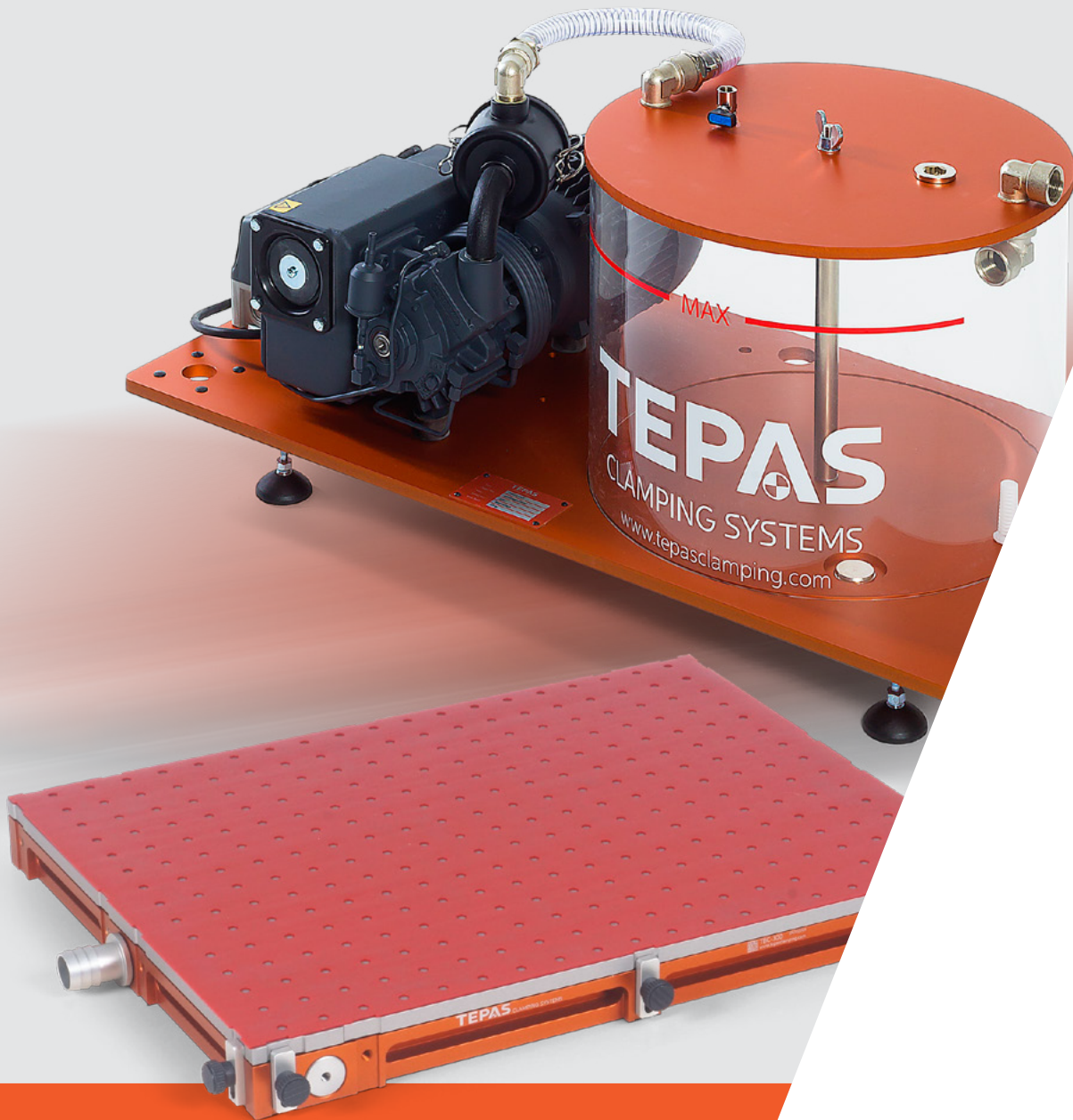


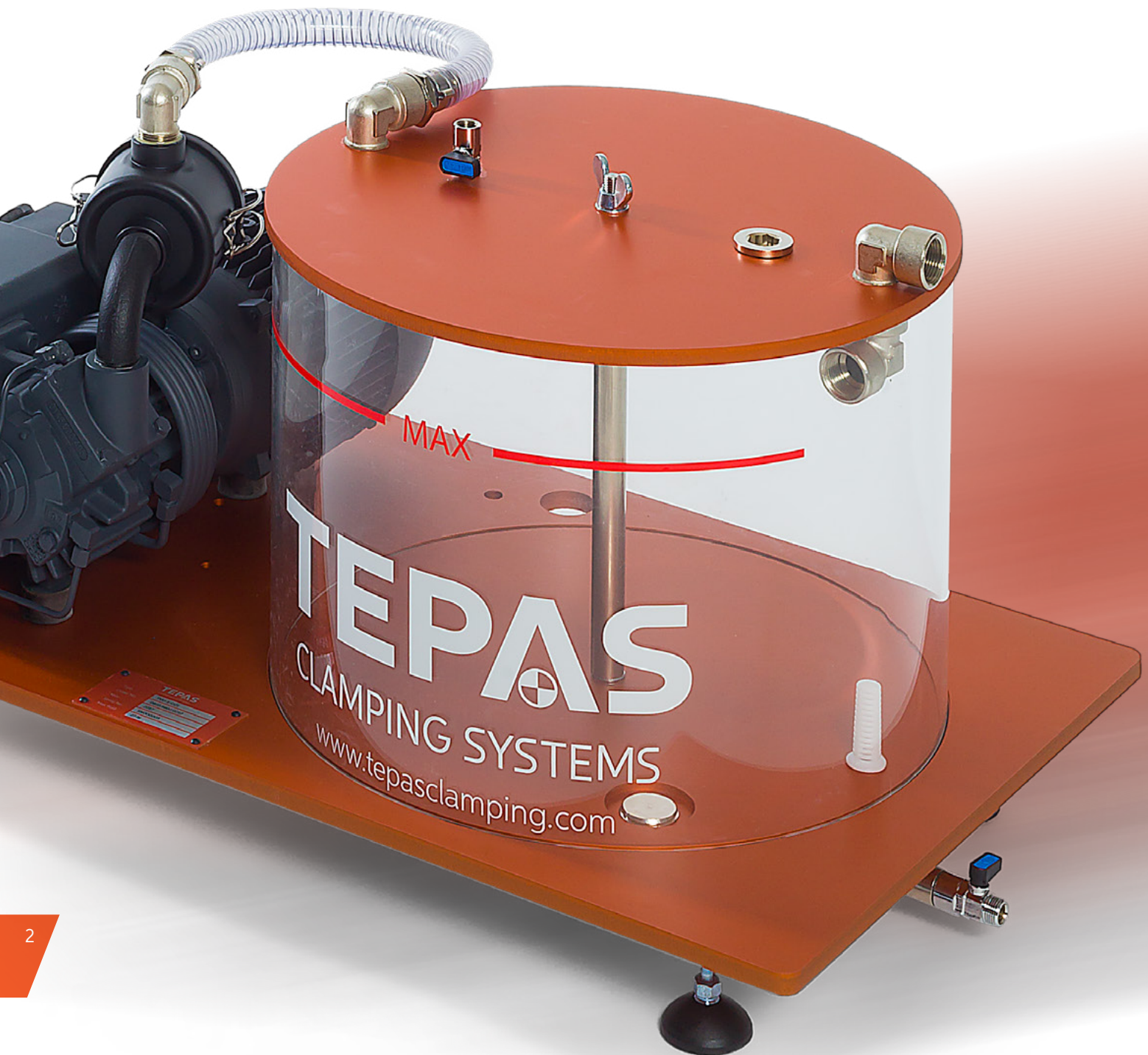
Vacuum Clamping



Catalogue 2021



TEPAS
CLAMPING SYSTEMS



Innovative products developed with a focus on creativity, with a desire to improve through people with specialist knowledge.

This is exactly what Tepas Clamping Systems is all about!

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THE BENEFITS OF VACUUM CLAMPING TECHNOLOGY

NO CLAMPING FORCES IN WORKPIECE

NO CLAMP DAMAGE

3 OR 5 SIDES FREELY ACCESSIBLE

FAST AND FLEXIBLE

NON-MAGNETIC

SUITABLE FOR ALMOST ALL MATERIALS

VIBRATION-FREE

**ALSO SUITABLE FOR THIN WORKPIECES
AND FILMS**

**FULL CUT-THROUGH OF WORKPIECES
POSSIBLE**

Suitable for:

Turning
Milling
Drilling
Tapping
Reaming
Engraving

Countersinking
Grinding
Polishing
Eroding
Inspecting
Measuring

Printing
Covering
Steel
Stainless steel
Titanium
Aluminium

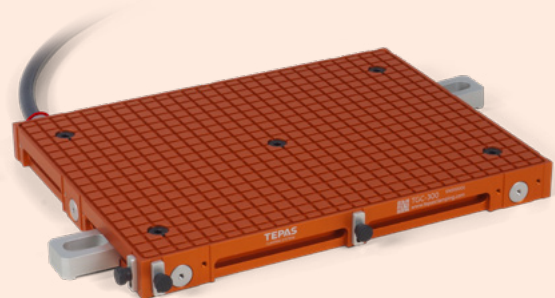
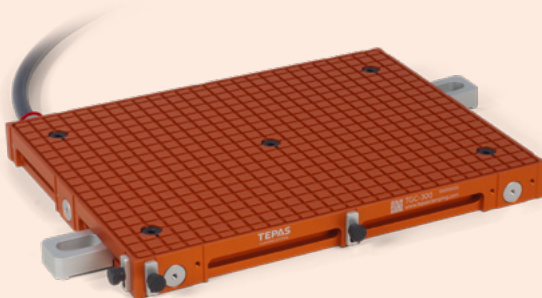
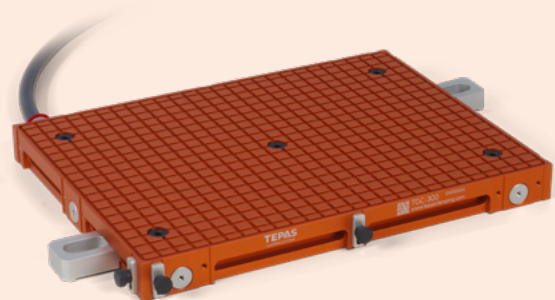
Non-ferrous metals
Plastic
Glass
Wood
Graphite
Ceramic

COMPLETE VACUUM CLAMPING SYSTEM

The vacuum clamping systems of Tepas Clamping Systems can easily be connected to one another. A fully functioning system consists of just 3 products

1. VACUUM PUMP
2. HOSE SET
3. VACUUM CHUCK





A more extensive system with several vacuum chucks can consist of:

1. VACUUM PUMP UNIT
2. HOSE SET
3. DISTRIBUTION BLOCK
4. MULTIPLE VACUUM CHUCKS

SELECTION TABLE VACUUM CHUCKS

	Only surface machining.		Simple outside contour		
		without mat	with mat	without mat	with mat
TGC GridChuck					
		TGC	TGC + TVM		TGC + TVM
TPC PerfoChuck					
			TPC + TPM		TPC + TPM
TUC µmChuck		"Machining without fluids"!			
			TUC + TPM		TUC + TPM
TEC EcoChuck					
		TEC	TEC + TVM		TEC + TVM
TBC+TCP BaseChuck with CustomPlate					
		TBC/TCP	TBC/TCP + TVM	TBC/TCP	TBC/TCP + TVM
TBC+TGP BaseChuck with GridPlate					
		TBC/TGP	TBC/TGP + TVM	TBC/TGP	TBC/TGP + TVM
TBC+TPP BaseChuck with PerfoPlate					
			TBC/TPP + TPM		TBC/TPP + TPM
TBC+TUP BaseChuck with µmPlate		"Machining without fluids"!			
			TBC/TUP + TPM		TBC/TUP + TPM

Complex outside contour

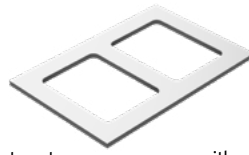
with cut-through

Film



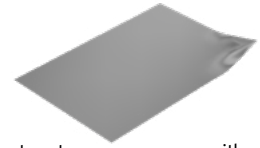
without mat

with mat



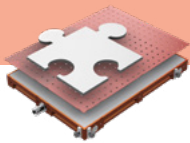
without mat

with mat

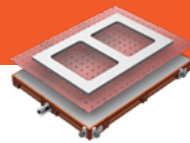


without mat

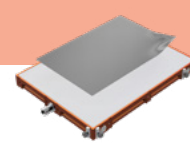
with mat



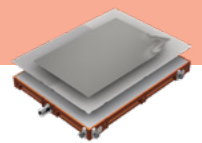
TPC + TPM



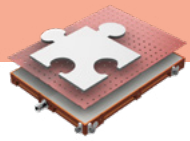
TPC + TPM



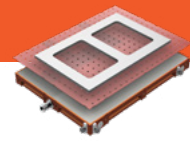
TPC



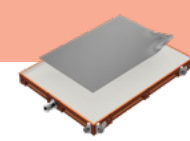
TPC + TAM



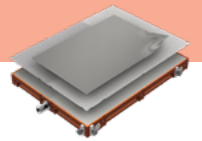
TUC + TPM



TUC + TPM



TUC



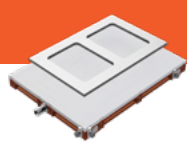
TUC + TAM



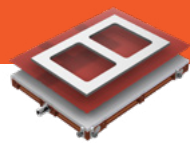
TBC/TCP



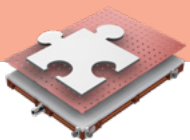
TBC/TCP + TVM



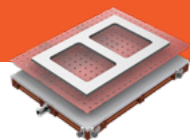
TBC/TCP



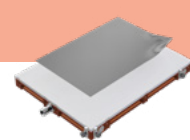
TBC/TCP + TVM



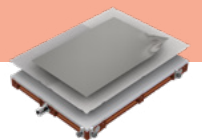
TBC/TPP + TPM



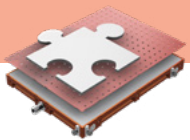
TBC/TPP + TPM



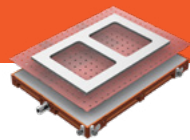
TBC/TPP



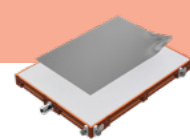
TBC/TPP + TAM



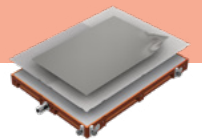
TBC/TUP + TPM



TBC/TUP + TPM



TBC/TUP

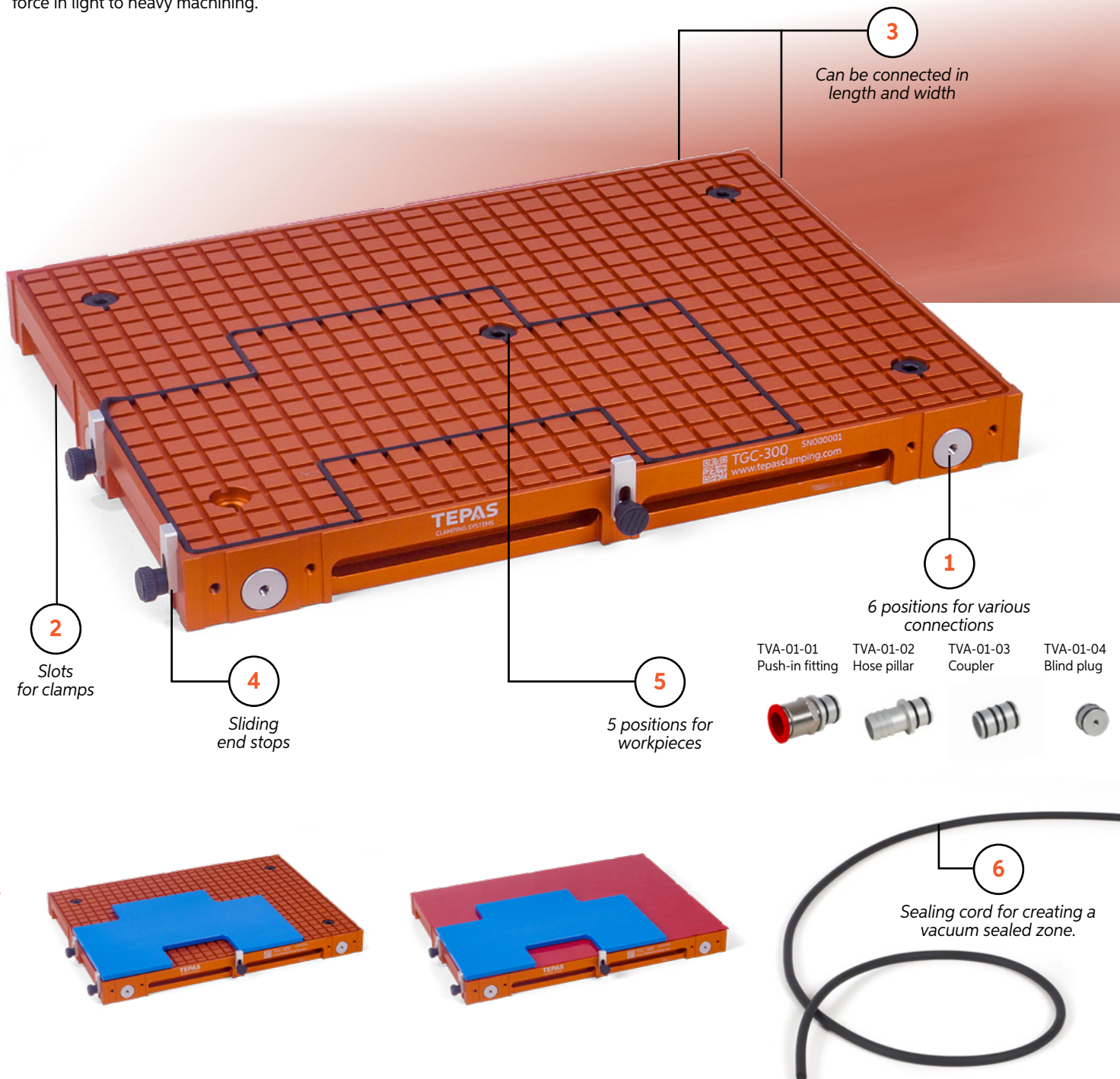


TBC/TUP + TAM

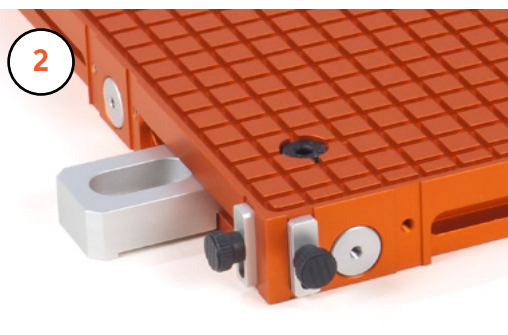
GRIDCHUCK VACUUM CLAMPING CHUCK WITH GRID

The vacuum chuck with the highest clamping force!

For rectangular and simple shaped workpieces. For the highest clamping force in light to heavy machining.



10



How it works

The sealing cord creates a vacuum sealed zone allowing clamping without vacuum leakage and allowing the highest clamping force to be achieved.

The benefits

Leak-free clamping ensures the highest possible clamping force. Suitable for both light and heavy machining. The sealing cord seals unevenness, including rough workpiece surfaces, ensuring reliable clamping.

Clamping and positioning

Can be used with almost all zero point clamping systems. With sliding end stops for precise positioning of workpieces. With longitudinal slots for direct mounting on the machine table with clamps.

Modular construction

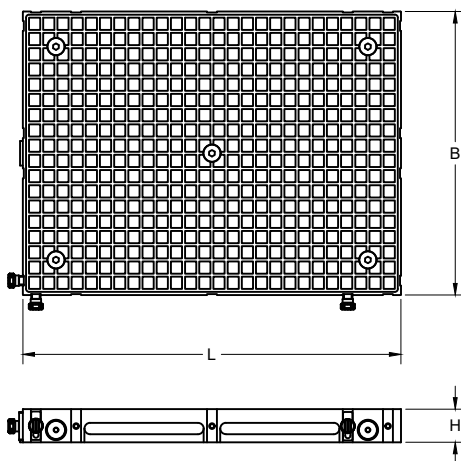
These vacuum chucks can be mounted together to increase the vacuum sealed zone without extra hoses. The vacuum is fed through with couplers so that only one hose connection is required.

