PASS | STANZTECHNIK AG

TRUMPF

THICK TURRET

SALVAGNINI

CATALOGUE 02/2016-WW-A.5

INSERTS FOR EUROMAC MULTITOOLS

CATALOGUE 02/2016-WW-A.5

SCOPE OF APPLICATION:

Deliveries and services provided by PASS Stanztechnik AG are effected exclusively according to PASS delivery and payment conditions. These conditions shall be deemed accepted at the latest upon receipt of the goods or services.

GENERAL REMARKS:

You can find our general terms and conditions on our Homepage under: www.pass-ag.com

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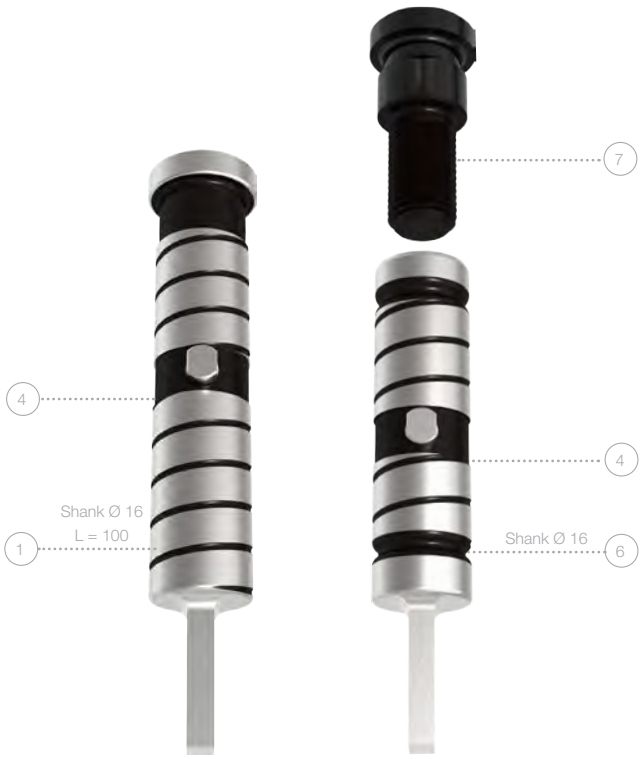
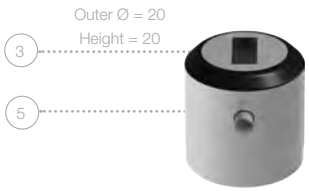
EUROMAC

XMTE10-12,7

PUNCH RIGID

PUNCH ADJUSTABLE





	POS.-NO.	PART.-NO.
PUNCH - RIGID (1)* (H-PM®)		
Round	1	413101
Square	1+4	413102
Rectangular	1+4	413103
Oblong	1+4	413104
O.D. Ground Special Shapes	1+4	41310G
EDM Required Special Shapes	1+4	41310E
PUNCH - ADJUSTABLE (2) (H-PM®)**		
Punch head	7	1999X1791
Round	6+4	413101-A
Square	6+4	413102-A
Rectangular	6+4	413103-A
Oblong	6+4	413104-A
O.D. Ground Special Shapes	6+4	41310G-A
EDM Required Special Shapes	6+4	41310E-A
STRIPPER		
Round	2	415101
Square	2	415102
Rectangular	2	415103
Oblong	2	415104
O.D. Ground Special Shapes	2	41510G
EDM Required Special Shapes	2	41510E
DIE (HWS)		
Round	3	414101
Square	3+5	414102
Rectangular	3+5	414103
Oblong	3+5	414104
O.D. Ground Special Shapes	3+5	41410G
EDM Required Special Shapes	3+5	41410E

ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
ADDITIONAL COSTS FOR DIE
Reinforced version
H-PM® Quality

