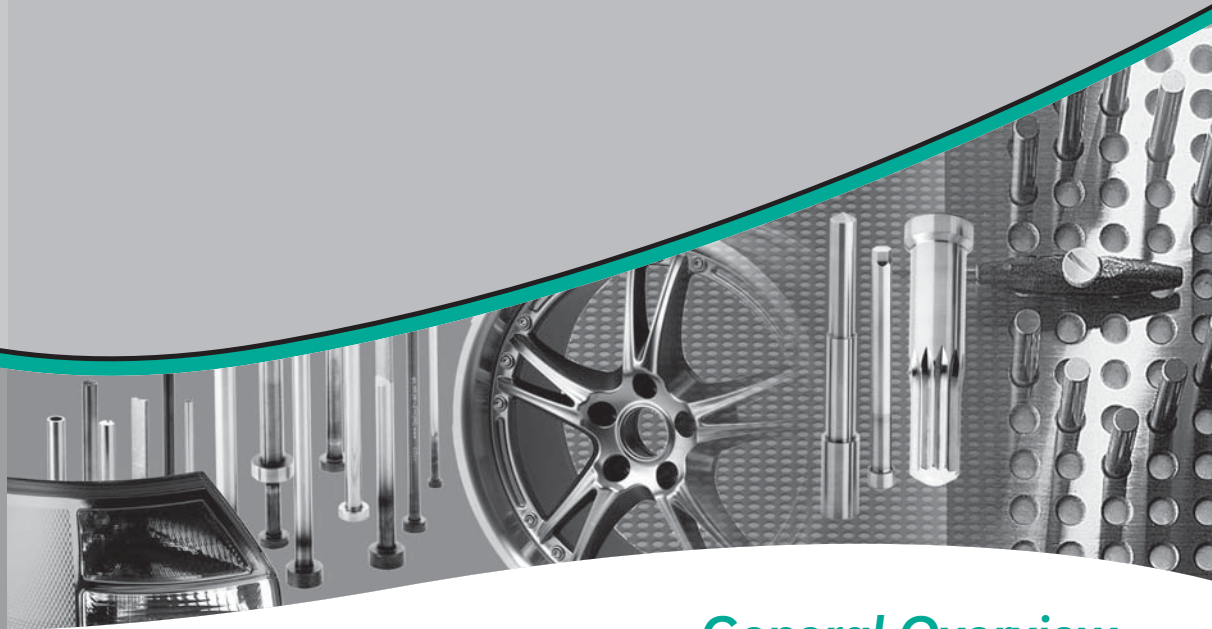


2005

*The Three-S Promise:
Superior Standards & Services!*



General Overview

PRECISION STANDARD TOOLS



DREI-S-WERK

PRECISION STANDARD TOOLS
PINNING SYSTEMS
DREI-S-technologies

EJECTOR PINS

DIN ISO 6751, 8694, 8693 (previously DIN 1530)

EJECTOR SLEEVES

DIN ISO 8405 (previously DIN 16756)

CORE PINS

similar to DIN ISO 6751 (previously DIN 1530)



Special items:

- a) Type DN, 60° countersunk head
shank-Ø 0.50 – 16.00 mm
lengths 100 – 400 mm
- b) core pins according to drawing
- c) ejector pins for drop-forging

Lubrication system:

high efficiency ejector pin grease (AWF 1400) with boron nitride usable up to 1400° C, excellent dry-running characteristics thanks to a solid lubricant and additives

Made of hot work steel, German steel no. 1.2343 / 1.2344 with precision forged cylindrical head, nitrided

AV03 **NEW**

Type A
cylindrical head

plasma nitrided and black oxidized

shank-Ø 0.50 – 40.00 mm
lengths 100 – 2.000 mm

Type C
stepped shank

step-Ø 0.50 – 2.50 mm
lengths 80 – 200 mm
larger step-Ø on request

Type F (blade ejector)
flat step

from all standard sizes of Type A

Ejector Sleeves
DIN ISO 8405

nitrided

Type A
non-nitrided for core pins
or contour ejectors
similar to DIN ISO 6751

shank-Ø 0.50 – 20.00 mm
lengths 63 – 630 mm

EJECTOR PINS

DIN ISO 6751, 8694, 8693 (previously DIN 1530)

