



CATALOGUE 10/2017-WW-A.4
INSERTS FOR PRIMA POWER/MULTITOOLS



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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INSERTS FOR PRIMA POWER/ MULTITOOLS

PASS TOOLS FOR YOUR
PRIMA POWER/MULTITOOL SYSTEM

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PRIMA POWER

MT20i-8



	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413111
Square	1	413112
Rectangular	1	413113
Oblong	1	413114
O.D. Ground Special Shapes	1	41311G
EDM Required Special Shapes	1	41311E
STRIPPER		
Round	2	415111
Square	2	415112
Rectangular	2	415113
Oblong	2	415114
O.D. Ground Special Shapes	2	41511G
EDM Required Special Shapes	2	41511E
DIE (HWS)		
Round	3	414111
Square	3+4	414112
Rectangular	3+4	414113
Oblong	3+4	414114
O.D. Ground Special Shapes	3+4	41411G
EDM Required Special Shapes	3+4	41411E

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

PRIMA POWER

MT8Ri1-16 (VERSION 1)

	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413051
Square	1+4	413052
Rectangular	1+4	413053
Oblong	1+4	413054
O.D. Ground Special Shapes	1+4	41305G
EDM Required Special Shapes	1+4	41305E
STRIPPER		
Round	2	415051
Square	2	415052
Rectangular	2	415053
Oblong	2	415054
O.D. Ground Special Shapes	2	41505G
EDM Required Special Shapes	2	41505E
DIE (HWS)		
Round	3	414051
Square	3+5	414052
Rectangular	3+5	414053
Oblong	3+5	414054
O.D. Ground Special Shapes	3+5	41405G
EDM Required Special Shapes	3+5	41405E

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



PRIMA POWER

MT8Ri2-16 (VERSION 2)



	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413151
Square	1	413152
Rectangular	1	413153
Oblong	1	413154
O.D. Ground Special Shapes	1	41315G
EDM Required Special Shapes	1	41315E
STRIPPER		
Round	2	415151
Square	2	415152
Rectangular	2	415153
Oblong	2	415154
O.D. Ground Special Shapes	2	41515G
EDM Required Special Shapes	2	41515E
DIE (HWS)		
Round	3	414151
Square	3+4	414152
Rectangular	3+4	414153
Oblong	3+4	414154
O.D. Ground Special Shapes	3+4	41415G
EDM Required Special Shapes	3+4	41415E

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

PRIMA POWER

MT3Ri-31,75; MT3i-31,75

	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1+4+5	413181
Square	1+4+5	413182
Rectangular	1+4+5	413183
Oblong	1+4+5	413184
O.D. Ground Special Shapes	1+4+5	41318G
EDM Required Special Shapes	1+4+5	41318E

STRIPPER		
Round	2	415181
Square	2	415182
Rectangular	2	415183
Oblong	2	415184
O.D. Ground Special Shapes	2	41518G
EDM Required Special Shapes	2	41518E

DIE (HWS)		
Round	3	414181
Square	3+6	414182
Rectangular	3+6	414183
Oblong	3+6	414184
O.D. Ground Special Shapes	3+6	41418G
EDM Required Special Shapes	3+6	41418E

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

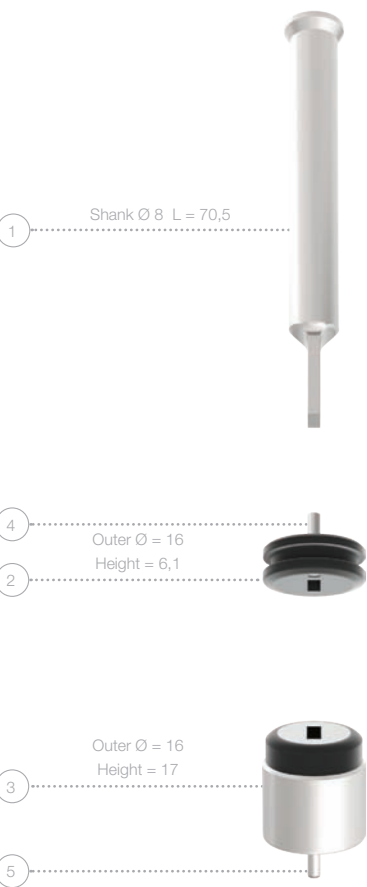
Reinforced version
H-PM® Quality

*suitable up to s = 6 mm



PRIMA POWER

MT24-8; MT12-8; MT20-8; MTH16-8



	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413121
Square	1	413122
Rectangular	1	413123
Oblong	1	413124
O.D. Ground Special Shapes	1	41312G
EDM Required Special Shapes	1	41312E
STRIPPER		
Round	2	415121
Square	2+4	415122
Rectangular	2+4	415123
Oblong	2+4	415124
O.D. Ground Special Shapes	2+4	41512G
EDM Required Special Shapes	2+4	41512E
DIE (HWS)		
Round	3	414121
Square	3+5	414122
Rectangular	3+5	414123
Oblong	3+5	414124
O.D. Ground Special Shapes	3+5	41412G
EDM Required Special Shapes	3+5	41412E