TEPAS

CLAMPING SYSTEMS

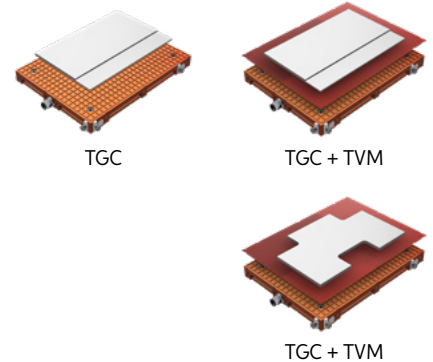
DRILLING MILLING GRINDING ENGRAVING

Dimensions



Article no.	Model	L mm	B mm	H mm	Grid mm	Pack.
6001.0300	TGC-300	400	300	35	16	1
6001.0400	TGC-400	600	400	35	16	1

Field of application



Included

- 1 piece **TVA-01-01** Hose pillar with Push-In fitting for ø11/16 vacuum PU hose
- 5 pieces **TVA-01-04** Blind plugs
- 3 pieces **TVA-01-05** End stops
- 2 pieces **TVA-01-06** Aluminium clamps (4 pieces with T'GC-400)
- 4 pieces **TVA-01-08** Control knob for end stop
- 5 pieces **TVA-01-09** Plug for clamping surface
- 10m **TVA-10-35** Sealing cord ø3.5mm
- 2m **TVA-20-2** Vacuum PU hose, 11/16mm

Accessories

- TVA-01-01** Push-in fitting
- TVA-01-02** Hose pillar
- TVA-01-03** Coupler
- TVA-01-04** Blind plug
- TVA-01-05** End stop
- TVA-01-06** Clamp
- TVA-01-07** Clamp element
- TVA-01-08** Control knob
- TVA-01-09** Plug
- TVA-01-10** Clamp



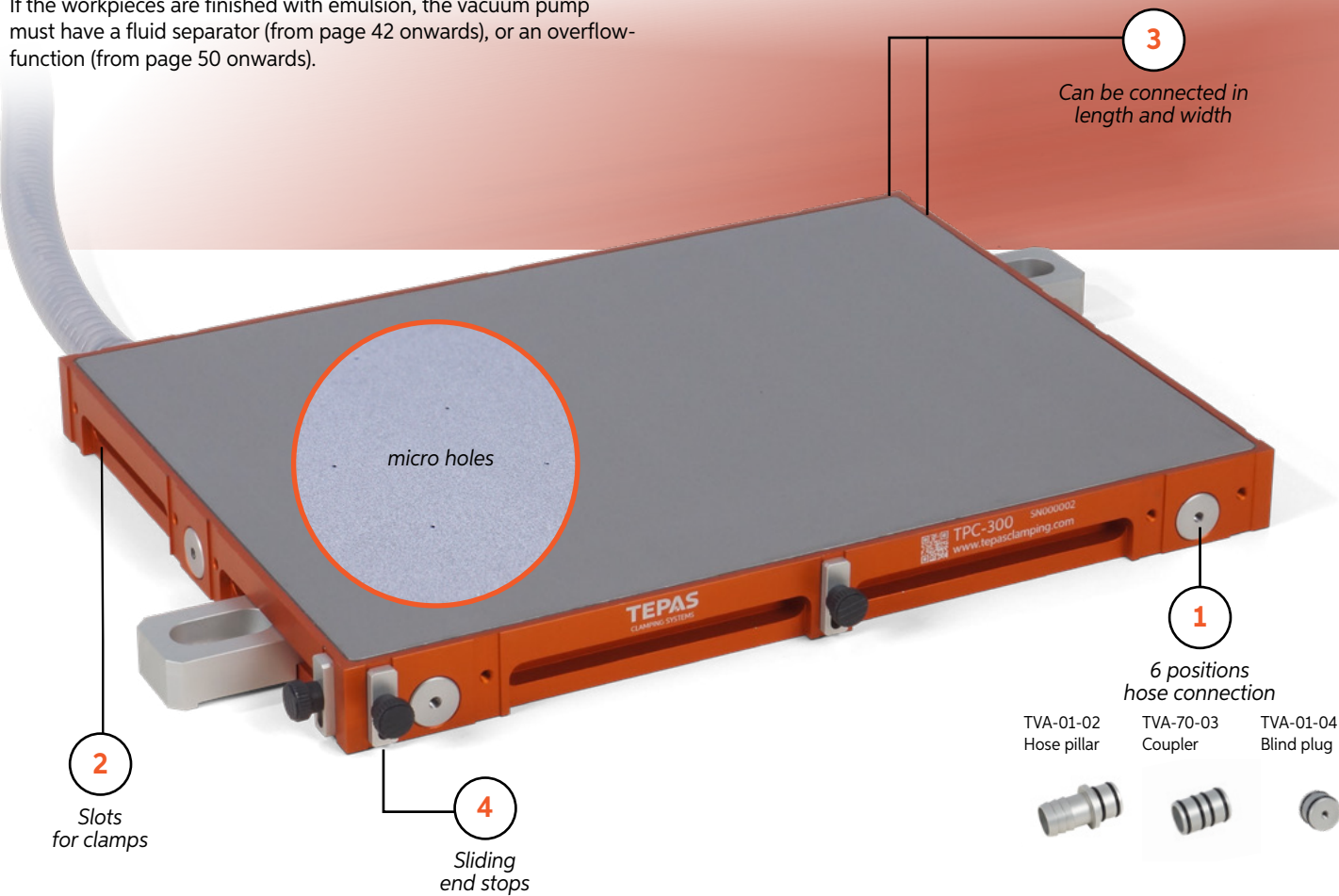
PERFOCHUCK VACUUM CLAMPING CHUCK WITH MICRO HOLES

The flexible vacuum chuck with high clamping force!

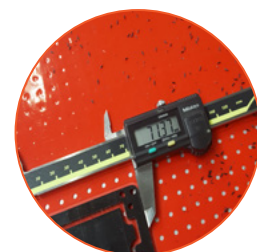
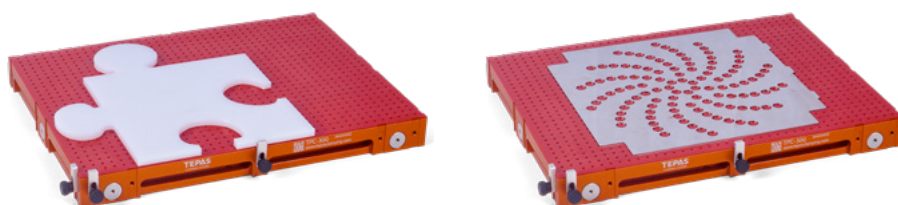
For rectangular and simple and complex shaped workpieces. For flexible clamping with average clamping force.

Work with emulsion

If the workpieces are finished with emulsion, the vacuum pump must have a fluid separator (from page 42 onwards), or an overflow-function (from page 50 onwards).

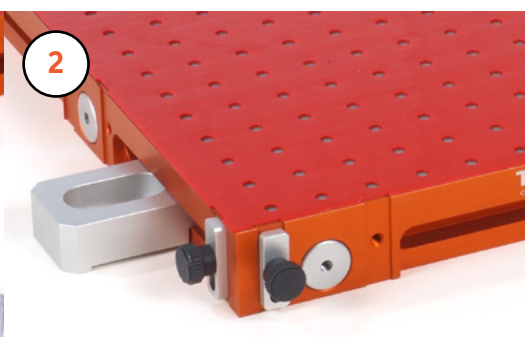


12



Practical example of cut-through.

70x40mm plastic workpiece fully cut through.



How it works

These vacuum chucks can only be used with the Tepas VacuMat or PerfoMat mats. Micro holes have been made in the clamping surface of these vacuum chucks. The very small micro holes limit the leakage of the vacuum with smaller workpieces or when workpieces are cut through. The Tepas PerfoMat mats have larger holes that enlarge the vacuum sealed zone.

The benefits

Limited vacuum leakage meaning a high clamping force can be achieved. Suitable for both light and heavy machining. Cutting through is possible without the vacuum chuck being damaged, because VacuMats or PerfoMats are used.

Clamping and positioning

Can be used with almost all zero point clamping systems. With sliding end stops for precise positioning of workpieces. With longitudinal slots for direct mounting on the machine table with clamps.

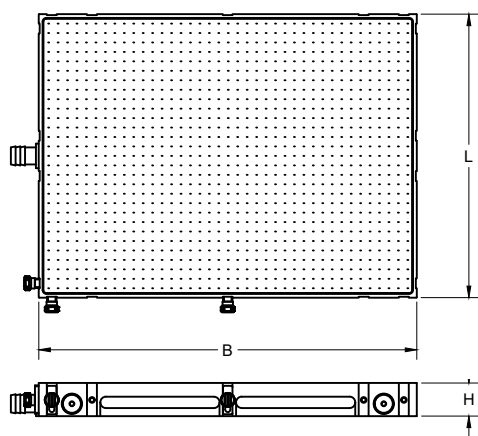
Modular construction

These vacuum chucks can be mounted together to increase the vacuum sealed zone without extra hoses. The vacuum is fed through with couplers so that only one hose connection is required.

TEPAS
CLAMPING SYSTEMS

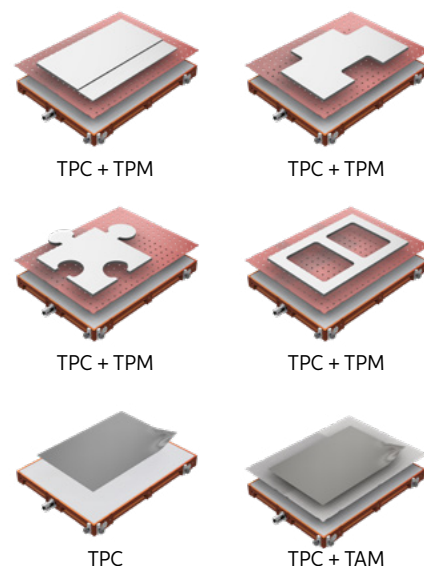
**DRILLING
MILLING
GRINDING
ENGRAVING**

Dimensions



Article no.	Model	L mm	B mm	H mm	Pack.
6002.0300	TPC-300	400	300	35	1
6002.0400	TPC-400	600	400	35	1

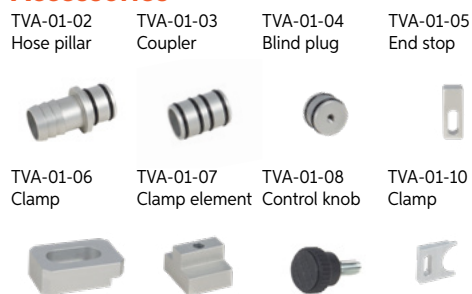
Field of application



Included

- 1 piece **TVA-01-02** Hose pillar ø19/25 vacuum spiral wire hose
- 5 pieces **TVA-01-04** Blind plugs
- 3 pieces **TVA-01-05** End stops
- 2 pieces **TVA-01-06** Aluminium clamps (4 pieces with TPC-400)
- 4 pieces **TVA-01-08** Control knob for end stop
- 2m **TVA-21-4** Vacuum spiral hose, 19/25mm

Accessories



4

5

With PerfoMat S

6

Included
Accessories

µmCHUCK VACUUM CHUCKS WITH MICROPOROUS CLAMPING SURFACE

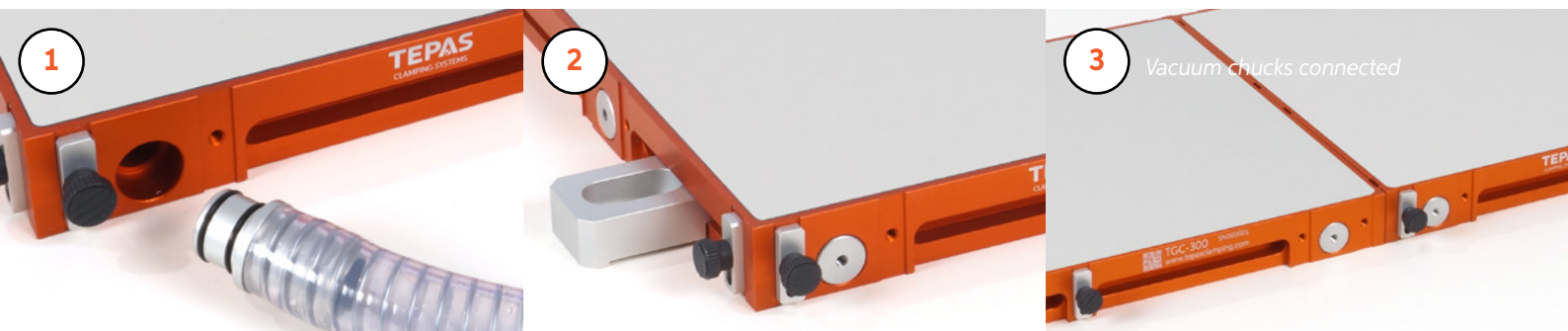
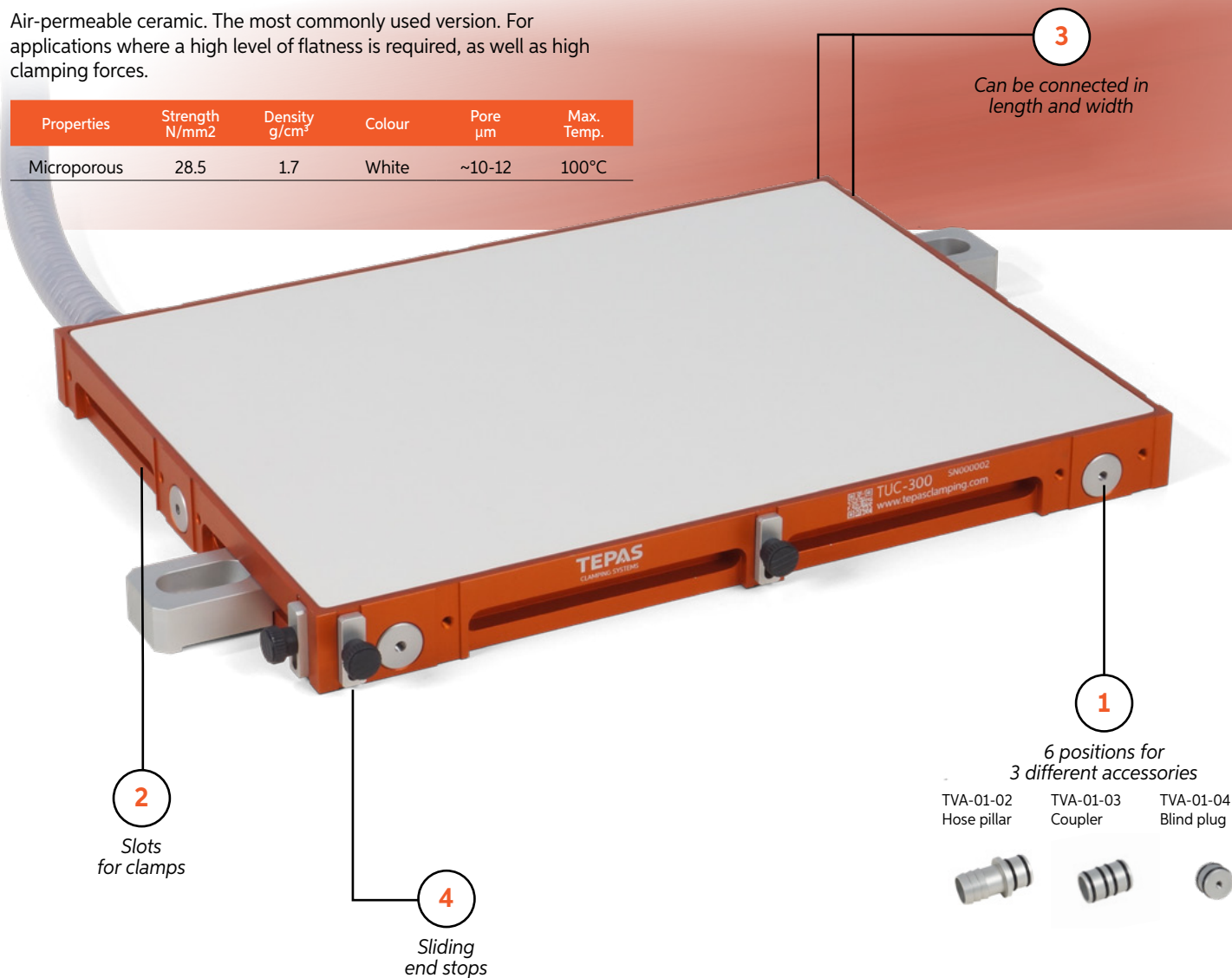
The problem-solving vacuum chuck!

If vacuum clamping with the GridChuck or PerfoChuck is not possible, this vacuum chuck with microporous clamping surface will often provide a solution.

CE100White

Air-permeable ceramic. The most commonly used version. For applications where a high level of flatness is required, as well as high clamping forces.

Properties	Strength N/mm ²	Density g/cm ³	Colour	Pore µm	Max. Temp.
Microporous	28.5	1.7	White	~10-12	100°C



How it works

The air-permeable clamping surface reduces high vacuum leakages, whereby the vacuum pump is able to create a vacuum.

The benefits

Very high flatness of the clamping surface in μm range is possible. No deformation of the workpiece as there are no grooves or holes in the clamping surface.

With the Tepas VacuMat and PerfoMat, a very wide range of applications is possible.

Microporous clamping surfaces are water-resistant, however coolant can seal the surface meaning there is no longer a vacuum. Therefore, do not use a coolant emulsion but machine dry.

Clamping and positioning

Can be used with almost all zero point clamping systems. With sliding end stops for precise positioning of workpieces. With longitudinal slots for direct mounting on the machine table with clamps.

Modular construction

These vacuum chucks can be mounted together to increase the vacuum sealed zone without extra hoses. The vacuum is fed through with couplers so that only one hose connection is required.

Workpieces

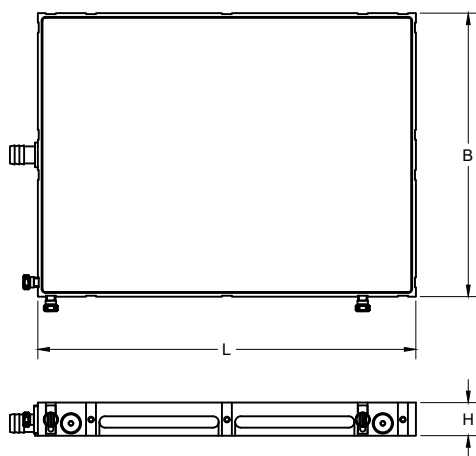
Film, paper, rubber, boards, plates and strips.

TEPAS

CLAMPING SYSTEMS

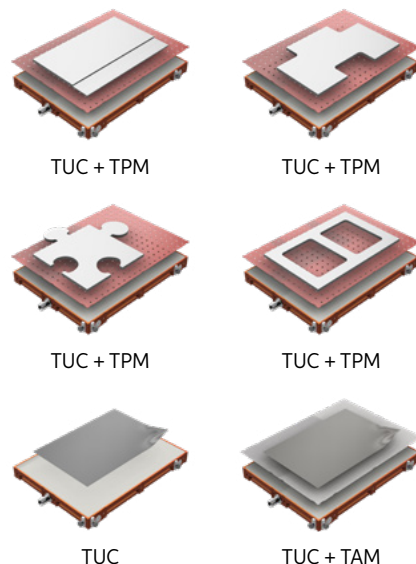
DRILLING MILLING ENGRAVING MEASURING INSPECTING

Dimensions



Article no.	Model	L mm	B mm	H mm	Pack.
6003.0300	TUC-300	400	300	35	1
6003.0400	TUC-400	600	400	35	1

Field of application



Included

- 1 piece **TVA-01-02** Hose pillar $\varnothing 19/25$ vacuum spiral wire hose
- 5 pieces **TVA-01-04** Blind plugs
- 3 pieces **TVA-01-05** End stops
- 2 pieces **TVA-01-06** Aluminium clamps (4 pieces with TPC-400)
- 4 pieces **TVA-01-08** Control knob for end stop
- 2m **TVA-21-4** Vacuumspiral hose, 19/25mm

Accessories



4

5

With PerfoMat S

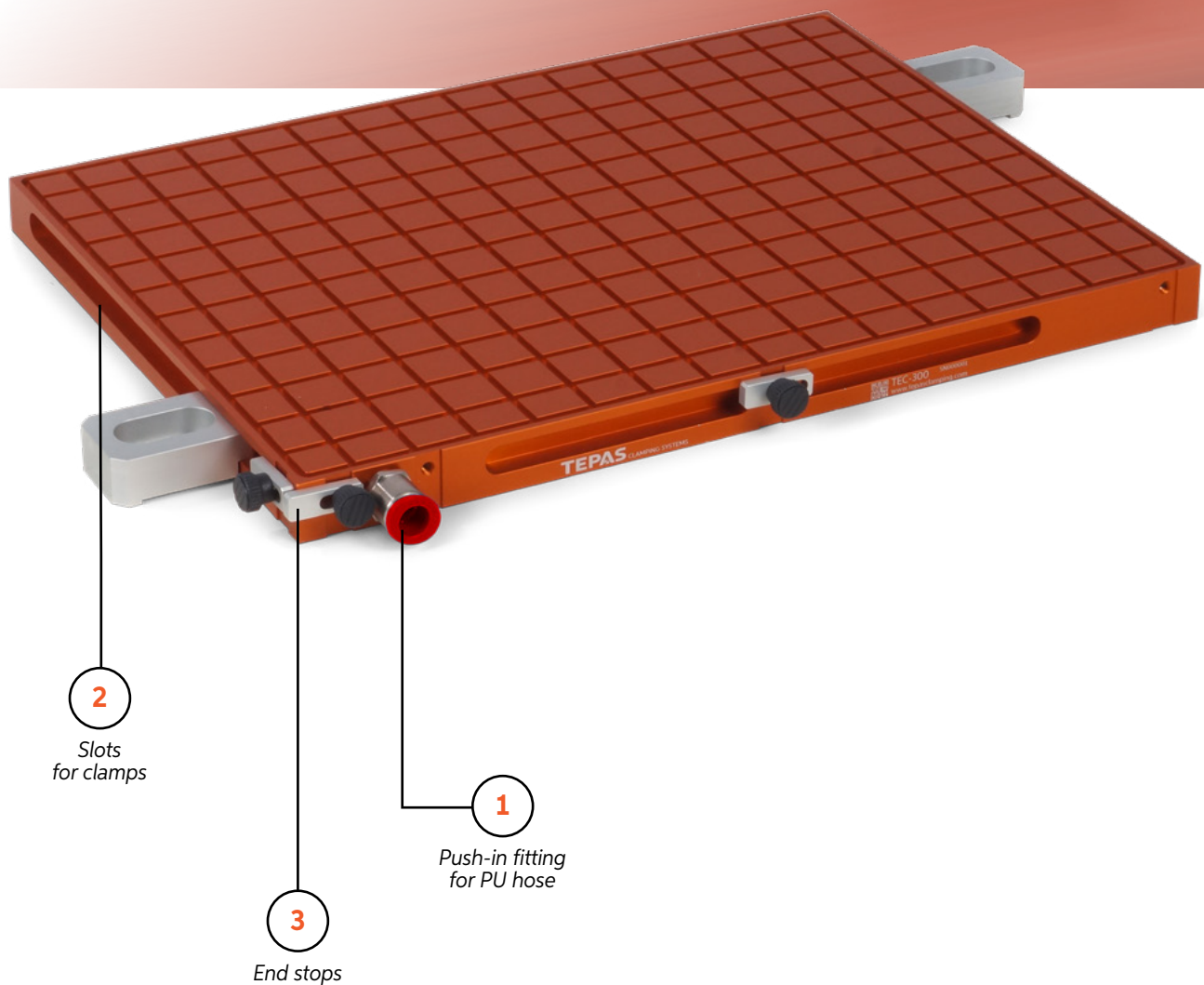
6

Included Accessories

ECOCHUCK VACUUM CHUCKS

The most economical vacuum chuck!

