



CATALOG 02/2022-WW-A.2

SYSTEM AMADA



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 AMADA 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 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 position:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-90-225°

Asym. shapes: 0-90-180-270°

Tool shapes 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 Shape	4012A0G
EDM Required Special Shape	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 Shape	4022A0G
EDM Required Special Shape	4022A0E

PUNCH GUIDE

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

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
O.D. Ground Special Shape	4052A0G
EDM Required Special Shape	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
Cutting part under 1,00 mm

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 DIES

Reinforced die
H-PM® Quality
Additional pin hole

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 position:

All shapes: 0°-90°-225°

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 Shape	4013A0G
	EDM Required Special Shape	4013A0E

HEAD UNIT		
	For all shapes	4093A01

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

PUNCH GUIDE		
	For all shapes	4033A05

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

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

SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
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
Cutting part under 1,00 mm

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

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1	Reinforced die
Shimkeeper (0,5 mm)	499A1M95	H-PM® Quality
		Additional pin hole



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 position:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-90-225°

Asym. shapes: 0-90-180-270°

Tool shapes 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 Shape	4017A0G
EDM Required Special Shape	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 Shape	4023A0G
EDM Required Special Shape	4023A0E

PUNCH GUIDE

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

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
O.D. Ground Special Shape	4052A0G
EDM Required Special Shape	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
Cutting part under 1,00 mm

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 DIES

Reinforced die
H-PM® Quality
Additional pin hole

ps:®beta-V2® ABS 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 sheet lubrication

On request, suitable for PDC-system



PUNCH BODY

Oil channel for sheet 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 position:
All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate with oil channels

ps:®beta-V2® ABS I STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4019A01
Square	4019A02
Rectangle	4019A03
Oblong	4019A04
O.D. Ground Special Shape	4019A0G
EDM Required Special Shape	4019A0E

HEAD UNIT

For all shapes	4099A10
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PUNCH BODY (H-PM®)

Round	4029A01
Square	4029A02
Rectangle	4029A03
Oblong	4029A04
O.D. Ground Special Shape	4029A0G
EDM Required Special Shape	4029A0E

PUNCH GUIDE

For all shapes	4039A05
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STRIPPER

Round	4049A01
Square	4049A02
Rectangle	4049A03
Oblong	4049A04
O.D. Ground Special Shape	4049A0G
EDM Required Special Shape	4049A0E

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
O.D. Ground Special Shape	4052A0G
EDM Required Special Shape	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
Cutting part under 1,00 mm

COMPENSATING SHIM FOR PUNCH

Not necessary

ADDITIONAL COSTS FOR PUNCH GUIDE

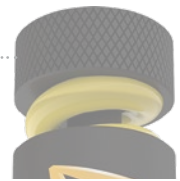
Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

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

ADDITIONAL COSTS FOR DIES

Reinforced die
H-PM® Quality
ps:®tornado-die (vacuum-style)
Additional pin hole



Head unit
for PDC-system
(without extra charge)

Part.-no. „see left“-PDC
e.g.: 4019A01-PDC



ps:®beta-compact ABS 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 sheet lubrication

On request, suitable for PDC-system



PUNCH BODY

Oil channel for sheet 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 position:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-45-90-135°

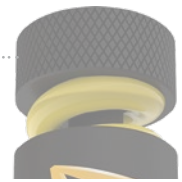
Asym. shapes: 0-90-180-270°

Tool shapes integrated in guide

ps:®beta-compact ABS I STATION A

DIAMETER UP TO 12,7 MM

		PART NO.
COMPLETE PUNCH ASSEMBLY		
	Round	4018A01
	Square	4018A02
	Rectangle	4018A03
	Oblong	4018A04
	O.D. Ground Special Shape	4018A0G
	EDM Required Special Shape	4018A0E
HEAD UNIT		
	For all shapes	4095A10
PUNCH BODY (H-PM®)		
	Round	4025A01
	Square	4025A02
	Rectangle	4025A03
	Oblong	4025A04
	O.D. Ground Special Shape	4025A0G
	EDM Required Special Shape	4025A0E
PUNCH GUIDE		
	Round	4038A01
	Square	4038A02
	Rectangle	4038A03
	Oblong	4038A04
	O.D. Ground Special Shape	4038A0G
	EDM Required Special Shape	4038A0E
DIE (HWS)		
	Round	4052A01
	Square	4052A02
	Rectangle	4052A03
	Oblong	4052A04
	O.D. Ground Special Shape	4052A0G
	EDM Required Special Shape	4052A0E



Head unit
for PDC-system
(without extra charge)

Part.-no. „see left“-PDC
e.g.: 4018A01-PDC

SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499A1M1	Reinforced die
Shimkeeper (0,5 mm)	499A1M95	H-PM® Quality
		ps:®tornado-die (vacuum-style)
		Additional pin hole

ps:®alpha ABS 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

Oil channel for sheet lubrication



PUNCH BODY

Metric thread M12 x 1,25

Oil channel for sheet lubrication

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 position:
All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate with oil channels

ps:® alpha ABS I STATION A

DIAMETER UP TO 12,7 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	40110A01
Square	40110A02
Rectangle	40110A03
Oblong	40110A04
O.D. Ground Special Shape	40110A0G
EDM Required Special Shape	40110A0E

HEAD UNIT

For all shapes	40910A10
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PUNCH BODY (H-PM®)

Round	40210A01
Square	40210A02
Rectangle	40210A03
Oblong	40210A04
O.D. Ground Special Shape	40210A0G
EDM Required Special Shape	40210A0E

PUNCH GUIDE

For all shapes	40310A05
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STRIPPER

Round	40410A01
Square	40410A02
Rectangle	40410A03
Oblong	40410A04
O.D. Ground Special Shape	40410A0G
EDM Required Special Shape	40410A0E

DIE (HWS)

Round	4052A01
Square	4052A02
Rectangle	4052A03
Oblong	4052A04
O.D. Ground Special Shape	4052A0G
EDM Required Special Shape	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
Cutting part under 1,00 mm

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 DIES

Reinforced die
H-PM® Quality
ps:®tornado-die (vacuum-style)
Additional pin hole



PASS STANDARD I STATION B

DIAMETER UP TO 31,57 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 position:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-90-225°

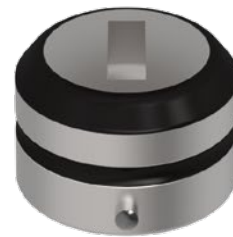
Asym. shapes: 0-90-180-270°

Tool shapes integrated in guide

PASS STANDARD I STATION B

DIAMETER UP TO 31,75 MM

		PART NO.
COMPLETE PUNCH ASSEMBLY		
	Round	4012B01
	Square	4012B02
	Rectangle	4012B03
	Oblong	4012B04
	O.D. Ground Special Shape	4012B0G
	EDM Required Special Shape	4012B0E
HEAD UNIT (HEAD SCREW, SPRING, DISTANCE RING)		
	For all shapes	4092B01
PUNCH BODY (H-PM®)		
	Round	4022B01
	Square	4022B02
	Rectangle	4022B03
	Oblong	4022B04
	O.D. Ground Special Shape	4022B0G
	EDM Required Special Shape	4022B0E
PUNCH GUIDE		
	Round	4032B01
	Square	4032B02
	Rectangle	4032B03
	Oblong	4032B04
	O.D. Ground Special Shape	4032B0G
	EDM Required Special Shape	4032B0E
DIE (HWS)		
	Round	4052B01
	Square	4052B02
	Rectangle	4052B03
	Oblong	4052B04
	O.D. Ground Special Shape	4052B0G
	EDM Required Special Shape	4052B0E



SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
Head screw	4092B31	TiCN coating
Spring	4092B11	T-MAX coating
Distance ring	4092B21	A-MAX coating
O-Ring (in punch guide)	4092B51	WT-shear
PU ejector Ø 3x6 (in punch)	4092P03	DOWT-shear
PU ejector Ø 6x10 (in punch)	4092P06	2 PT-shear
		4 PT-shear
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Piece (2 mm)	499B4S2	Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1	Reinforced die
Shimkeeper (0,5 mm)	499B1M95	H-PM® Quality
		Additional pin hole

ps:®alpha I STATION B

DIAMETER UP TO 31,75 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 position:
All shapes: 0-45-90-180-270°