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

PRIMA POWER

MT10-16; MT6-16; MTH16-16

	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413021
Square	1	413022
Rectangular	1	413023
Oblong	1	413024
O.D. Ground Special Shapes	1	41302G
EDM Required Special Shapes	1	41302E
STRIPPER		
Round	2	415021
Square	2+4	415022
Rectangular	2+4	415023
Oblong	2+4	415024
O.D. Ground Special Shapes	2+4	41502G
EDM Required Special Shapes	2+4	41502E
DIE (HWS)		
Round	3	414021
Square	3+5	414022
Rectangular	3+5	414023
Oblong	3+5	414024
O.D. Ground Special Shapes	3+5	41402G
EDM Required Special Shapes	3+5	41402E



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

PRIMA POWER

MT8-24



	POS.-NO.	PART.-NO.
PUNCH* (H-PM®)		
Round	1	413131
Square	1	413132
Rectangular	1	413133
Oblong	1	413134
O.D. Ground Special Shapes	1	41313G
EDM Required Special Shapes	1	41313E

STRIPPER		
Round	2	415131
Square	2+4	415132
Rectangular	2+4	415133
Oblong	2+4	415134
O.D. Ground Special Shapes	2+4	41513G
EDM Required Special Shapes	2+4	41513E

DIE (HWS)		
Round	3	414131
Square	3+5	414132
Rectangular	3+5	414133
Oblong	3+5	414134
O.D. Ground Special Shapes	3+5	41413G
EDM Required Special Shapes	3+5	41413E

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

A large grid of 20 columns and 40 rows for taking notes. The grid is composed of thin gray lines forming a uniform pattern across the page.



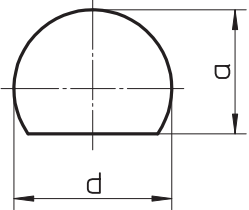
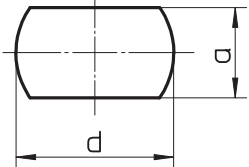
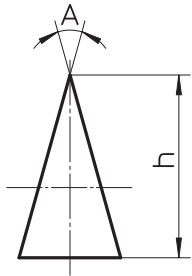
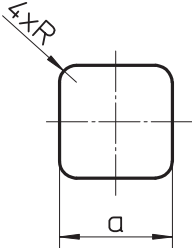
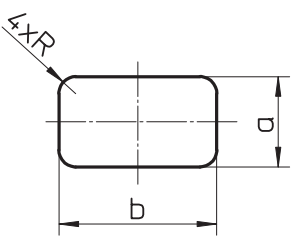
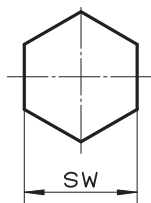
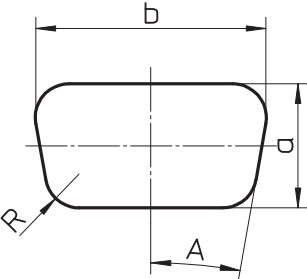

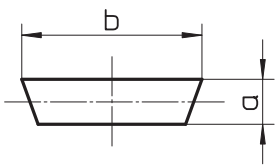
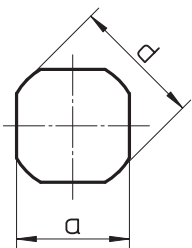
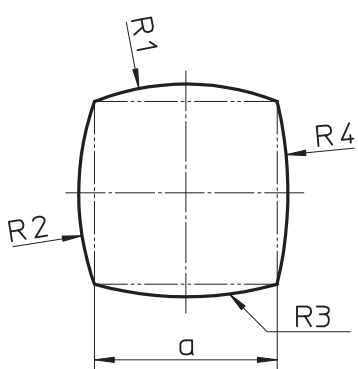
TECHNICAL INFORMATION

