



CATALOGUE 10/2017-WW-A.1

SYSTEM THICK TURRET



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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TOOLS STATION A TO E

PASS TOOLS FOR YOUR
THICK TURRET SYSTEM

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PASS STANDARD I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Hexagon head screw for simply assembling of the punch assembly

Spring for sheet thickness up to 6 mm

2 mm length adjustment by turning of the distance ring



PUNCH BODY

Metric-thread M12 x 1,25

Punch body made with premium H-PM®

Alignment pin with Double D for exact adjustment



PUNCH GUIDE

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Keyway:

Round: 0°

Square: 0-45°

Rect./ Oblong: 0-90-225°

Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

PASS STANDARD I STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4012A01
Square	4012A02
Rectangle	4012A03
Oblong	4012A04
*O.D. Ground Special Shapes	4012A0G
*EDM Required Special Shapes	4012A0E

HEAD UNIT (HEAD SCREW, SPRING, DISTANCE RING)

For all shapes	4092A01
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PUNCH BODY (H-PM®)

Round	4022A01
Square	4022A02
Rectangle	4022A03
Oblong	4022A04
*O.D. Ground Special Shapes	4022A0G
*EDM Required Special Shapes	4022A0E

PUNCH GUIDE

Round	4032A01
Square	4032A02
Rectangle	4032A03
Oblong	4032A04
*O.D. Ground Special Shapes	4032A0G
*EDM Required Special Shapes	4032A0E

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
*O.D. Ground Special Shapes	4052A0G
*EDM Required Special Shapes	4052A0E



SPARE PARTS

Head screw	4092A31
Spring	4092A11
Distance ring	4092A21
O-Ring (in punch guide)	4092A51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Piece (2 mm)	499A4S2
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ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1
Shimkeeper (0,5 mm)	499A1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality

ps:[®]alpha I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister for sheet thickness
up to 4 mm

Continuously and easy length
adjustment in assembled status



PUNCH BODY

Metric-thread M12 x 1,25

Punch body made with premium H-PM[®]

Alignment pin with Double D for exact adjustment



PUNCH GUIDE

Surface-hardened and polished punch guide
for sheet thickness up to 4 mm

Keyway:
All shapes: 0-90°

STRIPPER

Interchangeable stripper plate

ps:® alpha I STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY		
	Round	4013A01
	Square	4013A02
	Rectangle	4013A03
	Oblong	4013A04
	*O.D. Ground Special Shapes	4013A0G
	*EDM Required Special Shapes	4013A0E

HEAD UNIT		
	For all shapes	4093A01

PUNCH BODY (H-PM®)		
	Round	4023A01
	Square	4023A02
	Rectangle	4023A03
	Oblong	4023A04
	*O.D. Ground Special Shapes	4023A0G
	*EDM Required Special Shapes	4023A0E

PUNCH GUIDE		
	For all shapes	4033A05

STRIPPER		
	Round	4043A01
	Square	4043A02
	Rectangle	4043A03
	Oblong	4043A04
	*O.D. Ground Special Shapes	4043A0G
	*EDM Required Special Shapes	4043A0E

DIE (HWS)		
	Round	4052A01
	Square	4052A02
	Rectangle	4052A03
	Oblong	4052A04
	*O.D. Ground Special Shapes	4052A0G
	*EDM Required Special Shapes	4052A0E

SPARE PARTS	ADDITIONAL COSTS FOR PUNCH
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O-Ring (in punch guide)	4092A51	TICN coating
PU-ejector Ø 3x6 (in punch)	4092P03	T-MAX coating
PU-ejector Ø 6x10 (in punch)	4092P06	A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear

COMPENSATING SHIM FOR PUNCH	ADDITIONAL COSTS FOR PUNCH GUIDE
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Not necessary	Additional keyway
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SET OF COMPENSATING SHIMS FOR DIE	ADDITIONAL COSTS FOR DIE
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1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1	Reinforced die
Shimkeeper (0,5 mm)	499A1M95	H-PM® Quality



ps:® alpha-compact I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister for sheet thickness
up to 4 mm

Continuously and easy length
adjustment in assembled status



PUNCH BODY

Metric-thread M12 x 1,25

Punch body made with premium H-PM®

Alignment pin with Double D for exact adjustment



PUNCH GUIDE

Surface-hardened and polished punch guide
for sheet thickness up to 4 mm

Keyway:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-90-225°

Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

ps:® alpha-compact I STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4017A01
Square	4017A02
Rectangle	4017A03
Oblong	4017A04
*O.D. Ground Special Shapes	4017A0G
*EDM Required Special Shapes	4017A0E

HEAD UNIT

For all shapes	4093A01
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PUNCH BODY (H-PM®)

Round	4023A01
Square	4023A02
Rectangle	4023A03
Oblong	4023A04
*O.D. Ground Special Shapes	4023A0G
*EDM Required Special Shapes	4023A0E

PUNCH GUIDE

Round	4032A01
Square	4032A02
Rectangle	4032A03
Oblong	4032A04
*O.D. Ground Special Shapes	4032A0G
*EDM Required Special Shapes	4032A0E

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
*O.D. Ground Special Shapes	4052A0G
*EDM Required Special Shapes	4052A0E



SPARE PARTS

O-Ring (in punch guide)	4092A51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Not necessary	
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ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1
Shimkeeper (0,5 mm)	499A1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality

ps:® beta-V2® | STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister for sheet thickness
up to 6 mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication



PUNCH BODY

Oil channel for tool lubrication

Alignment pin with Double D for exact adjustment

Punch body made with premium H-PM®



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button

Surface-hardened and polished punch guide
for sheet thickness up to 6 mm

Keyway:
All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate

ps:®beta-V2® | STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4010A01
Square	4010A02
Rectangle	4010A03
Oblong	4010A04
*O.D. Ground Special Shapes	4010A0G
*EDM Required Special Shapes	4010A0E

HEAD UNIT

For all shapes	4090A10
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PUNCH BODY (H-PM®)

Round	4020A01
Square	4020A02
Rectangle	4020A03
Oblong	4020A04
*O.D. Ground Special Shapes	4020A0G
*EDM Required Special Shapes	4020A0E

PUNCH GUIDE

For all shapes	4030A05
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STRIPPER

Round	4040A01
Square	4040A02
Rectangle	4040A03
Oblong	4040A04
*O.D. Ground Special Shapes	4040A0G
*EDM Required Special Shapes	4040A0E

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
*O.D. Ground Special Shapes	4052A0G
*EDM Required Special Shapes	4052A0E

SPARE PARTS

O-Ring (in punch guide)	4092A51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Not necessary	
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ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1
Shimkeeper (0,5 mm)	499A1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality



ps:® beta-compact I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister for sheet thickness
up to 6 mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication



PUNCH BODY

Oil channel for tool lubrication

Alignment pin with Double D for exact adjustment

Punch body made with premium H-PM®



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button

Surface-hardened and polished punch guide
for sheet thickness up to 6 mm

Keyway:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-90-225°

Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

ps:®beta-compact I STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4016A01
Square	4016A02
Rectangle	4016A03
Oblong	4016A04
*O.D. Ground Special Shapes	4016A0G
*EDM Required Special Shapes	4016A0E

HEAD UNIT

For all shapes	4094A10
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PUNCH BODY (H-PM®)

Round	4024A01
Square	4024A02
Rectangle	4024A03
Oblong	4024A04
*O.D. Ground Special Shapes	4024A0G
*EDM Required Special Shapes	4024A0E

PUNCH GUIDE

Round	4036A01
Square	4036A02
Rectangle	4036A03
Oblong	4036A04
*O.D. Ground Special Shapes	4036A0G
*EDM Required Special Shapes	4036A0E

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
*O.D. Ground Special Shapes	4052A0G
*EDM Required Special Shapes	4052A0E



SPARE PARTS

O-Ring (in punch guide)	4092A51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Not necessary

ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1
Shimkeeper (0,5 mm)	499A1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality

PASS STANDARD I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Hexagon head screw
for simply assembling of punch assembly

Spring for sheet thickness up to 6 mm

2 mm length adjustment
by turning of the distance ring



PUNCH BODY

Metric-thread M20 x 1,5

Punch body made with premium H-PM®

Alignment pin with Double D for exact adjustment



PUNCH GUIDE

Surface-hardened and polished punch guide
for sheet thickness up to 6 mm

Keyway:

Round: 0°

Square: 0-45°

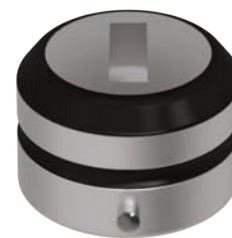
Rect./Oblong: 0-90-225°

Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

PASS STANDARD I STATION B

DIAMETER UP TO 31,7 MM



PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4012B01
Square	4012B02
Rectangle	4012B03
Oblong	4012B04
*O.D. Ground Special Shapes	4012B0G
*EDM Required Special Shapes	4012B0E

HEAD UNIT (HEAD SCREW, SPRING, DISTANCE RING)

For all shapes	4092B01
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PUNCH BODY (H-PM®)

Round	4022B01
Square	4022B02
Rectangle	4022B03
Oblong	4022B04
*O.D. Ground Special Shapes	4022B0G
*EDM Required Special Shapes	4022B0E

PUNCH GUIDE

Round	4032B01
Square	4032B02
Rectangle	4032B03
Oblong	4032B04
*O.D. Ground Special Shapes	4032B0G
*EDM Required Special Shapes	4032B0E

DIE (HWS)

Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
*O.D. Ground Special Shapes	4052B0G
*EDM Required Special Shapes	4052B0E

SPARE PARTS

Head screw	4092B31
Spring	4092B11
Distance ring	4092B21
O-Ring (in punch guide)	4092B51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Piece (2 mm)	499B4S2
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ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1
Shimkeeper (0,5 mm)	499B1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality

ps:® alpha I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 4 mm

Continuously and easy length adjustment
in assembled status



PUNCH BODY

Metric-thread M20 x 1,5

Punch body made with premium H-PM®

Alignment pin with Double D for exact adjustment



PUNCH GUIDE

Surface-hardened and polished punch guide
for sheet thickness up to 4 mm

Keyway:
All shapes: 0-45-90-180-270°

STRIPPER

Interchangeable stripper plate

ps:® alpha I STATION B

DIAMETER UP TO 31,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4013B01
Square	4013B02
Rectangle	4013B03
Oblong	4013B04
*O.D. Ground Special Shapes	4013B0G
*EDM Required Special Shapes	4013B0E

HEAD UNIT

For all shapes	4093B01
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PUNCH BODY (H-PM®)

