PASS | STANZTECHNIK AG

TRUMPF

THICK TURRET

SALVAGNINI

CATALOG 03/2023-WW-A.4

INSERTS FOR PRIMA POWER/MULTITOOLS

CATALOG 03/2023-WW-A.4

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

INDEX

INSERTS FOR PRIMA POWER/MULTITOOLS

TECHNICAL INFORMATION

03/2023-WW-A.4 Version 5.0

INSERTS FOR PRIMA POWER/ MULTITOOLS

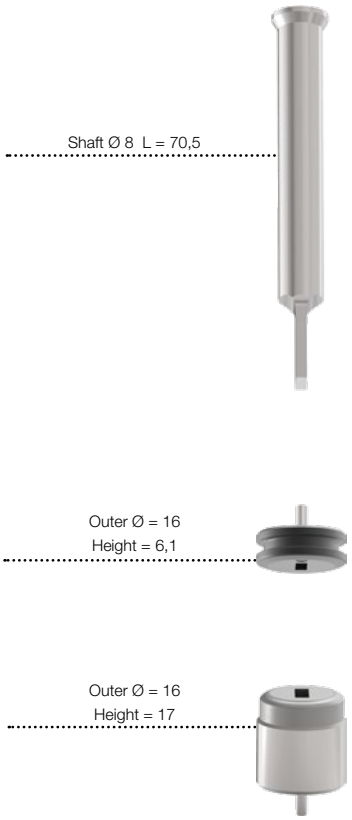
PASS TOOLS FOR YOUR PRIMA POWER/MULTITOOL SYSTEM

INDEX

03/2023-WW-A.4 Version 5.0

PRIMA POWER

MTPi24-8; MTP16-8; MT24-8; MTH16-8



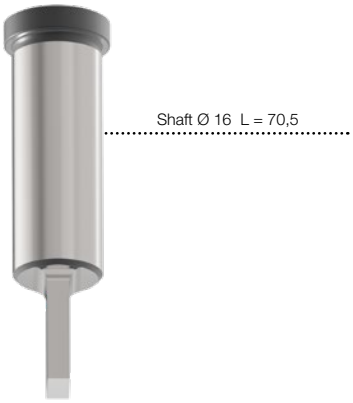
	PART-NO.
PUNCH (H-PM®)	
Round	413121
Square	413122
Rectangle	413123
Oblong	413124
O.D. Ground Special Shape	41312G
EDM Required Special Shape	41312E
STRIPPER	
Round	415121
Square	415122
Rectangle	415123
Oblong	415124
O.D. Ground Special Shape	41512G
EDM Required Special Shape	41512E
DIE (HWS)	
Round	414121
Square	414122
Rectangle	414123
Oblong	414124
O.D. Ground Special Shape	41412G
EDM Required Special Shape	41412E

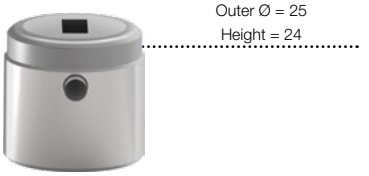
ADDITIONAL COSTS FOR PUNCHES	ADDITIONAL COSTS FOR DIES
TICN coating	Reinforced version
T-MAX coating	H-PM® Quality
A-MAX coating	Additional pin hole
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

PRIMA POWER

MTPi10-16; MTP8-16; MT10-16; MTH16-16

	PART-NO.
PUNCH (H-PM®)	
Round	413021
Square	413022
Rectangle	413023
Oblong	413024
O.D. Ground Special Shape	41302G
EDM Required Special Shape	41302E
STRIPPER	
Round	415021
Square	415022
Rectangle	415023
Oblong	415024
O.D. Ground Special Shape	41502G
EDM Required Special Shape	41502E
DIE (HWS)	
Round	414021
Square	414022
Rectangle	414023
Oblong	414024
O.D. Ground Special Shape	41402G
EDM Required Special Shape	41402E