INFORMATION ABOUT OUR TOOLS FOR YOUR THICK TURRET SYSTEM

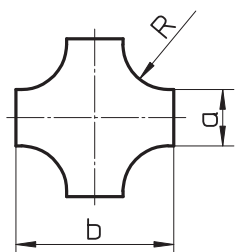
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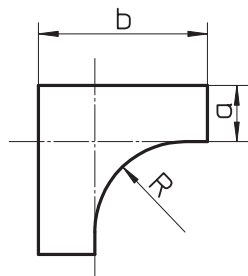
O.D. GROUND SPECIAL SHAPES

 <p>G01</p>	 <p>G02</p>	 <p>G03</p>
 <p>G04</p>	 <p>G05</p>	 <p>G06</p>
 <p>G07</p>	 <p>G08</p>	 <p>G09</p>
 <p>G10</p>	 <p>G11</p>	

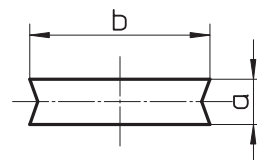
EDM REQUIRED SPECIAL SHAPES



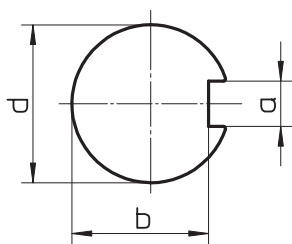
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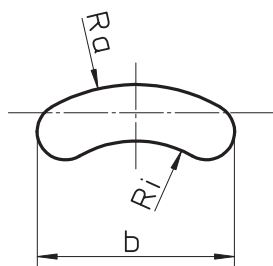
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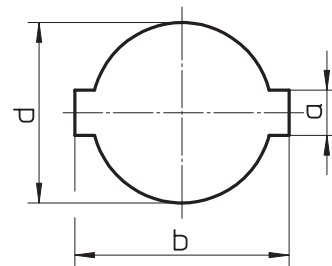
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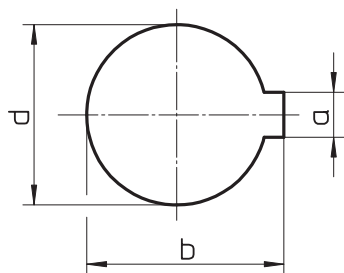
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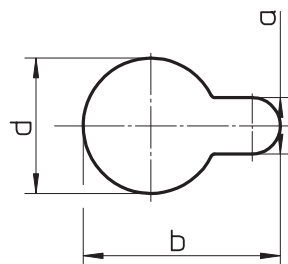
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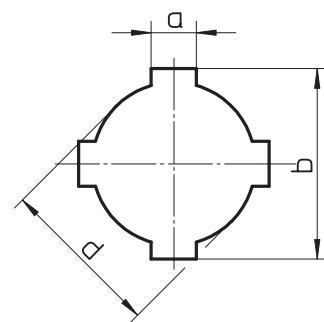
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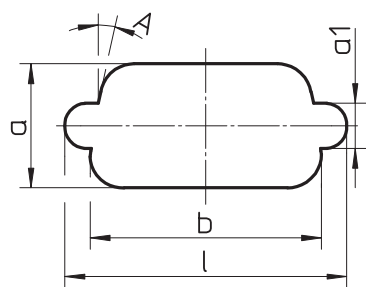
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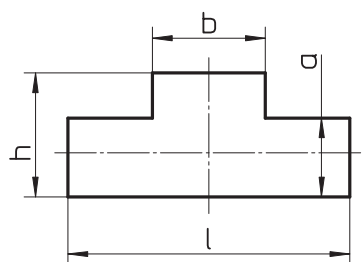
E08



E09



E10



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 uniformed 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

