

**"Punch & Tool system",
the ultimate tool for all who work with sheet metal**

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ADR AG in Wiesloch near Heidelberg in Germany manufactures with high precision for the international ADR Distributer, since more than 30 years electronic assemblies, nearly all complete tools for electronic and mechanic techniques.

ADR AG offers today the new designed **Punching System P&T** with punching tools for electrotechnics and mechanics. This system is designed for the requirements of designers, laboratory-engineers, modeldesigners, hobby-engineers, prototypmanufacturers to work on front panels, housingparts, instrumentchassis, printed circuit boards in industry, trade and hobbysector.

The Punching system P & T is suitable for: fast and easy manufacture of holes, notches, corner radiuses, bendings, on sheet metal parts, printed circuit boards, foils, plastic, cardboard, paper, and so on, for materials as unhardened steel, aluminum, brass, copper, epoxy resin, pertinax, and others.

The advantage compared with holes made by drilling or filing, is the fast, clean and dimensionally stable manufacture of holes with the professional look, on single pieces as on small-lot runs.

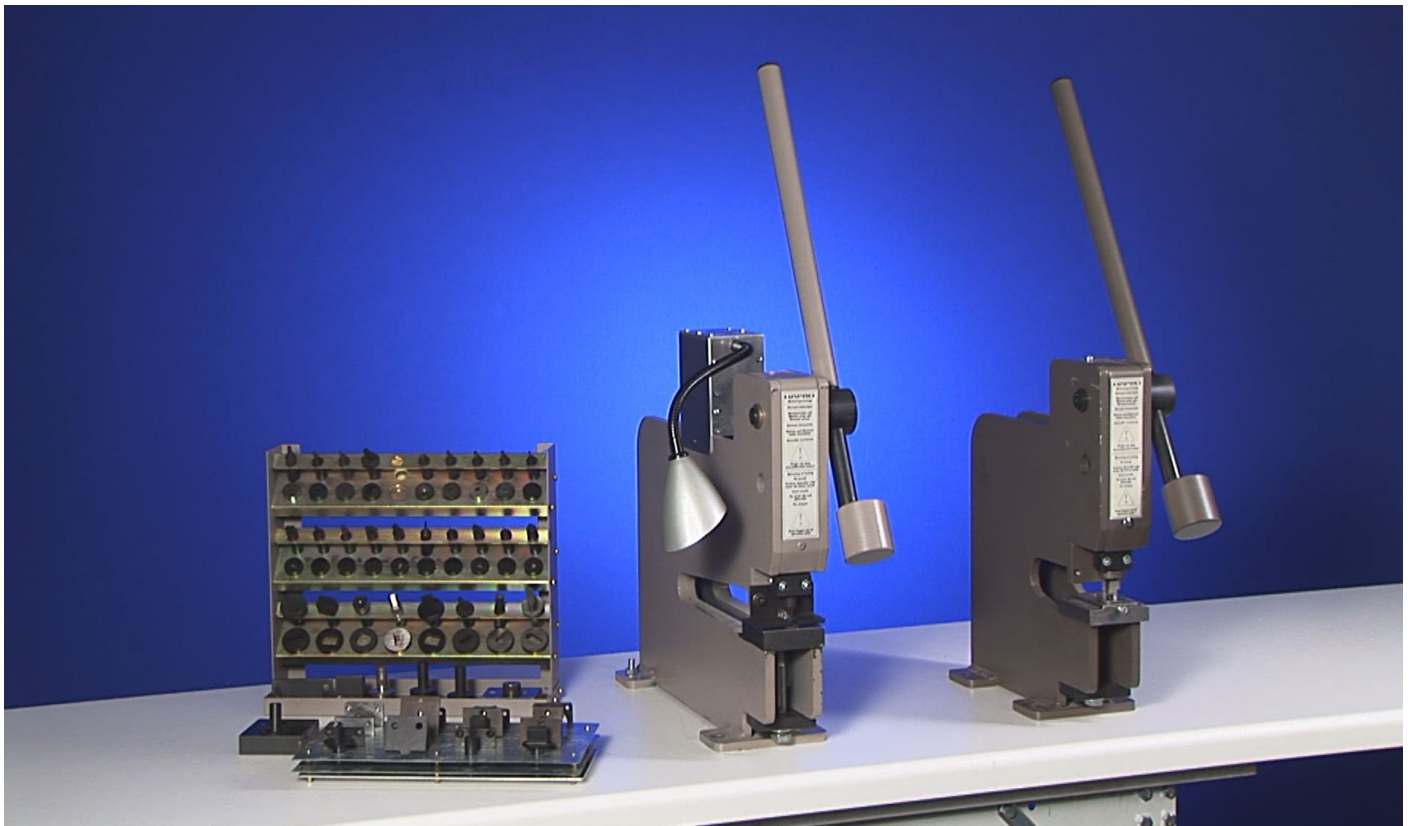
The system consists of two compact punching presses with different throat clearance, high punch force and a rich program of application tools.

Especially suitable for electronics, with punchtools for circular and square holes, slots and cutouts to assemble switches, connectors, potentiometers, LEDs, boards, meters, loudspeakers and many other applications. Available are application tools for bending of precise 90° bends. Special tools allow notches, corner radius, pressing of doubleribs and others.

The accessories, consisting of stop bar and guide systems, dieholders, strippers, waste bins and clear storing systems, speeds up your work and makes it easier, especially on serial production.

The costs are comparatively low for you, because additionally to the favourable punching presses, there are low-priced application tools for circular, square, shaped and special holes available. They are made out of tool steel for long lifetime.

The distribution for this punching system takes place through the international **ADR AG** authorised distributors, which are available for you anytime with information and service.



Arrangement for a number of punching presses to manufacture small-lot runs. Several punches save set-up times by dropping many tool changings. The length for a

work bench of about 60 inches is suitable for 3 or 4 punches. A smaller clearance is possible while manufacturing small parts.

P&T Plate shear 330/480/635

Plate shear

Solid plate shear, bench version, rugged steel design, for precise sheet blanks of different materials like soft steel, brass, aluminum, copper and circuit boards, plastics sheet, cardboard and others. Easy handling with hand lever, try square and parallel stop bar in the rear.

- Blank holder and blade operation with one stroke, designed on body of solid steel,
- Try square and graduated scale allows precise front positioning,

Technical Data

P&T Shear 330 Max. Width of cut: 330 mm
 P&T Shear 480 Max. Width of cut: 480 mm
 P&T Shear 635 Max. Width of cut: 635 mm

Max. Thickness of cutting material

Circuit boards: small 2mm up to 330 3 mm
 Steel sheet, unhardened: 1 mm
 Alu 1mm up to 3mm

Order-No.

