

STOLLE

CAST IRON, PLATES + SERVICES.

Wilhelm Stolle GmbH
Postfach 30 12 52
D-53192 Bonn
Tel.: +49 228 950 33-0
Fax: +49 228 950 33-33
E-Mail: info@stolle.net

Produktionsstandorte:

Werk Bad Godesberg:
Friesdorfer Straße 137-139
D-53175 Bonn

Werk Beuel:
Broichstraße 78-90
D-53227 Bonn

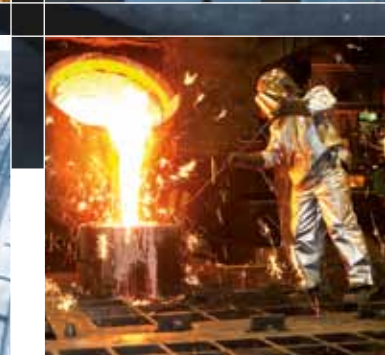
STOLLE Nederland BV:
Tangweg 1
NL-5991 PE Baarlo
Tel.: +31 77477 2020
Fax: +31 77477 3901
E-Mail: info@stolle.nl



www.stolle.net

GB 2013/500

Conception & Design: Welke Consulting Group, Siegen, Germany



Expertise
through experience

STOLLE
CAST IRON, PLATES + SERVICES.

We are working for you in these areas:



Metrology



Clamping technology



Test engineering



Special constructions

Contents	
Areas of expertise/contents	2-3
Services	4-5
Clamping technology	6-17
Test engineering	18-25
Metrology	26-29
Special constructions	30-35
Catalogue articles	36-37
Express shop	38-39
Refinishing	40-41
Delivery and assembly	42-43
This is STOLLE	44-47

STOLLE – Your system supplier

Everything from one source



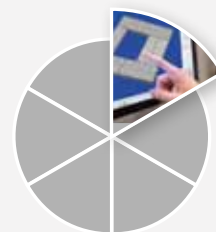
Planning

We plan each order for our customers from A to Z and leave nothing to chance. We make use of high-performance computer-aided technology in ultramodern 3D CAD workstations, among other places.



Logistics

We arrive just in time: We deliver a product just in time when it is needed from us with absolute transport security – including test reports, certificates, certificates of origin, warranties and accessories for assembly.



Development and construction

Our designers have many years of experience handling development and construction projects. They take all of the technical details into account and perform complex calculations (including FEM) to thereby guarantee products with a long performance life in the high quality that is expected from STOLLE.



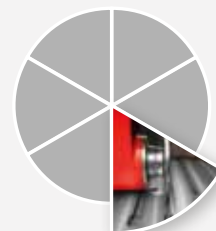
Assembly

Our specially trained installers with the top range of installation accessories place and anchor tooling plates, measuring plates or test stand plates worldwide, correctly and exactly in the right position.



Foundry

Special constructions are one of our specialties. That is why, in addition to workpiece sizes up to 9,000 mm long and up to 3,000 mm wide, we also offer custom sizes up to 3,600 mm wide. STOLLE manufactures casting weights up to 25 tonnes.



Machining

We guarantee machining down to the precise micrometre using modern CNC milling machines, drilling machines and planing benches. We thereby manufacture cast parts that are famous worldwide for their especially high rigidity, stability and precision.





Tooling plate in a moving column milling machine



21,000 x 11,000-mm tooling plate



Tooling plate for a gantry machine

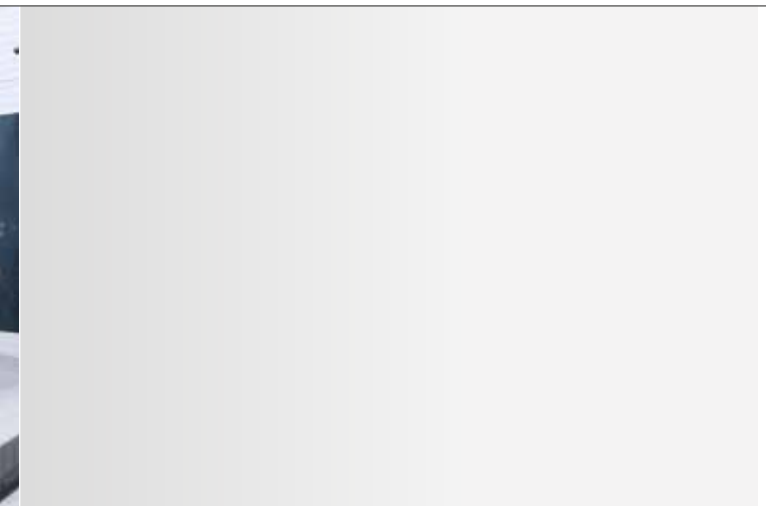
Clamping technology

Manufacturing upon request

STOLLE offers a standard range of products in the field of clamping technology that covers many different sizes. This allows us to be able to react flexibly and quickly to the requirements of our customers. Naturally we can also manufacture items according to individually specified sizes upon request.



STOLLE live



Large-scale processing centre using gantry construction with a STOLLE tooling plate field, 32,000 x 6,000 mm

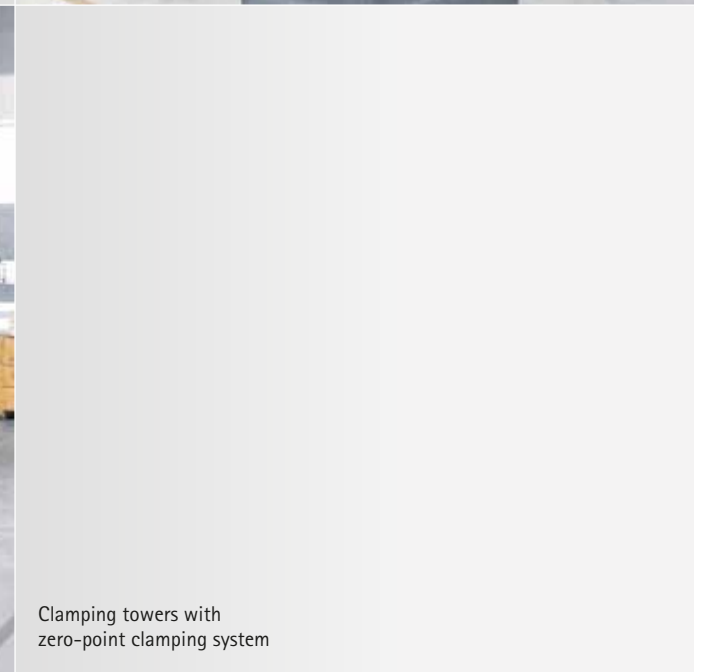


- Surface accuracies as per DIN 876/III, II and I
- T-slots as per DIN 650 – 10 to 42 mm in the accuracy tolerances H7 to H12
- Further STOLLE T-slots available in special dimensions upon request, e.g. in inches
- The standard product range includes plate load capacities of 5, 15 and 25 t/m²
- Higher loads up to over 150 t/m² available upon request



Tooling plates

- Up to 9,000 mm long and 3,000 mm wide in the standard product range
- All other sizes available upon request



Clamping towers with zero-point clamping system

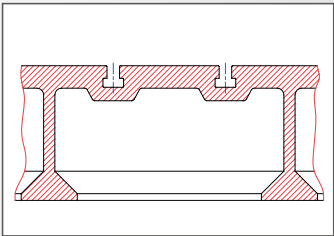




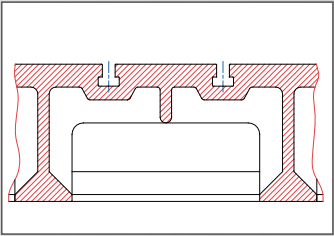
The production of tooling plates from design and mould construction to casting and all the way to machine finishing is carried out completely in-house by STOLLE. STOLLE tooling plates are designed so that they are suitable for various surface loads and applications. The length, width, height and even the ribbing of the plates can be individually customised. In cases of extreme loads we offer an FEM calculation.