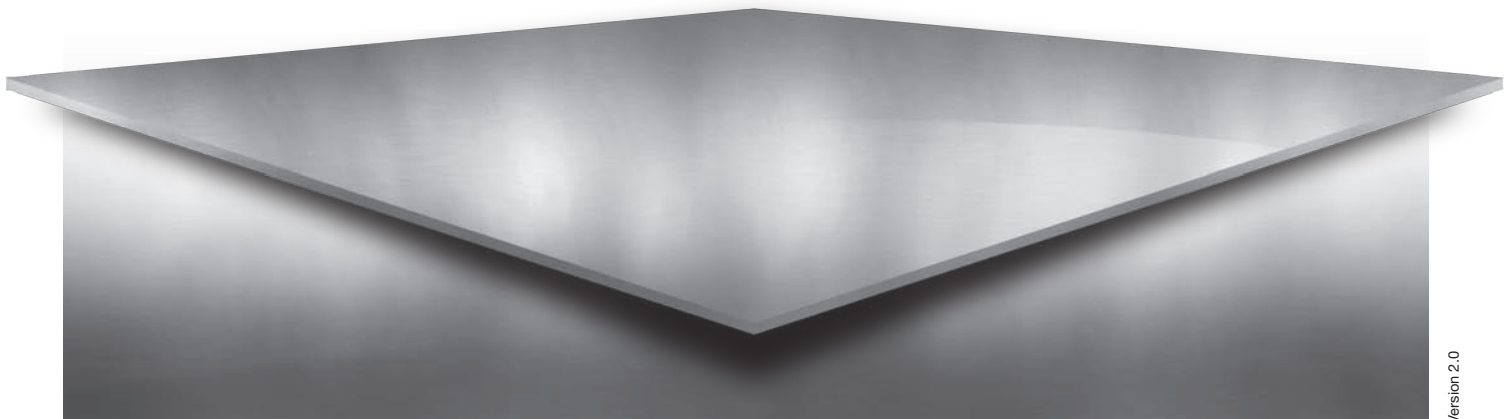
X8-PM

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.

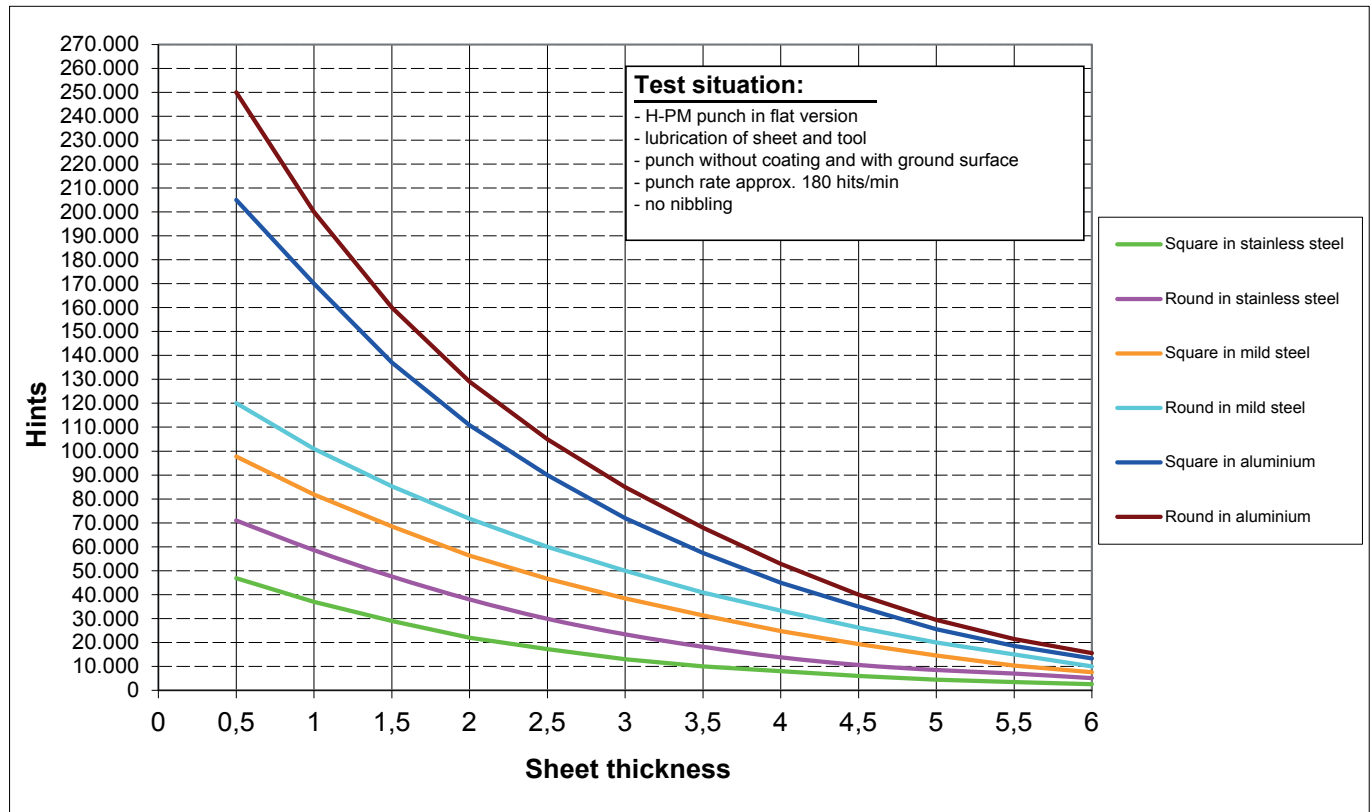
Advantage for customer:

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



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)	2,0 - 4,0
PASS-X3-PM punch	6,0 - 10,0
Nibbling	0,7 - 0,9
Notching	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 too small clearance	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 fulfill 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.