If you are just starting out with vacuum clamping or if you would like the most economical vacuum chuck, the EcoChuck would be the right choice for you.



16



How it works

The sealing cord creates a vacuum sealed zone allowing clamping without vacuum leakage and allowing the highest clamping force to be achieved.

The benefits

The highest clamping force is possible due to leak-free clamping.

Suitable for both light and heavy machining.

The sealing cord seals unevenness, including rough workpiece surfaces, ensuring reliable clamping.

Simple extra-low construction.

Modular construction

Can be used with almost all zero point clamping systems.

With sliding end stops for precise positioning of workpieces.

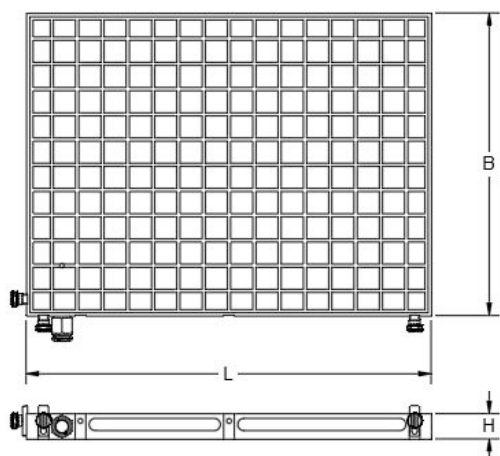
With longitudinal slots for direct mounting on the machine table with clamps.

TEPAS

CLAMPING SYSTEMS

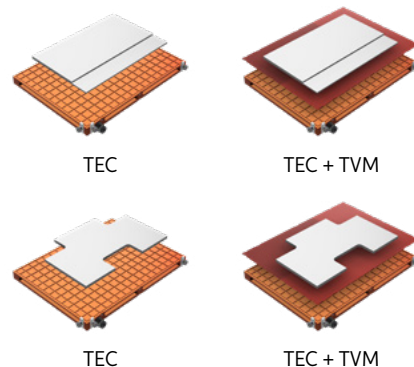
DRILLING
MILLING
ENGRAVING
MEASURING
INSPECTING

Dimensions



Article no.	Model	L mm	B mm	H mm	Grid mm	Pack.
6010.0300	TEC-300	400	300	25	25	1

Field of application



Included

- 1 piece **TVA-01-01** Push-in coupling with Push-In fitting for $\varnothing 12$ mm PU hose TVA-20-1
- 3 pieces **TVA-01-05** End stops
- 2 pieces **TVA-01-06** Aluminium clamps (4 pieces with TEC-400)
- 3 pieces **TVA-01-08** Control knob for end stop
- 2m **TVA-20-1** $\varnothing 12$ mm PU hose

Accessories

- TVA-01-05 End stop
- TVA-01-06 Clamp
- TVA-01-08 Control knob



4

Sealing cord can be cut to size

5

Vacuum area itself is customisable.

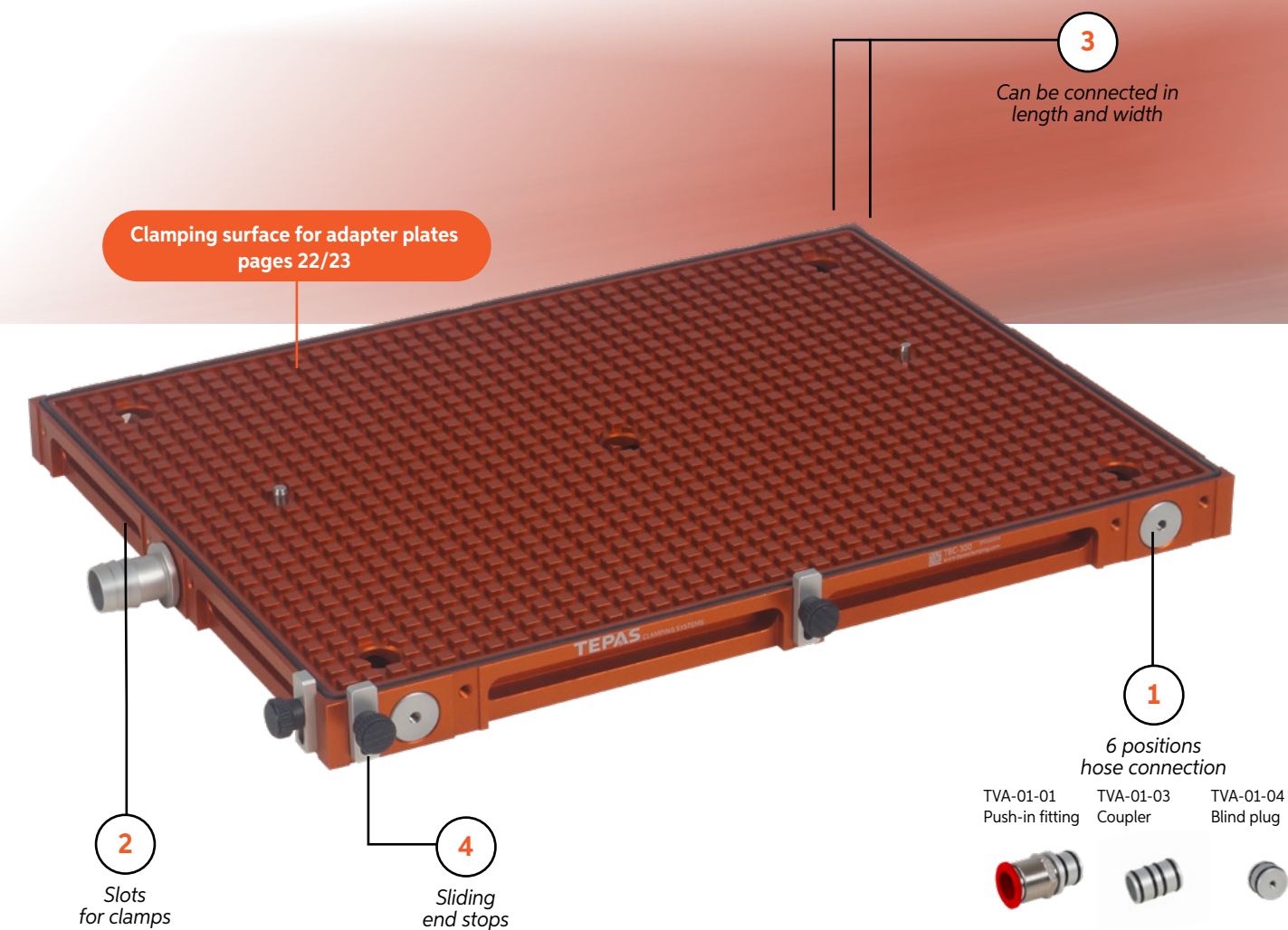
6

Included Accessories

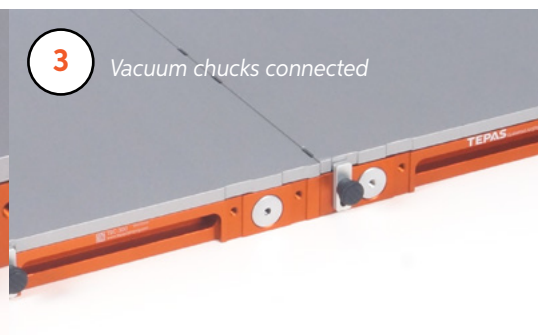
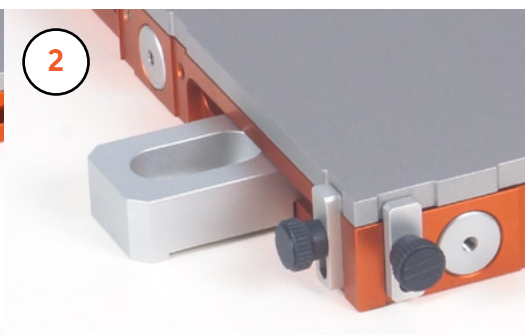
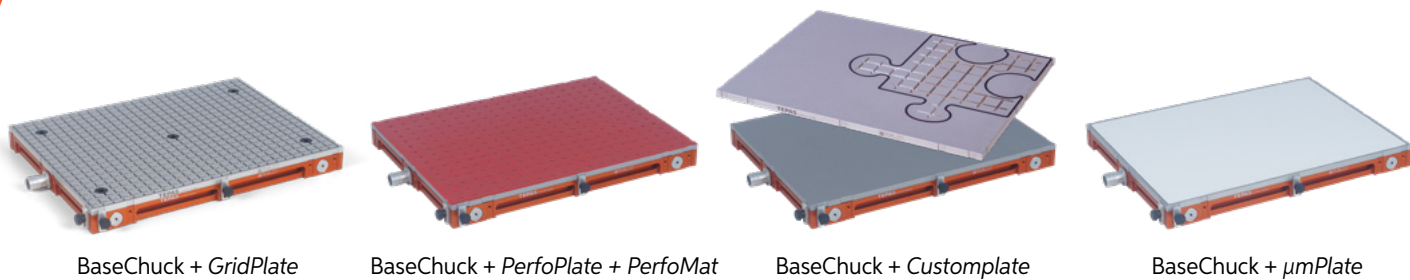
BASECHUCK MODULAR VACUUM CHUCK

All vacuum clamping options in one system

The BaseChuck creates a base on which adapter plates are placed, which enable the correct vacuum clamping method to be used for every workpiece.



18



How it works

Adapter plates are placed on the BaseChuck. Every adapter plate has its own vacuum clamping method.

Every type of vacuum chuck is also available as an adapter plate:

- GridPlate for the highest clamping force.
- PerfoPlate with micro holes for the highest level of flexibility.
- µmPlate as problem-solver for the highest level of flatness.
- CustomPlates for workpiece-specific clamping.

The benefits

The correct vacuum clamping method is available for every workpiece shape and every type of machining.

- Cheaper to buy than investing in multiple vacuum chucks.
- BaseChuck can remain clamped, so less set-up time
- Adapter plates are positioned precisely.

Clamping and positioning

Can be used with almost all zero point clamping systems. With sliding end stops for precise positioning of workpieces. With longitudinal slots for direct mounting on the machine table with clamps.

Modular construction

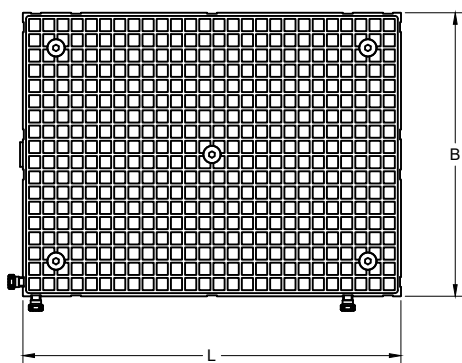
These vacuum chucks can be mounted together to increase the vacuum sealed zone without extra hoses. The vacuum is fed through with couplers so that only one hose connection is required.

TEPAS

CLAMPING SYSTEMS

DRILLING
MILLING
ENGRAVING
MEASURING
INSPECTING

Dimensions

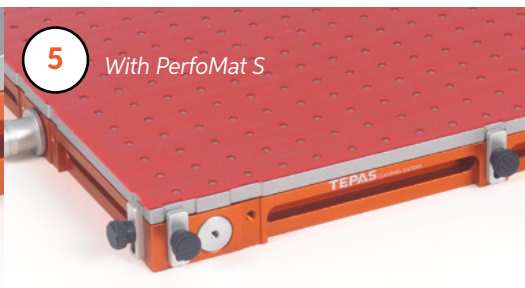
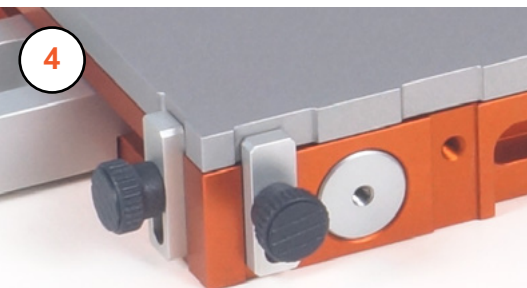


Article no.	Model	L mm	B mm	H mm	Pack.
6201.0200	TBC-200	300	200	35	1
6201.0300	TBC-300	400	300	35	1
6201.0400	TBC-400	600	400	35	1
6201.0500	TBC-500	500	500	35	1

Included

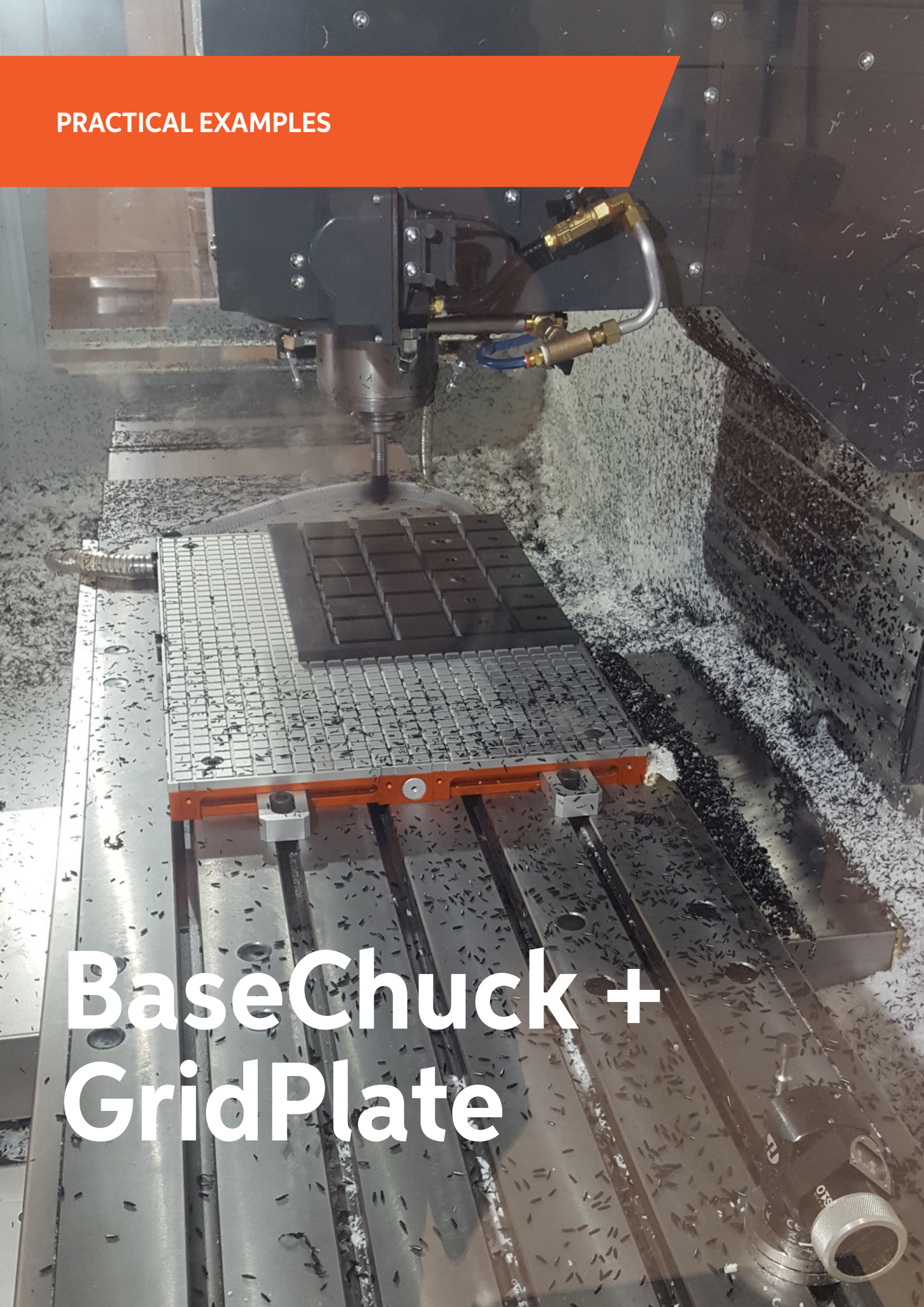
- | | | |
|----------|------------------|--|
| 1 piece | TVA-01-02 | Hose pillar ø19/25 vacuum spiral wire hose |
| 5 pieces | TVA-01-04 | Blind plugs |
| 3 pieces | TVA-01-05 | End stops |
| 2 pieces | TVA-01-06 | Aluminium clamps (4 pieces with TPC-400) |
| 4 pieces | TVA-01-08 | Control knob for end stop |
| 2m | TVA-21-4 | Vacuum spiral hose, 19/25mm |