After the casting the plates are machined with high precision on CNC-controlled milling machines or on planing benches. An oil-proof and waterproof design with a bolted-on or milled oil channel can also be manufactured. Several tooling plates can be connected into a tooling plate field using the corresponding plate connectors. The set-up is carried out on proprietary adjustment elements that are selected according to the type of set-up and plate load capacity.

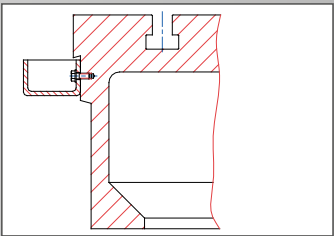
Normal ribbing



Reinforced ribbing

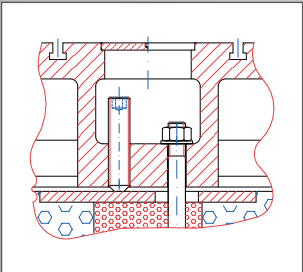


Version with oil channel



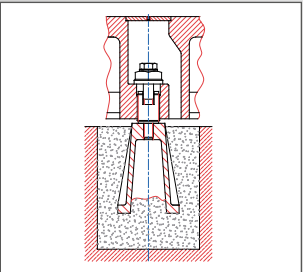
Load capacity	Plate height
up to 5 to/m ²	250 mm
up to 15 t/m ²	300 mm
up to 25 t/m ²	350 mm
up to 35 t/m ²	350 mm
up to 75 t/m ²	400 mm
up to 150 t/m ²	450 mm
over 150 t/m ²	500 mm

The recommended plate heights are specified for the corresponding m²load capacity in the following table.



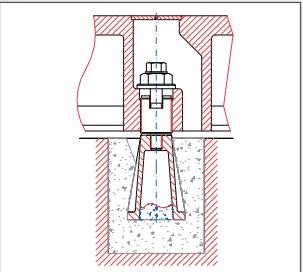
AG 30 adjusting unit

The AG 30 adjusting unit is suitable for the stationary setting of tooling plates and for grouting with non-shrink grout. Each rib field has a grouting opening. The grout should be poured approximately 10 – 15 cm into the ribbing. Subsequent adjustment of the plate after the grout has been poured is not possible. The level screw and dust-cover are included in the scope of supply.



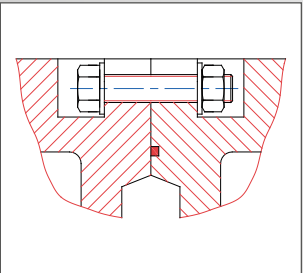
AE 55 alignment element

The AE 55 alignment element is suitable for loads up to 30 to/m². The complete alignment element consists of a foundation anchor which is grouted into the concrete and the actual adjustment element which is screwed into the plates. With this element the plate can be firmly anchored in the foundation and precisely adjusted in regard to tension and pressure. The scope of delivery includes the complete element including the foundation anchor and steel cover for the tooling plate. Subsequent readjustment of the plate towards the machine base is possible at any time from the plate surface.



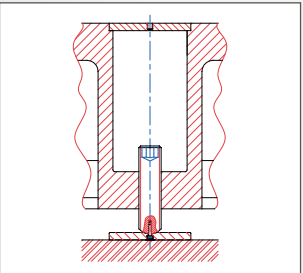
AE 82 / AES 82 alignment element

This alignment element is suitable for higher loads of over 30 up to approximately 100 to/m². In the AES 82 version an additional steel bushing is pressed into the tooling plate and riveted to enable the alignment element to accept loads of more than 100 t/m².



PST 24 plate connector

Individual plates can be combined into plate fields using bolts to produce a large flat clamping surface without any joints or edges as if cast from a single mould.



ST 30 regulating element

For set-up directly on the workshop floor where a plate working height that is as low as possible is desired. The plate is adjusted by altering the height of the square-head bolt. Other types of set-up are also possible as desired by the customer!



Tolerance tables

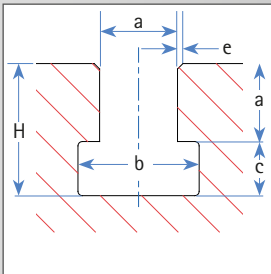
L mm	200	300	500	800	1000	1200	1500	2000	2500
DIN 876/III	48	52	60	72	80	88	100	120	140
DIN 876/II	24	26	30	36	40	44	50	60	70
DIN 876/I	12	13	15	18	20	22	25	30	35
DIN 876/0	4,8	5,2	6	7,2	8	8,8	10	12	14

L mm	3000	3500	4000	4500	5000	5500	6000	6500	7000
DIN 876/III	160	180	200	220	240	260	280	300	320
DIN 876/II	80	90	100	110	120	130	140	150	160
DIN 876/I	40	45	50	55	60	65	70	75	80
DIN 876/0	16	18	20	22	24	26	28	30	32

Data in µm

Surface accuracy - Tolerances

The surfaces of tooling plates, measuring plates, marking plates and surface plates are produced in accordance with DIN 876. The plates are laid onto at least three support points in order to measure their surface accuracy. The plate ribbing designed for each application transfers the forces that occur during use into the support points to ensure that the deformation of the surface to be measured is correspondingly low and the surface accuracy is correspondingly high.



Nominal measurement: a	for screws	b	c	H	e
10 mm	M8	17.5 – 18 mm	8 mm	18 mm	1.0 mm
12 mm	M10	20.5 – 21 mm	9 mm	21 mm	1.0 mm
14 mm	M12	1/2"	23.5 – 24 mm	10 mm	1.0 mm
16 mm	M14	26.5 – 27 mm	11 mm	27 mm	1.0 mm
18 mm	M16	5/8"	29.5 – 30 mm	12 mm	1.5 mm
20 mm	M18	33.5 – 34 mm	14 mm	34 mm	1.5 mm
22 mm	M20	3/4"	37.5 – 38 mm	16 mm	1.5 mm
24 mm	M22	7/8"	41.0 – 42 mm	18 mm	1.5 mm
28 mm	M24	1"	47.0 – 48 mm	20 mm	1.5 mm
32 mm	M27	1 1/8"	54 mm	22 mm	1.5 mm
36 mm	M30	1 1/4"	60 mm	25 mm	2.0 mm
42 mm	M36	1 1/2"	70 mm	29 mm	2.0 mm

T-slots

T-slots are manufactured according to DIN 650-H12 standard. It is also possible to manufacture T-slots with higher accuracies in the tolerance field H7 or H8. T-slots with special dimensions are available upon request!

Flatness tolerances:

The flatness tolerances indicate the permissible deviation of the measuring area in µm over the entire length L of the longest edge of the plate at a reference temperature of 20 °C.

