

# Guidelines for Suppliers of Mechanical Parts

Vers. 12



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## General

All documentation related to the manufacturing of mechanical parts is the property of the SANOVO TECHNOLOGY GROUP and may not be copied, shown or handed over to third party without our prior written consent.

**Follow these guidelines, especially where no dimensions or tolerances are on the drawing.**

All documentation made in the SANOVO TECHNOLOGY GROUP follows these standards:

Tolerance principle:	ISO 8015:2011
Dimension in mm without tolerances:	ISO 2768-1:1993
Geometrical tolerance:	ISO 22081:2021 (+ISO 1101:2017)
Surface roughness and texture:	ISO 21920-1:2022
Welding:	ISO 2553:2013

Every discipline carried out to supply SANOVO TECHNOLOGY GROUP is expected to be executed by skilled employees, and that everyone is inspecting their own work with focus on delivering the best quality.

## Choosing Material

These are the material specifications we expect:

Round bar, rod, etc. for <b>shafts</b> (aksel, axle, etc.)	h9, centerless grinded
<b>Sanitary pipes</b> (dairy pipes, mejerirør, levnedsmiddelrør, etc., including all associated <b>fittings</b> )	Cold-drawn, polished (min. grit 180) - exception: If surface treatment subsequently is "Glass-blown"
<b>Sheet metal</b>	2B finish up to 8 mm thickness

## Bending

If nothing else is mentioned on the drawing, below rules are applicable for bending tools for stainless steel sheet metal:

- The width of the rail on the lower matrices is 8 x the thickness of the plate
- The nose radius of the top bend tool is 1 mm

## Welding

- Welding must be carried out using welding wire.
- If no surface treatment is specified, discolouration from welding must be removed with wire-brush or acid solution/pickling.  
If an acid solution/pickling is used make sure to neutralise and rinse thoroughly afterwards.
- Everything must be fully welded both outside and inside, unless otherwise is stated on the drawing.  
Exception from this is shields and covers (if in doubt, please ask)
- Pipe welding assemblies must be welded using (and sufficiently protected with) shielding-/backgas. This also applies for other enclosures and areas where full penetration is needed, to avoid coke.
- If the dimension on individual parts on a pipe assembly drawing are defined these should be treated as indicative. It is always the measurements to centerlines that are applicable.

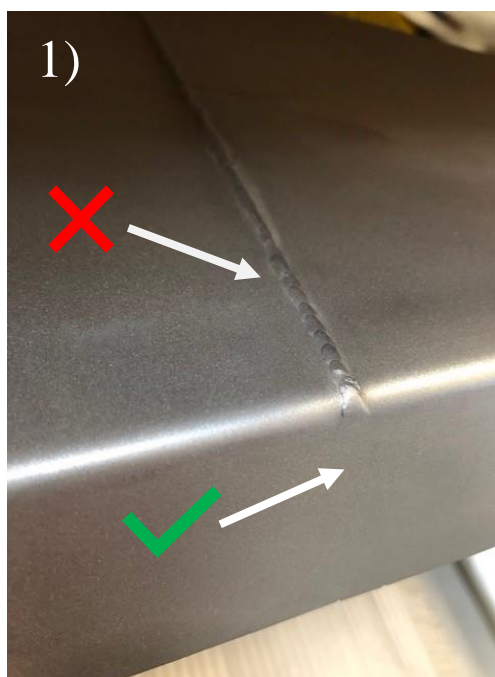
## Laser cutting

- Micro joints must be removed
- Lead-in must be put outside of the design to avoid piercing slag on the actual part
- Surfaces must be protected from scratches
- Burrs and sharp edges must be removed, i.e. by use of fladder



## Grinding & surface roughness

- Burrs and sharp edges **must be removed on all items** (incl. the inside of nozzle pipes, band saw cuts, etc.)
- No scratches on surfaces
- Machined surfaces on plastic parts cannot exceed  $Ra \leq 3,2\mu\text{m}$ .
- Items in contact with food (FCM/marked with \* on order) must be ground to a roughness  $Ra \leq 0,8\mu\text{m}$  (K180)
- Welding seams must be ground prior to surface treatment to make the joint “invisible” (see picture 1). Exceptions from this is: Sanitary pipes, welds on the inside of angles less than  $180^\circ$  and “hidden” welds (ask, when in doubt). Also accepted are square tube joints ground as seen on picture 2.  
*For bigger (machine-)frames further instructions and initial supervising from one of Sanovo's Field Service Engineers is required.*

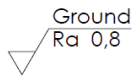


- Welds on product chutes must be grinded inside and outside (ask, when in doubt).
- Welds on covers and shields must be grinded outside (ask, when in doubt).

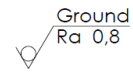
## Roughness symbols

- MRR – material to be removed (welding must be removed by grinding)
- NMR – no material to be removed (welding not to be grinded).