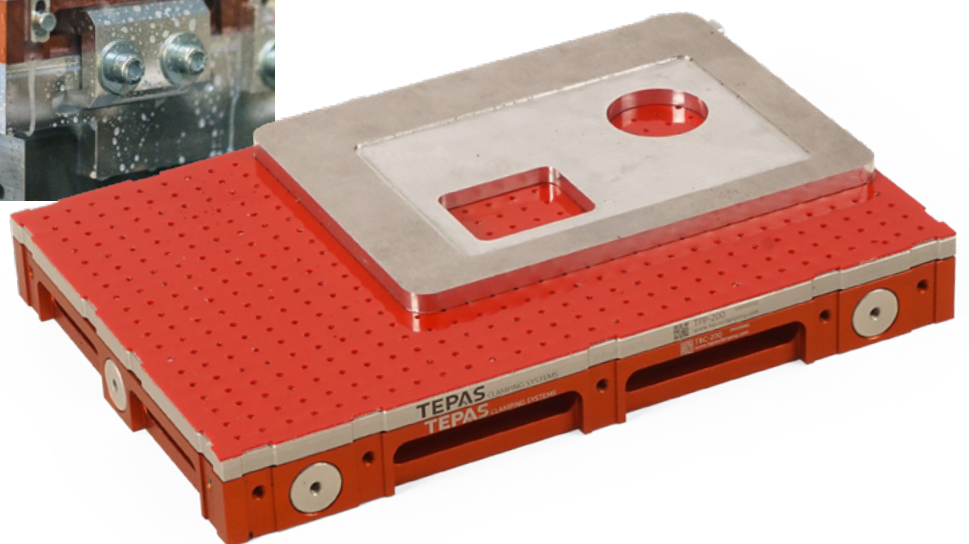
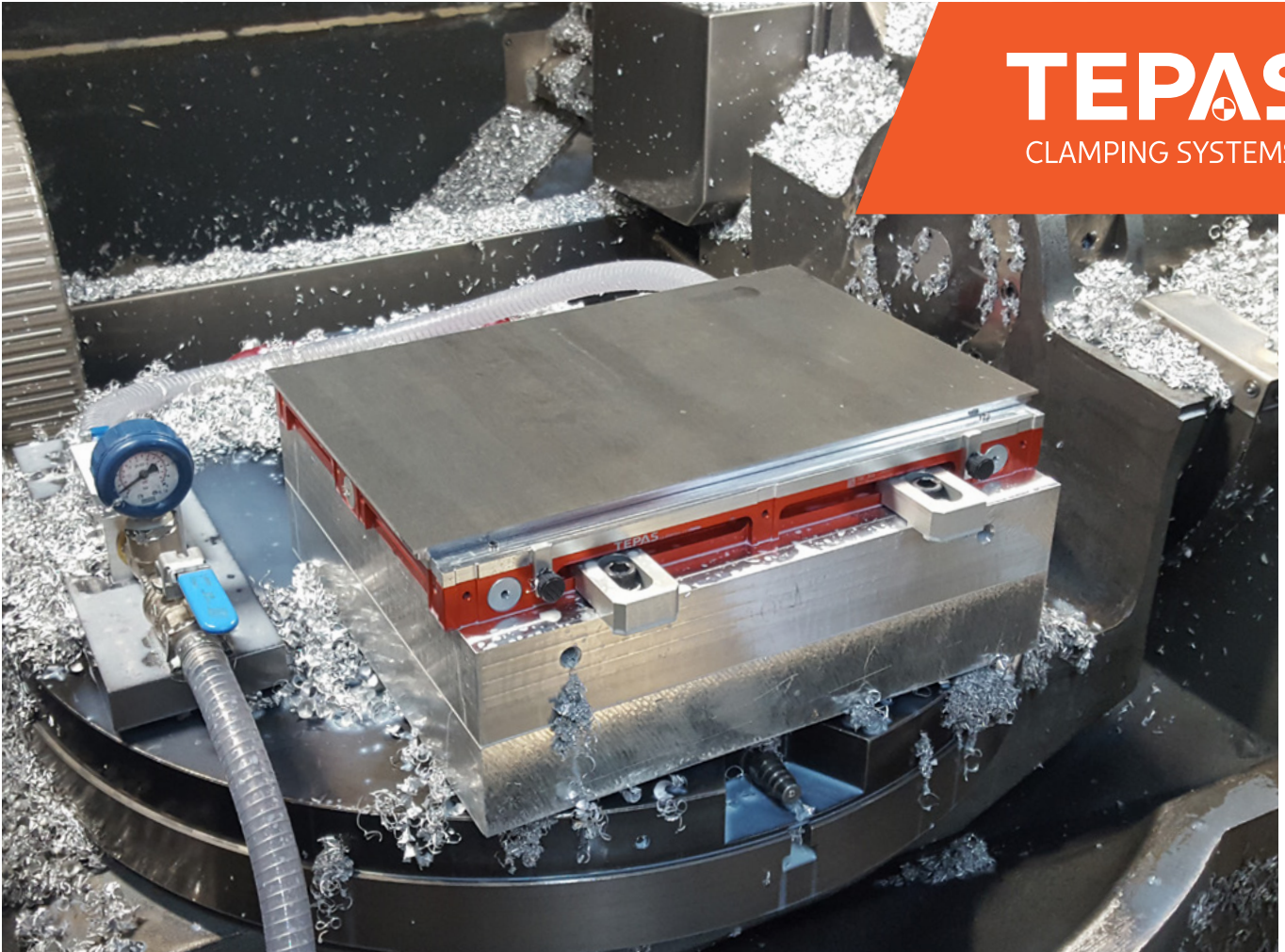
Accessories



PRACTICAL EXAMPLES

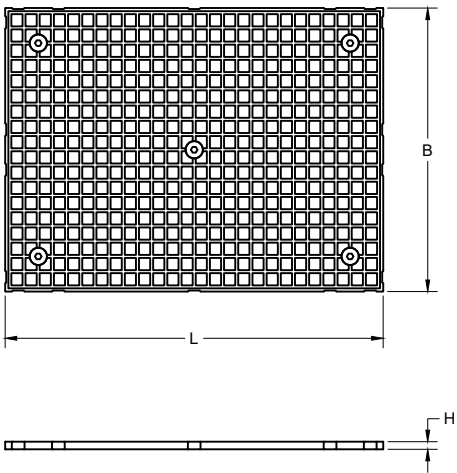
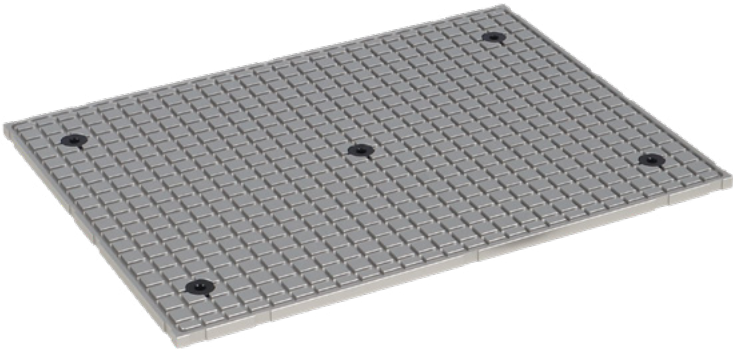
BaseChuck + GridPlate





VACUUM ADAPTER PLATES

Available adapter plates

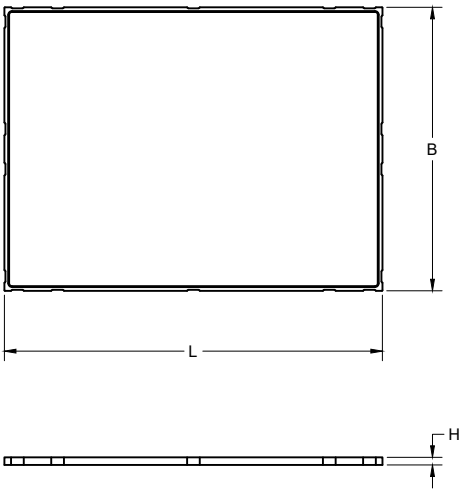
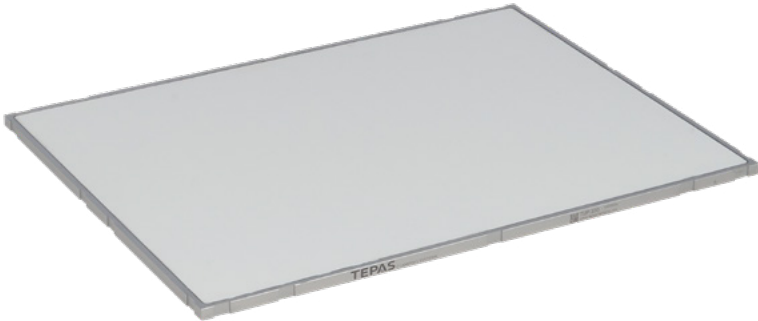


GridPlate with grid

Article no.	Model	L mm	B mm	H mm	Pack.
6221.0200	TGP-200	300	200	8	1
6221.0300	TGP-300	400	300	8	1
6221.0400	TGP-400	600	400	8	1
6221.0500	TGP-500	500	500	8	1

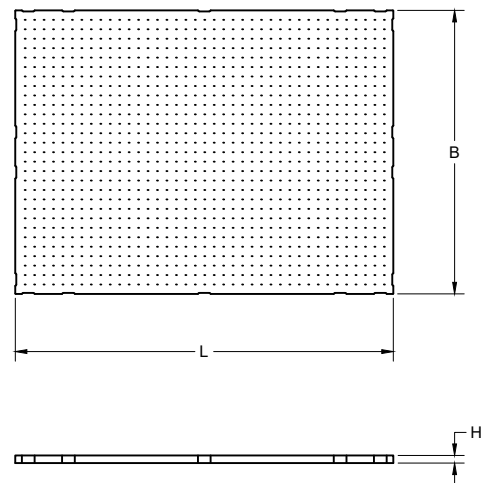
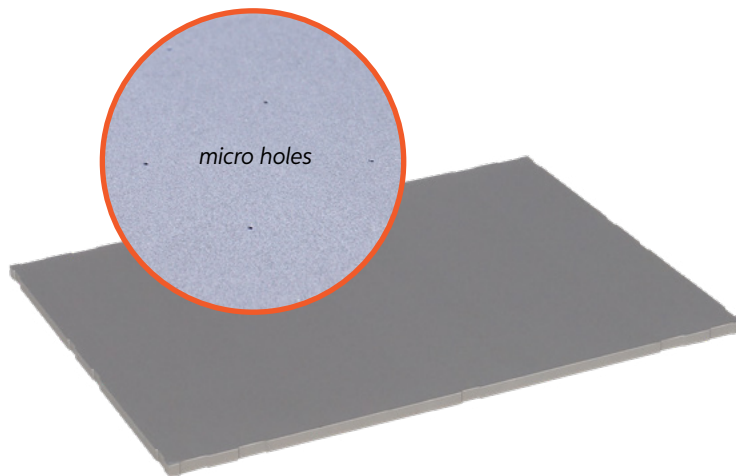
Included
 5 pieces **TVA-01-09** Plug for clamping surface
 10m **TVA-10-35** Sealing cord ø3.5mm

22



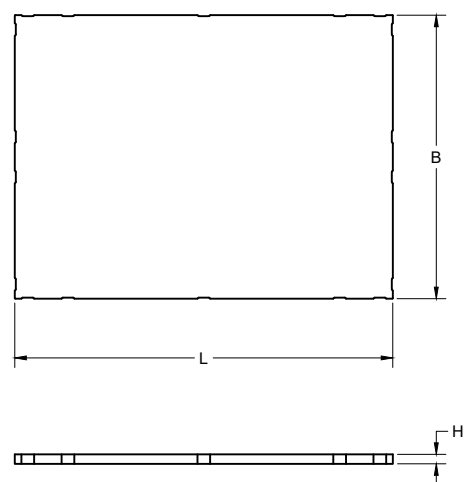
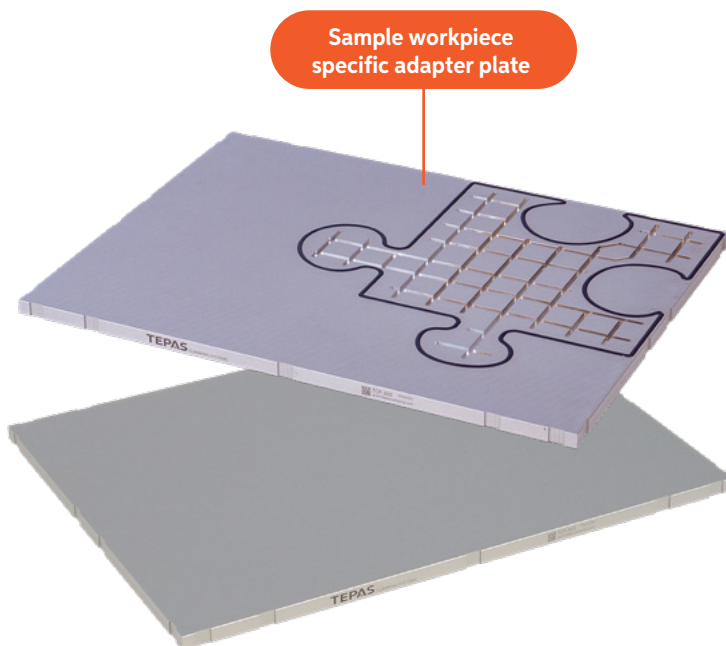
µmPlate, with microporous clamping surface

Article no.	Model	L mm	B mm	H mm	Pack.
6223.0200	TUP-200	300	200	8	1
6223.0300	TUP-300	400	300	8	1
6223.0400	TUP-400	600	400	8	1
6223.0500	TUP-500	500	500	8	1



PerfoPlate, with micro holes

Article no.	Model	L mm	B mm	H mm	Pack.
6222.0200	TPP-200	300	200	8	1
6222.0300	TPP-300	400	300	8	1
6222.0400	TPP-400	600	400	8	1
6222.0500	TPP-500	500	500	8	1



CustomPlates for workpiece-specific clamping.

Article no.	Model	L mm	B mm	H mm	Pack.
6224.0200	TCP-200	300	200	10	1
6224.0300	TCP-300	400	300	10	1
6224.0400	TCP-400	600	400	10	1
6224.0500	TCP-500	500	500	10	1

TEPAS VACUMAT

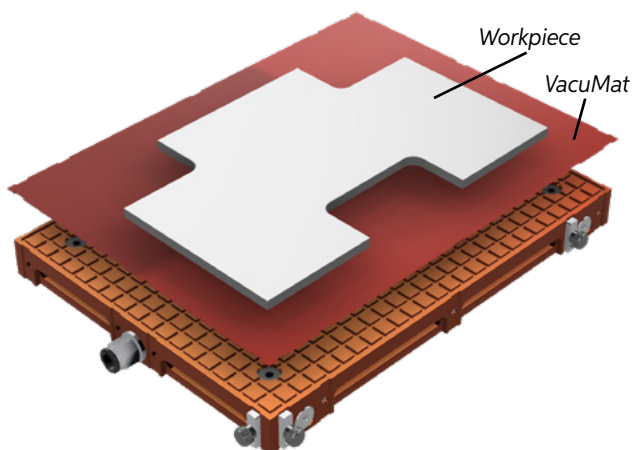
Extra clamping force and cutting through operations are possible!

The Tepas VacuMat mats provide extra resistance to slipping of the workpiece **without** glue **residues** etc., sticking to the workpieces. The Tepas VacuMat not only offers additional resistance to slipping, but also allows processing through the workpieces. For a vacuum table with a sealed cord, only outside the vacuum sealed zone. For a vacuum table with micro drilled holes or porous clamping surface, everywhere in the workpiece.

Use with TGC and TEC grid vacuum chucks

Machining of simple shapes.

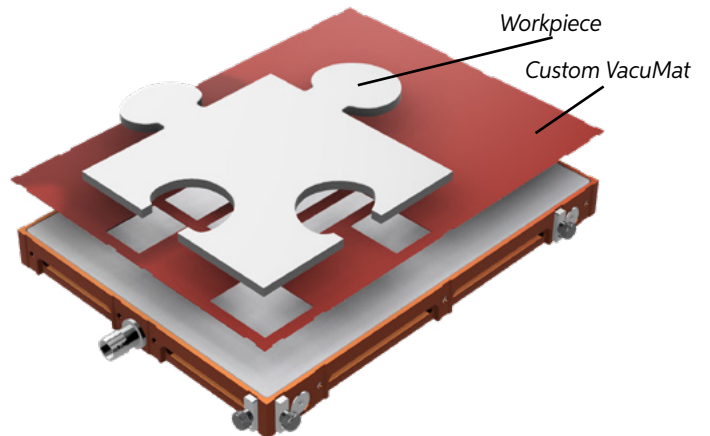
In simple patterns, the areas of cut-through can be separated from the vacuum sealed zone with the sealing cord.



GridChuck

Use with TPC and TUC vacuum chucks

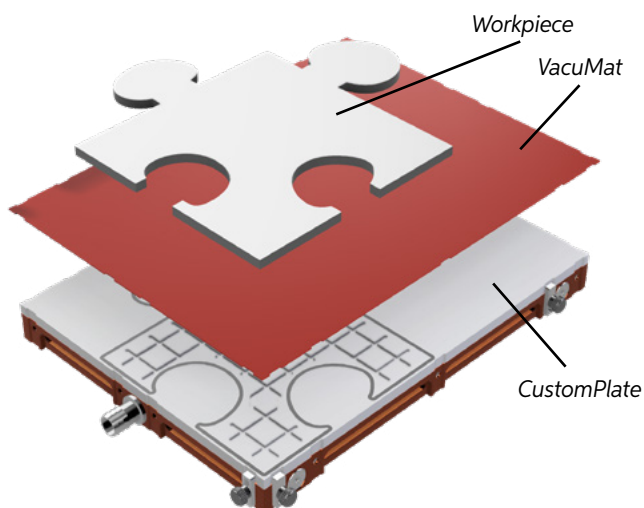
In the vacuum chucks with micro holes and the vacuum chucks with microporous clamping surface, even the vacuum sealed zone can be determined. By opening the mat where vacuum is required, you can decide exactly where there should and shouldn't be a vacuum.



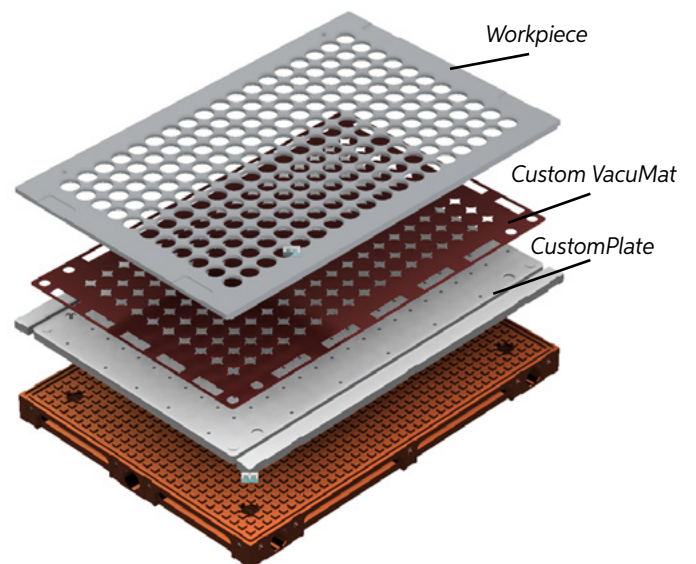
PerfoChuck

Machining of more complex shapes

In more complex shapes, a workpiece-specific adapter plate will offer a solution.



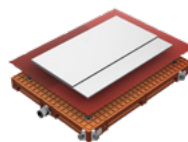
BaseChuck



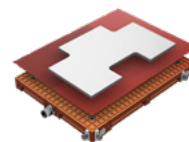
BaseChuck



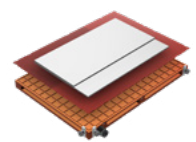
Field of application



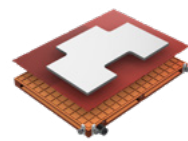
TGC + TVM



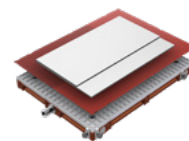
TGC + TVM



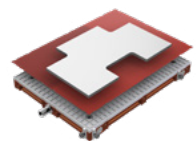
TEC + TVM



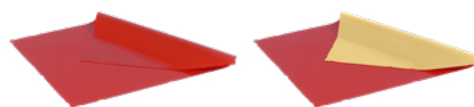
TEC + TVM



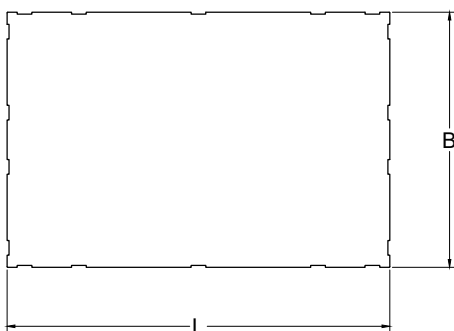
TBC/TGP + TVM



TBC/TGP + TVM



Dimensions



VACUMAT		VACUMAT S		DIMENSIONS			
Article no.	Model	Article no.	Model	L mm	B mm	H mm	Pack.
6400.0200	TVM-200	6401.0200	TVMS-200	300	200	1	1
6400.0300	TVM-300	6401.0300	TVMS-300	400	300	1	1
6400.0400	TVM-400	6401.0400	TVMS-400	600	400	1	1
6400.0500	TVM-500	6401.0500	TVMS-500	500	500	1	1



VACUMAT		DIMENSIONS			
Article no.	Model	L mm	B mm	H mm	Pack.
6400.0920	TVM-920	2000	400	1	1
6400.0990	TVM-990	9100	400	1	1
6400.0996	TVM-996	50000	600	1	1

TEPAS PERFOMAT

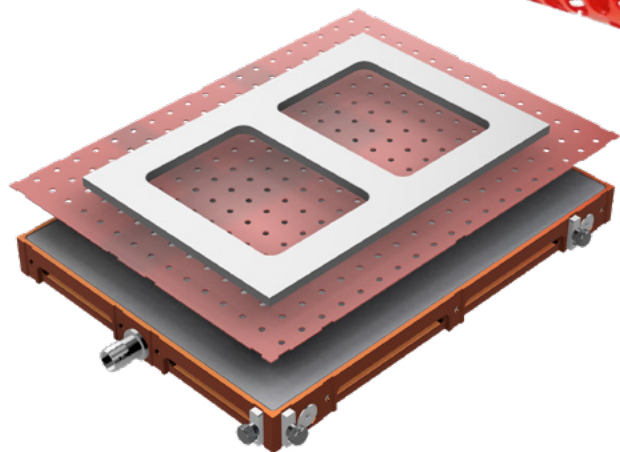
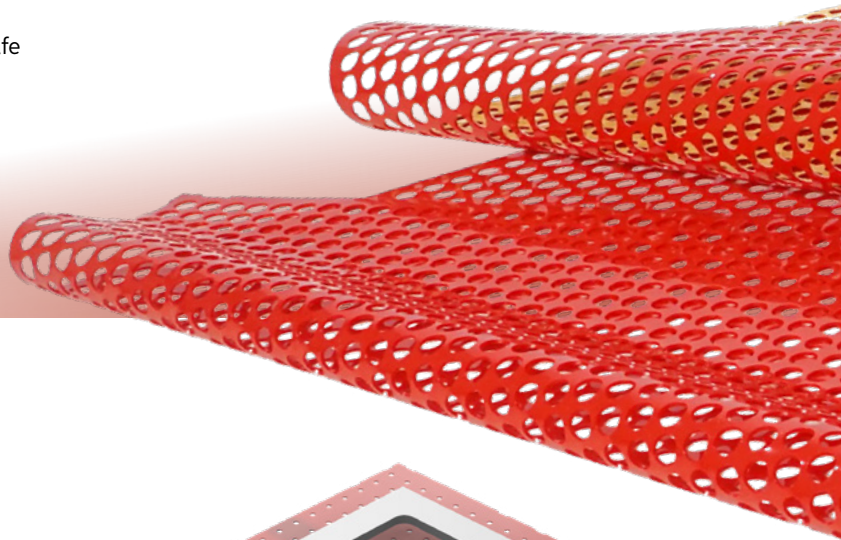
Vacuum clamping without sealing!

