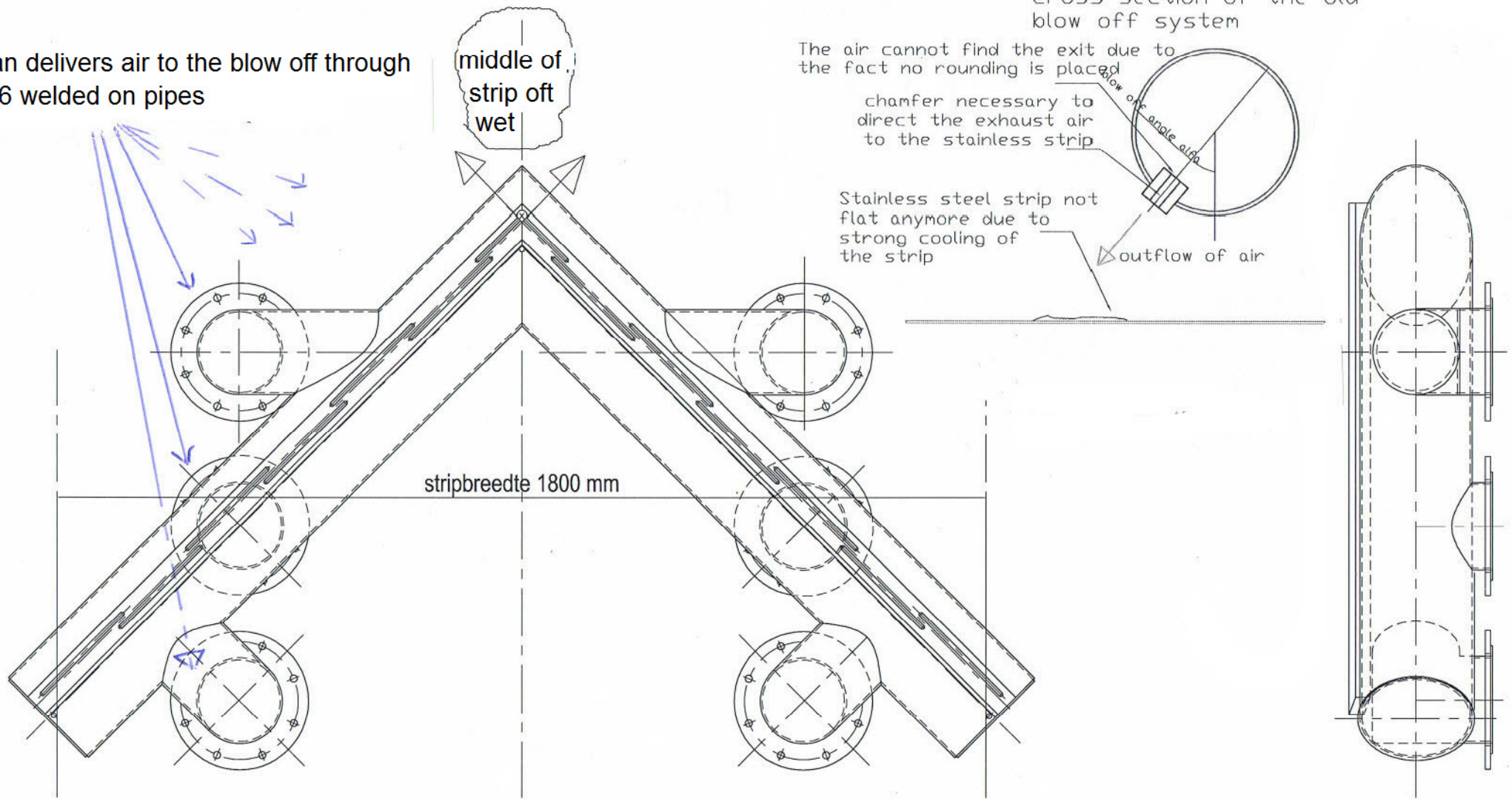
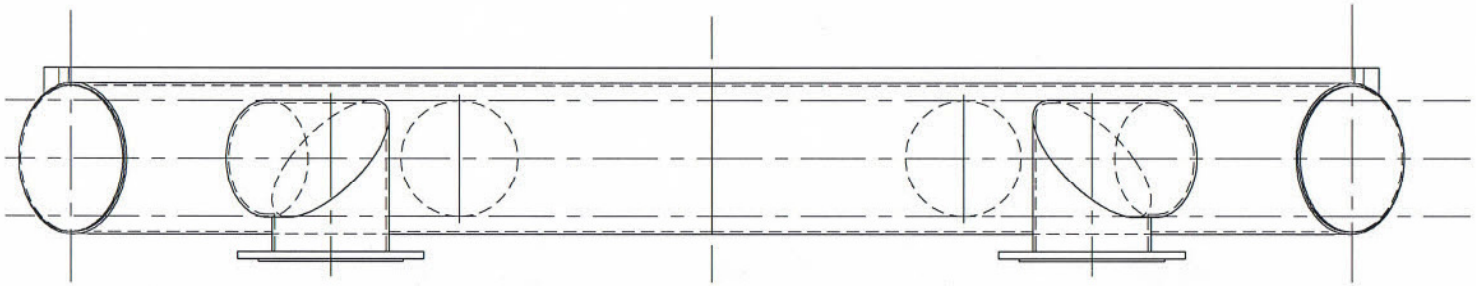
A fan delivers air to the blow off through the 6 welded on pipes



