

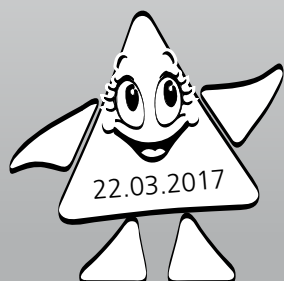
A perfect combination



Matsuura MX-330 | MAM72-35V | MAM72-63V **Triag International Workholding Systems**

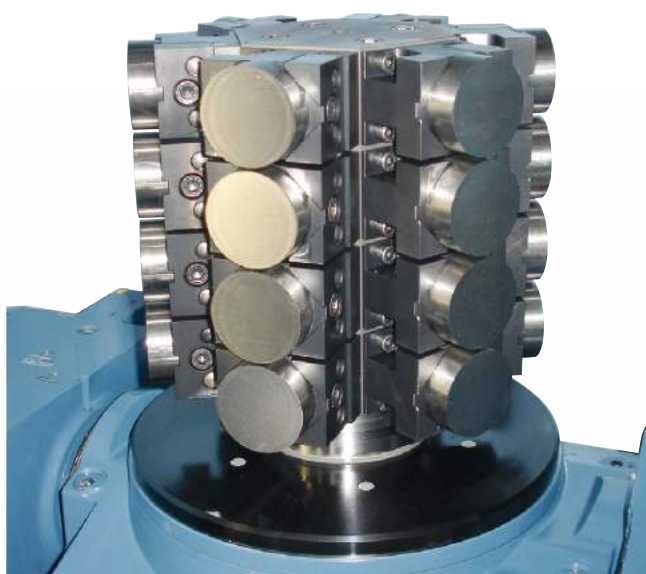


Boost value added with Triag International standard clamping systems in the high-performance machining centers Matsuura MX-330 MAM72-35V | MAM72-63V. With variable modular multiple workholding system Power Clamp and optimal solutions with Triag Micro Clamp and self centering vise.

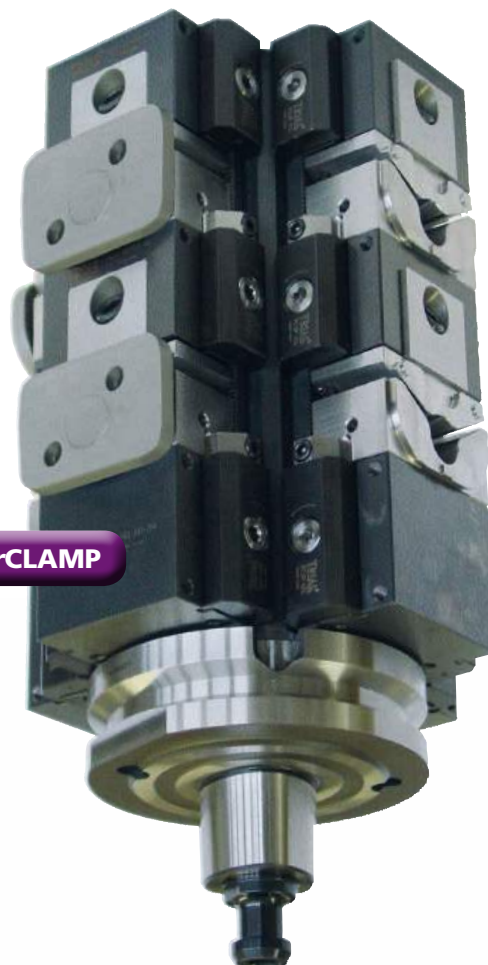


- **Reliable**
- **Space saving, compact**
- **Fast setup and reclamping**
- **Thanks to the modular design of the Power Clamp system, the clamping set up can be optimal adapted to the specific conditions of the machine and workpieces.**
- **Optimised lay out of clamp system to use full machine envelope**
- **The Power Clamp modular system offers more than 220 clamp and stop modules**
- **Multiple workholding for small and large parts**
- **With our direct stamping modules you clamp the parts only (1,8 and 3 mm) in depth**
- **Reach with Micro Clamp clamping modules a optimised clamping density**
- **Produce 5-axis with parts self centring vise**

microCLAMP



powerCLAMP



triCENTRO



Sideways adjustable

microCLAMP



Clamping fixture on PCT tombstone quick change system

ENGINEERING PRODUCTION AND WORLD WIDE DISTRIBUTION IN HIGH QUALITY!

