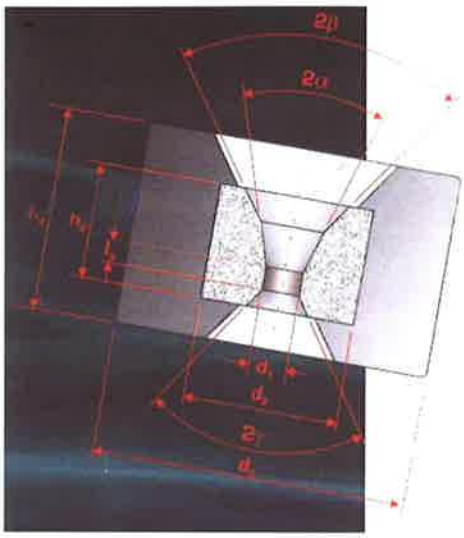
EDER ENGINEERING - Austria



Just Go For It!

TOMORROW'S TUNGSTEN CARBIDE DIE WORKING TECHNOLOGY

EDER
ENGINEERING
OVER 70 YEARS OF EXCELLENCE

STANDARD, SEMI-AUTOMATIC AND FULLY AUTOMATIC EQUIPMENT

Peter-Jordan-Str. 12/3
A-1190 Wien/Vienna
AUSTRIA/ÖSTERREICH

Tel.: ++43-1-367 49 49-13
Fax: ++43-1-367 49 49-49
e-mail: office@eder-eng.com
http://www.eder-eng.com

Supply of technology

EDER Engineering GmbH/Ltd.
precision die-tools
for the international wire-/cable industry

and equipments

SURVEY/GUIDELINE:

Illustrated general composition of a basic TC die reconditioning workshop equipment line :

EXECUTION: basic version, consisting of:

Ultrasonic Die-Tool Cleaning Tank Unit Models: POWERSONIC
for cleaning all dies prior to inspection and/or during reconditioning

Magnifying Lenses (10x/20x)

for optical inspection of the die bores' wear- and surface condition

High Speed Grinding and Polishing Machines
in semi-automatic version:

ETC-1/HF, ETC-2 LS, ETC-3 LS
etc.(dpdg. on bore-Ø)

= ideal, if often changing bore-sizes and varying wear conditions of tc dies are to be met = usual situation in most die-workshops !

Fully automatic versions
AKM, AZM, for small Ø only.
Reasonable only, if series of dies and in largely identical bore-sizes and wear-conditions are to be worked.

Suitable **Measuring Devices - Precision MICROMETERS, Measuring Pins etc.**

HPM - Hand Polishing Machine

for the manual finish-polishing

Working Material Packages/Consumbles

e.g. diamond powders/ pastes/ suspensions/ workneedles etc.

DIAPOL Diamond Materials:

EDER DIAPOL DIAMOND PASTES/COMPOUNDS

Special DIAMOND SUSPENSIONS

EDER DIAMOND POWDERS

Diamond Plated Grinding Pins

Technical Assistance Worldwide

can get offered, upon special request, if needed for:

Training to operate the equipment perfectly
usually often not required for EDER- machines, as these are easy to understand and operate.

Die Working Know How- Updating- Mediation
sometimes required, if no suitable experience existing.

EDER ENGINEERING GmbH

DIE & DIE MAKING TECHNOLOGY THAT SERVICES THE WORLD

ETC-1/HF

MODERN MULTI-PURPOSE HIGH SPEED GRINDING- AND POLISHING MACHINE FOR ROUND TUNGSTEN CARBIDE WIRE DRAWING DIES in a very large WORKRANGE : 0,70 to 20 mm

SUITABLE FOR THE FAST SEMI-AUTOMATIC REPAIR AND/OR PRODUCTION OF BOTH THE DRAWING CONE AND THE CYLINDRICAL DIE-BEARING OF ROUND TC DIES.

Only GOOD tungsten carbide dies draw GOOD wire!

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UNIQUE ADVANTAGES IN WORKING OF ROUND TUNGSTEN CARBIDE DIES:
using the semi-automatic top-efficient
MODEL ETC-1/HF

1. **Easy and efficient grinding and polishing of round tungsten carbide dies.**

2. The **EDER ETC-1/HF** can work **both** the **drawing cone** as well as the **cylindrical bearing portion** and **with high precision**. (grinding+polishing).

