MARKING AND CLEANING TOOLS

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Order no. 515429 · € 2.40
WE GENERATE EXCITEMENT.

Since the foundation of the company in 1890 until today the goal has remained the same: the highest quality in products and services. Nevertheless, the circumstances, tasks and challenges have changed, of course. By focussing on our core areas of expertise, we have long set new standards for innovative clamping technology - driven by our own development, the greatest possible flexibility and passion for individual solutions.

All this is possible only with committed and contented employees. Respectful interaction with others, personal development and measures for the individual are therefore values that matter to us.

OUR COMPANY HISTORY

1890 Company founded as a lock manufacturer by Andreas Maier.
1928 Production line assembly of FELLBACH LOCKS.
1951 Introduces clamping elements and diversifies into workplace and tool clamping technology.
1965 Toggle clamps extend the AMF product range. AMF catalogues are now in four languages.
1967 Further specialization into hydraulic clamping technology.
1962 Clamping and fixing systems round off AMF’s clamping expertise.
1996 AMF turn organization in all sections of the business. Quality management with certification to ISO 9001.
2001 AMF Service Guarantee for all products.
2004 Introduction of the ZVS zero-point clamping system.
2007 The magnetic clamping technology extends the AMF product range.
2009 Development and marketing of AMF Vacuum clamping technology.
2012 LOW-COST AUTOMATION gripping, clamping, marking and cleaning.
2014 AMF presents the most extensive product range of automation solution in zero-point clamping technology.
2017 Wireless sensing systems extend the expert into Industry 4.0 and friends seamlessly into the AMF product range.

PLEDGES THAT COUNT IN EVERY DAY LIFE

For this reason, we have a few principles that will be followed by conviction and which always apply.

INDIVIDUAL DEVELOPMENT

Even if the product you need does not exist yet, we will find the right solution with you, from special designs to new developments, everything is possible.

WARRANTY

In our high-quality standard, there is a complaint, this is dealt with quickly and undoubtedly, even beyond the warranty period.

HIGHEST QUALITY STANDARDS

Careful manufacturing based on tradition since 1890, and naturally with a modern quality management system according to ISO 9001 for many years.

SHORT DELIVERY TIME

With over 5,000 articles in our warehouse, you can expect your order to be dispatched on the same day.

COMPETENT SERVIFCE FROM EXPERTS

Your order is our order, the specialists in our team will find the right solution for every task.

MADE IN GERMANY

Our entire product range is developed and manufactured exclusively by our employees in Germany.

These Terms of Sale apply for companies, legal entities governed by public law and public limited special funds. Our goods and services are supplied exclusively on the basis of the following conditions. Any deviating purchasing conditions of the customer are only recognized if we have expressly recognized them in writing.

1. Offer and contractual conclusion

All our offers are subject to change without notice unless otherwise explicitly agreed. Our delivery and service contracts are based on the latest version of our catalogue.

2. Prices

The prices are in EURO, ex-works, excluding VAT, packing, postage, weight and insurance. They are subject to change and are binding and can be changed by us at any time. The prices quoted are net prices, no matter to which country the goods are net, we must make a minimum quantity surcharge of a 10% for cost reasons.

3. Tool costs

Unless otherwise stated on the invoice, the purchase price includes for net payment within 30 days of invoice date (without deduction of discount). Invoice amounts below 30 EURO are due for payment immediately. In case of default, we reserve the right to charge a processing fee of 10% of the invoice amount. The amount corresponds to our interest rate for current account credits at our main bank; the bank interest rate must be adjusted according to the relevant base interest rate applied by the European Central Bank. Moreover, in case of default following written notice to the customer, we shall be entitled to cease to fulfill our obligations until payments are received.

5. No set-off

No rights to set-off can be legally confirmed or unconfirmed counterparts.

6. Right of withdrawal in case of delayed acceptance or payment and insolvency

If the customer fails to accept the goods in due time, we shall be entitled to set a reasonable period of time for acceptance of the goods and supply the customer on a reasonable longer term. Our right to withdraw from the contract must be exercised by notifying the customer. If acceptance does not take place within the grace period, we shall be entitled to cease to fulfill our obligations until payment is received.

7. Customer-specific fabrication/project fabrications (custom fabrications)

Customer-specific fabrications require binding information on design, quantity, etc. in written form at the time of ordering. For manufacturing purposes, we reserve the right to make up to 10% above or below the order quantity. Technical modifications or cancellations are subject to any costs incurred. The return of customer-specific fabrications is not possible.

8. Delivery and packaging, transfer of risk

The delivery date is non-binding, although stated to the best of our knowledge. It is subject to unforeseeable current, defect-free and complete deliveries. The stated delivery date relates to completion in the factory, starting on the day the order is accepted by us. Delivery is DNV (door-to-door) in accordance with Incoterms 2010. Therefore, the costs are borne by the customer. The risk is transferred to the customer when the goods are passed to the carrier at the factory nominated to execute the shipment. This applies also to partial deliveries, or if we have assumed responsibility for delivery and transportation. The risk shall be transferred to the customer even in case of delayed acceptance.

In case of specific shipping instructions, we shall proceed as we deem fit and without any obligation to the cheapest or most expedient method. The customer agrees that we are entitled to execute the shipping and the packaging we deem fit.

9. Performance impediment and/or impossibility

If we are hindered in the fulfillment of our obligation due to the onset of unforeseeable circumstances, which we could not avoid despite reasonable effort in relation to the nature of the circumstances (e.g. operational interruption, delay in the delivery of important material or components or parts, defects in the delivery), the delivery time shall be extended by a reasonable period, instead as the supply of goods or services is not rendered reasonably, sufficiently or impossible.

If we have to accept that these circumstances are not only temporary, we shall be entitled to withdraw from the contract either in whole or in part.

If the supply of goods or services becomes impossible, the customer shall not be obligated to furnish it on our part. Section 275 BGB applies mutatis mutandis. If, however, the customer is solely or predominantly responsible for the circumstances that led to impossibility, it shall remain under an obligation to render the return service. The same applies if this circumstance occurs at a time when the customer is behind schedule with acceptance.

