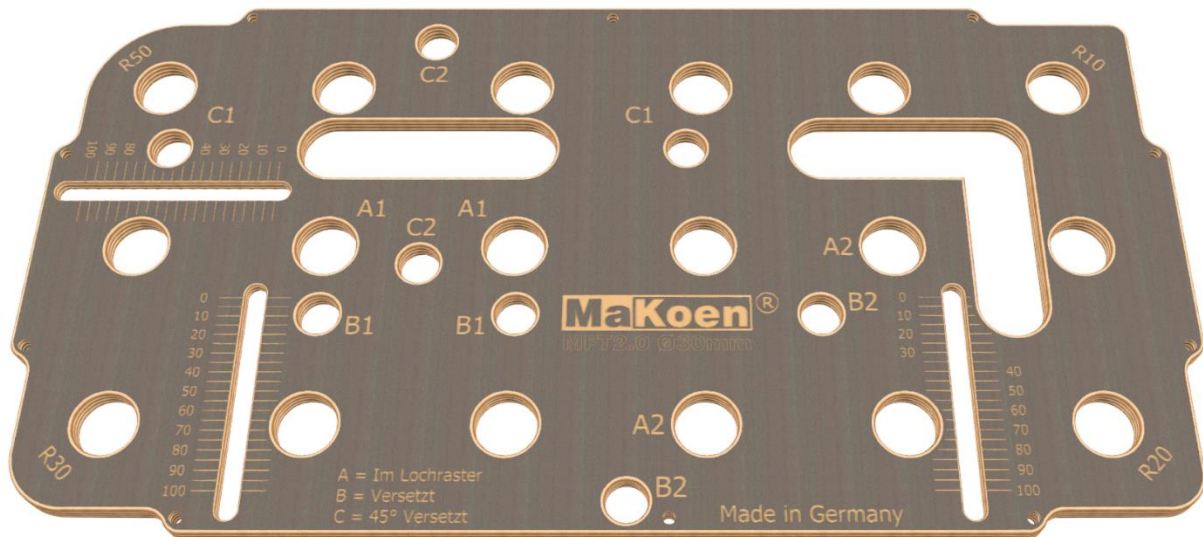




MFT template 2.0

20mm & 30mm

Manufacturer information



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Participants in the "Der Grüne Punkt" recycling system

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Safety instructions

ACHTUNG! VOR GEBRAUCH DIE MONTAGE- UND BEDIENUNGSANLEITUNG LESEN!
MONTAGE- UND BEDIENUNGSANLEITUNG SORGFÄLTIG AUFBEWAHREN!

NICHT IN DIE HÄNDE VON KINDERN KOMMEN LASSEN. DIESER ARTIKEL IST KEIN
SPIELZEUG! ES DROHT VERLETZUNGSGEFAHR!

Im Lieferumfang befinden sich verschluckbare Kleinteile. Wurde ein Teil verschluckt, konsultieren Sie
sofort einen Arzt.

Benutzen Sie Schutzausrüstung. Tragen Sie zur eigenen Sicherheit immer einen Gehörschutz, eine
Atem-/Staubschutzmaske und eine Schutzbrille.

Beachten Sie beim Umgang mit dem Produkt auch die Bedienungsanleitung der Oberfräse bzw. des
Gerätes, womit sie dieses Produkt bestücken.

Ziehen sie den Netzstecker, bevor Sie Teile montieren oder wechseln.

Alle Teile müssen sachgerecht vor der Verwendung montiert sein, ansonsten besteht
Verletzungsgefahr!

Entfernen Sie niemals vorhandene Schutzvorrichtungen.

Spannen Sie das zu bearbeitende Holzwerkstück fest.

Achten Sie darauf, dass Sie selbst und das zu bearbeitende Holzwerkstück einen sicheren Stand
haben.

Dieses Produkt ist nicht dafür bestimmt, durch Personen (einschließlich Kinder) mit eingeschränkten
physischen, sensorischen oder geistigen Fähigkeiten oder an einem Mangel an Erfahrung und/oder
Wissen benutzt zu werden, es sei denn, sie werden durch eine für ihre Sicherheit zuständige Person
beaufsichtigt oder erhalten von ihr Anweisungen, wie das Produkt zu benutzen ist.

Seien Sie aufmerksam, achten Sie darauf, was Sie tun und gehen Sie mit Vernunft an die Arbeit.
Benutzen Sie das Produkt nicht, wenn Sie müde sind oder unter dem Einfluss von Drogen, Alkohol
oder Medikamenten stehen. Ein Moment der Unachtsamkeit beim Gebrauch des Produkts kann zu
Verletzungen führen.

Benutzen Sie das Produkt nur, wenn es einwandfrei beschaffen und unbeschädigt ist. Ein
beschädigtes Produkt kann bei Benutzung brechen und zu Verletzungen führen.

Notes

Wir freuen uns, dass Sie sich für unser Produkt entschieden haben. Trotz aller
Sorgfalt unterlaufen uns dennoch Fehler. Sollte Ihnen etwas auffallen kontaktieren
Sie uns bitte. Wir werden eine schnelle und komfortable Lösung finden.

Abgesehen von einigen Normteilen werden unsere Produkte in Eigenleistung
hergestellt. Als Grundmaterial hierfür dienen Phenolharz beschichtete Furnier-
Sperrholzplatten. Diese bestehen üblicherweise aus Birkenholz. Holz ist ein
Naturmaterial und weist daher Unregelmäßigkeiten auf. Wir bemühen uns optische
Unregelmäßigkeiten zu reduzieren und gegebenenfalls auszusortieren. Kleine,
optische Mängel, welche die Funktionalität in keiner Weise beeinträchtigen **und**
deren Ursprung im Naturmaterial liegen werden von uns **nicht** aussortiert.

Zum Wohle der Umwelt und des Kosten Nutzen Verhältnisses.

Product data & scope of delivery

EAN code (Ø20mm):	4270003319621
EAN code (Ø30mm):	4270003319638
Dimensions:	Length: 588mm
	Width: 300mm
	Height: 12mm
Material:	Multiplex birch 12mm, phenolic resin on both sides (screen / film)
Application:	Template for the production of corner radii, slotted holes and perforated grid plates in a 96 mm grid with variable edge distance
Dimension:	3x6
Scale tolerance:	±1mm
Scope of delivery:	1x base body MFT template 2.0 (20mm / 30mm)
	3x aluminium sliding carriage 86mm x 20mm (short sliding carriage)
	3x DIN7991 M4x10 countersunk head screw*
	3x DIN7979 Ø6x18 dowel pin m6 fit & M4 internal thread*
	3x DIN7991 M5x25 countersunk head screw
	3x double dimension arrow
	3x DIN9021 washer 5.2 with 3x nominal diameter
	3x MaKoen M5 star knob (max. torque 1Nm)
	2x MaKoen BenchDog
	3x dowel pin beech Ø6x30mm

*The components marked with * are pre-assembled.*

Measuring scales

3 scales are engraved on the MFT template.

The resulting edge distance can be read from these.

Inserting the sliding carriage



Figure1 - Insertion sequence of the sliding carriage in the MFT template

1. Insert countersunk head screw DIN7991 M5x25 from below into the sliding carriage
2. Insert the sliding carriage with screw into the MFT template from below
3. Place the dimension arrow on the screw from above
4. Place washer DIN9021 Ø5.3mm on the screw and the dimension arrow
5. Screw on MaKoen star grip M5 (**max. tightening torque 1 Nm**)