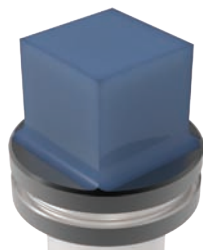
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

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

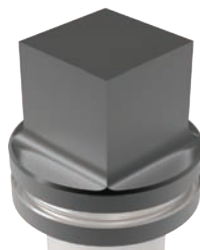
- zinc steel
- aluminium sheets

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



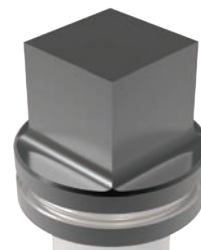
TiCN

for working with stainless steel



A-MAX

for dry processing with aluminium sheet



T-MAX

for working with galvanized sheet

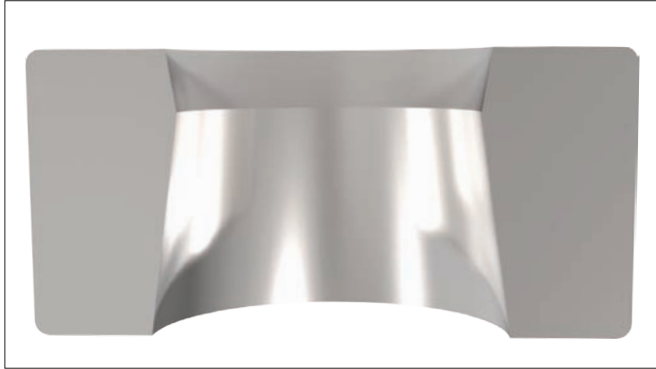
We recommend draw-polished punch edges to increase tool lifetime and reduce material build up (prices on request).



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).

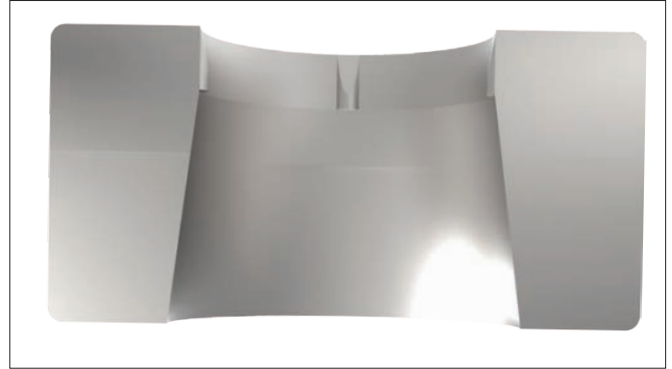
This means that the upper part of the cutting part is produced with a negative angle.

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

This is not recommended for:

- shapes smaller 1,25 mm
- clearance smaller 0,1 mm

SLUG-SNAP (SPECIAL VERSION - ADDITIONAL COSTS)



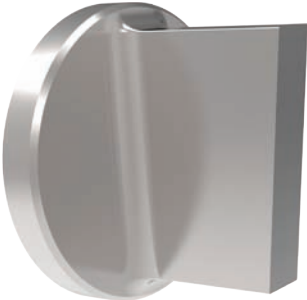
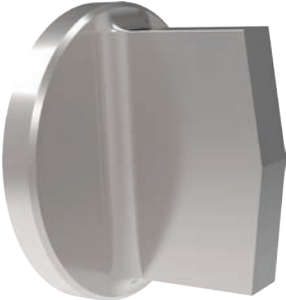
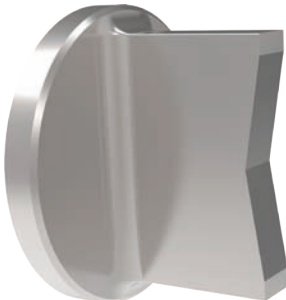
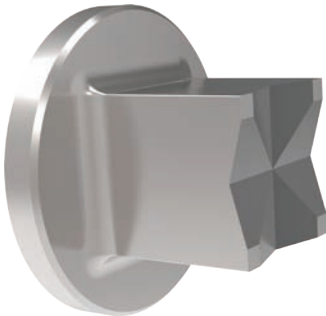
Alternatively we offer our slug-snap version (additional costs).