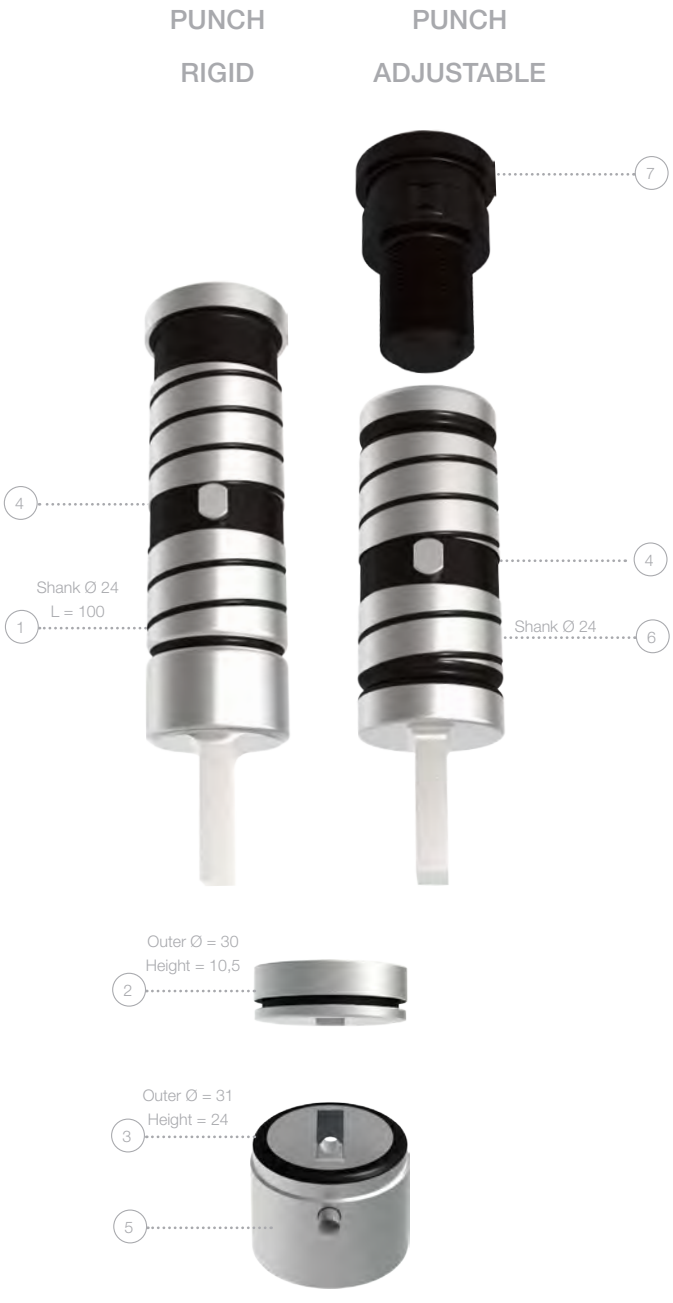
*suitable up to s = 6 mm

**not for distribution in Germany, Italy, Turkey, China, and the USA

EUROMAC

XMTE6-24; XMTE10-24

	POS.-NO.	PART.-NO.
PUNCH - RIGID (1)* (H-PM®)		
Round	1	413041
Square	1+4	413042
Rectangular	1+4	413043
Oblong	1+4	413044
O.D. Ground Special Shapes	1+4	41304G
EDM Required Special Shapes	1+4	41304E
PUNCH - ADJUSTABLE (2) (H-PM®)**		
Punch head	7	1999X1691
Round	6+4	413041-A
Square	6+4	413042-A
Rectangular	6+4	413043-A
Oblong	6+4	413044-A
O.D. Ground Special Shapes	6+4	41304G-A
EDM Required Special Shapes	6+4	41304E-A
STRIPPER		
Round	2	415041
Square	2	415042
Rectangular	2	415043
Oblong	2	415044
O.D. Ground Special Shapes	2	41504G
EDM Required Special Shapes	2	41504E
DIE (HWS)		
Round	3	414041
Square	3+5	414042
Rectangular	3+5	414043
Oblong	3+5	414044
O.D. Ground Special Shapes	3+5	41404G
EDM Required Special Shapes	3+5	41404E



ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
ADDITIONAL COSTS FOR DIE
Reinforced version
H-PM® Quality

*suitable up to s = 6 mm

**not for distribution in Germany, Italy, Turkey, China, and the USA

EUROMAC

XMTE4-31,75

	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413141
Square	1+4	413142
Rectangular	1+4	413143
Oblong	1+4	413144
O.D. Ground Special Shapes	1+4	41314G
EDM Required Special Shapes	1+4	41314E
STRIPPER		
Round	2	415141
Square	2	415142
Rectangular	2	415143
Oblong	2	415144
O.D. Ground Special Shapes	2	41514G
EDM Required Special Shapes	2	41514E
DIE (HWS)		
Round	3	414141
Square	3+5	414142
Rectangular	3+5	414143
Oblong	3+5	414144
O.D. Ground Special Shapes	3+5	41414G
EDM Required Special Shapes	3+5	41414E

ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
ADDITIONAL COSTS FOR DIE
Reinforced version
H-PM® Quality

*suitable up to s = 6 mm

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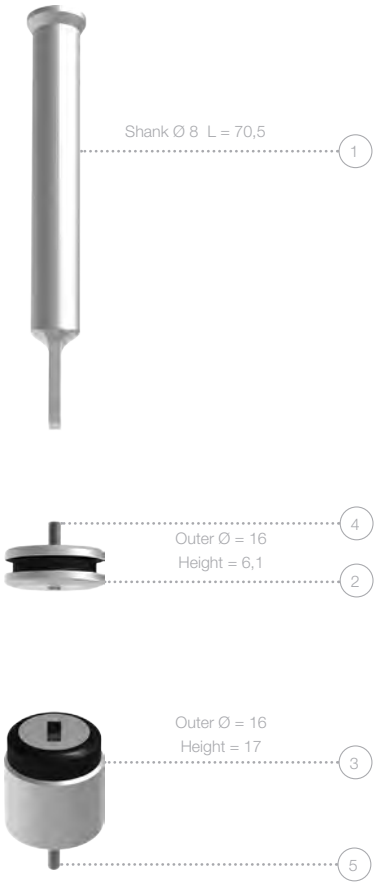
EUROMAC

MTE10-8 (POS. 2/3/4/5/6/8/10)