10. Samples/returns

Samples shall be provided only against payment. If samples or models are provided, a credit note shall be issued with the subsequent order if the order value is 125 EURO net or more. Goods can be returned only by agreement, although custom fabrications are excluded from such return.

11. Liability

The goods shall remain our property until full payment of all claims and/or until the cheques provided for this purpose are honoured. The demurrage in claims of an ongoing performance as well as the balancing of the account and the fulfillment thereof does not affect the retention of title. The customer is entitled to sell the retained goods during the ordinary course of business. However, the customer is not permitted to pledge the goods or transfer them by way of security. It shall assign its claim (arising from the completed and uncompleted part of the contract) to us. The customer shall be entitled to withdraw from the contract. At our request, the customer shall be entitled to state third-party debtors and we shall be entitled to report this to the assignee.

12. Property rights

We reserve property rights and copyrights to all contractual documents such as drafts, drawings, calculations and cost breakdowns. Such documents must not be reproduced or disclosed to third parties without our consent. Any rights to patents, utility models etc. made solely by us, or transfer as such patents have not been liked. Our products are allowed to be replicated only with our written consent. Further specialisation and tool clamping technology.

13. Warranty

If the goods contain a defect, we shall, provide, following a reasonable period of grace set by the customer, either a replacement or a repair as we deem fit. If such subsequent performance fails, the customer shall be entitled to reduce the purchase price or withdraw from the contract. Any further warranty claims are ruled out in case of neglectable deviations from the agreed quality, no claims for damages shall be recognized.

The discovery of defects must be communicated to us immediately in writing. In the case of recognizable defects, however, within 10 days of acceptance, in the case of non-recognizable defects immediately after they became evident. The warranty is 12 months; starting with delivery of the goods ex-works.

14. Liability

With the exception of harm to life, body or health on account of a breach of duty by ourselves, our liability shall be limited to intent or gross negligence.

15. Place of fulfillment, place of jurisdiction and governing law

The place of fulfillment for all obligations ensuing from this contractual relationship is D-76374 Fellbach. The place of jurisdiction for all legal disputes ensuing from the contractual relationship is the court responsible for the headquarters of Andreas Maier GmbH & Co. KG. All disputes ensuing from the contract or regarding the validity thereof shall be finally decided by a court of arbitration in accordance with the Court of Arbitration Ordinance of the German Committee for Arbitration Court Procedures or the Conciliation and Arbitration Arrangement of the International Chamber of Commerce, recourse to the ordinary courts of law being excluded. The legal dunning process, however, remains possible. German law shall govern (BGH and BGB). The applicability of the UK Convention on Contracts for the International Sale of Goods (CISG) is ruled out.

16. Severability clause

If individual provisions become legally invalid, the remaining provisions must not be affected. The legally invalid provision shall be replaced by regulations that most closely reflect the economic purpose of the contract with reasonable consideration for the mutual interests. The publication of these Terms of Sale, Delivery and Payment renders all previous versions invalid. This does not apply for any contracts concluded prior to announcement.
AMF MARKING TOOLS - AND YOUR MACHINE WILL MARK ECONOMICALLY

The AMF-Writers and AMF-Marker are tools for the permanent marking of workpieces. They are preferably clamped in collets and Weldon chucks and mounted in the machine spindle of a CNC machine.

Marking is accomplished through a combination of material compression and displacement, which we call "drumming". That means, the marking is made using a special needle with multiple refinements and an extremely hard tip. Thanks to the special design and very high quality guides, this tool can provide an even and high-quality marking without height adjustment by the spindle, for smooth and rough surfaces that can be uneven by between 3 and 9 mm. The adaptation to different materials, material hardness and implementation of different marking depths is infinitely adjustable.

This tool is particularly economical thanks to the low acquisition costs, long service life and tremendous time savings.

YOUR BENEFITS AT A GLANCE:

> the surface is not weakened or damaged, but is compressed and thus strengthened
> high marking speeds are possible
> high wear resistance and thus long service life
> also suitable for thin-walled workpieces
> no burrs appear on the marking line
> high-quality type face
> unevenness of the workpiece is compensated for (see Fig. 1)
> also suitable for marking round surfaces (up to 15°)
> depending on the design, it is possible to mark surfaces with a hardness of up to 57 HRC
> no generation of noise

Fig. 1 Uneven workpiece surface
AMF MARKING TOOLS – AND THE PERFECT NEEDLE!

The heart of the AMF marking tools and the guarantee for a perfect written type face is the elaborately produced needle. This permits marking through a combination of material compression and displacement, which we call “drumming”. That means, the marking is generated by the rounded point, which we also call a “ball”. The optimal radius of these “balls” varies, depending on the material to be labelled, the breadth and depth of the lines and print size. Therefore, AMF carries several designs of the needle in order to ensure the best marking results.

The design of the needle is classified by the angle, radius and eccentricity of the point. This means that a needle of design 90R10Ex01 has an angle of 90° at the tip of the needle and a radius of 1.0 mm as well as 0.1 mm eccentricity. A needle of design 90R05Ex00 would accordingly have an angle 90°, a radius of 0.5 mm as well as 0.0 mm eccentricity, i.e. it is a centric needle.

We are happy to assist you in the search for the optimal needle for your application.
CHOOSING THE MARKING TOOL -
HOW DO I FIND THE RIGHT TOOL FOR MY APPLICATION?

TENDENTIOUS MATERIAL ALLOCATION OF AMF-MARKER:

![Diagram showing the material allocation for different marking tools and materials.]

CHOOSING THE MARKING NEEDLE -
HOW DO I FIND THE RIGHT NEEDLE FOR MY APPLICATION?

Small letters are compressed on wide lines and become illegible. The minimum legible type size is limited by the width of the letter lines.

Type size: Distance from upper and lower end of the letter.