STRIPPER

Interchangeable stripper plate

ps:® alpha I STATION B

DIAMETER UP TO 31,75 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY		
	Round	4013B01
	Square	4013B02
	Rectangle	4013B03
	Oblong	4013B04
	O.D. Ground Special Shape	4013B0G
	EDM Required Special Shape	4013B0E

HEAD UNIT		
	For all shapes	4093B01

PUNCH BODY (H-PM®)		
	Round	4023B01
	Square	4023B02
	Rectangle	4023B03
	Oblong	4023B04
	O.D. Ground Special Shape	4023B0G
	EDM Required Special Shape	4023B0E

PUNCH GUIDE		
	For all shapes	4033B05

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

DIE (HWS)		
	Round	4052B01
	Square	4052B02
	Rectangle	4052B03
	Oblong	4052B04
	O.D. Ground Special Shape	4052B0G
	EDM Required Special Shape	4052B0E

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

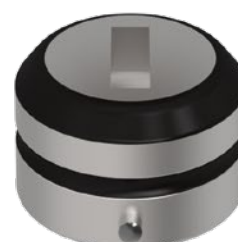
COMPENSATING SHIM FOR PUNCH		
Not necessary		

SET OF COMPENSATING SHIMS FOR DIE		
1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1	
Shimkeeper (0,5 mm)	499B1M95	

ADDITIONAL COSTS FOR PUNCH	
TICN coating	
T-MAX coating	
A-MAX coating	
WT-shear	
DOWT-shear	
2 PT-shear	
4 PT-shear	
Cutting part under 1,00 mm	

ADDITIONAL COSTS FOR PUNCH GUIDE	
Additional keyway	

ADDITIONAL COSTS FOR DIES	
Reinforced die	
H-PM® Quality	
Additional pin hole	



ps:®alpha-compact I STATION B

DIAMETER UP TO 31,75 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 position:

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 31,75 MM

		PART NO.
COMPLETE PUNCH ASSEMBLY		
	Round	4017B01
	Square	4017B02
	Rectangle	4017B03
	Oblong	4017B04
	O.D. Ground Special Shape	4017B0G
	EDM Required Special Shape	4017B0E
HEAD UNIT		
	For all shapes	4093B01
PUNCH BODY (H-PM®)		
	Round	4023B01
	Square	4023B02
	Rectangle	4023B03
	Oblong	4023B04
	O.D. Ground Special Shape	4023B0G
	EDM Required Special Shape	4023B0E
PUNCH GUIDE		
	Round	4032B01
	Square	4032B02
	Rectangle	4032B03
	Oblong	4032B04
	O.D. Ground Special Shape	4032B0G
	EDM Required Special Shape	4032B0E
DIE (HWS)		
	Round	4052B01
	Square	4052B02
	Rectangle	4052B03
	Oblong	4052B04
	O.D. Ground Special Shape	4052B0G
	EDM Required Special Shape	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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1	Reinforced die
Shimkeeper (0,5 mm)	499B1M95	H-PM® Quality
		Additional pin hole

ps:®beta-V2® ABS I STATION B

DIAMETER UP TO 31,75 MM



HEAD UNIT

Canister for sheet thickness up to 6 mm

Spring

10 mm length adjustment by thread

Oil channel for sheet lubrication

On request, suitable for PDC-system



PUNCH BODY

Oil channel for sheet 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 position:
All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate with oil channels

ps:®beta-V2® ABS I STATION B

DIAMETER UP TO 31,75 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	4019B01
Square	4019B02
Rectangle	4019B03
Oblong	4019B04
O.D. Ground Special Shape	4019B0G
EDM Required Special Shape	4019B0E

HEAD UNIT

For all shapes	4099B10
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PUNCH BODY (H-PM®)

Round	4029B01
Square	4029B02
Rectangle	4029B03
Oblong	4029B04
O.D. Ground Special Shape	4029B0G
EDM Required Special Shape	4029B0E

PUNCH GUIDE

For all shapes	4039B05
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STRIPPER

Round	4049B01
Square	4049B02
Rectangle	4049B03
Oblong	4049B04
O.D. Ground Special Shape	4049B0G
EDM Required Special Shape	4049B0E

DIE (HWS)

Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
O.D. Ground Special Shape	4052B0G
EDM Required Special Shape	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
Cutting part under 1,00 mm

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 DIES

Reinforced die
H-PM® Quality
ps:®tornado-die (vacuum-style)
Additional pin hole



Head unit
for PDC-system
(without extra charge)

Part.-no. „see left“-PDC
e.g.: 4019B01-PDC

ps:®beta-compact ABS I STATION B

DIAMETER UP TO 31,75 MM



HEAD UNIT

Canister for sheet thickness up to 6 mm

Spring

10 mm length adjustment by thread

Oil channel for sheet lubrication

On request, suitable for PDC-system



PUNCH BODY

Oil channel for sheet 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 position:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-45-90-135°

Asym. shapes: 0-90-180-270°

Tool shapes integrated in guide

ps:®beta-compact ABS I STATION B

DIAMETER UP TO 31,75 MM

		PART NO.
COMPLETE PUNCH ASSEMBLY		
	Round	4018B01
	Square	4018B02
	Rectangle	4018B03
	Oblong	4018B04
	O.D. Ground Special Shape	4018B0G
	EDM Required Special Shape	4018B0E
HEAD UNIT		
	For all shapes	4095B10
PUNCH BODY (H-PM®)		
	Round	4025B01
	Square	4025B02
	Rectangle	4025B03
	Oblong	4025B04
	O.D. Ground Special Shape	4025B0G
	EDM Required Special Shape	4025B0E
PUNCH GUIDE		
	Round	4038B01
	Square	4038B02
	Rectangle	4038B03
	Oblong	4038B04
	O.D. Ground Special Shape	4038B0G
	EDM Required Special Shape	4038B0E
DIE (HWS)		
	Round	4052B01
	Square	4052B02
	Rectangle	4052B03
	Oblong	4052B04
	O.D. Ground Special Shape	4052B0G
	EDM Required Special Shape	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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499B1M1	Reinforced die
Shimkeeper (0,5 mm)	499B1M95	H-PM® Quality
		ps:®tornado-die (vacuum-style)
		Additional pin hole

ps:® alpha ABS I STATION B

DIAMETER UP TO 31,75 MM



HEAD UNIT

Canister for sheet thickness up to 4 mm

Continuously and easy length adjustment
in assembled status

Oil channel for sheet lubrication



PUNCH BODY

Metric thread M20 x 1,25

Oil channel for sheet lubrication

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 position:
All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate with oil channels

ps:® alpha ABS I STATION B

DIAMETER UP TO 31,75 MM

PART-NO.

COMPLETE PUNCH ASSEMBLY

Round	40110B01
Square	40110B02
Rectangle	40110B03
Oblong	40110B04
O.D. Ground Special Shape	40110B0G
EDM Required Special Shape	40110B0E

HEAD UNIT

For all shapes	40910B10
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PUNCH BODY (H-PM®)

Round	40210B01
Square	40210B02
Rectangle	40210B03
Oblong	40210B04
O.D. Ground Special Shape	40210B0G
EDM Required Special Shape	40210B0E

PUNCH GUIDE

For all shapes	40310B05
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STRIPPER

Round	40410B01
Square	40410B02
Rectangle	40410B03
Oblong	40410B04
O.D. Ground Special Shape	40410B0G
EDM Required Special Shape	40410B0E

DIE (HWS)

Round	4052B01
Square	4052B02
Rectangle	4052B03
Oblong	4052B04
O.D. Ground Special Shape	4052B0G
EDM Required Special Shape	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
Cutting part under 1,00 mm

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 DIES

Reinforced die
H-PM® Quality
ps:®tornado-die (vacuum-style)
Additional pin hole



PASS STANDARD I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

3 mm length adjustment
by using compensating shims

Keyway position: 0-90°

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

Clamps 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 Shape	4022C0G
	EDM Required Special Shape	4022C0E