3. **Offering a uniquely large workrange**: **0.70 - 20 mm Ø / *.028" - .787" Ø***

4. **Very fast operations**: **An average tc die repair –** depending on the Ø, is effected **between 3 to 10 minutes only.**

HF workspindle rotation: max. 40.000 r.p.m.
Stroke motion: 20-200 strokes/min.; variable.

5. This semi-automatic ETC-1/HF Conception is unique in its ability to refurbish (grind and polish) a tc die´s drawing cone and its cylindrical bearing in a single working process. This outstanding feature, combined with the machine´s inherent user friendliness and very high speed operation, leads to high quality processed tungsten carbide dies with optimal geometry in record time.

Model ETC-1/HF is easy to understand and operate and therefore releases the die-shop personnel considerably

Operational working steps:

- Clamping of the die and adjusting the required angle.
- Establishing contact between die and workneedle (= 0-position, LED-indicated)
- Selecting the operational stroke motion and the workneedle-penetration depth.
- Adjusting the necessary stock-removal by means of the micrometer system.
- Once the timer has been set, the ETC-1/HF will start up automatically and will process the relevant die-portion (cone or bearing) to a high precision and an excellent surface.

EDER-Austria with over 70 years of expertise, have designed the **ETC-1/HF Equipment** for grinding and polishing of both the bearing and the drawing cone to the desired finishing execution, uniquely effected in one only machine and with great user friendliness. Many more competitors´ machines and more die-workshop personnel would be needed to match the unique performance and the large workrange of the EDER **ETC-1/HF** equipment.

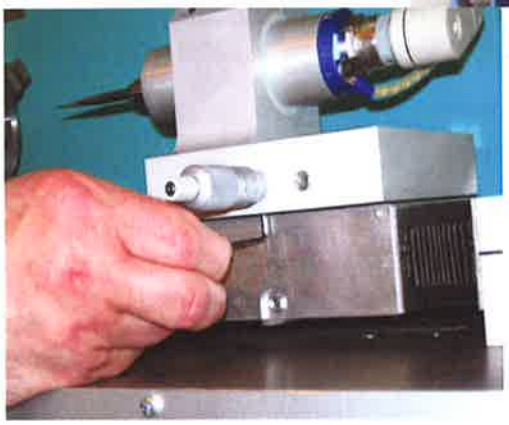
EDER ENGINEERING
OVER 70 YEARS OF EXCELLENCE

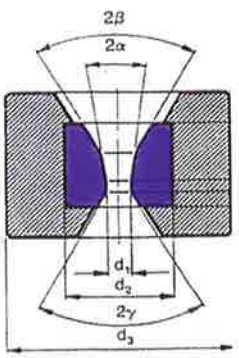
Tungsten Carbide Dies
and Die Processing Machines

EDER Tungsten Carbide Drawing Dies:

are produced from first-class quality TIZIT or SANDVIK tungsten carbide nibs only and in any required execution for wet- or dry drawing-, ferrous or non-ferrous applications.

ETC-1/HF:
ADVANCED TUNGSTEN CARBIDE DIE WORKING MACHINE





ETC-1/HF:

High speed semi-automatic Tc die processing machine for the precision grinding and polishing of both the dies' drawing cone and bearing. Suitable for the recon-ditioning and/or production of round tc dies in an extremely short time.

Workrange:
0,70 - 20,0 mm Ø
.028“ - .787“ Ø

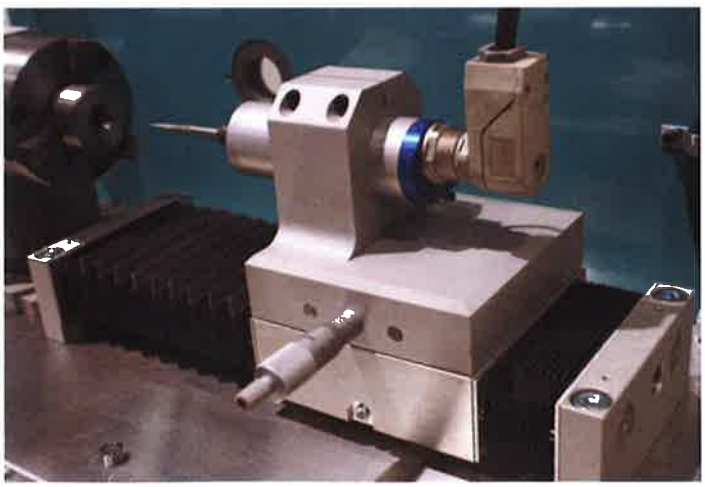
ETC-1/HF:

Semi- Automatic Tungsten Carbide Die Processing Machine designed to offer a remarkably large workrange:

0,70 - 20,0 mm Ø / *.028"-.787" Ø*

(best within 1 – 10 mm Ø / *.040" - .40" Ø)*

High speed semiautomatic Tc die processing machine for the precision grinding and polishing of both the die drawing cone and bearing. Suitable for the reconditioning and/or production of round tc dies, in an extremely short time.



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Only GOOD dies draw GOOD wire!

SIMPLE OPERATION of the ETC-1/HF Machine :

Due to the advanced design and the intelligent interactive motions, model ETC-1/HF is easy to understand and simple to operate.

EXAMPLE of OPERATION: *(e.g. reconditioning of a worn tc die)*

1. PREPARATION:

Measuring of the actual die-size and noting it down – Insertioning of the die into the 3-jaw chuck and centering it there to needs.

2. OPERATION:

A suitable workpin (8° tapered) is clamped into the HF-workspindle´s collet (diamond pins for grinding operations / steel polishing pins covered with diamond suspension for polishing) and the penetration depth and the needed angle (0 - 60°) adjusted. The relevant workpin is then brought into contact with the die (a LED signals that **contact = 0-position**, being established) and the stock removal/working pressure is adjusted by means of the precision micrometer device. Once the work cycle timer has then been set, the machine will start up and process (grind/polish) the relevant portion of the die (cone or bearing) to the highest precision largely automatically.

3. MEASURING:

of the processed die, is best done with suitable high precision measuring pins (optional accessories ranging 1-6mmØ in steps of 0.05mm) without de-chucking the die, not to lose centricity.

UNIQUELY LARGE WORKRANGE:

The **ETC-1/HF** Machine offers a large usability between appr. 0.70 to max. 20 mm Ø, but the most efficient operation is done between appr.. 1 – 8 mm Ø . In this range between about 6 to 12 pcs. dies can be processed per hour.. Larger die-sizes or severely worn dies will need longer time.

SIMPLE INSTALLATION :

The **ETC-1/HF** Equipment is delivered complete and ready for operation, exclusive of consumbles. **Consumble kits/working material packages** are tailored to customers´ specific requirements, containing diamond grinding- and steel polishing pins together with suitable diamond suspensions (and durable precision measuring pin sets) are recommended and **available as optionals** where required.

TECHNICAL DATA:

	(LxWxH
• Dimensions:	appr. 800x360x470 MM
• Weight:	appr. 100 kg net
• Electrical Supply required:	230V ±10%,50/60 Hz, 1 phase
• Compressed air supply:	5 bar, 140 Ltrs./Min., 1/2"
• Work cycle control:	connection via Timer
• Workrange:	0,70 - 20 MM Ø (ideal:1-8 MM
• 3-Jaw chuck capacity:	die casings up to 100 MM Ø
• HF Electric Workspindlel:	limited to max. 40.000 UpM
• Workpin take-up collets	for pins with shaft- Ø 3MM und 6 MM
• Stroke motion speed/-length:	20-200 strokes/min.adjustable 16 MM

Attention: Modifications due to technical progress remain reserved without further notice

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ETC-2 LS

HIGH SPEED SEMI-AUTOMATIC GRINDING and POLISHING MACHINE FOR TUNGSTEN CARBIDE DIES WITH ROUND BORES OF LARGER SIZES: 1 – 40 MM Ø

ETC-2 LS

HIGH SPEED SEMI-AUTOMATIC GRINDING and POLISHING MACHINE FOR TUNGSTEN CARBIDE DIES WITH ROUND BORES OF LARGER SIZES: 1 – 40 MM Ø