P&T Shear 330

P&T Shear 480

P&T Shear 635

- Adjustable precise rear stop with graduated scale and long travel way,
- Blank holder with defined contact force on the cutting material, □
- Precise adjustment of all corresponding parts for dimensional stability,
- Grinded blades allow clean cutting edges and minimized formation of burrs, □
- For long life time blades are manufactured of hardened tool steel, □
- Safe operation with finger protection up to P&T Shear 330.



Two solid punching presses for sheet metal and foil metal working. Suitable for reception of many application tools for easy and fast cutting, punching, notching, bending, riveting, crimping, cutting off to length of axles and other working on aluminum, copper and steel sheet, printed circuit boards and plastic plates. □

Rugged steel construction with precise guideway, high power transmission ratio and high press power up to max.5 ton

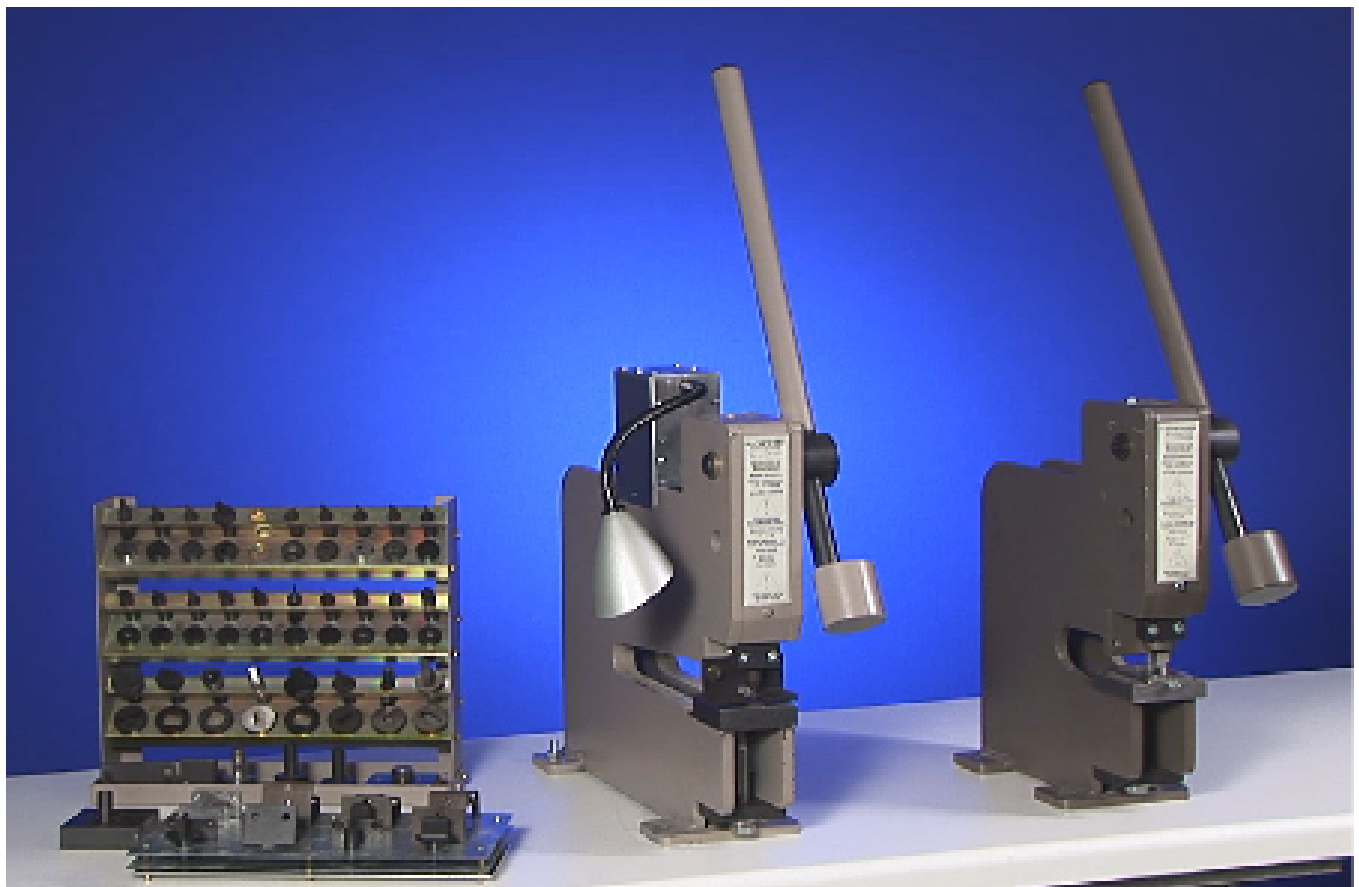
- For the reception of:
- circular punch tools up to 30 mm dia.,
- square punch tools up to 25x25 mm,
- notching and cutting tools,
- bending tools with width up to 120 mm,
- rivet-, crimp- and cut off to length tools.

Suitable for the reception of tools with small cutting clearance, useable for material thickness 0,1 up to 5mm.

Easy, unproblematic handling.