	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413011
Square	1	413012
Rectangular	1	413013
Oblong	1	413014
O.D. Ground Special Shapes	1	41301G
EDM Required Special Shapes	1	41301E
STRIPPER		
Round	2	415011
Square	2+4	415012
Rectangular	2+4	415013
Oblong	2+4	415014
O.D. Ground Special Shapes	2+4	41501G
EDM Required Special Shapes	2+4	41501E
DIE (HWS)		
Round	3	414011
Square	3+5	414012
Rectangular	3+5	414013
Oblong	3+5	414014
O.D. Ground Special Shapes	3+5	41401G
EDM Required Special Shapes	3+5	41401E

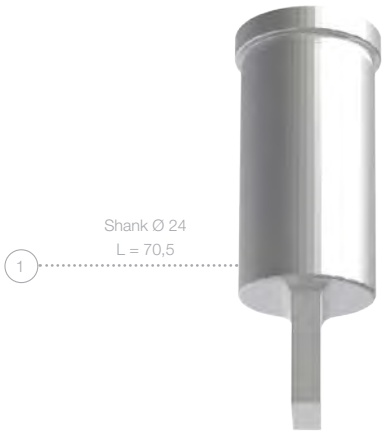


ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
ADDITIONAL COSTS FOR DIE
Reinforced version
H-PM® Quality

*suitable up to s = 4 mm

EUROMAC

MTE6-24; MTE10-24 (POS.1/7/9)



	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413031
Square	1	413032
Rectangular	1	413033
Oblong	1	413034
O.D. Ground Special Shapes	1	41303G
EDM Required Special Shapes	1	41303E
STRIPPER		
Round	2	415031
Square	2+4	415032
Rectangular	2+4	415033
Oblong	2+4	415034
O.D. Ground Special Shapes	2+4	41503G
EDM Required Special Shapes	2+4	41503E
DIE (HWS)		
Round	3	414031
Square	3+5	414032
Rectangular	3+5	414033
Oblong	3+5	414034
O.D. Ground Special Shapes	3+5	41403G
EDM Required Special Shapes	3+5	41403E

ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
ADDITIONAL COSTS FOR DIE
Reinforced version
H-PM® Quality

*suitable up to s = 4 mm

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EUROMAC

MTE4-31,75

	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413061
Square	1+4	413062
Rectangular	1+4	413063
Oblong	1+4	413064
O.D. Ground Special Shapes	1+4	41306G
EDM Required Special Shapes	1+4	41306E
STRIPPER		
Round	2	415061
Square	2	415062
Rectangular	2	415063
Oblong	2	415064
O.D. Ground Special Shapes	2	41506G
EDM Required Special Shapes	2	41506E
DIE (HWS)		
Round	3	414061
Square	3+5	414062
Rectangular	3+5	414063
Oblong	3+5	414064
O.D. Ground Special Shapes	3+5	41406G
EDM Required Special Shapes	3+5	41406E

ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
ADDITIONAL COSTS FOR DIE
Reinforced version
H-PM® Quality

*suitable up to s = 6 mm

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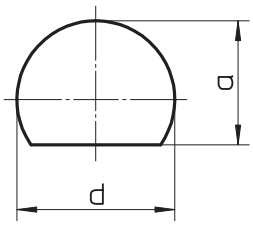
O.D. GROUND SPECIAL SHAPES



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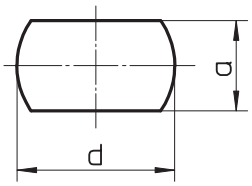

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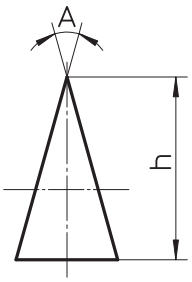

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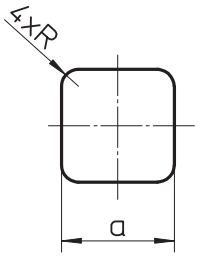

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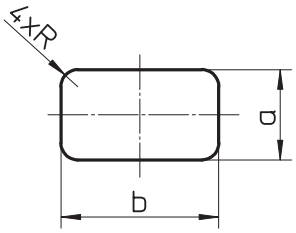

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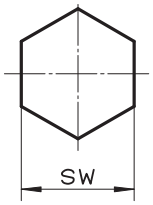

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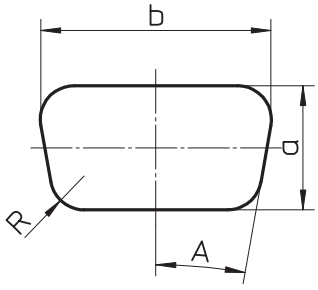

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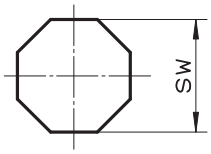

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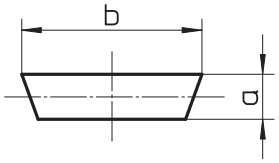

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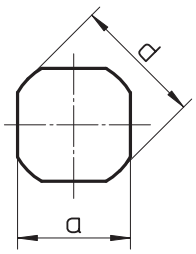

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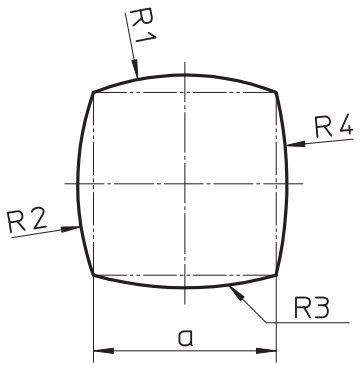