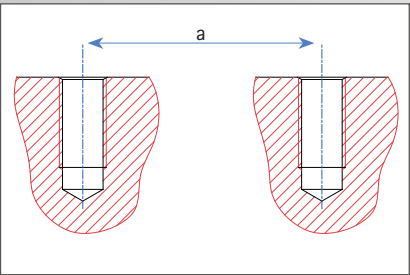
DIN 876/III = 40 + L : 25 = µm
DIN 876/II = 20 + L : 50 = µm
DIN 876/I = 10 + L : 100 = µm
DIN 876/0 = 4 + L : 250 = µm

Tolerance accuracies

Spacing tolerances for threaded holes (a)

0 – 2000	± 0.15
2000 – 4000	± 0.20
4000 – 6000	± 0.25
6000 – 8000	± 0.30

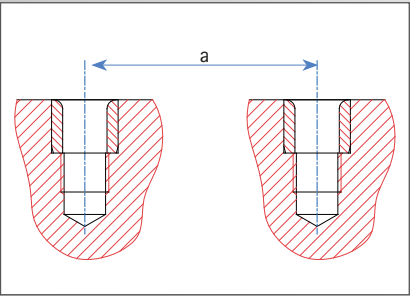
(in mm)
Higher tolerances available upon request.



Spacing tolerances for form fitted holes (a)

0 – 1000	± 0.05
1000 – 2000	± 0.08
2000 – 3000	± 0.10
3000 – 4000	± 0.12
4000 – 5000	± 0.13
5000 – 6000	± 0.15

(in mm)
Higher tolerances available upon request.



Machine base of a portal milling machine with connection surfaces and threaded drill holes for guide strips

Spaced drill holes



2-piece angled plate, total size 6,000 x 1,500 mm
Version with drill hole grid available as per customer specification



Machine table, 2,000 x 1,000 mm

Pallet clamping table for 4 x 90°
4-sided interchangeable pallet with
T-slots, height 2,200 mm

Angled plates and clamping cubes

- Customised clamping options for machining centres
- Fixing of workpieces in vertical position
- Clamping surfaces machined as per DIN 876/III
- With T-slots as per DIN 650-22H12 or DIN 650-28H12
- Other slot sizes as per DIN 650 from 12 to 42 mm also available
- Adjusted to the clamping options of the machine table

- The sizes and dimensions of the angled plates as well as the T-slots can vary according to customer requirements
- Angled plates: The standard product range encompasses the sizes from 1,500 x 800 to 3,500 x 1,500 mm
- Customised adjustment of the clamping cubes as requested by the customer





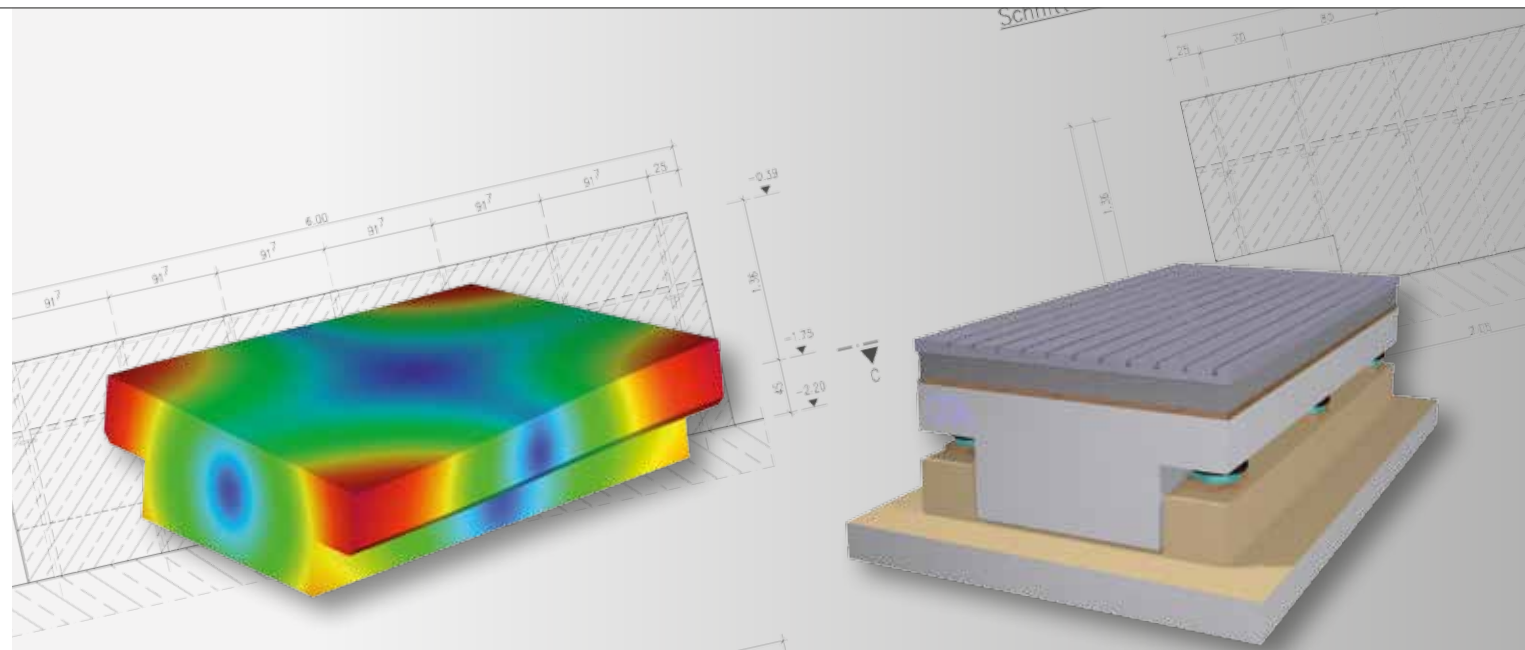
Test engineering

Turnkey solutions

STOLLE tooling plates are often an elemental component of a test stand. The width, length and height of the plates are adjusted to the natural frequencies and normally designed with vibration isolation.