EJECTOR SLEEVES

DIN ISO 8405 (previously DIN 16756)

INJECTION MOULDING



Special items:

- a) **copper core pins**
- b) **stainless steel** ejector pins of steel material no. 1.4125 similar to DIN ISO 6751, Type A, cylindrical head, hardened (for medical technology and food industry)
- c) ejector pins made of **HSS**, similar to DIN ISO 6751, Type AH, cylindrical head (extremely hard-wearing)

Lubrication system:

white high efficiency ejector pin grease (AWF 1400) with boron nitride usable up to 1400° C, excellent dry-running characteristics thanks to a solid lubricant and additives

Made of alloyed tool steel

Type AH shank-Ø 0.50 – 25.00 mm
cylindrical head lengths 40 – 1.000 mm

Type D shank-Ø 0.50 – 16.00 mm
60° countersunk head lengths 40 – 315 mm

Type CH step-Ø 0.50 – 2.50 mm
stepped shank lengths 60/63 – 250 mm
larger step-Ø on request

Type FH (blade ejector) from all standard sizes of Type AH
flat step

Ejector Sleeves hardened
DIN ISO 8405

Made of hot work steel, German steel no. 1.2343 / 1.2344 plasma nitrided bright or black oxidized

AV03 **NEW** shank-Ø 0.50 – 40.00 mm
Type A, black lengths 100 – 2.000 mm
cylindrical head

Type A, bright shank-Ø 0.50 – 32.00 mm
cylindrical head lengths 100 – 1.000 mm

Type C step-Ø 0.50 – 2.50 mm
stepped shank lengths 80 – 200 mm
larger step-Ø on request

Ejector Sleeves hot work steel, nitrided
DIN ISO 8405

PUNCHES

DIN 9861
DIN ISO 8020
DIN 9844
DIN 9840
DIN 9846

PUNCHING



Materials:

WS - alloyed cold work steel
HSS - high speed steel
ASP 2023 - powder metallurgical
manufactured HSS

Further types of steel:

- powder metallurgical HSS:
ASP 2030 / ASP 2060
- HSS-E cobalt-alloy
- tungsten carbide
- stainless steel

Surface coatings:

- **TiN** (PVD-procedure) colour gold
- **TiCN** (PVD-procedure) colour grey
- **nitriding treatment**

DIN 9861

60° countersunk head

Standard version

with hot forged head, Type DA and CA
made of WS and HSS with continuous or
stepped shank

Precision version

plunge cut-ground Type D and C made
of HSS and ASP 2023 with continuous or
stepped shank

DIN ISO 8020

cylindrical head

Type A and B made of HWS and HSS with
continuous or stepped shank,
Type E made of HSS with spring location pin

DIN 9844

cylindrical head

Type A and B made of HSS with continuous
or stepped shank

DIN 9840

40° countersunk head

Standard version

Type DA and CA made of HSS with conti-
nuous or stepped shank

DIN 9846

square punches

Type DA, A and B with and without hot
forged countersunk head

MEASURING PINS

similar to DIN 2269

for quality control and measurement departments
as well as for tool and equipment construction

TESTING



The following accessories are available:

Storage boxes

in 3 different sizes (without measuring pins) with bore holes positioned according to customer specification

Measuring pin holder

sizes 1 – 5

for use in setting up go/no-go gauges

Interchangeable plastic handles

sizes 1 - 10

These handles can be attached to measuring pins with diameters of \varnothing 0.40 – 5.30 mm. They make measuring easier especially with thin measuring pins.

Magnetic measuring pins

Especially for concentricity tests of gears. They adhere by their magnetic force to steel work pieces and make testing much easier.

Measuring pins can be used in various ways and replace expensive internal measuring equipment.

Usually delivered as complete boxed sets but also as single units.

Measuring pins are produced in tolerance grade 1 (\pm 0.001 mm) or tolerance grade 2 (\pm 0.002 mm).