Round	4023B01
Square	4023B02
Rectangle	4023B03
Oblong	4023B04
*O.D. Ground Special Shapes	4023B0G
*EDM Required Special Shapes	4023B0E

PUNCH GUIDE

For all shapes	4033B05
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STRIPPER

Round	4043B01
Square	4043B02
Rectangle	4043B03
Oblong	4043B04
*O.D. Ground Special Shapes	4043B0G
*EDM Required Special Shapes	4043B0E

DIE (HWS)

Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
*O.D. Ground Special Shapes	4052B0G
*EDM Required Special Shapes	4052B0E

SPARE PARTS

O-Ring (in punch guide)	4092B51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Not necessary

ADDITIONAL COSTS FOR PUNCH GUIDE

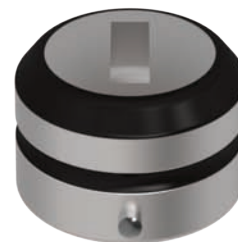
Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1
Shimkeeper (0,5 mm)	499B1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality



ps:® alpha-compact I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 4 mm

Continuously and easy length adjustment
in assembled status



PUNCH BODY

Metric-thread M20 x 1,5

Punch body made with premium H-PM®

Alignment pin with Double D for exact adjustment



PUNCH GUIDE

Surface-hardened and polished punch guide
for sheet thickness up to 4 mm

Keyway:

Round: 0°

Square: 0-45°

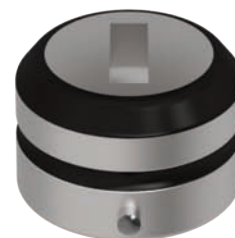
Rect./Oblong: 0-45-90-135°

Asym. shapes: 0-90-180-270°

Tool shapes integrated in guide

ps:® alpha-compact I STATION B

DIAMETER UP TO 31,7 MM



PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4017B01
Square	4017B02
Rectangle	4017B03
Oblong	4017B04
*O.D. Ground Special Shapes	4017B0G
*EDM Required Special Shapes	4017B0E

HEAD UNIT

For all shapes	4093B01
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PUNCH BODY (H-PM®)

Round	4023B01
Square	4023B02
Rectangle	4023B03
Oblong	4023B04
*O.D. Ground Special Shapes	4023B0G
*EDM Required Special Shapes	4023B0E

PUNCH GUIDE

Round	4032B01
Square	4032B02
Rectangle	4032B03
Oblong	4032B04
*O.D. Ground Special Shapes	4032B0G
*EDM Required Special Shapes	4032B0E

DIE (HWS)

Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
*O.D. Ground Special Shapes	4052B0G
*EDM Required Special Shapes	4052B0E

SPARE PARTS

O-Ring (in punch guide)	4092B51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Not necessary	
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ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1
Shimkeeper (0,5 mm)	499B1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality

ps:®beta-V2® | STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 6 mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication



PUNCH BODY

Oil channel for tool lubrication

Alignment pin with Double D for exact adjustment

Punch body made with premium H-PM®



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button

Surface-hardened and polished punch guide
for sheet thickness up to 6 mm

Keyway:

All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate

ps:®beta-V2® I STATION B

DIAMETER UP TO 31,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4010B01
Square	4010B02
Rectangle	4010B03
Oblong	4010B04
*O.D. Ground Special Shapes	4010B0G
*EDM Required Special Shapes	4010B0E

HEAD UNIT

For all shapes	4090B10
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PUNCH BODY (H-PM®)

Round	4020B01
Square	4020B02
Rectangle	4020B03
Oblong	4020B04
*O.D. Ground Special Shapes	4020B0G
*EDM Required Special Shapes	4020B0E

PUNCH GUIDE

For all shapes	4030B05
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STRIPPER

Round	4040B01
Square	4040B02
Rectangle	4040B03
Oblong	4040B04
*O.D. Ground Special Shapes	4040B0G
*EDM Required Special Shapes	4040B0E

DIE (HWS)

Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
*O.D. Ground Special Shapes	4052B0G
*EDM Required Special Shapes	4052B0E

SPARE PARTS

O-Ring (in punch guide)	4092B51
PU-ejector Ø 3x6 (in punch)	4092P03
PU-ejector Ø 6x10 (in punch)	4092P06

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

COMPENSATING SHIM FOR PUNCH

Not necessary	
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ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1
Shimkeeper (0,5 mm)	499B1M95

ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM® Quality



ps:® beta-compact I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 6 mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication



PUNCH BODY

Oil channel for tool lubrication

Alignment pin with Double D for exact adjustment

Punch body made with premium H-PM®



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button.

Surface-hardened and polished punch guide
for sheet thickness up to 6 mm

Keyway:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-45-90-135°

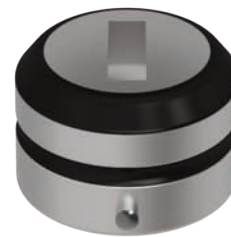
Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

ps:® beta-compact I STATION B

DIAMETER UP TO 31,7 MM

	PART-NO.
COMPLETE PUNCH ASSEMBLY	
Round	4016B01
Square	4016B02
Rectangle	4016B03
Oblong	4016B04
*O.D. Ground Special Shapes	4016B0G
*EDM Required Special Shapes	4016B0E
HEAD UNIT	
For all shapes	4094B10
PUNCH BODY (H-PM®)	
Round	4024B01
Square	4024B02
Rectangle	4024B03
Oblong	4024B04
*O.D. Ground Special Shapes	4024B0G
*EDM Required Special Shapes	4024B0E
PUNCH GUIDE	
Round	4036B01
Square	4036B02
Rectangle	4036B03
Oblong	4036B04
*O.D. Ground Special Shapes	4036B0G
*EDM Required Special Shapes	4036B0E
DIE (HWS)	
Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
*O.D. Ground Special Shapes	4052B0G
*EDM Required Special Shapes	4052B0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
O-Ring (in punch guide)	4092B51	TICN coating
PU-ejector Ø 3x6 (in punch)	4092P03	T-MAX coating
PU-ejector Ø 6x10 (in punch)	4092P06	A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1	Reinforced die
Shimkeeper (0,5 mm)	499B1M95	H-PM® Quality

PASS STANDARD I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

3 mm length adjustment by using compensating shims

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Clamping-screws to fix the strippers

PUNCH BODY

Thread M12

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

PASS STANDARD I STATION C

DIAMETER UP TO 50,8 MM

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	499C01

PUNCH BODY (H-PM®)		
	Round	4022C01
	Square	4022C02
	Rectangle	4022C03
	Oblong	4022C04
	*O.D. Ground Special Shapes	4022C0G
	*EDM Required Special Shapes	4022C0E

STRIPPER		
	Round	4032C01
	Square	4032C02
	Rectangle	4032C03
	Oblong	4032C04
	*O.D. Ground Special Shapes	4032C0G
	*EDM Required Special Shapes	4032C0E

DIE (HWS)		
	Round	4052C01
	Square	4052C02
	Rectangle	4052C03
	Oblong	4052C04
	*O.D. Ground Special Shapes	4052C0G
	*EDM Required Special Shapes	4052C0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
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PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
Set clamping-springs with screws	499C71	A-MAX coating
Guiding key with screws	499C63	WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway

SET OF COMPENSATING SHIMS FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
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1x0,4 mm/1x0,8 mm/1x1,2 mm	499C1S1	Additional keyway
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SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
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1x0,4 mm/1x0,8 mm/1x1,2 mm	499C2M1	H-PM® Quality
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ps:® beta-V2® | STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper

PUNCH BODY

Thread M12 with oil channel for tool lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

ps:®beta-V2® I STATION C

DIAMETER UP TO 50,8 MM

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4030C01

PUNCH BODY (H-PM®)		
	Round	4020C01
	Square	4020C02
	Rectangle	4020C03
	Oblong	4020C04
	*O.D. Ground Special Shapes	4020C0G
	*EDM Required Special Shapes	4020C0E

STRIPPER		
	Round	4040C01
	Square	4040C02
	Rectangle	4040C03
	Oblong	4040C04
	*O.D. Ground Special Shapes	4040C0G
	*EDM Required Special Shapes	4040C0E

DIE (HWS)		
	Round	4052C01
	Square	4052C02
	Rectangle	4052C03
	Oblong	4052C04
	*O.D. Ground Special Shapes	4052C0G
	*EDM Required Special Shapes	4052C0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating

- A-MAX coating
- WT-shear
- DOWT-shear
- 2 PT-shear
- 4 PT-shear
- Additional keyway

COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499C2M1	H-PM® Quality

ps:®beta-V2® SLITTING TOOL I STATION C



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper

SLITTING TOOL ADAPTER

2 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

ps:® beta-V2® SLITTING TOOL I STATION C

	PART-NO.
GUIDE ASSEMBLY	
For all shapes	4030C01
SLITTING TOOL ADAPTER	
For all shapes	4220CT00
SLITTING TOOL (MAX. 6,35X50) / (H-PM®)	
Rectangle	4020CT03
Oblong	4020CT04
*Trapezoid G09	4020CT0G
*Double Trapezoid E03	4020CT0E
STRIPPER	
Rectangle	4040CT03
Oblong	4040CT04
*Trapezoid G09	4040CT0G
*Double Trapezoid E03	4040CT0E
REVERSIBLE PLATE ADAPTER	
	4390CT00
REVERSIBLE PLATE (H-PM®)	
Rectangle	4052CT03
Oblong	4052CT04
*Trapezoid G09	4052CT0G
*Double Trapezoid E03	4052CT0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
COMPENSATING SHIM FOR SLITTING TOOL ADAPTER		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE		
1x0,4 mm/1x0,8 mm/1x1,2 mm	499CT60	

PASS STANDARD I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

3 mm length adjustment by using compensating shims

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Clamping-screw to fix the strippers

PUNCH BODY

Thread M12

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

PASS STANDARD I STATION D

DIAMETER UP TO 88,9 MM

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	499D01

PUNCH BODY (H-PM®)		
	Round	4022D01
	Square	4022D02
	Rectangle	4022D03
	Oblong	4022D04
	*O.D. Ground Special Shapes	4022D0G
	*EDM Required Special Shapes	4022D0E

STRIPPER		
	Round	4032D01
	Square	4032D02
	Rectangle	4032D03
	Oblong	4032D04
	*O.D. Ground Special Shapes	4032D0G
	*EDM Required Special Shapes	4032D0E