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

DIE (HWS)		
	Round	4052C01
	Square	4052C02
	Rectangle	4052C03
	Oblong	4052C04
	O.D. Ground Special Shape	4052C0G
	EDM Required Special Shape	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	
Set clamps with screws	499C71	A-MAX coating	
Guiding key with screws	499C63	WT-shear	
		DOWT-shear	
		2 PT-shear	
		4 PT-shear	
		Additional keyway	
		Cutting part under 1,00 mm	
SET OF COMPENSATING SHIMS FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE	
1x0,4 mm/1x0,8 mm/1x1,2 mm	499C1S1	Additional keyway	
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES	
1x0,4 mm/1x0,8 mm/1x1,2 mm	499C2M1	H-PM® Quality	
		Additional keyway	

ps:®beta-V2® ABS I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system

PUNCH BODY

Thread M12 with oil channel for sheet lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

ps:®beta-V2® ABS I STATION C

DIAMETER UP TO 50,8 MM

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4039C01

PUNCH BODY (H-PM®)		
	Round	4029C01
	Square	4029C02
	Rectangle	4029C03
	Oblong	4029C04
	O.D. Ground Special Shape	4029C0G
	EDM Required Special Shape	4029C0E

STRIPPER		
	Round	4049C01
	Square	4049C02
	Rectangle	4049C03
	Oblong	4049C04
	O.D. Ground Special Shape	4049C0G
	EDM Required Special Shape	4049C0E

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



Additional costs for die with keyway for PDC-system on request
Part-No.: „see left“ -2
(e.g.: 4052C04-2)

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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499C2M1	H-PM® Quality
		Additional keyway

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



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING PUNCH HOLDER

2 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING PUNCH

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

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

	PART NO.
GUIDE ASSEMBLY	
For all shapes	4039C01
SLITTING PUNCH HOLDER	
For all shapes	4229CT00
SLITTING PUNCH (MAX. 6,35X50) / (H-PM®)	
Rectangle	4029CT03
Oblong	4029CT04
Trapezoid G09	4029CT0G
Double Trapezoid E03	4029CT0E
STRIPPER	
Rectangle	4049CT03
Oblong	4049CT04
Trapezoid G09	4049CT0G
Double Trapezoid E03	4049CT0E
REVERSIBLE PLATE HOLDER	
	4399CT00
REVERSIBLE PLATE (H-PM®)	
Rectangle	4052CT03
Oblong	4052CT04
Trapezoid G09	4052CT0G
Double Trapezoid E03	4052CT0E



Additional costs for die with
keyway for PDC-system
on request
Part-No.: „see left“ -2
(e.g.: 4399CT00-2)

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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR SLITTING PUNCH HOLDER		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499CT60	Additional keyway

ps:®alpha-V2 ABS I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M14

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Suitable for PDC-system



PUNCH BODY

Thread M14 with oil channel for sheet lubrication

Punch body made with premium H-PM®



STRIPPER

Interchangeable stripper plate with oil channels

ps:®alpha-V2 ABS I STATION C

DIAMETER UP TO 50,8 MM

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4031C01

PUNCH BODY (H-PM®)		
	Round	4021C01
	Square	4021C02
	Rectangle	4021C03
	Oblong	4021C04
	O.D. Ground Special Shape	4021C0G
	EDM Required Special Shape	4021C0E

STRIPPER		
	Round	4041C01
	Square	4041C02
	Rectangle	4041C03
	Oblong	4041C04
	O.D. Ground Special Shape	4041C0G
	EDM Required Special Shape	4041C0E

DIE (HWS)		
	Round	4052C01
	Square	4052C02
	Rectangle	4052C03
	Oblong	4052C04
	O.D. Ground Special Shape	4052C0G
	EDM Required Special Shape	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
		Cutting part under 1,00 mm

COMPENSATING SHIM FOR PUNCH	
Not necessary	

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

PASS STANDARD I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

3 mm length adjustment
by using compensating shims

Keyway position: 0-90°

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

Clamps 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 Shape	4022D0G
	EDM Required Special Shape	4022D0E

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

DIE (HWS)		
	Round	4052D01
	Square	4052D02
	Rectangle	4052D03
	Oblong	4052D04
	O.D. Ground Special Shape	4052D0G
	EDM Required Special Shape	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 clamps with screws	499D71	A-MAX coating
Guiding key with screws	499D63	WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
		Cutting part under 1,00 mm
SET OF COMPENSATING SHIMS FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D3S1	Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D2M1	H-PM® Quality
		Additional keyway

ps:®beta-V2® ABS I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



PUNCH BODY

Thread M12 with oil channel for sheet lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

ps:®beta-V2® ABS I STATION D

DIAMETER UP TO 88,9 MM

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4039D01

PUNCH BODY (H-PM®)		
	Round	4029D01
	Square	4029D02
	Rectangle	4029D03
	Oblong	4029D04
	O.D. Ground Special Shape	4029D0G
	EDM Required Special Shape	4029D0E

STRIPPER		
	Round	4049D01
	Square	4049D02
	Rectangle	4049D03
	Oblong	4049D04
	O.D. Ground Special Shape	4049D0G
	EDM Required Special Shape	4049D0E

DIE (HWS)		
	Round	4052D01
	Square	4052D02
	Rectangle	4052D03
	Oblong	4052D04
	O.D. Ground Special Shape	4052D0G
	EDM Required Special Shape	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
		A-MAX coating
		WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D2M1	H-PM® Quality
		Additional keyway

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



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system

SLITTING PUNCH HOLDER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING PUNCH

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

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

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4039D01

SLITTING PUNCH HOLDER		
	For all shapes	4229DT00

SLITTING PUNCH (MAX. 6,35X85) / (H-PM®)		
	Rectangle	4029DT03
	Oblong	4029DT04
	Trapezoid G09	4029DT0G
	Double Trapezoid E03	4029DT0E

STRIPPER		
	Rectangle	4049DT03
	Oblong	4049DT04
	Trapezoid G09	4049DT0G
	Double Trapezoid E03	4049DT0E

REVERSIBLE PLATE HOLDER		
		4399DT00

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



Additional costs for die with keyway for PDC-system on request
Part-No.: „see left“ -2
(e.g.: 4399DT00-2)

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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR SLITTING PUNCH HOLDER		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499DT60	Additional keyway

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



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system

SLITTING PUNCH HOLDER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING PUNCH

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

One or two-sided relief for punching close to clamp

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

CLOSE TO CLAMP

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4039DTP01

SLITTING PUNCH HOLDER		
	For all shapes	4229DT00

SLITTING PUNCH (MAX. 6,35X85) / (H-PM®)		
	Rectangle	4029DT03
	Oblong	4029DT04
	Trapezoid G09	4029DTP0G
	Double Trapezoid E03	4029DTP0E

STRIPPER ONE-SIDED FREE		
	Rectangle	4049DTP03-1
	Oblong	4049DTP04-1
	Trapezoid G09	4049DTP0G-1
	Double Trapezoid E03	4049DTP0E-1

STRIPPER TWO-SIDED FREE		
	Rectangle	4049DTP03-2
	Oblong	4049DTP04-2
	Trapezoid G09	4049DTP0G-2
	Double Trapezoid E03	4049DTP0E-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		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

Cutting part under 1,00 mm

SET OF COMPENSATING SHIMS FOR SLITTING PUNCH HOLDER		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D2M1	H-PM® Quality
		Additional keyway



Additional costs for die with
keyway for PDC-system
on request
Part-No.: „see left“ -2
(e.g.: 4052DTP04-2-2)

ps:®alpha-V2 ABS I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M14

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Suitable for PDC-system

PUNCH BODY

Thread M14 with oil channel for sheet lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

ps:®alpha-V2 ABS I STATION D

DIAMETER UP TO 88,9 MM

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4031D01

PUNCH BODY (H-PM®)		
	Round	4021D01
	Square	4021D02
	Rectangle	4021D03
	Oblong	4021D04
	O.D. Ground Special Shape	4021D0G
	EDM Required Special Shape	4021D0E

STRIPPER		
	Round	4041D01
	Square	4041D02
	Rectangle	4041D03
	Oblong	4041D04
	O.D. Ground Special Shape	4041D0G
	EDM Required Special Shape	4041D0E

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



Additional costs for die with keyway for PDC-system on request
Part-No.: „see left“ -2
(e.g.: 4052D04-2)

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
		Cutting part under 1,00 mm

COMPENSATING SHIM FOR PUNCH	
Not necessary	

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499D2M1	H-PM® Quality
		Additional keyway

PASS STANDARD I STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

3 mm length adjustment
by using compensating shims

Keyway position: 0-90°

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

Clamps 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 Shape	4022E0G
	EDM Required Special Shape	4022E0E

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

DIE (HWS)		
	Round	4052E01
	Square	4052E02
	Rectangle	4052E03
	Oblong	4052E04
	O.D. Ground Special Shape	4052E0G
	EDM Required Special Shape	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 clamps with screws	499E71	A-MAX coating
Guiding key with screws	499E63	WT-shear
		DOWT-shear
		2 PT-shear
		4 PT-shear
		Additional keyway
		Cutting part under 1,00 mm
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 DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality
		Additional keyway

ps:®beta-V2® ABS I STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system

PUNCH BODY

Thread M12 with oil channel for sheet lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

ps:®beta-V2® ABS I STATION E

DIAMETER UP TO 114,3 MM

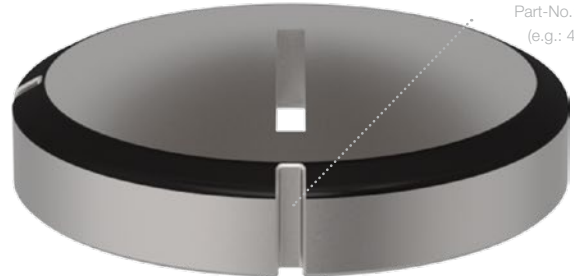
PART NO.