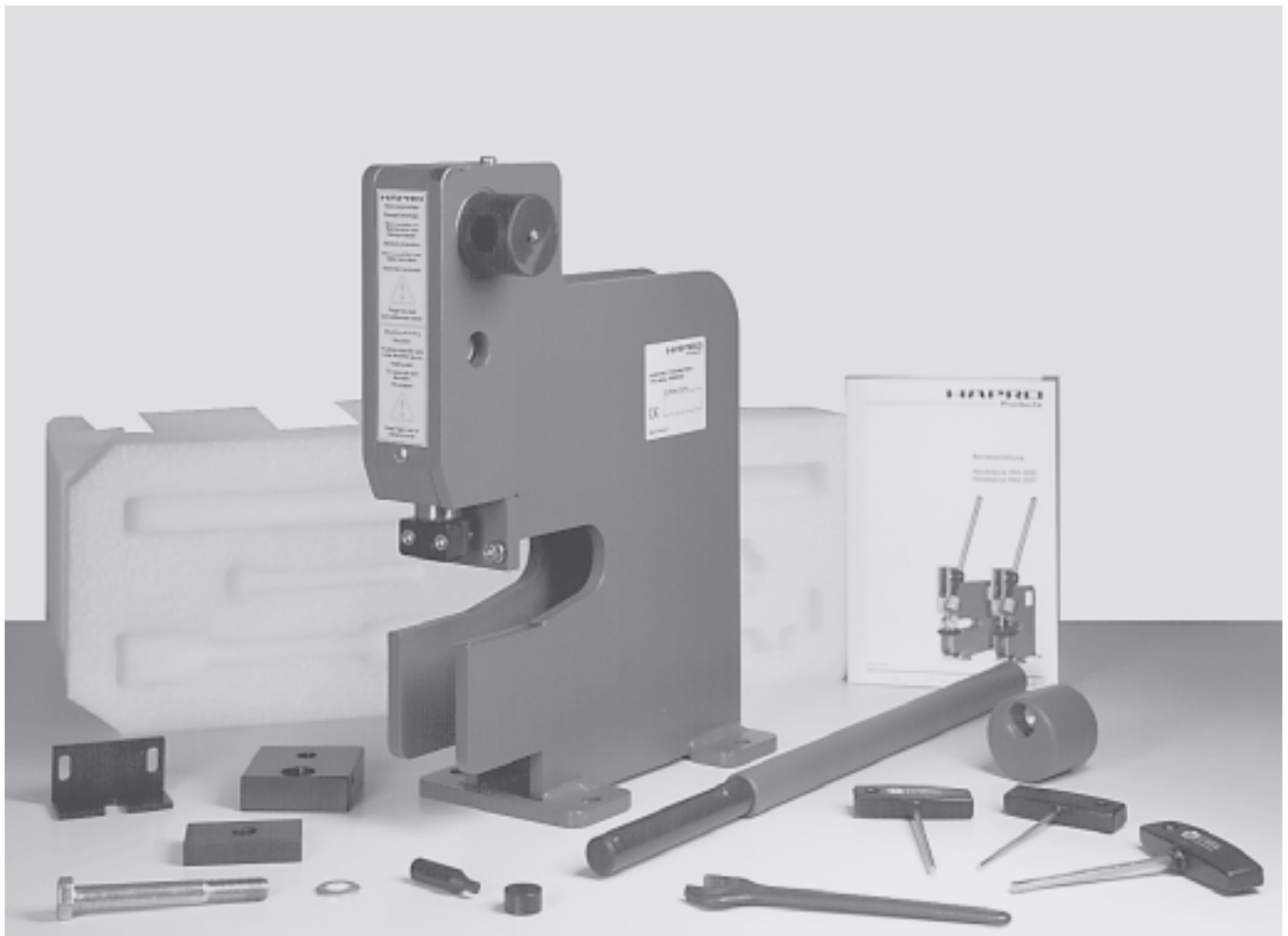
Low handle force. Technical data:

Order Number:	PP120	PP240
Throat clearance:	nom. 1,4 ton	nom. 1,4 ton
Punching power:	max. 5 ton	max. 5 ton
Circular holes:	up to 120 mm	up to 260 mm
(corresponding to application tool) Square holes:	up to 25x25mm	up to 25x25mm
(corresponding to application tool) Round holes:		
(WxDxH):	125x300x375	125x450x375 mm
Weight:	18 kg	25 kg



Schedule of parts supplied:

1 pcs. Punching press
1 pcs. Crossbar
1 pcs. Locking screw M12x100 mm
1 pcs. Wrench 19 mm
1 pcs. Allen key 3 mm
1 pcs. Allen key 4 mm
1 pcs. Allen key 5 mm
1 pcs. Stripper SN8 1 pcs.
Dieholder RD20 1 pcs. Circular
punch dia. 6 mm 1 pcs. Circular
die dia. 6 mm 1 pcs. Operation
manual
1 pcs. Packaging



Hole-punching tools for sheet metal working with high precision for designers on electronics and electrical engineering. For application on the P&T punching presses PP120 and PP240.

Forming tools for often used cut-outs for controls and displays.

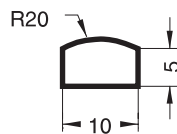
Punch tools for universal cut-outs by one's choice, circular dia. 40 mm up to dia. 200 mm, square 2,5x5mm up to 240x240 mm.

Fast, clean and precise working results by easy handling. Punches with circular shaft and circular lower dies are rotatable for good accessibility.

Punches and dies made of toolsteel for standard application, for small and medium quantities and material with low and normal strength, like steel sheet, brass, aluminum, copper, paper, cardboard and others. Well-tried standard quality with good price performance ratio.

Super high-speed steel on request.

Universal hole punching tool-set



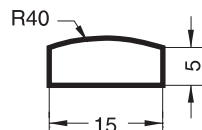
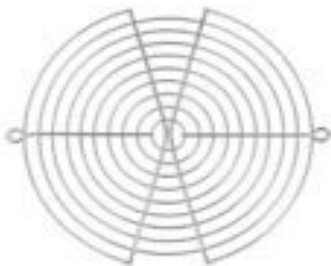
Quadrangle 5 x10 mm with Radius 20 mm

Punching tool-set consisting of punch and lower die to produce circular holes with radius 20 mm to 60mm

Punch-shaft dia. 12 mm Lower

Order-No. CIR20

Universal hole punching tool-set



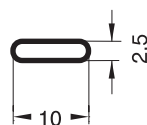
Quadrangle 5 x15 mm with Radius 40 mm

Punching tool-set consisting of punch and lower die to produce circular holes with radius 40 mm to 120mm.

Punch-shaft dia. 12 mm

Order.No.CIR40

Punch tool for slots



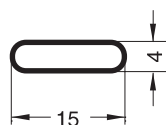
2,5 x 10 mm

Punching tool-set, consisting of punch and lower die for slots with rounded ends.

Punch-shaft dia. 12 mm
Lower die, outer dia. 40x40 mm

Order-No. 2K5Rx10

Punch tool for slots



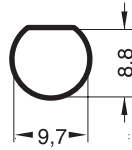
4 x 15 mm

Punching tool-set, consisting of punch and lower die for slots with rounded ends.

Punch-shaft dia. 12 mm
Lower die, outer dia. 40x40 mm

Order-No. 4Rx15

Punch Tool-Set for BNC-Connectors



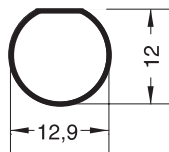
9,7 x 8,8 mm
for BNC-Receptacle

Punching tool-set, consisting of punch and lower die for circular holes with flattening.

Punch-shaft dia. 12 mm
Lower die, outer dia. 40 x 40 mm

Order-No. BNCB9K7

Punch Tool-Set for BNC-Connectors



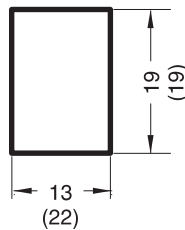
12,9x12,0 mm
for BNC-Receptacle

Punching tool-set, consisting of punch and lower die for circular holes with flattening.

Punch-shaft dia. 12,9 mm
Lower die, outer dia. 40x40 mm.

