

GUHRING

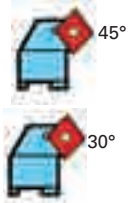





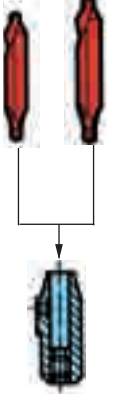






GE 100 FLEXIBLE TOOLING SYSTEM



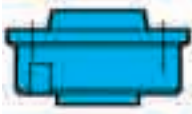
to rationalize operations such as facing,
chamfering, turning, form drilling, centering,
boring, and many others



System Summary GE 100

| Tool holder, radial adjustable | | | | Clamping sleeves to hold centre drills |
|--|---|---|---|---|
| for internal operations | for external operations | for turning operations | for facing operations | |
|  <p>45° 30°</p> |  <p>Angle adjustable 15° - 60°</p>  <p>45°</p>  <p>30°</p> |  <p>axial adjustable</p> |  |  |

| Tool heads | | |
|--|--|---|
|  | | |
|  <p>with 2 clamping holders</p> |  <p>with 3 clamping holders</p> |  <p>with 4 clamping holders</p> |

| Adaptors | | Adaptor |
|---|---|---|
| <p>with ISO taper to DIN 2080</p>  | <p>with ISO taper to DIN 69 871</p>  | <p>for UMA Ø 45/88,88*</p>  |
| <p>* other systems on request</p> | | |

System characteristics

Endless possibilities

The flexible tooling system GE 100 puts no limits on your creativity. Modular construction, radially and axially adjustable short clamping holders as well as special practice-orientated indexable inserts make the GE 100 universally applicable, especially for shaft, pipe and casing operations.

The main application area is to be found on machines for end operations. It is intended for such operations as spot facing and centering. But also for stripping clamping pilots, facing, outer chamfering and centering (in preparation for CNC machining operations). Or for coning of bar stock for further operations on automatic machines. Even for the machining of casings or mountings, i.e. capping, radius operations or face piercing operations on machining centers, multiple station and special machines. In short, we now offer you an additional tool alternative (fig. 1) for the:

- automotive industry, motor manufacturers (gearing, shafts, bushes)
- pipe fittings industry
- mountings industry
- steel manufacturers (coning of bars for automatic machines)

Intelligent modular design

Standardised tools are generally less expensive, but they are rarely as efficient as special tooling. This is not the case with the GE 100. This well thought-out, standardised, modular design (fig. 2) is remarkable in its flexibility regarding diameter, precision and tool material. The GE 100 can be applied for machining diameters of between 15 and 240 mm. The tool head (figs. 3 and 4) permits the application on all standard machine adaptors, also on all rapid change systems. By switching the clamping holders or clamping sleeves, one can machine other workpieces with one and the same basic support, i.e. tool head. The bore hole in the tool head serves as a clamping sleeve adaptor for center drills, step drills, form drills or boring bars.

Figs 1 and 2:






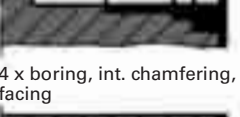
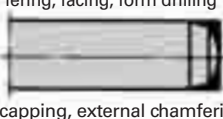


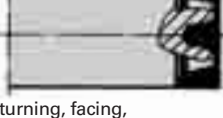
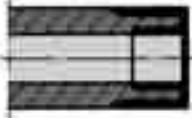
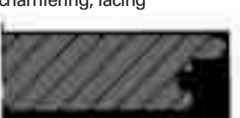
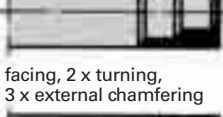


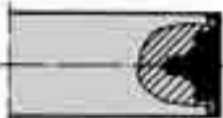


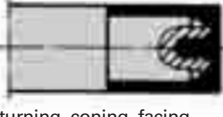
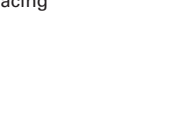
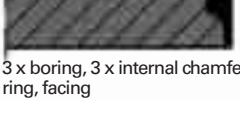



Two up to a maximum of six axially and radially adjustable tool holders in combination with a center drill or step drill reduce the time needed for the complete machining of ends to mere seconds.



Fig 3:

The application possibilities for this system are almost infinite.

Here are a few theoretical examples from the fields of shaft, pipe and casing operations.

| Shaft operations | Pipe operations | Casing operations |
|--|---|---|
|  face piercing, external chamfering, centering, facing |  facing, internal chamfering, external chamfering |  4 x boring, int. chamfering, facing |
|  2 x turning, 3 x external chamfering, facing, form drilling |  boring, facing, ext. chamfering, internal chamfering |  face piercing, boring, external chamfering, facing |
|  capping, external chamfering |  form drilling, facing, radius operations |  2 x boring, 2 x int. chamfering, face piercing, radius operations, external chamfering |
|  turning, facing, form operations, centering |  turning, 2 x external chamfering, boring, facing |  2 x boring, 2 x int. chamfering, face piercing, radius operations, external chamfering |
|  facing, 2 x turning, 3 x external chamfering |  2 x ext. chamfering, internal chamfering, facing |  3 x boring, 3 x internal chamfering, facing |
|  coning |  turning, external chamfering, internal chamfering, facing |  3 x boring, 3 x internal chamfering, facing |
|  spot facing, centering, ext. chamfering, facing |  turning, external chamfering, internal chamfering, facing |  3 x boring, 3 x internal chamfering, facing |
|  turning, coning, facing, centering |  turning, external chamfering, internal chamfering, facing |  3 x boring, 3 x internal chamfering, facing |

System characteristics

The set-up of the axially and radially adjustable tool holders proceeds via a set screw with a hexagon socket, the clamping proceeds via twin V-wedges (fig. 4). The twin V-wedges are arranged so that the common problem of self-locking no longer occurs and no longer hinders the setting-up process. Two hexagonal keys are sufficient in order to mount or re-equip a complete tool head. The insert program for tool holders is especially designed for the requirements of end operations.

There are two designs available: one precision design and one standard design. Indexable inserts with chip breaker grooves (fig 5) produce short controlled chips, absolutely necessary when carrying out multiple cutting operations. Efficiency is greatly increased with a four cutting edge arrangement. Other indexable inserts, however, are also available.

Advantages summary

- Combination of several operations into one.
- Modular design, i.e. shorter delivery times and lower costs.
- Absolute one-hundred percent facing and circular concentricity due to the rotation of all cutting edges.
- Axially and radially adjustable tool holders, thereby increased application ranges for each holder size.
- Precision ground indexable inserts with optimized, application-oriented chip-breakers $\pm 0,013$ mm indexing precision.
- Separation point on short taper can fit all tool adaptors
- Tool heads with 2, 3 or 4 adaptors for tool holders, independent of the machining diameter.
- Tool heads with bore hole for receiving clamping sleeves for center drills, step drills etc.
- Easy operation, clamping of the drilling tool possible from the outside without need for dismantling the tool holder.

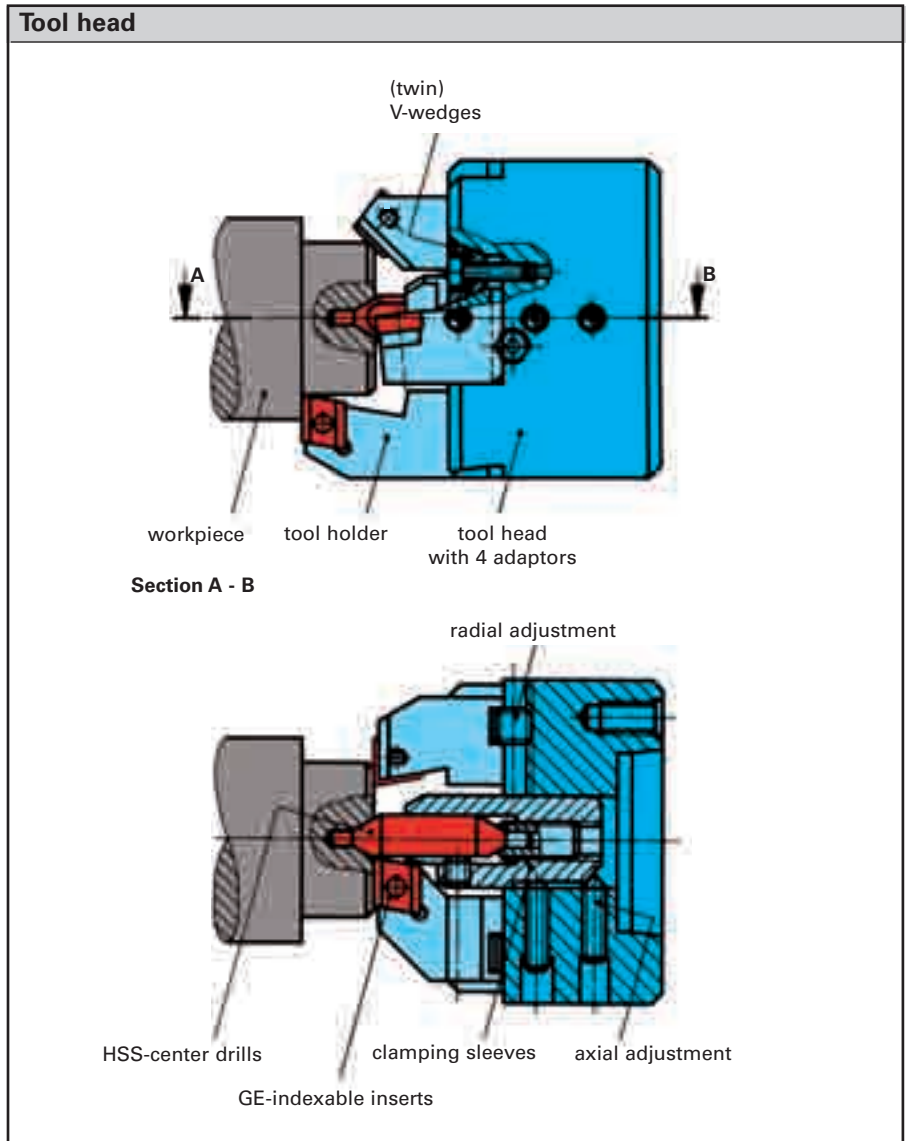


Fig. 4: The tool head permits the fitting on all standard machine adaptors, also on all rapid change systems. By switching the clamping sleeves, one can carry out numerous operations with one and the same tool head. A Belleville spring clamps the short clamping holder in the twin V-wedge.

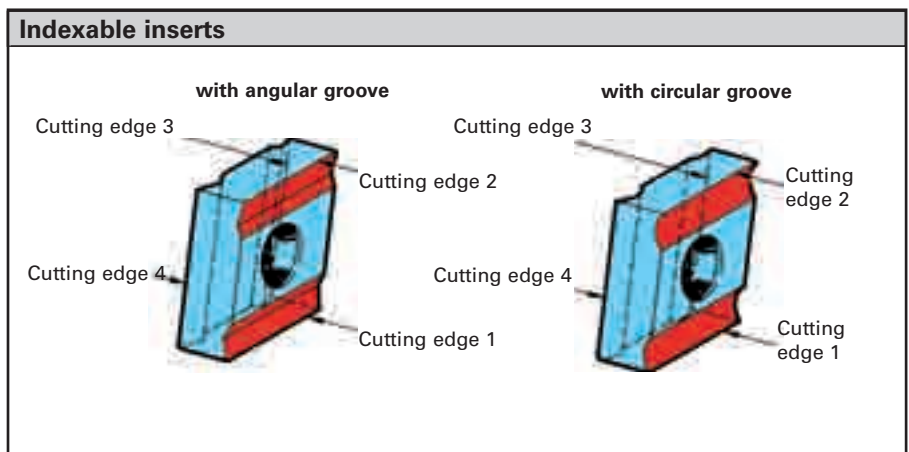


Fig. 5: Indexable inserts with chip breaker grooves produce short controlled chips, absolutely necessary when carrying out multiple cutting operations. Efficiency is greatly increased with the four cutting edge arrangement.