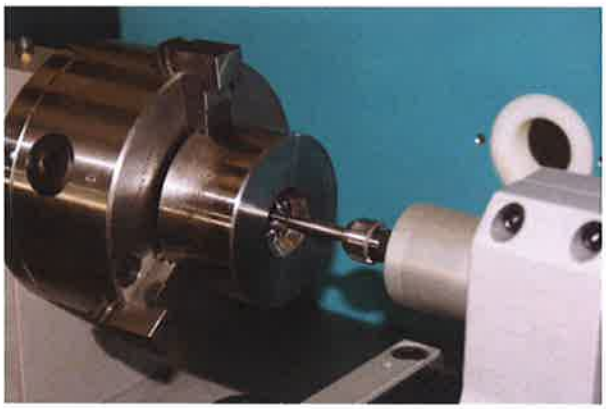
Based on the conception principles of the smaller ETC-1/HF, **model ETC-2 LS** offers a more rigid design plus a larger 3-jaw chuck and an even more robust electric HF-workspindle and therefore it is ideal for both the repair and production of round tungsten carbide wire-, bar-, tube drawing dies in larger sizes.

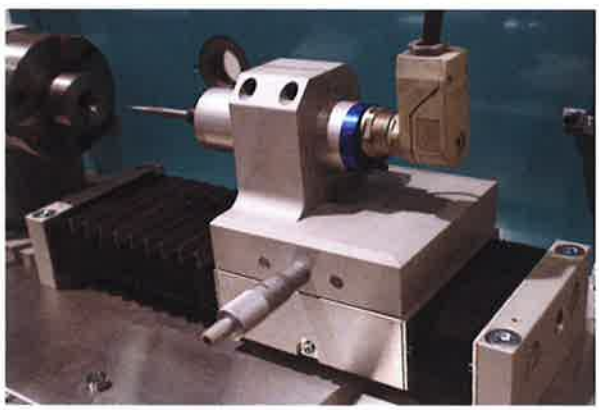
Execution: concepted like the ETC-1/HF unit, but additionally showing a larger carriage, a larger three-jaw chuck of 125 mm, a more robust, low noise electric high frequency workspindle Adjustment between the workneedle and the die is effected by means of a built-in micrometer screw. (saving diamond needles).

Net weight:	approx. 170 Kgs.
Dimensions:	approx. 1600 x 540 x 600 mm (LxDxH)
Electric supply:	230V +/-10%, 50/60 Hz, 1,7 kW, 1phase.
Compressed air:	5 bar, 140 litr./min.

Outstanding ETC-2 LS features and data:

- Uniquely large workrange: 1 to 40 mm bore diameter.
- Offers grinding **and** polishing of **both** the cones and the bearing.
- Easy to understand and to operate, even for only little skilled personnel.
- Die-tool processing is effected in record time.
- Workneedle rotation: up to max. 40.000 r.p.m. (adjustable)
- Saving diamond grinding needles´ service life, due to micrometer adjustment.
- Grinding motion: stroke length: variable between 20 to 200 strokes/min.
- Three-jaw chuck of 125 mm Ø. (accepting even larger die-casings).
- Once the working mode being set and the contact pin - die being established, (LED-indicated), most of the **ETC-2LS** operations are performed automatically.