Order-No. BNC12k9

Tool-Set for Rocker Switches



19 x 13 mm for Rockerswitch, 1-pole
19 x 22 mm for Rockerswitch, 2-pole

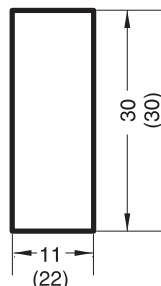
Punching tool-set, consisting of punch and lower die for square holes for rocker switches

Punch shaft dia. 12 mm
Lower die, outer dia. 40 x 40 mm

Cut-Out: 13x19 mm
Order-No.VK13x19

Cut-Out: 19x22 mm
Order-No.VK22x19

Tool-Set for Rocker Switches



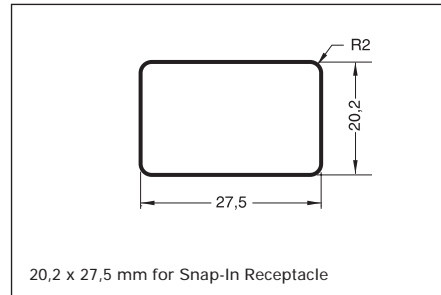
30x11 mm for Rockerswitch, 1-pole 30
x 22 mm for Rockerswitch, 2-pole

Punching tool-set, consisting of punch and lower die for square holes for rocker switches

Punch shaft dia. 12 mm
Lower die, outer dia. 40 x 80 mm

Cut-Out: 30x11 mm
Order-No. VK11x30
Cut-Out: 30x22 mm
Order-No. VK22x30

Punch Tool-Set for CEE-Std. Connectors, 3-pin

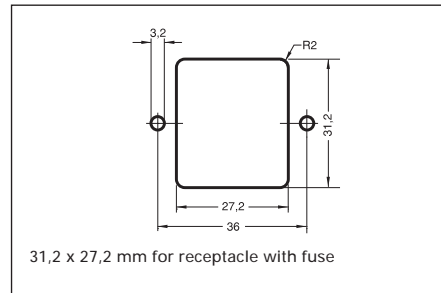


Punching tool-set, consisting of punch, lower die, stripper and adjustable Stop-Bar System. Suitable for holes with distance to the edge of plate of about 240 mm. Fixture of punch with four screws.

Lower die, outer dim. 40 x 40 x 4 mm

Order-No. VK20K2x27K5

Punch Tool-Set for CEE-Std. Connectors, 3-pin



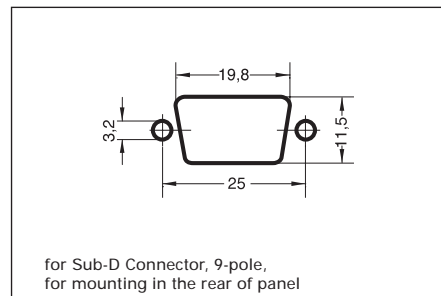
Punching tool-set, consisting of punch, lower die, stripper and adjustable Stop-Bar System. Suitable for holes with distance to the edge of plate of about 240 mm. Fixture of punch with four screws.

Lower die, outer dim. 40 x 60 x 4 mm

Order-No. VK20x27K2

Order-No. VK31K2x36

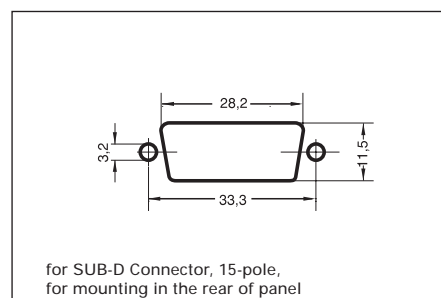
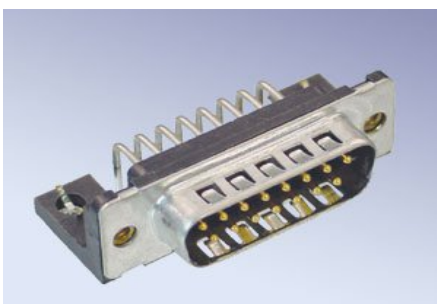
Punch Tool-Set for SUB-D Connectors, 9-pin



Punching tool-set, consisting of punch, lower die, stripper and adjustable Stop-Bar System. Suitable for holes with distance to the edge of plate of about 240 mm. Fixture of punch with four screws. Cut-Out size for rear panel mounting of SUB-D Connectors, 9-pin.

Order-No. SUBD9

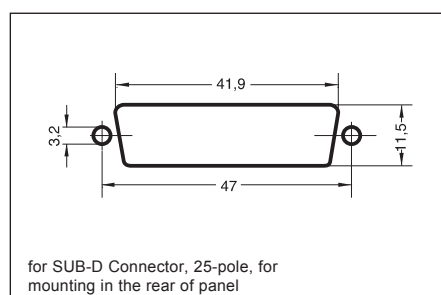
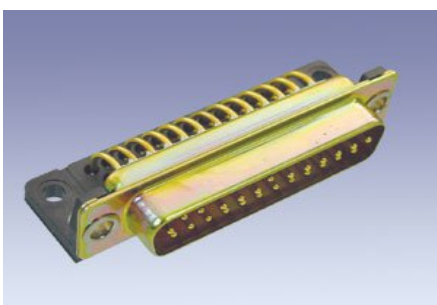
Punch Tool-Set for SUB-D Connectors, 15-pin



Punching tool-set, consisting of punch, lower die, stripper and adjustable Stop-Bar System. Suitable for holes with distance to the edge of plate of about 240 mm. Fixture of punch with four screws. Cut-Out size for rear panel mounting of SUB-D Connectors, 15-pin.

Order-No. SUBD15

Punch Tool-Set for SUB-D Connectors, 25-pin



Punching tool-set, consisting of punch, lower die, stripper and adjustable Stop-Bar System. Suitable for holes with distance to the edge of plate of about 240 mm. Fixture of punch with two screws M6. Cut-Out size for rear panel mounting of SUB-D Connectors, 25-pin.

Order-No. SUBD25

Punch Tool-Set for Potentiometers



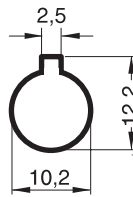
for Potentiometer with nose, M7 x 0,75

Punching tool-set, consisting of punch and lower die, for circular holes with 7,2 mm dia. and nose.

Punch shaft dia. 12 mm
Lower die, outer dia. 40x40 mm.

Order-No. POT17K2

Punch Tool-Set for Potentiometers



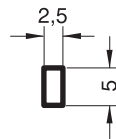
for Potentiometer with nose, M10 x 0,75

Punching tool-set, consisting of punch and lower die, for circular holes with 10,2 mm dia. and nose for Potentiometer.

Punch shaft dia. 12 mm
Lower die, outer dia. 40x40 mm.

Order-No. POT10K2

Punch Tool-Set for LED's



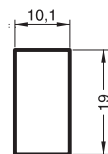
for LED, rectangular

Punching tool-set, consisting of punch and lower die, for square holes.