The Tepas **PerfoMat** negates the need for sealing, therefore fast, safe and simple clamping!

How it works

The leakage is reduced significantly by the micro holes of the **PerfoChuck** vacuum chucks. Because of its larger holes, the **PerfoMat** enlarges the vacuum sealed zone and significantly increases the slip resistance of the workpiece. Using tools, workpieces can be fully cut through. Using, for example, a cutter, the mat beneath the workpiece is milled into.

In combination with a vacuum pump with overflow-function, this version is suitable for applications with coolant emulsion (wet) or with micro lubrication.



The benefits

- Fastest clamping because no sealing cord, etc. is used.
- The slip resistance of the **PerfoMat** results in reliable clamping.
- Without modifications necessary, workpieces can be fully cut through.
- **PerfoMat** can easily be replaced after heavy use.

The models

PerfoMat:

Standard vacuum mat with holes in various patterns.

PerfoMat S:

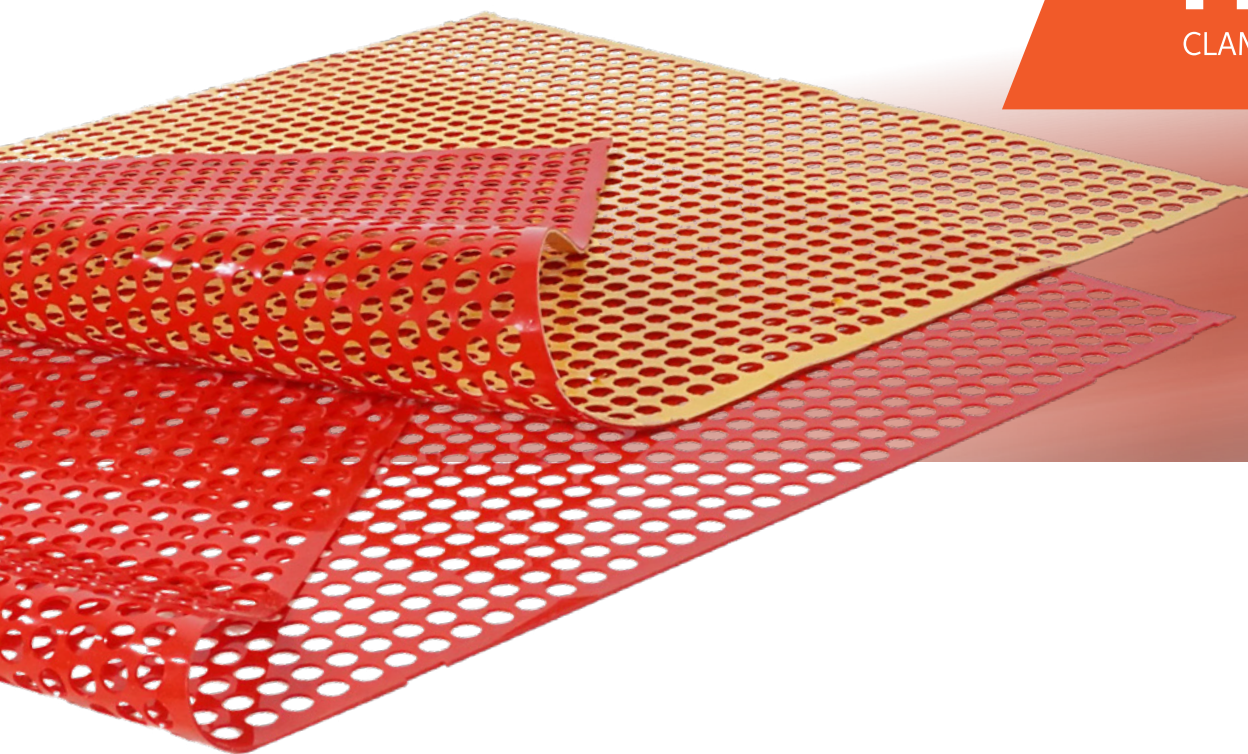
PerfoMat with adhesive layer. The PerfoMat-S has a semi-permanent adhesive layer which is slightly resistant to emulsion. When changing workpieces, the mat remains adhered to the **PerfoChuck** or **PerfoPlate**.

The **PerfoMat-S** can be removed without leaving behind glue residues. The recommendation is to stick and keep these on the StoragePlate plates to prevent contamination.

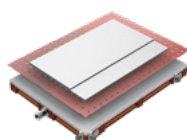
Please note:

Products with a (very) smooth surface may be clamped so firmly that these cannot easily be released from the clamp.

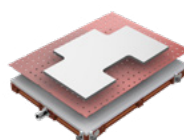




Field of application



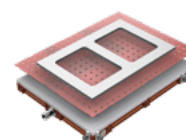
TBC/TPP + TPM



TBC/TPP + TPM

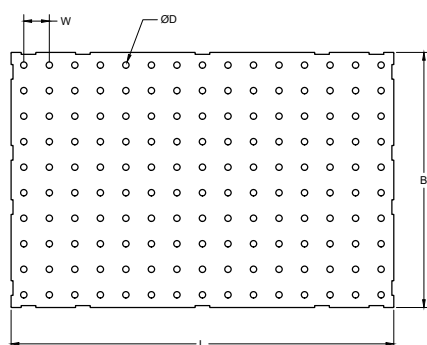


TBC/TPP + TPM



TBC/TPP + TPM

Dimensions

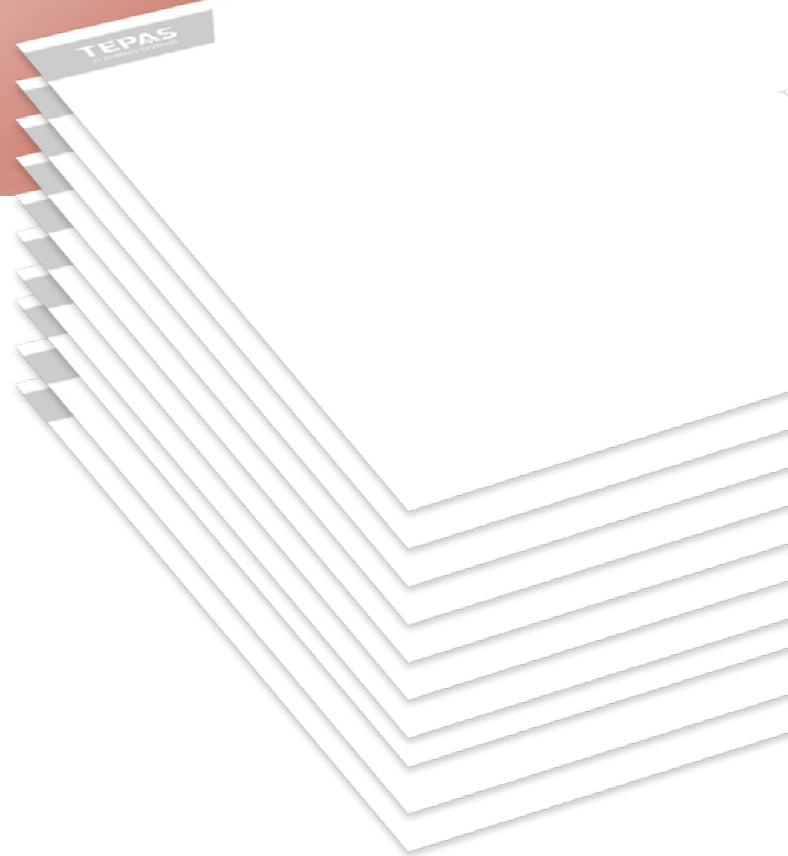


PERFOMAT		PERFOMAT S		DIMENSIONS					
Article no.	Model	Article no.	Model	L mm	B mm	H mm	B mm	D mm	Pack.
Fine:									
6410.2200	TPM-F-200	6411.2200	TPMS-F-200	300	200	1	10	3	1
6410.2300	TPM-F-300	6411.2300	TPMS-F-300	400	300	1	10	3	1
6410.2400	TPM-F-400	6411.2400	TPMS-F-400	600	400	1	10	3	1
6410.2500	TPM-F-500	6411.2500	TPMS-F-500	500	500	1	10	3	1
Medium:									
6410.0200	TPM-M-200	6411.0200	TPMS-M-200	300	200	1	10	5	1
6410.0300	TPM-M-300	6411.0300	TPMS-M-300	400	300	1	10	5	1
6410.0400	TPM-M-400	6411.0400	TPMS-M-400	600	400	1	10	5	1
6410.0500	TPM-M-500	6411.0500	TPMS-M-500	500	500	1	10	5	1
Wide									
6410.4200	TPM-W-200	6411.4200	TPMS-W-200	300	200	1	10	8	1
6410.4300	TPM-W-300	6411.4300	TPMS-W-300	400	300	1	10	8	1
6410.4400	TPM-W-400	6411.4400	TPMS-W-400	600	400	1	10	8	1
6410.4500	TPM-W-500	6411.4500	TPMS-W-500	500	500	1	10	8	1

TEPAS AIRMAT

Vacuum clamping of films without sealing.

The Tepas AirMat allows films to be fully cut through. Because of the milling in the cardboard mats, the underlying vacuum chuck (preferably the Tepas μ mChuck) is not damaged.



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How it works with the μ mChuck

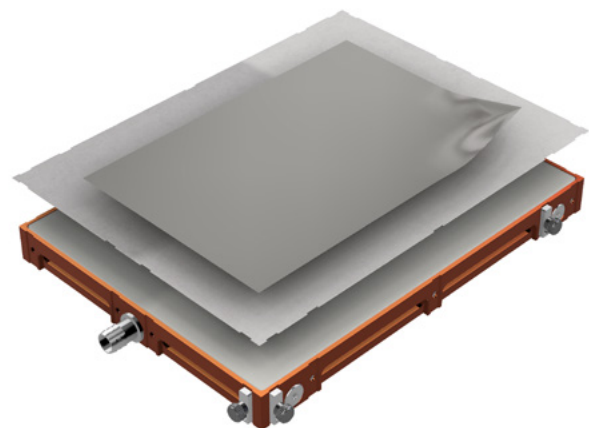
The cardboard Tepas AirMat is placed on the μ mChuck vacuum chuck or μ mPlate adapter plate. The product to be machined is placed on that, after which this is clamped by vacuum.

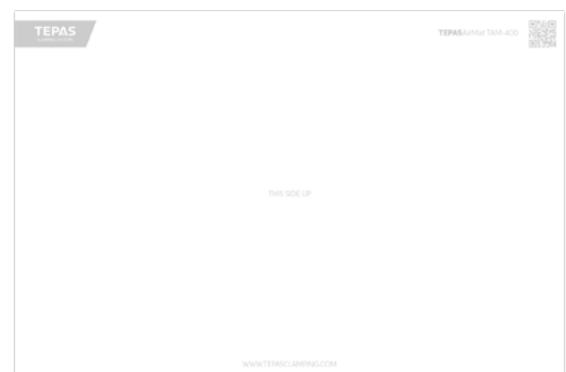
The benefits

- Fast clamping of thin films without specific clamping being required.
- AirMat ensures higher slip resistance.
- Without modifications necessary, workpieces can be fully cut through.

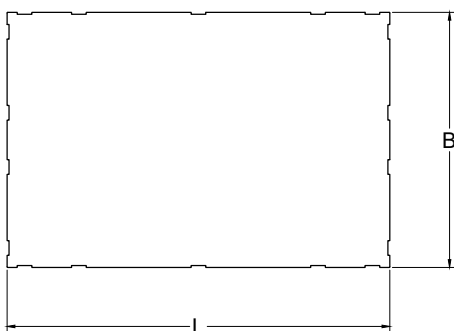
Suitable for:

- Thin workpieces, such as film and paper.
- Light machining such as micro-milling and similar.
- Milling, drilling, printing, etc.





Dimensions

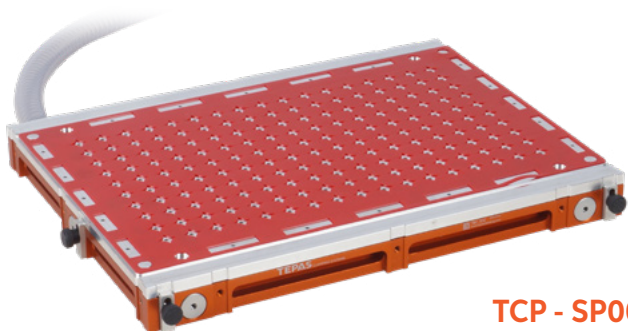


Tepas AirMat

Article no.	Model	L mm	B mm	H mm	Pack.
6430.0200	TAM-200	300	200	0.4	10
6430.0300	TAM-300	400	300	0.4	10
6430.0400	TAM-400	600	400	0.4	10

SPECIFIC VACUUM CHUCKS

Example: BaseChuck with specific TCP adapter plate and specific TVM VacuMat



TCP - SP007

Example: customer-specific dimensions

Tepas GridChuck 500x500mm with 12.5mm grid and reference slots beneath.



TGC - SP016

Example: multiple vacuum chuck



TGC - SP004

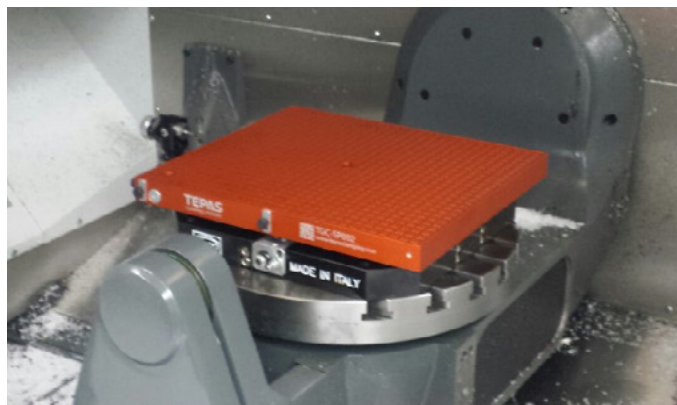
Example: special adapter plate

CustomPlate modified with specific dimensions of Metapor® for high-accuracy surface machining of unique workpieces.



TCP - SP015

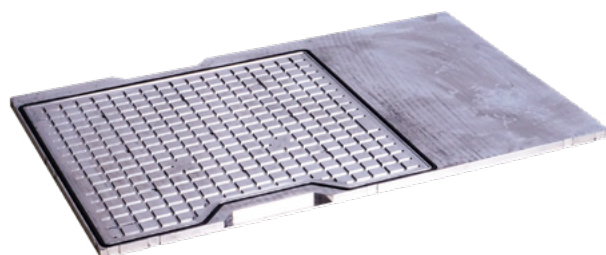
Example: vacuum chucks with zero point clamping system for 5-axis machining centre



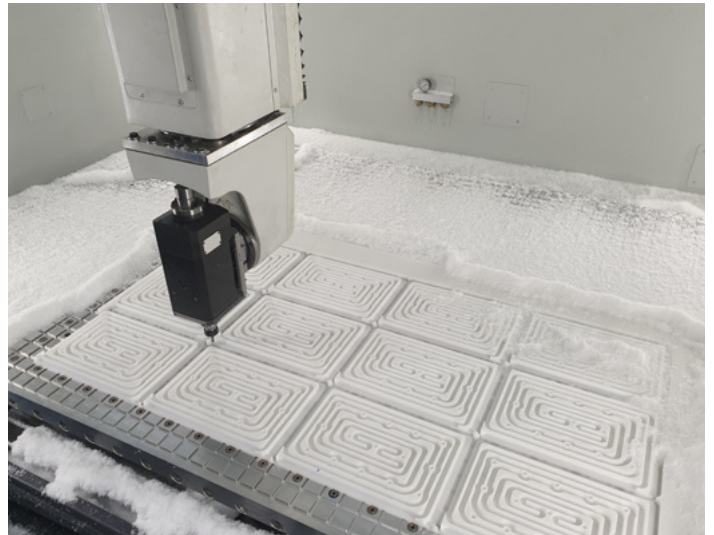
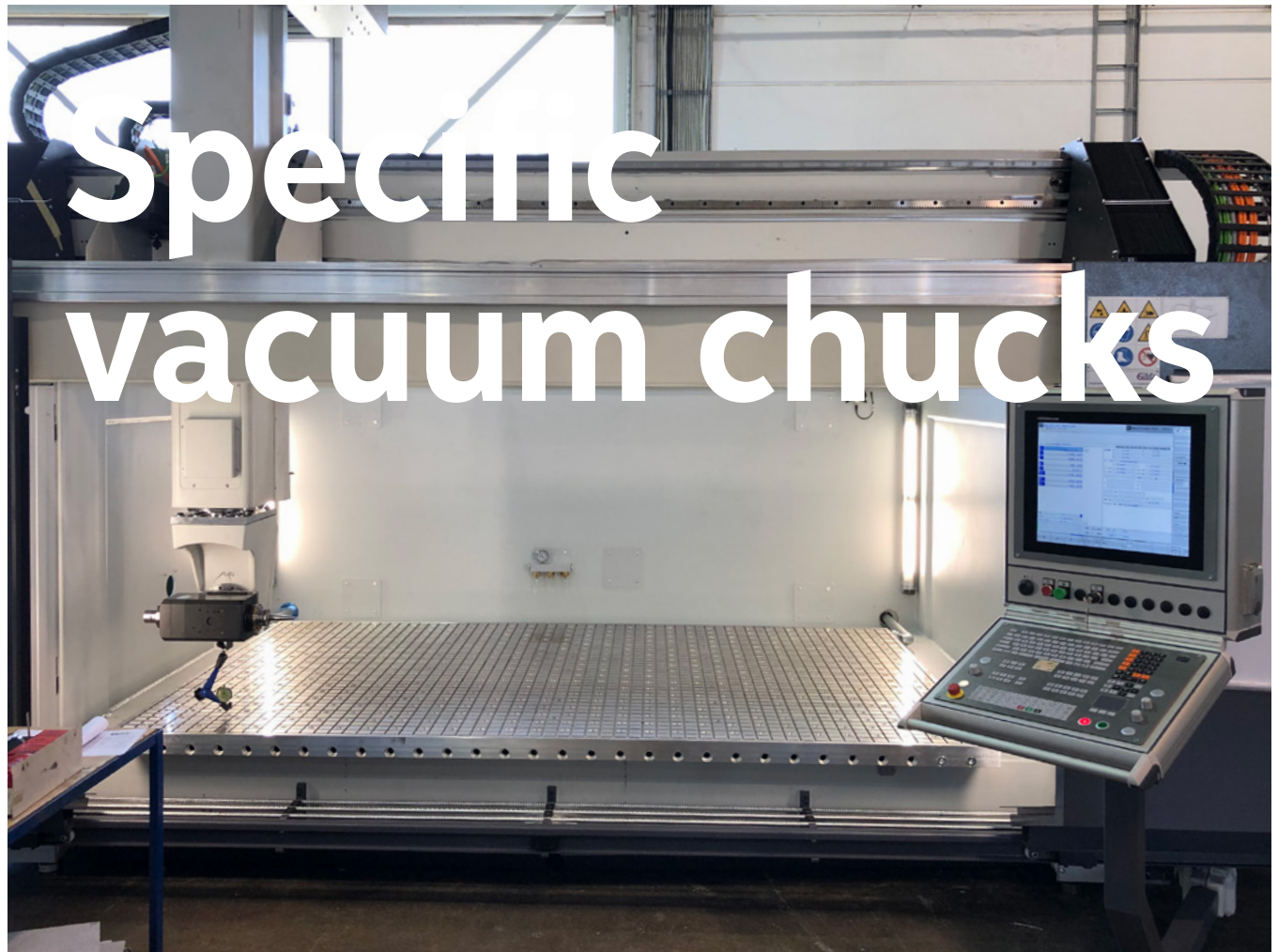
TGC - SP002