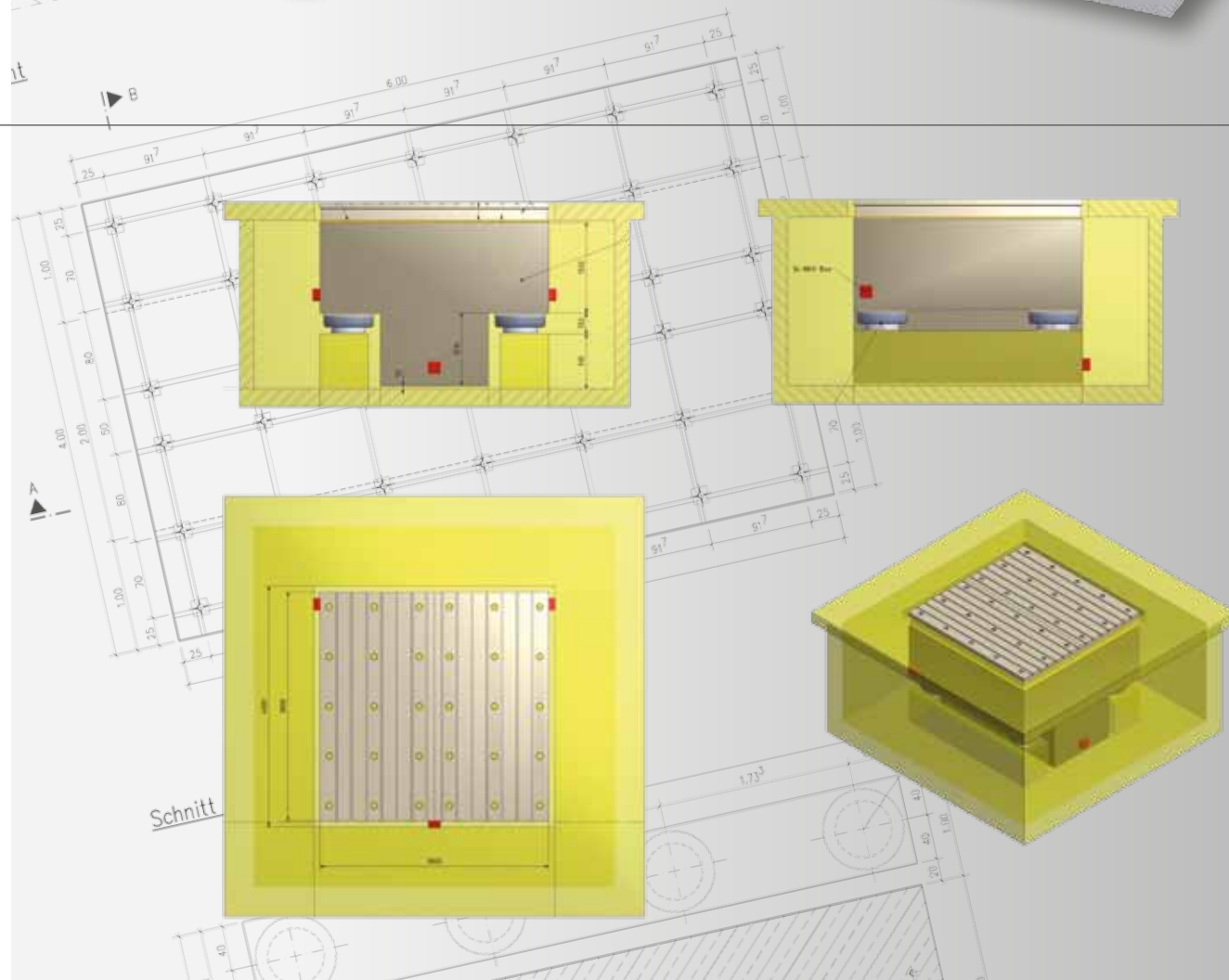
Driving simulator in Sindelfingen
Air suspension of the hexapod on a
base construction 31,000 mm long



STOLLE services

- Construction and design of the plate
- Foundation design
- Creation of formwork and reinforcement plans
- Selection of vibration isolation
- Static and dynamic calculation for determining the natural frequency and rigidity of the test stand plates and foundations
- Worldwide installation and commissioning
- Project management

We deliver and install the test stand plates with the appropriate vibration isolation according to your special applications.



Elastomer springs

Design of test stands with vibration isolation (e.g. servo hydraulic test stands with frequencies above 7 Hz). Rubber isolators designed according to the load capacities!



Trestle type VSD with elastomer spring

Steel spring isolators

Vibration isolation without level control for natural frequencies from 2 to 6 Hz.



Steel spring isolator



Air springs

With pneumatic, mechanical or electronic level control. Customised design of the suitable air springs from the different type series such as rolling lobe belts, bellows cylinders or membrane air springs.



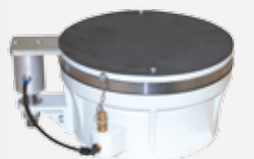
Bellow cylinder for the bedding of engine and drive unit test stands for frequencies of 2.3 – 3.7 Hz



Rolling lobe belt for the bedding of large foundations with a natural frequency of 1.3 to 1.6 Hz

Membrane air springs

High horizontal spring stiffness and adjustable air damping.



Membrane air spring for frequencies of 1.7 – 2.4 Hz



Wind power transmission system test stand

Generator test stand



Diesel engine development



Large-scale transmission system test stand for ship transmission systems
15,000 x 8,000 mm

STOLLE test stand plates in the energy industry

- Transmission and large-scale transmission system test stands
- Generator test stands
- Turbine test stands
- Engine test stands
- Condenser test stands
- etc.



Test plate including sub-frame with design-related adjustable lateral plate



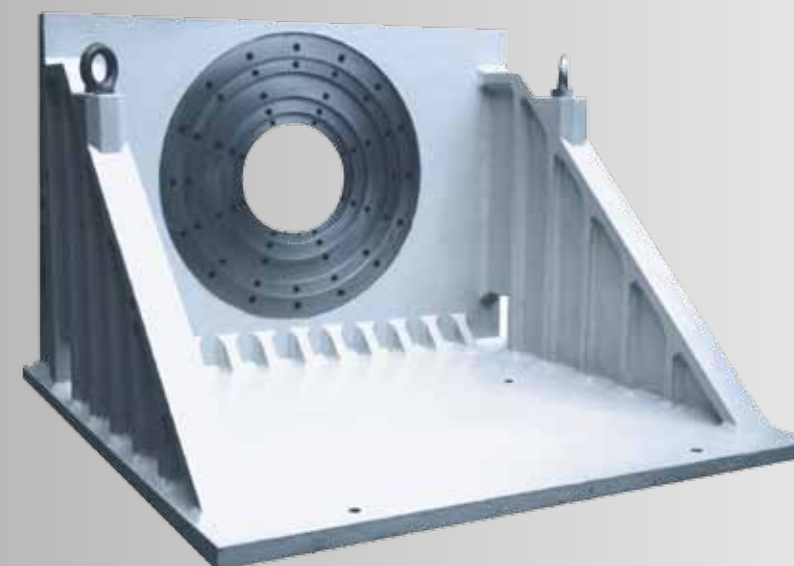


Test field for component tests
Tooling plate size 14,000 x 10,000 mm durably
connected with the seismic mass and designed
with vibration isolation

Tooling plate for static tests

STOLLE test stand plates in the automobile industry

- Engine test stands
- Transmission system test stands
- Exhaust test stands
- Brake test stands
- Axle test stands
- Acoustics test stands
- Roller test stands
- Torsion test stands
- Shaker test stands
- Road simulation test stands
- etc.



Heavy angle plate for electric engine test
stand, 2,200 x 1,800 x 2,000 mm





Metrology

Fast and precise

STOLLE measuring plates or marking plates are required throughout the entire manufacturing industry and are specifically adapted to the load capacities. The plates are also used in the automobile industry. There the plates are adapted according to the desires of the customer as needed and manufactured accordingly.