Punch shaft dia. 12 mm
Lower die, outer dia. 40x40 mm

Order-No. VK2K5x5

Punch Tool-Set for 7-Segment Displays



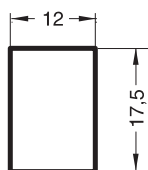
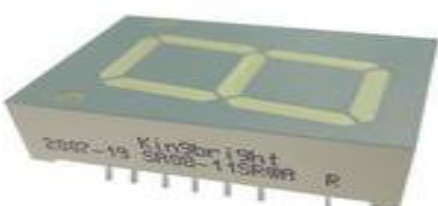
for 7-Segment Display

Punching tool-set, consisting of punch and lower die, for square holes.

Punch shaft dia. 12 mm
Lower die, outer dia. 40 mm

Order-No. VK10K1x19

Punch Tool-Set for 7-Segment Displays



for 7-Segment Display

Punching tool-set, consisting of punch and lower die, for square holes.

Punch shaft dia. 12 mm
Lower die, outer dia. 40 mm

Order-No. VK12x17K5

Round Punches and Dies with high precision for application on ADR AG Punch&Tool punching presses PP120 / PP240

- Punches and dies for circular holes accurate to size, for most of the applications, like holes for screws and rivets, axles, wires, cable and other elements.

- **WS Toolsteel** for standard application, for small and medium quantities and material with low and normal strength, like unhardened steel sheet, brass, aluminum, copper, paper, cardboard, hardboard and others. Well-ried standard quality with good price performance ratio.

- HSS Super high speed steel for professional application on request

- All punches and dies are hardened and grinded for long lifetime

- For exact positioning all punches for circular holes size 2,5 mm and bigger are equiped with centre points.☒

- Special sizes on request.

Tool-Sets for circular holes



Punch and Die Sets, Hole diameter in mm from 1 to 30mm in steps of 0,5 and additional Hole diameter :
2,1 2,3 3,3 5,1 6,2 6,3 9,4



All punches with shaftdiameter 12 mm.
All circular punches d=2,5 mm and bigger optional with centre point.
Dies from 2,0 up to 12,0 mm with outer diameter

Order-No. see pricelist

Round Punches and Dies with high precision for application on ADR AG Punch&Tool punching presses PP120 / PP240

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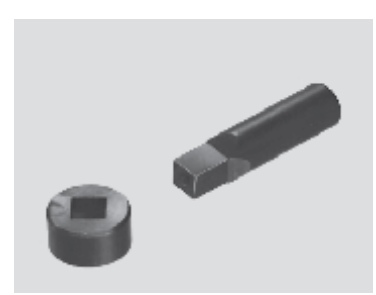
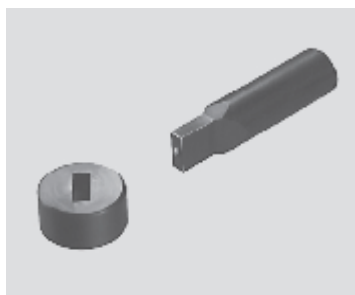
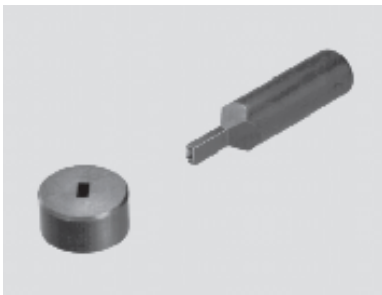
- All punches and dies are hardened and grinded for long lifetime

- For exact positioning all punches for circular holes size 2,5 mm and bigger opt. are equipped with centre points.

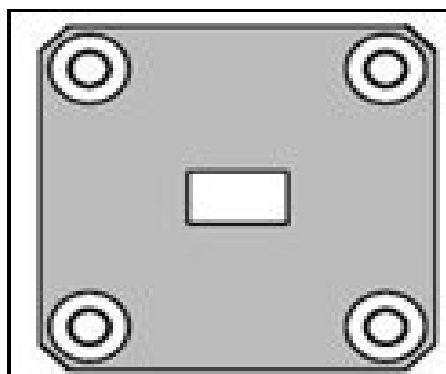
- Special sizes on request

Tool-Sets for circular holes

Punch w. round die



Flat die



Order-No.: see pricelist

Punching templates for high productivity and freedom from faults

Punching templates are well-trying accessories to the **P&T** - Punchsystem. They are designed for easy and rational manufacturing of punched parts on small-lot runs and medium series production.

The punching templates made of steel sheet, allow the punching of very different holes, without marking or layout before. It saves the marking-off operation.

This results in a higher productivity compared with parts manufactured individual.

Because of the pre-punched template, which corresponds later with the punched part, a freedom from faults production is possible, although with semiskilled workers.

Advantage

Punching templates are self-amortizing after short time, because of:

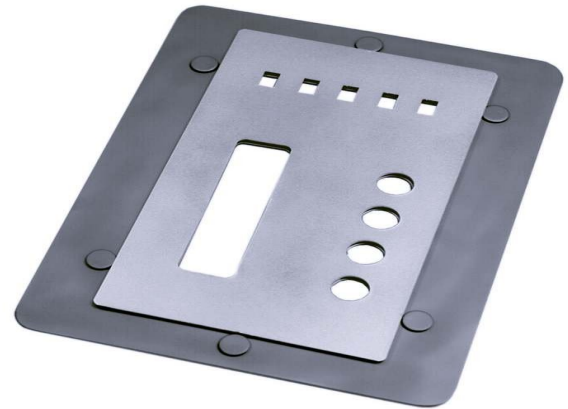
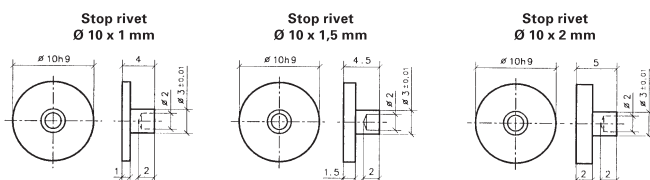
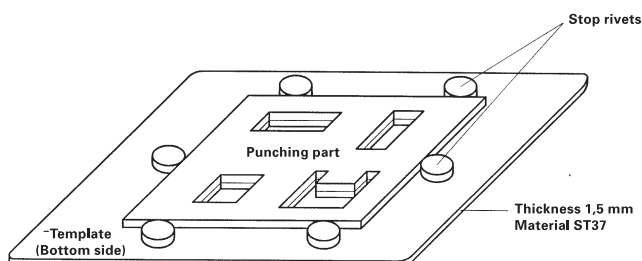
- lower **piece-production cost**,
- higher **productivity**,
- no **marking-off operation cost**,
- the **freedom of faults**,
- the **repetition of accuracy**,
- the **employment of semi-skilled workers**.

Function

A prepared punching template is suitable for reception of punching parts, which are cut to the outer dimensions. Stops with rivets keep the punching parts in the exact position. With this although semi-skilled workers are able to manufacture parts free from faults easy and rational.