MRR Ground;  
Ra0,8 ⇔



NMR Ground;



## Thread recovery

- Nuts, muffs, etc. that are welded on or positioned near welds must be checked for functionality and recut if necessary.
- All outside pipe threads must be checked for functionality (ie. by use of nut).
- When glass bead blasting threads must be recut afterwards and as for blind holes plugging beforehand is advised.
- FCM (Food Contact Material) approved anti-seize compound must be used for assemblies where parts are fitted with screws, nuts, anything with thread.

## Surface treatment

- Surface treatment must always be done according to the purchase order. The purchase order overrules the drawing text for surface treatment.
- Glass bead blasted frames must be treated with Inoxol or ProLube White Oil due to risk of airborne contamination.  
Glass- and metal dust of all kinds must be cleaned off before oil is applied, and all surplus oil must be wiped off before shipment.
- When glass bead blasting square pipe constructions and nozzles pipes, etc., do plug holes to keep glass out and protect threads. Alternatively, clean pipes, square pipes, etc. thoroughly and recut threads.
- 'Wire-brushed' means brushed with a cup-shaped wire-brush, using an oil/carborundum powder-mix, to a uniform full surface on both sides of the item. Work at random to avoid making a pattern. See picture on page 10. For welded assemblies containing sanitary pipe parts wire-brushing means brushing the weldings to make them visually uniform to the pipes general surface.
- 'Fladder' means fladdered on both sides of the item.
- Printed text on sanitary pipes and plates must be removed.



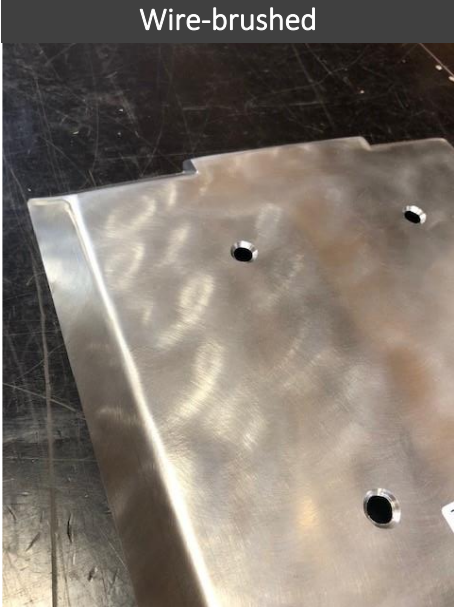
## Packing and shipment

- Avoid contact between parts that may scratch or in any way cause damage during handling and transport when packing for shipment. If necessary, separate individual parts with a layer of corrugated paper.
- Consider using environmentally friendly packing materials and prioritize their use. Additionally, please minimize the amount used (without compromising its purpose)

Any questions?

Feel free to contact the local purchase department  
where the order was placed.