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 1,25 mm
- clearance smaller 0,1 mm

PUNCHES WITH DIFFERENT SHEAR TYPES

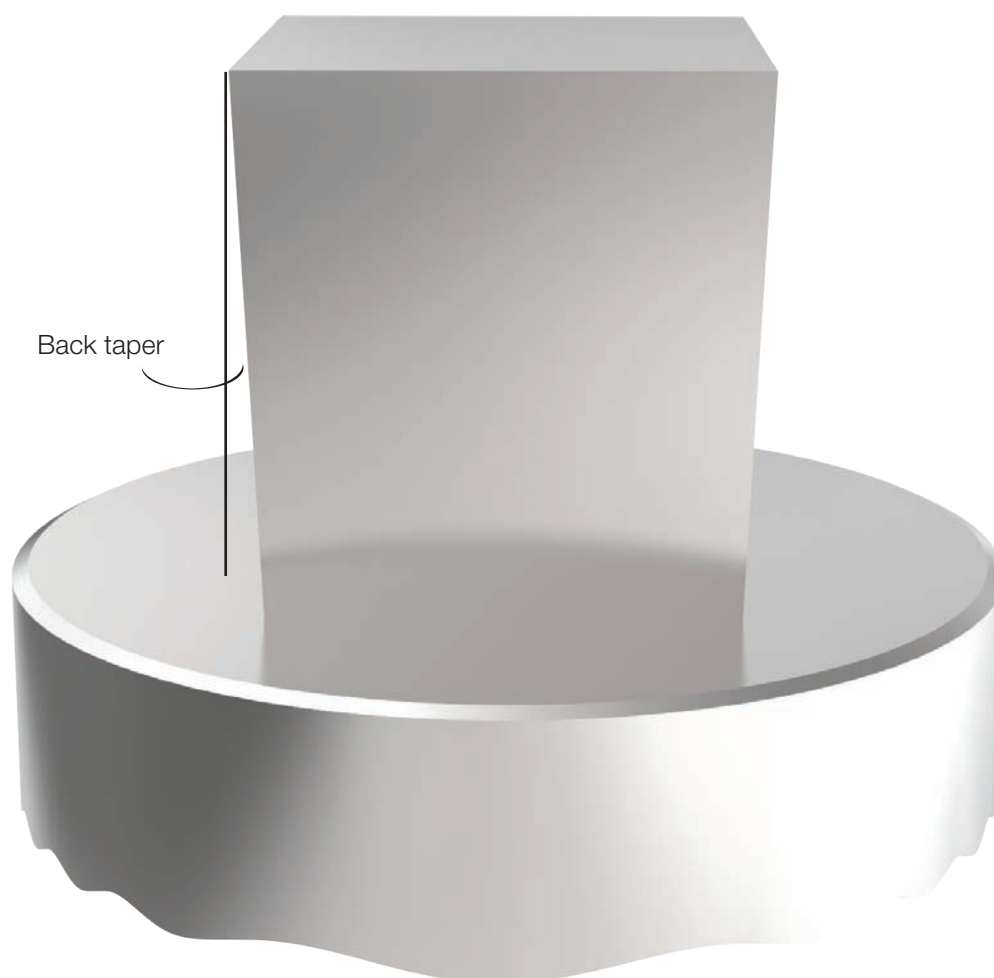
		DESCRIPTION
WT		<div>WT</div> <div>- Advantage: easy regrindable</div> <div>- Disadvantage: lateral forces</div>
DOWT		<div>DOWT</div> <div>- Advantages: easy regrindable no lateral forces</div> <div>- Disadvantage: only reasonable for big contours</div>
2 PT		<div>2 PT</div> <div>- Advantage: no lateral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

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.