Customised solutions for specific requirements

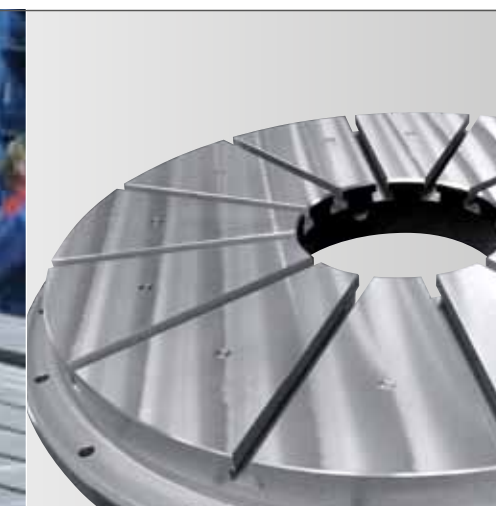
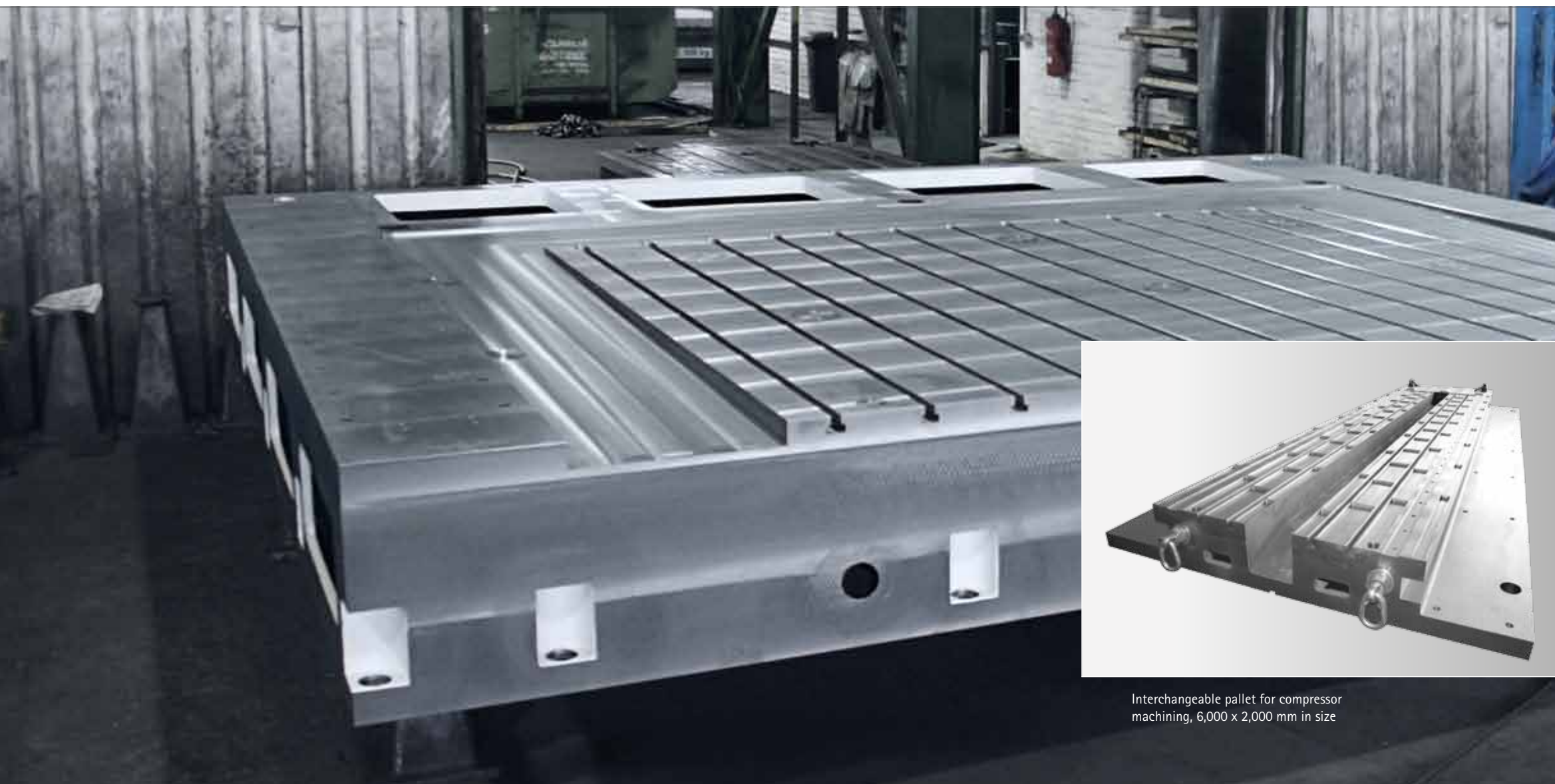
The STOLLE plates are individually designed with their load bearing capacity adjusted according to the size and weight of the workpieces to be measured and manufactured for the widest variety of guide systems. T-slots, holes and marking

lines are designed in according to your requirements. Thanks to our high manufacturing capacities and flexible processes we can also react quickly to changes to the product and can realise fast delivery times.