G11

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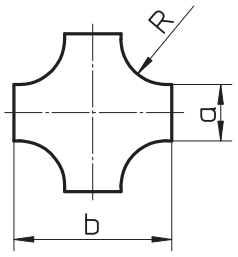
EDM REQUIRED SPECIAL SHAPES



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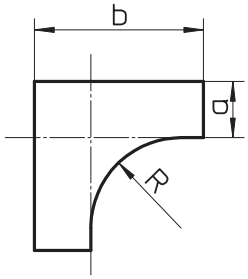

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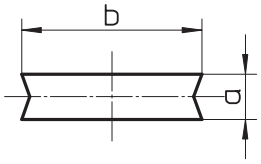

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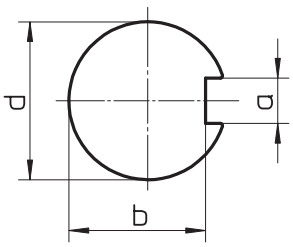

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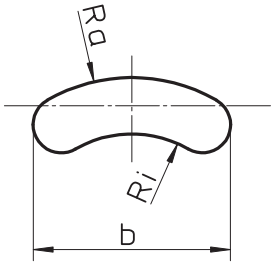

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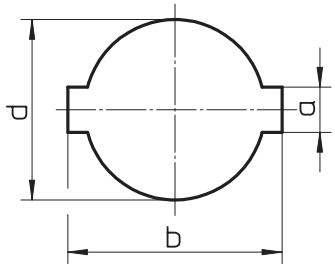

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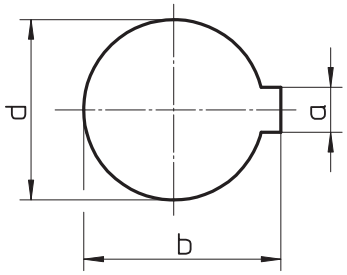

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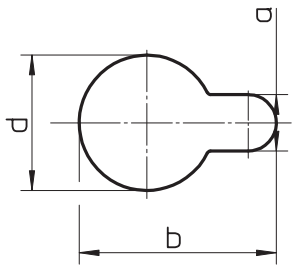

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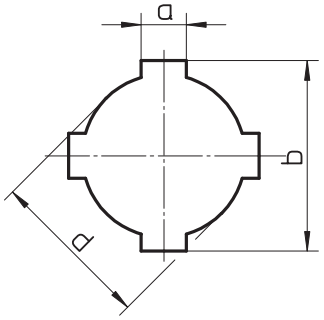

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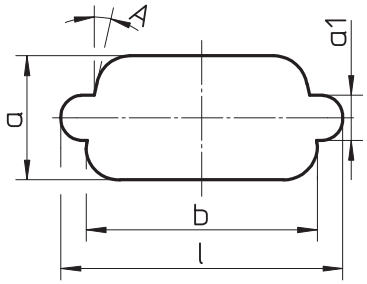

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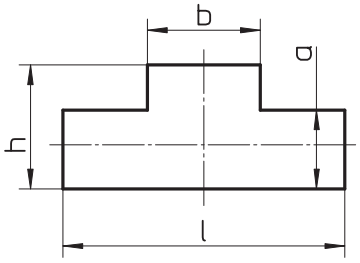


E11

PASS TOOL VARIETY

HWS

HWS tools are made of a secondary hardened cold work steel with superior toughness. This type of steel is especially suitable for dies.

Advantage for customer:

- excellent cost in accordance to performance

H-PM®

H-PM® tools are produced with steel made on powder-metallurgical base with a high degree of purity.

This guarantees a segregational uniformed microstructure in the complete cross-section of the tool.

Advantage for customer:

- excellent cost in accordance to performance
- good stability for edges by increased toughness
- high tool life time due to the unformed microstructure
- increased current hit-flex-capability; suitable as an excellent base for dies

X3-PM

The X3-PM tools are made of a high-end powder-metallurgical steel with the best possible performance characteristics for punches in the punching technology due to the best possible degree of purity.

The segregational uniformed microstructure with high vanadium concentration in the complete cross-section of the punch guarantees best possible wear resistance regarding tool life time.

Advantage for customer:

- best efficiency by multiple increase of the punch hit count
- best possible stability for cutting edges
- extremely high abrasion resistance
- utmost compressive strength