Set dimension

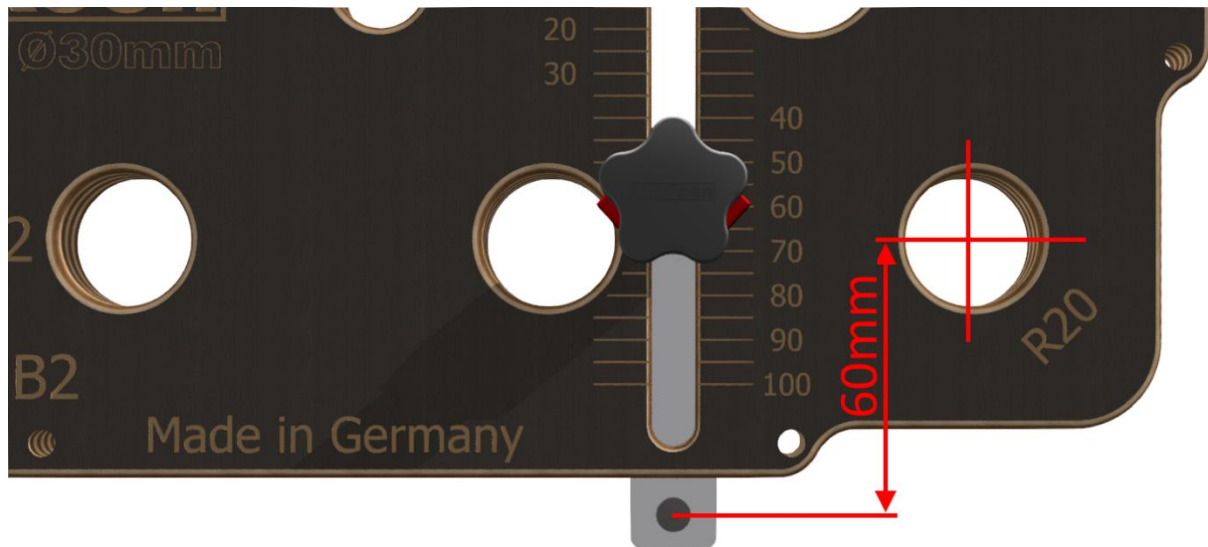


Figure2 - Meaning of the set 60 mm dimension

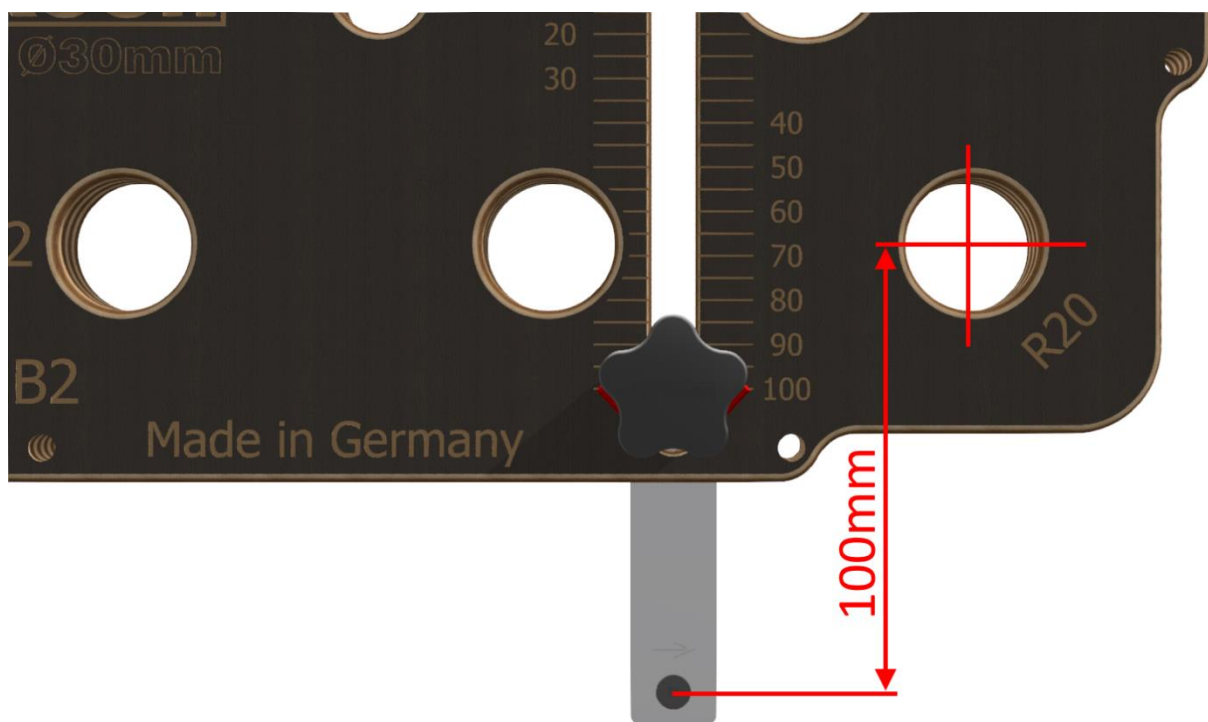


Figure3 - Meaning of the set 100 mm dimension

The set dimension indicates the distance from the centre of the hole to the centre of the 6 mm centring pin. This allows the edge distance of the first row of holes to be infinitely adjusted.

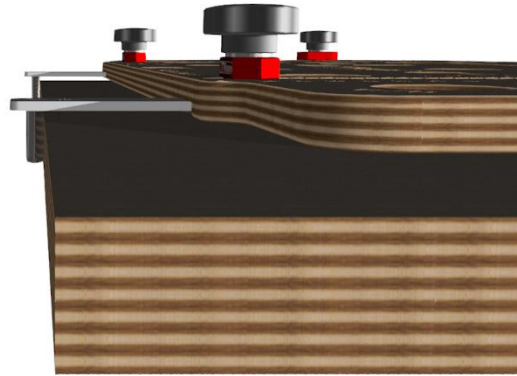
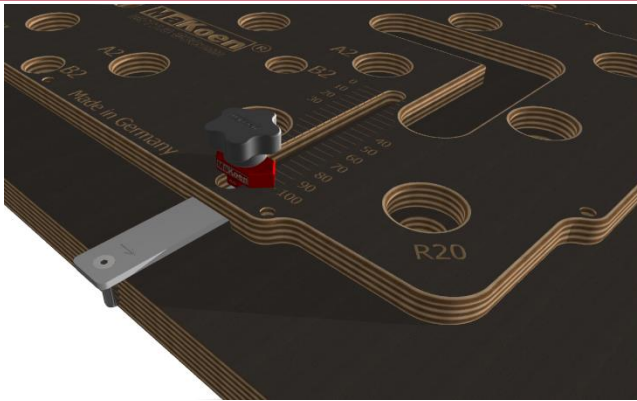


Figure4 - Result of the distance setting for 100mm

Determining the dimension to be set

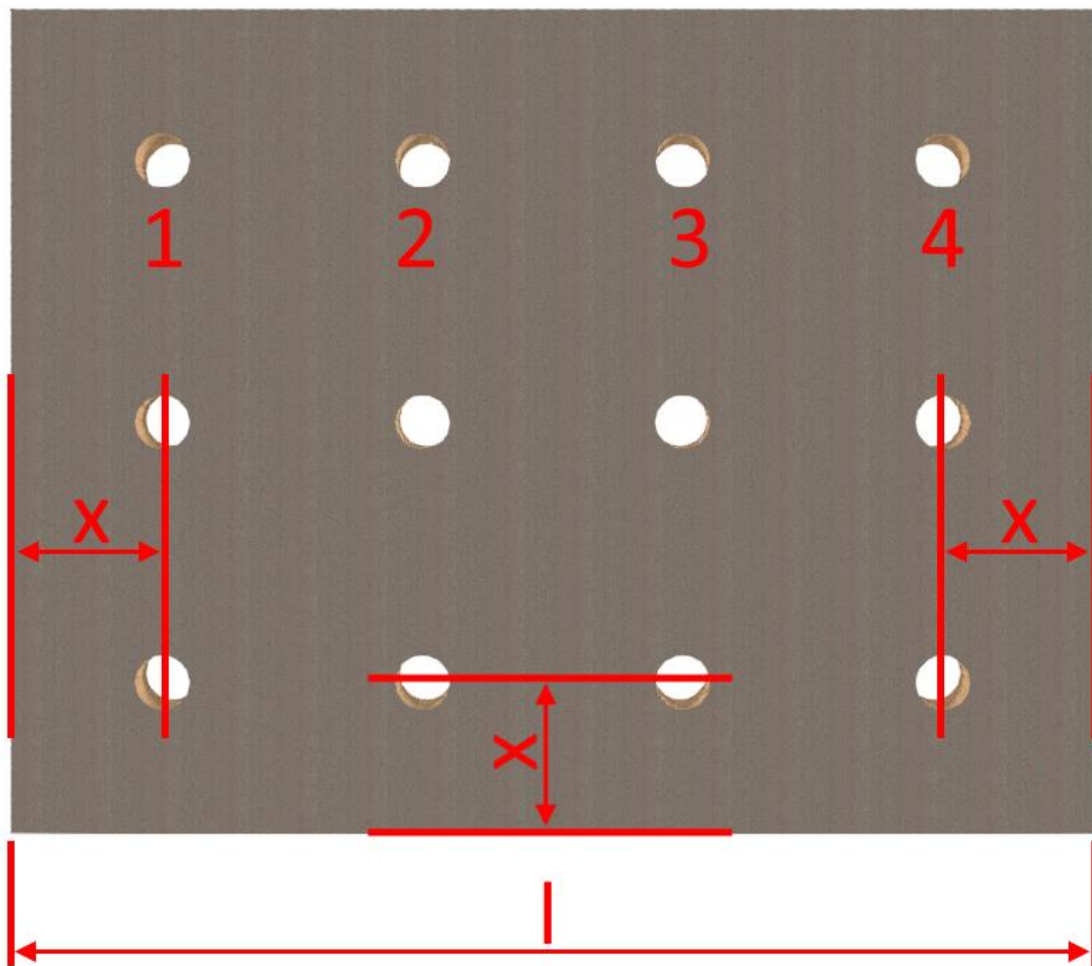


Figure5 - Determining the setting dimension on a sample panel

Two values are required for a symmetrical arrangement of the holes.