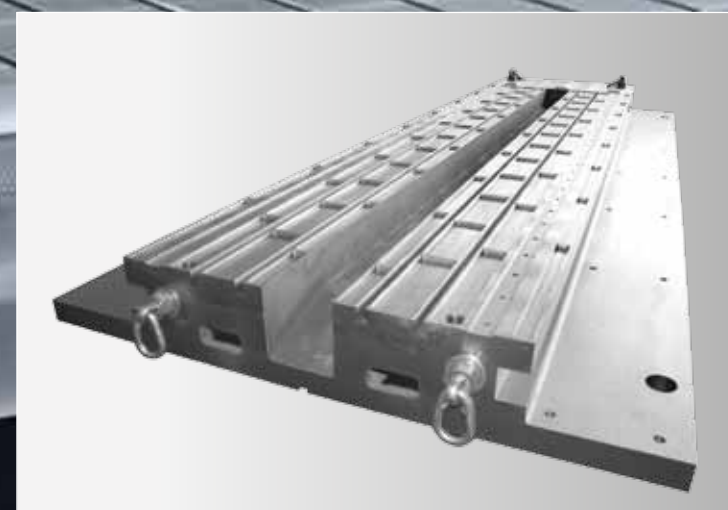


STOLLE live

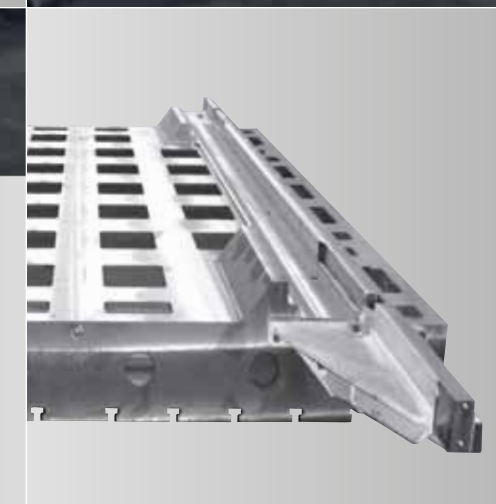




Tooling plate for special machining,
2,500 mm in diameter



Interchangeable pallet for compressor
machining, 6,000 x 2,000 mm in size

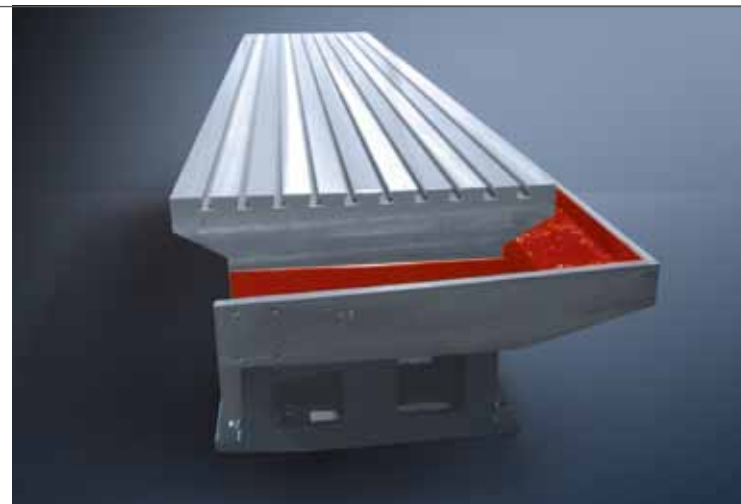


Machine table/interchangeable plate,
4,000 x 3,000 x 470 mm

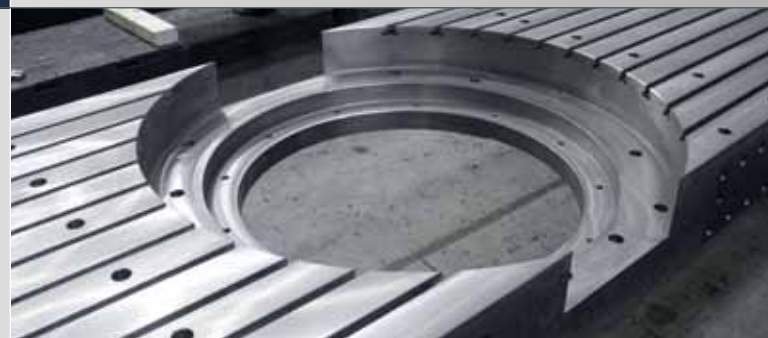
Special construction

Customised solutions

With over 110 years of experience, STOLLE advises and develops customised solutions to very specific requirements. This results in complete solutions with a great deal of manufacturer know-how and the highest degree of reliability, quality and precision. Our service and technical support are customised entirely to the needs of our customers.



Protruding base for column milling machine with integrated water channel, 7,400 x 1,100 x 850 mm



Tooling plate with integrated bearing for turntable



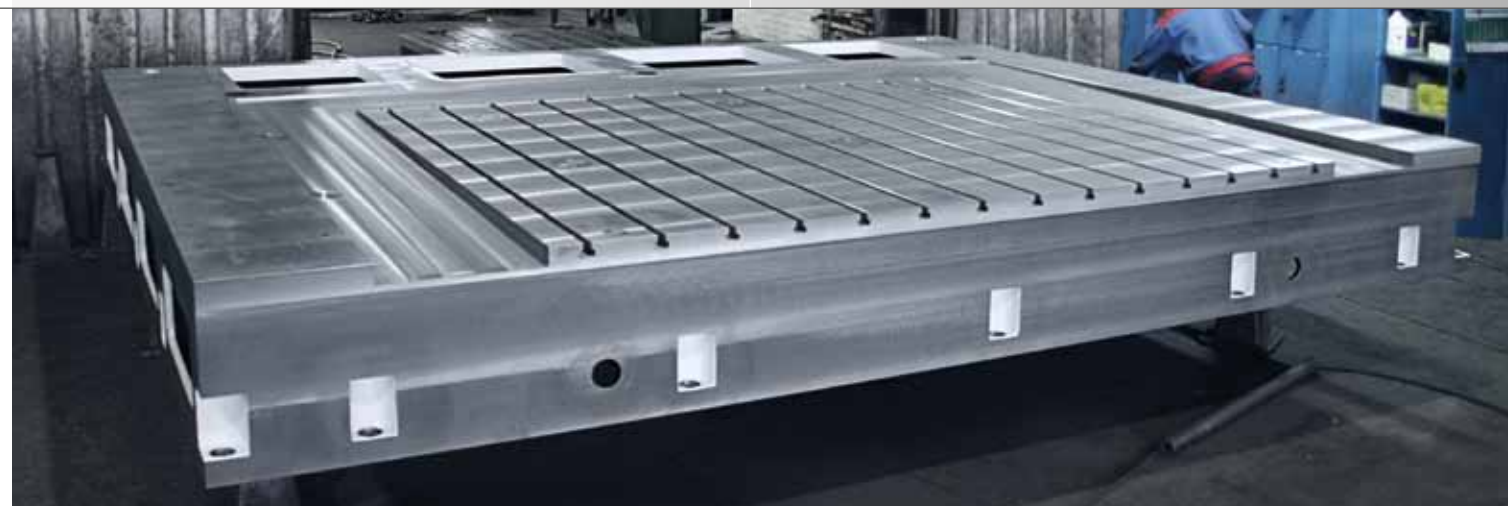
Segment of a turntable with a diameter of 10,000 mm



Working tables

- Different machine beds for machine tools
- Precision base for fast and flexible setup of the machine tool