Diameters available:

0.10 – 25.00 mm \varnothing

in increments of 0.01 mm

Lengths:

Dia. 0.10 – 0.99 mm \varnothing = 40 mm

Dia. 1.00 – 25.00 mm \varnothing = 70 mm

Measuring pins to 3 decimal points are available only in tolerance grade 1 (\pm 0.001 mm).

We stock **measuring pin sets** in 30 different combinations in 2 tolerances.

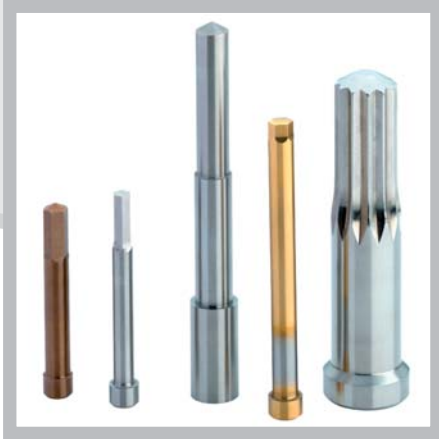
On request we can provide the relevant **test certificates**.

Customised items are available on request.

For detailed information please ask for our catalogue "Measuring pins".

SEMI-COLD AND COLD FORMING TOOLS

for the production of screws, washers and pins as well as the production of cold-press moulded items



Semi-cold and cold impact tools must meet exacting requirements.

This means that the choice of material, as well as its quality is critical.

The forming tools are available with different types of head according to your needs.

Material recommendations:

HSS – HSS-E (cobalt-alloy)-

ASP 2030 – ASP 2060 – CPM Rex M4

The hardness should be between 62 – 68 HRC, depending on specific application and material quality.

For most items the head is of the same hardness as the shank.

A surface coating (TiN / TiCN etc.) is recommended for special applications and for high resistance to wear and tear.

DOWEL PINS

DIN ISO 8734 (previously DIN 6325)
DIN ISO 8735 (previously DIN 7979)
for fixing tools, moulds and machines



Dowel pins are used to lock or pin plates, tool parts or individual pieces.

Our dowel pins are made of wear-resistant material thanks to hardened steel. The hardness is 60 ± 2 HRC.

Dowel pins are available in 3 types:

DIN ISO 8734 (previously DIN 6325), fitting m6, standard version

Diameters available:
1- 20 mm Ø
lengths 4 – 120 mm

DIN ISO 8734 (previously DIN 6325), fitting m5, polished spherical caps

Diameters available:
1- 12 mm Ø
lengths 4 – 100 mm

DIN ISO 8735 (previously DIN 7979) Type D, fitting m6, with internal thread

Diameters available:
6- 20 mm Ø
lengths 16 – 120 mm

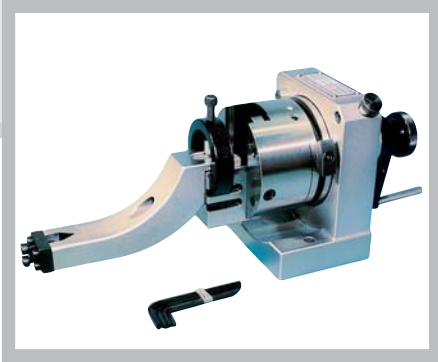
FORMING

Dowel pins DIN ISO 8735 are specially suitable for building into blind holes, for instance, if it is not possible to knock out the pin from one side. The ground flat allows the escape of the air.

In order to loosen these dowel pins we recommend our **loosening tool** with interchangeable pull-off inserts and screws.

MACHINING TOOLS AND EQUIPMENT

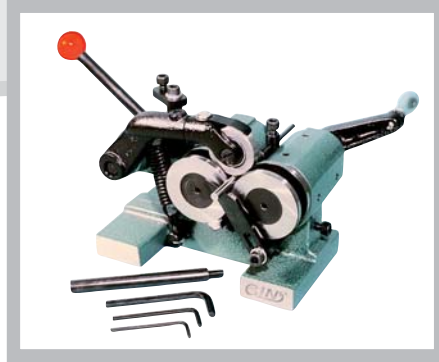
FORM PUNCH-GRINDER AND WHEEL DRESSER



With special wheel brace made of hardened and precision ground tool steel, 60 HRC

max. part- \varnothing : 31 mm
max. pitch: 24-fold
max. prism: 32 mm
max. parallelism + right-angle
= 5 μ m in 50 mm