GUIDE ASSEMBLY		
	For all shapes	4039E01

PUNCH BODY (H-PM®)		
	Round	4029E01
	Square	4029E02
	Rectangle	4029E03
	Oblong	4029E04
	O.D. Ground Special Shape	4029E0G
	EDM Required Special Shape	4029E0E

STRIPPER		
	Round	4049E01
	Square	4049E02
	Rectangle	4049E03
	Oblong	4049E04
	O.D. Ground Special Shape	4049E0G
	EDM Required Special Shape	4049E0E

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



Additional costs for die with
keyway for PDC-system
on request
Part-No.: „see left“ -2
(e.g.: 4052E04-2)

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
		Cutting part under 1,00 mm
COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary		Additional keyway
SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality
		Additional keyway

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



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system

SLITTING PUNCH HOLDER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING PUNCH

Punch body made with premium H-PM®

STRIPPER

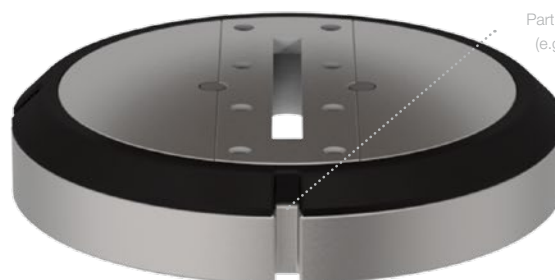
Interchangeable stripper plate with oil channels

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

	PART NO.
GUIDE ASSEMBLY	
For all shapes	4039E01
SLITTING PUNCH HOLDER	
For all shapes	4229ET00
SLITTING PUNCH (MAX. 6,35X111) / (H-PM®)	
Rectangle	4029ET03
Oblong	4029ET04
Trapezoid G09	4029ET0G
Double Trapezoid E03	4029ET0E
STRIPPER	
Rectangle	4049ET03
Oblong	4049ET04
Trapezoid G09	4049ET0G
Double Trapezoid E03	4049ET0E
REVERSIBLE PLATE HOLDER	
	4399ET00
REVERSIBLE PLATE (H-PM®)	
Rectangle	4052ET03
Oblong	4052ET04
Trapezoid G09	4052ET0G
Double Trapezoid E03	4052ET0E



Additional costs for die with
keyway for PDC-system
on request
Part-No.: „see left“ -2
(e.g.: 4399ET00-2)



SPARE PARTS	ADDITIONAL COSTS FOR PUNCH
PU ejector Ø 3x6 (in punch)	4092P03
PU ejector Ø 6x10 (in punch)	4092P06
	TICN coating
	T-MAX coating
	A-MAX coating
	WT-shear
	DOWT-shear
	2 PT-shear
	4 PT-shear
	Additional keyway
	Cutting part under 1,00 mm
SET OF COMPENSATING SHIMS FOR SLITTING PUNCH HOLDER	ADDITIONAL COSTS FOR PUNCH GUIDE
Not necessary	Additional keyway
SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE	ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499ET60
	Additional keyway

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



GUIDE ASSEMBLY

Screw M12

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING PUNCH HOLDER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING PUNCH

Punch body made with premium H-PM®



STRIPPER

Interchangeable stripper plate

One or two-sided relief for punching close to clamp

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

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4039ETP01

SLITTING PUNCH HOLDER		
	For all shapes	4229ET00

SLITTING PUNCH (MAX. 6,35X111) / (H-PM®)		
	Rectangle	4029ET03
	Oblong	4029ET04
	Trapezoid G09	4029ET0G
	Double Trapezoid E03	4029ET0E

STRIPPER ONE-SIDED FREE		
	Rectangle	4049ETP03-1
	Oblong	4049ETP04-1
	Trapezoid G09	4049ETP0G-1
	Double Trapezoid E03	4049ETP0E-1

STRIPPER TWO-SIDED FREE		
	Rectangle	4049ETP03-2
	Oblong	4049ETP04-2
	Trapezoid G09	4049ETP0G-2
	Double Trapezoid E03	4049ETP0E-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		ADDITIONAL COSTS FOR PUNCH
PU ejector Ø 3x6 (in punch)	4092P03	TICN coating
PU ejector Ø 6x10 (in punch)	4092P06	T-MAX coating

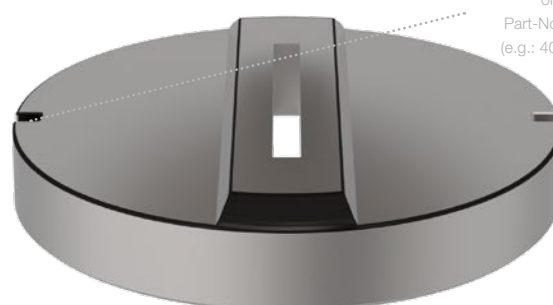
A-MAX coating
WT-shear
DOWT-shear
2 PT-shear
4 PT-shear

Additional keyway

Cutting part under 1,00 mm

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

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality
		Additional keyway



Additional costs for die with keyway for PDC-system on request
Part-No.: „see left“ -2
(e.g.: 4052ETP04-2-2)

ps:®alpha-V2 ABS I STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M14

Disc springs for sheet thickness up to 6 mm

Oil channel for sheet lubrication

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

Keyway position: 0-90°

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

Suitable for PDC-system

PUNCH BODY

Thread M14 with oil channel for sheet lubrication

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

ps:® alpha-V2 ABS I STATION E

DIAMETER UP TO 114,3 MM

PART NO.

GUIDE ASSEMBLY		
	For all shapes	4031E01

PUNCH BODY (H-PM®)		
	Round	4021E01
	Square	4021E02
	Rectangle	4021E03
	Oblong	4021E04
	O.D. Ground Special Shape	4021E0G
	EDM Required Special Shape	4021E0E

STRIPPER		
	Round	4041E01
	Square	4041E02
	Rectangle	4041E03
	Oblong	4041E04
	O.D. Ground Special Shape	4041E0G
	EDM Required Special Shape	4041E0E