DIE (HWS)		
	Round	4052D01
	Square	4052D02
	Rectangle	4052D03
	Oblong	4052D04
	*O.D. Ground Special Shapes	4052D0G
	*EDM Required Special Shapes	4052D0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
Set clamping-springs with screws	499D71	A-MAX coating
Guiding key with screws	499D63	WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
SET OF COMPENSATING SHIMS FOR PUNCH		ADDITIONAL COSTS FOR PUNCH
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D3S1	Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D2M1	H-PM® Quality

ps:®beta-v2® | STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper



PUNCH BODY

Thread M12 with oil channel for tool lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

ps.[®]beta-V2[®] | STATION D

DIAMETER UP TO 88,9 MM

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4030D01

PUNCH BODY (H-PM [®])		
	Round	4020D01
	Square	4020D02
	Rectangle	4020D03
	Oblong	4020D04
	*O.D. Ground Special Shapes	4020D0G
	*EDM Required Special Shapes	4020D0E

STRIPPER		
	Round	4040D01
	Square	4040D02
	Rectangle	4040D03
	Oblong	4040D04
	*O.D. Ground Special Shapes	4040D0G
	*EDM Required Special Shapes	4040D0E

DIE (HWS)		
	Round	4052D01
	Square	4052D02
	Rectangle	4052D03
	Oblong	4052D04
	*O.D. Ground Special Shapes	4052D0G
	*EDM Required Special Shapes	4052D0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
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PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway

COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
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Not necessary		Additional keyway
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SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
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1x0,4 mm/1x0,8 mm/1x1,2 mm	499D2M1	H-PM [®] Quality
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ps:®beta-V2® SLITTING TOOL I STATION D



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

ps:®beta-V2® SLITTING TOOL I STATION D

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4030D01

SLITTING TOOL ADAPTER		
	For all shapes	4220DT00

SLITTING TOOL (MAX. 6,35X85) / (H-PM®)		
	Rectangle	4020DT03
	Oblong	4020DT04
	*Trapezoid G09	4020DT0G
	*Double Trapezoid E03	4020DT0E

STRIPPER		
	Rectangle	4040DT03
	Oblong	4040DT04
	*Trapezoid G09	4040DT0G
	*Double Trapezoid E03	4040DT0E

REVERSIBLE PLATE ADAPTER		
		4390DT00

REVERSIBLE PLATE (H-PM®)		
	Rectangle	4052DT03
	Oblong	4052DT04
	*Trapezoid G09	4052DT0G
	*Double Trapezoid E03	4052DT0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating

		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway

COMPENSATING SHIM FOR SLITTING TOOL ADAPTER		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway

SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE		
1x0,4 mm/1x0,8 mm/1x1,2 mm	499DT60	

ps:®beta-V2® SLITTING TOOL I STATION D CLOSE TO CLAMP



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM®



STRIPPER

Interchangeable stripper plate

One or two-sided relief for punching close to clamp

ps:®beta-V2® SLITTING TOOL I STATION D CLOSE TO CLAMP

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4030DTP01

SLITTING TOOL ADAPTER		
	For all shapes	4220DT00

SLITTING TOOL (MAX. 6,35X85) / (H-PM®)		
	Rectangle	4020DT03
	Oblong	4020DT04
	*Trapezoid G09	4020DT0G
	*Double Trapezoid E03	4020DT0E

STRIPPER ONE-SIDED FREE		
	Rectangle	4040DTP03-1
	Oblong	4040DTP04-1
	*Trapezoid G09	4040DTP0G-1
	*Double Trapezoid E03	4040DTP0E-1

STRIPPER TWO-SIDED FREE		
	Rectangle	4040DTP03-2
	Oblong	4040DTP04-2
	*Trapezoid G09	4040DTP0G-2
	*Double Trapezoid E03	4040DTP0E-2

DIE ONE-SIDED FREE (HWS)		
	Rectangle	4052DTP03-1
	Oblong	4052DTP04-1
	*Trapezoid G09	4052DTP0G-1
	*Double Trapezoid E03	4052DTP0E-1

DIE TWO-SIDED FREE (HWS)		
	Rectangle	4052DTP03-2
	Oblong	4052DTP04-2
	*Trapezoid G09	4052DTP0G-2
	*Double Trapezoid E03	4052DTP0E-2

SPARE PARTS		
PU-ejector Ø 3x6 (in punch)		4092P03
PU-ejector Ø 6x10 (in punch)		4092P06

COMPENSATING SHIM FOR SLITTING TOOL ADAPTER		
Not necessary		

SET OF COMPENSATING SHIMS FOR DIE		
1x0,4 mm/1x0,8 mm/1x1,2 mm		499D2M1

ADDITIONAL COSTS FOR PUNCH	
TICN coating	
T-MAX coating	
A-MAX coating	
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Additional keyway	

ADDITIONAL COSTS FOR PUNCH GUIDE	
Additional keyway	

ADDITIONAL COSTS FOR DIE	
H-PM® Quality	



Function:

The ps:® clean-cut for THICK TURRET machines was developed to obtain slitting perforations without any witness marks.

The typical nibbling slitting tool leaves marks that can be seen and are noticeable. These marks normally have to be polished manually to be removed.



When using the ps:® clean-cut no witness marks are made and only smooth and clean cuts can be seen - without the need of additional rework.

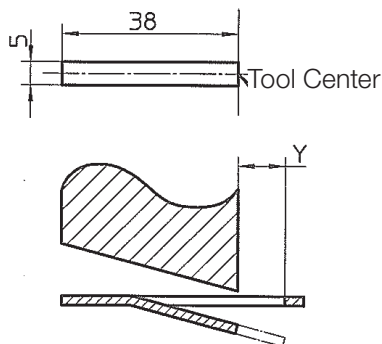


Functional principle of the tool:

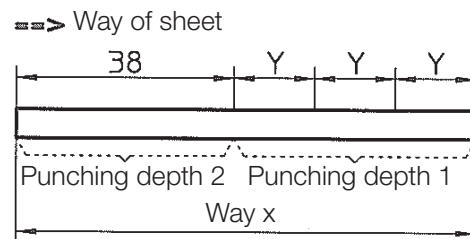
Continuous slitting. The shavings will be guided within the die and will be separated into pieces with the second slitting unit.

Programming information:

The punch shape rectangle 5x38 is located asymmetrically to the tool center. Thus, the beginning of the slitting point is located at the tool center. The endpoint of the slit is transferred by 38 mm to the tool center.



The way X will be cut with a punching depth 1 (continuous slit - see sketch). The last hit has to be programmed with a punching depth 2 (deep hit - see sketch), in order to specify the way length exactly and remove the remaining slug out of the tool.



Technical handling of the tool:

The upper part has got a total length of 208,5 mm (see drawing 499110001).

The die is spring-loaded and 4 mm higher (see drawing 499110001).

The result of this is the increasing programming working position of minimum 4 mm (better would be 6 mm).

Step 1:

The punching depth „1“ (continuous slitting) has to be determined by fine adjustment on the machine. In this case the slit on the sheet upper side must have a length of 32 to 37 mm. For this reason one sheet sample (size ~60x60 mm to 100x100 mm) should be placed by hand onto the die. Afterwards the station has to be adjusted manually under the ram. After the test hit the station can be returned to changing position and the sheet can be removed.

Attention: Please do not use a complete sheet plate in the clamp for test hits, as manual removal of the sheet is almost impossible.

Step 2:

The punching depth „2“ (deep end hit) has to be determined by fine adjustment on the machine. In this case the punching slug must be punched 2,0 to 3,0 mm into the die on the short side of the whisper shear. (Theoretical calculation: punching depth „1“ + sheet thickness + 2 to 3 mm)

ps:[®]clean-cut

FOR MACHINE TYPE THICK TURRET - STATION D

	PART-NO.
TOOL - COMPLETE	
	499110001
UPPER PART - COMPLETE	
	499110001-1
DIE - COMPLETE	
	499110001-2
SPARE PARTS TO UPPER ASSY	
Punch insert (Re 5x38)	499110040
Stripper plate	499110030
SPARE PARTS TO DIE ASSY	
Die plate	199110050
Guillotine unit cpl. incl. slitting plate	199110001-3
Slitting plate - top	199110140
Slitting plate - bottom	199110150
Set springs for die plate	199110903
Set shoulder screws for die plate	199110904



TECHNICAL INFORMATION		ADDITIONAL COSTS FOR SLITTING BLADE
Aluminium:	0,5 - 1,2 mm (tool direction: 16 mm)	TiCN coating (for stainless steel-sheet)
Steel:	0,5 - 1,2 mm (tool direction: 16 mm)	A-MAX coating (for aluminium sheet)
Stainless steel:	0,5 - 1,2 mm (tool direction: 16 mm)	T-MAX coating (for zinc steel)
Aluminium:	1,25 - 1,5 mm (tool direction: 12 mm)	
Steel:	1,25 - 1,5 mm (tool direction: 12 mm)	
Aluminium:	1,6 - 2,0 mm (tool direction: 10 mm)	
		ADDITIONAL COSTS FOR STRIPPER
		Polished version for low-scratch material handling

MAX. REGRINDING LENGTH		ADDITIONAL COSTS FOR DIE PLATE
Punch: (Lmin = 201,5 mm)	7 mm	Polished version for low-scratch material handling
Die plate: (Hmin = 33,5 mm)	0,5 mm	

PASS STANDARD I STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

3 mm length adjustment by using compensating shims

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Clamping-screws to fix the strippers

PUNCH BODY

Thread M12

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

PASS STANDARD I STATION E

DIAMETER UP TO 114,3 MM

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	499E01

PUNCH BODY (H-PM®)		
	Round	4022E01
	Square	4022E02
	Rectangle	4022E03
	Oblong	4022E04
	*O.D. Ground Special Shapes	4022E0G
	*EDM Required Special Shapes	4022E0E

STRIPPER		
	Round	4032E01
	Square	4032E02
	Rectangle	4032E03
	Oblong	4032E04
	*O.D. Ground Special Shapes	4032E0G
	*EDM Required Special Shapes	4032E0E