PUNCH-GRINDING EQUIPMENT



manual

for work pieces from:

\varnothing 3 – 30 mm
lengths
30 – 300 mm

concentricity: 5 μ m



with electric motor,
also available with sinus

for work pieces from:

\varnothing 1.6 – 38 mm
lengths
up to max. 260 mm

concentricity: 2 μ m

CUTTING-OFF AND SUR- FACE GRINDING MACHINE



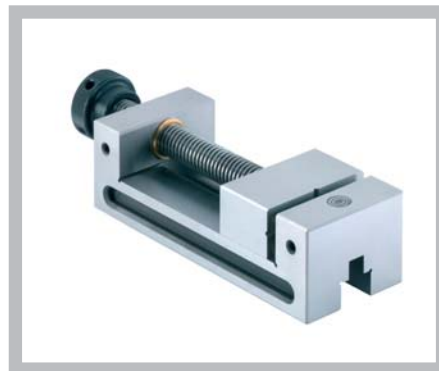
For cutting punches, ejectors, core pins, sleeves and other rod-shape parts.

max. work piece length: 300 mm/
600 mm with extension

length tolerance: \pm 0.01 mm
right-angle tolerance: \pm 0.01 mm

machine dimensions (L x W x H):
430 x 360 x 500 mm
net weight: 87,5 kg
motor: 380 / 400 V
cutting disk:
1 mm x 180 mm \varnothing / 31,8 mm \varnothing
RPM 3600 1/min.
cup grinding-wheel: 100 x 50 x 20 mm

PRECISION VICE / CHUCK



Made of hardened tool steel, 56 – 58 HRC, fine finish, in wooden case.

parallelism: 2 μ m / 100 mm

right-angle: 5 μ m / 100 mm

span: 63 / 75 / 125 mm

Also available in stainless steel.
span: 67 / 82 / 85 mm

Innovative by tradition

The company DREI-S-WERK was founded in 1850 („Schwabacher Spinnereinadel und Stahlspitzenwerk Fr. Reingruber KG“) and began as a small company specialising in the production of textile machine needles. Over the years, it became a medium-sized enterprise and today is world market leader in the field of needle systems.

In 1940, the second business sector started: the production of precision standard parts. Ever since, DREI-S-WERK has been supplying precision parts to the engineering and motor construction industry, as well as to tool and mould construction and their users. The traditional, medium-sized family enterprise is located in Schwabach (Bavaria). It is run by Till M. Schmauser and Erik M. Schmauser and today has 120 employees.

The modern production site manufactures perforating punches for punching dies and stamping tools, ejector pins and sleeves, core pins for injection moulding, pressing and die casting moulds, test pins for testing departments and productions, as well as a large variety of other precision, abrasive, and remodelling parts according to standard norms or individual customer requirements. Measuring pins with $\pm 1 \mu\text{m}$ tolerance and a wide range of materials are natural part of our production line.

The company DREI-S-WERK is one of the largest manufacturers in this market in Europe. DREI-S-WERK is market leader in the field of ejector and test pins. A range of ground parts (based on drawings), devices, and machining tools, completes the product programme.

DREI-S products are well-known in all relevant industry sectors for their long tool life and high reliability. Quality, service and short delivery times are our ultimate ambition. Our range of sizes is one of the largest worldwide. Even customized, special dimensions can be supplied at short notice.



DIN EN ISO 9001:2000

Zertifikat: 01 100 80420

Always one step ahead

DREI-S-WERK was the first manufacturer of ejector pins in Europe and pathfinder for the former DIN 1530 standard. We have traditionally always played an active role in DIN standardisations. DREI-S-WERK was one of the first to develop and use nitriding technologies which today are customary in the market.

150 years of industrial experience has allowed us to build up a wealth of knowledge and show our willingness to adapt to new situations. Our committed staff is used to self dependent work and comprehensive thinking. It is driven by the desire of presenting new products and innovations in production.

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