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Complete solutions



Your part

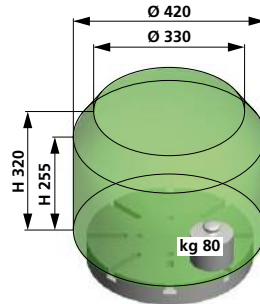


Your machine



our solution

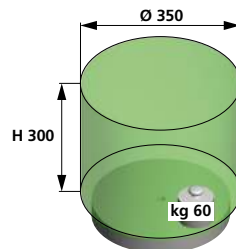
Matsuura MX-330



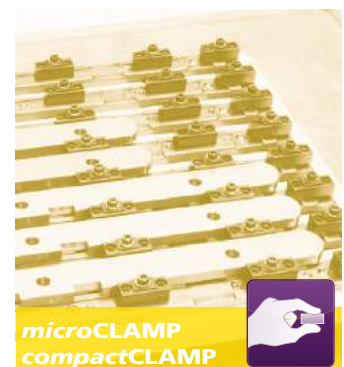
- Easy and precise entry into the 5-axis machining
- Well-known Matsuura quality
- The ergonomic and dynamic design ensures productivity
- Matsuura automation with 10 pallets (expandable)
- Matsuura G-tech 31: Large touch screen for maximum user-friendliness
- Tool storage option up to 90 tools



Matsuura MAM72-35V



- The flagship of Matsuura Advanced Manufacturing
- Highest precision and productivity in unmanned production
- Capacity up to 40 pallets and 520 tools
- Ergonomic design for even better user-friendliness
- Space-saving
- Unmanned production of different parts up to 72h



Self centring vise block 45° Sputnik I

- Multiple clamping and 5-sided machining
- Increased productivity
- Longer processing times - less pallet change and down times
- Decreasing machine wear thanks to less tool change



Self centering vise in various dimensions

- Minimum clamping depths of 3 mm thanks to stamping technology
- Direct stamping
- Complete 5-sided machining
- Optimal accessibility
- High clamping forces
- Clamping range up to 180 mm
- Large selection of clamping jaws up to 150 different standard end modules
- Unique spring loaded mechanism to maintain clamping force



Tombestone for Matsuura

- Multiple clamping on 5-axis machining center
- Three-sided machining in a multi clamping set up
- Ideal for medium to large batch sizes
- 3 - 4 clamping surfaces available instead of just the machining table
- Suitable for smaller and larger workpieces
- Monoblock design made of steel, thus very compact and rigid