DIE (HWS)		
	Round	4052E01
	Square	4052E02
	Rectangle	4052E03
	Oblong	4052E04
	*O.D. Ground Special Shapes	4052E0G
	*EDM Required Special Shapes	4052E0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
Set clamping-springs with screws	499E71	A-MAX coating
Guiding key with screws	499E63	WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
SET OF COMPENSATING SHIMS FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E3S1	Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality

ps:®beta-V2® | STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper

PUNCH BODY

Thread M12 with oil channel

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

ps:®beta-V2® | STATION E

DIAMETER UP TO 114,3 MM

	PART-NO.
GUIDE ASSEMBLY	
For all shapes	4030E01
PUNCH BODY (H-PM®)	
Round	4020E01
Square	4020E02
Rectangle	4020E03
Oblong	4020E04
*O.D. Ground Special Shapes	4020E0G
*EDM Required Special Shapes	4020E0E
STRIPPER	
Round	4040E01
Square	4040E02
Rectangle	4040E03
Oblong	4040E04
*O.D. Ground Special Shapes	4040E0G
*EDM Required Special Shapes	4040E0E
DIE (HWS)	
Round	4052E01
Square	4052E02
Rectangle	4052E03
Oblong	4052E04
*O.D. Ground Special Shapes	4052E0G
*EDM Required Special Shapes	4052E0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality

ps:®beta-V2® SLITTING TOOL I STATION E



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate

ps:®beta-V2® SLITTING TOOL | STATION E

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4030E01

SLITTING TOOL ADAPTER		
	For all shapes	4220ET00

SLITTING TOOL (MAX. 6,35X111) / (H-PM®)		
	Rectangle	4020ET03
	Oblong	4020ET04
	*Trapezoid G09	4020ET0G
	*Double Trapezoid E03	4020ET0E

STRIPPER		
	Rectangle	4040ET03
	Oblong	4040ET04
	*Trapezoid G09	4040ET0G
	*Double Trapezoid E03	4040ET0E

REVERSIBLE PLATE ADAPTER		
		4390ET00

REVERSIBLE PLATE (H-PM®)		
	Rectangle	4052ET03
	Oblong	4052ET04
	*Trapezoid G09	4052ET0G
	*Double Trapezoid E03	4052ET0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating

		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway

COMPENSATING SHIM FOR SLITTING TOOL ADAPTER		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway

SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE		
1x0,4 mm/1x0,8 mm/1x1,2 mm	499ET60	

ps:®beta-V2® SLITTING TOOL I STATION E CLOSE TO CLAMP



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

Simple 10 mm length adjustment in assembled state by pressing the locking button

Keyway: 0-90°

Surface-hardened and polished punch guide for sheet thickness up to 6 mm

Fast and easy clamping system for stripper



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM®



STRIPPER

Interchangeable stripper plate

One or two-sided relief for punching close to clamp

ps:®beta-V2® SLITTING TOOL I STATION E CLOSE TO CLAMP

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4030ETP01

SLITTING TOOL ADAPTER		
	For all shapes	4220ET00

SLITTING TOOL (MAX. 6,35X111) / (H-PM®)		
	Rectangle	4020ET03
	Oblong	4020ET04
	*Trapezoid G09	4020ET0G
	*Double Trapezoid E03	4020ET0E

STRIPPER ONE-SIDED FREE		
	Rectangle	4040ETP03-1
	Oblong	4040ETP04-1
	*Trapezoid G09	4040ETP0G-1
	*Double Trapezoid E03	4040ETP0E-1

STRIPPER TWO-SIDED FREE		
	Rectangle	4040ETP03-2
	Oblong	4040ETP04-2
	*Trapezoid G09	4040ETP0G-2
	*Double Trapezoid E03	4040ETP0E-2

DIE ONE-SIDED FREE (HWS)		
	Rectangle	4052ETP03-1
	Oblong	4052ETP04-1
	*Trapezoid G09	4052ETP0G-1
	*Double Trapezoid E03	4052ETP0E-1

DIE TWO-SIDED FREE (HWS)		
	Rectangle	4052ETP03-2
	Oblong	4052ETP04-2
	*Trapezoid G09	4052ETP0G-2
	*Double Trapezoid E03	4052ETP0E-2

SPARE PARTS		
PU-ejector Ø 3x6 (in punch)		4092P03
PU-ejector Ø 6x10 (in punch)		4092P06

COMPENSATING SHIM FOR SLITTING TOOL ADAPTER		
Not necessary		

SET OF COMPENSATING SHIMS FOR DIE		
1x0,4 mm/1x0,8 mm/1x1,2 mm		499E2M1

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear
Additional keyway

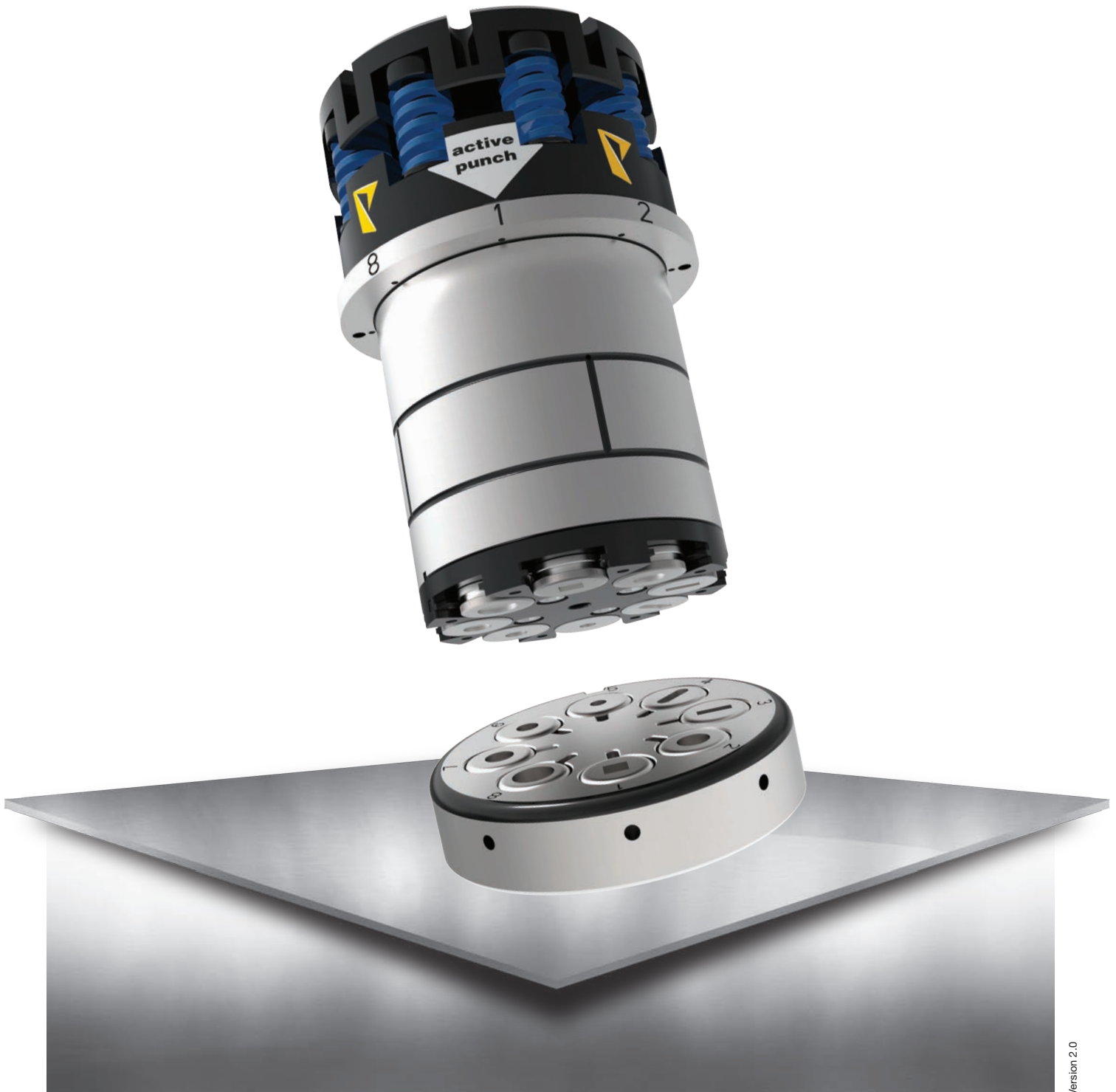
ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

ADDITIONAL COSTS FOR DIE

H-PM® Quality





MULTITOOLS

ps:®multitool

FOR YOUR PRIMA POWER MACHINES

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ps:® MT8Ri3-16 | INSERTS

FOR MACHINE TYPE PRIMA POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*



POS.-NO.

PART-NO.

PUNCH ⁽¹⁾			
Round	1	413161-1	
Square	1	413162-1	
Rectangle	1	413163-1	
Oblong	1	413164-1	
*O.D. Ground Special Shapes	1	41316G-1	
*EDM Required Special Shapes	1	41316E-1	

PUNCH ⁽²⁾			
Head unit	2	450801800	
Set compensating shims (10 pc.)	3	450801900	
Round	4	413161-2	
Square	4	413162-2	
Rectangle	4	413163-2	
Oblong	4	413164-2	
*O.D. Ground Special Shapes	4	41316G-2	
*EDM Required Special Shapes	4	41316E-2	

STRIPPER			
Round	5	415161	
Square	5	415162	
Rectangle	5	415163	
Oblong	5	415164	
*O.D. Ground Special Shapes	5	41516G	
*EDM Required Special Shapes	5	41516E	

8-STATION STRIPPER ⁽³⁾			
Optional - shape adaptable stripper		450802000	

DIE (HWS)			
Round	6	414161	
Square	6	414162	
Rectangle	6	414163	
Oblong	6	414164	
*O.D. Ground Special Shapes	6	41416G	
*EDM Required Special Shapes	6	41416E	

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⁽¹⁾ One-piece punch (solid version) - max. sheet thickness:

Aluminium:	0,8 up to 6,0 mm
Steel (up to 420 N/mm ²):	0,5 up to 4,0 mm
Stainless steel:	0,5 up to 3,0 mm

⁽²⁾ Punch in separated version (for regrinding length up to 5 mm) - max. sheet thickness:

Aluminium:	0,8 up to 3,0 mm
Steel (up to 420 N/mm ²):	0,5 up to 2,0 mm
Stainless steel:	0,5 up to 1,5 mm

⁽³⁾ Stripper - adaptable to shape (form)

Optional, one 8-station stripper, adaptable to shape, can be used in order to avoid marks on the sheet surface (e.g. when using polished aluminium)

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 die	
H-PM® Quality	

SET OF COMPENSATING SHIMS FOR DIE

2x0,1 mm/2x0,3 mm/2x0,5 mm	41416US
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ps:®MT8Ri3-16 | ADAPTER

FOR MACHINE TYPE PRIMA POWER
SUITABLE FOR SHEET THICKNESS UP TO 6 MM*

	POS.-NO.	PART-NO.
8-STATION PUNCH UNIT		
(without punch or stripper inserts)	1	450800000
8-STATION DIE UNIT		
(without die inserts)	2	450802100



INDEX

*** max. sheet thickness:

Aluminium:	0,8 up to 6,0 mm
Steel (up to 420 N/mm ²):	0,5 up to 6,0 mm
Stainless steel:	0,5 up to 4,0 mm

Alternatively, one 8-station stripper, adaptable to shape, can be used in order to avoid marks on the sheet surface (e.g. when using polished aluminium)

ps:® MT3Ri3-31,75 | INSERTS

FOR MACHINE TYPE PRIMA POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*



POS.-NO.