1. The total length L
2. The number of holes n (in this case 4)

(Only the horizontal length is taken into account here. The values for the vertical length here would be $l=304\text{mm}$, $n=3$)

The formula for determining x is

$$x = \frac{l - (n - 1) * 96}{2}$$

The sample panel shown above has an edge length of 400 mm and has 4 horizontal holes. From this follows:

$$x = \frac{400 - (4 - 1) * 96}{2} = \frac{400 - 3 * 96}{2} = \frac{400 - 288}{2} = \frac{112}{2} = 56mm$$

The dimension to be set in this case is 56mm.



Figure6 - Result of the calculated edge distance

Drilling the hole pattern with the MFT template Ø20mm

To transfer the hole pattern with the MFT template, the edge distance should be set first. Alternatively, the template can be aligned freehand.

After setting:

Place the template with the stop pins on the outer edge of the workpiece to be processed (Figure4).

It is strongly recommended to fix the template with at least 2 screw clamps.

The Ø20mm version is designed for use with a Ø20mm Forstner bit. After fixing, the holes can simply be transferred with a cordless screwdriver or a drill.

Moving the template:

Remove the sliding carriage

Loosen the screw clamps and remove the sliding carriages.

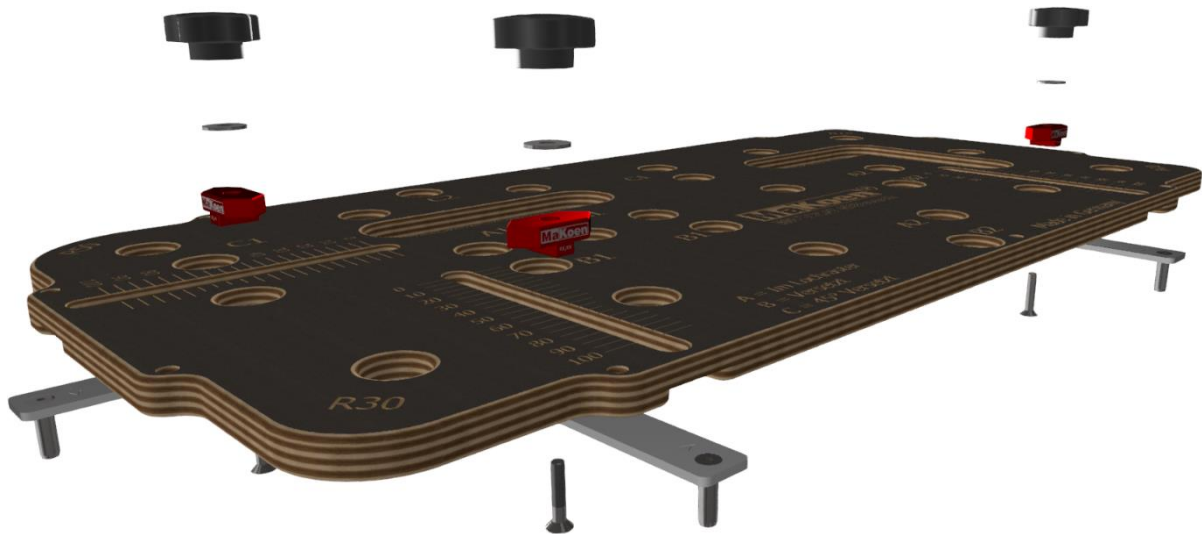


Figure7 - Removing the sliding carriage

Use BenchDogs

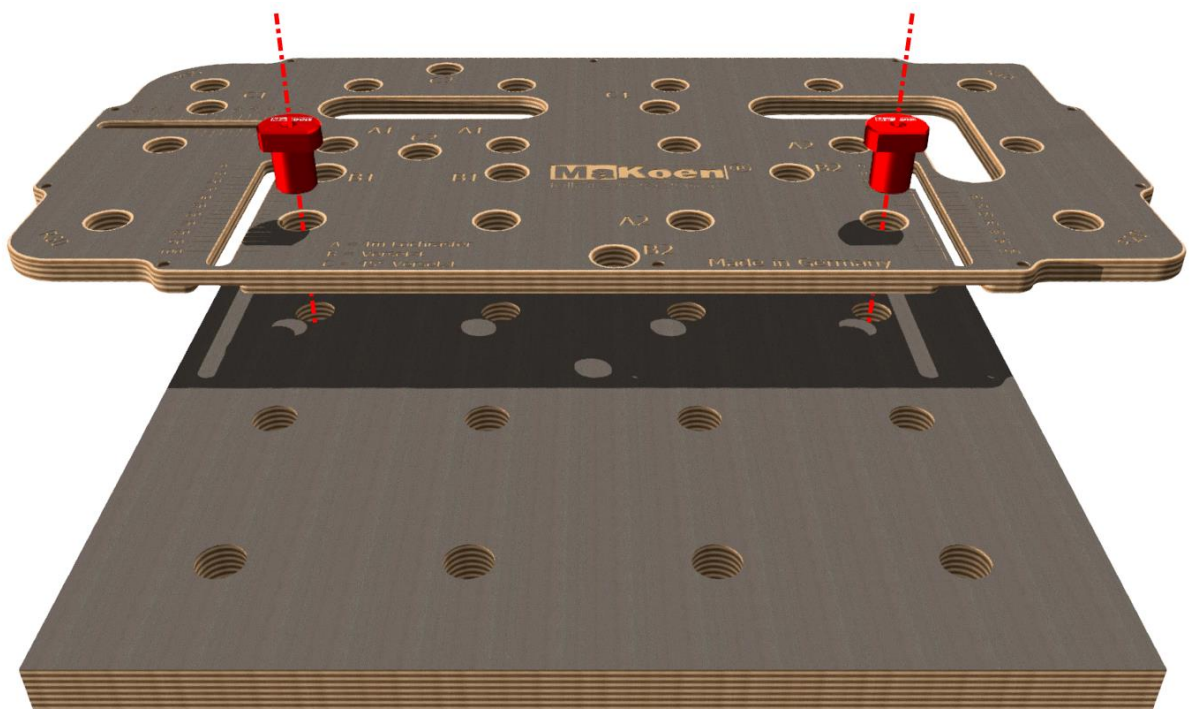


Figure 8- Inserting the bench dogs to extend the hole pattern with the Ø20mm variant