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

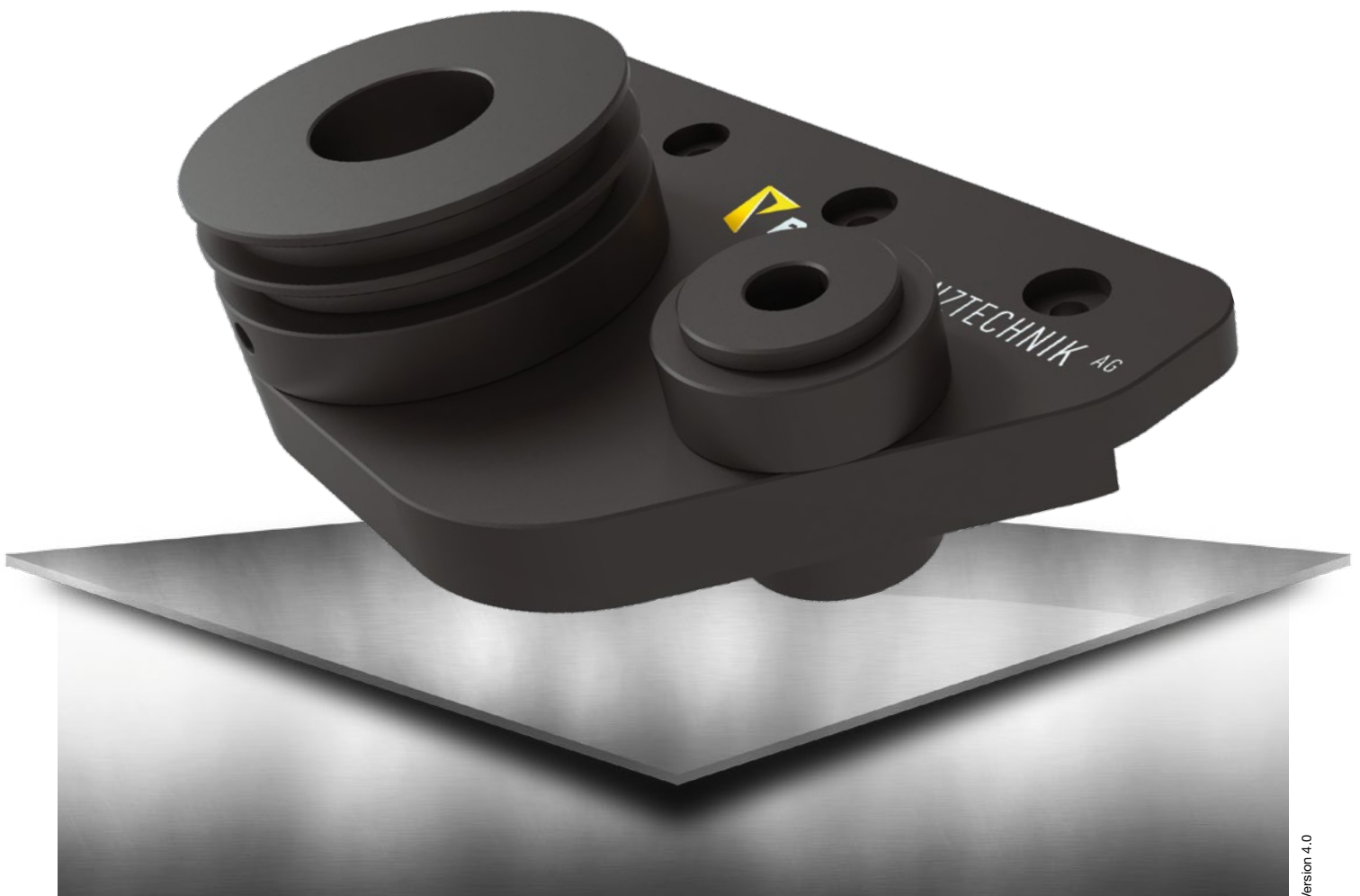


Additional costs for die with
keyway for PDC-system
on request
Part-No.: „see left“ -2
(e.g.: 4052E04-2)

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
		Cutting part under 1,00 mm

COMPENSATING SHIM FOR PUNCH	
Not necessary	

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIES
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality
		Additional keyway



ACCESSORIES

PASS ACCESSORIES FOR YOUR AMADA SYSTEM

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ps:® assembly-element	page 60
PASS assembling set	page 61
PASS adapter	page 62
PASS dies	page 63

STATION A



STATION B



STATION C



STATION D



STATION E



EQUIPPED BASE PLATE

PART-NO.

SOCKET SET INCL. BASE PLATE		
Set consists of: 5 sockets (Stat. A-E) + 1 base plate		499M18000

PASS ASSEMBLING SET

FOR PASS GUIDE ASSEMBLY STAT. C, D, E

PART-NO.

COMPLETE ASSEMBLING SET

Torque wrench / 25-130 Nm

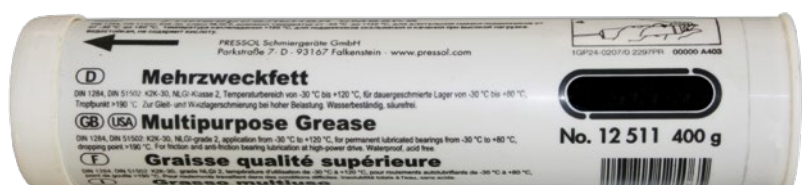
incl. 4 socket wrench
SW 8 / SW10 / SW 12 / SW 14

Multipurpose grease 400 gr.

Triangular whetstone

Diamond needle file with quick-acting clamp

Total price 499MONKIT



PASS ADAPTER

PUNCH ADAPTER

Surface-hardened and polished



	STATION	PART-NO.
PASS ADAPTER		
Punch adapter	B/A	401BAS1
Die adapter ⁽³⁾	B/A	401BAM1
Punch adapter	C/B	401CBS1
Die adapter ⁽¹⁾⁽³⁾	C/B	401CBM1
Punch adapter	D/A	401DAS1
Die adapter ⁽³⁾	D/A	401DAM1
Punch adapter	D/B	401DBS1
Die adapter ⁽³⁾	D/B	401DBM1
Punch adapter	D/C	401DCS1
Die adapter ⁽¹⁾⁽²⁾⁽³⁾	D/C	401DCM1