Machine base with special design

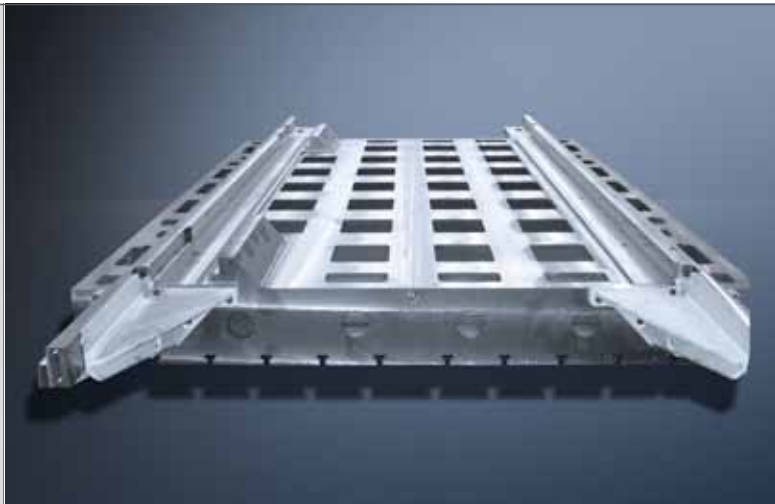


Turntables

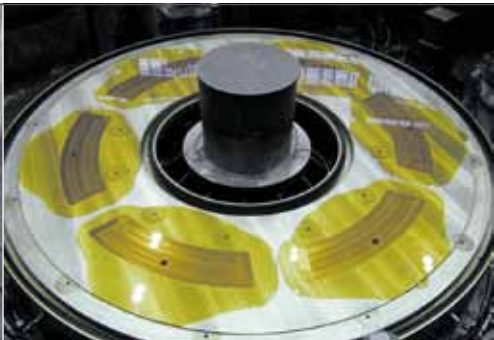


Mounting pallets

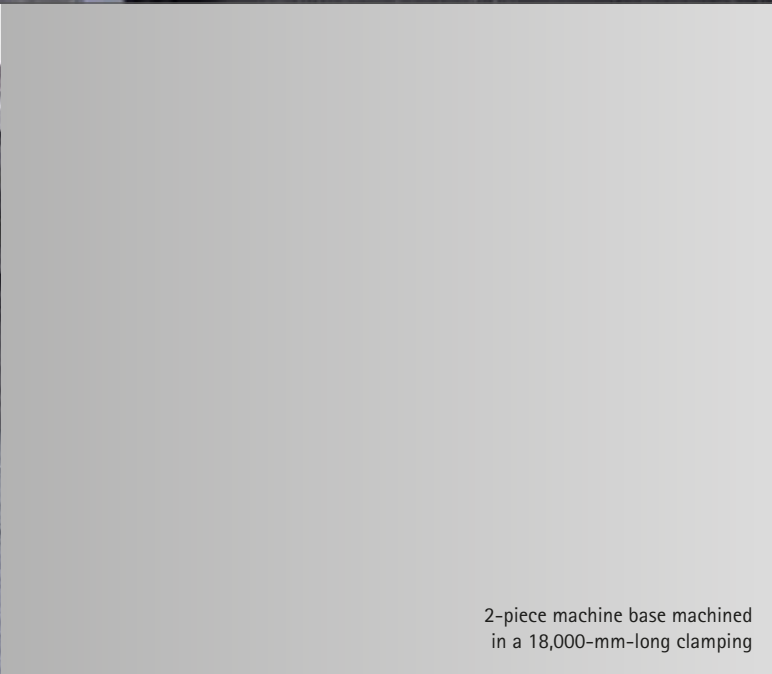
Workpieces are often already assembled on the mounting pallets outside of the machine before the machining. This minimises the effort required for assembly and noticeably minimises the degree of utilisation through the simultaneous assembly of several pallets on the base plate. The mounting pallets manufactured according to the customer's wishes thereby aid in the rapid, rigid and form-fit acceptance of workpieces with secure and exact positioning for further machining. With the mounting pallets we offer you cost-efficient solutions in proven STOLLE quality.



Machine table, 4,000 x 3,000 x 470 mm for a milling machine

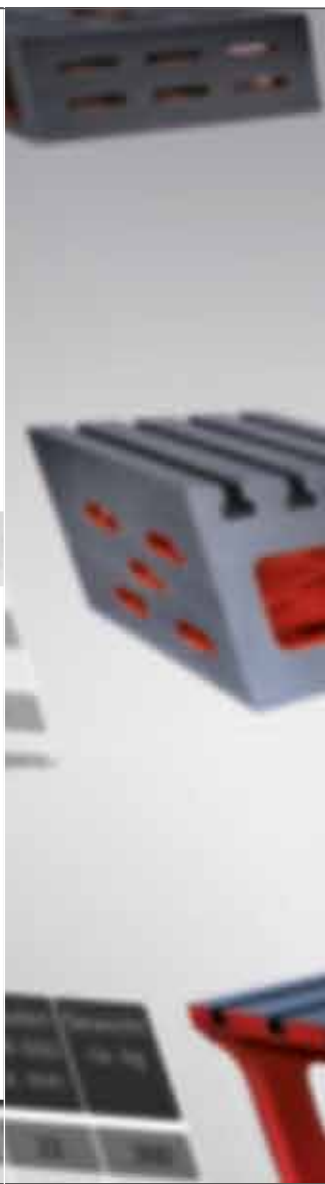
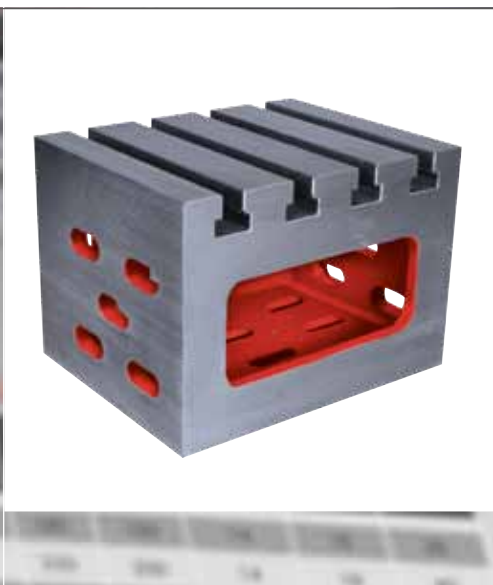
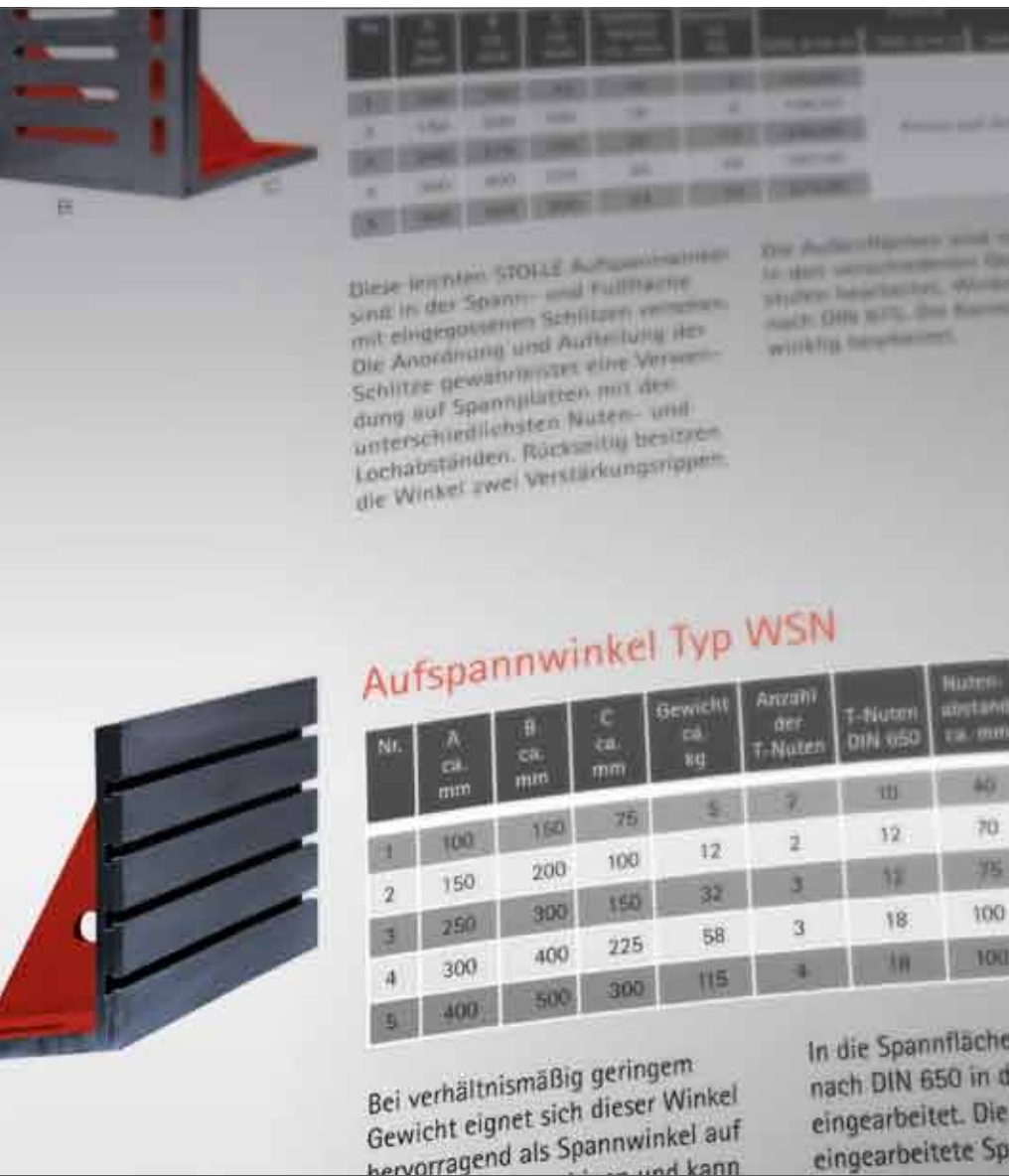