Only a few steps are necessary to get a punching template:

- selection of template size corresponding to the planned work,
- marking and punching holes for the stops corresponding to the outer dimensions of the planned work,
- fixing of stops on the template by riveting,
- insert first work with holes into new template and punch corresponding to first work,
- new template is ready for use.



Template with six stop rivets and inserted punching part.

Template size

Templates are available in twelve different sizes and with different thickness of the stops with rivets. With this, it is possible to manufacture punching parts with size from 80x80 mm up to 280x380 mm.

Sizes:

100 x 100 mm
100 x 150 mm
100 x 200 mm
150 x 150 mm
150 x 200 mm
150 x 250 mm
150 x 300 mm
200 x 200 mm
200 x 300 mm
200 x 400 mm
300 x 300 mm
300 x 400 mm

Order-No.Temp 2050
Order-No.Temp 2051
Order-No.Temp 2052
Order-No.Temp 2053
Order-No.Temp 2054
Order-No.Temp 2055
Order-No.Temp 2056
Order-No.Temp 2057
Order-No.Temp 2058
Order-No.Temp 2059
Order-No.Temp 2060
Order-No.Temp 2061

All radius R10		Format 300 x 300	Format 300 x 400
		Format 200 x 200	Format 200 x 400
Format 150 x 200	Format 150 x 200	Format 150 x 250	Format 150 x 300
Format 100 x 100	Format 100 x 150	Format 100 x 200	

Schedule of parts supplied

1 pcs. Template made of 1,5 mm steel sheet with
6 pcs. Stop rivets, thickness 1,0 mm, 1,5 mm, and 2,0 mm each.

Bending Tools for insertion on **P&T** presses **PP120** and **PP240**. For bending of aluminum-, copper- and steel sheet with thickness up to 1,0 mm and width up to 118 mm. Upper bending dies with different length and screw-mounting on the punchholder of the press. Lower bending dies with different prisms and adjustable Stop-Bar system for sharp-edged 90° bends Easy mounting on press with upper bending die holder, crossbar and screw.

Bending tool set, small

Bending tool set for sharp-edged 90° bends with bendingwidth of 60 mm. Consisting of lower die with two prisms of different depth, adjustable stop for bending length 2,5 up to 35 mm and upper die with width 60 mm. Dies made of hardened toolsteel.

Tool set with depth of prisms:
2,5 and 3,5 mm
Dieholder for upper die

Order-No. **BT60**

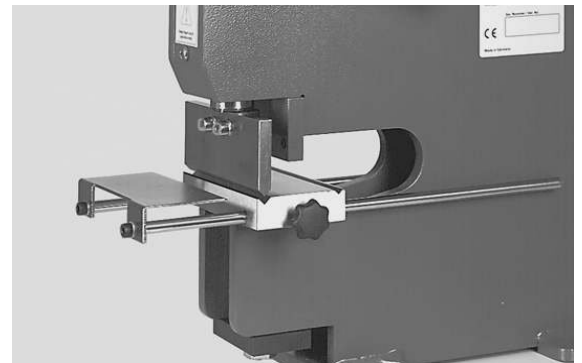


Bending tool set, big

Bending tool set for sharp-edged 90° bends with bendingwidth of 118 mm. Consisting of lower die with two prisms of different depth, adjustable stop-bar for bending length 2,5 up to 210 mm and upper die with width 118 mm. Optional mounting of stop-bar in the rear or front. Dies made of hardened toolsteel.

Tool set with depth of prisms:

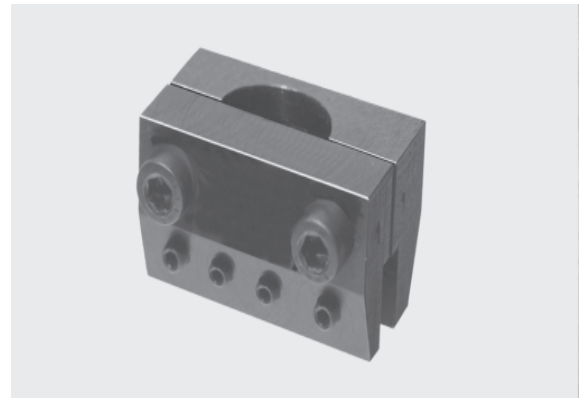
Order-No. **BT120**



Dieholder for upper die

Further upper dies for 90° bends with different bending width. Made of hardened tool steel.

Sworholder **Order-No. HUS**



Set bending swords 12,24,36,48,& 60mm, sharp edged,

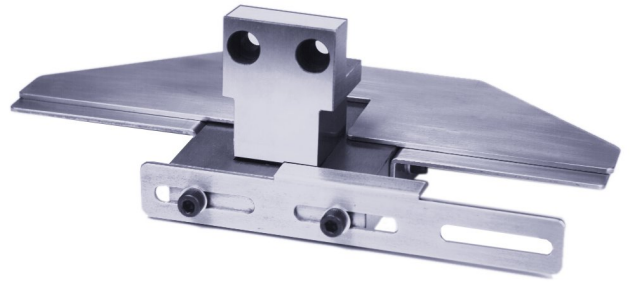
Width	T hickness	Order-No.
12 mm	10mm	BTS12
24 mm	10mm	BTS24
36 mm	10mm	BTS36
48 mm	10mm	BTS48
60 mm	10mm	BTS60
complet set	10mm	SBSS



Notching tool set

Notching tool set for easy production of precise, rectangular notches. Exact positioning of material with two continuous adjustable stops in the rear and sidewise. Easy handling. Made of toolsteel.

Notching width: 1 - 28 mm
 Notching depth (one stroke): 1 - 30 mm
 Dimensions: 220x90x55 mm
 Weight: 1,6 kg



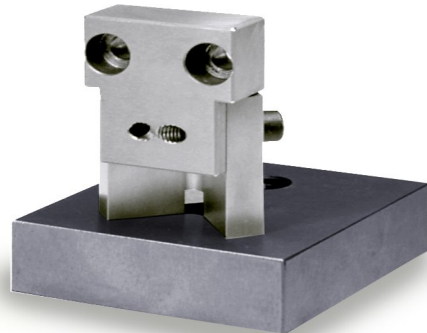
Order-No. NT

Radius punch tool sets for outside edges

Radius punch tool sets for fast and exact punching of roundcornered edges. Consisting of radiuspunch and lower die. Made of hardened toolsteel.