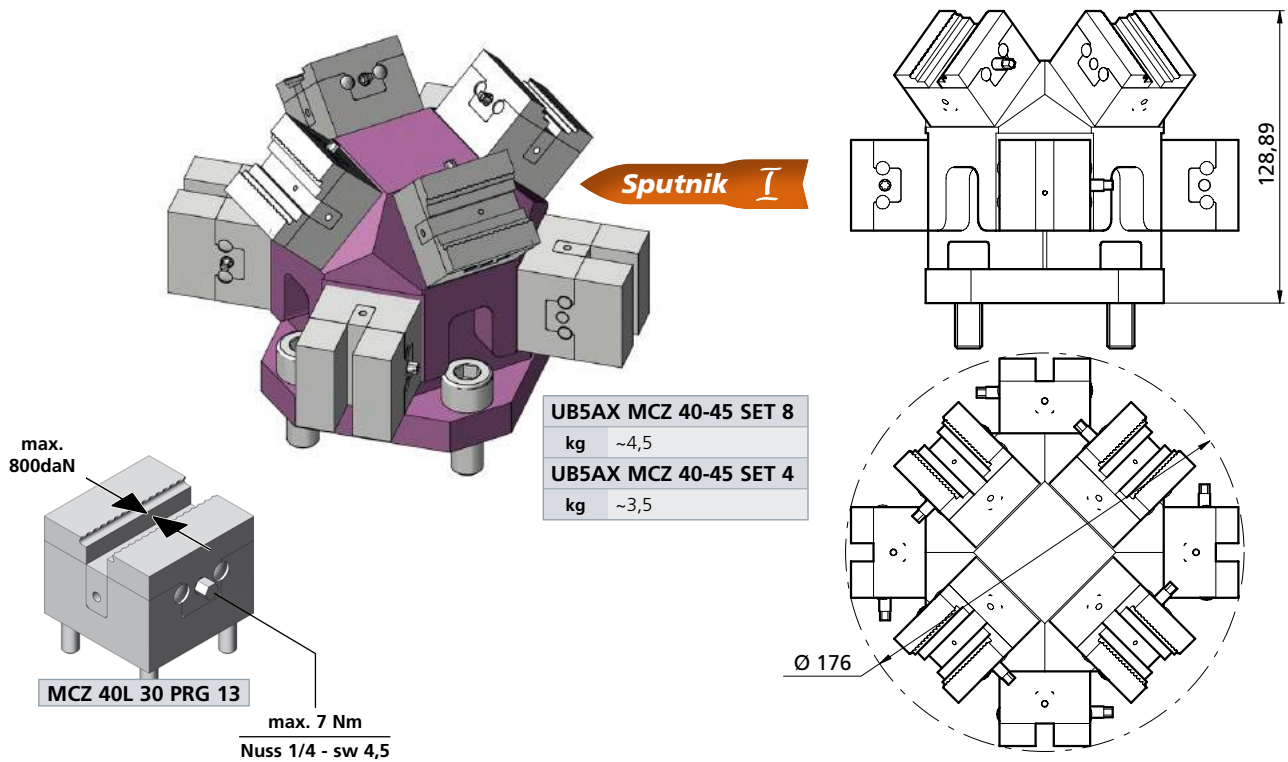


Micro Clamp

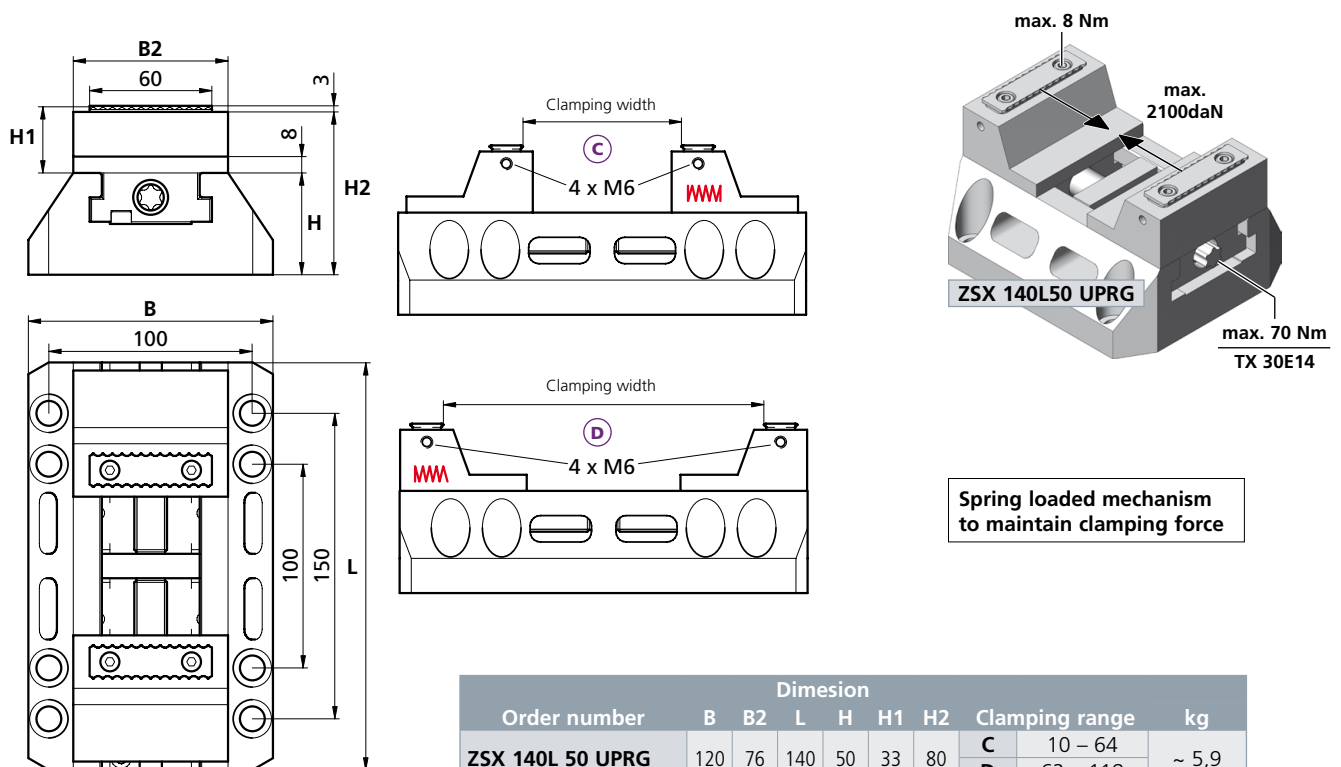
- Clamping solutions according to your needs
- Simple or complex clamping solutions
- Endless clamping possibilities
- High clamping density in small space
- Direct stamping from 1.8 mm clamping depth