2 practical examples

Example 1:

Workpiece:

GGG50, protective cap seats on wheel cylinders for a new ABS.

Task:

Production of the complicated profile of the protective cap seat (fig. 7).

Problem:

Drastic reduction in costs by combining the following operations:

facing
turning $\varnothing = 25.5$ mm
turning of radius (R2)
recessing

and naturally all on the same machine to minimise setting-up and transport times.

Solution:

The ideal situation, to carry out all the operations with only 1 tool was an illusion. However, our Guhring expert solved the task applying only 2 tools:

Tool I:

GE 100, set up for the operations: facing, turning \varnothing and turning of radius (fig. 8).

Tool II:

Another GE 100, set up for the recessing operation (fig. 8 and fig. 9). The machining is carried out using a stationary workpiece and rotating tools, a process in which all 3 cutting edges are simultaneously engaged. The workpiece is thereby not subjected to any one-sided imbalances and cutting edge wear is reduced.

Tool material:

carbide, carbide grade K10/K20 for both tools.

Cutting rates:

$v_c = 314$ m/min
 $f = 0.12$ mm/rev.
(applicable for both tools)

The machining costs correspond to the required, extremely tight framework of calculations.

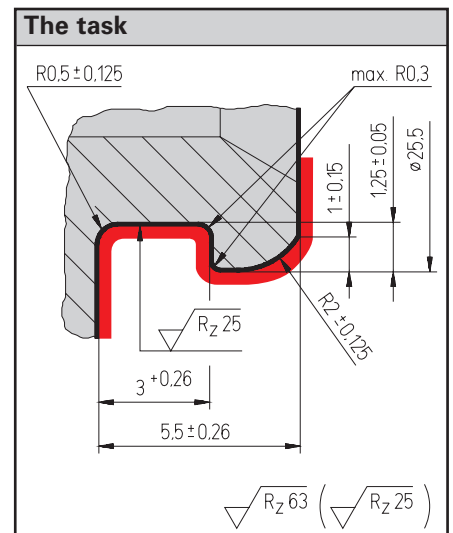


Fig. 7



Fig. 9:
tool II

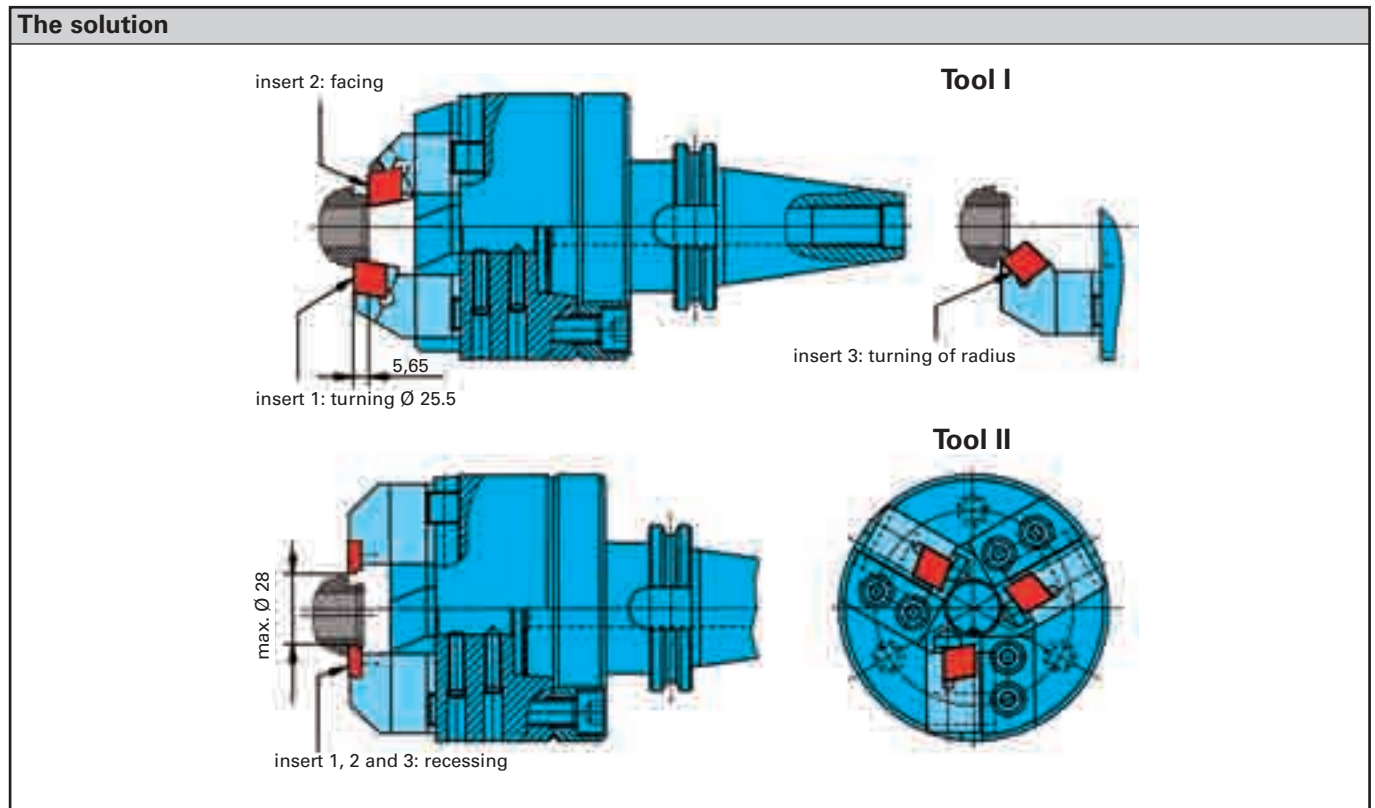


Fig. 8

2 practical examples

Example 2:

Workpiece:

Cold formed bolts in extrusion steel (Cq45) of 630 N/mm².

Basic dimensions: $\varnothing 5.2_{-0.02} \times 170$ mm.

Task:

Turning of bolt to $\varnothing 3.5 \pm 0.1 \times 3.5$ mm, chamfer $0.5 \times 45^\circ$.

Problem:

Combining the operations "turning" and "chamfering" but retaining alignment accuracy of 4/100 mm (!) from $\varnothing 3.5$ mm to $\varnothing 5.2$ mm. Support is a genuine problem considering the unclamped distance of 30 mm.

Solution:

End operation system GE 100 with support (fig. 10). The support contains a sealed ball bearing with a guide bush, guaranteeing absolute concentricity. The radially adjustable clamping holder allows the exact setting of $\varnothing 3.5$ mm and chamfer $0.5 \times 45^\circ$.

By choosing this tooling solution our expert not only reduced the task to one operation but also achieved extreme alignment accuracy of 0.04 mm on average, better than required. The 2 indexable inserts generally achieve 8000 parts, whereby the deviation from the nominal diameter never exceeded 0.02 mm. Inaccuracies of the rotary machine spindle did not influence the result.

A further advantage which must be mentioned is the simple, flexible adjustment for other components. It is sufficient to change clamping holder and guide bush.

Cutting rates:

$v_c = 100$ m/min,

$f = 0.12$ mm/rev.

Dry machining.

The task

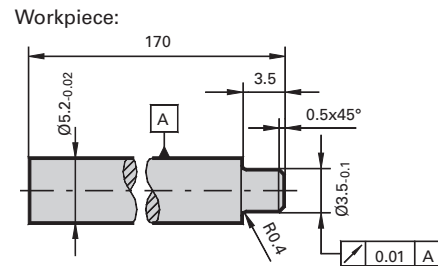


Fig 10

The solution

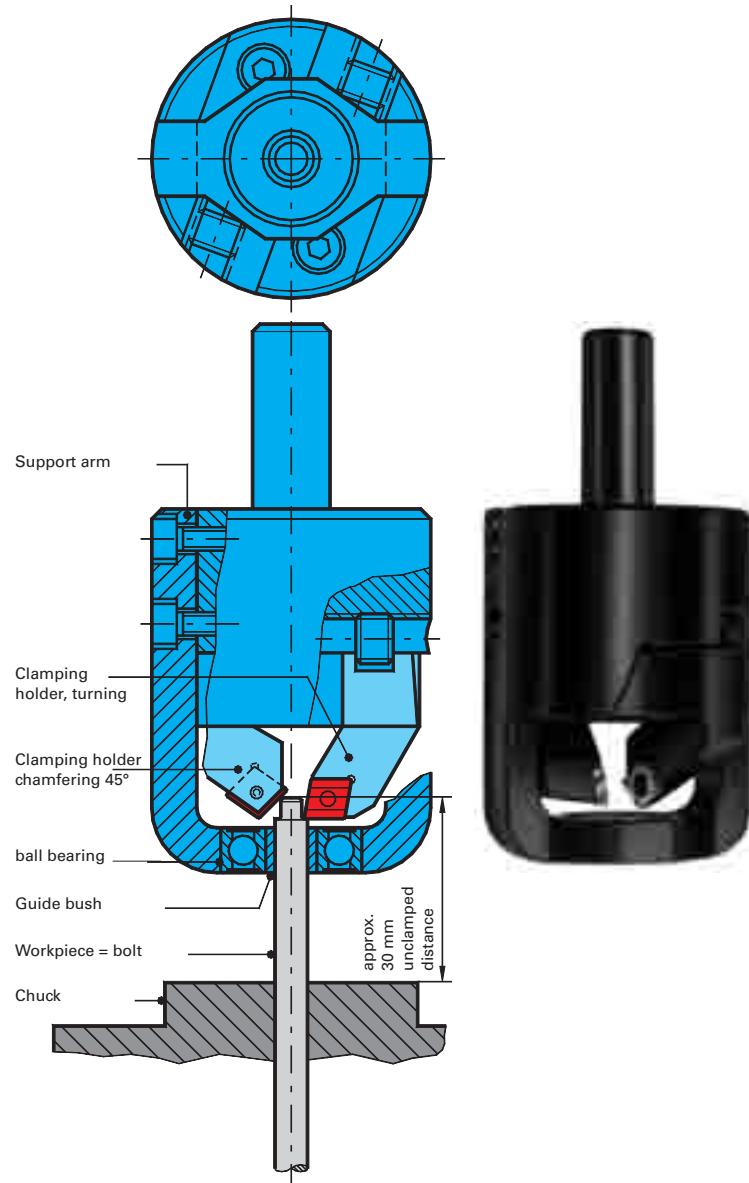
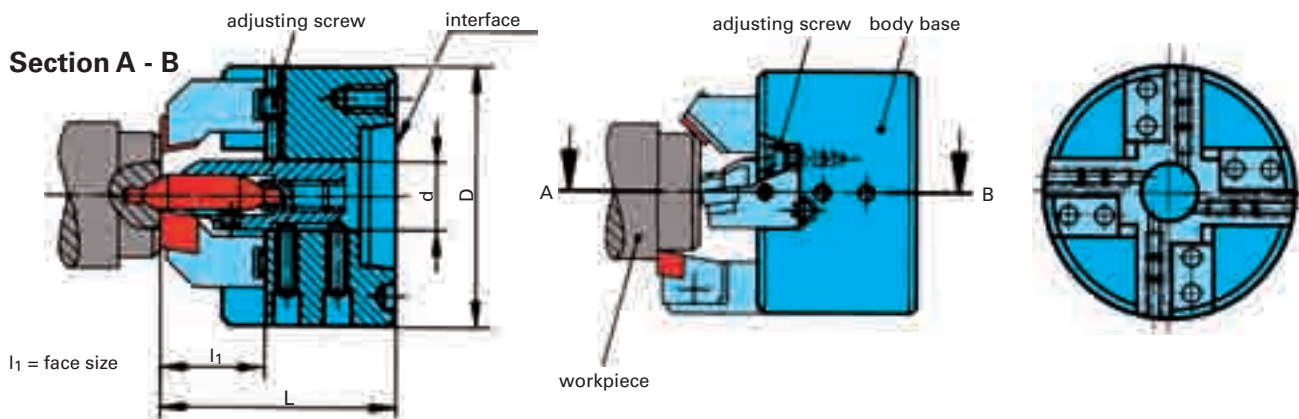