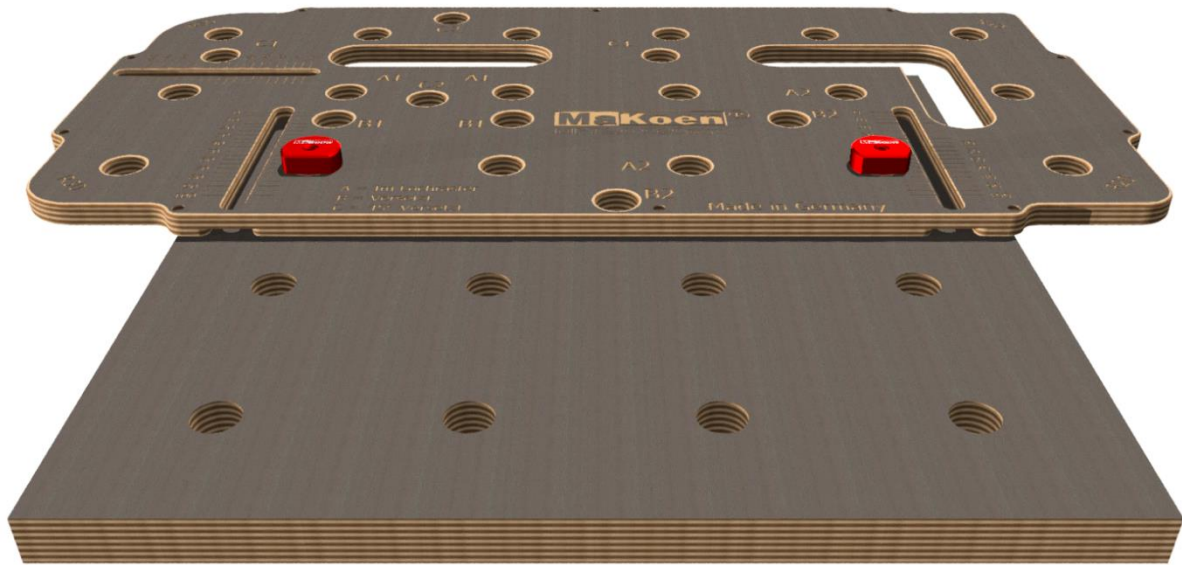


Figure 9 - Bench dogs inserted in template and workpiece

The two bench dogs supplied are required to extend the hole pattern. The bench dogs are inserted into the template, which in turn is inserted into the previously drilled holes (Figure 9).

This means that the hole pattern can be extended as required.

Note: To avoid deviations, the largest possible spacing should always be selected. In the example, this is 4 holes, as the hole pattern is only 4 holes wide.

Drilling the hole pattern with the MFT template Ø30mm

To transfer the hole pattern with the MFT template, the edge distance should be set first. Alternatively, the template can be aligned freehand.

After setting:

Place the template with the stop pins on the outer edge of the workpiece to be processed (Figure 4).

It is strongly recommended to fix the template with at least 2 clamps.

The Ø30mm version is designed for use with routers and copying sleeves. Due to the space available, it may be necessary to drill some holes subsequently (Figure 10).



Figure10 - Overlap of the holes to the sliding carriages

The holes in the immediate vicinity of the sliding carriages can overlap with the router and must therefore be subsequently repositioned.

In order to transfer the hole pattern from the template to the workpiece with the router, a copy sleeve with a suitable milling cutter is required.

The formulae for the correct copy sleeve/milling cutter combination are as follows:

$$\varnothing_{\text{Kopierhülse}} = 30 - (\varnothing_{\text{Bohrung}} - \varnothing_{\text{Werkzeug}})$$

$$\varnothing_{\text{Werkzeug}} = \varnothing_{\text{Bohrung}} - (30 - \varnothing_{\text{Kopierhülse}})$$

Examples:

The diameter of the template holes is fixed at Ø30mm.

The diameters are variable:

1. Copy sleeve
2. Tools
3. Holes in the workpiece

As the bench dogs supplied, like many of the accessories available, have a diameter of 20mm, we will assume this 20mm for the Ø bore in this example.

From this follows:

$$\varnothing_{\text{Kopierhülse}} = 30 - (20 - \varnothing_{\text{Werkzeug}})$$

$$\varnothing_{\text{Werkzeug}} = 20 - (30 - \varnothing_{\text{Kopierhülse}})$$

The easiest way to find out which combination you need is to check your own inventory:

Which copy sleeve do I have, which milling cutter do I need?

Or

Which milling cutter do I have, which copy sleeve do I need?

As soon as the required combination has been determined, the hole pattern can be transferred.

Moving the template:

Remove the sliding carriage

Loosen the screw clamps and remove the sliding carriages.

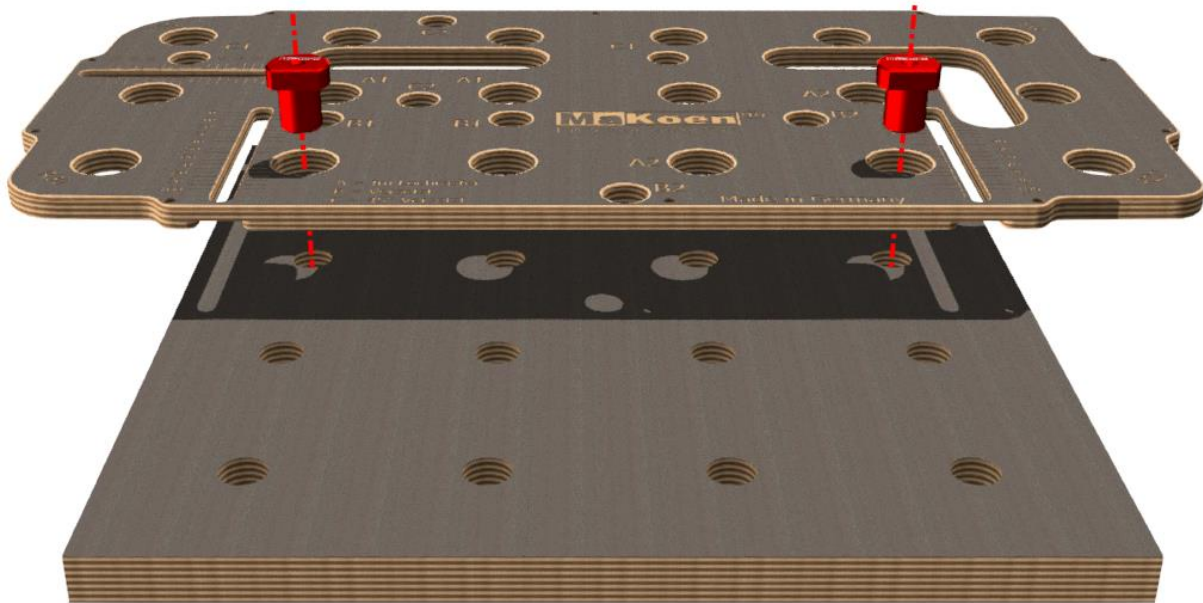


Figure11 - Inserting the bench dogs to extend the hole pattern with the Ø30mm variant

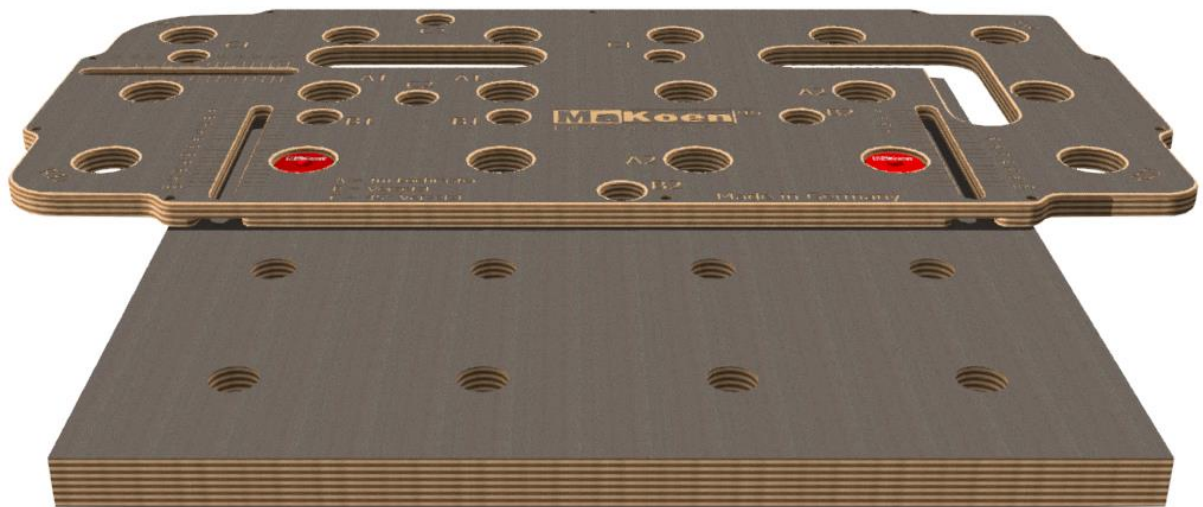


Figure12 - Bench dogs inserted in template and workpiece

The two bench dogs supplied are required to extend the hole pattern. The bench dogs are inserted into the template, which in turn is inserted into the previously drilled holes (Figure12).