Self centring vise block 45°



Manual self centring vise with direct spring loaded stamping jaws



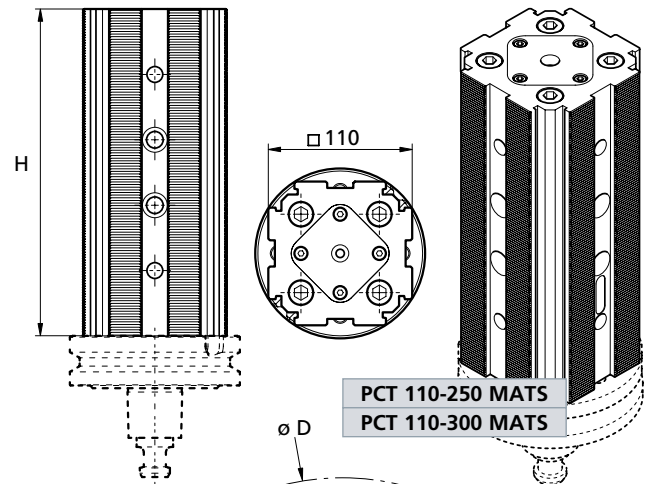
Order number	Dimension						Clamping range		kg
	B	B2	L	H	H1	H2	C	D	
ZSX 140L 50 UPRG	120	76	140	50	33	80	C 10 – 64	D 62 – 118	~ 5,9
ZSX 160L 50 UPRG	120	76	160	50	33	80	C 10 – 84	D 62 – 198	
ZSX 180L 50 UPRG	120	76	180	50	33	80	C 10 – 104	D 62 – 158	~ 7,0
ZSX 200L 50 UPRG	120	76	200	50	33	80	C 10 – 124	D 62 – 178	

Clamping tombstone to Matsuura

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Interface for over 220 different modules from 19 - 150 mm width, available as pull down- & linear- & direct stamping modules

	H	kg	Ø D			
PCT 110-250 MATS	250	~20	255	241	211	224
PCT 110-300 MATS	300	~24	255	241	211	224
PCT 72-80-232 MATS	232	~11	211	195	161	176
PCT 155-290-3 MATS	290	~28,8	243	229	202	219
GPL 160 MATS	20	~2,2				



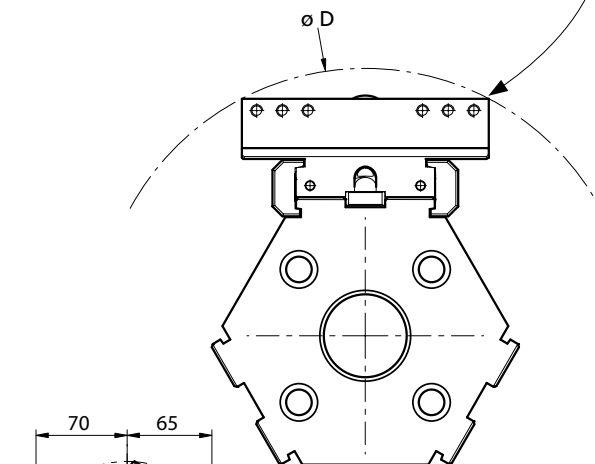
PCT 110-250 MATS
PCT 110-300 MATS

PS1R 43N49 B60

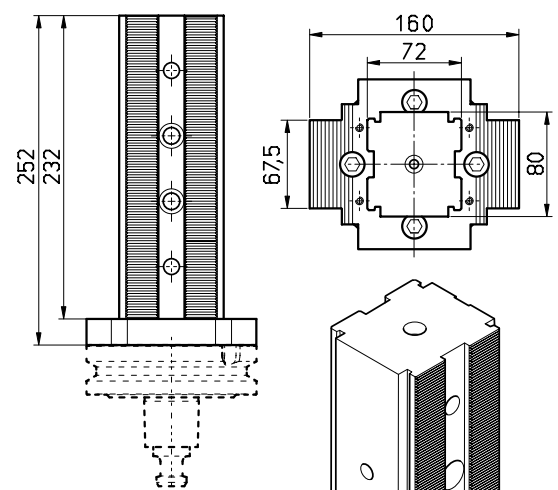
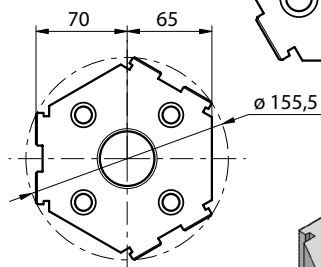
PS1R 94N34 B80