PART-NO.

PUNCH			
Head unit	1	450301700	
Round	2	413191	
Square	2	413192	
Rectangle	2	413193	
Oblong	2	413194	
*O.D. Ground Special Shapes	2	41319G	
*EDM Required Special Shapes	2	41319E	

STRIPPER			
Round	3	415191	
Square	3	415192	
Rectangle	3	415193	
Oblong	3	415194	
*O.D. Ground Special Shapes	3	41519G	
*EDM Required Special Shapes	3	41519E	

3-STATION STRIPPER (*)			
Optional - shape adaptable stripper		450302000	

DIE (HWS)			
Round	4	414191	
Square	4	414192	
Rectangle	4	414193	
Oblong	4	414194	
*O.D. Ground Special Shapes	4	41419G	
*EDM Required Special Shapes	4	41419E	

INDEX

max. sheet thickness:	
Aluminium:	0,8 up to 6,0 mm
Steel (up to 420 N/mm ²):	0,5 up to 4,0 mm
Stainless steel:	0,5 up to 3,0 mm

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 die
- H-PM® Quality

SET OF COMPENSATING SHIMS FOR DIE

2x0,1 mm/2x0,3 mm/2x0,5 mm	41419US
----------------------------	---------

(*) Stripper - adaptable to shape (form)

Optional, one 3-station stripper, adaptable to shape, can be used in order to avoid marks on the sheet surface (e.g. when using polished aluminium).

ps:®MT3Ri3-31,75 | ADAPTER

FOR MACHINE TYPE PRIMA POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*

	POS.-NO.	PART-NO.
3-STATION PUNCH UNIT		
(without punch or stripper inserts)	1	450300000
3-STATION DIE UNIT		
(without die inserts)	2	450301900



INDEX

*** max. sheet thickness:

Aluminium:	0,8 up to 6,0 mm
Steel (up to 420 N/mm ²):	0,5 up to 6,0 mm
Stainless steel:	0,5 up to 4,0 mm

Alternatively, one 3-station stripper, adaptable to shape, can be used in order to avoid marks on the sheet surface (e.g. when using polished aluminium)

ps:® MT8RiA-12,7 | INSERTS

FOR MACHINE TYPE PRIMA POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*



	POS.-NO.	PART-NO.
PUNCH BODY (H-PM®)		
Head unit	1	453801800
Round	2	4020A01
Square	2	4020A02
Rectangle	2	4020A03
Oblong	2	4020A04
*O.D. Ground Special Shapes	2	4020A0G
*EDM Required Special Shapes	2	4020A0E
STRIPPER		
Round	3	4040A01
Square	3	4040A02
Rectangle	3	4040A03
Oblong	3	4040A04
*O.D. Ground Special Shapes	3	4040A0G
*EDM Required Special Shapes	3	4040A0E
DIE (HWS)		
Round	4	4052A01
Square	4	4052A02
Rectangle	4	4052A03
Oblong	4	4052A04
*O.D. Ground Special Shapes	4	4052A0G
*EDM Required Special Shapes	4	4052A0E

SPARE PARTS	ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch) 4092P03	TiCN coating
PU-ejector Ø 6x10 (in punch) 4092P06	T-MAX coating
	A-MAX coating
	WT-shear
	DOWT-shear
	2 PT-shear
	4 PT-shear
COMPENSATING SHIM FOR PUNCH	ADDITIONAL COSTS FOR DIE
Not necessary	Reinforced die
	H-PM® Quality
COMPENSATING SHIM FOR DIE	
2x0,1 mm/2x0,3 mm/2x0,5 mm 41416US	

ps:[®]MT8RiA-12,7 | ADAPTER

FOR MACHINE TYPE PRIMA POWER
SUITABLE FOR SHEET THICKNESS UP TO 6 MM*

	POS.-NO.	PART-NO.
8-STATION PUNCH UNIT		
(without punch or stripper inserts)	1	453800000
8-STATION DIE UNIT		
(without die inserts)	2	453802100



INDEX

*** max. sheet thickness:

Aluminium:	0,8 bis 6,0 mm
Steel (up to 420 N/mm ²):	0,5 bis 6,0 mm
Stainless steel:	0,5 bis 4,0 mm

ps:® MT3RiB-31,75 | INSERTS

FOR MACHINE TYPE PRIMA POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*



	POS.-NR.	PART-NO.
PUNCH BODY (H-PM®)		
Head unit	1	450301700
Round	2	4020B01
Square	2	4020B02
Rectangle	2	4020B03
Oblong	2	4020B04
*O.D. Ground Special Shapes	2	4020B0G
*EDM Required Special Shapes	2	4020B0E
STRIPPER		
Round	3	4040B01
Square	3	4040B02
Rectangle	3	4040B03
Oblong	3	4040B04
*O.D. Ground Special Shapes	3	4040B0G
*EDM Required Special Shapes	3	4040B0E
DIE (HWS)		
Round	4	4052B01
Square	4	4052B02
Rectangle	4	4052B03
Oblong	4	4052B04
*O.D. Ground Special Shapes	4	4052B0G
*EDM Required Special Shapes	4	4052B0E

SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
PU-ejector Ø 3x6 (in punch)	4092P03	TiCN coating
PU-ejector Ø 6x10 (in punch)	4092P06	T-MAX coating
		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR DIE
Not necessary		Reinforced die
		H-PM® Quality
COMPENSATING SHIM FOR DIE		
2x0,1 mm/2x0,3 mm/2x0,5 mm	41419US	

ps:®MT3RiB-31,75 | ADAPTER

FOR MACHINE TYPE PRIMA POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*

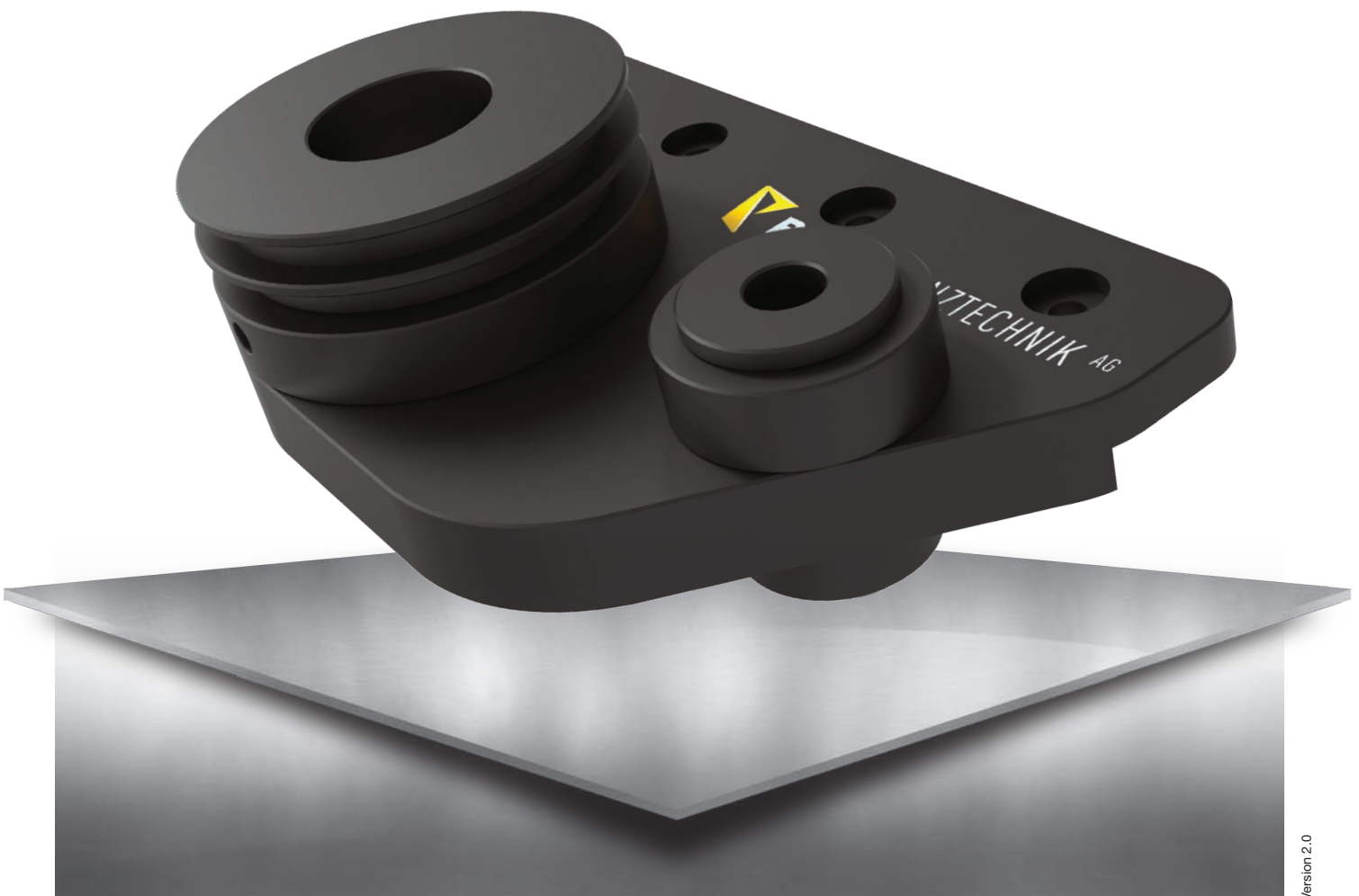
	POS.-NR.	PART-NO.
3-STATION PUNCH UNIT		
(without punch or stripper inserts)	1	453300000
3-STATION DIE UNIT		
(without die inserts)	2	450301910



INDEX

*** max. sheet thickness:

Aluminium:	0,8 bis 6,0 mm
Steel (up to 420 N/mm ²):	0,5 bis 6,0 mm
Stainless steel:	0,5 bis 4,0 mm



ACCESSORIES

PASS ACCESSORIES FOR YOUR
THICK TURRET SYSTEM

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STATION A



STATION B



STATION C



STATION D



STATION E



PART-NO.