Size of lower die: 70 x 65 x 19,5 mm

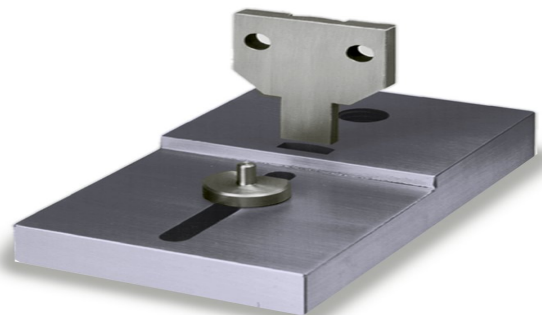
For outer radius 3 mm:	Order-No.	CR3
For outer radius 5 mm:	Order-No.	CR5
For outer radius 10 mm:	Order-No.	CR10
For outer radius 20 mm:	Order-No.	CR20



Radius punch tool set for inner diameters

Radius punch tool set for punching of circular holes, like allround circles, semicircles, quaters of a circle, or parts of it. Consisting of lower die with continuous, adjustable centre point and shaped punch with cutting edge of R=16 mm. Made of hardened toolsteel.

Suitable for inner radius: 32 - 120 mm 4,0
 Centre point diameter: mm 115x65x19,5
 Size of lower die: mm



Order-No. CIR20
 Order-No. CIR40

Spinning tool set for double-ribs

Spinning tool set for punching and pressing double ribs. Double ribs are suitable to hold printed circuit boards or plates in position. Consisting of punch and lower die. Made of hardened toolsteel.

Shaft diameter of punch: Ø 12mm

For PCB-thickness 1,6 mm: Order-No. RIP1K6



Stop-bar system, big

Stop-bar system with holder for lower dies and continuous adjustable stop-bars in four directions. Alu sheet stops for rear and front with width 300 mm and Alu sheet stops for left and right. Adjustable with thumb screws.

Rear stop length: 300mm

For lower dies with:

Outer diameter 40x40 mm

Order-No. ASP



Stop-bar system, small

Stop-bar system consisting of holder for circular lower dies. With adjustable stop, useable in the front or rear. Adjustment with thumb screws.

For lower dies with:

Outer Diameter 40x40

Outer diameter 20 mm + Outer Diameter 40x40

Outer diameter 30 mm + Outer Diameter 40x40

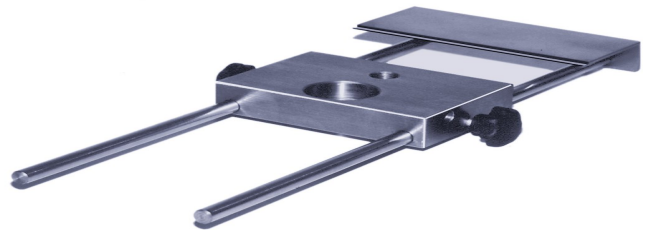
Outer diameter 40 mm + Outer Diameter 40x40

Order-No. ASS

Order-No. ASS20

Order-No. ASS30

Order-No. ASS30



Holders for lower dies

Compact, solid holders for circular lower dies. Made of steel.

For lower dies with:

For lower dies with:

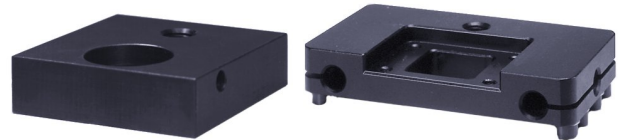
Outer diameter 20 mm

Outer diameter 25 mm

Outer diameter 30 mm

Außenmaße 40 x 40 mm

Order-No.see pricelist



Strippers

Strippers in order to strip punched part from punch. Adjustable on thickness of material. Especially for round holes. Opening for punch:

3 mm **Order-No. SA3**

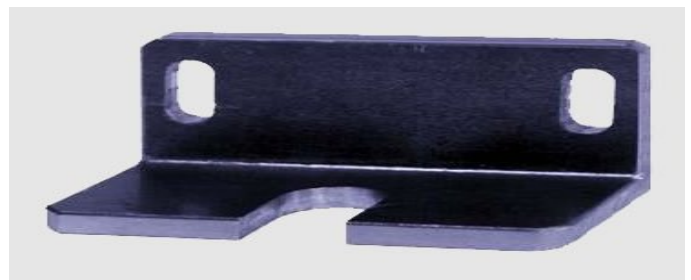
6 mm **Order-No. SA6**

8 mm **Order-No. SA8**

11 mm **Order-No. SA11**

14 mm **Order-No. SA14**

21 mm **Order-No. SA21**



Strippers, adjustable

Two-piece stripper for stripping punched part from punch. Adjustable for openings from 2 mm up to 32 mm. Made of steel. For material thickness:

1 bis 41 mm

Order-No. SA1-41



Waste bin, small

Waste bin for collection of the punching waste. Made of painted steel sheet. Flat version for location underneath the punching press.



Dimensions: 130x140x12mm **Order-No. WASTS**

Waste bin, big

Waste bin for collection of bigger quantity of punching waste. Two piece, deep version to hang in front of the punching press. Made of painted steel sheet.



Dimensions: 75x75x100 mm **Order-No. WASTB**

Tool-storage unit, small

Small tool-storage unit, suitable to store up to 10 sets of circular punches and circular lower dies. Safes searching of tools sets. Made of electro-galvanized steel sheet.

Dimensions: 310 mmx54x42 mm
Weigth: 0,7 kg

For outer diameter of lower dies:
20 mm (for 10 set) **Order-No. HSZ2047- 20**
30 mm (for 8 set) **Order-No. HSZ2047- 30**



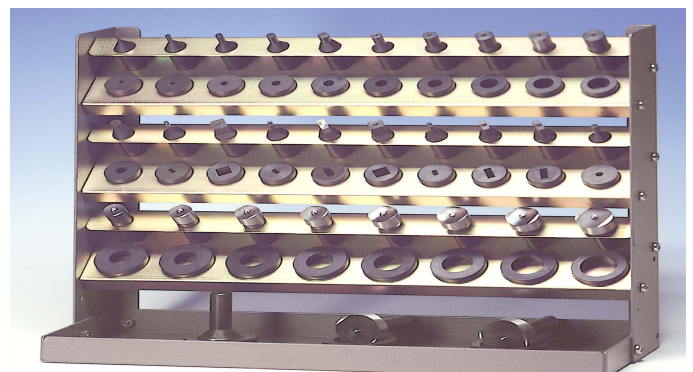
Tool-storage unit, big

Big tool-storage unit, suitable to store 28 sets of circular punches and circular lower dies. Keeps toolsets always available. Made of painted and electro-galvanized steel sheet. With wall suspension eyes.

For 20 sets lower dies with outer diameter 20 mm.
and 8 sets lower dies with outer diameter 30 mm.