PS1R 94N49 B90

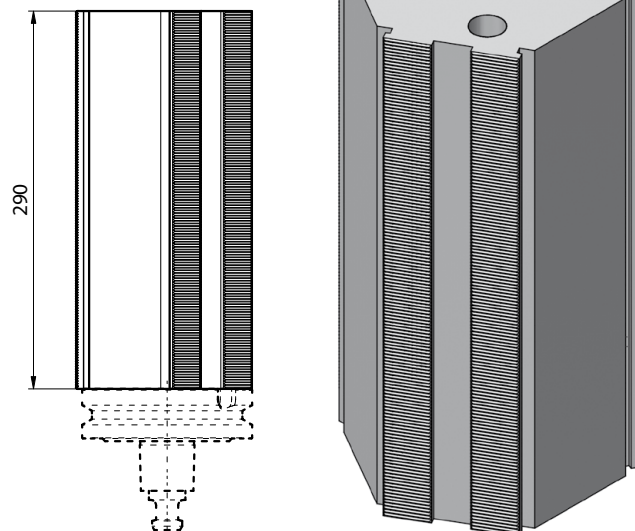
PS1R 125N49 B95



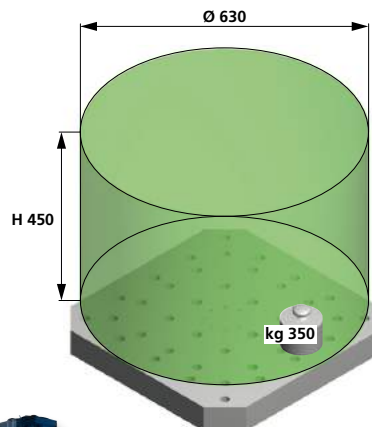
PCT 155-290-3 MATS



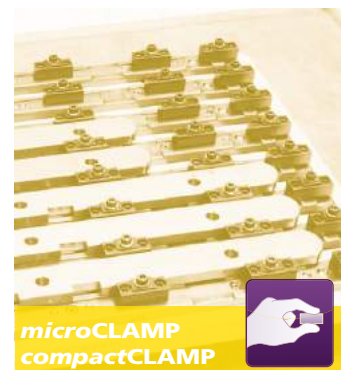
PCT 72-80-232 MATS



GPL 160 MATS



- Highly productive 5-axis machining for workpieces up to a size of $\varnothing 630 \times H 450$
- Up to 72 hours continuous unmanned production
- Pallet storage for up to 180 pallets
- Manless production of variable parts, (just-in-time) Manufacturing without set-up times
- Precision machining in one clamping set up



Clamping solutions

Sputnik III, tri Centro, Tripoxy Mineral, Power Clamp, Micro Clamp, Sputnik II

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Self centring vise block 35° Sputnik III

- Advanced manufacturing in 5-axis machining
- Optimal accessibility
- To be combined with self-centring vise, power clamp rails or zero point system
- Light and vibration-dampening thanks to the mineral cast core
- Suitable for small and large workpieces



Tripoxy Mineral & Power Clamp

- Low weight with maximum vibration damping
- Large assortment of standard mineral cast thump stones
- Multiple clamping surfaces on a 5-axis machining center
- 3-sided machining
- Ideal for multiple clamping for of large number of parts or large batch sizes



Micro Clamp

- Clamping solutions according to your needs
- Simple or complex clamping solutions
- Endless clamping possibilities
- High clamping density in small space
- Direct stamping from 1.8 mm clamping depth