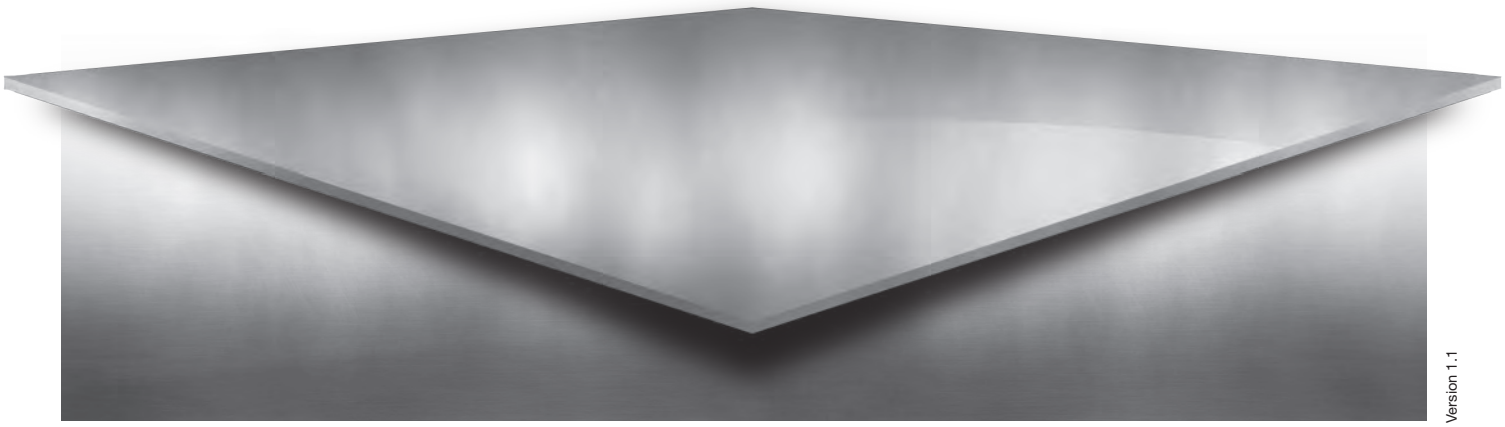
X8-PM

The X8-PM tools are made of a high-end powder-metallurgical steel with the best possible performance characteristics for dies in the punching technology caused by best possible degree of purity.

The high ductility of the segregational uniformed microstructure guarantees best possible fatigue limit. This kind of steel is especially suitable for dies with risk-breakage in regards to special contours.

Advantage for customer:

- best possible absorption of hit-flex stress; prevents fatigue breakage.
- high abrasion resistance



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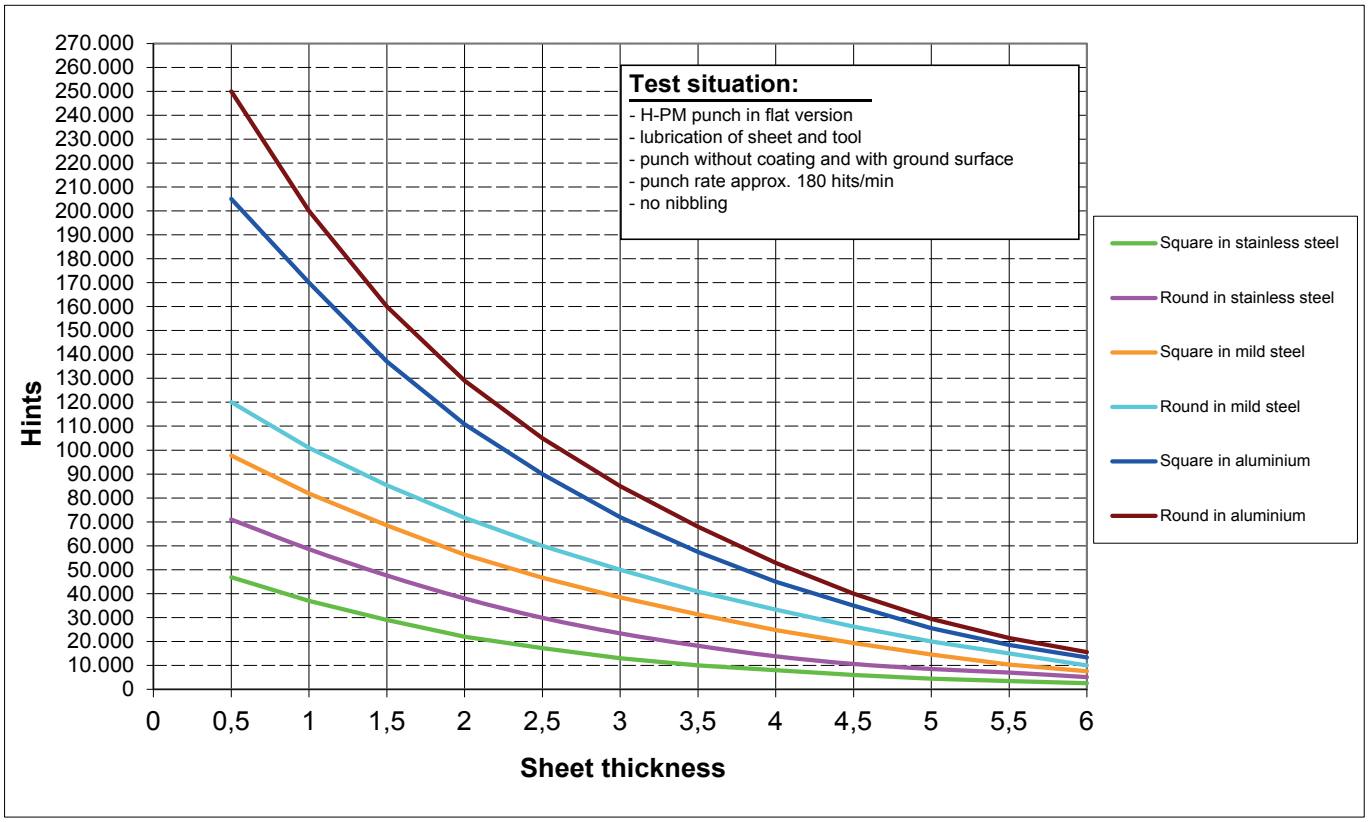
LIFE-TIME OF TOOLS / REGRIND ADVICE

PASS punches and dies are made of high-end special steel in order to guarantee best life-time of tools together with high robustness.