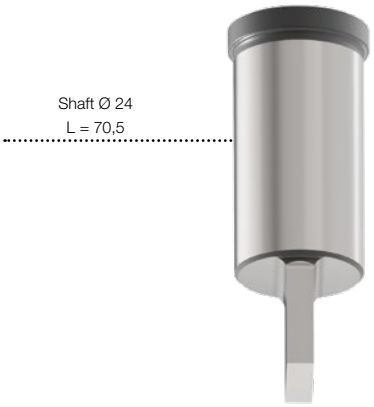


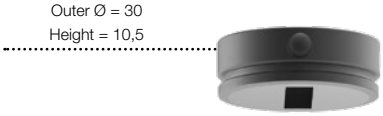


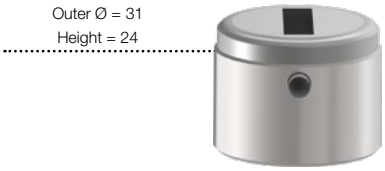
ADDITIONAL COSTS FOR PUNCHES	ADDITIONAL COSTS FOR DIES
TICN coating	Reinforced version
T-MAX coating	H-PM® Quality
A-MAX coating	Additional pin hole
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

PRIMA POWER

MTPi8-24; MTP5-24; MT8-24







	PART-NO.
PUNCH (H-PM®)	
Round	413131
Square	413132
Rectangle	413133
Oblong	413134
O.D. Ground Special Shape	41313G
EDM Required Special Shape	41313E
STRIPPER	
Round	415131
Square	415132
Rectangle	415133
Oblong	415134
O.D. Ground Special Shape	41513G
EDM Required Special Shape	41513E
DIE (HWS)	
Round	414131
Square	414132
Rectangle	414133
Oblong	414134
O.D. Ground Special Shape	41413G
EDM Required Special Shape	41413E

ADDITIONAL COSTS FOR PUNCHES	ADDITIONAL COSTS FOR DIES
TICN coating	Reinforced version
T-MAX coating	H-PM® Quality
A-MAX coating	Additional pin hole
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

PRIMA POWER

MT3Ri-31,75; MT3i-31,75

	PART-NO.
PUNCH (H-PM®)	
Round	413181
Square	413182
Rectangle	413183
Oblong	413184
O.D. Ground Special Shape	41318G
EDM Required Special Shape	41318E
STRIPPER	
Round	415181
Square	415182
Rectangle	415183
Oblong	415184
O.D. Ground Special Shape	41518G
EDM Required Special Shape	41518E
DIE (HWS)	
Round	414181
Square	414182
Rectangle	414183
Oblong	414184
O.D. Ground Special Shape	41418G
EDM Required Special Shape	41418E

ADDITIONAL COSTS FOR PUNCHES	ADDITIONAL COSTS FOR DIES
TICN coating	Reinforced version
T-MAX coating	H-PM® Quality
A-MAX coating	Additional pin hole
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

PRIMA POWER

MT20i-8

	PART-NO.
PUNCH (H-PM®)	
Round	413111
Square	413112
Rectangle	413113
Oblong	413114
O.D. Ground Special Shape	41311G
EDM Required Special Shape	41311E
STRIPPER	
Round	415111
Square	415112
Rectangle	415113
Oblong	415114
O.D. Ground Special Shape	41511G
EDM Required Special Shape	41511E
DIE (HWS)	
Round	414111
Square	414112
Rectangle	414113
Oblong	414114
O.D. Ground Special Shape	41411G
EDM Required Special Shape	41411E

ADDITIONAL COSTS FOR PUNCHES	ADDITIONAL COSTS FOR DIES
TICN coating	Reinforced version
T-MAX coating	H-PM® Quality
A-MAX coating	Additional pin hole
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

03/2023-WW-A.4 Version 5.0

	PART-NO.
PUNCH (H-PM®)	
Round	413151
Square	413152
Rectangle	413153
Oblong	413154
O.D. Ground Special Shape	41315G
EDM Required Special Shape	41315E
STRIPPER	
Round	415151
Square	415152
Rectangle	415153
Oblong	415154
O.D. Ground Special Shape	41515G
EDM Required Special Shape	41515E
DIE (HWS)	
Round	414151
Square	414152
Rectangle	414153
Oblong	414154
O.D. Ground Special Shape	41415G
EDM Required Special Shape	41415E

ADDITIONAL COSTS FOR PUNCHES	ADDITIONAL COSTS FOR DIES
TICN coating	Reinforced version
T-MAX coating	H-PM® Quality
A-MAX coating	Additional pin hole
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