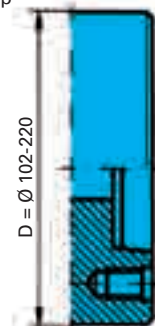
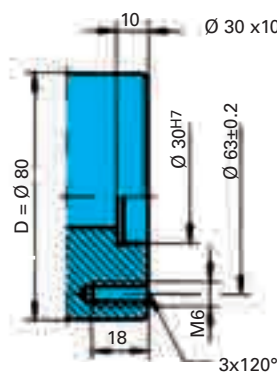
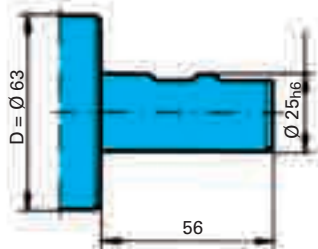
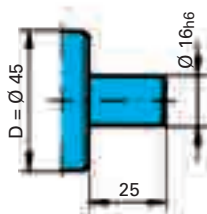
Fig 11



Adaptor (interface)
Ø 16x25

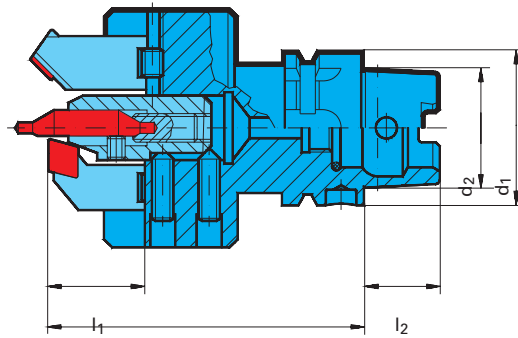
B25 DIN 1835

C3 ... C8
DIN 55028

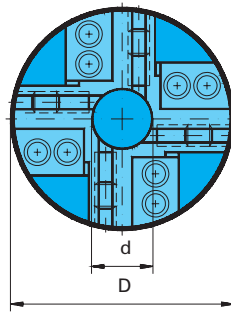


| Tool head | Size | Code no.* | Availability discount group122 | Dimensions | | | | Adaptor (interface) | V-wedge Guh. no. 6021 Code no.* | Availability discount group122 | adjust. screw Guh. no. 6022 Code no.* | Availability discount group122 |
|-----------------------------------|------|-----------|--------------------------------|------------|------|------|-------------------|---------------------|---------------------------------------|--------------------------------|---|--------------------------------|
| | | | | D mm | d mm | L mm | l ₁ mm | | | | | |
| 2 clamp. holders Guh. no. 6001 | I | 45.002 | ● | 45 | 10.0 | 50 | 27 | Ø 16 x 25 | 45.000 | ● | 8.000 | ● |
| | | 63.002 | ● | 63 | 10.0 | 50 | 27 | B25 DIN 1835 | 63.000 | ● | 8.000 | ● |
| | II | 80.002 | ● | 80 | 20.0 | 75 | 35 | Ø 30 x 10 deep | 80.000 | ● | 12.000 | ● |
| | | 102.002 | ● | 102 | 20.0 | 80 | 35 | C3 DIN 55028 | 102.000 | ● | 12.000 | ● |
| | III | 112.002 | ● | 112 | 31.5 | 100 | 45 | C4 DIN 55028 | 112.000 | ● | 12.000 | ● |
| | | 140.002 | ● | 140 | 31.5 | 105 | 45 | C5 DIN 55028 | 140.000 | ● | 12.000 | ● |
| 3 clamp. holders Guh. no. 6002 | I | 63.003 | ● | 63 | 10.0 | 50 | 27 | B25 DIN 1835 | 63.000 | ● | 8.000 | ● |
| | | 80.003 | ● | 80 | 20.0 | 75 | 35 | Ø 30 x 10 deep | 80.001 | ● | 12.000 | ● |
| | II | 102.003 | ● | 102 | 20.0 | 80 | 35 | C3 DIN 55028 | 102.000 | ● | 12.000 | ● |
| | | 112.003 | ● | 112 | 31.5 | 100 | 45 | C4 DIN 55028 | 112.000 | ● | 12.000 | ● |
| | III | 140.003 | ● | 140 | 31.5 | 105 | 45 | C5 DIN 55028 | 140.000 | ● | 12.000 | ● |
| | | 170.003 | ● | 170 | 31.5 | 130 | 60 | C6 DIN 55028 | 170.000 | ● | 16.000 | ● |
| 4 clamp. holders Guh. no. 6003 | II | 102.004 | ● | 102 | 20.0 | 80 | 35 | C3 DIN 55028 | 102.001 | ● | 12.000 | ● |
| | | 112.004 | ● | 112 | 31.5 | 100 | 45 | C4 DIN 55028 | 112.001 | ● | 12.000 | ● |
| | III | 140.004 | ● | 140 | 31.5 | 105 | 45 | C5 DIN 55028 | 140.001 | ● | 12.000 | ● |
| | | 170.004 | ● | 170 | 50.0 | 160 | 60 | C6 DIN 55028 | 170.001 | ● | 16.000 | ● |
| | IV | 220.004 | ● | 220 | 50.0 | 175 | 60 | C8 DIN 55028 | 220.000 | ● | 16.000 | ● |
| | | 250.004 | ● | 250 | 50.0 | 200 | 60 | C10 DIN 55028 | 250.000 | ● | 16.000 | ● |




*) When ordering, please always state Guhring no. and code no.!



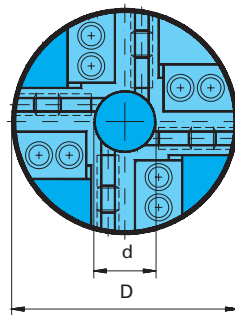
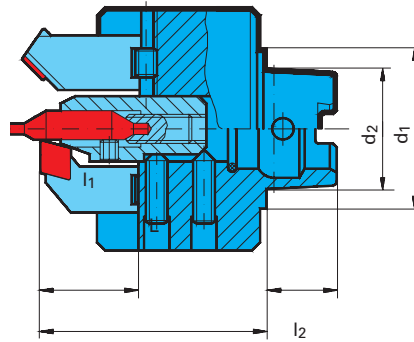
L






Tool head
with HSK-holder,
form A
automatic




| Tool head | Size | Code no.* | Availability discount group 122 | Dimensions | | | | | | | HSK holder | |
|--|------|-----------|---------------------------------------|------------|---------|-----------------------------|----------------------|----------------|----------------------|----------------------|---------------|--|
| | | | | D mm | d mm | d ₁ mm form A | d ₂ mm | L mm form A | l ₁ mm | l ₂ mm | | |
| 2 clamp. holders form A No. 6041  | I | 45.032 | ● | 45 | 10.0 | 32 | 24 | 85 | 27 | 16 | 32 | |
| | | 63.040 | ● | 63 | 10.0 | 40 | 30 | 85 | 27 | 20 | 40 | |
| | II | 80.050 | ● | 80 | 20.0 | 50 | 38 | 105 | 35 | 25 | 50 | |
| | | 102.063 | ● | 102 | 20.0 | 63 | 48 | 105 | 35 | 32 | 63 | |
| | III | 112.080 | ● | 112 | 31.5 | 80 | 60 | 131 | 45 | 40 | 80 | |
| | | 140.100 | ● | 140 | 31.5 | 100 | 75 | 131 | 45 | 50 | 100 | |
| 3 clamp. holders form A No. 6042  | I | 63.040 | ● | 63 | 10.0 | 40 | 30 | 85 | 27 | 20 | 40 | |
| | | 80.050 | ● | 80 | 20.0 | 50 | 38 | 105 | 35 | 25 | 50 | |
| | II | 102.063 | ● | 102 | 20.0 | 63 | 48 | 105 | 35 | 32 | 63 | |
| | | 112.080 | ● | 112 | 31.5 | 80 | 60 | 131 | 45 | 40 | 80 | |
| | III | 140.100 | ● | 140 | 31.5 | 100 | 75 | 131 | 45 | 50 | 100 | |
| | | | | | | | | | | | | |
| 4 clamp. holders form A No. 6043  | II | 102.063 | ● | 102 | 20.0 | 63 | 48 | 105 | 35 | 32 | 63 | |
| | | 112.080 | ● | 112 | 31.5 | 80 | 60 | 131 | 45 | 40 | 80 | |
| | III | 140.100 | ● | 140 | 31.5 | 100 | 75 | 131 | 45 | 50 | 100 | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