COMPLETE SET ASSEMBLY KIT

Set consists of: 499M09SET

5 assembly adapter

1 assembling plate



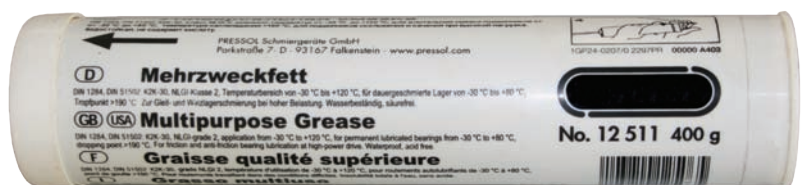
EQUIPPED PLATE WITH ADAPTER

PASS ASSEMBLING SET

FOR PASS GUIDE ASSEMBLY STAT. C, D, E / FOR ps:[®]multitool STAT.D / FOR PASS
ps:[®]multi-thread[®]

PART-NO.

ASSEMBLING SET - CONSISTING OF	
Torque wrench / 25-130Nm	
incl. 4 socket wrench SW 7 / SW10 / SW 12 / SW 14	
Multipurpose Grease 400 gr.	
Triangular Whetstone	
Diamond needle file with quick-acting clamp	
total price	499MONKIT



PASS ADAPTER

PUNCH ADAPTER

Surface-hardened and polished



DIE ADAPTER

Surface-hardened and polished

2 Clamp screws



STATION

PART-NO.

MACHINE TYPE: PRIMA POWER & LVD		
Punch adapter	B/A	401BAS1
Die adapter	B/A	401BAM1
Punch adapter	C/B	401CBS1
Die adapter	C/B	401CBM1
Punch adapter	D/A	401DAS1
Die adapter	D/A	401DAM1
Punch adapter	D/B	401DBS1
Die adapter	D/B	401DBM1
Punch adapter	D/C	401DCS1
Die adapter	D/C	401DCM1*

* 2 mm increased

MACHINE TYPE: PIVATIC & WEMO & DALCOS		
Punch adapter	B/A	401BAS3
Die adapter	B/A	401BAM3
Punch adapter	C/B	401CBS3
Die adapter	C/B	401CBM3
Punch adapter	D/A	401DAS3
Die adapter	D/A	401DAM3
Punch adapter	D/B	401DBS3
Die adapter	D/B	401DBM3
Punch adapter	D/C	401DCS3
Die adapter	D/C	not usable

PASS DIES

(WITH BRUSH INSERTS)

	STATION	PART-NO.
PASS DIES WITH BRUSH INSERTS		
1x Ø13	A	441711A01
3x Ø13	B	441711B01
7x Ø13	C	441711C01
19x Ø13	D	441711D01
35x Ø13	E	441711E01



PASS ALIGNMENT TOOLS



	STATION	POSITION	PART.-NO.
ALIGNMENT TOOLS			
Alignment punch	A	*	499701A01
Alignment die	A	*	499701A06
Alignment punch	B	*	499701B01
Alignment die	B	*	499701B06
Alignment punch	C	2	499701C01
Alignment die	C	5	499701C06
Alignment punch	D	*	499701D01
Alignment die	D	*	499701D06
Alignment punch	E	*	499701E01
Alignment die	E	*	499701E06
Calibration adjustment	A-E	3	499701Z01
Handles	A-E	1	499701Z11
Alignment rod	A-E	4	499701Z21

*without picture



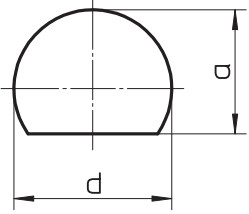
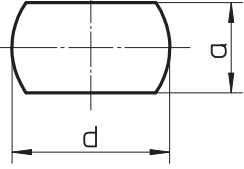
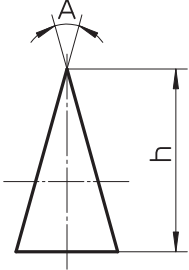
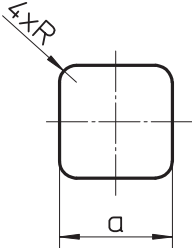
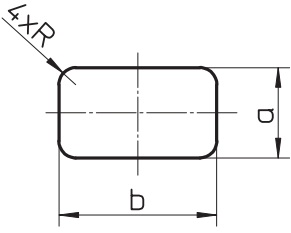
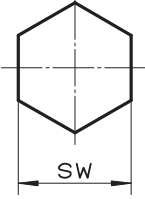
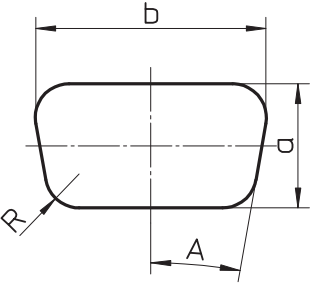
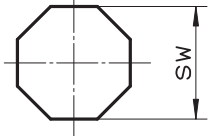
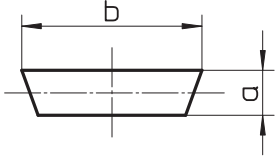
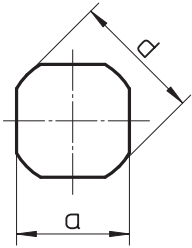
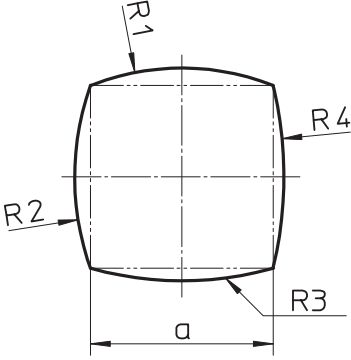
TECHNICAL INFORMATION

INFORMATION ABOUT OUR TOOLS FOR YOUR THICK TURRET SYSTEM

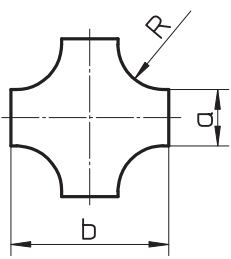
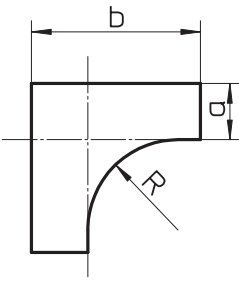
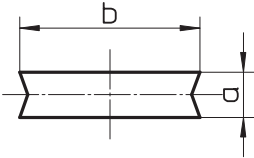
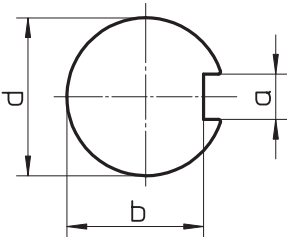
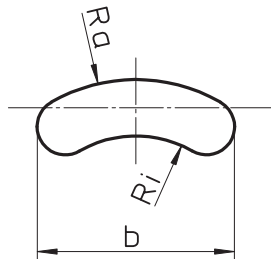
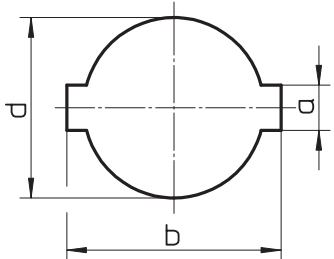
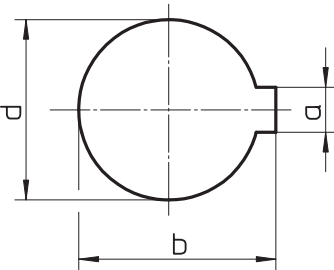
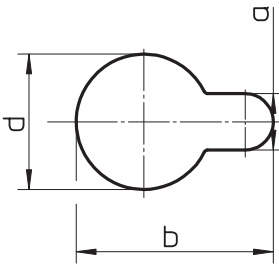
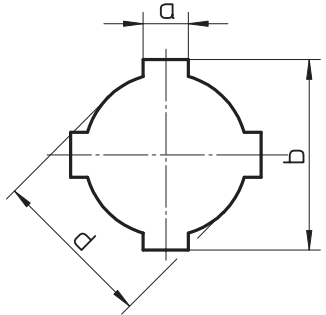
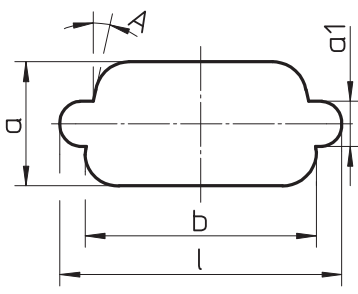
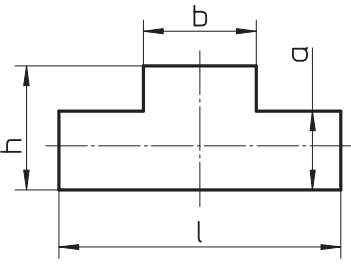
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O.D. GROUND SPECIAL SHAPES

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EDM REQUIRED SPECIAL SHAPES

 <p>E01</p>	 <p>E02</p>	 <p>E03</p>
 <p>E04</p>	 <p>E05</p>	 <p>E06</p>
 <p>E07</p>	 <p>E08</p>	 <p>E09</p>
 <p>E10</p>	 <p>E11</p>	

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

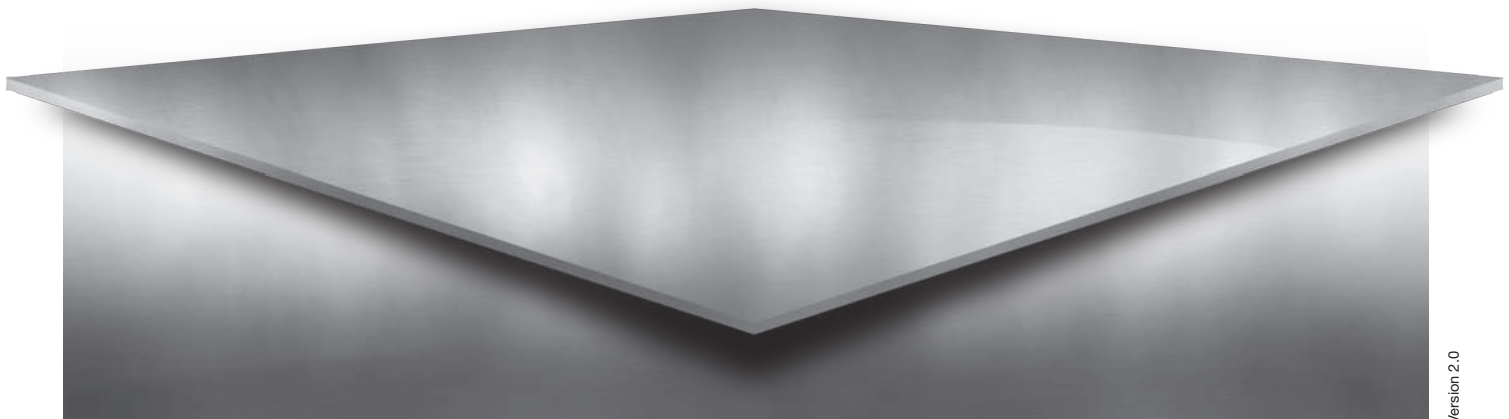
X8-PM

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.