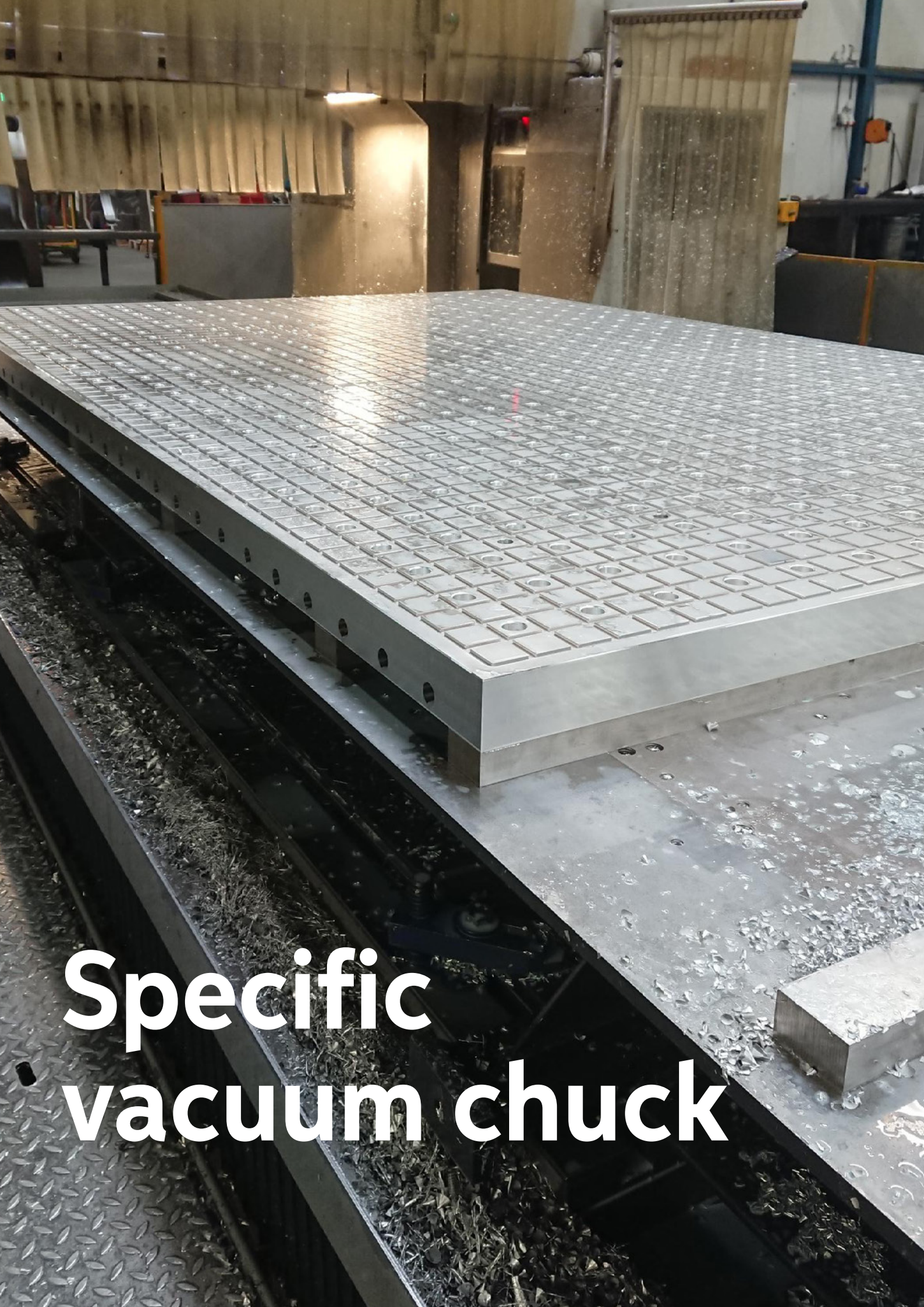
Example: special adapter plate

CustomPlate modified with specific grid for a workpiece with a simple shape. Flat machining of metal workpieces with very high tensile strength.



TCP - SP013





**Specific
vacuum chuck**

REQUEST FORM

Copy/scan this page and complete in full.
You can email or post your request.

T +31 (0)76 572 03 00 E office@tepasclamping.com Dukaatstraat 14, 4879 AD Etten-Leur

Type of vacuum table

* For each request, tick 1 type

- ☐ GridChuck
- ☐ PerfoChuck
- ☐ µmChuck
- ☐ BaseChuck
- ☐ GridPlate
- ☐ PerfoPlate
- ☐ µmPlate
- ☐ CustomPlate
- ☐ Other: _____

Dimensions

B Width _____ mm

L Length _____ mm

H Height _____ mm

Description of the application

Description of the machining

Comments

Workpiece drawings included? Yes/No

Options

- ☐ Recording for zero point clamping systems

Brand _____

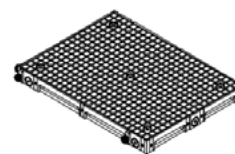
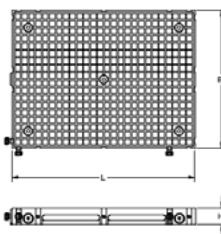
Type _____

Dimensions _____

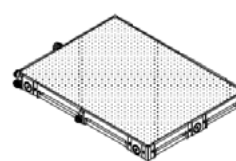
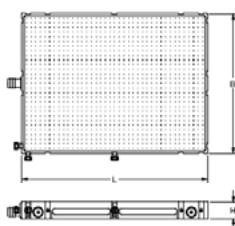
Distributor's details

Your distributor _____

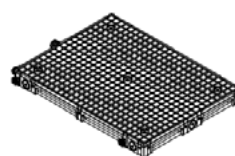
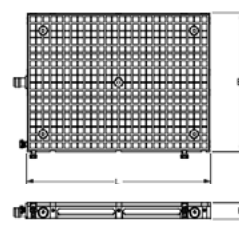
Distributor's contact person _____



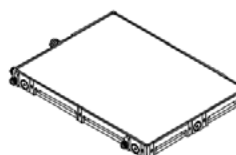
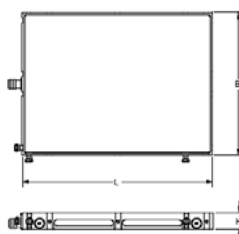
GridChuck Grid
Vacuum chucks in
specific dimensions



PerfoChuck
vacuum chucks with
micro holes in
specific dimensions



µmChuck
vacuum chucks with
porous surface in
specific dimensions



BaseChuck
Vacuum chucks with
adapter plates

Your information

Company name _____

Contact person _____

Address _____

Postcode _____

Town/city _____

Country _____

Tel. number _____

Fax number _____

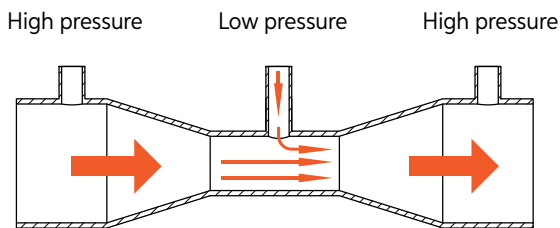
Email address _____

Website _____

THE TEPAS PUMPS PROGRAMME

Venturi valve

A venturi valve creates a vacuum with the help of air flow. There is a narrowing in the air duct. As the air flow accelerates when it passes through the narrowing, there is a reduction in pressure in the narrowing (the venturi effect). By means of a side connection in this narrowing, air can be drawn in, thus creating a vacuum.



Advantages

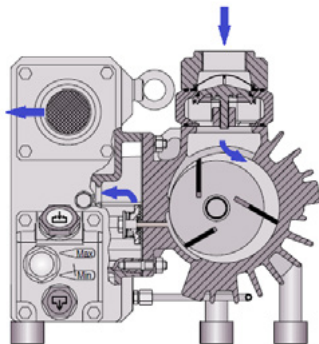
- Very low investment
- Small
- Simple
- Thin hose (compressed air instead of vacuum)

Disadvantages

- Uses compressed air - relatively expensive
- Can distribute emulsion as vapour
- No consistent vacuum pressure
- Higher noise level

Oil-lubricated vacuum pumps

A rotor is fitted to the shaft of the vacuum pump. The shaft of the vacuum pump is driven by the motor through a flexible coupling. This rotor is arranged eccentrically in relation to the cylinder, therefore there is a difference in volume on the two sides of the rotor. Vanes slide in grooves in the rotor, such that, combined with an oil film, the chambers are sealed. At the same time, air is drawn in and compressed.



Advantages

- Average/low investment
- High vacuum up to 0.1mbar
- Can run for >24 hours uninterrupted
- Robust and operational reliability
- Long lifetime

Disadvantages

- Low resistance to big leakage (>30%)
- Minimum pressure 300mbar (70% vacuum)
- Oil can be contaminated with moisture

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Dry-running rotary vane vacuum pumps

The dry-running rotary vane pumps work on the same principle as the oil-lubricated vacuum pumps, however; These pumps are able to withstand significant leakage. Because there is no oil, there will continue to be a small leakage between the vanes, as a result of which a dry-running pump creates less of a vacuum (85%) than an oil-lubricated vacuum pump (~98%). The vanes are made from graphite as opposed to plastic, because of which these have a self-lubricating action.



Advantages

- Less maintenance
- No risk of oil contamination
- Oil-free

Disadvantages

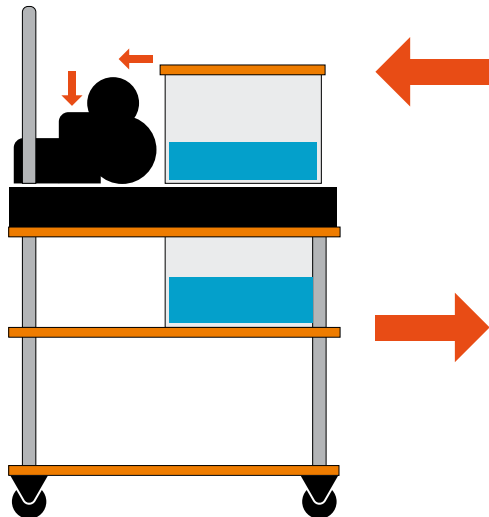
- Lower vacuum 150mbar (85%)
- Sensitive to moisture
- Shorter lifetime

Pumps with overflow-function

Pumps with overflow-function are able to pump back the separated fluid (such as emulsions) during the vacuum process to the machine.

TVU-4 vacuum units

This vacuum unit is suitable for a continuous process in applications where fluids are used. Separated fluids, such as emulsions, are automatically pumped back without the vacuum process being interrupted. There is also integrated level protection and a vacuum sensor that can be connected to your machine control through the control.



Advantages

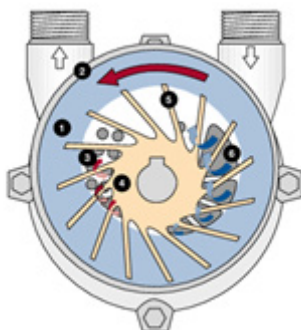
- Automatic overflow-function.
- Sensors for connection with machine control.
- Unmanned production

Disadvantages

- Higher investment costs

Liquid ring pump

After being switched on, the rapidly rotating impeller causes fluids, such as emulsion, to form a ring inside the pump body, which seals the contactless impeller. The fluid separated from the vacuum is fed through the circuit of the pump. During operation, the surplus fluid (such as emulsion) is fed back to the machine via an overflow.



Advantages

- With overflow-function
- Less maintenance
- No fluid separator required

Disadvantages

- During dry machining, make sure there is enough fluid in the pump
- Limited pump-back capacity of fluids

- 1 Operating liquid ring
- 2 Pump housing
- 3 Exhaust port
- 4 Impeller
- 5 Impeller vanes
- 6 Intake port

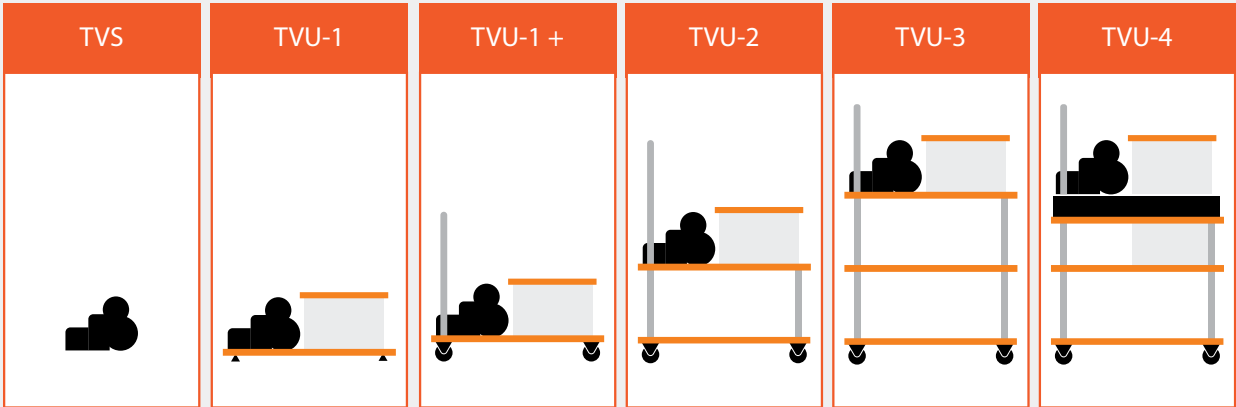
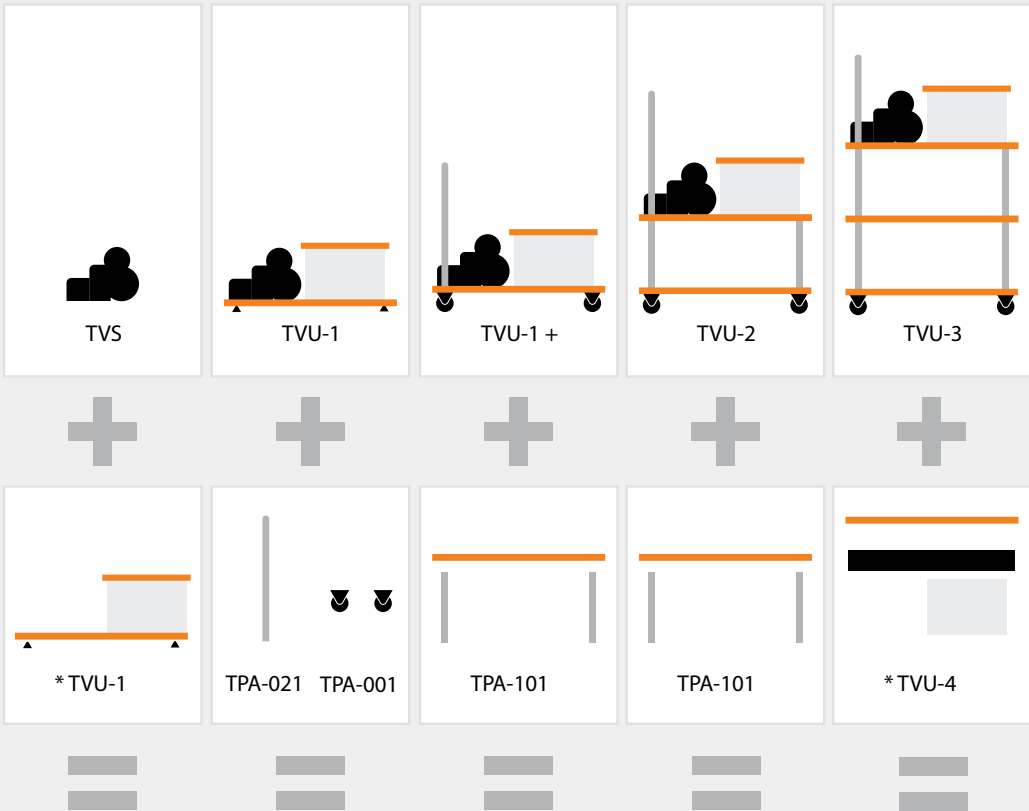
The mounted impeller (4) is the only moving part in the pump. Contactless operation in the pump housing (2).

A rotating liquid ring (1) creates seals in the space between the impeller vanes, forming compression chambers.

Air enters the vanes cells through the intake port (6). To keep the liquid ring stable, fluid is also permanently drawn into the compression chamber and expelled (3) along with the transported air. The eccentric arrangement of the impeller in the housing ensures there are variable compression chambers between the vanes (5) during rotation, compressing the transported air during one full revolution.

The Tepas TVU series of vacuum units can be expanded as required.

TVU-1 MODULAR TO TVU-4



SELECTION TABLE

TEPAS

CLAMPING SYSTEMS



	venturi valve	oil-lubricated	dry running	liquid ring
investment	low	average	average	average
energy consumption (costs)	high	low	low	low
reliability	low	high	high	high
depth of vacuum	max. 80%	99.8%	88%	95%
dry machining	✓	✓	✓	✓
wet machining		✓	limited	✓
maintenance	none	average	low	low
noise level	~75dB	~66 dB(A)	61-66 dB(A)	65dB(A)
minimum vacuum	0%	70%	0%	0%

		LEAKAGE IN CLAMPING		
		NONE	→	SIGNIFICANT
DRY MACHINING	Infrequent use			
	Intensive use	TVS-O	TVS-L	TVS-D
	Highest use reliability	TVS-O	TVS-L	TVU-3-D
WET MACHINING	Infrequent use			
	Intensive use	TVS-O	TVS-L	TVU-1-O TVUC-1-O
	Highest use reliability	TVU-2-D +TPA-01 +TVA-55 +TVA-56	TVS-L	TVU-2-D +TPA-01 +TVA-55 +TVA-56
	Highest use reliability and automated/unmanned machining	TVU-4-O		TVU-4-D

For leakage-free clamping		For clamping with PerfoChuck/Plate and µmChuck/µmPlate	
up to ~1,200cm ² (vacuum chucks up to 300x400mm)	10M ³ /hour	up to ~1,200cm ² (vacuum chucks up to 300x400mm)	25M ³ /hour
up to ~2,500cm ² (vacuum chucks up to 400x600mm)	21M ³ /hour	up to ~2,500cm ² (vacuum chucks up to 400x600mm)	40M ³ /hour
up to 2m ²	63M ³ /hour		

OIL-LUBRICATED VACUUM PUMPS

TVS-O vacuum pump sets

"Plug-and-play" vacuum pump set. Oil-lubricated vane pump for machining workpieces without fluids, such as emulsion.



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TVS-O21



TVS-O40



TVS-O63

Fast, easy and economical

Provided that no fluids are used during the machining process that can enter the vacuum pump, the Tepas TVS-O vacuum pump sets are easy to use. They guarantee the highest possible clamping force of the workpieces. A corresponding TVA-22 hose set and one of the Tepas vacuum chucks make "Plug-and-Play" starting possible with vacuum clamping.

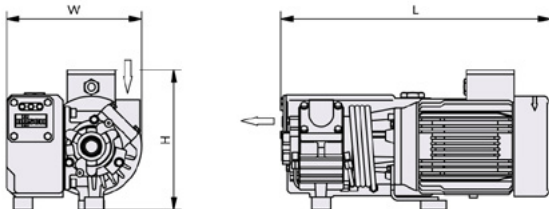
TEPAS

CLAMPING SYSTEMS

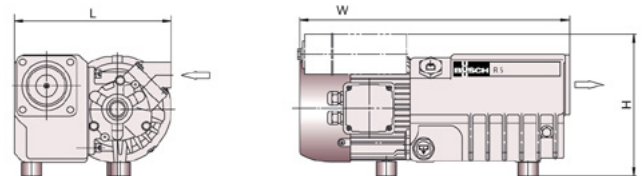
Highlights

- Air filter housing with polyester filter
- Thermally protected switch (EU countries only).
- At a later stage, using an extension kit, this can be expanded into a unit with fluid separator (see page 42).

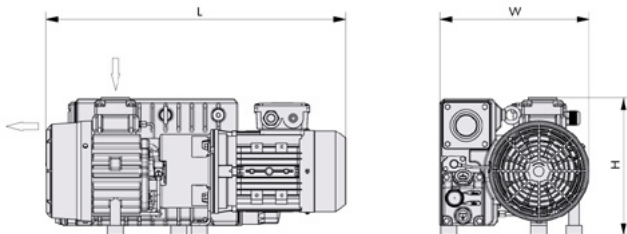
TVS-O16



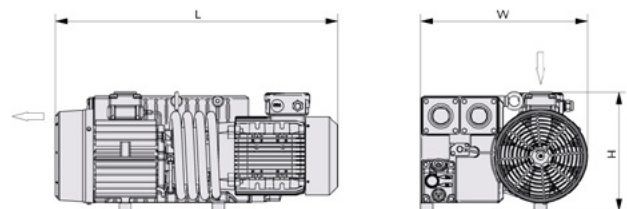
TVS-O21



TVS-O40



TVS-O63



Article no.	Model	m ³ /hour	max. vacuum	hPa mbar	Clamping force kg/cm ² (1*)	V	kW	Kg	Pack.
6601.1160	TVS-O16	16	98.0%	2	0.98	230	0.55	18	1
6601.1210	TVS-O21	20	99.0%	1	0.99	230	0.75	20	1
6601.1211	TVS-O21-400	20	99.0%	1	0.99	400	0.75	20	1
6601.1401	TVS-O40	40	99.9%	0.1	0.999	400	1.4	42	1
6601.1631	TVS-O63	63	99.9%	0.1	0.999	400	2	55	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

Included

- Air filter housing with polyester filter
- 3 metres of electrical cable with thermally protected switch (EU countries only)*
- 500ml vacuum oil
- Download manual from the website

Accessories

TVP-77 Vacuum oil
Page 63

TVA-71 Air filter
Page 62

TVA-78 Maintenance set
Page 63



DRY-RUNNING VACUUM PUMPS

TVS-D vacuum pump sets

"Plug-and-play" vacuum pump set. Dry-running rotary vane pump for machining workpieces without fluids, such as emulsion. Ideal for situations where leakage is present, such as with the Tepas Perfo-Chuck, PerfoPlate and the Tepas μ Chuck or μ mPlate.