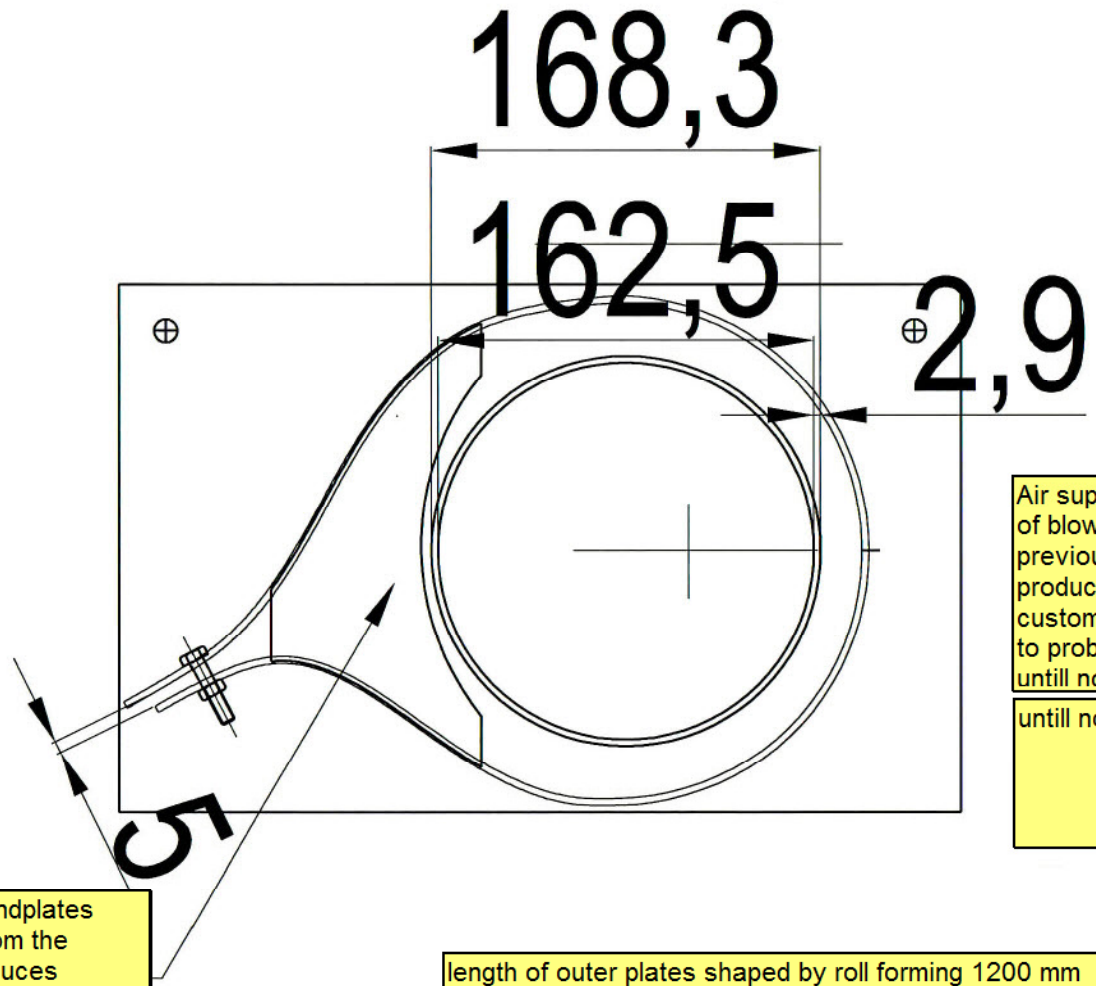
cross section of the old blow off system



In a furnace a stainless steel strip gets it heat threatment by heating the strip untill about 1000 degree Celsius. After that the strip is air cooled by nozzles. When the strip is at a temperature of about 600 degree Celsius the strip is cooled off by water jets. This water has to be removed from the strip because scale breakers will not work and the pickling bath gets deluted. For this a blow off system was necessary. With this system customers could produce at 80% of maximum speed. With the improved system customers can produce at maximum speed without any problem. The new blow off works 5 till 10 times better and is 2,5 times cheaper. For each furnace a price reduction fo 80.000 euro is possible.

Cross sectional shape of the new blow off concept

Due to the shape of the new blow off the pressurised air supplied by a big fan slowly gets speeded up to reach excit speed. Due to the slow curvature friction losses are reduced. Also now the blow off angle is adaptable to the production speed. This means a further energy reduction. Due to the fact this is a prototype bolts are placed at the exit so air speed can be optimised.



Air supply can be arranged from the ends of blow off tubes. Now pipe on pipe welding (see previous page) is not necessary lowering production costs with a factor of 2,5. Now customers van produce at maximum speeds. Due to problems with dryer this has not been possible untill now

untill now.