⁽¹⁾ max. stamping and punching force: 70kn

⁽²⁾ assembled die is 2 mm above table level

⁽³⁾ height h = 26 mm

DIE ADAPTER

Surface-hardened and polished

2 clamping screws



PASS DIES

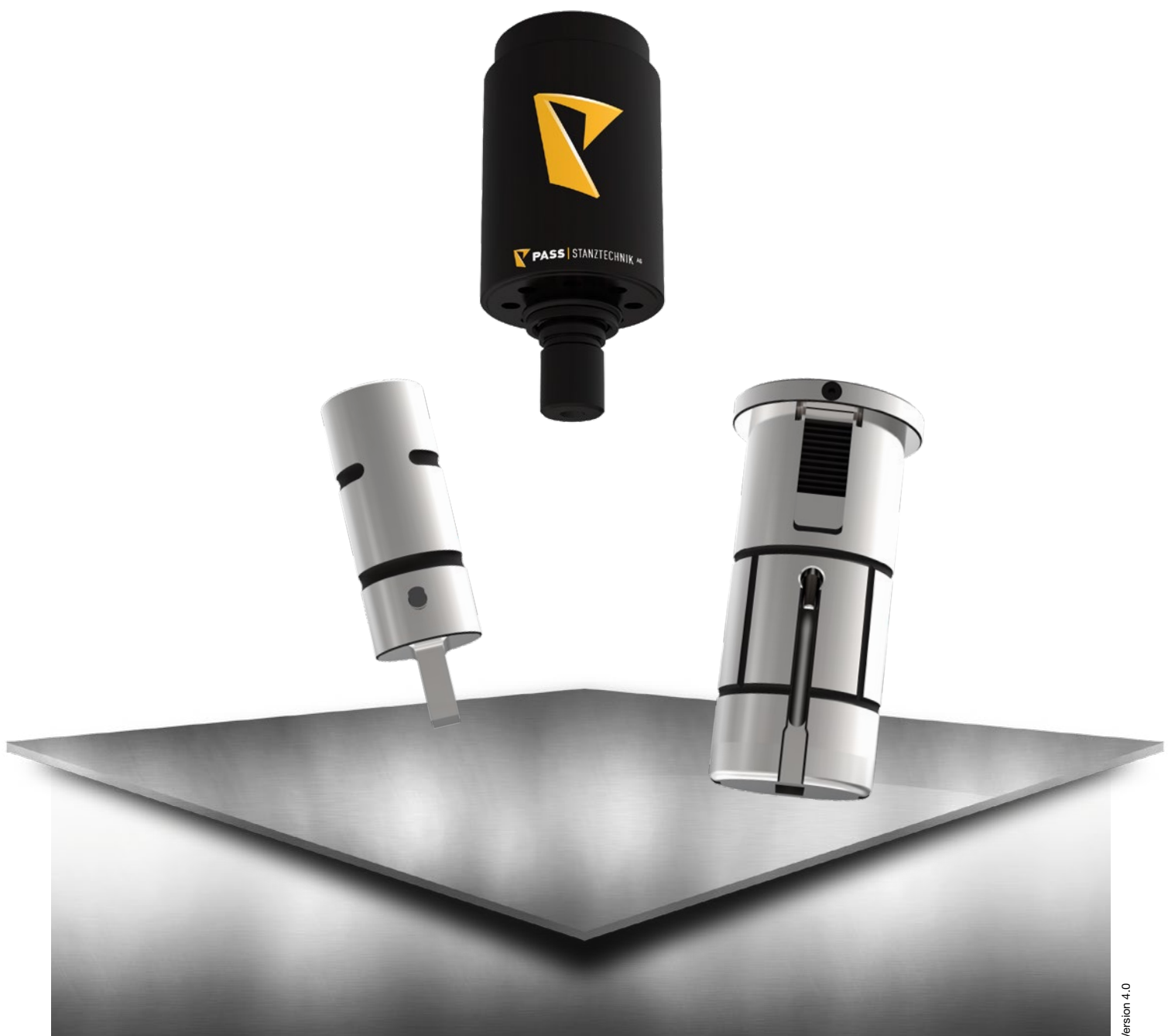
WITH BRUSH INSERTS

	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



SPARE PARTS

Brush inserts Ø 13 mm (piece) 200B00



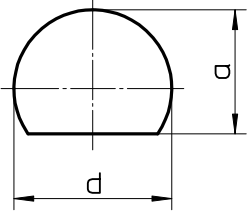
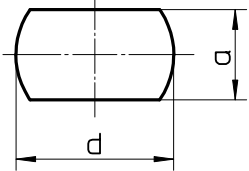
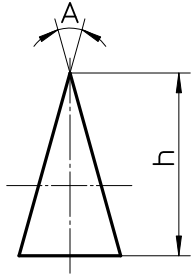
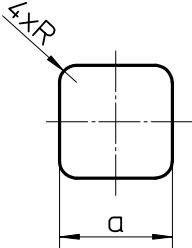
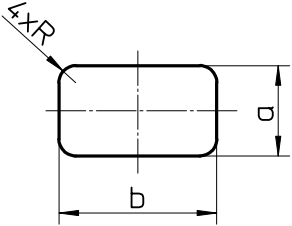
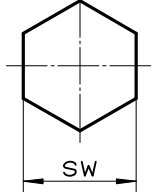
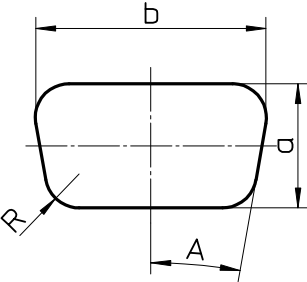
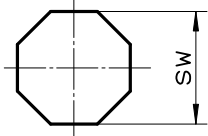
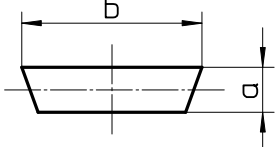
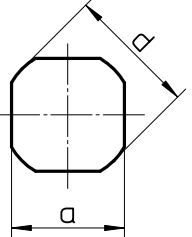
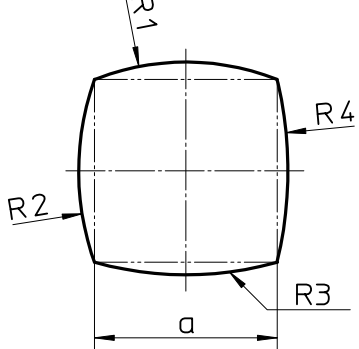
TECHNICAL INFORMATION

INFORMATION ABOUT OUR TOOLS FOR YOUR AMADA SYSTEM

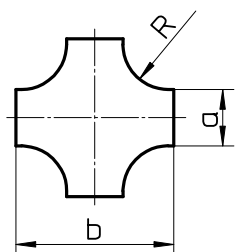
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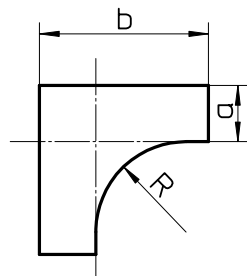
O.D. GROUND SPECIAL SHAPES

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

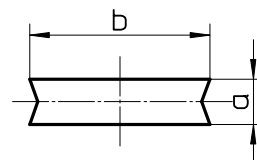
EDM REQUIRED SPECIAL SHAPES



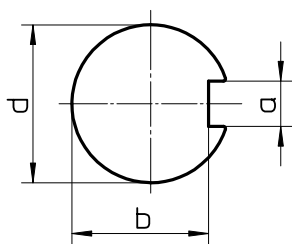
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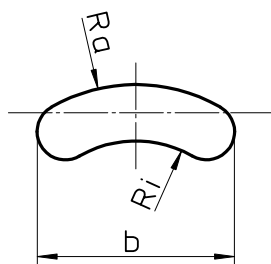
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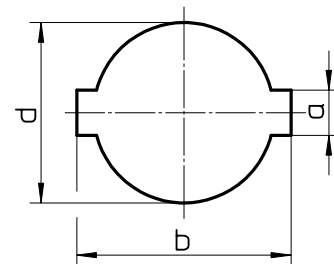
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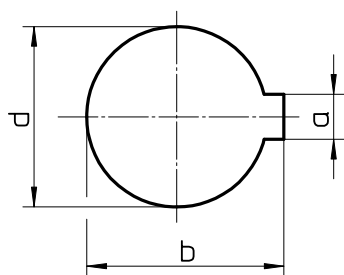
E04



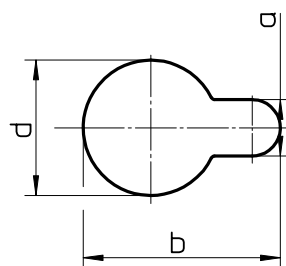
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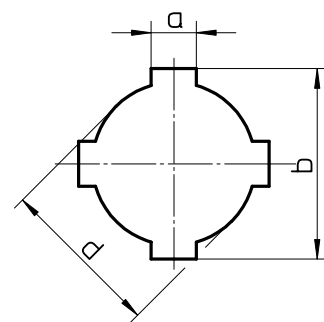
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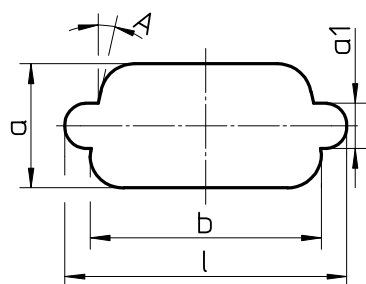
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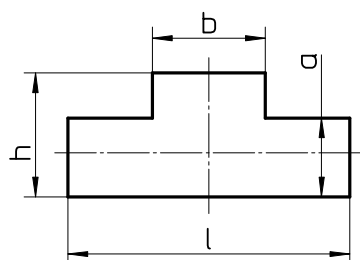
E08



E09



E10



E11

PASS TOOL VARIETY

HWS

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

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 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 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.