Tool heads






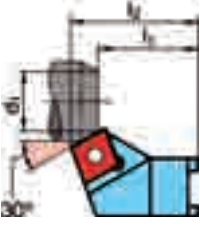

Tool head
with HSK-holder,
form C
manual
with increased
locating face

| Tool head | Size | Code no.* | Availability discount group 122 | Dimensions | | | | | | | HSK holder |
|---|------|-----------|---------------------------------------|------------|---------|-----------------------------|----------------------|----------------|----------------------|----------------------|---------------|
| | | | | D mm | d mm | d ₁ mm form C | d ₂ mm | L mm form C | l ₁ mm | l ₂ mm | |
| 2 clamp. holders form C No. 6031 | I | 45.032 | ● | 45 | 10.0 | 40 | 24 | 59 | 27 | 16 | 32 |
| | | 63.040 | ● | 63 | 10.0 | 50 | 30 | 59 | 27 | 20 | 40 |
|  | II | 80.050 | ● | 80 | 20.0 | 63 | 38 | 75 | 35 | 25 | 50 |
| | | 102.063 | ● | 102 | 20.0 | 80 | 48 | 75 | 35 | 32 | 63 |
| | III | 112.080 | ● | 112 | 31.5 | 100 | 60 | 100 | 45 | 40 | 80 |
| | | 140.100 | ● | 140 | 31.5 | 125 | 75 | 100 | 45 | 50 | 100 |
| 3 clamp. holders form C No. 6032 | I | 63.040 | ● | 63 | 10.0 | 50 | 30 | 59 | 27 | 20 | 40 |
| | | 80.050 | ● | 80 | 20.0 | 63 | 38 | 75 | 35 | 25 | 50 |
|  | II | 102.063 | ● | 102 | 20.0 | 80 | 48 | 75 | 35 | 32 | 63 |
| | | 112.080 | ● | 112 | 31.5 | 100 | 60 | 100 | 45 | 40 | 80 |
| | III | 140.100 | ● | 140 | 31.5 | 125 | 75 | 100 | 45 | 50 | 100 |
| | | | | | | | | | | | |
| 4 clamp. holders form C No. 6033 | II | 102.063 | ● | 102 | 20.0 | 80 | 48 | 75 | 35 | 32 | 63 |
| | | 112.080 | ● | 112 | 31.5 | 100 | 60 | 100 | 45 | 40 | 80 |
|  | III | 140.100 | ● | 140 | 31.5 | 125 | 75 | 100 | 45 | 50 | 100 |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| Tool holder type | Code no.* | Facing size l ₁ mm | Availability discount group 122 | Total length l ₂ mm | Machining dia. range d ₁ min d ₁ max mm | For tool head | | For insert type | Tungst. | Threaded | Clamp. | | | | | | | | | | | |
|---------------------------------------|-----------|-------------------------------------|--|--------------------------------------|--|---------------|------------|-----------------|---|---|---|--------|-------|-------|------------|--------------|-----|------------|------------|--------|-------|-------|
| | | | | | | D mm | size | | carb. base | ring | screw | | | | | | | | | | | |
| | | | | | | | | | no. 6126 Code no. | no. 6127 Code no. | no. 6128 Code no. | | | | | | | | | | | |
| | | | | | | | | |  |  |  | | | | | | | | | | | |
| | | | | | | | | | Availability/discount group 122 | | | | | | | | | | | | | |
| Holder for facing operations | 11.006 | 27 | ● | - | 0 - 20 | 45 | I | CCH...0602 | - | - | 2.501 | | | | | | | | | | | |
| Guhring no. 6101 | 12.006 | | ● | | | 0 - 30 | | | | | 63 | ● | | | | | | | | | | |
| | 11.009 | | ● | | | 0 - 22 | | | | | 45 | 3.500 | | | | | | | | | | |
| | 21.009 | 35 | ● | - | 0 - 25 | 80 | II | CCH...09T3 | 9.000 | 5.000 | 3.501 | | | | | | | | | | | |
| | 22.009 | | ● | | 0(8**)- 44 | 102 | | | | | ● | | | | | | | | | | | |
| | 21.012 | | ● | | 10 - 40 | 80 | | | | | CNH...1204 | 12.000 | 6.000 | 4.000 | | | | | | | | |
| | 22.012 | | ● | | 10(17**)- 62 | 102 | | | | | | | | | | | | | | | | |
| | 31.012 | | 45 | | ● | - | | | | | | | | | 0 - 30 | 80 | III | CNH...1606 | 16.000 | 8.000 | 5.000 | |
| | 32.012 | | | | ● | | | | | | | | | | 0(8**)- 50 | 102 | | | | | | |
| | 31.016 | ● | | 0 - 40 | 112 | | | | | | | | | | | | | | | | | |
| | 32.016 | ● | | 0 - 70 | 140 | | | | | | | | | | | | | | | | | |
| | 41.016 | 60 | ● | - | 35 - 70 | 112 | IV | CNH...1906 | 19.000 | 8.000 | 5.000 | | | | | | | | | | | |
| | 42.016 | | ● | | 35 - 100 | 140 | | | | | | | | | | | | | | | | |
| 41.019 | ● | | 0 - 46 | | 112 | | | | | | | | | | | | | | | | | |
| 42.019 | ● | | 0 - 76 | | 140 | | | | | | | | | | | | | | | | | |
| Holder for ext. chamfering operations | 11.006 | 27 | ● | 30.4 | 8 - 13 | 45 | I | CCH...0602 | - | - | 2.501 | | | | | | | | | | | |
| Guhring no. 6102 | 12.006 | | ● | | | 10 - 30 | | | | | 63 | ● | | | | | | | | | | |
| | 11.009 | | ● | | | 8 - 12 | | | | | 45 | 3.500 | | | | | | | | | | |
| | 12.009 | ● | 32.7 | 9 - 30 | 63 | | | | | | | | | | | | | | | | | |
| | 21.009 | 35 | | ● | 40.7 | 12 - 16 | 45 | II | CCH...09T3 | 9.000 | 5.000 | | 3.501 | | | | | | | | | |
| | 22.009 | | | ● | | 13 - 34 | 63 | | | | | | | | | | | | | | | |
| | 21.012 | | ● | 9 - 23 | | 80 | CNH...1204 | | | | | 12.000 | | 6.000 | 4.000 | | | | | | | |
| | 22.012 | | ● | 9(18**)- 45 | | 102 | | | | | | | | | | | | | | | | |
| | 31.012 | | 45 | ● | | 53.0 | | | | | | | | | | 20 - 33 | 80 | III | CNH...1606 | 16.000 | 8.000 | 5.000 |
| | 32.012 | | | ● | | | | | | | | | | | | 20(29**)- 55 | 102 | | | | | |
| | 31.016 | ● | | 9 - 20 | 80 | | | | | | | | | | | | | | | | | |
| | 32.016 | ● | | 9(17**)- 44 | 102 | | | | | | | | | | | | | | | | | |
| | 41.016 | 60 | ● | 63.3 | 20 - 31 | 80 | IV | CNH...1906 | 19.000 | 8.000 | 5.000 | | | | | | | | | | | |
| 42.016 | ● | | 20(29**)- 55 | | 102 | | | | | | | | | | | | | | | | | |
| 41.016 | ● | | 15 - 38 | | 112 | | | | | | | | | | | | | | | | | |
| 42.016 | ● | | 15 - 68 | | 140 | | | | | | | | | | | | | | | | | |


*) When ordering, please always state Guhring no. and code no.!

**) Dimensions for tool head with 4 adaptors, Ø 102 mm (6003 102,004)!

| Tool holder type | Code no.* | Facing size l ₁ mm | Availability discount group 122 | Total length l ₂ mm | Machining dia. range | | For tool head | | For insert type | Tungst. carb. base | Threaded ring | Clamp. screw |
|--|-----------|---|--|--|----------------------|--------------------|---------------|------------|-----------------|---|---|---|
| | | | | | d ₁ min | d ₁ max | D | size | | no. 6126 Code no. | no. 6127 Code no. | no. 6128 Code no. |
| | | | | | mm | | mm | | |  |  |  |
| Availability/discount group 122 | | | | | | | | | | | | |
| Holder for ext. chamfering operations Guhring no. 6103  | 11.006 | 27 | ● | 31.5 | 8 - 13 | 45 | I | CCH...0602 | - | - | 2.501 | ● |
| | 12.006 | | ● | | 10 - 30 | 63 | | | | | | |
| | 11.009 | | ● | | 12 - 17 | 45 | | | | | | |
| | 12.009 | | ● | 15 - 34 | 63 | | | | | | | |
| | | | ● | 34.3 | 8 - 12 | 45 | | | | | | |
| | | | | | 10 - 30 | 63 | | | | | | |
| | 21.009 | 35 | ● | 42.3 | 8 - 21 | 80 | II | CCH...09T3 | 9.000 | 5.000 | 3.501 | ● |
| | 22.009 | | ● | | 8(17**)- 43 | 102 | | | | | | |
| | 21.012 | | ● | | 20 - 32 | 80 | | | | | | |
| | | | ● | 45.0 | 20(29**)- 54 | 102 | | | | | | |
| | 22.012 | | | | ● | 8 - 20 | | | | | | |
| | | | ● | 8(17**)- 43 | 102 | | | | | | | |
| | 31.012 | 45 | | ● | 55.1 | 15 - 38 | 112 | III | CNH...1204 | 12.000 | 6.000 | 4.000 |
| | 32.012 | | ● | 15 - 68 | | 140 | | | | | | |
| | | | ● | 57.9 | | 38 - 60 | 112 | | | | | |
| | 31.016 | | | | ● | 38 - 90 | 140 | | | | | |
| | | | ● | 55.9 | 15 - 38 | 112 | | | | | | |
| | 32.016 | | | | ● | 15 - 68 | 140 | | | | | |
| ● | | 55.9 | 38 - 60 | 112 | | | | | | | | |
| | 38 - 90 | | 140 | | | | | | | | | |
| 41.016 | | 60 | ● | 70.9 | 36 - 72 | 170 | IV | CNH...1606 | 16.000 | 8.000 | 5.000 | ● |
| 42.016 | ● | | 36 - 124 | | 220 | | | | | | | |
| | ● | | 71 - 114 | | 170 | | | | | | | |
| Holder for int. chamfering operations Guhring no. 6104  | 11.006 | 27 | ● | 29.0 | 7 - 15 | 45 | I | CCH...0602 | - | - | 2.501 | ● |
| | 12.006 | | ● | | 14 - 30 | 63 | | | | | | |
| | 11.007 | | ● | | 7 - 25 | 63 | | | | | | |
| | 12.007 | | ● | | 7 - 15 | 45 | | | | | | |
| | | | ● | | 15 - 30 | 63 | | | | | | |
| | 11.009 | | ● | | 7 - 22 | 63 | | | | | | |
| | 11.009 | ● | 14 - 16 | 45 | | | | | | | | |
| | | ● | 18 - 34 | 63 | | | | | | | | |
| | 21.009 | 35 | ● | 36.5 | 15 - 27 | 80 | II | CCH...09T3 | 9.001 | 5.000 | 3.501 | ● |
| | 22.009 | | ● | | 15(23**)- 49 | 102 | | | | | | |
| | | | ● | | 25 - 35 | 80 | | | | | | |
| | 22.012 | | | ● | | 25(30**)- 57 | | | | | | |
| | | | ● | 38.0 | 16 - 25 | 80 | | | | | | |
| | ● | | | | 16(24**)- 46 | 102 | | | | | | |
| | | 22.012 | ● | 25 - 35 | 80 | | | | | | | |
| | ● | | 25(30**)- 53 | 102 | | | | | | | | |
| | | 31.012 | 45 | ● | 47.0 | 15 - 40 | 112 | III | CNH...1204 | 12.001 | 6.000 | 4.000 |
| | 32.012 | ● | | 15 - 70 | | 140 | | | | | | |
| ● | | 48.0 | | 40 - 60 | | 112 | | | | | | |
| | 31.016 | | | ● | 40 - 90 | 140 | | | | | | |
| ● | | 47.0 | | 20 - 40 | 112 | | | | | | | |
| | 32.016 | | | ● | 20 - 70 | 140 | | | | | | |
| ● | | 48.0 | 40 - 60 | 112 | | | | | | | | |
| | 40 - 90 | | 140 | | | | | | | | | |
| 41.016 | | 60 | ● | 68.0 | 40 - 82 | 170 | IV | CNH...1606 | 16.001 | 8.000 | 5.000 | ● |
| 42.016 | ● | | 40 - 132 | | 220 | | | | | | | |
| | ● | | 78 - 120 | | 170 | | | | | | | |
| ● | 42.016 | ● | 78 - 170 | 220 | | | | | | | | |

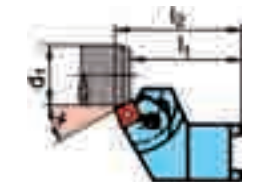
*] When ordering, please always state Guhring no. and code no.!

**] Dimensions for tool head with 4 adaptors, Ø 102 mm (6003 102,004)!




| Tool holder type | Code no.* | Facing size l ₁ mm | Availability discount group 122 | Total length l ₂ mm | Machining dia. range | | For tool head | | For insert type | Tungst. carb. base | Threaded ring | Clamp. screw | | | |
|---|-----------|----------------------------------|---------------------------------|-----------------------------------|---------------------------------|--------------------|---------------|------------|-----------------|----------------------|----------------------|----------------------|---|---|---|
| | | | | | d ₁ min | d ₁ max | D mm | size | | no. 6126 Code no. | no. 6127 Code no. | no. 6128 Code no. | | | |
| | | | | | Availability discount group 122 | | | | | | | | | | |
| Holder for internal chamf. operations | 11.006 | 27 | ● | 29.5 | 7 - 15 | 45 | I | CCH...0602 | - | - | - | | | | |
| | 12.006 | | | | 15 - 30 | 63 | | | | | | | | | |
| Guhring no. 6105 | 11.007 | | | | 7 - 20 | 63 | | | | | | CCH...09T3 | - | - | - |
| | 12.007 | | | | 7 - 15 | 45 | | | | | | | | | |
| | 11.009 | | | | 15 - 30 | 63 | | | | | | | | | |
| | | | | | 7 - 22 | 63 | | | | | | | | | |
|  | 21.009 | 35 | ● | 36.5 | 15 - 27 | 80 | II | CNH...1204 | 9.002 | 5.000 | 3.501 | | | | |
| | 22.009 | | | | 15(23**)- 49 | 102 | | | | | | | | | |
| | | | | | 25 - 38 | 80 | | | | | | | | | |
| | 21.012 | | | | 25(35**)- 60 | 102 | | | | | | | | | |
| | | | | | 16 - 25 | 80 | | | | | | | | | |
| | 22.012 | | | | 16(24**)- 46 | 102 | | | | | | | | | |
| | | 26 - 36 | 80 | | | | | | | | | | | | |
| | 31.012 | 45 | ● | 48.0 | 70.0 | 15 - 40 | 112 | III | CNH...1606 | 12.002 | 6.000 | 4.000 | | | |
| | | | | | | 15 - 70 | 140 | | | | | | | | |
| | | | | | | 40 - 60 | 112 | | | | | | | | |
| | | | | | | 40 - 90 | 140 | | | | | | | | |
| | | | | | | 20 - 40 | 112 | | | | | | | | |
| 20 - 70 | | | | | | 140 | | | | | | | | | |
| 32.012 | 60 | ● | 70.0 | 70.0 | 40 - 60 | 112 | IV | - | - | - | | | | | |
| | | | | | 40 - 90 | 140 | | | | | | | | | |
| | | | | | 40 - 60 | 112 | | | | | | | | | |
| | | | | | 40 - 90 | 140 | | | | | | | | | |
| 31.016 | 45 | ● | 48.0 | 70.0 | 40 - 82 | 170 | - | - | - | | | | | | |
| 20 - 40 | | | | | 112 | | | | | | | | | | |
| 32.016 | 60 | ● | 70.0 | 70.0 | 40 - 132 | 220 | 16.000 | 8.000 | 5.000 | | | | | | |
| 41.016 | | | | | 78 - 120 | 170 | | | | | | | | | |
| 42.016 | 78 - 170 | 220 | | | | | | | | | | | | | |

*) When ordering, please always state Guhring no. and code no!
 **) Dimensions for tool head with 4 adaptors. Ø 102 mm (6003 102.004)!