Modifications, due to technical progress, remain reserved

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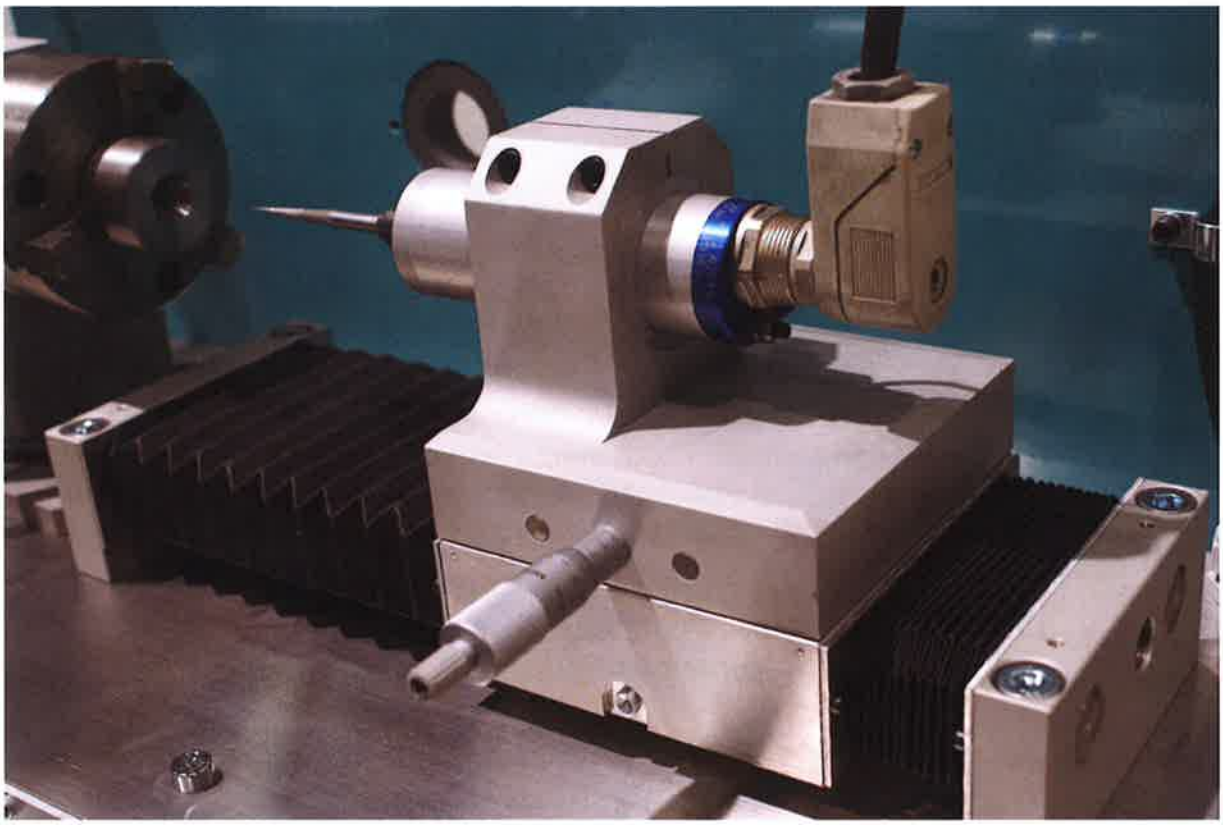