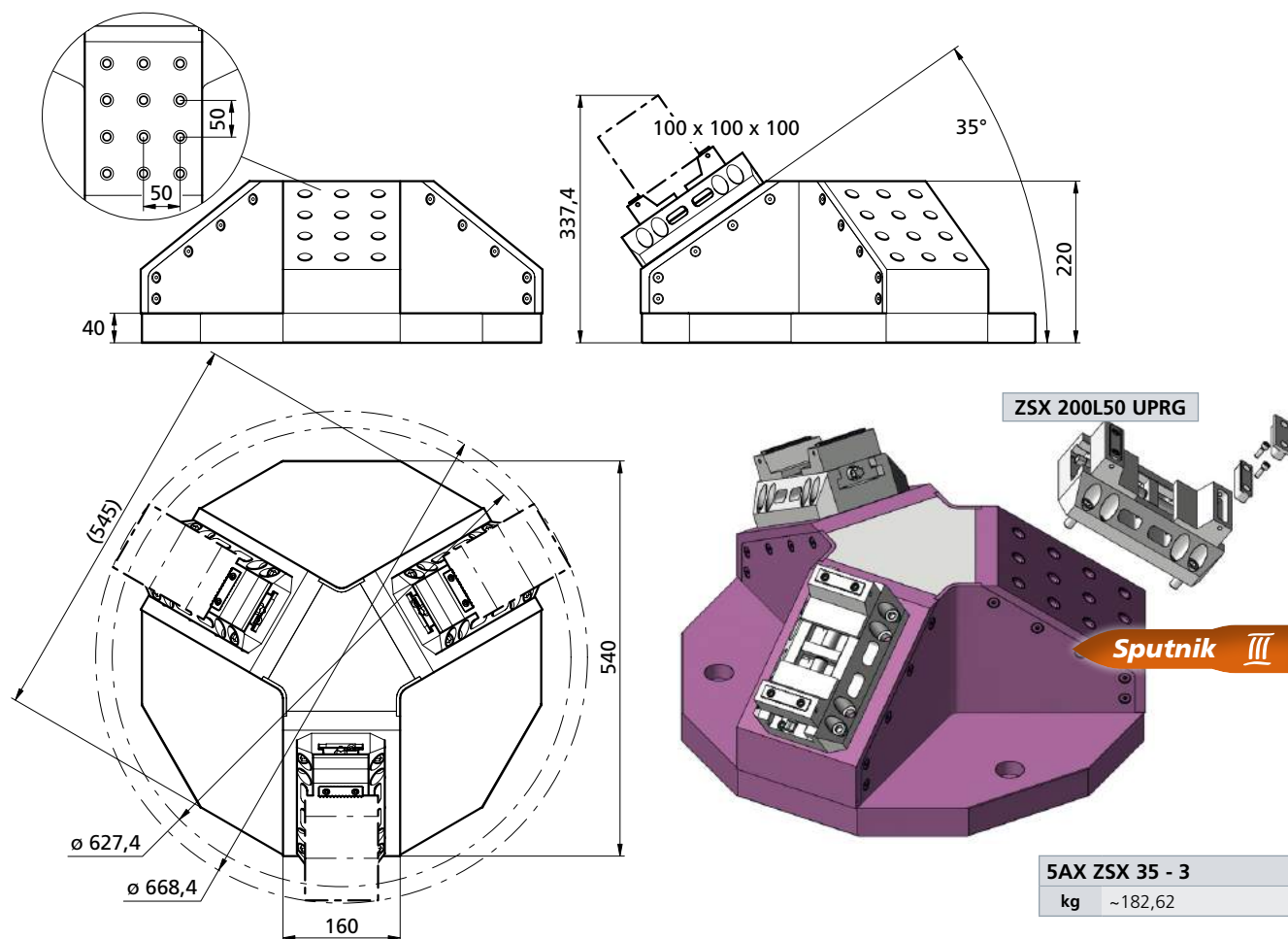
Self centring vise block 45°|90° Sputnik II

- Multiple clamping and 5-axis machining combined
- Very suitable for small and medium sized workpieces
- Up to 12 workpieces in one clamping set up thanks to a modular design
- Longer production times and greater productivity
- Machine-friendly thanks to less tool change