Additional Note:

Minimum legible type size depending on the marking needle selected:

<table>
<thead>
<tr>
<th>Tool Code</th>
<th>Type Size</th>
<th>Tool Code</th>
<th>Type Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>90R03 Ex00</td>
<td>1.2 mm</td>
<td>90R10 Ex01</td>
<td>5.0 mm</td>
</tr>
<tr>
<td>90R05 Ex00</td>
<td>2.0 mm</td>
<td>90R10 Ex02</td>
<td>6.0 mm</td>
</tr>
<tr>
<td>90R10 Ex00</td>
<td>4.0 mm</td>
<td>90R10 Ex03</td>
<td>7.0 mm</td>
</tr>
</tbody>
</table>

In the case of a smaller radius, the same force affects a smaller surface, i.e. the font becomes deeper.

With eccentric needles you can produce a wider text.
ARE YOU PRODUCING YET OR STILL LABELLING?
THE CALCULATION IS QUITE SIMPLE!

Through use of the AMF marking tools, you demonstrably reduce your marking time in the machining centre by over 75%.
You avoid long times for marking, and your machine can already work on the next job - so you save money.
Take the time and simply calculate your savings potential with the AMF marking tool.

SAMPLE CUSTOMER CALCULATION BEFORE AND AFTER USE OF THE AMF MARKING TOOL:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Conventional marking process</th>
<th>Marking with the AMF marking tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine costs (in €/hr)</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Number of markings per shift (8 hr)</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Time per marking procedure (in s)</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>Time per marking procedure per shift (in min)</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>Costs for marking per shift</td>
<td>100.00 €</td>
<td>20.00 €</td>
</tr>
<tr>
<td>Costs for marking per year (250 working days)</td>
<td>25,000.00 €</td>
<td>5,000.00 €</td>
</tr>
<tr>
<td>Annual savings per shift</td>
<td></td>
<td>20,000.00 €</td>
</tr>
</tbody>
</table>

DRASTICALLY REDUCED MARKING TIMES GUARANTEE YOU WILL EXPERIENCE A RAPID RATIONALISATION EFFECT

If previously 60 minutes had to be invested per shift for 60 markings in the machining centre, you reduce the pure marking time to 12 minutes through use of the AMF marking tool. Through the automated exchange of the workpiece and the ability of the tool to mark quickly, you achieve savings consistently.
The savings in our customer example of €60,000 per year, for three-shift production utilisation, guarantees rapid amortisation of the invested amounts of approx. €1,600 for an AMF-Writer Extra Large.
AMF Marker Extra Large

No. 1550MXL

Marking tool, suitable for 20 mm collets and Weldon holders (Weldon holders only when using the function check). Marking needles are not included.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>D3 [mm]</th>
<th>D4 [mm]</th>
<th>D5 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
<th>L5 [mm]</th>
<th>L6 [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>548180</td>
<td>4</td>
<td>20</td>
<td>26</td>
<td>40</td>
<td>46</td>
<td>125,5</td>
<td>118</td>
<td>7,5</td>
<td>26</td>
<td>74</td>
<td>36</td>
<td>326</td>
</tr>
</tbody>
</table>

**Application:**

Material and surface quality:
The AMF-Marker Extra Large is particularly suitable for the labelling of alloyed steel, hardened steel or cast steel. The surface of the component can be rough and uneven.

Type size and type width:
Centric marking needles are suitable for small letters and narrow lines. The font becomes wider by the use of eccentric marking needles and the rotation of the machine spindle. To ensure a good text, please observe the following note:

Spindle speed (1/min) / 10 = feed rate (mm/min)

Max. permissible spindle speed: 8,000 1/min

Needle pressure and batch size setting:
It is possible to adjust the needle pressure in the clamped state of the tool by the external adjusting ring. For this reason, we also recommend the AMF-Marker Extra Large for small batch sizes, or for batch size 1.

Features:

Change and choice of needle:
Instant change of needle by pulling out the marking needle using pliers, for example, with our special pliers No. 1530Z. Centric and eccentric needles are obtainable for the AMF-Marker Extra Large.

Function check:
Thanks to the possibility of checking the presence of the marking needle by means of an optional pneumatic dynamic pressure query, the AMF-Marker Extra Large is also ideally suited for use in automation.

Advantage:
- Labelling of alloyed steel, hardened steel or cast steel with rough and uneven surface
- Centric and eccentric marking needles available
- External adjusting ring for adjusting the needle pressure
- Instant change of needle
- Function check possible

No. 1550MXLN

Marking needle
fits AMF Marker Extra Large No. 1550MXL.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Needle</th>
<th>D1 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>R1 [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>550468</td>
<td>MXLN-90R05 Ex00</td>
<td>4</td>
<td>47</td>
<td>0,0</td>
<td>0,5</td>
<td>8</td>
</tr>
<tr>
<td>550469</td>
<td>MXLN-90R10 Ex00</td>
<td>4</td>
<td>47</td>
<td>0,0</td>
<td>1,0</td>
<td>8</td>
</tr>
<tr>
<td>550470</td>
<td>MXLN-90R10 Ex01</td>
<td>4</td>
<td>47</td>
<td>0,1</td>
<td>1,0</td>
<td>8</td>
</tr>
<tr>
<td>550471</td>
<td>MXLN-90R10 Ex02</td>
<td>4</td>
<td>47</td>
<td>0,2</td>
<td>1,0</td>
<td>8</td>
</tr>
<tr>
<td>550472</td>
<td>MXLN-90R10 Ex03</td>
<td>4</td>
<td>47</td>
<td>0,3</td>
<td>1,0</td>
<td>8</td>
</tr>
</tbody>
</table>

Note:

Centric marking needles:
550468: radius 0.5 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 2 mm
550469: radius 1.0 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 4 mm

Eccentric marking needles:
550470: radius 1.0 mm, eccentricity 0.1 mm, minimum character size: legible from approx. 5 mm
550471: radius 1.0 mm, eccentricity 0.2 mm, minimum character size: legible from approx. 6 mm
550472: radius 1.0 mm, eccentricity 0.3 mm, minimum character size: legible from approx. 7 mm

Subject to technical alterations.
**AMF Marker Large**

Marking tool, suitable for 20 mm collets and Weldon holders (Weldon holders only when using the function check). Marking needles are not included.