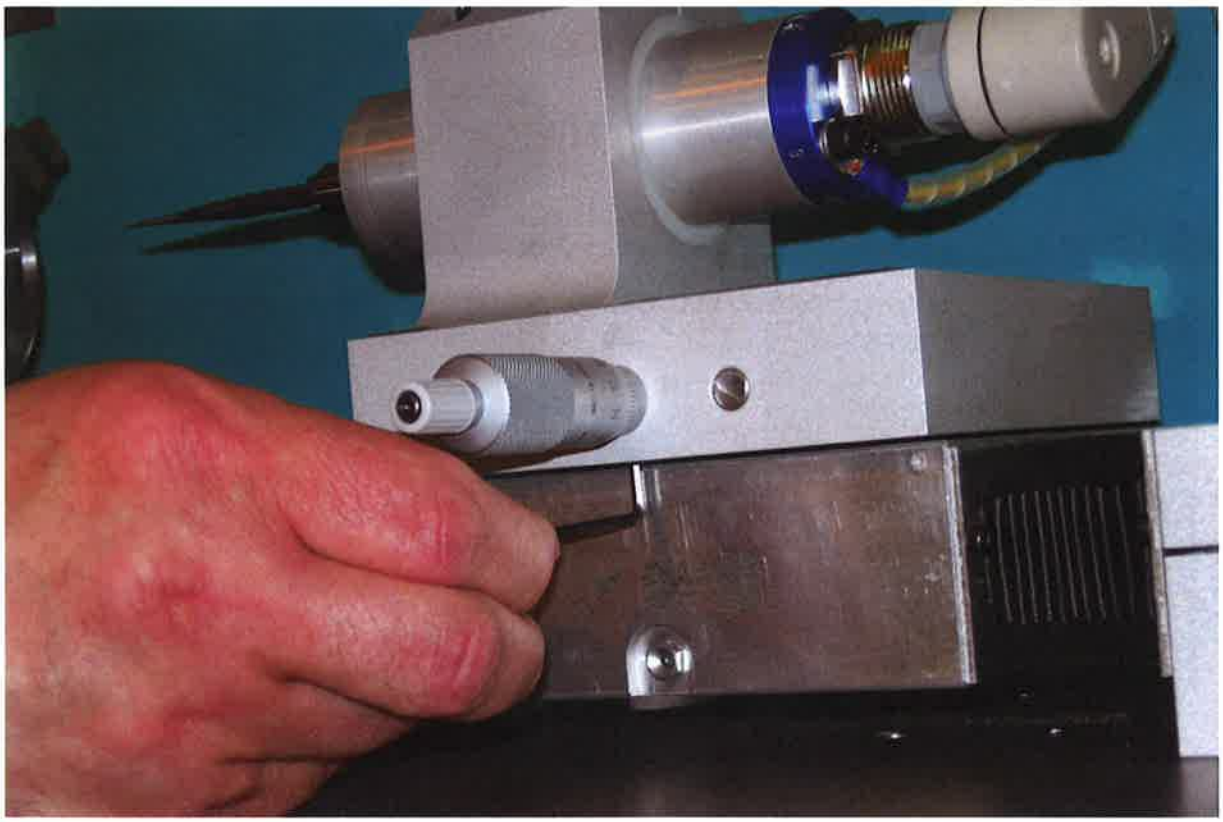

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Working Materials / Consumbles:

Scope of supplies:

"DIAPOL" Working material kits

Diamond Pastes, -Powders. -Suspensions.
Workneedles for grinding and polishing /
Calibration pins/wires. etc..

Supply of complete lines with machines and necessary ancillary devices for the repair and manufacture of all kinds of precision dies.

Technical assistance, Installation, Training, Supply of Know-How, Upgradings etc.

.. all adapted to the specific needs of any customer.

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Supply of technology and equipments

Benefits / Proven Arguments in favour of EDER Machines vis à vis products of our few competitors :

ADDED VALUE – EDER Machines :

Built under over 75 years of experience

Leading state-of-the-art technology

Highest possible efficiency

Universal flexibility and unique application

(Our competitors need additional machines to reach the efficiency/range of EDER units !)

High degree of automation ensured

Easy to understand and operate

Minimal human operator intervention

Low maintenance requirements

Hardly any spare parts required

Uniquely long service life and high quality

(EDER machines partly have been found still operating after being over 50 years in use !)

Only good dies draw good wire!

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OVER 70 YEARS OF EXCELLENCE

Reconditioning used tungsten carbide dies on a regular, on going basis is essential for the production of consistent high quality wire. Well maintained dies produce linger uninterrupted runs, excellent wire surface quality and improved performance leading to higher outputs.

Eder Engineering's range of specialist Tungsten Carbide die working machinery is designed to process tungsten carbide drawing dies quickly and efficiently

EDER ENGINEERING ETC -1/HF, ETC-2 LS, ETC-3 EL, HPM

- Easy to understand and operate.
- Suitable for both the reconditioning and production of die tools.
- Easy and successful TC die processing with minimum human operator intervention due to the high degree of automation included across the range.
- Outstanding efficiency and versatility - most machines can process (grind and polish) the cone/reduction as well as the cylindrical bearing section of the die.
- Excellent value for money.
- Designed in full conformity to the latest EU machinery safety regulations.
- From a company with over 75 years experience in the wire, cable and tooling industries.

OUR MANUFACTURING PROGRAMME:

Equipment for the repair and manufacture of Tungsten Carbide dies.

Equipment for the repair and manufacture of Diamond/PCD dies.

Supply of single machines, complete die workshops and turnkey die tool manufacturing plants.

Complete hardware/software packages, Know How and Technical Assistance.

Die tool inspection and measuring equipment.

Ultrasonic die tool cleaning tanks.

Diamond powders, suspension, pastes, etc.

Diamond grinding pins, Steel polishing pins.

Steel calibration pins (0.1 - 6.0 mm Ø, ex stock). Precision measuring pins.

Working material packages, tuned to customers' specific needs.

Note: Due to continuous product improvement, specifications contained within this brochure are liable to change without notice

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