TVS-D16



TVS-D40

Fast, easy and economical

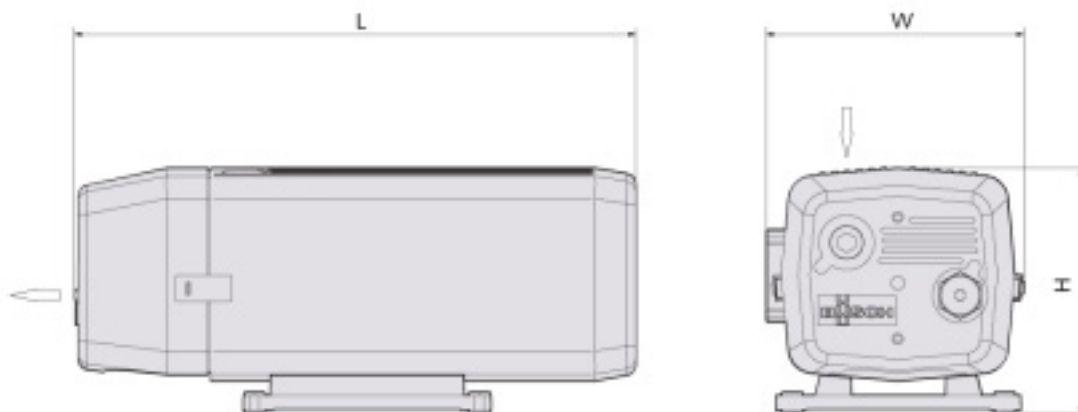
Provided that no leak-tight clamping situations are possible and provided that no fluids are used during the machining process that could enter the vacuum pump, the Tepas TVS-D vacuum pump sets are easy to use. These dry-running vacuum pumps can be guaranteed to be used if a minimum of 70% cannot always be achieved due to the amount of leakage. A corresponding TVA-22 hose set and one of the Tepas vacuum chucks make "Plug-and-Play" starting possible with vacuum clamping.

Highlights

- Air filter housing with polyester filter
- Thermally protected switch (EU countries only).

TEPAS

CLAMPING SYSTEMS



Article no.	Model	m³/hour	max. vacuum	hPa mbar	Clamping force kg/cm² ^(*)	V	kW	Kg	Pack.
6631.1160	TTVS-D16-230	16	85.0%	150	0.85	230	0.55	27	1
6631.1161	TVS-D16-400	16	85.0%	150	0.85	400	0.55	27	1
6631.1250	TVS-D25-230	25	85.0%	150	0.85	230	0.9	33	1
6631.1251	TVS-D25-400	25	85.0%	150	0.85	400	0.9	33	1
6631.1400	TVS-D40-230	40	85.0%	150	0.85	230	1.25	40	1
6631.1401	TVS-D40-400	40	85.0%	150	0.85	400	1.25	40	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

Included

- Air filter housing with polyester filter
- 3 metres of electrical cable with thermally protected switch (EU countries only)
- Download manual from the website

Accessories

TVA-71 Air filter

Page 62

TVA-74 Internal filter

Page 62



MODULAR VACUUM UNITS WITH OIL-LUBRICATED VACUUM PUMPS.

TVU-1-O vacuum units with fluid separator

Vacuum unit for machining workpieces where fluids, such as emulsions, are used. These units have a modular design, enabling expansion at a later date.

The 36-litre separator tank is suitable for separating 26 litres of fluid which is also drawn in during the vacuum process.



TVU-1-O21

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TVU-2-O21



TVU-2-O63



TVU-3-O21



TVU-3-O63

TVU-2-O vacuum units with fluid separator and 2nd shelf

Oil-lubricated vacuum pump set with fluid separator for applications with fluids, such as coolant emulsion. With a second shelf. In the TVU-2-O40 and TVU-2-O63, the pumps are mounted on the lowest shelf.

TVU-3-O vacuum units with fluid separator and 3 shelves

Mobile vacuum unit with oil-lubricated vacuum pump. With fluid separator for applications with fluids such as coolant emulsion. With 3 shelves for maximum storage space.

The basis for vacuum with fluid separator

As soon as, during the vacuum process, there is a possibility that fluid can also be drawn in, this fluid has to be separated before it reaches the vacuum pump. These TVU-1-O vacuum units form the basis for all vacuum processes, in which a fluid separator is necessary. The vacuum unit is modularly designed, enabling the pump to be expanded at a later stage with accessories, such as level sensors, vacuum switches and wheels. Even this most comprehensive TVU-4-O vacuum unit is based on this unit. They guarantee the highest possible clamping force of the workpieces.

Highlights

- Modular construction; this unit forms the basis for expansions at a later date.
- 36/26 litres fluid separator.
- Oil-lubricated vane pump generates up to 99% vacuum.

TVU-1

Article no.	Model	m ³ /hour	max. vacuum	hPa mbar	Clamping force kg/cm ² (*1)	V	kW	Pack.
6602.0160	TVU-1-O16	16	98.0%	2	0.98	230	0.55	1
6602.0210	TVU-1-O21	20	99.0%	1	0.99	230	0.75	1
6602.0211	TVU-1-O21-400	20	99.0%	1	0.99	400	0.75	1

Mobile extended vacuum units

Extended vacuum unit with fluid separator for applications with fluids such as emulsions. These mobile units have 2 or 3 shelves for maximum storage space. Upwards of 40m³/hour pumps, these are mounted on the lowest shelf. These units can easily be expanded with a control box to which a level sensor and/or vacuum sensor can be connected. The 5 metres of signal cable which is also included, can be connected to your machine, to enable the sensor protection to communicate with your machine control. Ideal for use of vacuum with automated processes.

Highlights

- Modular construction, therefore suitable for expansions at a later date.
- Easy to expand with control for sensors.
- Mobile model with 2 or 3 shelves for maximum storage space.

Modular construction

These vacuum units can be assembled from the TVU-1-O21 vacuum unit with the TPA-001 wheel set (page 48), TPA-021 push handle set and TPA-101 level increase.

TVU-2

Article no.	Model	m ³ /hour	max. vacuum	hPa mbar	Clamping force kg/cm ² (*1)	V	kW	Pack.
6602.2160	TVU-2-O16	16	98.0%	2	0.98	230	0.55	1
6602.2210	TVU-2-O21	20	99.0%	1	0.99	230	0.75	1
6602.2211	TVU-2-O21-400	20	99.0%	1	0.99	400	0.75	1
6602.2401	TVU-2-O40	40	99.9%	0.1	0.999	400	1.4	1
6602.2631	TVU-2-O63	63	99.9%	0.1	0.999	400	2	1

TVU-3

Article no.	Model	m ³ /hour	max. vacuum	hPa mbar	Clamping force kg/cm ² (*1)	V	kW	Pack.
6602.3160	TVU-3-O16	16	98.0%	2	0.98	230	0.55	1
6602.3210	TVU-3-O21	20	99.0%	1	0.99	230	0.75	1
6602.3211	TVU-3-O21-400	20	99.0%	1	0.99	400	0.75	1
6602.3401	TVU-3-O40	40	99.9%	0.1	0.999	400	1.4	1
6602.3631	TVU-3-O63	63	99.9%	0.1	0.999	400	2	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

MODULAR VACUUM UNITS DRY-RUNNING WITH DRY RUNNING VACUUM PUMPS

TVU-1-D vacuum units with fluid separator

Vacuum unit for machining workpieces where leakage is present in the clamping and fluids, such as emulsions, are used. These units have a modular design, enabling expansion at a later date. The 36-litre separator tank is suitable for separating 26 litres of fluid which is also drawn in during the vacuum process.



TVU-1-D16 230V



TVU-2-D40



TVU-3-D16



TVU-3-D40

TVU-2-D vacuum units with fluid separator and 2nd shelf

Vacuum unit with a second shelf for machining workpieces where leakage is present in the clamping and fluids, such as emulsions, are used.

TVU-3-D vacuum units with fluid separator and 3 shelves

Vacuum unit with third shelf for machining workpieces where leakage is present in the clamping and fluids, such as emulsions, are used.

The basis for vacuum with fluid separator

An oil-lubricated vacuum pump cannot withstand large amounts of vacuum leakage and must generate at least 70% vacuum. If there is too much vacuum leakage and fluid can be drawn in during the vacuum process, these TVU-1-D vacuum units are the ideal basis for these vacuum processes. The vacuum unit is modularly designed, enabling the pump to be expanded at a later stage with accessories, such as level sensors, vacuum switches and wheels. Even this most comprehensive TVU-4-D vacuum unit is based on this unit. They guarantee the highest possible clamping force of the workpieces.

Highlights

- Modular construction; this unit forms the basis for expansions at a later date.
- 36/26 litres fluid separator.
- Dry-running rotary vane pump for clamping with vacuum leakage.

TVU-1

Article no.	Model	m³/hour	max. vacuum	hPa mbar	Clamping force kg/cm² (*1)	V	kW	Kg	Pack.
6632.0160	TVU-1-D16-230	16	85.0%	150	0.85	230	0.55	27	1
6632.0161	TVU-1-D16-400	16	85.0%	150	0.85	400	0.55	27	1

Mobile extended vacuum units.

Vacuum units with fluid separator for applications where fluids, such as emulsions, are used. With dry-running rotary vane pump, which is very suitable for applications where leakage is present in the clamping and potentially <70% vacuum can be achieved. Mobile design with 2 or 3 levels. These units can easily be expanded with a control box to which a level sensor and/or vacuum sensor can be connected. The 5 metres of signal cable which is also included, can be connected to your machine, to enable the sensor protection to communicate with your machine control. Ideal for use of vacuum with automated processes. Fitted to the lowest shelf.

Highlights

- Modular construction, therefore suitable for expansions at a later date.
- Easy to expand with control for sensors.
- Mobile model with 2 or 3 shelves for maximum storage space.

Modular construction

These units have a modular design, enabling expansion at a later date. In the TVU-3-D25 and TVU-3-D40, the pumps are mounted on the lowest shelf.

TVU-2

Article no.	Model	m³/hour	max. vacuum	hPa mbar	Clamping force kg/cm² (*1)	V	kW	Pack.
6632.2160	TVU-2-D16-230	16	85.0%	150	0.85	230	0.55	1
6632.2161	TVU-2-D16-400	16	85.0%	150	0.85	400	0.55	1
6632.2250	TVU-2-D25-230	25	85.0%	150	0.85	230	0.9	1
6632.2251	TVU-2-D25-400	25	85.0%	150	0.85	400	0.9	1
6632.2400	TVU-2-D40-230	40	85.0%	150	0.85	230	1.25	1
6632.2401	TVU-2-D40-400	40	85.0%	150	0.85	400	1.25	1

TVU-3

Article no.	Model	m³/hour	max. vacuum	hPa mbar	Clamping force kg/cm² (*1)	V	kW	Pack.
6632.3160	TVU-3-D16-230	16	85.0%	150	0.85	230	0.55	1
6632.3161	TVU-3-D16-400	16	85.0%	150	0.85	400	0.55	1
6632.3250	TVU-3-D25-300	25	85.0%	150	0.85	230	0.9	1
6632.3251	TVU-3-D25-400	25	85.0%	150	0.85	400	0.9	1
6632.3400	TVU-3-D40-230	40	85.0%	150	0.85	230	1.25	1
6632.3401	TVU-3-D40-400	40	85.0%	150	0.85	400	1.25	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

VACUUM COMPACT UNITS



TVUC-021

Smallest design vacuum unit with fluid separator

As soon as, during the vacuum process, there is a possibility that fluid can also be drawn in, this fluid has to be separated before it reaches the vacuum pump. These TVUC-1-O vacuum units are used for all vacuum processes, in which a fluid separator is necessary. They guarantee the highest possible clamping force of the workpieces.

Own colour

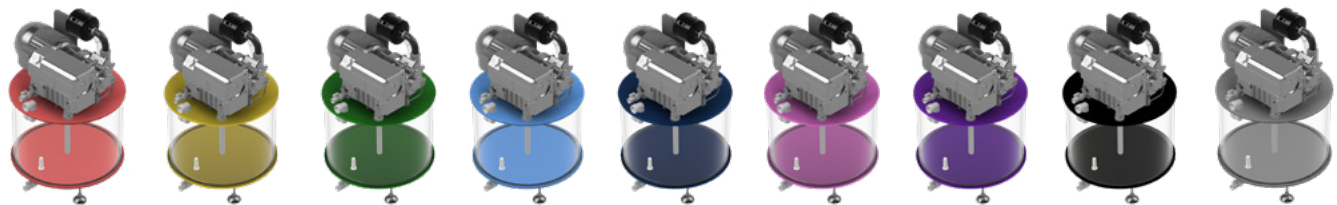
In addition to the standard orange colour, other colours are available at a small additional price. The options are listed in the colour chart below. Delivery time is 4 to 6 working weeks.

Highlights

- Compact construction.
- Expandable with wheels
- 36/26 litres fluid separator.
- Oil-lubricated vane pump generates up to 99% vacuum.

Included

- Fluid separator 36/26 litres
- Air filter housing with polyester filter
- 3m of electrical cable
- Electrical plug (EU countries only)
- 500ml vacuum oil
- Download manual from the website



Standard (orange)

Article no.	Model	m³/hour	max. vacuum	hPa mbar	Clamping force kg/cm² (*1)	V	kW	Kg	Pack.
6604.0210	TVUC-O21	20	99.0%	1	0.99	230	0.75	?	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

Own colour

Article no.	Colour
6604.xxxx	See colour samples

Order article 6604.0201 for colour chart code 2.01.



ACCESSORIES

ACCESSORIES FOR PUMP UNITS

TPA-001 wheel set

Wheel set for TVU-1 pump units. Consisting of 2 fixed wheels and 2 castors with brake. Incl. mounting materials. Excl. Key SW13. A wheel set is included with the TVU-2, TVU-3 and TVU-4 pump units.



Article no.	Model	Pack.
6688.0001	TPA-001	1

TPA-101 level increase

Level increase for TVU-1 and TVU-2 pump unit at 355mm, consisting of: 1 mounting plate, 2 clamps with flanges, 4 single clamps and mounting materials.



Article no.	Model	Pack.
6688.0101	TPA-101	1

TPA-002 wheel set

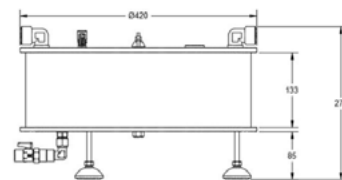
Set of 3 wheels with brake for vacuum pump TVUC-O-21. Comprising 3 double wheels including M8 peg for mounting.



Article no.	Model	For series	Pack.
6688.0002	TPA-002	TVUC-1-O21	1

TPA-201 separate separator tank 15 litres

Separate separator to separate fluid from the vacuum system.



Article no.	Model	D	H	litres	Pack.
6688.2010	TPA-201	420	272	~15	1

TPA-021 push handle set

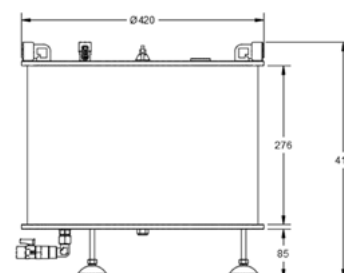
Push handle set and assembly set with which a push handle can be mounted on a TVU-1 pump unit. A push handle set is included with the TVU-2, TVU-3 and TVU-4 pump units.



Article no.	Model	Pack.
6688.0021	TPA-021	1

TPA-202 separate separator tank 26 litres

Separate separator to separate fluid from the vacuum system.



Article no.	Model	D	H	litres	Pack.
6688.2020	TPA-202	420	272	~26	1

UNMANNED MACHINING WITH VACUUM

Sensors and control for monitoring and controlling vacuum units.

TPA-51 Control unit

Control unit for connecting up to 2 sensors. Sensors that can be connected are the TVA-54-52 vacuum sensor and TVA-56-02 level sensor. The control unit can be connected to, for example, a processing machine. In the absence of electrical power, a fault signal is given.



Article no.	Model	V	For series	Pack.
6688.0501	TPA-501	220V	TPA-54 220V	1
6688.0502	TPA-502	24V	TPA-55 24V	1

TPA-511 control cabinet

Control cabinet for TVU and TVUC pump units. For connecting to an electronic vacuum sensor. This control unit ensures that the pump stops when sufficient vacuum is reached and is switched on again when the vacuum falls by 7%.



Article no.	Model	V	For series	Pack.
6688.0511	TPA-511	230	TVU and TVU-C	1



Expansion

With optional
vacuum and level sensor
Page 61

VACUUM UNITS WITH OVERFLOW-FUNCTION

Unique vacuum unit with automatic pump emptying function. With fluid separator for applications with fluids such as coolant emulsion. With 3 shelves for maximum storage space.

TVU-4-O vacuum units with fluid separator and overflow-function

With oil-lubricated vacuum pump.

TVU-4-D vacuum units with fluid separator and overflow-function

With dry-running vacuum pump for applications where leakage is present in the clamping.



TVU-4-O21



TVU-4-D40

With overflow-function

This vacuum unit is suitable for a continuous process in applications where fluids are used. Separated fluids, such as emulsions, are automatically pumped back without the vacuum process being interrupted. There is also integrated level protection and a vacuum sensor that can be connected to your machine control through the control.

Highlights

- With automatic overflow-function.
- With sensors for connection with machine control.
- To be used with vacuum chucks where leakage is present.

Modular construction

In the TVU-4-D25, TVU-4-D40, TVU-4-O40 and TVU-4-O63 the pumps are mounted on the lowest shelf.

TVU-4-O

Article no.	Model	m ³ /hour	max. vacuum	hPa mbar	Clamping force kg/cm ² (*1)	V	kW	Pack.
6602.4160	TVU-4-O16	16	98.0%	2	0.98	230	0.55	1
6602.4210	TVU-4-O21	20	99.0%	1	0.99	230	0.75	1
6602.4211	TVU-4-O21-400	20	99.0%	1	0.99	400	0.75	1
6602.4401	TVU-4-O40	40	99.9%	0.1	0.999	400	1.4	1
6602.4631	TVU-4-O63	63	99.9%	0.1	0.999	400	2	1

TVU-4-D

Article no.	Model	m ³ /hour	max. vacuum	hPa mbar	Clamping force kg/cm ² (*1)	V	kW	Pack.
6632.4160	TVU-4-D16-230	16	85.0%	150	0.85	230	0.55	1
6632.4161	TVU-4-D16-400	16	85.0%	150	0.85	400	0.55	1
6632.4250	TVU-4-D25-230	25	85.0%	150	0.85	230	0.9	1
6632.4251	TVU-4-D25-400	25	85.0%	150	0.85	400	0.9	1
6632.4400	TVU-4-D40-230	40	85.0%	150	0.85	230	1.25	1
6632.4401	TVU-4-D40-400	40	85.0%	150	0.85	400	1.25	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

LIQUID RING PUMPS

TVS-L25 liquid ring pump with overflow-function

These vacuum pumps are compact 'plug-and-play' systems. Simple to use. With automatic overflow-function. For machining workpieces where leakage is present in the clamping and fluids, such as emulsions, are used. The pumps are air-cooled and 100% oil-free. During use, there is minimal wear and tear, therefore regular maintenance isn't required. The pumps run reliably continuously and are not susceptible to condensation from the pumped air.



TVS-L25

Plug & Play, with overflow-function

This vacuum unit is suitable for a machining process in applications where fluids are used. The separated fluids, such as emulsions, flow back automatically to the machine through the overflow without the vacuum process being interrupted.

Highlights

- With overflow-function
- Air filter housing with polyester filter
- Compact design
- Oil-free and air-cooled
- Plug & play
- No regular maintenance required

Article no.	Model	m³/hour	max. vacuum	hPa mbar	Clamping force kg/cm² ^(*)	V	kW	Kg	Pack.
6634.1025	TVS-L25	25	95%	50	0.95	400	0.85	?	1
6634.1050	TVS-L50	50	95%	50	0.95	400	1.4	?	1
6634.1070	TVS-L70	70	95%	50	0.95	400	2,4	?	1
6634.1105	TVS-L105	105	95%	50	0.95	400	3.4	?	1
6634.1150	TVS-L150	150	95%	50	0.95	400	4.2	?	1
6634.1200	TVS-L200	200	95%	50	0.95	400/690	5.5	?	1
6634.1230	TVS-L230	230	95%	50	0.95	400/690	7,0	?	1

*1 The clamping force is calculated with an air pressure of 1,000 mbar and 100% leakproof clamping of the workpiece.

Included

- Air filter housing with polyester filter
- 3m of electrical cable
- Electrical plug (EU countries only)
- Download manual from the website

Accessories

TVA-21-4 Vacuum hose
Page 56

TVA-22-2 Vacuum hose set
Page 57

TVA-71-01 Air filter
Page 62



VENTURI VALVE

TVE-3 venturi valve

The Tepas TVE-3 venturi valve enables you to easily create a vacuum without a large investment. The venturi valve can be connected to all ducts of the Tepas vacuum chucks. The venturi valve can therefore be connected in 6 different places.