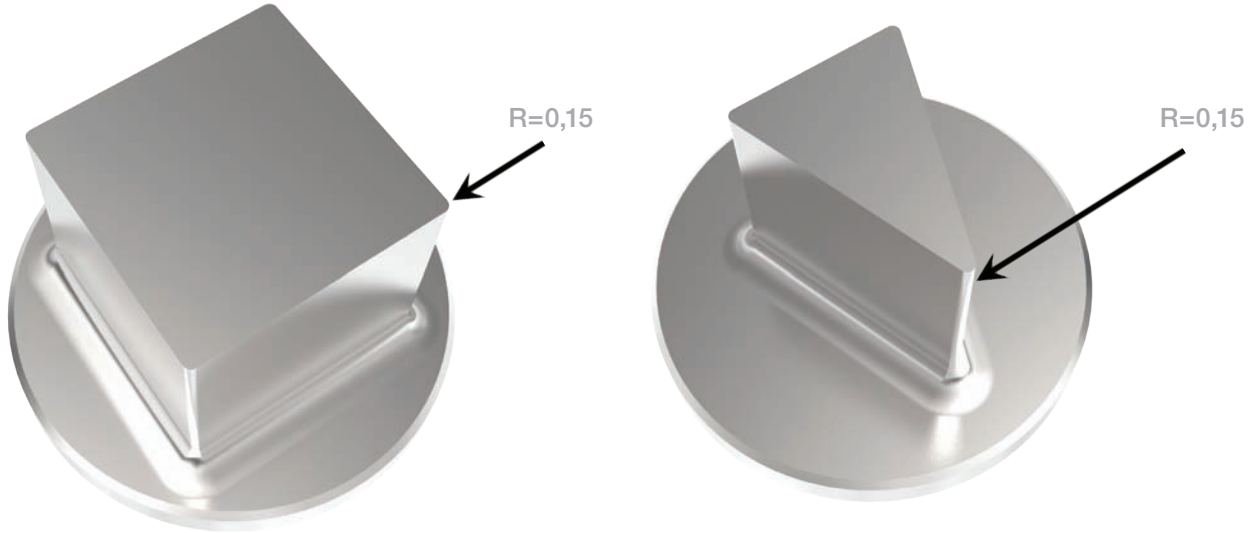
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal contour, e.g. cross-form, U-form, etc.) and in high quality sheets.



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

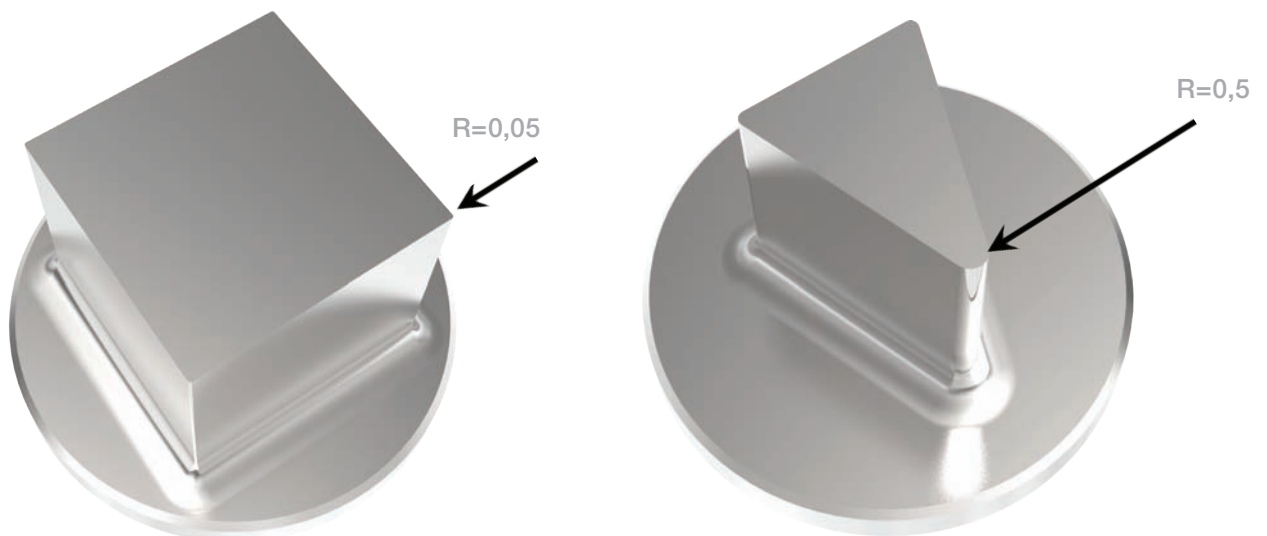


The corner radius can be changed on customer's request.

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.