INFLUENCING FACTORS	FACTOR
Zinc coated sheet / stainless steel with foil / aluminium anodized	0,5 - 0,8
No sheet-lubrication	0,4 - 0,6
Punch coating (TICN for stainless steel / T-MAX for zinc coated steel / A-Max for aluminium / C-Max for copper)	2,0 - 4,0
PASS-X3-PM punch	6,0 - 10,0
Nibbling	0,7 - 0,9
Corner-punching	0,5 - 0,7
Whisper Tool	0,8 - 0,9
Punching rate > 300 hits / min.	0,8 - 0,9
Cutting part with EDM surface	0,4 - 0,8
Cutting part with polished surface	1,5 - 3,0
Cutting part smaller than 1,5x sheet thickness	0,6 - 0,8
Cutting part smaller than 1,0x sheet thickness	0,3 - 0,5
Using of a too close radius	0,4 - 0,9

An average decrease of the tool life of 5-10% per regrind has to be taken in account for the first regrind.

PASS COATING VERSIONS/DRAW-POLISHING

TO REDUCE MATERIAL BUILD-UP

H-PM® tools are produced with steel made on powder-metallurgical base with a high degree of purity to fullfil the highest punching demands.

Furthermore we attach great importance to a high quality hardening process by repeated temporing and deep-freeze subsequently.

This process guarantees an extremely high hardness with an outstanding wear resistance of our punching tools.

Associated with modern production methods (grinding of the cutting edges with special grinding wheels) we can ensure that the wide range of different sheet qualities can be punched up to 1.600 N/mm² - no matter if it concerns mild alloyed aluminium, mild steel, stainless steel or spring band steel.

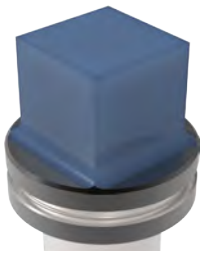
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

Tests show us that the well-known TICN coating is a good coating to increase the lifetime (especially working with stainless steel). However, the problem of material buildup on the edges have not really been counteracted.

Built-up edges are known especially when working with

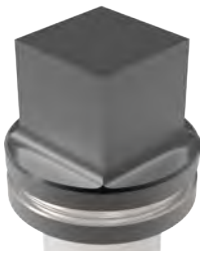
- zinced steel
- aluminium sheets

After specialized tests at PASS Stanztechnik AG the below mentioned coatings turned out to be the most successful coatings:



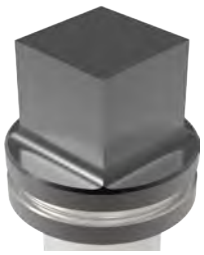
TICN

for working with stainless steel



A-MAX

for dry processing with aluminium sheet



T-MAX

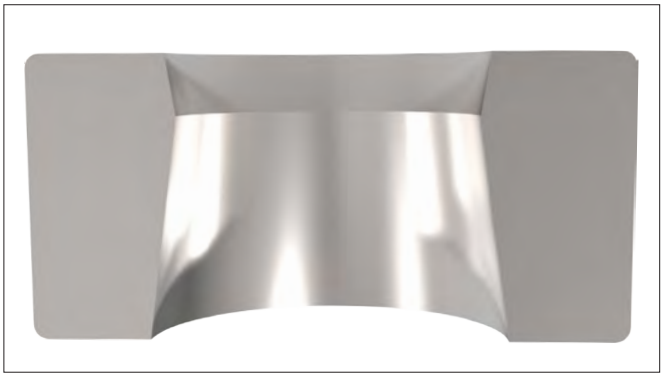
for working with galvanized sheet

We recommend draw-polished punch edges to increase tool lifetime and reduce material build up (prices on request).

DIE VERSIONS

SLUG-STOP AND SLUG-SNAP (AVOID THE BUILD-UP OF THE PULLING SLUGS)

SLUG-STOP (STANDARD)



PASS dies for tooling system Thick Turret are produced in standard version with a slug-stop version (without additional costs).

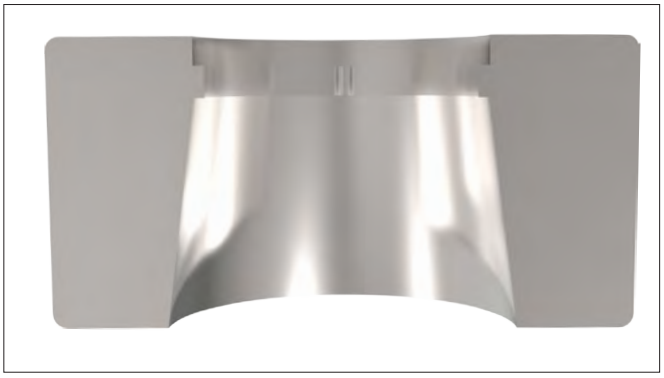
This means that the upper part of the cutting part is produced with a negative angle.

The pulling slug will be held with the complete circumference in the die.