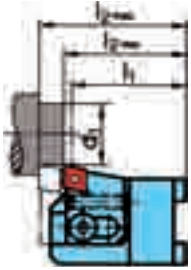
Tool holders, axially, radially and angular adjustable

| Holders with adjustable angle for external chamfering | Code no.* | Availability discount group 122 | Angle adjustment range | | Dimensions | | Machining dia. range** d ₁ min. d ₁ max. mm | For tool head | | For insert type |
|---|-----------|---------------------------------|------------------------|------|-------------------|-------------------|--|---------------|------------|-----------------|
| | | | min. | max. | l ₁ mm | l ₂ mm | | D mm | size | |
|  | 80.000 | ● | 15° - 60° | 35 | 39.5 | 12 - 21 | 80 | II | CCH...0602 | |
| | | | | | | 12 - 44 | 102 | | | |
| | 170.000 | ● | 15° - 60° | 45 | 54.5 | 16 - 35 | 112 | III | CNH...1204 | |
| 16 - 65 | | | | | | 140 | | | | |
| 112.000 | ● | 15° - 60° | 60 | 76.5 | 30 - 67 | 170 | IV | CNH...1906 | | |
| | | | | | 30 - 120 | 220 | | | | |




Components for Guhring no. 6111

| Basic holder | Code no.* | Availability discount group 122 | Holder inserts | Code no.* | Availability discount group 122 | Clamping screw | Code no.* | Availability discount group 122 | For Guh. no. holder 6111 Code no.* |
|---|-----------|---------------------------------|---|-----------|---------------------------------|--|-----------|---------------------------------|------------------------------------|
| Guh. no. 6112 | | | Guh. no. 6113 | | | Guh. no. 6128 | | | |
|  | 80.000 | ● |  | 20.006 | ● |  | 2.501 | ● | 80.000 |
| | 112.000 | ● | | 30.012 | ● | | 4.002 | ● | 112.000 |
| | 170.000 | ● | | 40.019 | ● | | 5.000 | ● | 170.000 |

Tool holders, axially, radially and angular adjustable

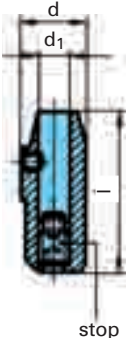
| Holders for turning operations axially and radially adjustable | Length adjustment range l ₂ min. l ₂ max. mm | Code no.* | Availability discount group 122 | Facing size l ₁ mm | Machining dia. range** d ₁ min. d ₁ max. mm | For tool head | | For insert type | |
|---|--|-----------|---------------------------------|-------------------------------------|---|---------------|------|--------------------------------------|----------------|
| | | | | | | D mm | size | | |
|  | 35 - 42 | 80.000 | ● | 35 | 11.0 - 25.0 | 80 | II | CCH... 0602 | |
| | 42 - 49 | 80.001 | ● | | | | | | |
| | 49 - 56 | 80.002 | ● | | | | | | |
| | 35 - 45 | 102.000 | ● | | 4.0 - 28.0 | 102 | | | CCH... 09T3 |
| | 45 - 55 | 102.001 | ● | | | | | | |
| | 55 - 65 | 102.002 | ● | | | | | | |
| | 40 - 50 | 102.003 | ● | | | | | | |
| | 50 - 60 | 102.004 | ● | | | | | | |
| | 60 - 70 | 102.005 | ● | | | | | | |
| | 40 - 50 | 102.013 | ● | 45 | 6.0 - 35.0 6.0 - 65.0 | 112 140 | III | CNH... 1204 CCH... 09T3 | |
| | 50 - 60 | 102.014 | ● | | | | | | |
| | 60 - 70 | 102.015 | ● | | | | | | |
| | 45 - 55 | 112.000 | ● | | | | | | |
| | 55 - 65 | 112.001 | ● | | | | | | |
| | 65 - 75 | 112.002 | ● | | | | | | |
| | 45 - 55 | 112.010 | ● | | | | | | |
| | 55 - 65 | 112.011 | ● | | | | | | |
| | 65 - 75 | 112.012 | ● | | | | | | |

Components for Guhring no. 6114

| Basic holder | Code no.* | Availability discount group 122 | Holder inserts | Code no.* | Availability discount group 122 | Clamping screw | Code no.* | Availability discount group 122 | For Guh. no. holder 6114 Code no.* |
|---|-----------|---------------------------------|---|-----------|---------------------------------|--|-----------|---------------------------------|------------------------------------|
| Guh. no. 6115 | | | Guh. no. 6116 | | | Guh. no. 6128 | | | |
|  | 80.000 | ● |  | 20.006 | ● |  | 2.501 | ● | 80.000 |
| | 80.001 | ● | | | | | | | 80.001 |
| | 80.002 | ● | | | | | | | 80.002 |
| | 102.000 | ● | | 23.006 | ● | | 2.501 | ● | 102.000 |
| | 102.001 | ● | | | | | | | 102.001 |
| | 102.002 | ● | | | | | | | 102.002 |
| | 102.000 | ● | | 23.012 | ● | | 4.002 | ● | 102.003 |
| | 102.001 | ● | | | | | | | 102.004 |
| | 102.002 | ● | | | | | | | 102.005 |
| | 102.000 | ● | | 23.009 | ● | | 3.500 | ● | 102.013 |
| | 102.001 | ● | | | | | | | 102.014 |
| | 102.002 | ● | | | | | | | 102.015 |
| | 112.000 | ● | | 23.012 | ● | | 4.002 | ● | 112.003 |
| | 112.001 | ● | | | | | | | 112.004 |
| | 112.002 | ● | | | | | | | 112.005 |
| | 112.000 | ● | | 23.009 | ● | | 3.500 | ● | 112.010 |
| | 112.001 | ● | | | | | | | 112.011 |
| | 112.002 | ● | | | | | | | 112.012 |



*) When ordering, please always state Guhring no. and code no.! **) without clamping sleeve

Clamping bushes and Centre drills

| Version | Guhring no. | Availability discount group 122 | Code no.* | Dimensions | | | For centre drills | | For step drills | Stop (component) Guh. no. 6155 | |
|---|-----------------------------|---------------------------------|-----------|-------------------|------|------|-------------------|----------------|-----------------|--------------------------------|----------|
| | | | | d ₁ mm | d mm | l mm | form A/R drill Ø | form B drill Ø | | Code no.* | €/DG 122 |
|  | 6151 for size I | ● | 4.000 | 4.0 | 10.0 | 32 | 1.6 | – | – | 6.000 | ● |
| | | ● | 5.000 | 5.0 | 10.0 | 32 | 2.0 | – | – | 6.001 | ● |
| | | ● | 6.300 | 6.3 | 10.0 | 32 | 2.5 | 1.6 | – | 6.002 | ● |
| | 6152 for size II | ● | 4.000 | 4.0 | 20.0 | 49 | 1.6 | – | – | 10.000 | ● |
| | | ● | 5.000 | 5.0 | 20.0 | 49 | 2.0 | – | – | 10.001 | ● |
| | | ● | 6.300 | 6.3 | 20.0 | 49 | 2.5 | 1.6 | – | 10.002 | ● |
| | | ● | 8.000 | 8.0 | 20.0 | 49 | 3.15 | 2.0 | M 4 | 10.003 | ● |
| | | ● | 10.000 | 10.0 | 20.0 | 49 | 4.0 | 2.5 | M 5 | 10.004 | ● |
| | 6153 for size III | ● | 6.300 | 6.3 | 31.5 | 70 | 2.5 | 1.6 | – | 12.000 | ● |
| | | ● | 8.000 | 8.0 | 31.5 | 70 | 3.15 | 2.0 | M 4 | 12.001 | ● |
| | | ● | 10.000 | 10.0 | 31.5 | 70 | 4.0 | 2.5 | M 5 | 12.002 | ● |
| | | ● | 11.200 | 11.2 | 31.5 | 70 | – | 3.15 | – | 12.003 | ● |
| | | ● | 12.500 | 12.5 | 31.5 | 70 | 5.0 | – | M 6 | 12.004 | ● |
| | | ● | 14.000 | 14.0 | 31.5 | 70 | – | 4.0 | M 8 | 12.005 | ● |
| | | ● | 16.000 | 16.0 | 31.5 | 70 | 6.3 | – | M 10 | 12.006 | ● |
| | | ● | 18.000 | 18.0 | 31.5 | 70 | – | 5.0 | – | 12.007 | ● |
| | 6154 for size IV | ● | 18.000 | 18.0 | 50.0 | 116 | – | 5.0 | – | 20.000 | ● |
| | | ● | 20.000 | 20.0 | 50.0 | 116 | 8.0 | 6.3 | M 12 | 20.001 | ● |
| | | ● | 25.000 | 25.0 | 50.0 | 116 | 10.0 | 8.0 | M 16 | 20.002 | ● |
| | | ● | 31.500 | 31.5 | 50.0 | 116 | 12.5 | 10.0 | M 20 | 20.003 | ● |

Setting dimensions page 22

*) When ordering, please always state Guhring no. and code no.!

| | | | | 287 | 288 |
|---|--------|--------|-------|---|---|
| Guhring no. | | | | Guhring standard | |
| standard | | | | | |
| Tool material | | | | HSS | |
| Surface | | | | ○ | ○ |
| Form | | | | A | R |
| Cutting direction | | | | right | right |
| Discount group | | | | 138 | 138 |
| Please observe the setting dimensions page 22. | | | |  |  |
| | | | | Availability | |
| d1 | d2 | l1 | s | ● | ● |
| mm | mm | mm | mm | ● | ● |
| 1,600 | 5,000 | 40,00 | 4,20 | ● | ● |
| 2,000 | 6,300 | 45,00 | 5,35 | ● | ● |
| 2,500 | 8,000 | 50,00 | 6,85 | ● | ● |
| 3,150 | 10,000 | 56,00 | 8,40 | ● | ● |
| 4,000 | 12,500 | 63,00 | 10,65 | ● | ● |
| 5,000 | 16,000 | 71,00 | 13,65 | ● | ● |
| 6,300 | 20,000 | 80,00 | 17,40 | ● | ● |
| 8,000 | 25,000 | 100,00 | 21,90 | ● | ● |
| 10,000 | 31,500 | 125,00 | 27,10 | ● | ○ |
| 12,500 | 31,500 | 125,00 | 28,40 | ○ | ○ |

○ bright

Centre drills

Guhring no.