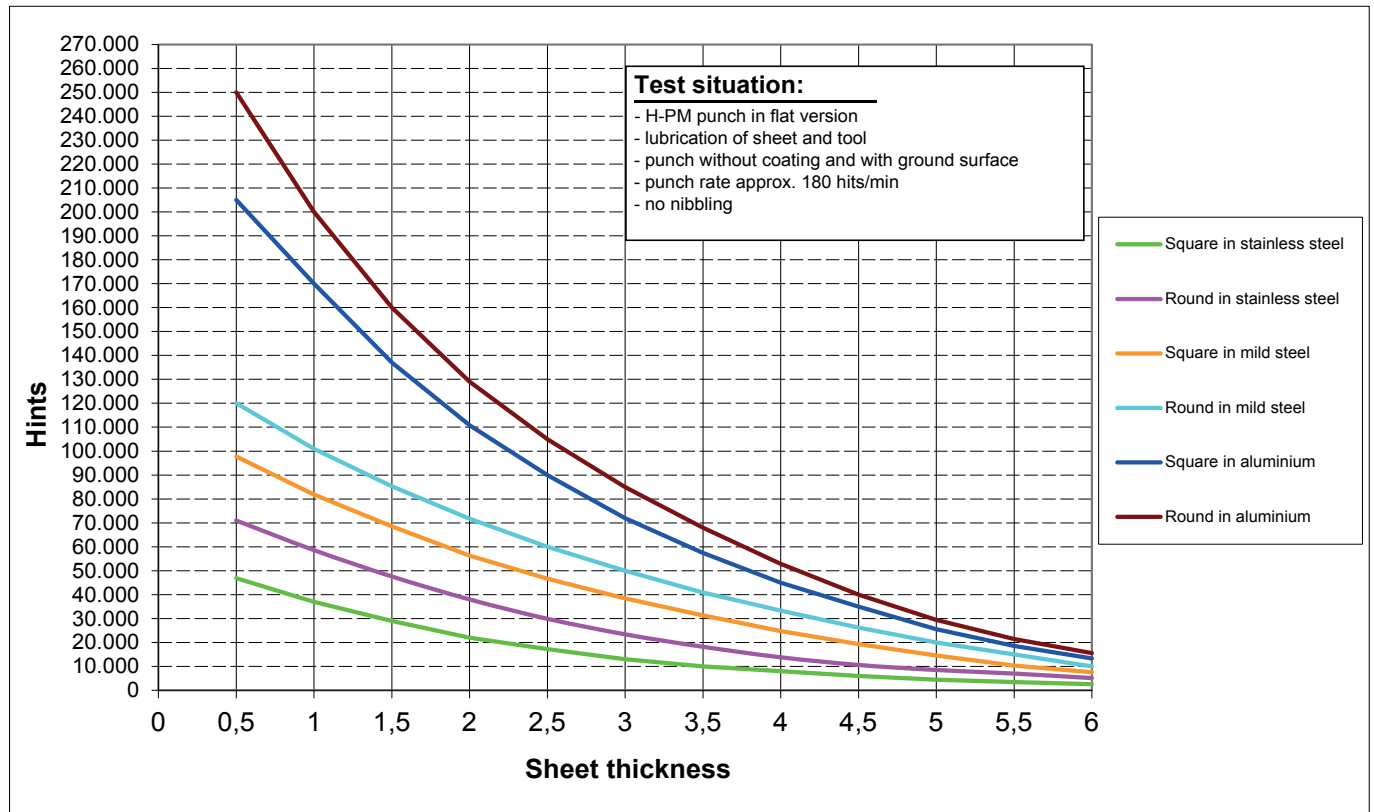
Advantage for customer:

- 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 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 fulfill the highest punching demands.

Furthermore we attach great importance to a high quality hardening process by repeated tempering 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.

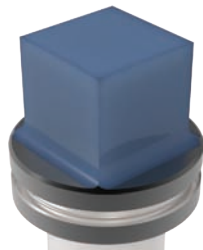
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

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

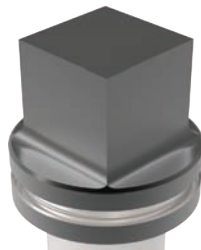
- zined steel
- aluminium sheets

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



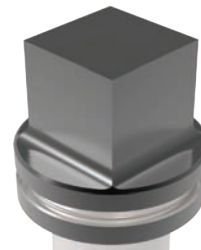
TiCN

for working with stainless steel



A-MAX

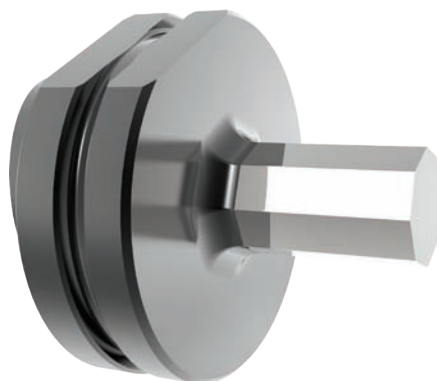
for dry processing with aluminium sheet



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).

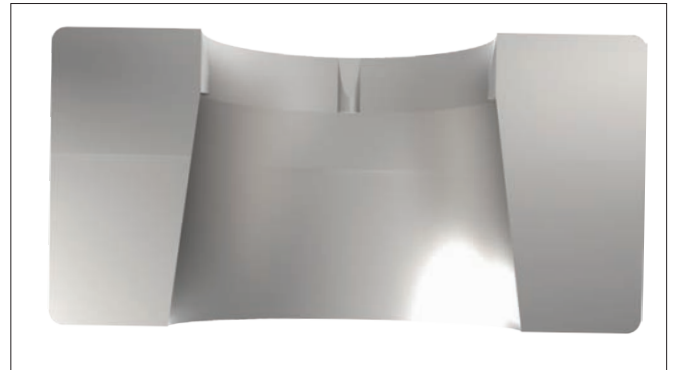
This means that the upper part of the cutting part is produced with a negative angle.

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)



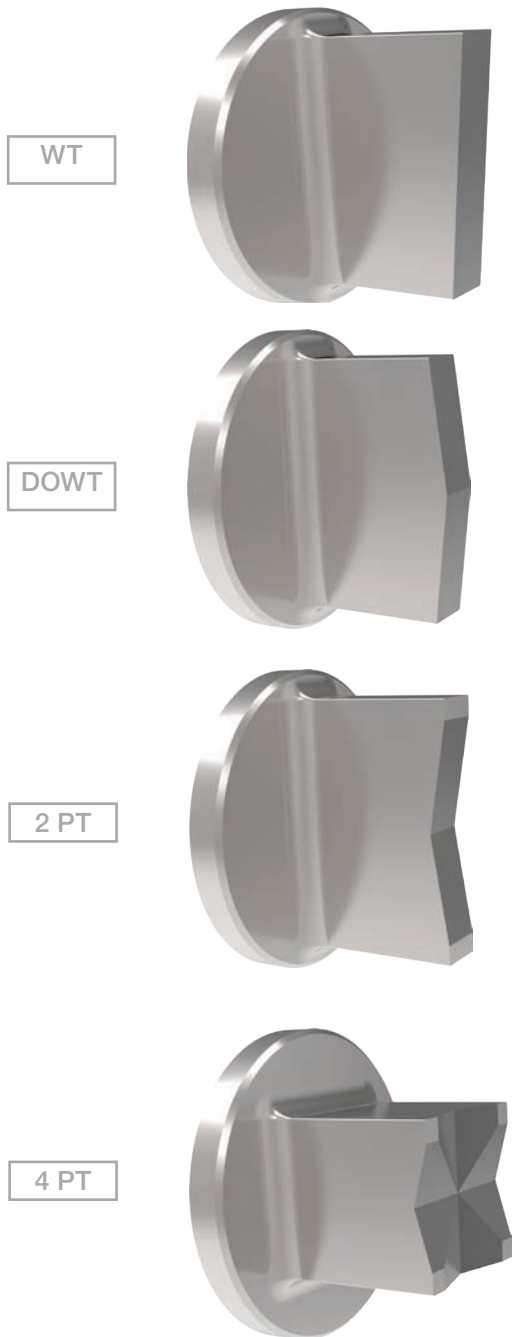
Alternatively we offer our slug-snap version (additional costs).

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 0,1mm

PUNCHES WITH DIFFERENT SHEAR TYPES



DESCRIPTION

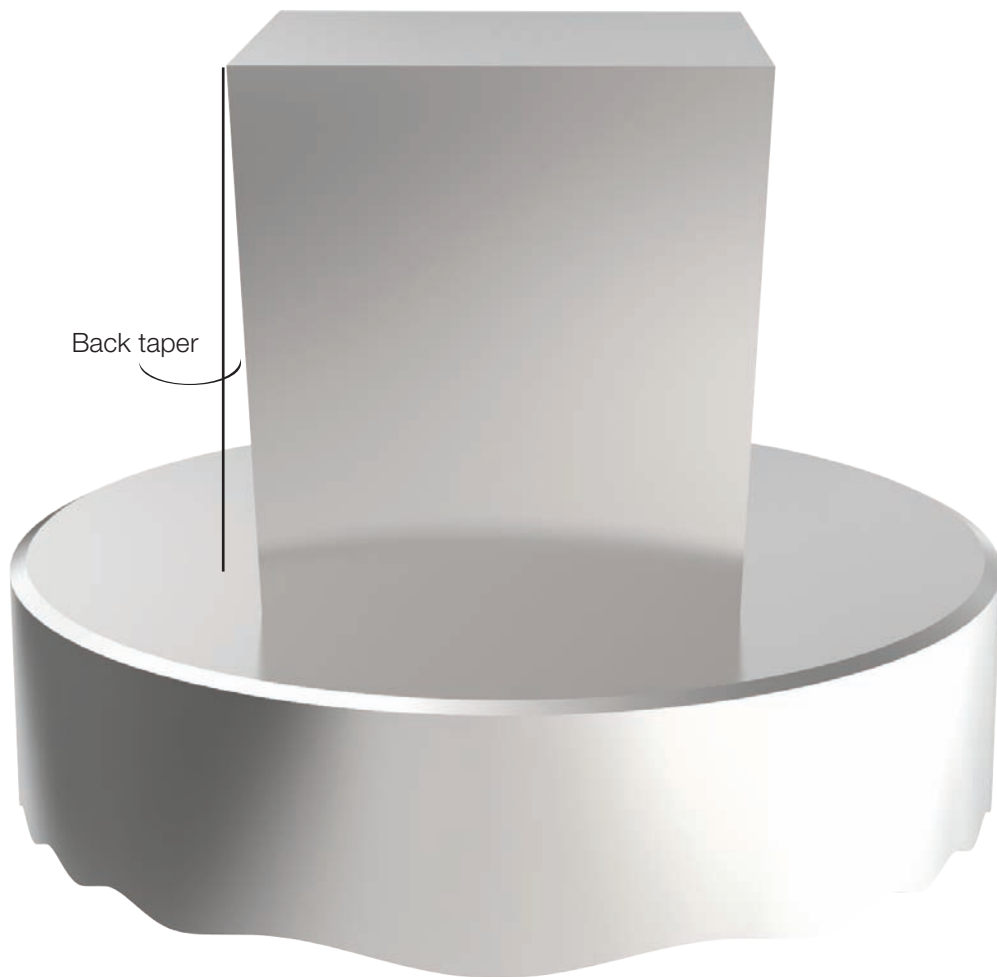
	DESCRIPTION
WT	
- Advantage:	easy regrindable
- Disadvantage:	lateral forces
DOWT	
- Advantages:	easy regrindable no lateral forces
- Disadvantage:	only reasonable for big contours
2 PT	
- Advantage:	no lateral forces optimal die cutting
- Disadvantages:	only reasonable for big and slim contours difficult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