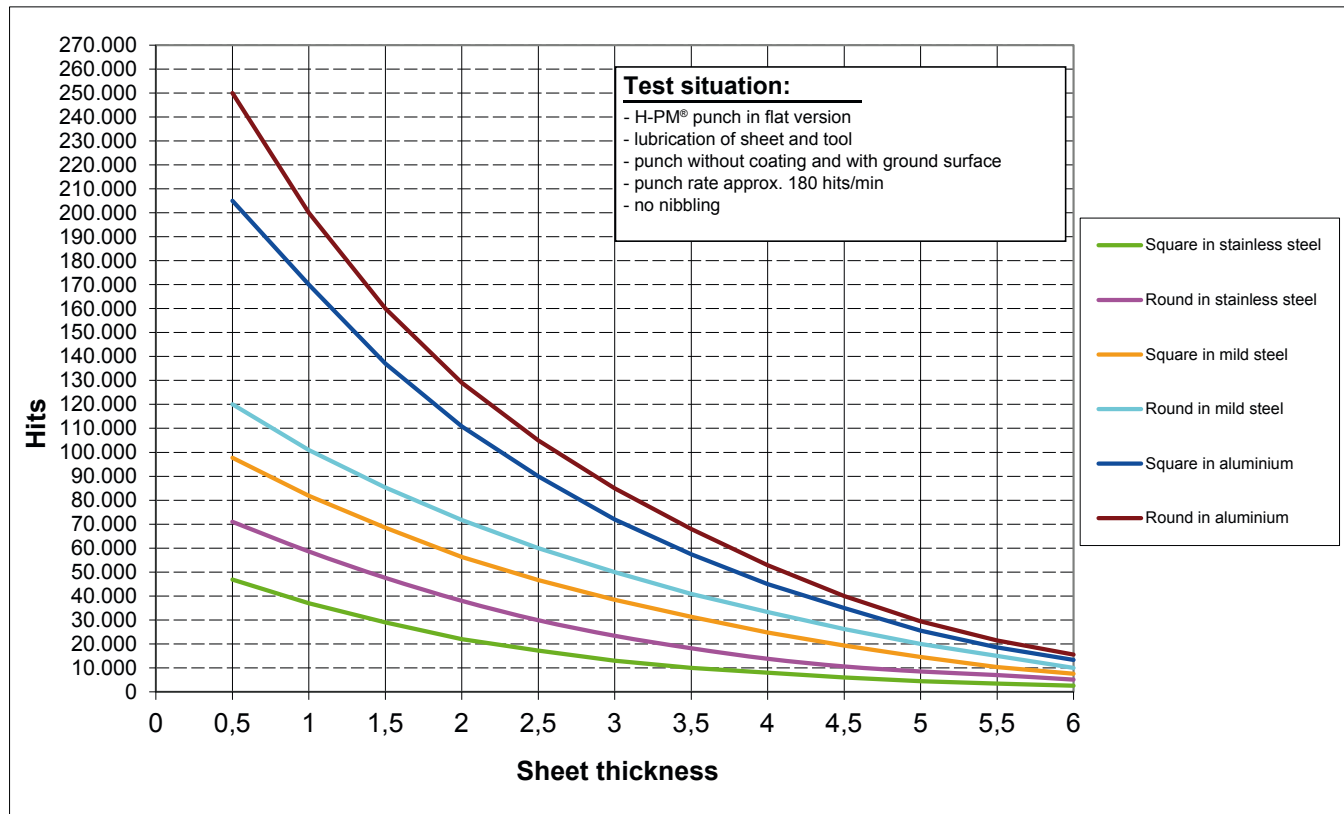
The high ductility of the segregational uniformed microstructure guarantees best possible fatigue limit. This kind of steel is especially suitable for dies with risk-breakage in regard to special shapes.

Advantage for customer:

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

LIFETIME OF TOOLS | 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 fulfil 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.

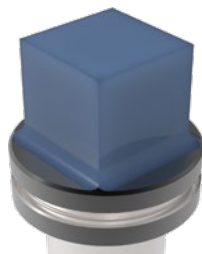
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

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

- 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

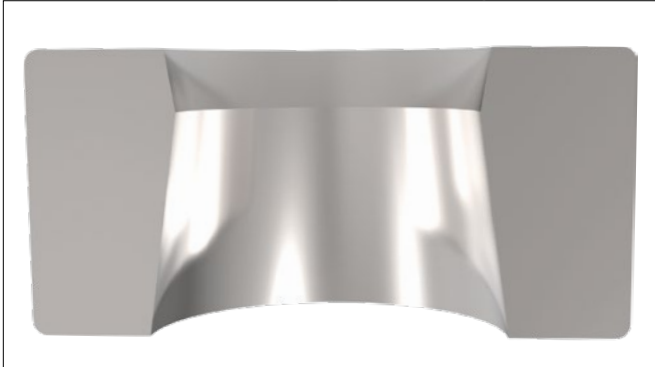
We recommend draw-polished punch edges to increase tool lifetime and reduce material build up (prices on request):



DIE VERSIONS

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

SLUG-STOP (STANDARD)



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

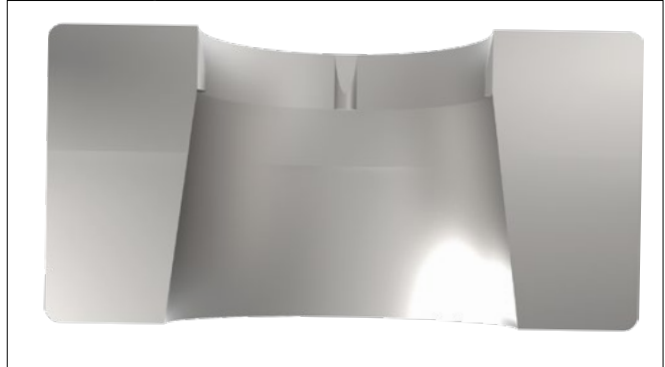
This means that the upper part of the cutting part is produced with a negative angle.

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)

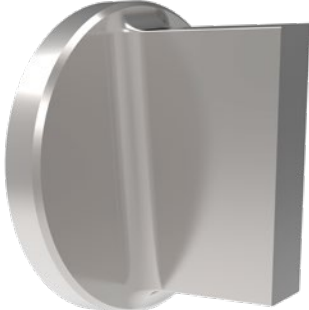
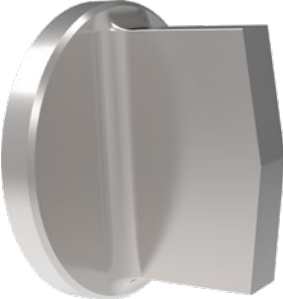
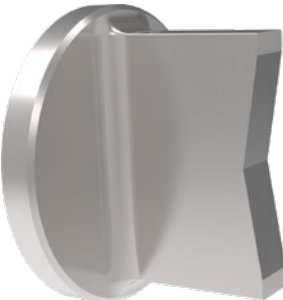
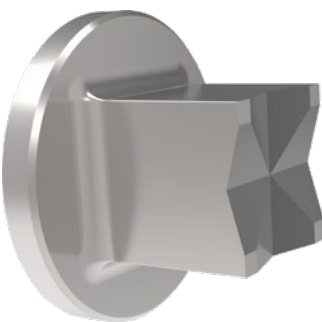


Alternatively we offer our slug-snap version (additional costs).

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

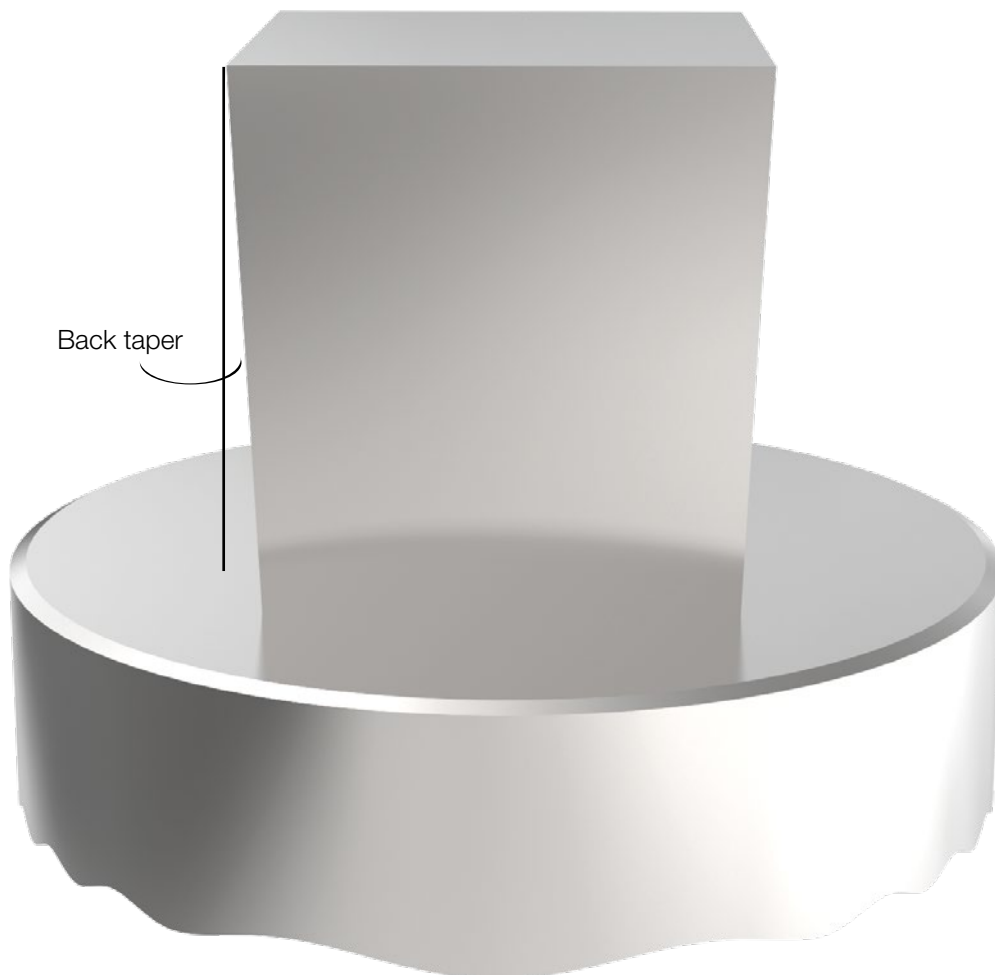
		DESCRIPTION
WT		<div>WT</div> <div>Advantage</div> <div>easy regrindable</div> <div>Disadvantage</div> <div>lateral forces</div>
DOWT		<div>DOWT</div> <div>Advantages</div> <div>easy regrindable no lateral forces</div> <div>Disadvantage</div> <div>only reasonable for big shapes</div>
2 PT		<div>2 PT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

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.