This means that the hole pattern can be extended as required.

Note: To avoid deviations, the largest possible spacing should always be selected. In the example, this is 4 holes, as the hole pattern is only 4 holes wide.

Milling radii

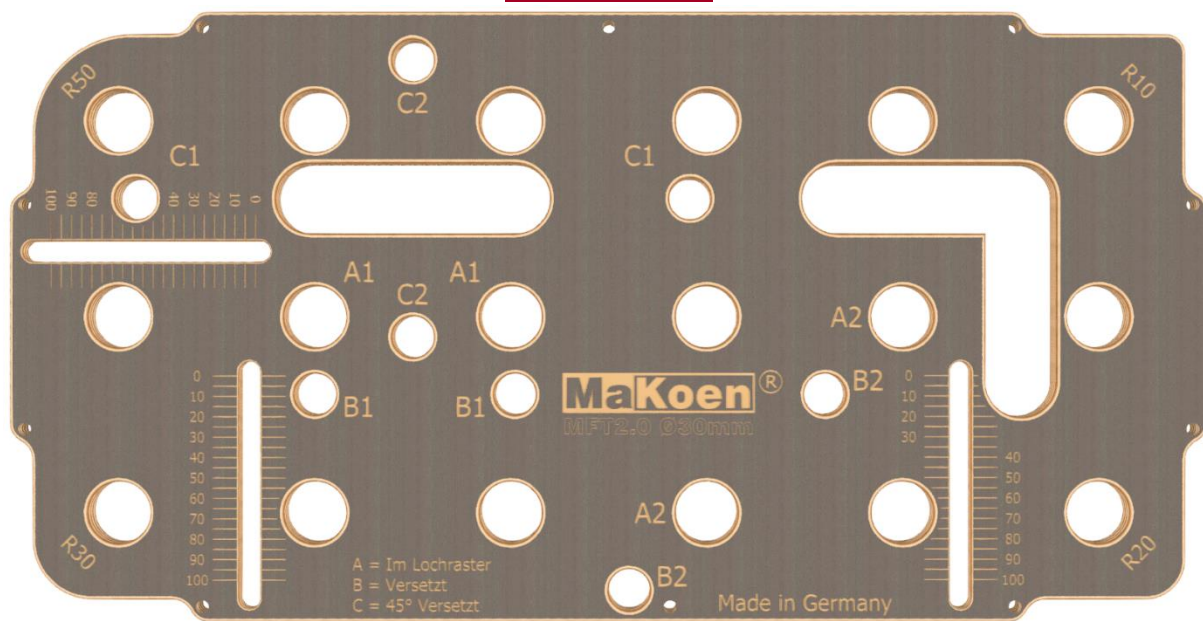


Figure13 - Top view of MFT template 2.0

The outer edges of the MFT template can be used for milling transition radii.

A total of 10 Ø6mm holes are distributed all round. The 3 Ø6mm pins supplied can be inserted into these holes. The inserted pins form a stop that is aligned with the edges of the radii.

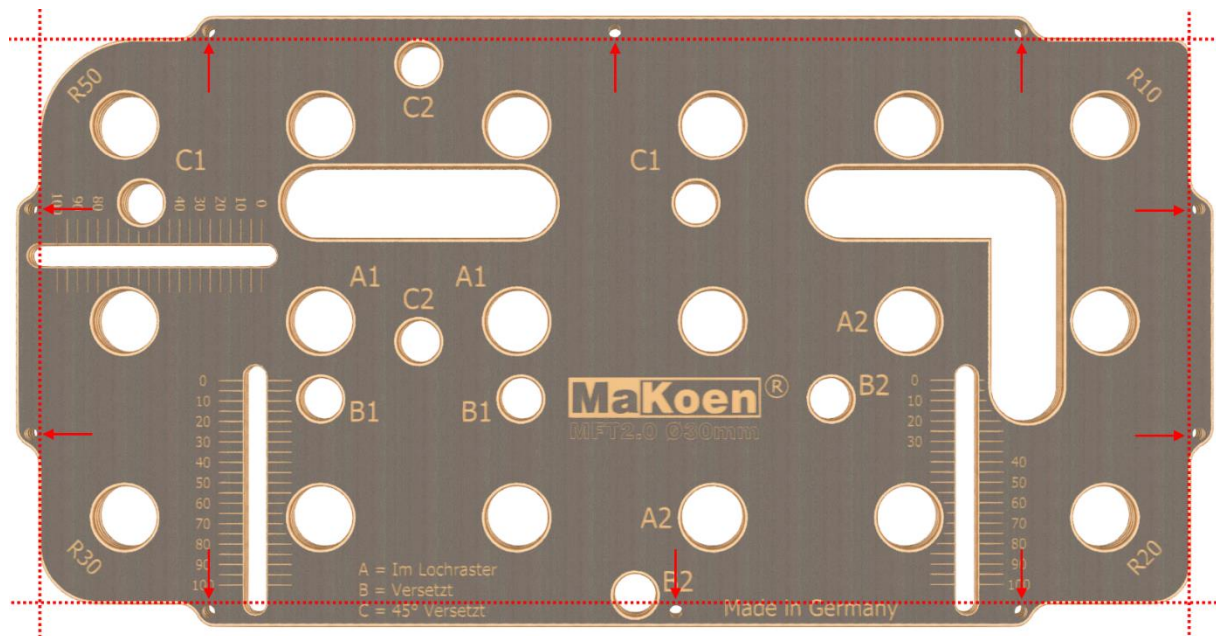


Figure14 - Aligned edges of the holes to the outer radii

Insert the 3 pins into the holes whose radius you want to mill. 3 pins form an aligned edge and a lateral stop (Figure15).

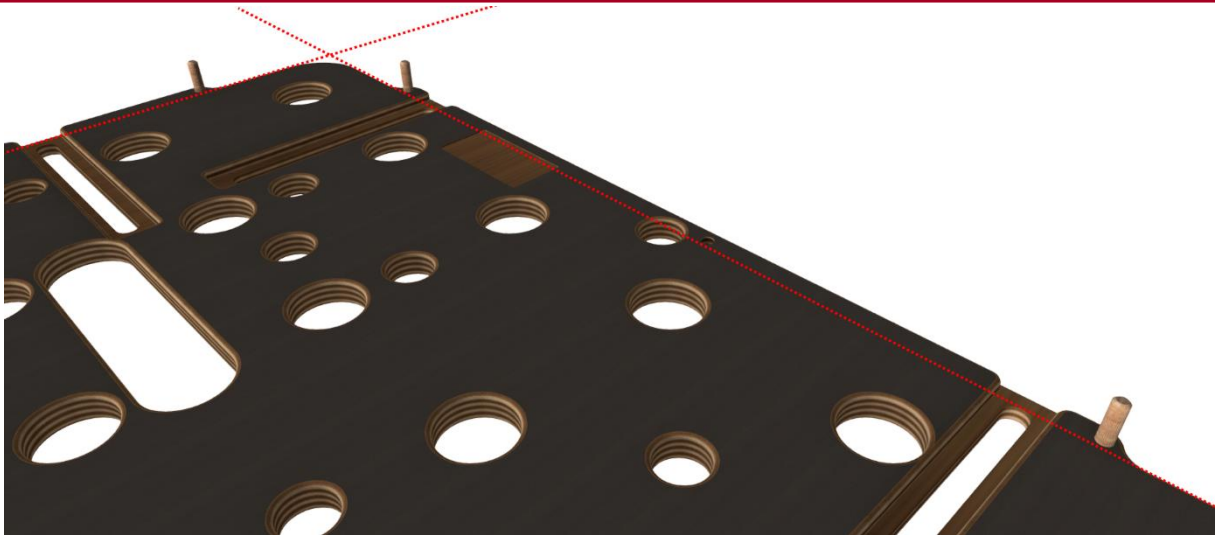


Figure15 - Stop edge formed by pins

The red dotted line represents the stop edge formed by the inserted pins. Place these against the workpiece to transfer the radius of the template to the workpiece.