### Application:

**Material and surface quality:**

The AMF-Marker Large is suitable for the labelling of different materials, but especially for the labelling of steel and stainless steel. The surface of the component can be uneven.

**Type size and type width:**

Centric marking needles are suitable for small letters and narrow lines. The font becomes wider by the use of eccentric marking needles and the rotation of the machine spindle. To ensure a good text, please observe the following note:

- Spindle speed (1/min) / 10 = feed rate (mm/min)
- Max. permissible speed: 8,000 1/min

**Needle pressure and batch size setting:**

It is possible to adjust the needle pressure in the clamped state of the tool by the external adjusting ring. For this reason, we also recommend the AMF-Marker Large for small batch sizes, or for batch size 1.

### Features:

**Change and choice of needle:**

Instant change of needle by pulling out the marking needle using pliers, for example, with our special pliers No. 1530Z. Centric and eccentric needles are obtainable for the AMF-Marker Large.

**Function check:**

Thanks to the possibility of checking the presence of the marking needle by means of an optional pneumatic dynamic pressure query, the AMF-Marker Extra Large is also ideally suited for use in automation.

### Advantage:

- Labelling of various materials, but especially labelling of steel and stainless steel, also with uneven surface
- Centric and eccentric marking needles available
- External adjusting ring for adjusting the needle pressure
- Instant change of needle
- Function check possible

### Note:

**Centric marking needles:**

550473: radius 0.5 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 2 mm
550474: radius 1.0 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 4 mm

**Eccentric marking needles:**

550475: radius 1.0 mm, eccentricity 0.1 mm, minimum character size: legible from approx. 5 mm
550476: radius 1.0 mm, eccentricity 0.2 mm, minimum character size: legible from approx. 6 mm
550477: radius 1.0 mm, eccentricity 0.3 mm, minimum character size: legible from approx. 7 mm

---

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Needle</th>
<th>D1 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>R1 [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>550473</td>
<td>MLN-90R05 Ed00</td>
<td>3</td>
<td>53.5</td>
<td>0.0</td>
<td>0.5</td>
<td>5</td>
</tr>
<tr>
<td>550474</td>
<td>MLN-90R10 Ed00</td>
<td>3</td>
<td>53.5</td>
<td>0.0</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>550475</td>
<td>MLN-90R10 Ed01</td>
<td>3</td>
<td>53.5</td>
<td>0.1</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>550476</td>
<td>MLN-90R10 Ed02</td>
<td>3</td>
<td>53.5</td>
<td>0.2</td>
<td>1.0</td>
<td>5</td>
</tr>
<tr>
<td>550477</td>
<td>MLN-90R10 Ed03</td>
<td>3</td>
<td>53.5</td>
<td>0.3</td>
<td>1.0</td>
<td>5</td>
</tr>
</tbody>
</table>
**No. 1570MM**

**AMF Marker Medium**

Marking tool suitable for 20 mm collets and Weldon holders.

552306: lower pressing force, ideally suited for aluminium in conjunction with marking needle 550479
556949: higher pressing force, ideally suited for steel and stainless steel

Marking needles are not supplied as standard.

**AMF Marker Medium**

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
<th>L5 [mm]</th>
<th>L6 [mm]</th>
<th>L7 [mm]</th>
<th>L8 [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>552306</td>
<td>3</td>
<td>20</td>
<td>93</td>
<td>88</td>
<td>6</td>
<td>65</td>
<td>50</td>
<td>46,5</td>
<td>8</td>
<td>6</td>
<td>78</td>
</tr>
<tr>
<td>556949</td>
<td>3</td>
<td>20</td>
<td>93</td>
<td>88</td>
<td>6</td>
<td>65</td>
<td>50</td>
<td>46,5</td>
<td>8</td>
<td>6</td>
<td>78</td>
</tr>
</tbody>
</table>

**Application:**

Material and surface quality:
The AMF-Marker Medium is suitable for the labelling of different materials, but especially for the labelling of aluminium, plastic, steel and stainless steel. The surface of the component can be uneven.

Type size and type width:
Centric marking needles are suitable for small letters and narrow lines. The font becomes wider by the use of eccentric marking needles and the rotation of the machine spindle. To ensure a good text, please observe the following note:

- Spindle speed (1/min) / 10 = feed rate (mm/min)
- Max. permissible speed: 8,000 1/min

Needle pressure and batch size setting:
It is possible to adjust the needle pressure using the internal adjusting screw. Since the tool is removed from the holder to do this, we recommend the AMF-Marker Medium for medium and large batch sizes.

**Features:**

Change and choice of needle:
Instant change of needle by pulling out the marking needle using pliers, for example, with our special pliers No. 1530Z. Centric and eccentric needles are obtainable for the AMF-Marker Medium.

Dimensions and machine size:
Thanks to its compact design, the AMF-Marker Medium fits into the tool magazine of milling machines and lathes.

**Advantage:**

- Labelling of various materials, but especially labelling of aluminium, plastic, steel and stainless steel, also with uneven surface
- Centric and eccentric marking needles available
- Internal adjusting screw for adjusting the needle pressure
- Instant change of needle
- Compact design

**Note:**

Centric marking needles:
550478: radius 0.5 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 2 mm
550479: radius 1.0 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 4 mm

Eccentric marking needles:
552308: radius 1.0 mm, eccentricity 0.1 mm, minimum character size: legible from approx. 5 mm
552310: radius 1.0 mm, eccentricity 0.2 mm, minimum character size: legible from approx. 6 mm
552311: radius 1.0 mm, eccentricity 0.3 mm, minimum character size: legible from approx. 7 mm

Subject to technical alterations.
No. 1580MS
AMF Marker Small
Marking tool, suitable for 12 mm collets and Weldon holders. Marking needles are not included.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
<th>L5 [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>550225</td>
<td>3</td>
<td>12</td>
<td>69</td>
<td>66</td>
<td>3,5</td>
<td>49</td>
<td>34</td>
<td>21</td>
</tr>
</tbody>
</table>

Application:

Material and surface quality:
The AMF-Marker Small is particularly suitable for the labelling of plastics and materials with similar material properties as well as for the labelling of steel and stainless steel. The surface of the component should already be machined.