Standard

Tool material

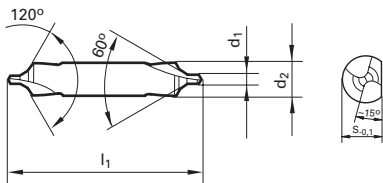
Surface

Form

Cutting direction

Discount group

Please observe the setting dimensions
page 22.



589

Guhring std.

HSS



B

rh

138

| d1 | d2 | l1 | s |
|--------|--------|--------|-------|
| mm | mm | mm | mm |
| 1.600 | 6.300 | 45.00 | 5.35 |
| 2.000 | 8.000 | 50.00 | 6.95 |
| 2.500 | 10.000 | 56.00 | 8.40 |
| 3.150 | 11.200 | 60.00 | 10.00 |
| 4.000 | 14.000 | 67.00 | 12.65 |
| 5.000 | 18.000 | 75.00 | 16.40 |
| 6.300 | 20.000 | 80.00 | 17.90 |
| 8.000 | 25.000 | 100.00 | 22.50 |
| 10.000 | 31.500 | 125.00 | 28.40 |
| | | | |
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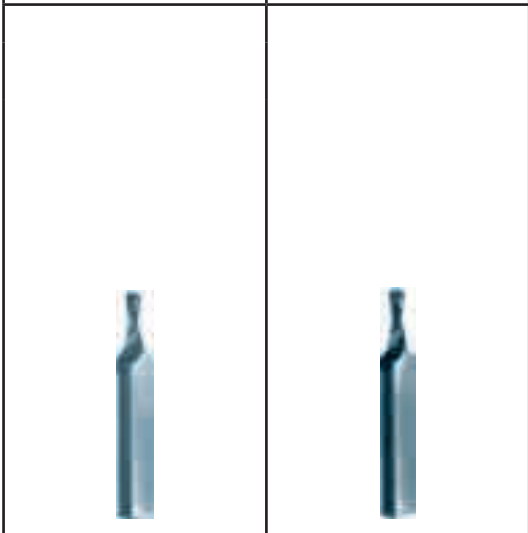
| Availability | |
|--------------|--|
| ● | |
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Step drills

Guhring no.
Standard
Tool material
Surface
Type
Form
Cutting direction
Discount group

Please observe the setting dimensions page 22.

| 274 | 574 |
|--------------------------------|---------------------------------|
| Guhring standard | |
| HSS | |
| ● | ● |
| N | N |
| for countersinks form D | for countersinks form DR |
| rh | rh |
| 138 | 138 |

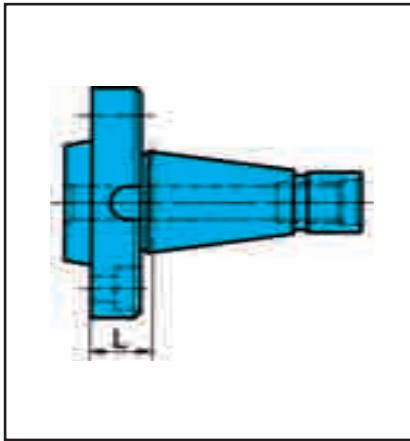


| d3 h7 | d2 | d1 h8 | s | l1 | l2 | l4 | l5 | for |
|--------|--------|--------|-------|--------|-------|-------|-------|--------|
| mm | mm | mm | mm | mm | mm | mm | mm | thread |
| 8.000 | 4.300 | 3.300 | 6.75 | 63.00 | 23.00 | 11.00 | 1.60 | M 4 |
| 10.000 | 5.300 | 4.200 | 8.45 | 67.00 | 27.00 | 13.00 | 2.15 | M 5 |
| 12.500 | 6.400 | 5.000 | 10.45 | 71.00 | 33.00 | 16.00 | 2.90 | M 6 |
| 14.000 | 8.400 | 6.800 | 12.50 | 88.00 | 41.00 | 19.50 | 3.50 | M 8 |
| 16.000 | 10.500 | 8.500 | 14.85 | 94.00 | 47.00 | 23.00 | 4.70 | M 10 |
| 20.000 | 13.000 | 10.200 | 18.45 | 105.00 | 59.00 | 28.00 | 6.50 | M 12 |
| 25.000 | 17.000 | 14.000 | 23.40 | 132.00 | 67.00 | 33.00 | 8.30 | M 16 |
| 31.500 | 21.000 | 17.500 | 29.35 | 145.00 | 76.50 | 38.00 | 10.35 | M 20 |
| 40.000 | 25.000 | 21.000 | 36.50 | 160.00 | 90.00 | 45.00 | 12.00 | M 24 |
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| Availability | |
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○ steam tempered

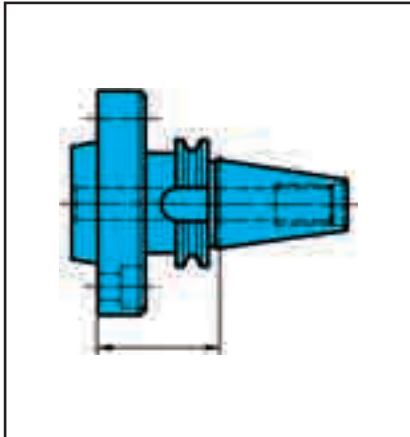
Standard size adaptors



Adaptors with ISO taper to DIN 2080

No. 6051

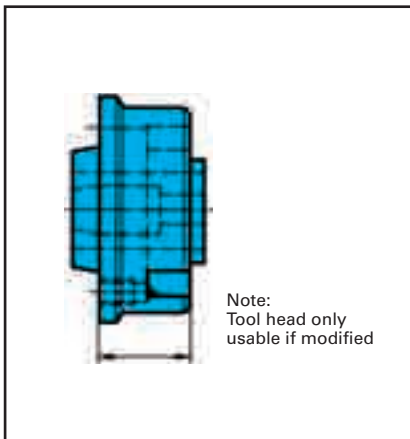
| Code no.* | Availability discount group 122 | Size | Tool head size | Interface | Size L mm | Head Ø |
|-----------|---------------------------------|-------|----------------|-------------------------|-----------|--------|
| 30.080 | ● | SK 30 | II | Ø 30H ⁶ x 10 | 16.6 | 80 |
| 40.080 | ● | SK 40 | II | Ø 30H ⁶ x 10 | 16.6 | 80 |
| 40.102 | ● | SK 40 | II | C 3 DIN 55028 | 21.6 | 102 |
| 40.112 | ● | SK 40 | III | C 4 DIN 55028 | 21.6 | 112 |
| 40.140 | ● | SK 40 | III | C 5 DIN 55028 | 21.6 | 140 |
| 50.140 | ● | SK 50 | III | C 5 DIN 55028 | 23.2 | 140 |



Adaptors with ISO taper to DIN 69871-1 AD

No. 6052

| Code no.* | Availability discount group 122 | Size | Tool head size | Interface | Size L mm | Head Ø |
|-----------|---------------------------------|-------|----------------|---------------|-----------|--------|
| 40.102 | ● | SK 40 | II | C 3 DIN 55028 | 55 | 102 |
| 40.112 | ● | SK 40 | III | C 4 DIN 55028 | 55 | 112 |
| 40.140 | ● | SK 40 | III | C 5 DIN 55028 | 55 | 140 |
| 45.112 | ● | SK 45 | III | C 4 DIN 55028 | 55 | 112 |
| 45.140 | ● | SK 45 | III | C 5 DIN 55028 | 55 | 140 |
| 50.140 | ● | SK 50 | III | C 5 DIN 55028 | 55 | 140 |



Adaptors for UMA Ø 45/88.88

No. 6056

| Code no.* | Availability discount group 122 | Tool holder adaptors | Tool head size | Interface | Size L mm | Head Ø |
|-----------|---------------------------------|----------------------|----------------|---------------|-----------|--------|
| 3.002 | ● | 2 | II | C 3 DIN 55028 | 40 | 102 |
| 3.003 | ● | 3 | II | C 3 DIN 55028 | 40 | 102 |
| 3.004 | ● | 4 | II | C 3 DIN 55028 | 40 | 102 |
| 4.002 | ● | 2 | III | C 4 DIN 55028 | 40 | 112 |
| 4.003 | ● | 3 | III | C 4 DIN 55028 | 40 | 112 |
| 4.004 | ● | 4 | III | C 4 DIN 55028 | 40 | 112 |
| 5.004 | ● | 4 | III | C 5 DIN 55028 | 45 | 140 |

*) When ordering, please always state Guhring no. and code no.! Other systems on request.