03/2023-WW-A.4 Version 5.0

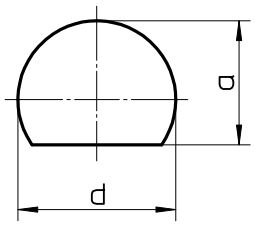
TECHNICAL INFORMATION

INFORMATION ABOUT OUR TOOLS FOR YOUR THICK TURRET SYSTEM

INDEX

03/2023-WW-A.4 Version 5.0

O.D. GROUND SPECIAL SHAPES



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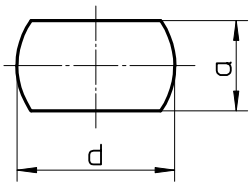

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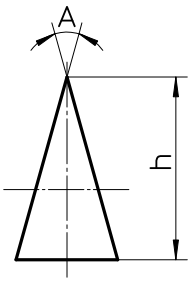

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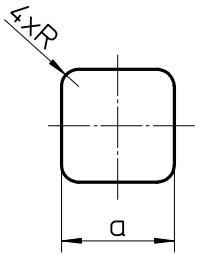

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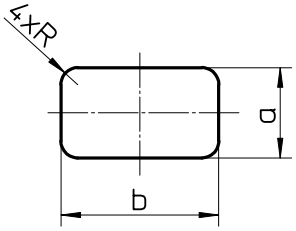

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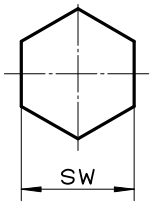

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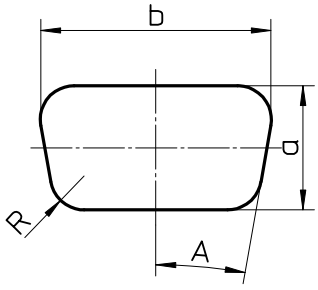

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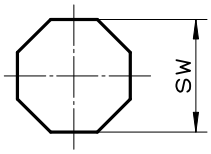

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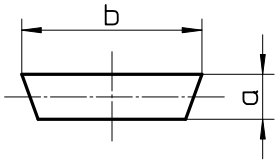

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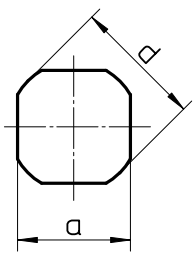

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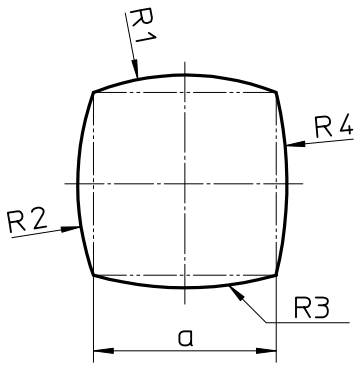
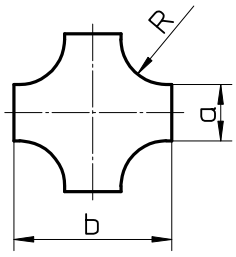


G11

CONTACT: **+49 92 70 / 9 85 - 0**

03/2023-WW-A.4 Version 5.0

EDM REQUIRED SPECIAL SHAPES



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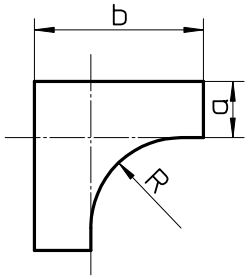

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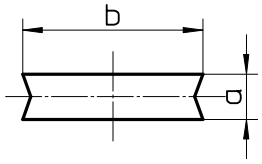

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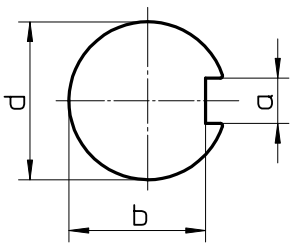

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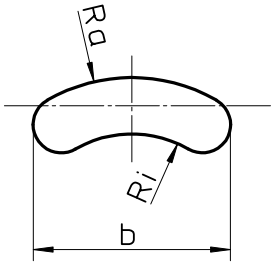

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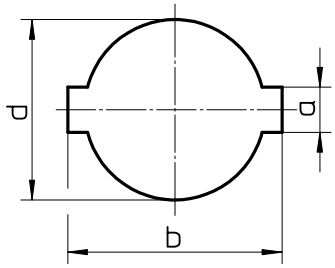