Dimensions: 318 x 108 x 270 mm
Weigth: 3,2 kg

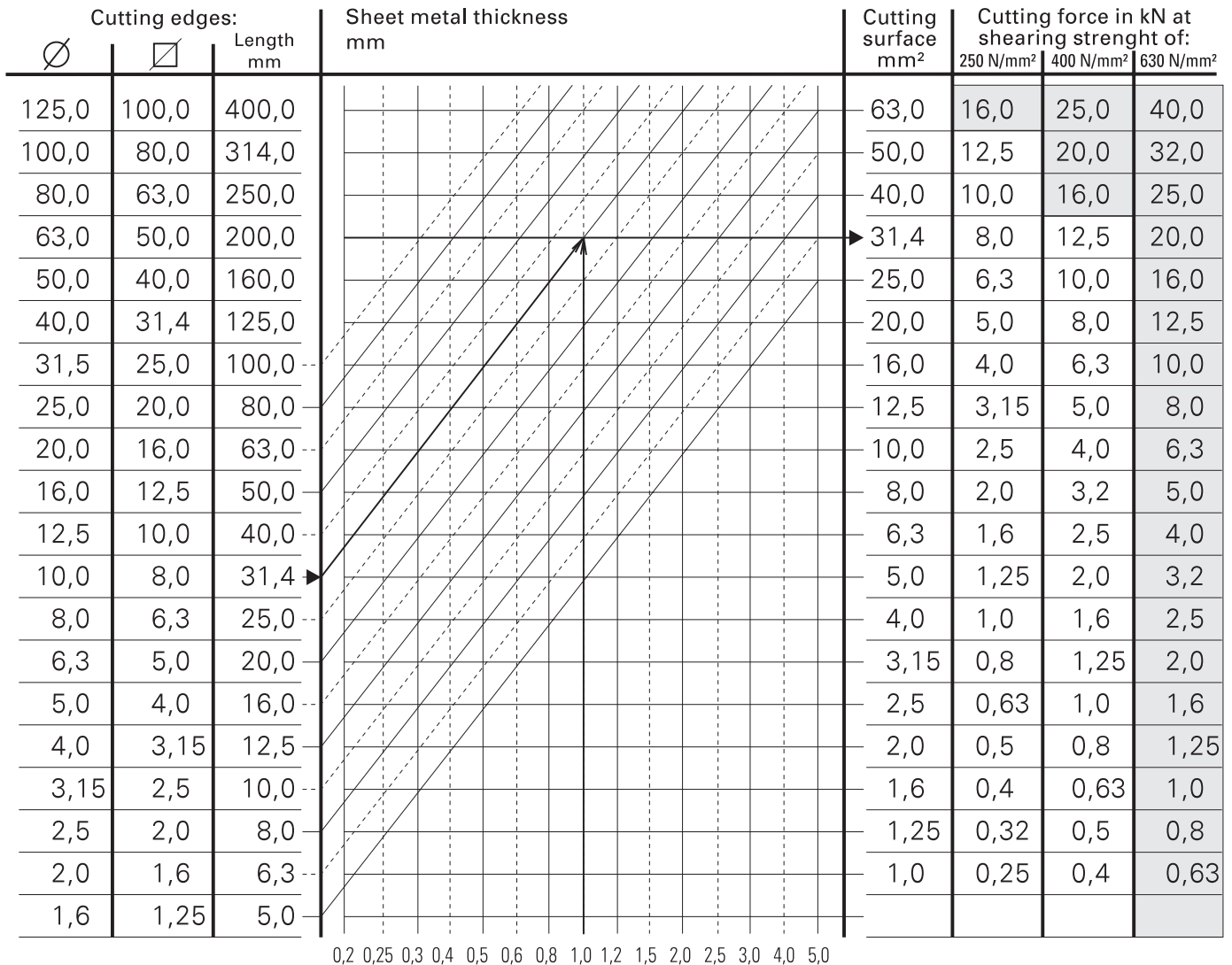
Order-No. HSZ2047-223



Cutting sizes and cutting forces

For long lifetime and trouble-free operation, the **P&T** Punching Presses are designed for cutting forces of nominal 14kN. A short-term overload is normally without damaging consequence, but should be avoided. For selection of desired application tools and the corresponding cutting forces, the following diagram can be used.

The size of the cutting force depends on the cutting material, the length of its cutting edges, the thickness of material, the shape and condition of the cutting edges of upper and lower die.
The diagram values are valid for parallel cutting edges on upper and lower dies.



Example:

Hole Ø: **10mm** ⇒ Cutting edges: 31,4mm ⇒
 Thickness: 1,0mm ⇒ Cutting surface: 31,4mm² ⇒
 Shearing Strength: 250N/mm² **Cutting Force 8kN/mm²**

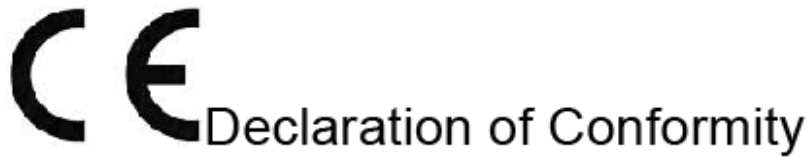


Working in this area creates trouble and reduces life-time of tooling.

Shearing strength of sheet metal

Sheet metal grades	Specification	Metal Code No.	Shearing strength N/mm ²
Sheet Spring Steel	38Si7	1.5023	944
Sheet Steel, stainless	X5CrNi 18 10	1.4301	480
Sheet Steel, strong	St52-3G	1.0570G	416
Sheet Steel, soft	St37-2G	1.0037G	300
Sheet Brass, hard	CuZn37 (F45)	2.0321	380
Sheet Brass, soft	CuZn37 (F30)	0321	240
Sheet Aluminum, hard	AlCuMg1	3.1325	304
Sheet Aluminum, soft	AlMg1	3.3315	112

The quality WS of the P&T Punchtools is designed for shearing strength up to 400N/mm². This provides with proper application for long lifetime also on individual production and small-lot runs.



Declaration of Conformity
Declaration de Conformite

Hersteller: ADR AG
Ludwig-Wagner-Str. 19
D-69168 Wiesloch

Bezeichnung / Product name Punch&Tool
Designation

Typ / Type / Type: PP120, PP260, PP260dh PP380

Nach folgenden Bestimmungen / with Applicable applications / avec les Directives suivantes: Maschinenrichtlinie 89 / 392 / EWG
Machinery Directive 89 / 392 / EEC
Directive Machines 89 / 392 / CEE

Anhang /Appendix/Appendice 91/368/EWG/EEC/CEE
Anhang /Appendix/Appendice 93/44/ EWG /EEC/CEE
Anhang /Appendix/Appendice 93/ 68/EWG /EEC/CEE

Angewendete harmonisierte
Normen / Harmonized Standards applied / Normes harmonisees utilisees

Datum/ Date /Date
03.09.1997
05.04.2001
12.10.2012

Unterschrift/Sinature/Signatur