



Recess for the small inspection door 3 with welded hinge and door holding.

2.1.10 Quality control of the shaft casings



For checking the straightness and length, at least three of the shaft casings must be mounted on a plane surface.



Check the flange connection with regard to tightness and accuracy in fitting.



Control the squared form of the casing by cross check.



Check the tightness and easy movement of the assembly door when it is completely mounted.

2.1.11 Preparation for dispatch



For transport purposes, up to four casings are screwed together at the flanges.