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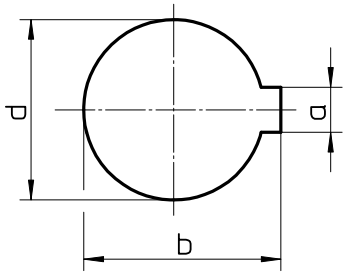

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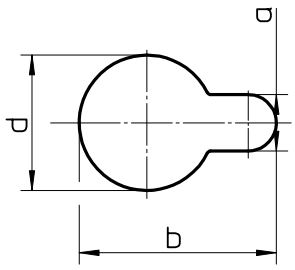

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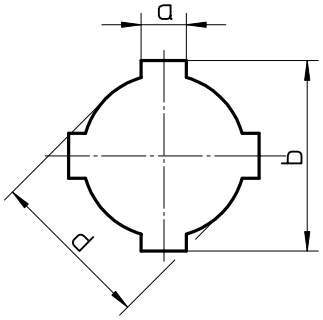

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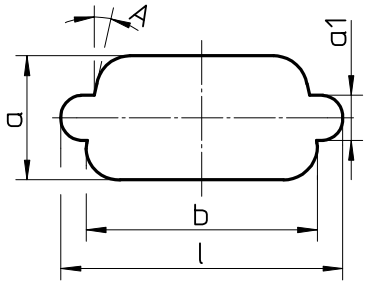

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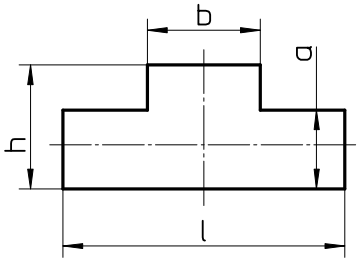


E11

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.

Advantages 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 lifetime 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 lifetime.

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 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 regard to special shapes.

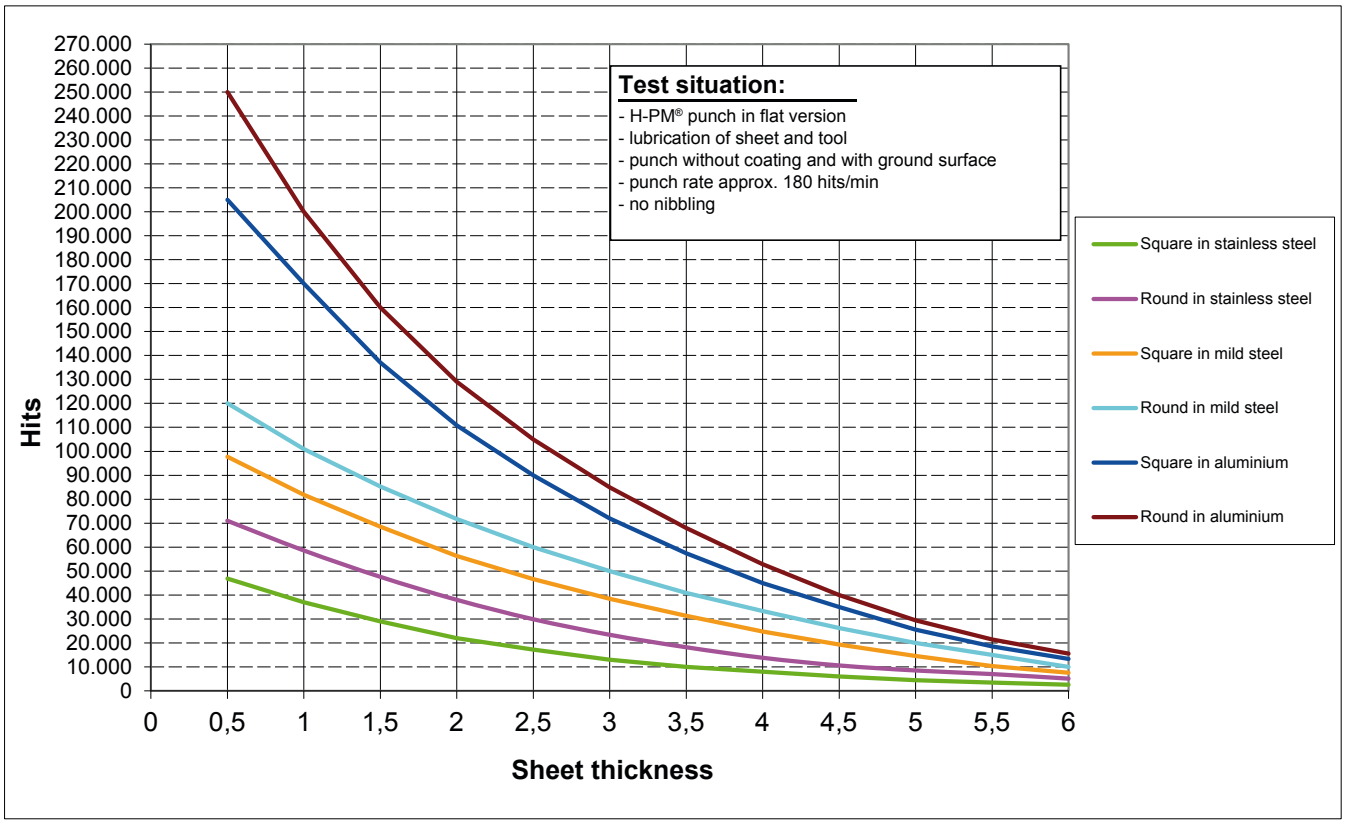
Advantage for customer:

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

03/2023-WW-A.4 Version 5.0

LIFETIME OF TOOLS I REGRIND ADVICE

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



INFLUENCING FACTORS	FACTOR
Galvanised steel / stainless steel with foil / aluminium anodised	0,5 - 0,8
No sheet lubrication	0,4 - 0,6
Punch coating (TICN for stainless steel / T-MAX for galvanised 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
Shear	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 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 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.

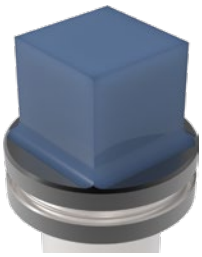
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

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

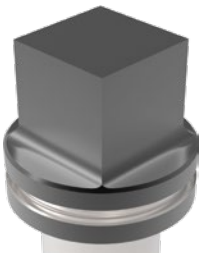
- galvanised steel
- aluminium

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



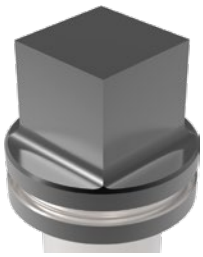
TICN

for working with stainless steel



A-MAX

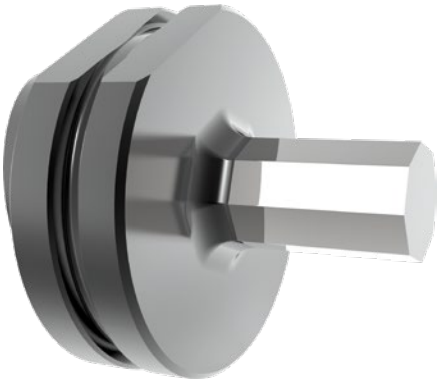
for dry processing with aluminium sheet



T-MAX

for working with galvanised sheet / zincor

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

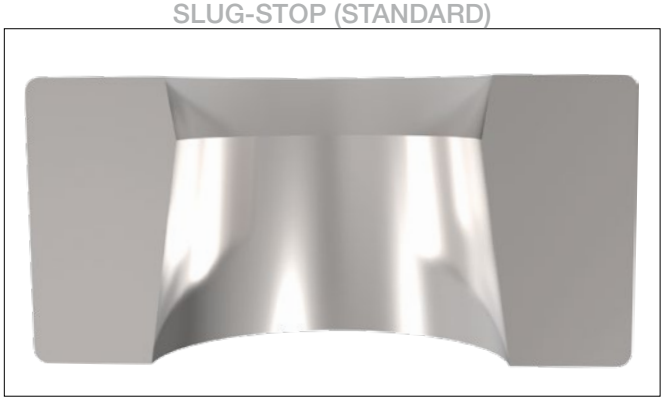


03/2023-WW-A.4 Version 5.0

DIE VERSIONS

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

SLUG-STOP (STANDARD)