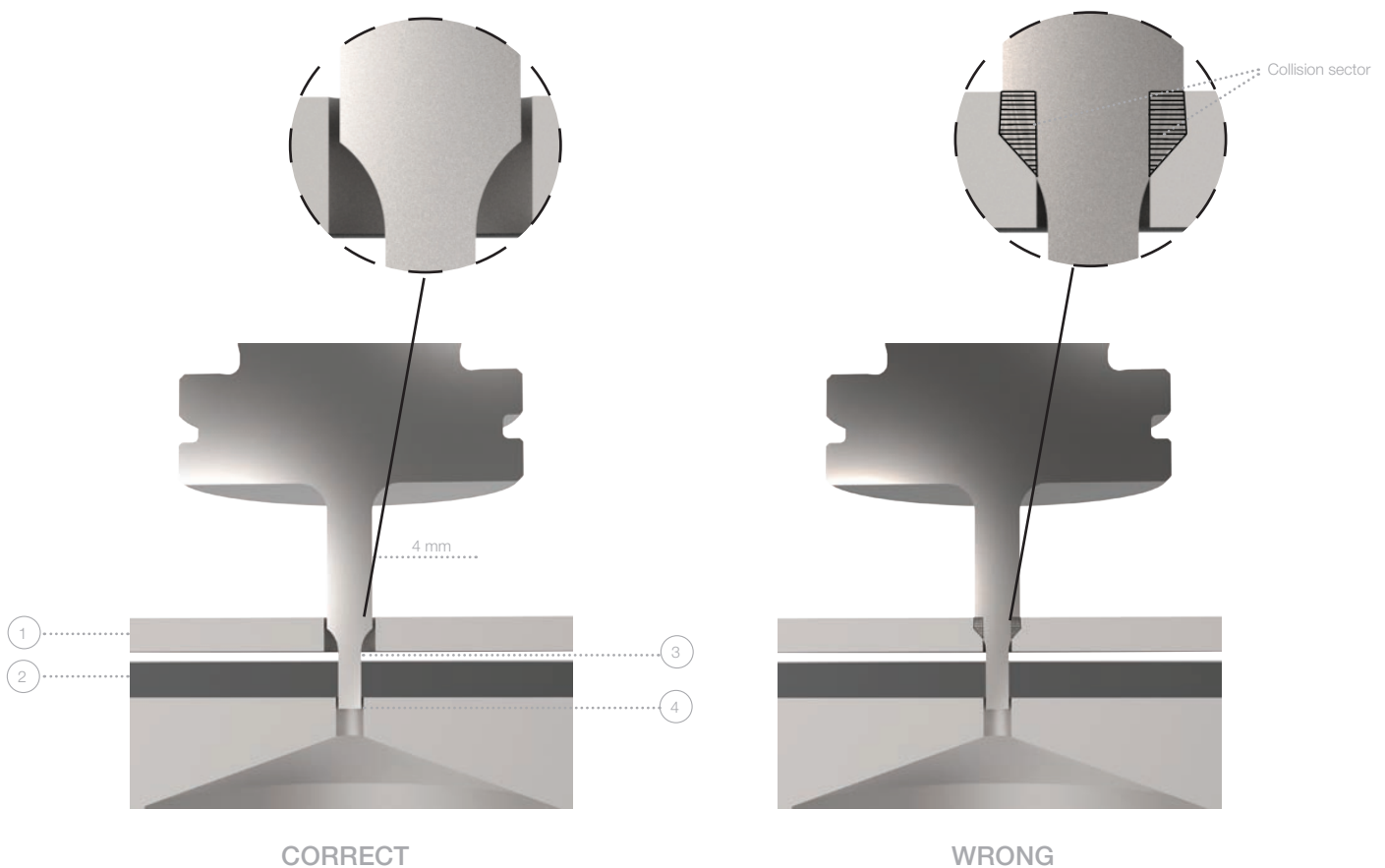
PASS PUNCHES WITH REINFORCED SHOULDER

All PASS punches are produced with a 4 mm reinforced shoulder as soon as the cutting section is required smaller than 4 mm.

This guarantees that you will get a tool with highest stability in order to punch also thicker and high-strength sheets.

However, the correct stripper size has to be selected in subject to machine type, tool design, sheet thickness (2), immersion depth (4), stripper thickness (1) and stripper overlap (3).

It might be possible that it gets necessary to use a stripper with an appropriate big shape (width min. 4,5 mm) in order to get sure that the reinforced punch shoulder can immerse into the stripper.



A large grid of 20 columns and 30 rows for taking notes. The grid is composed of thin, light gray lines forming a uniform pattern across the central area of the page.

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