Indexable inserts

| Indexable insert type | Dimensions of basic body mm | | | | Dimensions of chipbreaker mm | | Carbide grade | Surface finish | Cutting direction |
|--|--|-------|------|------|------------------------------|----------------|-------------------------|----------------------|-------------------|
| | R | d | l | s | B | R ₁ | ISO code* | Code no. | Gühring no. |
| Indexable insert with high radius chipbreaker and 4 cutting edges | 0.0 | 12.70 | 12.9 | 4.76 | 2.6 | 1.5 | CNHX 12 0400(R/L) 226 | 124.000 | |
| | 0.4 | 12.70 | 12.9 | 4.76 | 2.6 | 1.5 | CNHX 12 0404(R/L) 226 | 124.040 | |
| | 0.4 | 12.70 | 12.9 | 4.76 | 3.0 | 2.0 | CNHX 12 0404(R/L) 230 | 124.041 | |
| | 0.8 | 12.70 | 12.9 | 4.76 | 2.6 | 1.5 | CNHX 12 0408(R/L) 226 | 124.080 | |
| | 0.8 | 12.70 | 12.9 | 4.76 | 3.0 | 2.0 | CNHX 12 0408(R/L) 230 | 124.081 | |
| | 0.2 | 15.88 | 16.1 | 6.35 | 2.6 | 1.5 | CNHX 16 0602(R/L) 226 | 166.000 | |
| | 0.4 | 15.88 | 16.1 | 6.35 | 2.6 | 1.5 | CNHX 16 0604(R/L) 226 | 166.040 | |
| | 0.8 | 15.88 | 16.1 | 6.35 | 3.0 | 1.5 | CNHX 16 0608(R/L) 230 | 166.081 | |
| | 0.4 | 19.05 | 19.2 | 6.35 | 3.0 | 2.0 | CNHX 19 0604(R/L) 230 | 196.040 | |
| | 0.8 | 19.05 | 19.2 | 6.35 | 3.0 | 2.0 | CNHX 19 0608(R/L) 235 | 196.080 | |
| Indexable insert with standard chipbreaker and 4 cutting edges | 0.0 | 12.70 | 12.9 | 4.76 | 2.2 | 0.5 | CNHX 12 0400(R/L) 122 | 124.000 | |
| | 0.0 | 12.70 | 12.9 | 4.76 | 2.6 | 0.5 | CNHX 12 0400(R/L) 126 | 124.001 | |
| | 0.4 | 12.70 | 12.9 | 4.76 | 2.2 | 0.5 | CNHX 12 0404(R/L) 122 | 124.040 | |
| | 0.4 | 12.70 | 12.9 | 4.76 | 2.6 | 0.5 | CNHX 12 0404(R/L) 126 | 124.041 | |
| | 0.8 | 12.70 | 12.9 | 4.76 | 2.6 | 0.5 | CNHX 12 0408(R/L) 126 | 124.080 | |
| | 0.8 | 12.70 | 12.9 | 4.76 | 3.0 | 0.5 | CNHX 12 0408(R/L) 130 | 124.081 | |
| | 0.2 | 15.88 | 16.1 | 6.35 | 2.6 | 0.5 | CNHX 16 0602(R/L) 126 | 166.000 | |
| | 0.4 | 15.88 | 16.1 | 6.35 | 2.6 | 0.5 | CNHX 16 0604(R/L) 126 | 166.040 | |
| | 0.8 | 15.88 | 16.1 | 6.35 | 3.0 | 0.5 | CNHX 16 0608(R/L) 130 | 166.081 | |
| | 0.4 | 19.05 | 19.2 | 6.35 | 3.0 | 0.5 | CNHX 19 06 04 (R/L) 130 | 196.040 | |
| Indexable insert without chipbreaker and 4 cutting edges | 0.0 | 12.70 | 12.9 | 4.76 | | | CNHQ 12 0400N | 124.000 | |
| | 0.4 | 12.70 | 12.9 | 4.76 | | | CNHQ 12 0404N | 124.040 | |
| | 0.8 | 12.70 | 12.9 | 4.76 | | | CNHQ 12 0408N | 124.080 | |
| | 0.2 | 15.88 | 16.1 | 6.35 | | | CNHQ 16 0602N | 166.020 | |
| | 0.4 | 15.88 | 16.1 | 6.35 | | | CNHQ 16 0604N | 166.040 | |
| | 0.8 | 15.88 | 16.1 | 6.35 | | | CNHQ 16 0608N | 166.080 | |
| | 0.4 | 19.05 | 19.2 | 6.35 | | | CNHQ 19 0604N | 196.040 | |
| | 0.8 | 19.05 | 19.2 | 6.35 | | | CNHQ 19 0608N | 196.080 | |
| | 1.2 | 19.05 | 19.2 | 6.35 | | | CNHQ 19 0612N | 196.120 | |
| | Indexable insert with high radius chipbreaker and 2 cutting edges | 0.2 | 6.35 | 6.4 | 2.38 | 1.2 | 0.5 | CCHX 060202(R/L) 212 | 62.020 |
| 0.4 | | 6.35 | 6.4 | 2.38 | 1.2 | 0.5 | CCHX 060204(R/L) 212 | 62.040 | |
| 0.8 | | 6.35 | 6.4 | 2.38 | 1.4 | 0.5 | CCHX 060208(R/L) 214 | 62.080 | |
| 0.2 | | 9.525 | 9.6 | 3.97 | 1.6 | 1.0 | CCHX 09T3 02(R/L) 216 | 93.020 | |
| 0.4 | | 9.525 | 9.6 | 3.97 | 1.6 | 1.0 | CCHX 09T3 04(R/L) 216 | 93.040 | |
| 0.8 | | 9.525 | 9.6 | 3.97 | 1.8 | 1.0 | CCHX 09T3 08(R/L) 218 | 93.080 | |
| 0.2 | | 12.70 | 12.9 | 4.76 | 1.6 | 1.0 | CCHX 120402(R/L) 216 | 124.020 | |
| 0.4 | | 12.70 | 12.9 | 4.76 | 1.6 | 1.0 | CCHX 120404(R/L) 216 | 124.040 | |
| 0.8 | | 12.70 | 12.9 | 4.76 | 1.6 | 1.0 | CCHX 120408(R/L) 216 | 124.080 | |
| Indexable insert without chipbreaker and 2 cutting edges | | 0.2 | 6.35 | 6.4 | 2.38 | | | CCHW 060202N | 62.020 |
| | 0.4 | 6.35 | 6.4 | 2.38 | | | CCHW060204N | 62.040 | |
| | 0.8 | 6.35 | 6.4 | 2.38 | | | CCHW060208N | 62.080 | |
| | 0.2 | 9.525 | 9.6 | 3.97 | | | CCHW09T3 02N | 93.020 | |
| | 0.4 | 9.525 | 9.6 | 3.97 | | | CCHW09T3 04N | 93.040 | |
| | 0.8 | 9.525 | 9.6 | 3.97 | | | CCHW09T3 08N | 93.080 | |
| | 0.2 | 12.70 | 12.9 | 4.76 | | | CCHW 120402 N | 124.020 | |
| | 0.4 | 12.70 | 12.9 | 4.76 | | | CCHW 120404 N | 124.040 | |
| | 0.8 | 12.70 | 12.9 | 4.76 | | | CCHW 120408 N | 124.080 | |


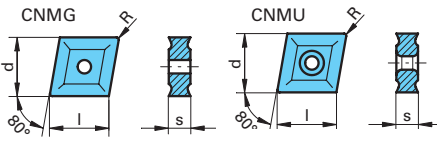
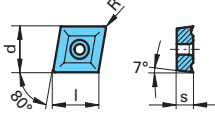
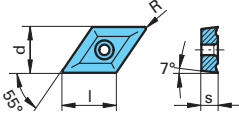
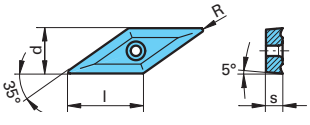
○ bright

● TiN


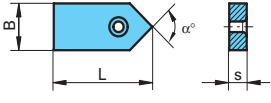
● TiAlN

● TiCN

Indexable inserts, sintered

| Indexable insert type | Dimensions indexable inserts mm | | | | Clamping screw Guhring no. 6128  Code-Nr. | ISO code* | Carbide grade | Surface finish | Cutting direction |
|---|---------------------------------|-------|------|------|---|----------------|---------------|----------------|-------------------|
| | R | d | l | s | | | Guhring no. | Code no. | |
| Indexable insert with chipbreaker and 4 cutting edges | | | | | | | | | |
|  | | | | | | | | | |
| | 0.2 | 12.70 | 12.9 | 4.76 | | CNMU 12 0402N | 124.020 | | |
| | 0.4 | 12.70 | 12.9 | 4.76 | | CNMG12 0404N | 124.040 | | |
| | 0.8 | 12.70 | 12.9 | 4.76 | | CNMG12 0408N | 124.080 | | |
| | 0.4 | 15.88 | 16.1 | 6.35 | | CNMU16 0604N | 166.040 | | |
| | 0.8 | 15.88 | 16.1 | 6.35 | | CNMG16 0608N | 166.080 | | |
| Indexable insert with chip-breaker and 2 cutting edges | | | | | | | | | |
|  | | | | | | | | | |
| | 0.2 | 6.35 | 6.4 | 2.38 | | CCMT 060202N | 62.020 | | |
| | 0.4 | 6.35 | 6.4 | 2.38 | | CCMT060204N | 62.040 | | |
| | 0.8 | 6.35 | 6.4 | 2.38 | | CCMT060208N | 62.080 | | |
| | 0.2 | 9.525 | 9.6 | 3.97 | | CCMT09T3 02N | 93.020 | | |
| | 0.4 | 9.525 | 9.6 | 3.97 | | CCMT09T3 04N | 93.040 | | |
| | 0.8 | 9.525 | 9.6 | 3.97 | | CCMT09T3 08N | 93.080 | | |
| | 0.4 | 12.70 | 12.9 | 4.76 | | CCMT120404N | 124.040 | | |
| 0.8 | 12.70 | 12.9 | 4.76 | | CCMT120408N | 124.080 | | | |
| Indexable insert with chip-breaker and 2 cutting edges | | | | | | | | | |
|  | | | | | | | | | |
| | 0.2 | 6.35 | 7.8 | 2.38 | | DCMT 070202N | 72.020 | | |
| | 0.4 | 6.35 | 7.8 | 2.38 | | DCMT070204N | 72.040 | | |
| | 0.4 | 9.525 | 11.0 | 3.97 | | DCMT11T304N | 11.040 | | |
| Indexable insert with chip-breaker and 2 cutting edges | | | | | | | | | |
|  | | | | | | | | | |
| | 0.2 | 6.35 | 11.0 | 2.38 | | VBMT 11 02 02N | 11.020 | | |

Insert blanks for final grinding, precision ground

| Insert blank | Dimensions indexable inserts mm | | | | Clamping screw Guhring no. 6128  Code-Nr. | Drawing no. | Carbide grade | Surface finish | Cutting direction |
|---|---------------------------------|-------|----------------|-----|---|-------------|---------------|----------------|-------------------|
| | B | L | α° | s | | | Guhring no. | Code no. | |
|  | 6.4 | 13.25 | 90 | 2.4 | 2.501 | ES 060001 | 6.000 | | |
| | 7.4 | 16.70 | 60 | 2.5 | 2.501 | ES 070001 | 7.000 | | |
| | 8.4 | 20.70 | 60 | 3.0 | 3.500 | ES 080001 | 8.000 | | |
| | 9.4 | 18.65 | 90 | 4.0 | 4.000/4.001 | ES 090001 | 9.000 | | |
| | 10.4 | 18.70 | 90 | 4.0 | 4.000/4.001 | ES 100001 | 10.000 | | |
| | 13.4 | 23.50 | 90 | 4.0 | 4.000/4.001 | ES 130001 | 13.000 | | |

○ bright

● TiN

● TiAlN

● TiCN







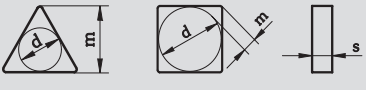






Indexable insert code sim. DIN ISO 1832

Example

| | | | | | | | | | |
|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|---------------------------|-----------------------|-------------------------|
| C ₁ | N ₂ | H ₃ | X ₄ | 12 ₅ | 04 ₆ | 04 ₇ | (R/L) ₈ | 2 ₉ | 26 ₁₀ |
|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|---------------------------|-----------------------|-------------------------|

| | | | | | |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|
| K10 | P10 | P25 | P40 | P40 | P40 |
| ○ | ○ | ○ | ○ | Ⓢ | Ⓢ |
| left/right | left/right | left/right | left/right | left/right | left/right |
| 6294 | 6295 | 6296 | 6275 | 6276 | 6297 |
| Availability • discount group 122 | | | | | |
| ● | ● | ● | ● | ● | ● |
| ● | | | | | ● |
| ● | | | | | ● |
| left/right | | | | left/right | |
| 6271 | | | | 6273 | |
| Availability • discount group 122 | | | | | |
| ● | | | | ● | |
| ● | | | | ● | |
| ● | | | | ● | |
| ● | | | | ● | |
| ● | | | | ● | |
| left/right | | | | left/right | |
| 6290 | | | | 6231 | |
| Availability • discount group 122 | | | | | |
| ● | | | | ● | |
| ● | | | | ● | |
| ● | | | | ● | |
| left/right | | | | left/right | |
| 6291 | | | | 6292 | |
| Availability • discount group 122 | | | | | |
| ● | | | | ● | |

| | | | | | |
|-----------------------------------|------------|------------|-------------|------------|------------|
| K10 | P10 | P25 | P40 | P40 | P40 |
| ○ | ○ | ○ | ○ | Ⓢ | Ⓢ |
| left/right | | | left/right | | |
| 6285 | | | 6286 | | |
| Availability • discount group 122 | | | | | |
| ● | | | ● | | |
| ● | | | ● | | |
| ● | | | ● | | |
| ● | | | ● | | |
| ● | | | ● | | |

| | | | | | | | | | | |
|-----------|--|-------------------------------|--------------|--------------|---|-----------------------|---------------------------|---|--------------------------|-------------------------------|
| 1 | Basic form C  rhombus with 80° corner angle D  rhombus with 55° corner angle V  rhombus with 35° corner angle | | | | | | | | | |
| 2 | Clearance angle B  C  N  | | | | | | | | | |
| 3 | Tolerance class  H insert thickness s ± 0.025 M ± 0.05 - 0.13* inscribed circle d ± 0.013 verification m ± 0.013 ± 0.05 - 0.2 | | | | | | | | | |
| 4 | Characteristics G  with chipbreakers on both faces and parallel bore Q  without chipbreaker, with fastening hole 40°...60°, on both sides T  with chipbreakers on one face and fastening hole 40°...60°, on one side U  with chipbreakers on both faces and fastening hole 40°...60°, on both sides W  without chipbreaker, with fastening hole 40°...60°, on one side X  special design (to drawing) | | | | | | | | | |
| 5 | size Cutting edge length in mm without decimal point, 0 precedes one-figure numbers. | | | | | | | | | |
| 6 | Thickness Insert thickness in mm without decimal point, 0 precedes one-figure numbers. | | | | | | | | | |
| 7 | Corner radius Radius in 1/10 mm, 0 precedes one-figure numbers. | | | | | | | | | |
| 8 | Cutting direction R right-hand L left-hand N right-/left-hand | | | | | | | | | |
| 9 | Cutting edge design <table border="1"> <tr> <td></td> <td>ground angle</td> <td>actual angle</td> </tr> <tr> <td>1</td> <td>standard chip breaker</td> <td>16° 10° (relief angle 6°)</td> </tr> <tr> <td>2</td> <td>high radius chip breaker</td> <td>18°/24° 18° (relief angle 6°)</td> </tr> </table> | | ground angle | actual angle | 1 | standard chip breaker | 16° 10° (relief angle 6°) | 2 | high radius chip breaker | 18°/24° 18° (relief angle 6°) |
| | ground angle | actual angle | | | | | | | | |
| 1 | standard chip breaker | 16° 10° (relief angle 6°) | | | | | | | | |
| 2 | high radius chip breaker | 18°/24° 18° (relief angle 6°) | | | | | | | | |
| 10 | Chipbreaker width in 1/10 mm without decimal point (example: 2.6 mm = 26). | | | | | | | | | |