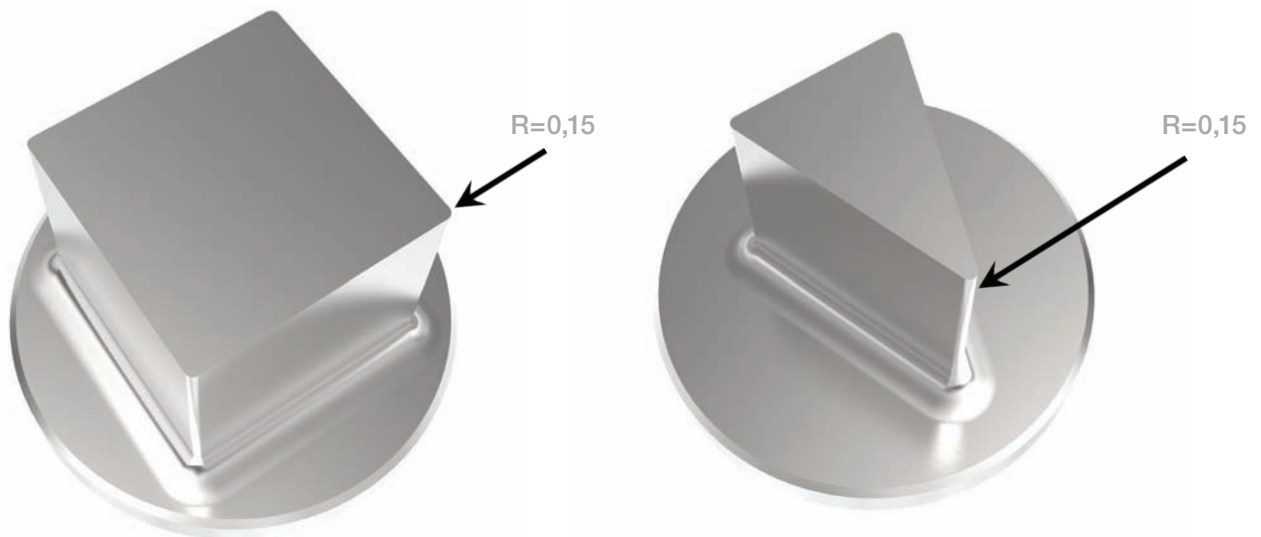
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal contour, e.g. cross-form, U-form, etc.) and in high quality sheets.



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

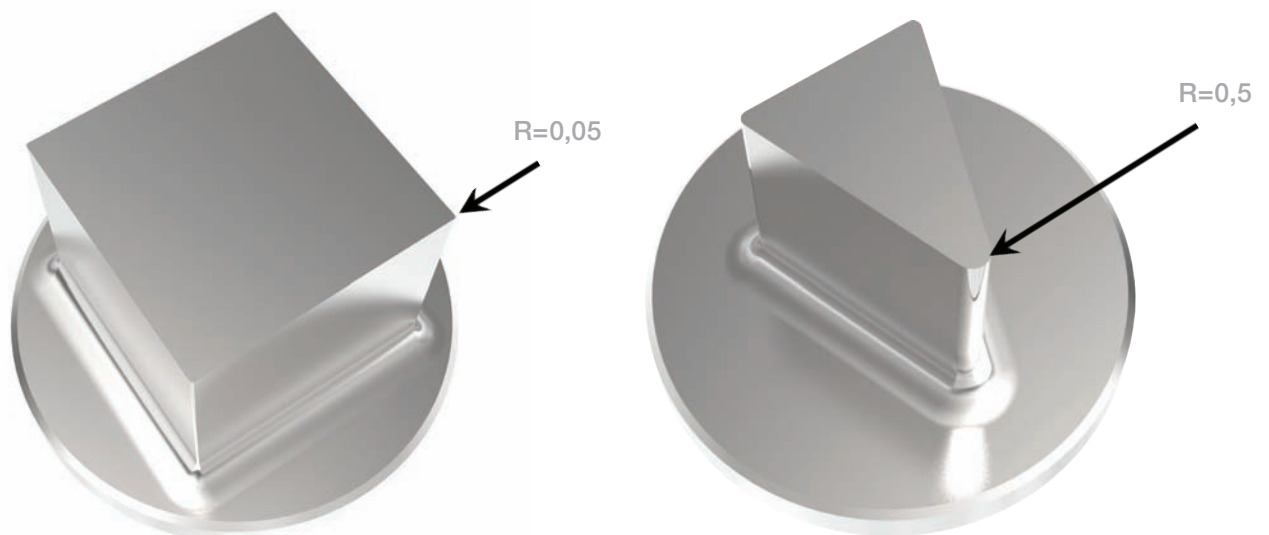


The corner radius can be changed on customer's request.

e.g.:

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

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



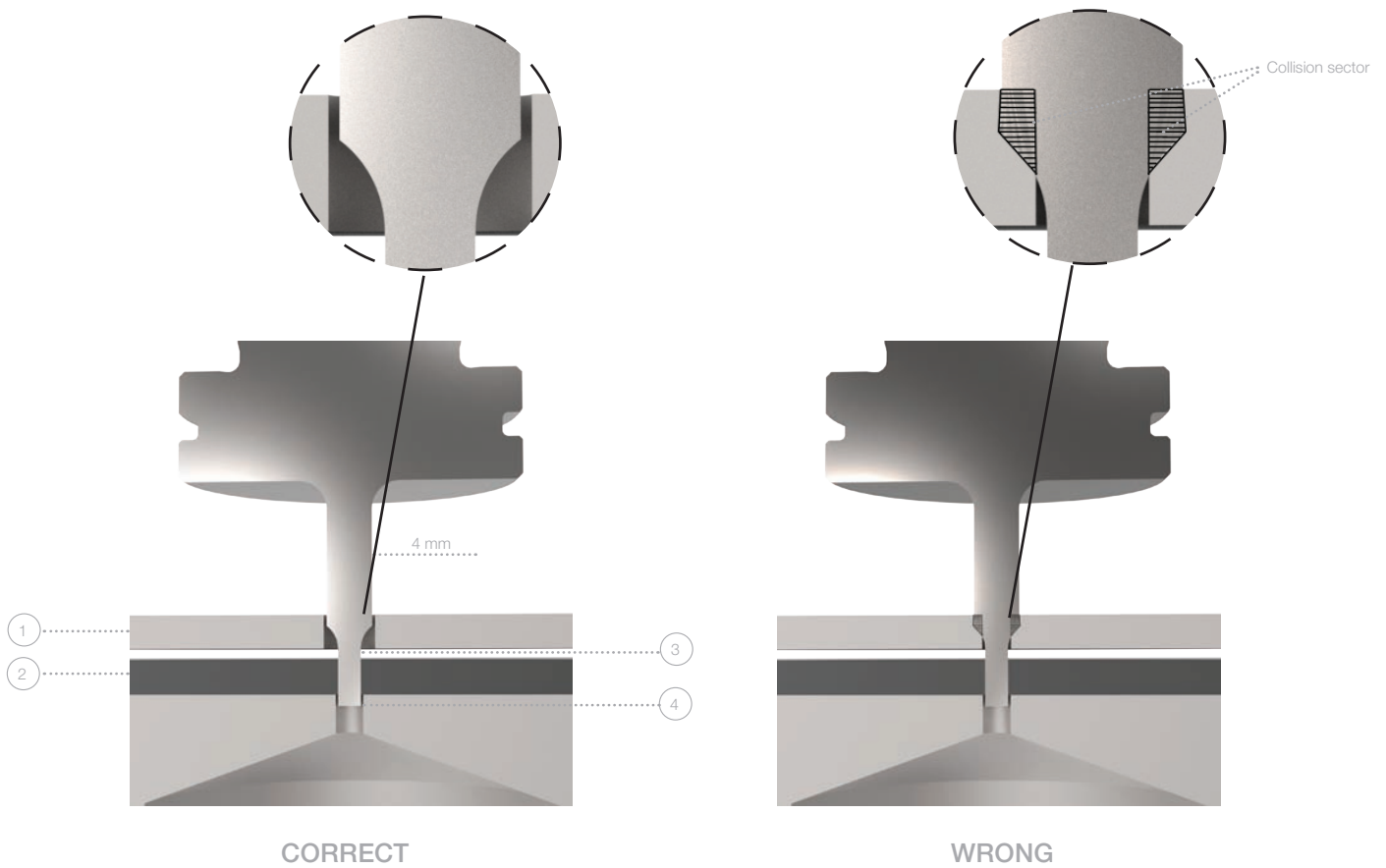
PASS PUNCHES WITH REINFORCED SHOULDER

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.



NOTES

A large grid of graph paper for taking notes, consisting of 20 columns and 40 rows of small squares.

A large grid of graph paper for taking notes, consisting of 20 columns and 40 rows of small squares.

NOTES

A large grid of graph paper for taking notes, consisting of 20 columns and 40 rows of small squares.

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SALVAGNINI | **THICK TURRET** | **TRUMPF**



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