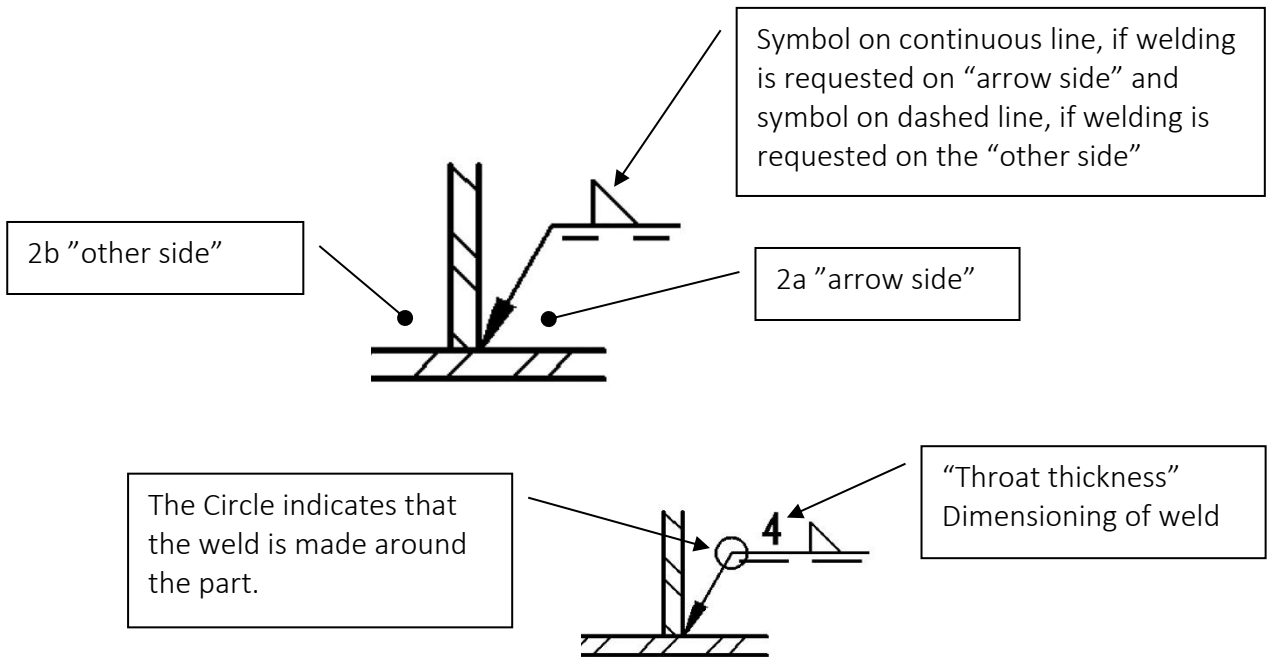
Examples of surface treatments



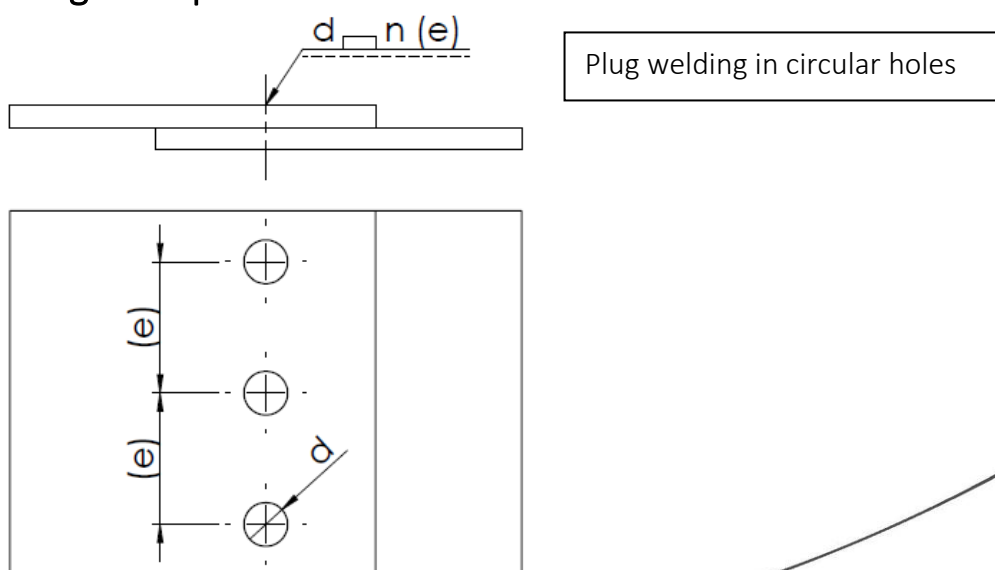
## Welding symbols based on the standard

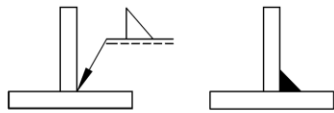
Method of representation:

- 1 arrow line
- 2a reference line (continuous line)
- 2b identification line (dashed line)
- 3 welding symbols

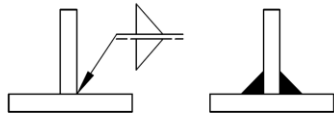


## Different welding examples

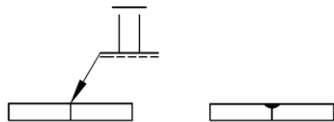




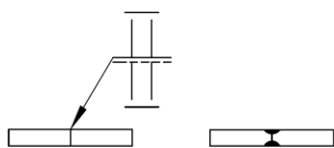
Fillet weld only on the "arrow side" with welding



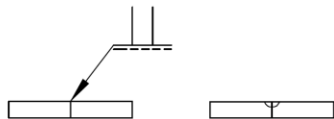
Fillet welded on both sides with welding rod



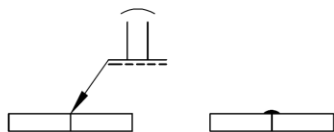
Square butt welding, welded with welding rod and grinded



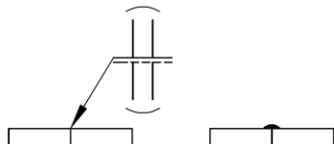
Square butt welding, welded with welding rod and grinded on both sides



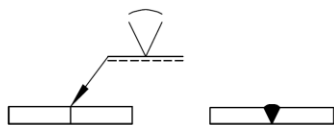
Square butt welding, **welded without welding rod (converged)**



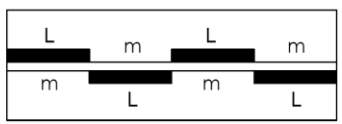
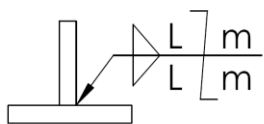
Square butt welding, **welded with welding rod**



Square butt welding, **welded with welding rod**



Singel- V butt weld, **welded with welding rod**



Staggered intermittent fillet weld