*)When ordering, please always state ISO code, carbide grade, Guhring no. and code no. (example: CNHX120400R226 K10 6208 124,000)

all indexable insert sizes not shown as available can be supplied on request

Setting instructions for too head

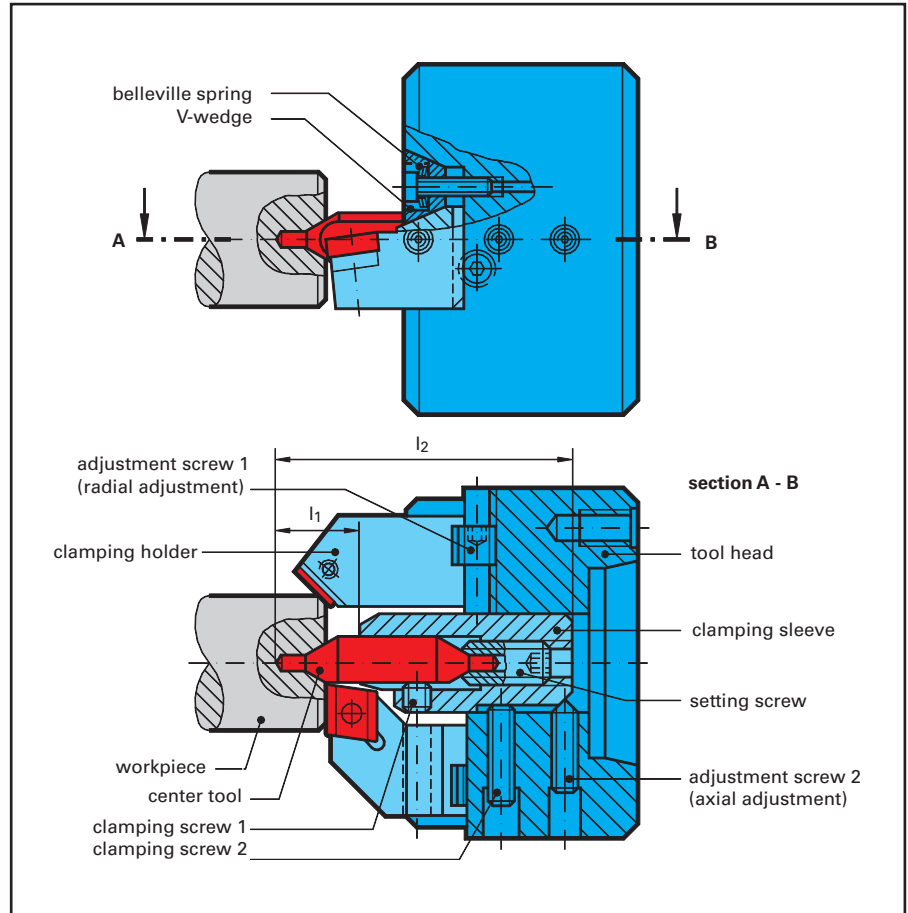
In order to clarify initial queries, we have developed the questionnaire on the following page. Please photocopy and complete. This assist us greatly. ➤

Setting of clamping holder

1. Turn the clamping holder adjustment screw 1 in direction of adjustment until stop.
2. Loosen V-wedge, then pretension again via Bellville spring (do not tighten!).
3. Using hexagonal spanner set adjustment screw 1 (1 mm increments) to the required dimension (1 turn = 2 mm in diameter).
4. Tighten V-wedge.

Setting and changing of center drills

1. Pre-set lengths l_1 and l_2 according to setting dimensions via setting screw.
2. Place clamping sleeve in the bore of the tool head and finely adjust via tool head adjustment screw 2 which acts axially on chamfer of clamping sleeve.
3. Set clamping sleeve position with clamping screw.
4. Tool change is achieved by loosening clamping screw 2 via hole in the clamping holder without adjusting clamping holder.



Setting dimensions "L" for clamping sleeves

with center drills or step drills with flats

| center drill | Clamping sleeve | | No. 587, 588 | | | No. 589 | | | No. 274, 574 | | |
|--------------|-----------------|-----------|--|---------------|---|---------------|---------------|---|---------------|---------------|--------|
| | Guh. no. | Code no.* | Center drill with flat for center holes form A or R to DIN 332 sheet 1 | | Center drill with flat for center holes form B to DIN 332 sheet 1 | | | Center drill with flat for center holes form D or DR to DIN 332 sheet 2 | | | |
| | | | drill dia. mm | dimensions mm | | drill dia. mm | dimensions mm | | drill dia. mm | dimensions mm | |
| | 6151 | 4.000 | 1.60 | 47.5 | 35.5 | - | - | - | - | - | - |
| | | 5.000 | 2.00 | 48.4 | 40.0 | - | - | - | - | - | - |
| | | 6.300 | 2.50 | 49.5 | 45.0 | - | - | - | - | - | - |
| | | 6152 | 4.000 | 1.60 | 62.5 | 35.5 | - | - | - | - | - |
| | 6153 | 5.000 | 2.00 | 63.4 | 40.0 | - | - | - | - | - | - |
| | | 6.300 | 2.50 | 64.5 | 45.0 | 1.60 | 64.5 | 45.0 | - | - | - |
| | | 8.000 | 3.15 | 66.0 | 50.0 | 2.00 | 66.0 | 50.0 | M 4 | 74.7 | 58.0** |
| | | 10.000 | 4.00 | 67.9 | 56.0 | 2.50 | 67.9 | 56.0 | M 5 | 77.8 | 61.0** |
| | 6154 | 6.300 | 2.50 | 83.0 | 45.0 | 1.60 | 83.0 | 45.0 | - | - | - |
| | | 8.000 | 3.15 | 87.0 | 50.0 | 2.00 | 87.0 | 50.0 | M 4 | 95.7 | 58.0** |
| | | 10.000 | 4.00 | 88.9 | 56.0 | 2.50 | 88.9 | 56.0 | M 5 | 98.8 | 61.0** |
| | | 11.200 | - | - | - | 3.15 | 87.0 | 60.0 | - | - | - |
| | | 12.500 | 5.00 | 91.1 | 63.0 | - | - | - | M 6 | 103.2 | 71.0 |
| | | 14.000 | - | - | - | 4.00 | 90.1 | 67.0 | M 8 | 108.3 | 77.0** |
| 6154 | 16.000 | 6.30 | 94.0 | 71.0 | - | - | - | M 10 | 114.1 | 82.0** | |
| | 18.000 | - | - | - | 5.00 | 92.7 | 75.0 | - | - | - | |
| | 18.000 | - | - | - | 5.00 | 148.7 | 75.0 | - | - | - | |
| | 20.000 | 8.00 | 153.9 | 80.0 | 6.30 | 151.4 | 80.0 | M 12 | 174.9 | 105.0 | |
| | 25.000 | 10.00 | 158.5 | 100.0 | 8.00 | 155.4 | 100.0 | M 16 | 186.7 | 132.0 | |
| | 31.500 | 12.50 | 164.6 | 125.0 | 10.00 | 160.5 | 125.0 | M 20 | 196.0 | 145.0 | |

*)When ordering, always indicate Guhring no. and code no.!

***) reduced shank length

Technical questionnaire

for the design of end operation tools

1. Tool

1.1 Technical data

Tool Ø max. _____ mm
 Tool length max. _____ mm
 Tool holder _____
 Suggestion for indexable insert _____

1.2 Required machining operations

(if possible, please enclose workpiece drawing)

Facing



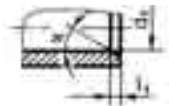
d₁ max. _____ mm, d₁ min. _____ mm

External chamfering



d₁ max. _____ mm, d₁ min. _____ mm
 % _____ °, l₁ max. _____ mm
 % _____ °, l₁ max. _____ mm
 % _____ °, l₁ max. _____ mm

Internal chamfering



d₁ max. _____ mm, d₁ min. _____ mm
 % _____ °, l₁ max. _____ mm
 % _____ °, l₁ max. _____ mm
 % _____ °, l₁ max. _____ mm

Turning



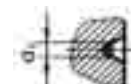
d₁ max. _____ mm, d₁ min. _____ mm
 d₂ max. _____ mm, d₂ min. _____ mm
 % _____ °, l₁ max. _____ mm

Boring

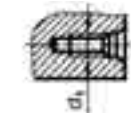


d₁ max. _____ mm, d₁ min. _____ mm
 d₂ max. _____ mm, d₂ min. _____ mm
 % _____ °, l₁ max. _____ mm

Centering



Centering to DIN 332
 Form A d₁ _____ mm
 Form B d₁ _____ mm
 Form R d₁ _____ mm



Form D d₁ M _____
 Form DR d₁ M _____

3. Machine

3.1 Technical data

Machine type _____
 Drive power _____ kW

Other machine operation

1.3 Quantity required

Basic body _____ short clamping holder _____

Accessories _____

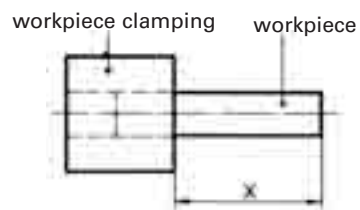
2. Workpiece

(if possible, please enclose workpiece drawing)

2.1 Material to be machined

Material designation (Mat. no. to DIN) _____

2.2 Position of workpiece



Proj. unclamped length x min. _____ mm

2.3 Other information

(please provide example drawing on reverse side)

Surface finish _____

Tolerances _____

For technical queries please contact Mr. _____

Tel. _____

Company name and address _____

Date, signature _____

GUHRING

Guhring oHG

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Dies

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F-tools, FIRE-coated (allround)
P-tools, AlCrNN-coated
S-tools, TiN-coated (allround)
M-tools, MolyGlide-coated

8. MODULAR TOOLING SYSTEMS

Tooling system GM 300

Tool holders, clamping systems and accessories to ISO 12164, DIN 69893 and DIN 69871 for transfer lines, machining and turning centres

Flexible tooling system GE 100

a tooling system for the combined machining operations facing, chamfering, boring, centering etc.

ISO indexable inserts, short clamping holders and KV 400 cartridges

9. SPECIAL TOOLS

to sketch or drawing, the more complex, the better

10. CARBIDES for precision cutting tools

11. CARBIDE SPECIAL PARTS for the forming, machining and wear protection industry

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