Why 10 boreholes



Figure16 - Small components

The problem with small components can be that the large distance between the holes is too large for contact with the workpiece. For this reason, several holes are distributed. Adjust the position of the pins so that a stop edge can be formed (Figure17)

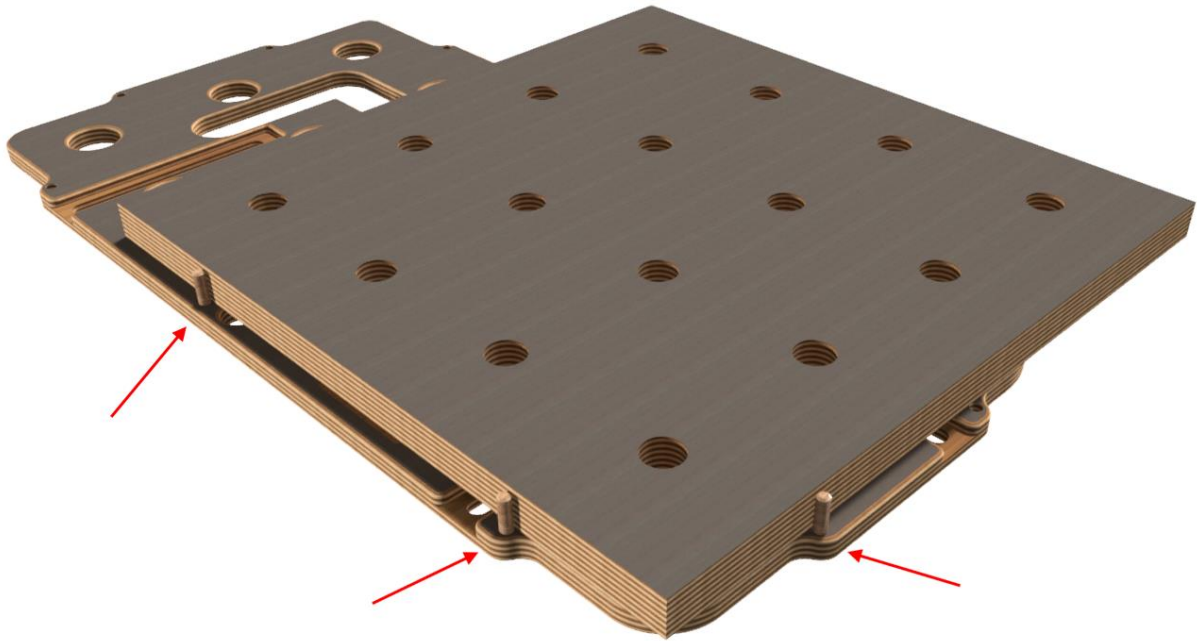


Figure17 - Pins position adjusted

To transfer the radius, place the template on the workpiece and clamp it firmly. You can now transfer the radius using a flush milling cutter with a ball bearing at the top (Figure18)

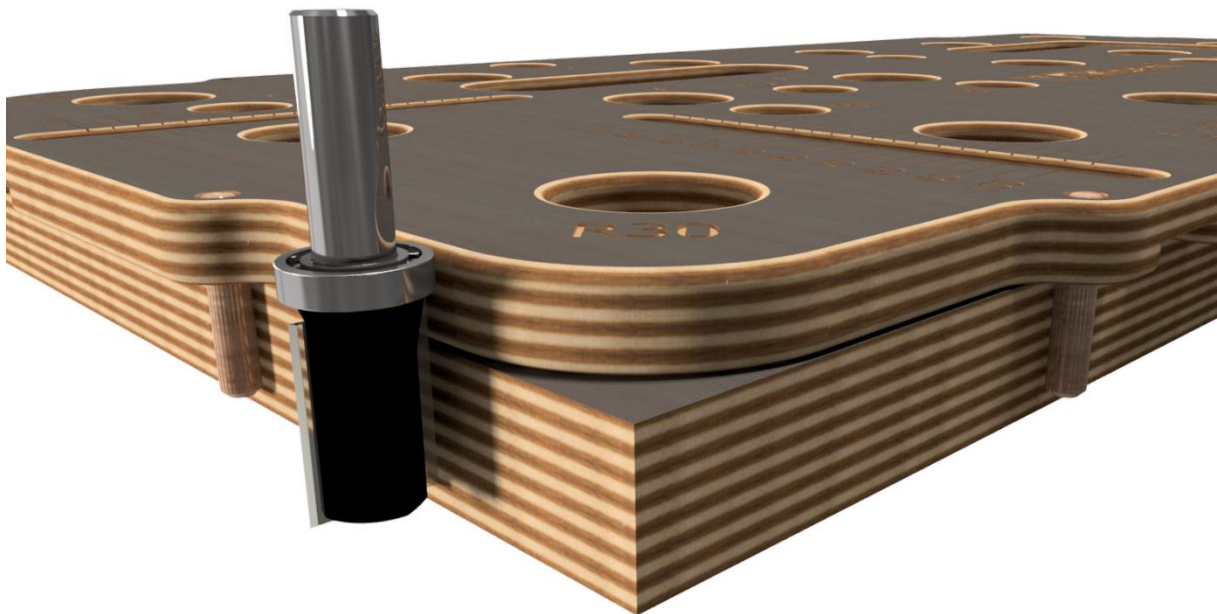


Figure18 - Flush milling cutter with ball bearing at the top

Slotted holes

There are 2 slotted holes in the MFT template. One straight and one angled slotted hole.

It is recommended to add the slotted holes after drilling or milling the hole pattern.

Slotted holes in a workbench are ideal for standard screw clamps. This saves on expensive workbench clamps.

Arrangement of slotted holes A1 - C2

The template can be aligned in the drilled hole grid using the bench dogs supplied. The hole pattern must be created **beforehand**.

Note: With the Ø20mm version, it may be necessary to remove the bench dogs after alignment, as the milling path is blocked by the bench dogs.

The holes labelled A retain the hole pattern. The slotted holes are included in the hole pattern.

The holes labelled B offset the slotted holes so that existing holes are covered. This means that the slotted holes can also be used on smaller panels.

The holes labelled C1 rotate the slotted hole by 45°.

The holes labelled C2 **extend** the slotted hole, which is rotated by 45°.

Note: All slotted holes are dimensioned to cover an existing hole pattern. This means that the hole pattern can also be adapted at a later date. Arrangement C2 is an exception. If the slotted hole is to be extended by C2, the arrangement should be considered beforehand, as the extension overlaps with the hole pattern (Figure25).