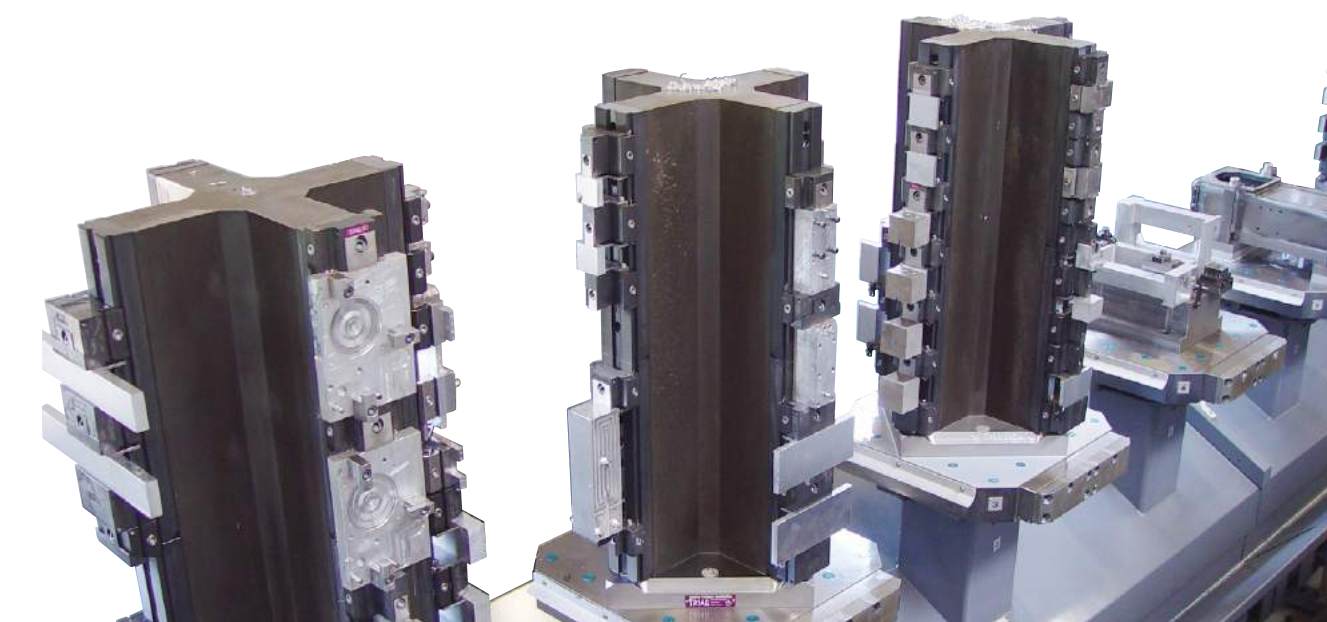


Self centring vise block 35°

INTERNATIONAL



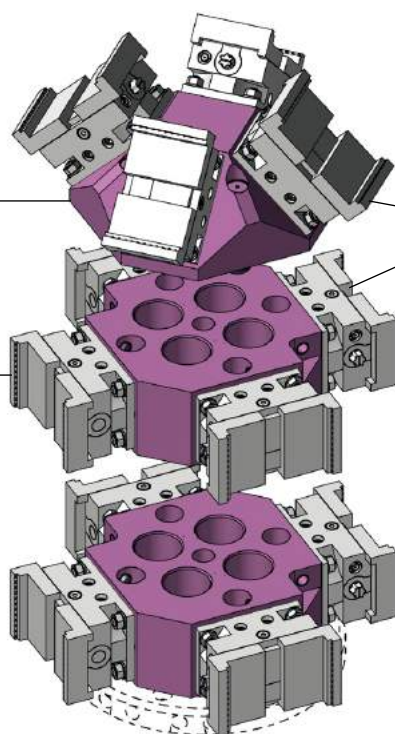
Performance of Epoxy Mineral



- Lightweight and rigid
- Damping effect 10 x better than cast iron 100 x better than alu!
- Specific weight like aluminum
- Faces ground, hardened bushings M12/12F7
- Base plate made to machine specifications
- Other dimensions on request

	Epoxy mineral	GG20	High density Alu
Density [kg/dm³]	ca. 2,4	ca. 7,1 - 7,3	ca. 2,76
Logarithmic Decrement (damping)	0,035	0,004	0,0004
Coefficient of linear expansion [1/K]	ca. 12x10 ⁻⁶	ca. 10x10 ⁻⁶	ca. 23x10 ⁻⁶
Tensile strength [N/mm²]	15 - 20	200 - 400	470 - 520
Thermal conductivity [W/mK]	ca. 2	ca. 50	ca. 140