This venturi valve can be used for up to ~70% vacuum, however with very limited leakage. The venturi valve is connected to compressed air.



Advantages

- Very low investment
- Simple
- Thin hose (compressed air instead of vacuum)

Disadvantages

- Uses compressed air - relatively expensive
- Can distribute emulsion as vapour
- No consistent vacuum pressure
- Higher noise level

Art.Nr.	Model	m3/ hour	p	NI/s	mbar	Pack.
6600.0033	TVE-3	3.3	2.5	2.9	280	1

TVA-01 standard accessories for vacuum chucks

Coupler Push-In fitting

Push-in coupling with Push-In fitting for ø12mm PU hose TVA-20-1.



Article no.	Model	Pack.
6800.0101	TVA-01-01	1

Coupling with hose pillar

Push-in coupling with 19mm hose pillar for internal 19mm vacuum spiral hose TVA-21-4.



Article no.	Model	D mm	Pack.
6800.0102	TVA-01-02	19	1

Coupler

Push-in coupling for vacuum feedthrough if several vacuum chucks are connected to one another.



Article no.	Model	Pack.
6800.0103	TVA-01-03	1

Blind plug

Push-in coupling for sealing vacuum ducts.



Article no.	Model	Pack.
6800.0104	TVA-01-04	1

End stop

Sliding end stops for precise positioning of workpieces.



Article no.	Model	Pack.
6800.0105	TVA-01-05	1

Clamp

Clamp for mounting vacuum clamping chucks, which fit into the designated clamping slots.



Article no.	Model	Pack.
6800.0106	TVA-01-06	1

Clamping element for connecting vacuum chucks

Clamping element for mounting vacuum chucks if several vacuum chucks are connected to one another.



Article no.	Model	Pack.
6800.0107	TVA-01-07	1

Control knob

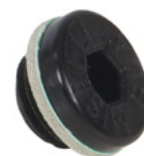
Control knob for mounting end stops and removing blind plugs.



Article no.	Model	Pack.
6800.0108	TVA-01-08	1

Plug

For sealing vacuum holes in the clamping surface.



Article no.	Model	Pack.
6800.0109	TVA-01-09	1

Clamp

For hose pillars TVA-01-01 or TVA-01-02.



Article no.	Model	Pack.
6800.0110	TVA-01-10	1

ACCESSORIES

TVA-02 T-nut set

T-nut with bolt and flat ring for TVA-01-06 clamping chucks.



Article no.	Model	M	Pack.
6800.0214	TVA-02-14	12	1
6800.0216	TVA-02-16	12	1
6800.0218	TVA-02-18	12	1

TVA-03 T-nut set for clamping element

T-nut with bolt, flat rings and cup washers for TVA-01-07 clamping elements, which are used for connecting vacuum chucks.



Article no.	Model	M	Pack.
6800.0314	TVA-03-14	5	1
6800.0316	TVA-03-16	5	1
6800.0318	TVA-03-18	5	1

TVA-10 Vacuum sealing cord

To create a vacuum sealed zone with GridChuck vacuum chucks or workpiece-specific vacuum chucks.



Article no.	Model	D mm	Pack.
6800.1020	TVA-10-20	2	>10m
6800.1025	TVA-10-25	2.5	>10m
6800.1030	TVA-10-30	3	>10m
6800.1035	TVA-10-35	3.5	>10m
6800.1040	TVA-10-40	4	>10m
6800.1050	TVA-10-50	5	>10m
6800.1060	TVA-10-60	6	>10m
6800.1080	TVA-10-80	8	>10m
6800.1100	TVA-10-100	10	>10m

TVA-20 Vacuum PU hose

PolyUrethane hose suitable for vacuum. Available per metre upwards of a 5-metre length.



Article no.	Model	Di mm	Do mm	Pack.
6800.2001	TVA-20-1	8	12	>5m
6800.2002	TVA-20-2	11	16	>5m

TVA-21 Vacuum spiral wire hose

Transparent vacuum hose with steel spiral insert. Available per metre.



Article no.	Model	Di mm	Do mm	Pack.
6800.2103	TVA-21-3	12	19	>5m
6800.2104	TVA-21-4	19	25	>5m
6800.2105	TVA-21-5	25	34	1m
6800.2106	TVA-21-6	32	40	1m

TVA-22 Hose sets with vacuum gauge

Can be connected directly to the Tepas vacuum pumps and all Tepas vacuum chucks.



PU hose



Spiral wire hose

With vacuum PU hose

Article no.	Model	Di mm	Do mm	L m	Pack.
6800.2201	TVA-22-1	8	12	3	1
6800.2202	TVA-22-2	11	16	3	1

With vacuum spiral wire hose

Article no.	Model	Di mm	Do mm	L m	Pack.
6800.2203	TVA-22-3	12	19	3	1
6800.2204	TVA-22-4	19	25	3	1
6800.2205	TVA-22-5	25	34	3	1

TVA-23 Hose sets with electronic vacuum switch

Can be connected directly to the Tepas vacuum pumps and all Tepas vacuum chucks. With TVA-55-11 digital vacuum switch.



Article no.	Model	Di mm	Do mm	L m	Pack.
6800.2302	TVA-23-2	11	16	3	1
6800.2304	TVA-23-4	19	25	3	1

TVA-25 Vacuum feedthrough sets

Set with quick-action couplings for vacuum feedthrough through, for example, the wall of a machine.

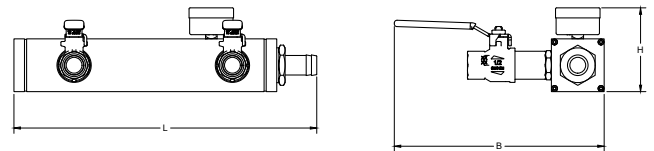


With quick-action couplings for vacuum spiral wire hose

Article no.	Model	Di mm	Do mm	L	Pack.
6800.2503	TVA-25-3	12	19		1
6800.2504	TVA-25-4	19	25		1

TVA-26 Distribution blocks

For the distribution of several vacuum hoses on 1 central hose.



With Push-In fittings

Article no.	Model	L mm	B mm	H mm	Pack.
6800.2602	TVA-26-02	287	200	80	1
6800.2603	TVA-26-03	437	200	80	1
6800.2604	TVA-26-04	580	200	80	1

TVA-25 Vacuum feedthrough sets

Set with quick-action couplings for vacuum feedthrough through, for example, the wall of a machine.



With Push-In fittings for vacuum PU hose

Article no.	Model	Di mm	Do mm	Pack.
6800.2501	TVA-25-1	8	12	1
6800.2502	TVA-25-2	11	16	1



With quick-action couplings

Article no.	Model	L mm	B mm	H mm	Pack.
6800.2612	TVA-26-12	287	200	80	1
6800.2613	TVA-26-13	437	200	80	1
6800.2614	TVA-26-14	580	200	80	1

ACCESSORIES

TVA-30 Push-In fittings

For connecting PU vacuum hose.



Article no.	Model	CH1 mm	CH2 inches	Pack.
6800.3011	TVA-30-11	12	1/4"	1
6800.3012	TVA-30-12	12	3/8"	1
6800.3013	TVA-30-13	12	1/2"	1
6800.3022	TVA-30-22	16	3/8"	1
6800.3023	TVA-30-23	16	1/2"	1

TVA-30 Quick-action couplings for vacuum spiral wire hose



With internal thread

Article no.	Model	G inches	Pack.
6800.3041	TVA-30-41	1/4"	1
6800.3042	TVA-30-42	3/8"	1
6800.3043	TVA-30-43	1/2"	1

With external thread

Article no.	Model	G inches	Pack.
6800.3051	TVA-30-51	1/4"	1
6800.3052	TVA-30-52	3/8"	1
6800.3053	TVA-30-53	1/2"	1

TVA-30 Quick-action coupling with large hole

To be used in vacuum pumps upwards of 40m³/hour.



Article no.	Model	G inches	Pack.
6800.3074	TVA-30-74	3/4"	1

TVA-31 Plug-in nipple with hose pillar

For use with standard quick-action couplings.



Article no.	Model	D mm	Pack.
6800.3102	TVA-31-02	12	1

TVA-31 Plug-in nipple with thread

For use with standard quick-action couplings.



With external thread

Article no.	Model	D inches	Pack.
6800.3121	TVA-31-21	1/4"	1
6800.3122	TVA-31-22	3/8"	1
6800.3123	TVA-31-23	1/2"	1

With internal thread

Article no.	Model	G inches	Pack.
6800.3131	TVA-31-31	1/4"	1
6800.3132	TVA-31-32	3/8"	1
6800.3133	TVA-31-33	1/2"	1

TVA-31 Plug-in nipple with thread TBV TVA-30-74

For use with quick-action couplings with large hole.



With external thread

Article no.	Model	D inches	Pack.
6800.3144	TVA-31-44	3/4"	1

With internal thread

Article no.	Model	G inches	Pack.
6800.3154	TVA-31-54	3/4"	1

TVA-32 Hose pillar with thread

For connecting vacuum spiral wire hose.

With external thread



Article no.	Model	D1 mm	G inches	Pack.
6800.3201	TVA-32-01	8	1/4"	1
6800.3202	TVA-32-02	8	3/8"	1
6800.3204	TVA-32-04	12	1/4"	1
6800.3205	TVA-32-05	12	3/8"	1
6800.3206	TVA-32-06	12	1/2"	1
6800.3209	TVA-32-09	19	3/4"	1

With internal thread



Article no.	Model	D1 mm	G inches	Pack.
6800.3221	TVA-32-21	8	1/4"	1
6800.3222	TVA-32-22	8	3/8"	1
6800.3225	TVA-32-25	12	3/8"	1
6800.3226	TVA-32-26	12	1/2"	1

TVA-33 Double thread nipple, internal thread

For general mounting of couplings, etc.



Article no.	Model	G1 inches	G2 inches	Pack.
6800.3331	TVA-33-31	1/4"	1/4"	1
6800.3332	TVA-33-32	3/8"	3/8"	1
6800.3333	TVA-33-33	1/2"	1/2"	1
6800.3334	TVA-33-34	3/4"	3/4"	1

Reducer nipple



Article no.	Model	G1 inches	G2 inches	Pack.
6800.3341	TVA-33-41	3/8"	1/4"	1
6800.3342	TVA-33-42	1/2"	1/4"	1
6800.3343	TVA-33-43	1/2"	3/8"	1
6800.3344	TVA-33-44	3/4"	1/2"	1

TVA-33 Reducer nipple with external and internal thread

For general mounting of couplings, etc.



Article no.	Model	G1 inches	G2 inches	Pack.
6800.3350	TVA-33-50	1/4"	1/8"	1
6800.3351	TVA-33-51	3/8"	1/4"	1
6800.3352	TVA-33-52	1/2"	1/4"	1
6800.3353	TVA-33-53	1/2"	3/8"	1
6800.3355	TVA-33-55	3/4"	3/8"	1
6800.3356	TVA-33-56	3/4"	1/2"	1

TVA-33 Double thread nipple, external thread

For general mounting of couplings, etc.



Article no.	Model	G1 inches	G2 inches	Pack.
6800.3301	TVA-33-01	1/4"	1/4"	1
6800.3302	TVA-33-02	3/8"	3/8"	1
6800.3303	TVA-33-03	1/2"	1/2"	1
6800.3304	TVA-33-04	3/4"	3/4"	1

Reducer nipple



Article no.	Model	G1 inches	G2 inches	Pack.
6800.3311	TVA-33-11	3/8"	1/4"	1
6800.3312	TVA-33-12	1/2"	1/4"	1
6800.3313	TVA-33-13	1/2"	3/8"	1
6800.3314	TVA-33-14	3/4"	3/8"	1
6800.3315	TVA-33-15	3/4"	1/2"	1

TVA-34 T distributor

For general mounting of couplings, etc.



With internal thread

Article no.	Model	G1 inches	G2 inches	G3 inches	Pack.
6800.3401	TVA-34-01	1/4"	1/4"	1/4"	1
6800.3402	TVA-34-02	3/8"	3/8"	3/8"	1
6800.3403	TVA-34-03	1/2"	1/2"	1/2"	1
6800.3404	TVA-34-04	3/4"	3/4"	3/4"	1

With 2x external thread and 1x internal thread

Article no.	Model	G1 inches	G2 inches	G3 inches	Pack.
6800.3411	TVA-34-11	1/4"	1/4"	1/4"	1
6800.3412	TVA-34-12	3/8"	3/8"	3/8"	1
6800.3413	TVA-34-13	1/2"	1/2"	1/2"	1
6800.3414	TVA-34-14	3/4"	3/4"	3/4"	1

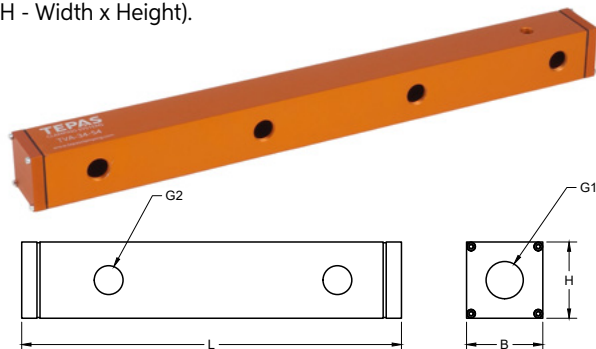
With 1x external thread and 2x internal thread

Article no.	Model	G1 inches	G2 inches	G3 inches	Pack.
6800.3421	TVA-34-21	1/4"	1/4"	1/4"	1
6800.3422	TVA-34-22	3/8"	3/8"	3/8"	1
6800.3423	TVA-34-23	1/2"	1/2"	1/2"	1
6800.3424	TVA-34-24	3/4"	3/4"	3/4"	1

ACCESSORIES

TVA-34 Distribution blocks without couplings

Can be fitted with own couplings. Aluminium 50x50mm (BxH - Width x Height).



Article no.	Model	G1 inches	G2 inches	Connections	Pack.
6800.3452	TVA-34-52	3/4"	1/2"	2	1
6800.3453	TVA-34-53	3/4"	1/2"	3	1
6800.3454	TVA-34-54	3/4"	1/2"	4	1

TVA-35 Sealing rings

For sealing without tape or glue.



Article no.	Model	G1 inches	Pack.
6800.3501	TVA-35-01	1/4"	1
6800.3502	TVA-35-02	3/8"	1
6800.3503	TVA-35-03	1/2"	1
6800.3504	TVA-35-04	3/4"	1

TVA-35 Hose clamps

Pinch clamps.



Article no.	Model	D1 mm	D2 mm	Pack.
6800.3541	TVA-35-41	13	21	1
6800.3542	TVA-35-42	18	25	1
6800.3543	TVA-35-43	22	30	1
6800.3544	TVA-35-44	30	40	1

Article no.	Model	D1 mm	D2 mm	Pack.
6800.3551	TVA-35-51	18	21	1
6800.3552	TVA-35-52	23	27	1
6800.3553	TVA-35-53	34	37	1
6800.3554	TVA-35-54	40	43	1

TVA-36 Rotary union



Article no.	Model	G1 inches	Pack.
6800.3602	TVA-36-02	1/4"	1
6800.3603	TVA-36-03	3/8"	1
6800.3604	TVA-36-04	1/2"	1
6800.3605	TVA-36-05	3/4"	1

TVA-37 Blind plugs

Blind plug with NBR sealing ring.



Article no.	Model	G1 inches	Pack.
6800.3701	TVA-37-01	1/4"	1
6800.3702	TVA-37-02	3/8"	1
6800.3703	TVA-37-03	1/2"	1
6800.3704	TVA-37-04	3/4"	1
6800.3705	TVA-37-05	1"	1

TVA-51 Vacuum valves

Ball valves with aeration.



Hand lever valve

Article no.	Model	G1 inches	Pack.
6800.5102	TVA-51-02	1/4"	1
6800.5103	TVA-51-03	3/8"	1
6800.5104	TVA-51-04	1/2"	1
6800.5105	TVA-51-05	3/4"	1
6800.5106	TVA-51-06	1"	1

Mini ball valve

Article no.	Model	G1 inches	Pack.
6800.5132	TVA-51-32	1/4"	1
6800.5133	TVA-51-33	3/8"	1

TVA-52 Vacuum gauges

With glycerine.



Hand lever valve

Article no.	Model	G1 inches	L mm	method of mounting	Pack.
6800.5201	TVA-52-01	1/4"	50	beneath	1
6800.5251	TVA-52-51	1/4"	50	behind	1

Protective cap

Article no.	Model	G1 inches	L mm	Pack.
6800.5281	TVA-51-81		50	1

TVA-54 Vacuum regulator

Mechanically adjustable vacuum regulator.



Article no.	Model	G1 inches	L/min	Pack.
6800.5402	TVA-54-02	1/4"	265	1

TVA-54 Electronic vacuum switch

Electronic mechanically adjustable vacuum switch.



Article no.	Model	G1 inches	Volts	Pack.
6800.5452	TVA-54-52	1/4"	max. 250	1

TVA-55 Electronic vacuum switch

Electronic digitally adjustable vacuum switch.



Article no.	Model	G1 inches	E	bar	V	Pack.
6800.5501	TVA-55-01	1/8"	M8x1	-1/0	10-30	1
6800.5502	TVA-55-02	1/8"	M8x1	-1/0	10-30	1
6800.5511	TVA-55-11	1/8"	M8x1	-1/0	10-30	1

TVA-55 Data cable

For electronic vacuum switch.



Article no.	Model	E	L	design	Pack.
6800.5551	TVA-55-51	M8x1	5m	straight	1
6800.5552	TVA-55-52	M8x1	5m	perpendicular	1

TVA-56 Level sensor

Electronic level sensor, 2 or 3 pins.



Article no.	Model	G	L mm	number of pins	Pack.
6800.5602	TVA-56-02	3/4"	max. 300	2	1
6800.5603	TVA-56-03	3/4"	max. 300	3	1

ACCESSORIES

TVA-56 Data cable

For electronic level sensor.



Article no.	Model	L	Pack.
6800.5693	TVA-56-93	3m	1

TVA-72 Oil filter



Article no.	Model	for m³/h	Pack.
6800.7202	TVA-72-02	40-63	1

TVA-70 Air filter housing with air filter

Steel air filter housing including polyester air filter.



Article no.	Model	for m³/h	G inches	Pack.
6800.7001	TVA-70-01	16-21	3/4"	1
6800.7002	TVA-70-02	40-63	1.1/4"	1

TVA-73 Oil-mist filter cartridge

For oil-lubricated vacuum pumps.



Article no.	Model	for m³/h	Pack.
6800.7301	TVA-73-01	16-21	1
6800.7302	TVA-73-02	40	1
6800.7303	TVA-73-03	63	1

TVA-71 Air filter

Polyester finish.



Article no.	Model	for m³/h	Pack.
6800.7101	TVA-71-01	16-40	1
6800.7102	TVA-71-02	40-63	1

TVA-74 Internal filter

For dry-running vacuum pumps.



Article no.	Model	for m³/h	Pack.
6800.7401	TVA-74-01	16-40	1

TVA-76 Cleaner

For the regular cleaning of vacuum units with fluid separator or overflow-function.



Article no.	Model	contents ltr	Pack.
6800.7601	TVA-76-01	1	1
6800.7602	TVA-76-02	5	1

TVA-77 Vacuum oil

For oil-lubricated vacuum pumps.



Article no.	Model	for m³/h	Pack.
6800.7701	TVA-77-01	16-21	1
6800.7702	TVA-77-02	40-63	1

TVA-77-51 Vacuum grease

Grease for greasing O-rings of hose pillars, couplers and blind plugs.



Article no.	Model	ml	Pack.
6800.7751	TVA-77-51	12	1

TVA-78 Maintenance sets

For Oil-lubricated vacuum pumps.



For oil-lubricated vacuum pumps.

Article no.	Model	for m³/h	Pack.
6800.7801	TVA-78-01	16	1
6800.7802	TVA-78-02	21	1
6800.7803	TVA-78-03	40	1
6800.7804	TVA-78-04	63	1

For dry-running vacuum pumps.

Article no.	Model	for m³/h	Pack.
6800.7811	TVA-78-11	16-40	1

TVA-80 Air-permeable plates

Made from sintered ceramic, type CE100W.



Article no.	Model	D mm	L mm	B mm	Pack.
6800.8010	TVA-80-10	10	500	500	1
6800.8015	TVA-80-15	15	500	500	1
6800.8020	TVA-80-20	20	500	500	1
6800.8025	TVA-80-25	25	500	500	1
6800.8030	TVA-80-30	30	500	500	1
6800.8035	TVA-80-35	35	500	500	1
6800.8040	TVA-80-40	40	500	500	1
6800.8050	TVA-80-50	50	500	500	1
6800.8060	TVA-80-60	60	500	500	1
6800.8070	TVA-80-70	70	500	500	1
6800.8080	TVA-80-80	80	500	500	1
6800.8087	TVA-80-87	100	500	500	1
6800.8088	TVA-80-88	400	500	500	1



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