First deviders close to endplates preferably more away from the air support pipe. This reduces friction losses and will improve the distribution of air over the length of this new blow off.

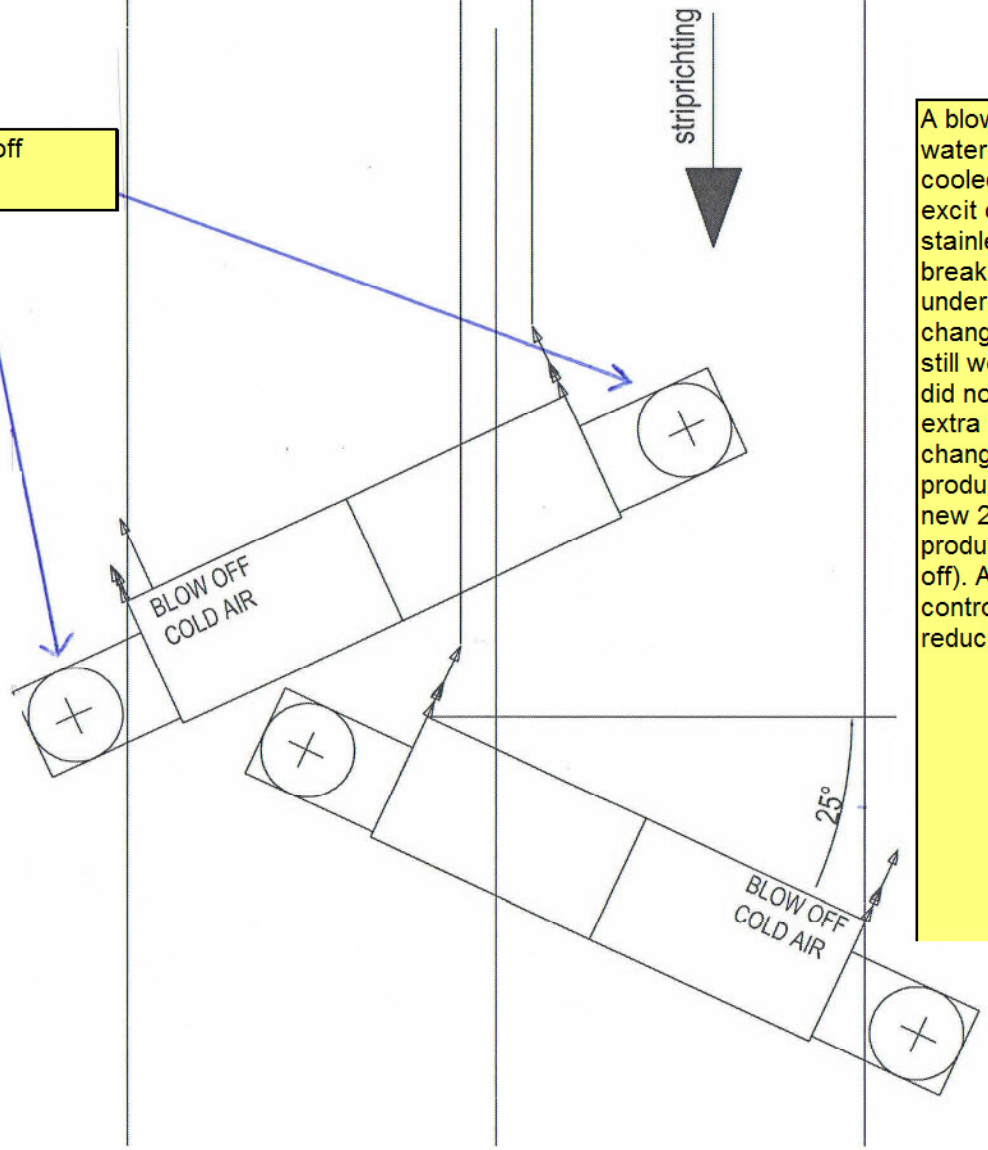
length of outer plates shaped by roll forming 1200 mm
air supply connected to the flat outer plates
inside diameter of pipe for air supply 162,5 mm
Flow out area 5x1200=6000 mm*mm

Top view of the new blow off situated above the stainless steel plate

Overlapping of arrows now 156 mm. Keep as minimum to be sure middle of steel plate gets dry

Width of stainless steel strip 1600 mm

Air deliverd by a big fan enters the blow off system from the top



A blow off system is necessary to blow off the cooling water from the stainless steel strip. The heated up strip is cooled with air and water before the plate reaches the excit of the furnace. For a nice and shining surface of the stainless steel plate scale breakers are necessary to break off the polluted top layer of the steel plate so the underneath shining layer will become visable. Before a change in design of the blow off the steel plate was often still wet leaving the furnace. This ment that scalebreakers did not function and the annealing bath got deluted with extra water so concentrations of the annealing bath changed. Above problems ment that customer could only produce at 80% of maximum production speed. With this new 2,5 times cheaper blow off system customers can produce at lower energy rates (changing angle of blow off). Also strip temperature can now be more under controll meaning that the strip can heat the annealing bath reducing energy costs even more.