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

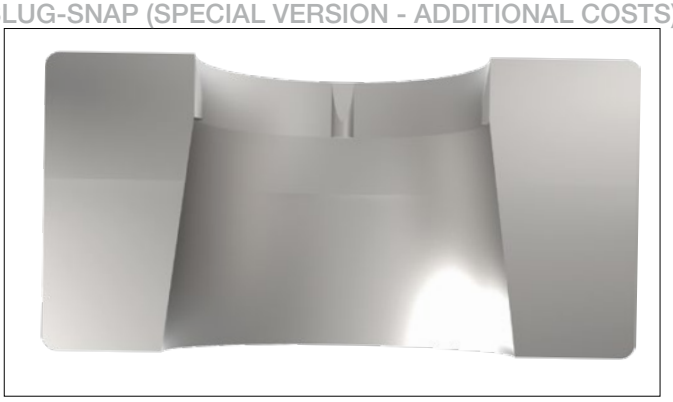
This means that the upper part of the cutting part is produced with a negative angle.

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

This is not recommended for:

- shapes smaller than 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 slug positively (better than the slug-stop version).

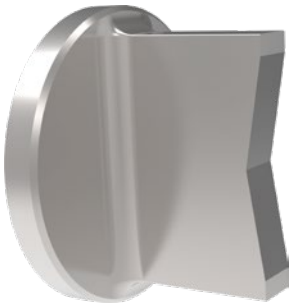
The slug-snap version is also more convenient for shapes smaller than 1,25 mm and clearance smaller 0,1 mm.

PUNCHES WITH DIFFERENT SHEAR TYPES

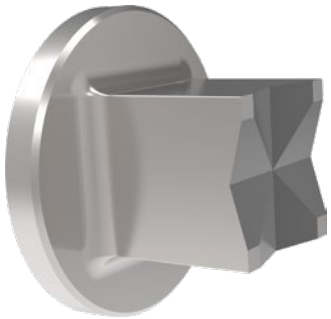
WT

DOWT

2 PT



4 PT



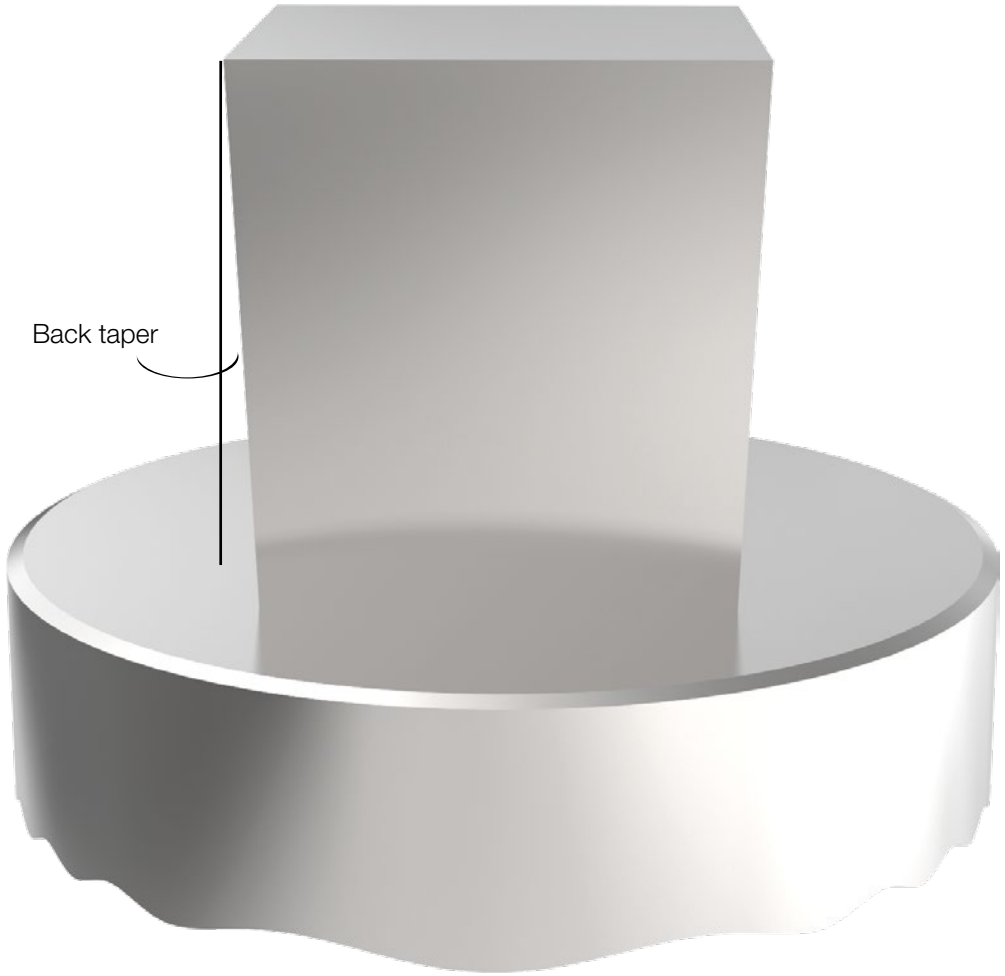
DESCRIPTION	
WT	
Advantage	easy regrindable
Disadvantage	lateral forces
DOWT	
Advantages	easy regrindable no lateral forces
Disadvantage	only reasonable for big shapes
2 PT	
Advantages	no lateral forces optimal die cutting
Disadvantages	only reasonable for big and slim shapes difficult to regrind
4 PT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