Turntable machining for ship propeller machining, 10,000 mm in diameter



2-piece machine base machined in a 18,000-mm-long clamping

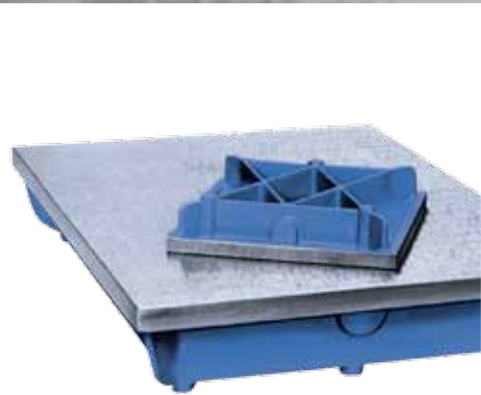




Precision in clamping technology

For further information please ask for our catalogue product brochure!

This way to the catalogue articles:
www.stolle-plates.com/catalogue-articles



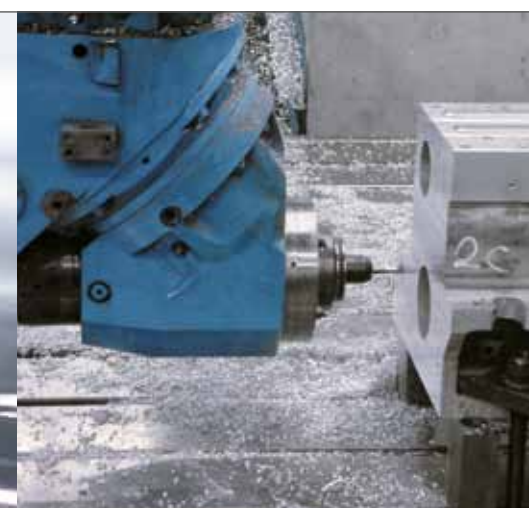


Visit our express shop!

Order our warehouse goods directly and simply via our express shop. Simply fill out the order form and the goods are already on their way to you!

This way to the
express shop:
www.stolle-plates.com/express-shop



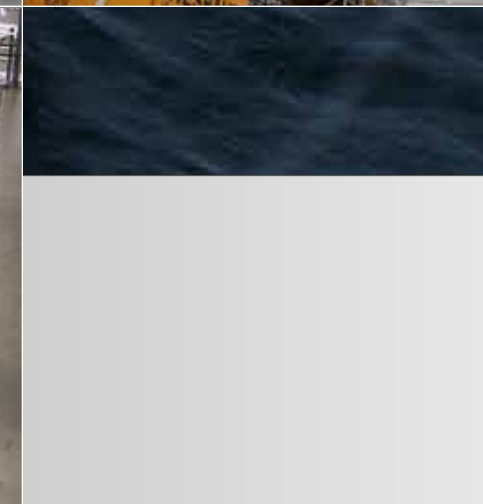


Refinishing

High demands on quality

Thanks to our machinery with an integrated CAD-CAM system we can quickly realise and reliably manufacture new projects. Whether individual or custom parts, small or large series, whether a complete product or individual components – we adapt to specific requirements.

The machining of various materials is one of our speciality areas. We can thereby offer you a broad range of applications. That is know-how straight from STOLLE!



Logistics and assembly

Always one step ahead

STOLLE logistics and assembly offers:

- development and project planning
- sea packaging
- storage of goods in our logistic halls until delivery
- worldwide transport organisation
- worldwide assembly



Our core area of expertise: casting and machining

STOLLE has more than 100 years of experience in iron casting and machining. In our foundries we manufacture cast parts weighing up to 25 t in sizes up to 9,000 x 3,600 mm. We then machine them with the highest degree of precision and customised to fit customer requests and DIN standards.

We offer quality according to the highest technical requirements while never losing sight of the environment or our employees.

STOLLE has been connecting generations since 1898

We have been a family-run company for four generations that has made a name for itself as a leading manufacturer and supplier of complete solutions in clamping technology as a market leader throughout Europe. STOLLE offers customers cost-efficient cast iron solutions that have been proven in practice. They stand for the highest degree of precision and qualities. We are dependable and obliging to our customers, our staff of over 170 employees and our numerous suppliers. Our services stand out due to their high quality and long service life. That is

because STOLLE is a company with a long tradition that maintains long-standing business relationships with its customers, employees and suppliers for the future. In doing so we wish to be measured and consistent with the best certified quality in our services. Just as change is always permanent in technology, we are also continuously improving our products for clamping technology with great passion. Our customers can therefore rely on the fact that they have a responsible partner who stands for cost efficiency, fairness and long-term relationships.

STOLLE – Expertise, quality and assurance



We have agencies representing us in these countries:



Germany:
Wilhelm Stolle GmbH
Postfach 30 12 52
D-53192 Bonn
Phone: +49 228 95033-0
Fax: +49 228 95033-33
E-Mail: info@stolle.net
www.stolle.net



Netherlands:
STOLLE Nederland BV
Tangweg 1
5991 PE Baarlo
Phone: +31 77 4772020
Fax: +31 77 4773901
E-Mail: info@stolle.nl



France:
STOLLE France
Franco Allemands Partenaires
5 rue Antonio Vivaldi
78590 Noisy le Roi - France
Phone: +33 9 81 03 50 45
Fax: +33 1 30 56 50 45
Mobil: +33 6 68 20 50 50
E-Mail: la Gazette@stolle.net



Eastern Europe:
STOLLE Czechia
CZ, Slowakische Republik, Polen,
Slowenien, Kroatien, Bosnien und
Herzegowina, Ungarn, Weißrussland
und RUS (Ost-Europa)
Boreticka 4009/13
CZ 628 Brno-Zidence
Mobil: +420 605 247 947
E-Mail: razik@stolle.net



USA:
CFM ITBONA LLC
4282 Shoreline Drive
Spring Park, Minneapolis 55384
Phone: +1 952 942 610 4
Fax: +1 952 942 610 6
E-Mail: info@cfm-itbona.com



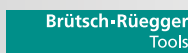
England:
PES (UK) Limited
Unit 1 Watling Close
Sketchley Meadows Business Park, Hinckley
Leicestershire LE10 3EZ
Phone: +44 14 5525 1251
Fax: +44 14 5525 1252
E-Mail: sales@pesukltd.com



Spain:
Pol. Ind. de Goian. San Andrés
1. Pabellón 5.
E-01170 Legutiano
Phone: +34 945 465460
Fax: +34 945 465461
E-Mail: info@bereiker.com



Italy:
AMU Princigalli srl
Via Como, 124
23883 Brivio LC
Phone: +39 039 5320749
Fax: +39 039 9273300
E-Mail: amu@amusrl.com



Switzerland:
Brütsch/Rüegger Werkzeuge AG
In der Luberzen 1, CH-8902 Urdorf
8010 Zürich
Phone: +41 44 736 63 63
Fax: +41 44 736 63 00
E-Mail: info@brw.ch