Type size and type width:
Centric marking needles are suitable for small letters and narrow lines.

Needle pressure and batch size setting:
It is possible to adjust the needle pressure using the internal adjusting screw. Since the tool is removed from the holder to do this, we recommend the AMF-Marker Small for medium and large batch sizes.

Features:

Change and choice of needle:
Instant change of needle by pulling out the marking needle using pliers, for example, with our special pliers No. 1530Z. Centric needles are obtainable for the AMF-Marker Small.

Dimensions and machine size:
Thanks to its very compact design, the AMF-Marker Small fits into the tool magazine of milling machines and lathes.

Advantage:
- Labelling of plastics and materials with similar material properties, but also labelling of steel and stainless steel, with even surface
- Centric marking needles available
- Internal adjusting screw for adjusting the needle pressure
- Instant change of needle
- Very compact design

No. 1580MSN
Marking needle
fits AMF Marker Small No. 1580MS.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Needle</th>
<th>D1 [mm]</th>
<th>L1 [mm]</th>
<th>R1 [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>550481</td>
<td>MSN-90R03 Ex00</td>
<td>3</td>
<td>26</td>
<td>0,3</td>
<td>2</td>
</tr>
<tr>
<td>550480</td>
<td>MSN-90R05 Ex00</td>
<td>3</td>
<td>26</td>
<td>0,5</td>
<td>2</td>
</tr>
</tbody>
</table>

Note:

Centric marking needles:
550481: radius 0.3 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 1.2 mm
550480: radius 0.5 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 2 mm
No. 1590MSL
AMF Marker Slimline
Marking tool with long, narrow tip, suitable for 12 mm collets and Weldon holders.
Marking needles are not included.

AMF Marker Slimline

Order no. | D1 [mm] | D2 [mm] | D3 [mm] | L1 [mm] | L2 [mm] | L3 [mm] | L4 [mm] | L5 [mm] | L6 [mm] | Weight [g]
---|---|---|---|---|---|---|---|---|---|---
550226 | 3 | 12 | 6 | 95 | 86 | 8,5 | 59 | 44 | 75 | 29

Application:

Material and surface quality:
The AMF-Marker Slimline is particularly suitable for the labelling of plastics and materials with similar material properties as well as for the labelling of steel and stainless steel in extremely confined spaces. The surface of the component can be slightly uneven.

Type size and type width:
Centric marking needles are suitable for small letters and narrow lines.

Needle pressure and batch size setting:
It is possible to adjust the needle pressure using the internal adjusting screw. Since the tool is removed from the holder to do this, we recommend the AMF-Marker Small for medium and large batch sizes.

Features:

Change and choice of needle:
Instant change of needle by pulling out the marking needle using pliers, for example, with our special pliers No. 1530Z. Centric needles are obtainable for the AMF-Marker Slimline.

Dimensions and machine size:
Thanks to its very compact design, the AMF-Marker Slimline fits into the tool magazine of milling machines and lathes.

Advantage:
- Labelling of plastics and materials with similar material properties, but also labelling of steel and stainless steel, with slightly uneven surface in extremely confined spaces
- Centric marking needles available
- Internal adjusting screw for adjusting the needle pressure
- Instant change of needle
- Very compact design

No. 1590MSLN
Marking needle
fits AMF Marker Slimline No. 1580MSL.

Order no. | Needle | D1 [mm] | L1 [mm] | R1 [mm] | Weight [g]
---|---|---|---|---|---
550482 | MSLN-90R03 Ex00 | 3 | 42 | 0,3 | 4
550482 | MSLN-90R05 Ex00 | 3 | 42 | 0,5 | 4

Note:
Centric marking needles:
550483: radius 0.3 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 1.2 mm
550482: radius 0.5 mm, eccentricity 0.0 mm, minimum character size: legible from approx. 2 mm

Subject to technical alterations.
No. 1530Z
Special pliers
With one-sided plastic protective covering.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>B [mm]</th>
<th>L [mm]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>552953</td>
<td>55</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

**Application:**
The tool is suitable for fast and safe replacement of the marking needles of all AMF markers. It can be used for marking needles with diameters 3 and 4 mm.
AMF-Writer Extra Large

Marking tool, fits 20 mm collets and Weldon holders.

**Application:**
This tool is especially suitable for marking uneven or rough surfaces with a large font (font size legible from 4 mm) and wide line thickness with a hardness of up to 50 HRC. Workpiece unevenness is compensated for. The marking speed depends on the feed rate of the machine and is independent of the spindle speed. The workpiece surface can be machined either dry or wet.

**Features:**
The AMF-Writer Extra Large has reinforced guides and a broader special needle. The setting is made continuously through a knurled nut and can be determined by means of a scale. Due to this setting capability with the knurled nut, the tool is optimally suited for small and medium lot sizes. The tool is held preferably in 20 mm collets or Weldon holders.

**Advantage:**
- Extremely high wear resistance
- Suitable for marking rough and uneven materials
- Easy adjustment by means of a knurled nut (possible also when clamped)

**Dimensions:**

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>D3 [mm]</th>
<th>D4 [mm]</th>
<th>D5 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
<th>L5 [mm]</th>
<th>L6 [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17475</td>
<td>4</td>
<td>20</td>
<td>26</td>
<td>40</td>
<td>46</td>
<td>126</td>
<td>113</td>
<td>13</td>
<td>26</td>
<td>74</td>
<td>36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Needle [mm]</th>
<th>R1 [1/min]</th>
<th>Speed [m/min]</th>
<th>Max. marking speed [m/min]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17475</td>
<td>60R10 Ex00</td>
<td>1,0</td>
<td>0-300</td>
<td>200</td>
<td>318</td>
</tr>
</tbody>
</table>
AMF-Writer Large

Marking tool, fits 20 mm collets and Weldon holders.