This is not recommended for:

- shapes smaller 2,5 mm
- clearance smaller/equal 0,1 mm

SLUG-SNAP (SPECIAL VERSION - ADDITIONAL COSTS)



Alternatively we offer our slug-snap version (additional costs).

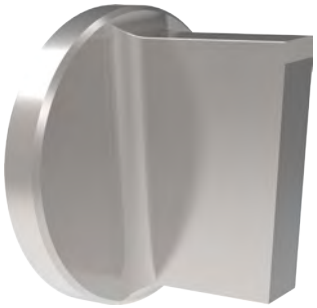
In this case special holding bolts are included in the die, clamping the pulling slug positively (better than the slug-stop version).

The slug-snap version is also more convenient for:

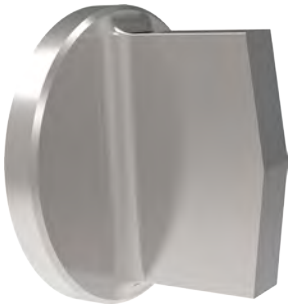
- shapes smaller than 2,5 mm
- clearance smaller/equal 0,1mm

PUNCHES WITH DIFFERENT SHEAR TYPES

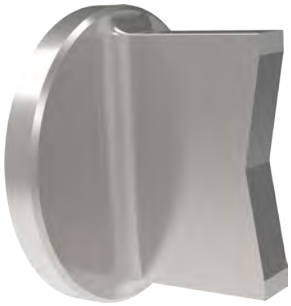
WT



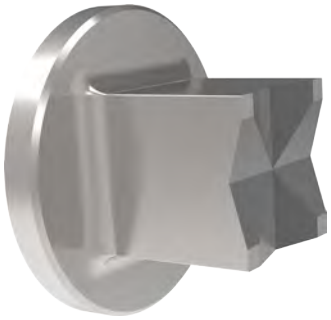
DOWT



2 PT



4 PT



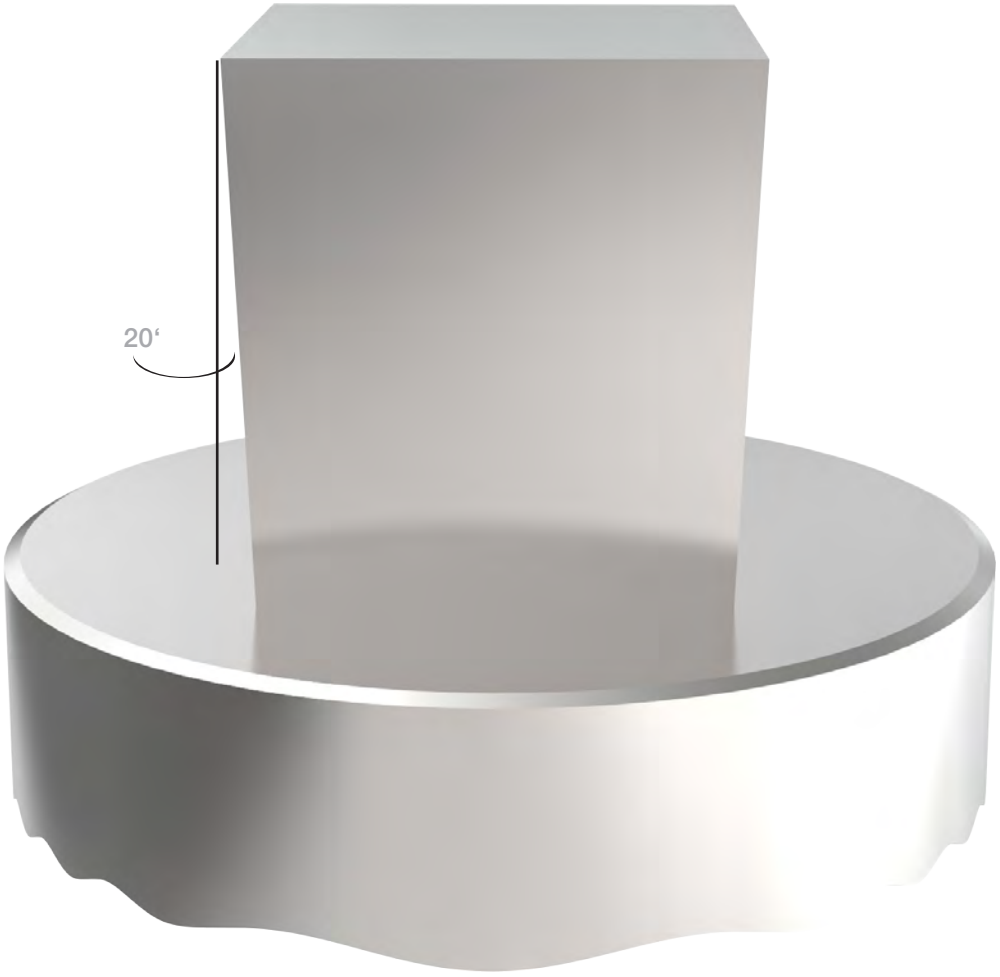
DESCRIPTION	
WT	
- Advantage:	easy regrindable
- Disadvantage:	lateral forces
DOWT	
- Advantages:	easy regrindable no lateral forces
- Disadvantage:	only reasonable for big contours
2 PT	
- Advantage:	no lateral forces optimal die cutting
- Disadvantages:	only reasonable for big and slim contours difficult to regrind
4 PT	
- Advantage:	no lateral forces optimal die cutting suitable for trimming
- Disadvantages:	only reasonable for big contours difficult to regrind

BACK TAPER ON PUNCHES

PASS punches are normally produced with back taper to reduce galling and premature punch wear.