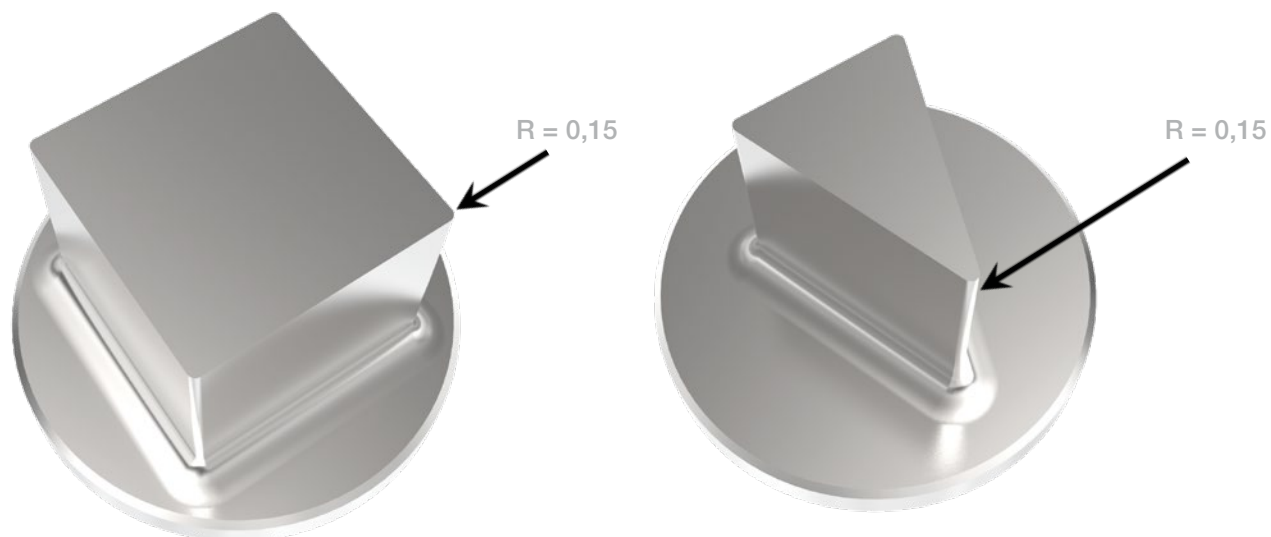
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal shape, e.g. cross-form, U-form, etc.) and in high quality sheets.



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.

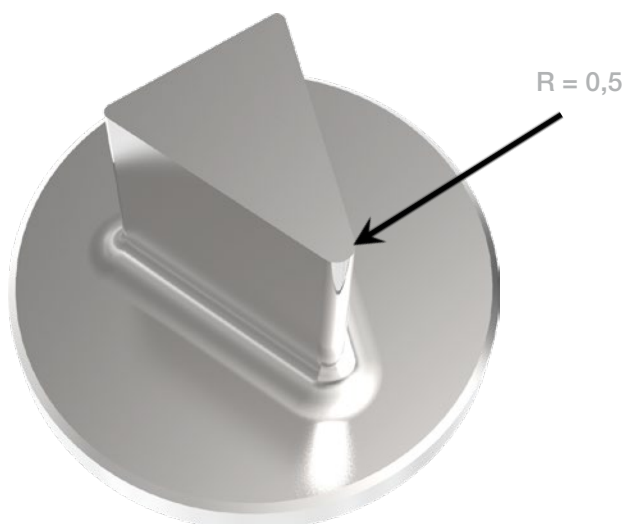
E.g.: square and triangle punch



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.



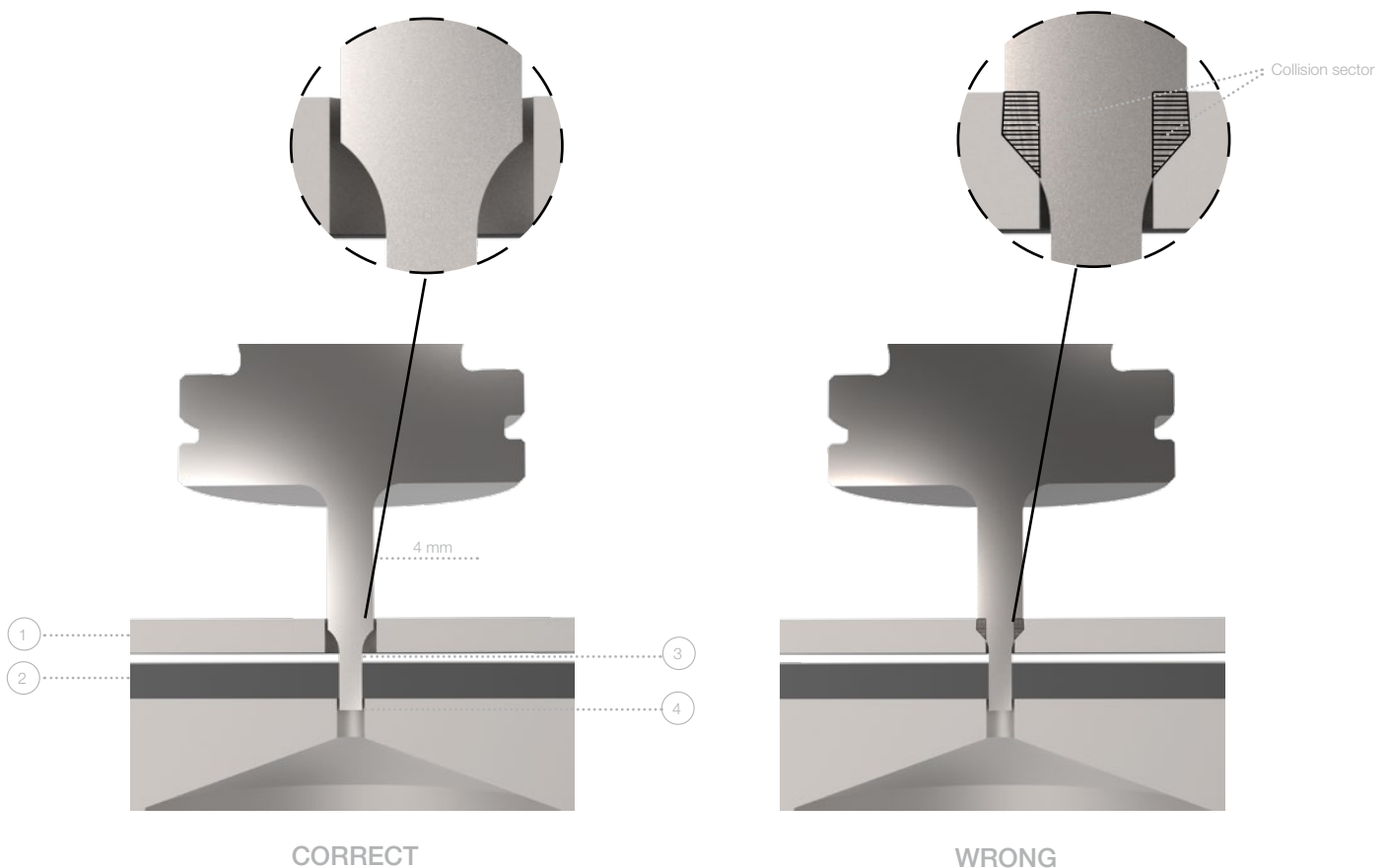
PASS PUNCHES WITH REINFORCED SHOULDER

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.



NOTES

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

NOTES

A large grid of squares, resembling graph paper, occupying the central portion of the page. The grid is composed of 20 columns and 30 rows of small squares, providing a structured area for writing or drawing.

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