PASS 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.

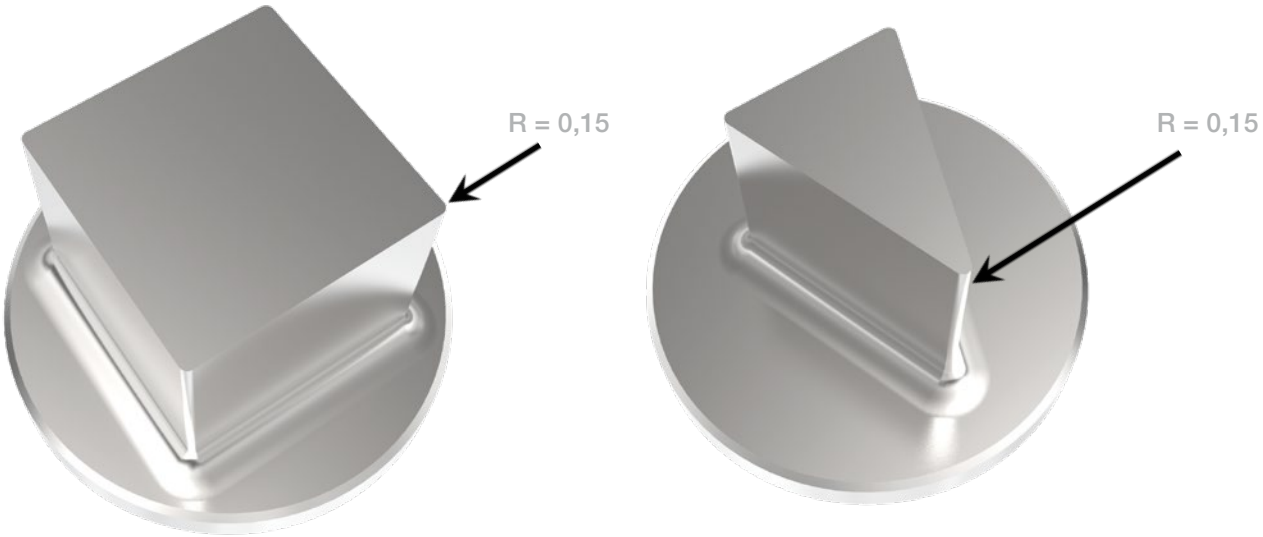
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal shape, e.g. cross-form, U-form, etc.) and in high qualitity sheets.



PASS CORNER RADIUS ON PUNCHES

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

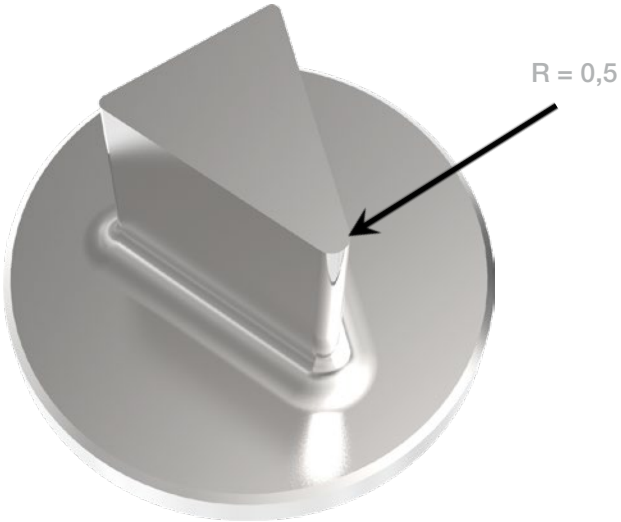
E.g.: square and triangle punch



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

E.g.:

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



03/2023-WW-A.4 Version 5.0

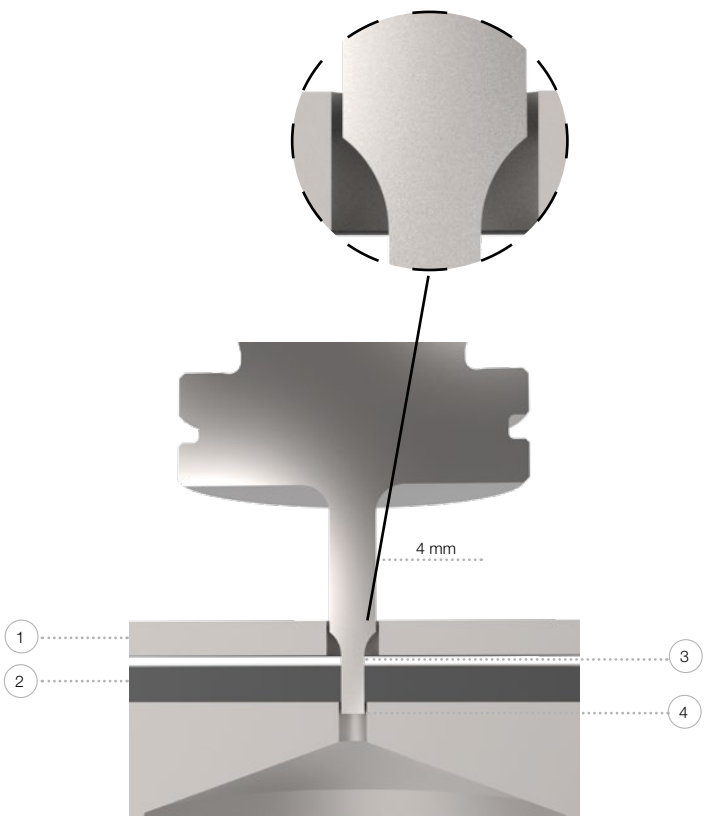
PASS PUNCHES WITH REINFORCED SHOULDER

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

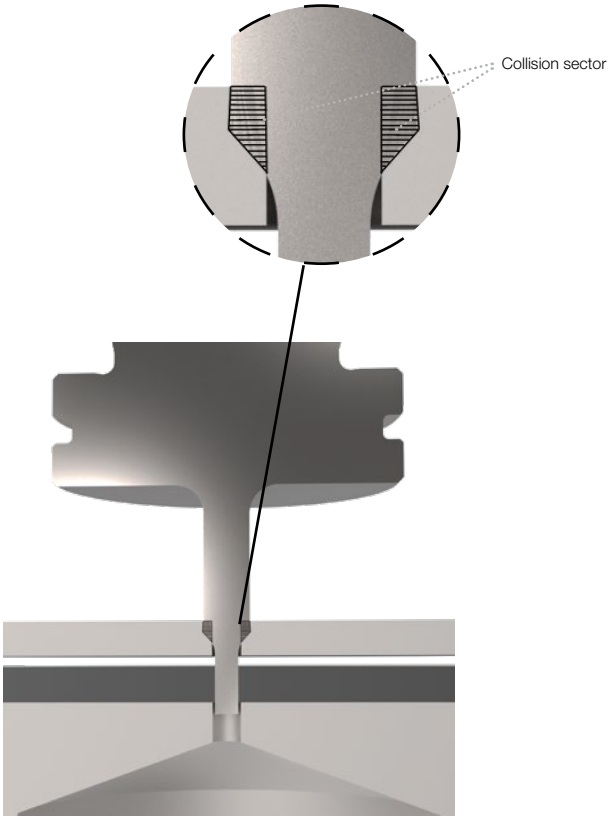
This guarantees that you will get a tool with highest stability in order to punch also thicker and high-strength sheets.

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

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.



CORRECT



WRONG

NOTES

NOTES

NOTES

03/2023-WW-A.4 Version 5.0

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