Application:
The tool is ideal for marking a wide variety of materials such as aluminium, titanium, steel, bronze, copper, brass, plastics etc.
Two needle types are available.
- Needle 90R10 Ex00 is optimal for marking with a large font (font size legible from 4 mm) and wide line thickness on surfaces with a hardness of up to 50 HRC.
- Needle 90R05 Ex00 is optimal for marking with a small font (font size legible from 2 mm) and medium, but deeper line thickness on surfaces with a hardness of up to 55 HRC.
Workpiece unevenness is compensated for. The marking speed depends on the feed rate of the machine and is independent of the spindle speed. The workpiece surface can be machined either dry or wet.

Features:
The AMF-Writer Large has high-quality guides and a robust special needle. The setting is made continuously through a knurled nut and can be determined by means of a scale. Due to this setting capability with the knurled nut, the tool is optimally suited for small and medium lot sizes. The tool is held preferably in 20 mm collets or Weldon holders.

Advantage:
- High wear resistance
- Suitable for marking a wide variety of materials
- Easy adjustment by means of a knurled nut (possible also when clamped)

Dimensions:

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>D4</th>
<th>D5</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
</tr>
</thead>
<tbody>
<tr>
<td>17418</td>
<td>3</td>
<td>20</td>
<td>24</td>
<td>36</td>
<td>42</td>
<td>119</td>
<td>108</td>
<td>11</td>
<td>26</td>
<td>65</td>
<td>36</td>
</tr>
<tr>
<td>17426</td>
<td>3</td>
<td>20</td>
<td>24</td>
<td>36</td>
<td>42</td>
<td>119</td>
<td>108</td>
<td>11</td>
<td>26</td>
<td>65</td>
<td>36</td>
</tr>
</tbody>
</table>
AMF-Writer Medium

Marking tool, fits 20 mm collets and Weldon holders.

Application:
The tool is ideal for marking a wide variety of materials such as aluminium, titanium, steel, bronze, copper, brass, plastics etc.
- Two needle types are available.
  - Needle 90R10 Ex00 is optimal for marking with a large font (font size legible from 4 mm) and wide line thickness on surfaces with a hardness of up to 50 HRC.
  - Needle 90R05 Ex00 is optimal for marking with a small font (font size legible from 2 mm) and medium, but deeper line thickness on surfaces with a hardness of up to 55 HRC.
Workpiece unevenness is compensated for. The marking speed depends on the feed rate of the machine and is independent of the spindle speed. The workpiece surface can be machined either dry or wet.

Features:
The AMF-Writer Medium has high-quality guides and a robust special needle. Setting occurs steplessly via an inside screw, which can be adjusted using a hexagon wrench. Because this tool has to be removed from the holder in order to be set, it is optimally suited for large-scale production. The tool is held preferably in 20 mm collets or Weldon holders.

Advantage:
- High wear resistance
- Suitable for marking a wide variety of materials
- Compact design

Examples of marking on various materials:
1. stainless steel  2. aluminium  3. plastics

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Needle</th>
<th>R1 [mm]</th>
<th>Speed [1/min]</th>
<th>Max. marking speed [m/min]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17434</td>
<td>90R10 Ex00</td>
<td>1.0</td>
<td>0-300</td>
<td>200</td>
<td>78</td>
</tr>
<tr>
<td>17442</td>
<td>90R05 Ex00</td>
<td>0.5</td>
<td>0-300</td>
<td>200</td>
<td>78</td>
</tr>
</tbody>
</table>

Dimensions:

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17434</td>
<td>3</td>
<td>20</td>
<td>97</td>
<td>87</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>17442</td>
<td>3</td>
<td>20</td>
<td>97</td>
<td>87</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

Subject to technical alterations.
AMF-Writer Small

Marking tool, fits 12 mm collets and Weldon holders.

**Application:**
The tool is ideal for marking a wide variety of materials such as aluminium, titanium, steel, bronze, copper, brass, plastics etc.

- Needle 90R05 Ex00 is optimal for marking with a small font (font size legible from 2 mm) and medium line thickness on surfaces with a hardness of up to 55 HRC.
- Needle 90R03 Ex00 is optimal for marking with a small font (font size legible from 1.2 mm) and small, but deeper line thickness on surfaces with a hardness of up to 57 HRC.

Workpiece unevenness is compensated for. The marking speed depends on the feed rate of the machine and is independent of the spindle speed. The workpiece surface can be machined either dry or wet.

**Features:**
The AMF-Writer Small has high-quality guides and a robust special needle. Setting occurs steplessly via an inside screw, which can be adjusted using a hexagon wrench. Because this tool has to be removed from the holder in order to be set, it is optimally suited for large-scale production. The tool is preferably received into 12 mm collets or Weldon holders.

**Advantage:**
- High wear resistance
- Suitable for marking a wide variety of materials
- Very compact design

**Dimensions:**

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17459</td>
<td>3</td>
<td>12</td>
<td>72</td>
<td>66</td>
<td>6</td>
<td>34</td>
</tr>
<tr>
<td>17467</td>
<td>3</td>
<td>12</td>
<td>72</td>
<td>66</td>
<td>6</td>
<td>34</td>
</tr>
</tbody>
</table>

**Order no.**

<table>
<thead>
<tr>
<th>Needle R1</th>
<th>Speed [1/min]</th>
<th>Max. marking speed [m/min]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>90R05 Ex00</td>
<td>0.5</td>
<td>200</td>
<td>24</td>
</tr>
<tr>
<td>90R03 Ex00</td>
<td>0.3</td>
<td>200</td>
<td>24</td>
</tr>
</tbody>
</table>
No. 1440WSL

AMF-Writer Slimline
Marking tool with long, narrow tip, fits 12 mm collets and Weldon holders.

<table>
<thead>
<tr>
<th>Order no.</th>
<th>Needle</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>535146</td>
<td>90R05 Ex00</td>
<td>3</td>
<td>12</td>
<td>6</td>
<td>85</td>
<td>76</td>
<td>9</td>
<td>34</td>
<td>65</td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>535161</td>
<td>90R03 Ex00</td>
<td>3</td>
<td>12</td>
<td>6</td>
<td>85</td>
<td>76</td>
<td>9</td>
<td>34</td>
<td>65</td>
<td></td>
<td>28</td>
</tr>
</tbody>
</table>

**Application:**
The tool is especially well-suited for marking in a very confined spaces. A wide variety of materials such as aluminium, titanium, steel, bronze, copper, brass, plastics etc. can be marked.