However it should be mentioned that back taper is very important when punching materials such as stainless steel or very thick material to reduce galling and eliminate breakage of the tool corners and edges.

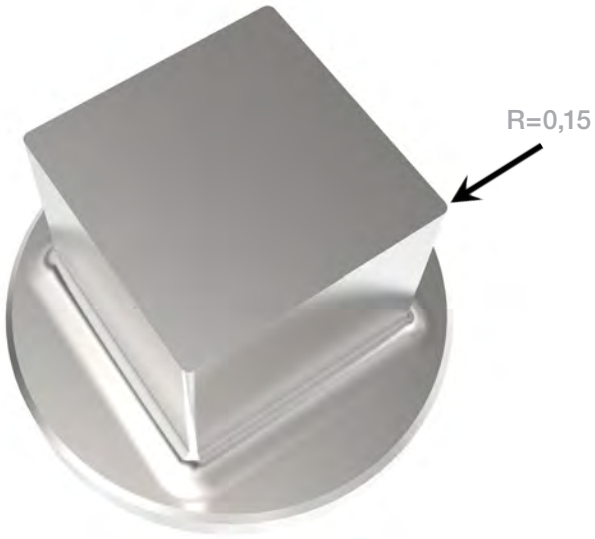
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal contour, e.g. cross-form, U-form, etc.) and in high qualitity sheets.

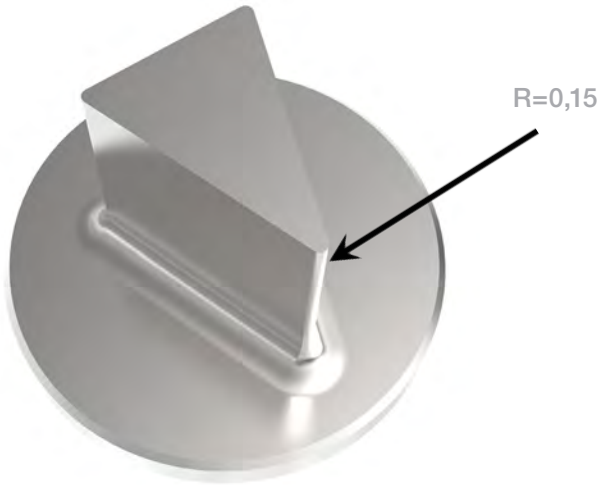


PASS CORNER EDGES ON PUNCHES

PASS punches are automatically produced with corner radius R = 0,15 mm. This process increases the life-time as the corner abrasive wear will be decreased considerably.

e.g.: square- and triangle punch

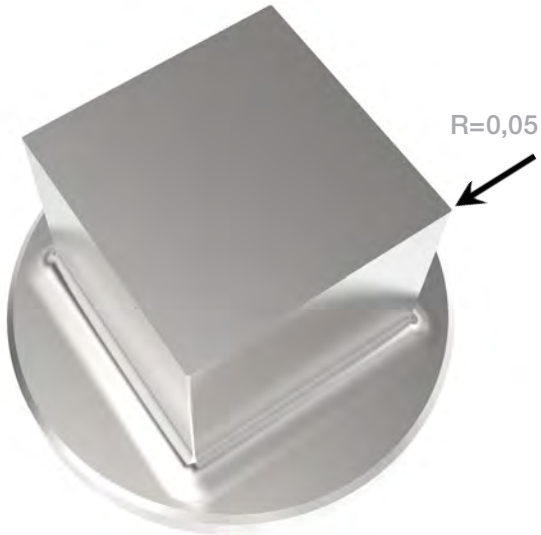




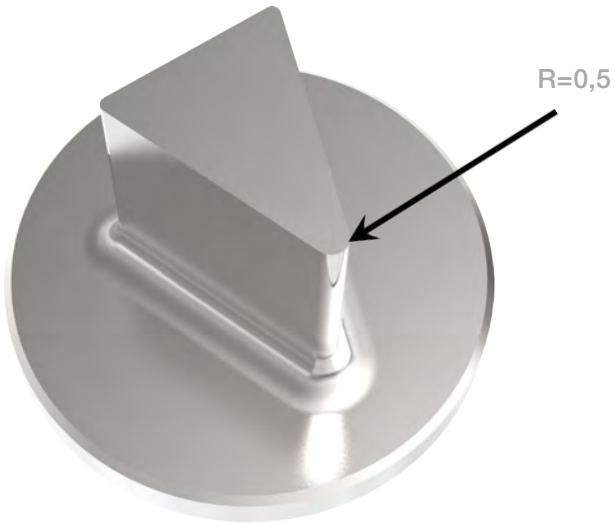
The corner radius can be changed on customer‘s request.

e.g.:

R = 0,05 instead of R = 0,15 mm for electronical parts.



R = 0,5 mm instead of R = 0,15 mm for stainless steel in order to increase tool-life.



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NOTES

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