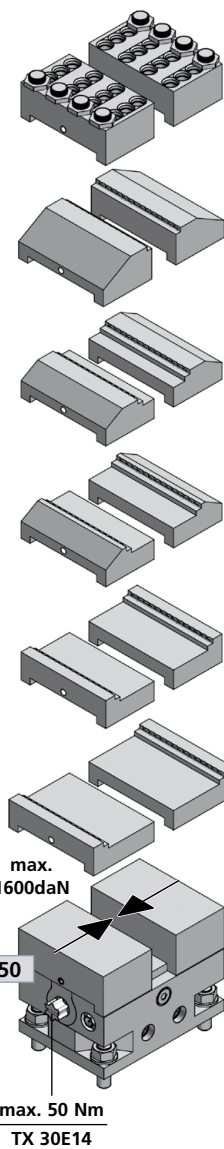
kg	~82
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kg	~28
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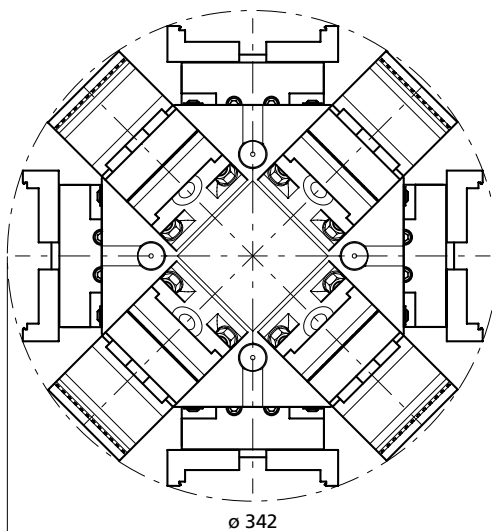
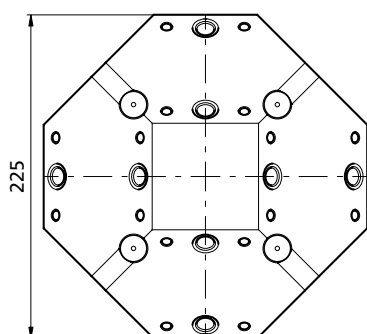
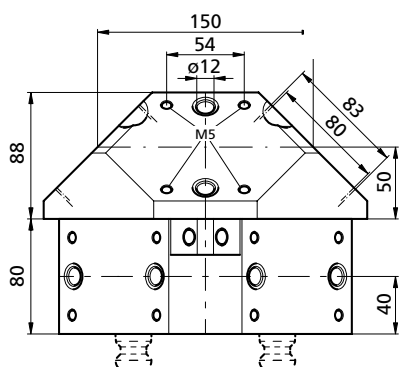
kg	~56
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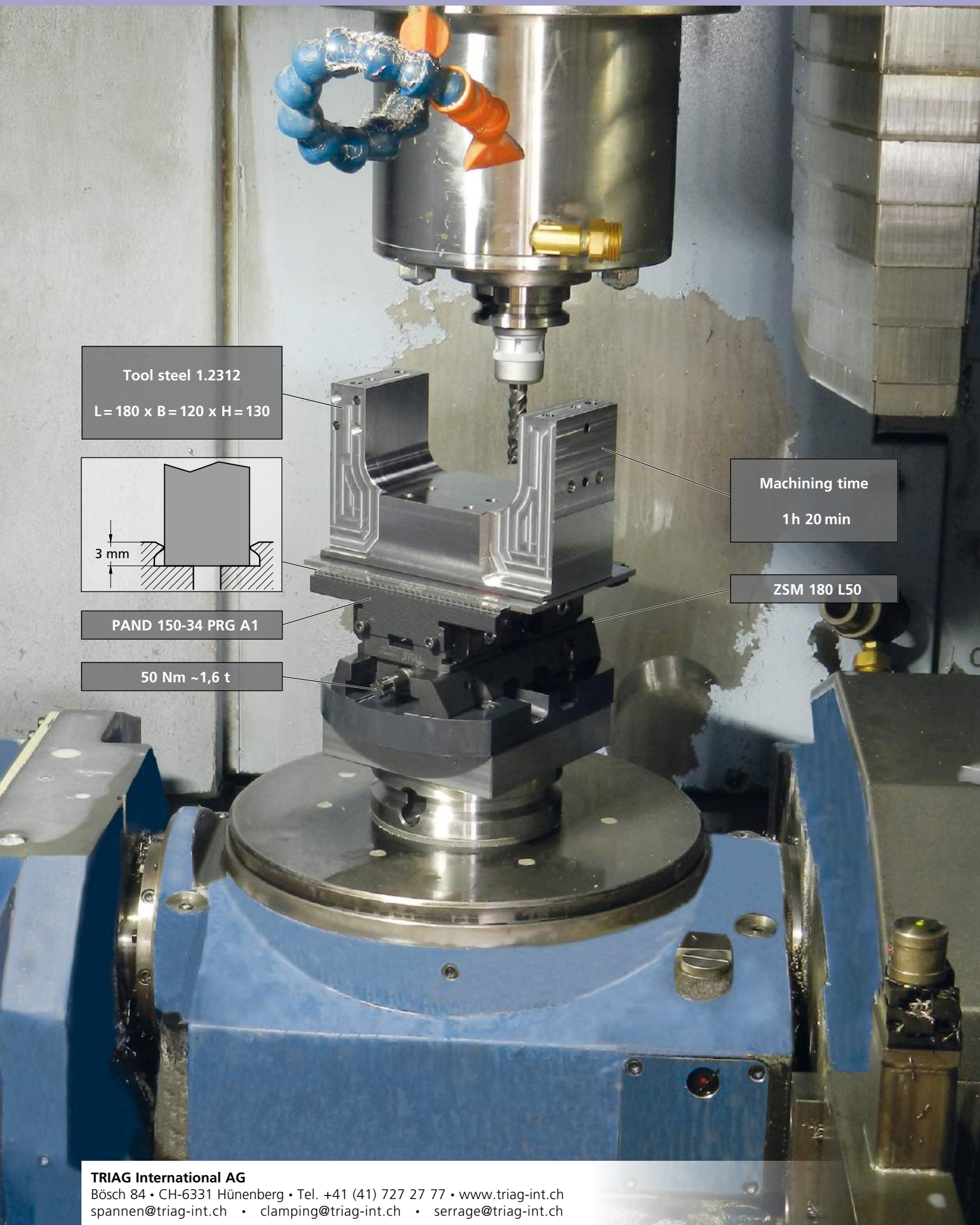
kg	~27
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MCZ 100 L50

max. 50 Nm
TX 30E14





Tool steel 1.2312

L = 180 x B = 120 x H = 130

3 mm

Machining time

1h 20 min

ZSM 180 L50

PAND 150-34 PRG A1

50 Nm ~1,6 t

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