Two needle types are available.
- Needle 90R05 Ex00 is optimal for marking with a small font (font size legible from 2 mm) and medium line thickness on surfaces with a hardness of up to 55 HRC.
- Needle 90R03 Ex00 is optimal for marking with a small font (font size legible from 1.2 mm) and small, but deeper line thickness on surfaces with a hardness of up to 57 HRC.

Workpiece unevenness is compensated for. The marking speed depends on the feed rate of the machine and is independent of the spindle speed. The workpiece surface can be machined either dry or wet.

**Features:**
The AMF Slimline writer has high-quality guides and a robust special needle. It has an outstanding narrow tip. Setting occurs steplessly via an inside screw, which can be adjusted using a hexagon wrench. Because this tool has to be removed from the holder in order to be set, it is optimally suited for large-scale production. The tool is preferably received into 12 mm collets or Weldon holders.

**Advantage:**
- High wear resistance
- Suitable for marking a wide variety of materials
- Very compact design
- Long, narrow tip for use in confined spaces (e.g. in grooves)

**Dimensions:**

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1</th>
<th>D2</th>
<th>D3</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
</tr>
</thead>
<tbody>
<tr>
<td>535146</td>
<td>3</td>
<td>12</td>
<td>6</td>
<td>85</td>
<td>76</td>
<td>9</td>
<td>34</td>
<td>65</td>
</tr>
<tr>
<td>535161</td>
<td>3</td>
<td>12</td>
<td>6</td>
<td>85</td>
<td>76</td>
<td>9</td>
<td>34</td>
<td>65</td>
</tr>
</tbody>
</table>
AMF-Cleaner in use

AMF-Cleaner in use
AMF-CLEANER AND YOUR MACHINE CLEANS ITSELF

AMF-Cleaners are tools for cleaning workpieces, tools and the interior of CNC machines. They are preferably clamped in Weldon chucks and mounted in the machine spindle of a CNC machine.

AMF Cleaners use through spindle coolant or compressed air. AMF Cleaners in Stick design are available in lengths of 30, 100 and 180 mm and are ideally suitable for cleaning swarf from workpieces, vices and fixtures prior to unloading the workpiece and before the next workpiece is loaded. The spindle can be static or a slow rotation may be used to improve cleaning operation.

AMF Cleaners in the Ball design are available with horizontal or vertical connection to the machine spindle and are designed for cleaning the entire interior working area of the machine tool. The user selects which nozzles to open which controls the direction and pressure of the jet. Moving and rotating the spindle under constant flow of coolant achieves and excellent and systematic cleaning of the machine interior.

Our AMF-Cleaners are characterised by low acquisition costs and a long service life - their time saving will impress you.

Your benefits at a glance:

- repeatable, systematic and thorough cleaning
- no aerosol pollution harmful to the health of the machine operator
- reduction of the cleaning time
- preserves the machine guides
- no risk of injury due to swarf
No. 1500CC

AMF-Cleaner
in Clean Case.

Cleaning tools for attachment to the machine spindle, fits 16 mm Weldon holders.

Components:
1 AMF Cleaner, Ball Horizontal
1 AMF Cleaner, Ball Vertical Control
1 AMF Cleaner, Stick 30 mm
1 AMF Cleaner, Stick 100 mm
1 AMF Cleaner, Stick 180 mm
3 multi-purpose nozzles
1 pressure gauge
1 adapter
1 ball joint
4 replacement lock screws
1 hexagon screwdriver

Operating Manual

AMF-Cleaner

No. 1500CC

Application:

BALL:
The cleaning range of the AMF Cleaner is 360° and can be shaped through the number of opened outlets. The horizontal version of the tool with side connection even permits cleaning of the spindle tip. The control version allows connection of a pressure gauge to monitor the condition of the pump, filter and entire supply line.

STICK:
This tool is essential for automation of a CNC machine. It gives the machine the ability to mechanically clean workpieces and clamping fixtures. The effect of the AMF Cleaner is adapted to the local conditions by the selective travel to different positions with a rotating tool. Due to its shape and the different lengths, it is especially well-suited for cleaning holes, pockets, undercuts or other contours. Thanks to 3 different universal nozzles (UN), the intensity of the cleaning jet can be influenced as well. The adapters permit 2 cleaners to be connected together and extended in order to penetrate into lower-lying working areas. The ball joint also enables an oblique nozzle position, allowing the jet angle to be controlled. The AMF Cleaner cleans at high-speed and can be integrated into the automation cycle quickly and easily by means of a short subroutine.

Features:

BALL:
- Working range up to 360°
- KSS pressure range 5 to 120 bar
- Outlets (horizontal) 15
- Outlets (vertical) 14
- Minimum speed 5 rpm
- Maximum speed 100 rpm
- Working medium Cooling lubricant
- Weight, horizontal vers. 409 g
- Weight, vertical vers. 331 g

STICK:
- KSS pressure range 5 to 120 bar
- Compressed-air pressure range 5 to 10 bar
- Outlets 3
- Minimum speed 30 rpm
- Maximum speed 400 rpm
- Working medium Cooling lubricant,
  Compressed air
- Weight, vers. L=30 50 g
- Weight, vers. L=100 133 g
- Weight, vers. L=180 208 g

Advantage:

BALL:
- Repeatable, systematic and thorough cleaning of the inside of the machine
- No aerosol pollution harmful to the health of the machine operator
- Reduction of cleaning time

STICK:
- Repeatable, systematic and thorough cleaning of the workpiece or clamping fixture
- No aerosol pollution harmful to the health of the machine operator
- Reduction of cleaning time
No. 1510CBVC
AMF-Cleaner, Ball Vertical Control design
Cleaning tool for attachment to the machine spindle fits 16 mm Weldon holders.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17590</td>
<td>16</td>
<td>60</td>
<td>110</td>
<td>40</td>
<td>100</td>
<td>5</td>
<td>120</td>
<td>331</td>
</tr>
</tbody>
</table>

Application:
The cleaning range of the AMF Cleaner is 360° and can be shaped through the number of opened outlets. Through the optional installation of a pressure gauge, the status of the pump, filter and entire supply line can be checked.