Arrangement A1 - slotted hole in the hole pattern

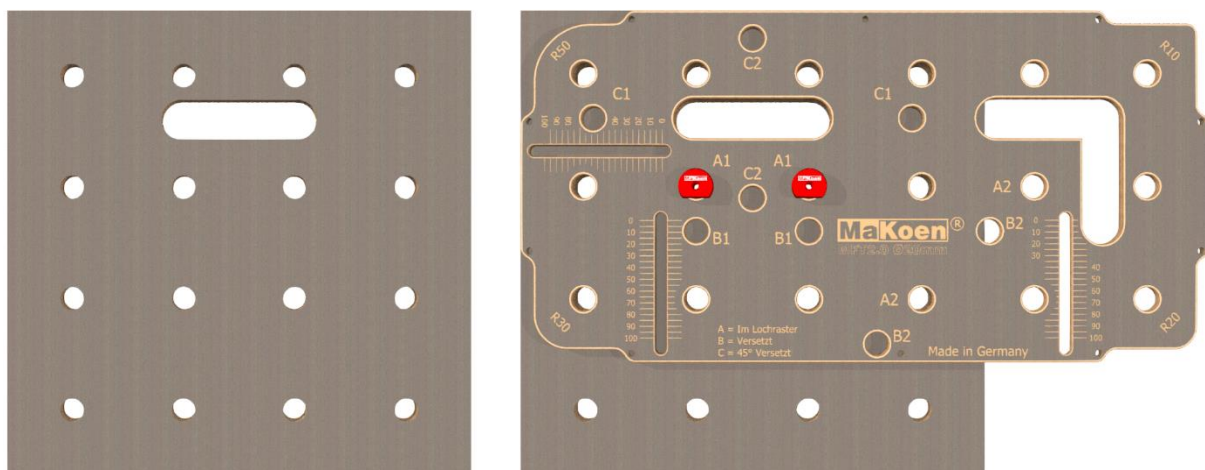


Figure19 - Slot through the application of arrangement A1

Arrangement A2 - Angled slotted hole in the hole pattern

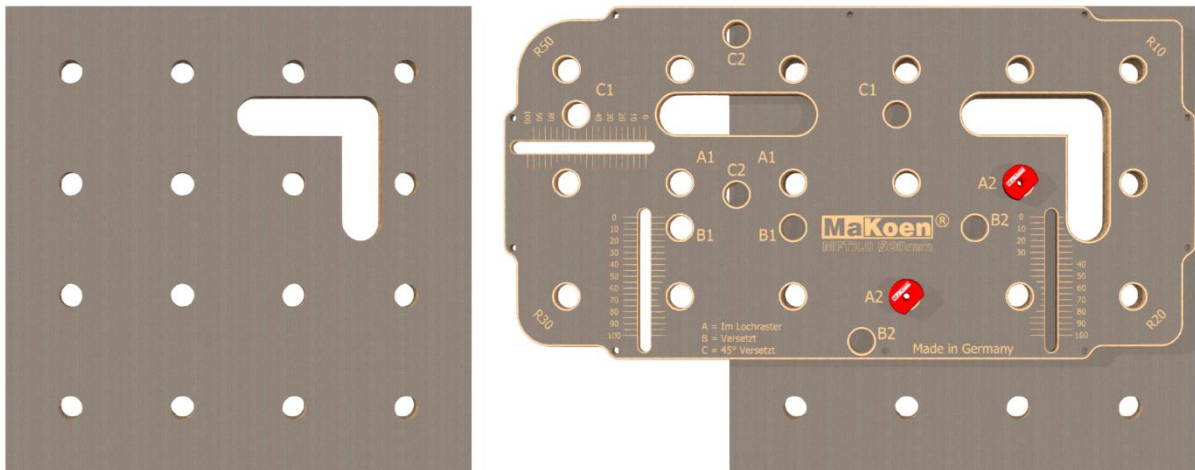


Figure20 - Angled slotted hole using arrangement A1

Arrangement B1 - slotted hole offset

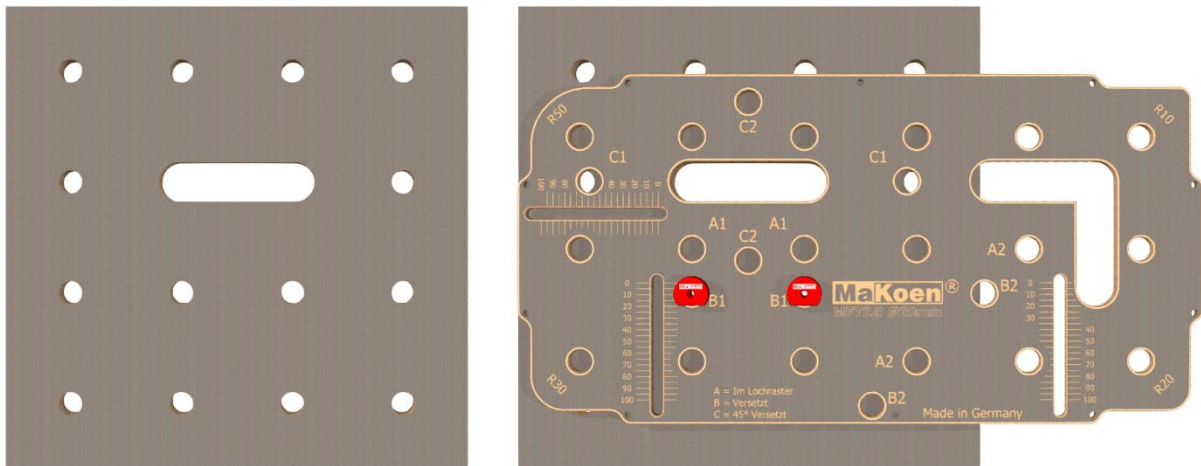


Figure21 - Oblong hole using arrangement B1

Arrangement B2 - Angled slotted hole offset

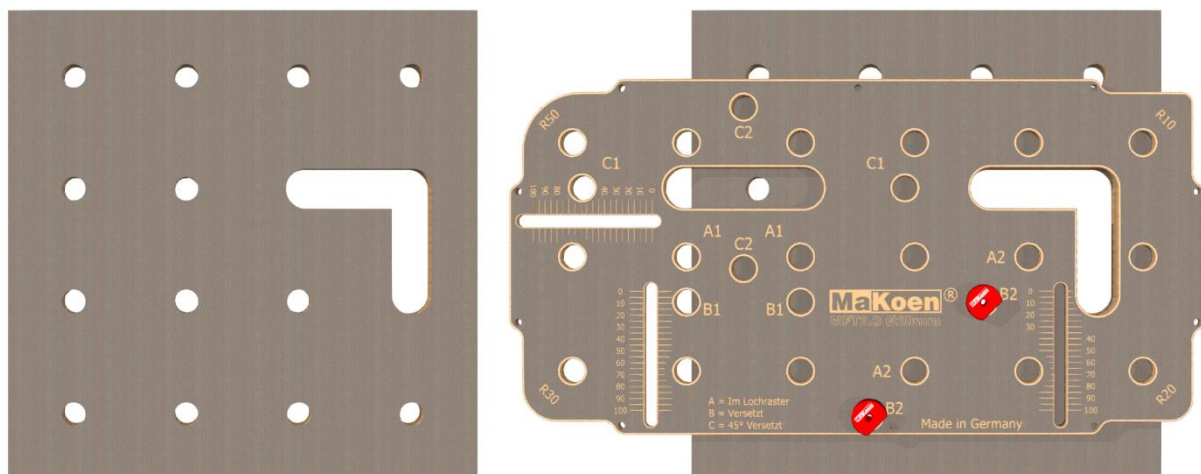


Figure22 - Angled slotted hole using arrangement B2

Arrangement C1 - 45° offset

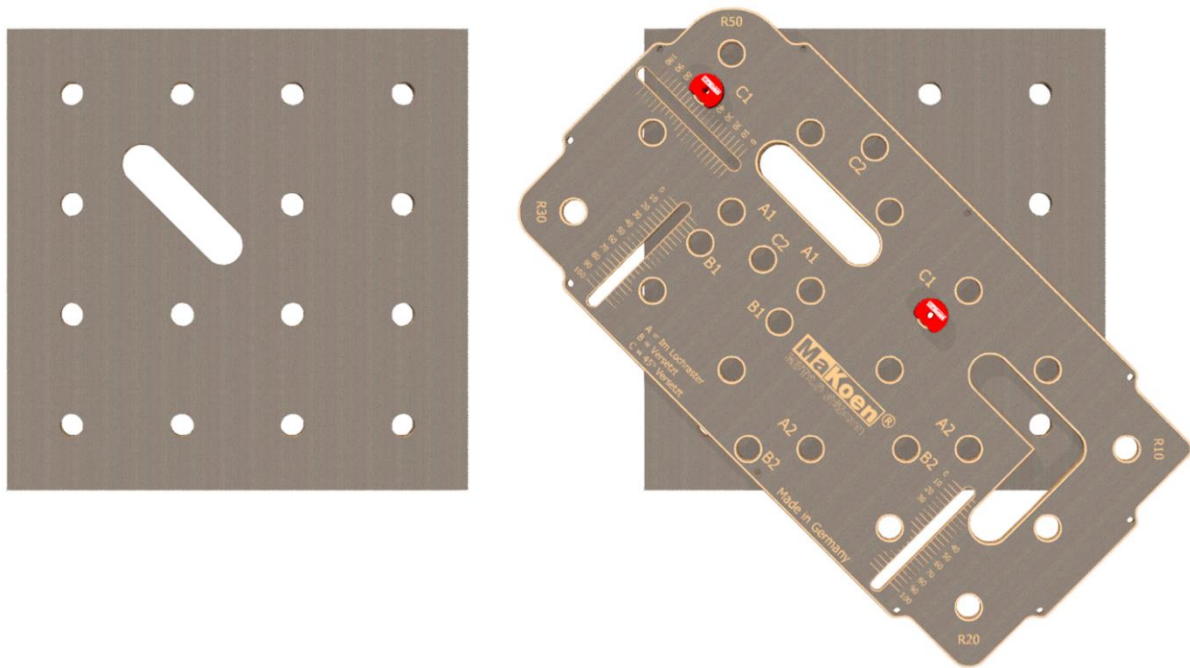


Figure23 - Slot through the application of arrangement C1

Arrangement C2 - extend offset by 45

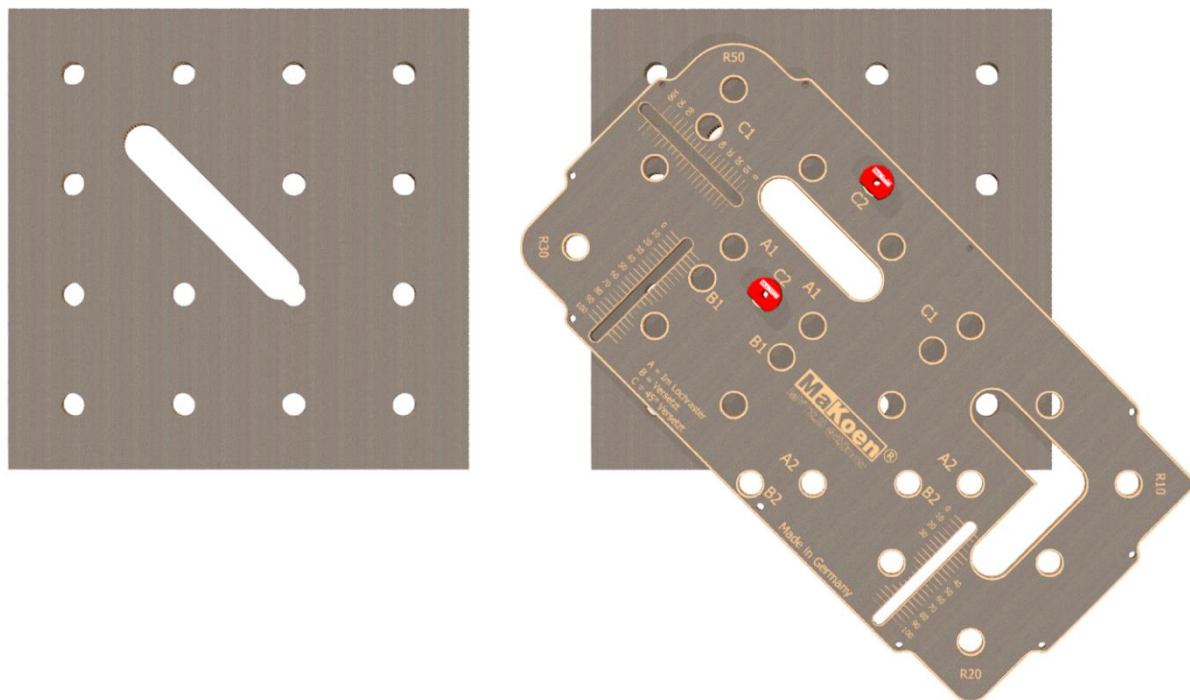


Figure24 - Slot through the application of arrangement C2

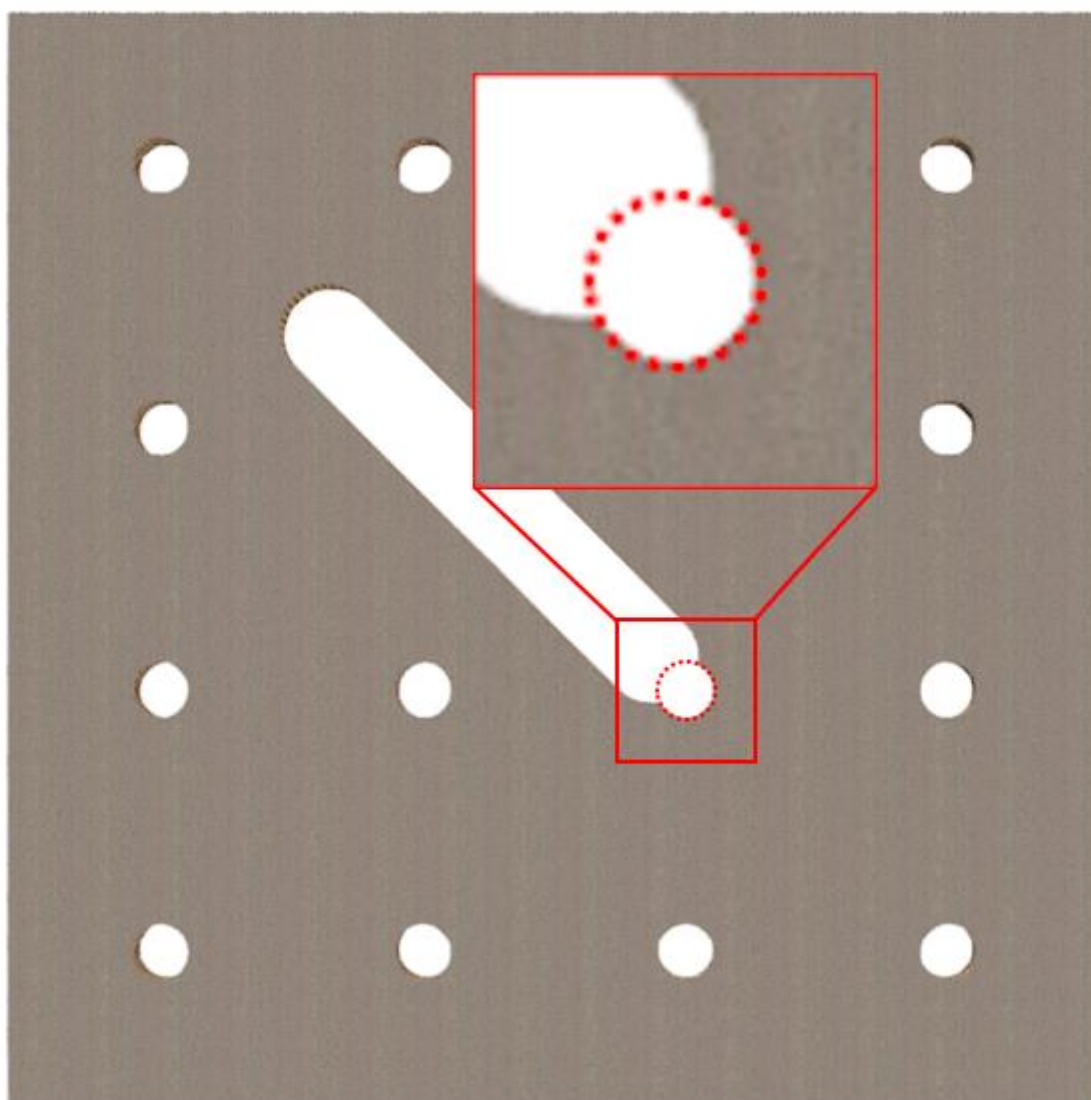


Figure25 - Overlap of arrangement C2 with the hole pattern

FAQ

1. Welche Modelle passen auf eure Fräszirkel?

A: Für folgende Modelle bieten wir passende Fräszirkel an:

Makita: RT0700 – DRT50Z

Bosch: POF1400

Bosch Professional: GKF600 – Oberfräsenmodul – Kantenfräsmodule –
