Technical delivery terms of RITZFAHR GmbH

1. Validity

These technical delivery terms (TL) are valid in case of missing or unclear drawing documentations as supplement to customer drawing. In the pre-mentioned case, these TL are binding as co-applicable documents. Drawing data and possible co-applicable documents provided by the customer always take priority. We point out, that we will not take responsibility for any claims exceeding these TL and not clearly advised by the customer. Specified and complete customer drawings will be given priority after technical verification with our written production release. To this effect, our guarantee is exclusively valid for released documentations in connection with our up-to-date TL.

2. Performance

2.1. Dimension tolerances

For dimensions without tolerances, DIN ISO 2768-m is valid. If dimensions without tolerance indications below 0.5 mm are available, they will also be treated according to DIN ISO 2768-m (as dimensions 0.5 to 3 mm).

2.2. Form- and position tolerances

According to DIN ISO 2768-k. Key areas, hex-heads, slots, cross-drilling etc. cannot be made aligned together if angle data are missing.

2.3. Angle tolerances

For all angles without tolerance indications, a tolerance of ±2° is valid. For all chamfers and bevels with an edge length of 0.5mm, an angle tolerance of ±5° is valid.
For chamfers und overrunnings without tolerance indications
Nominal dimension up to 0.2 mm ± 0.1 mm
Nominal dimension > 0.2 bis 0.5 mm ± 0.2 mm
Nominal dimension > 0.5 bis 1.0mm ± 0.3 mm
Nominal dimension > 1.0 mm ± 0.4 mm

2.4. Non-dimensiones workpiece edges

Valid for all non-dimensioned workpiece edges:
Outer edge -0,2 mm
Inner edge +0,4 mm
See DIN ISO 13715.
Edge descriptions such as „sharp-edged burr-free“, „sharp-edged“ and „burr-free“ are accepted with ±0.05mm according to DIN 6784, i.e. a minimum material removal as well as a minimum burr may be available. Intergradient drillings can have one burr of maximum +0.1mm. If a burr-free junction is required, the chamfer size is not defined.

2.5. Testing conditions for fits

A slight trimming of the no-go side on fit-begin is accepted when testing fit drillings with a plug gauge. Should fits get uneven due to the instability of the workpiece, inner fits on the smallest-, outer fits on the largest area of the uneven surface will be checked. Given tolerances will be used on these areas.

2.6. Threads

Versions optionally cut, chased, furrowed, rolled or whirled. Thread- run-ins and run-outs depend on production process, as a rule chamfered. Threads run-outs to the collar are made in normal length according to DIN 76 Form A. The dimensional stability of threads first begins with the third thread, i.e. the no-go side of the limit gauges can be screwed in this area if necessary.

2.7. Millings

Milled surfaces can be optionally plunge-milled or continuously milled. Chippings in the transition to the adjacent surfaces are permissible.

2.8. Upper surface quality

2.8.1. General upper surface quality

The upper surface has an average roughness value Ra 3.2 according DIN EN ISO1302 and an averaged roughness depth of Rz 25, as long as the measuring distance for determination is sufficient. The roughness data which are, meanwhile invalid according to DIN 140 („triangles“), are converted according to DIN EN ISO1302/column2/measuring value Ra.

2.8.2. Upper surface quality in drills

Tolerance range according to DIN ISO 286-1 roughness, drills without ISO-fit tolerances Ra12.5
Fits H11, z.B. H11 Ra6.3
Fits H10, H9, H8 Ra3.2
Fits H7, H6, H5 Ra0.8

2.9. Slugs

As long as the drawing does not clearly require the distance to the turning slugs, the manufactured turning parts may carry turning slugs at their front sides (flat surfaces). This is also valid in case of generally valid handling reference in or at the description field. The slug size is measured according to DIN 6785.

2.10. Input-material | Provided material

Tolerance of outer dimension for rod-, ring- and coil material: h11 according to DIN EN10277.

2.11. Heat treatment | Upper surface treatment

2.11.1. Dimensional changes through heat- and upper surface treatment

For all dimensions, the layer thickness of the upper surface to be eventually applied should be considered in the given case. The same is valid for dimensional changes through heat treatments except for standard dimensions given by the basic material as long as it is not clearly indicated in the drawing.

3. Packing | Tidiness

The parts in the packing unit are cleaned, tidy, mainly free of any impurities (e.g. metal chippings, oil, lubricate, lubricants, hand sweat). As soon as the parts are directly dumped from the packing into the machining process, the customer must make sure impurities such as small chippings do not cause a stand-still in the process chain. If an absolutely chip-free condition is contractually guaranteed, a special packing agreement must be arranged.

4. Shipping inspection

RITZFAHR carries out random inspection/final inspection through AQL (Acceptable Quality Level) according to DIN ISO2859/ ISO3951, unless otherwise agreed upon with the customer. If no AQL score is given by the customer, the AQL score 1.0 (II) is binding for RITZFAHR. This corresponds to 1 % faulty units (normal inspection level).