Features:
- Working range up to 360°
- Outlets 15
- Working medium Cooling lubricant

Advantage:
- Repeatable, systematic and thorough cleaning of the inside of the machine
- No aerosol pollution harmful to the health of the machine operator
- Reduction of cleaning time

No. 1510CBH
AMF-Cleaner, Ball Horizontal design
Cleaning tool for attachment to the machine spindle fits 16 mm Weldon holders.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>17582</td>
<td>16</td>
<td>120</td>
<td>64</td>
<td>40</td>
<td>100</td>
<td>5</td>
<td>120</td>
<td>409</td>
</tr>
</tbody>
</table>

Application:
The cleaning range of the AMF Cleaner is 360° and can be shaped through the number of opened outlets. This version of the tool with side connection even permits cleaning of the spindle tip.

Features:
- Working range up to 360°
- Outlets 15
- Working medium Cooling lubricant

Advantage:
- Repeatable, systematic and thorough cleaning of the inside of the machine
- No aerosol pollution harmful to the health of the machine operator
- Reduction of cleaning time
Application:
The pressure gauge is screwed into the AMF Cleaner, Ball Vertical Control (CBVC) design, and serves to control the cooling lubricant pressure actually present. This is helpful for checking the necessary supply pressure of the AMF Cleaner, and the cooling lubricant pressure of the machine tool that is actually present can also be checked with this measuring tool. Based on this, conclusions can be made about the condition of the pump, filter and supply line.

Features:
- Working medium: Cooling lubricant

Advantage:
- Possibility to check the KSS pressure of the machine tool
- Pressure necessary for AMF Cleaner can be checked

<table>
<thead>
<tr>
<th>Order no.</th>
<th>D1 [mm]</th>
<th>D2 [mm]</th>
<th>L1 [mm]</th>
<th>L2 [mm]</th>
<th>L3 [mm]</th>
<th>L4 [mm]</th>
<th>max. r.p.m. [1/min]</th>
<th>Min. KSS pressure [bar]</th>
<th>Max. KSS pressure [bar]</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>17710</td>
<td>44</td>
<td>34</td>
<td>14</td>
<td>26</td>
<td>46</td>
<td>100</td>
<td>0</td>
<td>60</td>
<td>67</td>
<td></td>
</tr>
</tbody>
</table>
AMF-Cleaner, stick design

Cleaning tool for attachment to the machine spindle.

Orders:
- Order No. 17608: Short
- Order No. 17616: Standard
- Order No. 17624: Long

Application:
This tool is essential for automation of a CNC machine. It gives the machine the ability to mechanically clean workpieces and clamping fixtures. The effect of the AMF Cleaner is adapted to the local conditions by the selective travel to different positions with a rotating tool. Due to its shape and the different lengths, it is especially suitable for cleaning holes, pockets, undercuts or other contours. Through selection from 3 different universal nozzles (UN), you can influence the intensity of the cleaning jet. The AMF Cleaner cleans at high-speed and can be integrated into the automation cycle quickly and easily by means of a short subroutine.

Features:
- KSS pressure range 5 to 120 bar
- Compressed-air pressure range 5 to 10 bar
- Outlets 3
- Minimum speed 30 rpm
- Maximum speed 400 rpm
- Working medium: Cooling lubricant, compressed air

Advantage:
- Repeatable, systematic and thorough cleaning of the workpiece or clamping fixture
- No aerosol pollution harmful to the health of the machine operator
- Reduction of cleaning time

AMF-Cleaner, universal nozzles

Universal nozzles for the AMF Cleaner.

Orders:
- Order No. 17632: Low flow
- Order No. 17640: Standard
- Order No. 17657: High flow
No. 1520CZ

Ball joint and adapter
Accessory for AMF Cleaner, stick design
Order No. 17699: ball joint
Order No. 17673: adapter

Application:
Adapter:
Adapters are used to connect 2 or more AMF Cleaners to each other. The adapter is simply screwed on instead of the universal nozzle of an AMF Cleaner. The length of the cleaning tool can thus be varied.

Ball joint:
Ball joints are used to connect movably 2 or more AMF Cleaners to each other. The universal nozzle attached to the front or an additional AMF Cleaner can be deflected up to 30 degrees through the ball joint.

Order information: To deflect an additional AMF Cleaner, the adapter is needed in addition to the ball joint.

Features:
- Modular design for individual applications
- Cost savings through simple expansion possibilities

Advantage:

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Zero point clamping technology to perfection

+ Outstanding price-performance ratio
+ Drastically reduced tooling time
+ Immediate improvement of productivity
+ Repeat accuracy < 5um
+ Stainless steel
+ Form fit
### Contents

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### Notes
The “Clamping technology APP” offers you an overview of
AMF’s exciting clamping product range. No matter whether
mechanical, pneumatic, hydraulic or magnetic clamping
technology, as well as vacuum and zero point clamping systems
– all the products are presented in detail in this APP, and you
can see the numerous application options of AMF clamping
technology at a glance.

All products can be downloaded as 2D and 3D CAD models, and
be conveniently imported into all standard CAD programs.

Also stay up-to-date and read our news and PDF catalogues on
your mobile device.

Test it now by downloading our clamping technology APP
free-of-charge from the Apple App Store or Google Play.
WE GENERATE EXCITEMENT.

Since the foundation of the company in 1890 until today, the company has remained the highest quality in products and services. Nevertheless, the circumstances, tasks and challenges have changed, of course. By focusing our core areas of expertise, we have long set new standards for innovative clamping technology - driven by our own development, the greatest possible flexibility and passion for individual solutions.

All this is possible only with committed and contented employees. Respectful interaction with others, personal development and measures for the wellbeing of each individual are therefore values that matter to us.