Winkelfräsmodule – GKF12V – GOF1250

Festool: OF1010REB – OF1010REBQ – OF1400 – OF2200

2. Die Schablone ist gewölbt, warum?

A: Das Grundmaterial ist Multiplex Birke mit Phenolharzbeschichtung. Bei der Herstellung des Grundmaterials entstehen Spannungen im Material, welche bereits vor der Verarbeitung vorhanden sind und für ein Verzug des Plattenwerkstoffs sorgen. Dies lässt sich leider nicht verhindern.

Fräszirkel: Der Zentrierstift ist lang genug, um auch bei leichter Wölbung sicher im Zentrum zu halten

MFT-Schablone: Es wird empfohlen die Schablone festzuspannen. Unabhängig einer möglichen Wölbung. Beim Spannen wird diese ausgeglichen

6-Fach Schablone: Durch die kompakte Form der Schablone fällt ein Verzug meistens nicht auf. Sollte dies dennoch vorkommen, wird die Schablone aussortiert.

Unzufrieden?

Sie haben Fragen oder Anregungen?

Bitte kontaktieren Sie uns über eine der folgenden Möglichkeiten

Tel.: 0421 960 15 70

Mobil: 0176 28 54 7300

E-Mail: info@makoen.com

Product page MFT Ø20mm: <https://makoen.com/mft-schablone-20mm>

Product page MFT Ø30mm: <https://makoen.com/mft-schablone-30mm>