



CATALOGUE 02/2016-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 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

PASS 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

PASS 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



PASS 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

PASS 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

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 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:

All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate with oil channels

PASS 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 Shapes	4019A0G
*EDM Required Special Shapes	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 Shapes	4029A0G
*EDM Required Special Shapes	4029A0E

PUNCH GUIDE

For all shapes	4039A05
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STRIPPER

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

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:tornado-die (vacuum-style)



Head Unit
for PDC-system
(without extra charge)

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



PASS 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:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-45-90-135

Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

PASS 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 Shapes	4018A0G
*EDM Required Special Shapes	4018A0E

HEAD UNIT

For all shapes	4095A10
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PUNCH BODY (H-PM®)

Round	4025A01
Square	4025A02
Rectangle	4025A03
Oblong	4025A04
*O.D. Ground Special Shapes	4025A0G
*EDM Required Special Shapes	4025A0E

PUNCH GUIDE

Round	4038A01
Square	4038A02
Rectangle	4038A03
Oblong	4038A04
*O.D. Ground Special Shapes	4038A0G
*EDM Required Special Shapes	4038A0E

DIE (HWS)

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



Head Unit
for PDC-system
(without extra charge)

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



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:tornado-die (vacuum-style)

PASS 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:
All shapes: 0-90°

STRIPPER

Interchangeable stripper plate with oil channels

PASS 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 Shapes		40110A0G
*EDM Required Special Shapes		40110A0E

HEAD UNIT		
For all shapes		40910A10

PUNCH BODY (H-PM®)		
Round		40210A01
Square		40210A02
Rectangle		40210A03
Oblong		40210A04
*O.D. Ground Special Shapes		40210A0G
*EDM Required Special Shapes		40210A0E

PUNCH GUIDE		
For all shapes		40310A05

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

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
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
Not necessary		Additional keyway

SET OF COMPENSATING SHIMS FOR DIE		ADDITIONAL COSTS FOR DIE
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)



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°

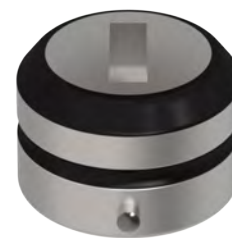
Rect./Oblong: 0-90-225°

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
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		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-coating
PU-ejector Ø 3x6 (in punch)	4092P03	DOWT-shear
PU-ejector Ø 6x10 (in punch)	4092P06	2 PT-shear
		4 PT-shear

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

PASS 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

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

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	

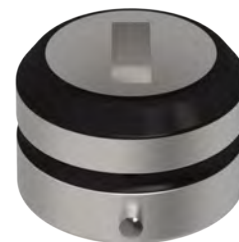
COMPENSATING SHIM FOR PUNCH		
Not necessary		

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	

ADDITIONAL COSTS FOR PUNCH GUIDE	
Additional keyway	

ADDITIONAL COSTS FOR DIE	
Reinforced die	
H-PM® Quality	



PASS 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°

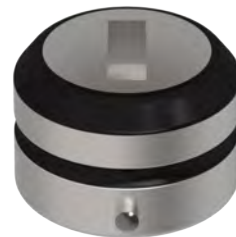
Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

PASS 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
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		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 BETA-V2® ABS 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 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:

All shapes: 0-90-225°

STRIPPER

Interchangeable stripper plate with oil channels

PASS BETA-V2[®] ABS I STATION B

DIAMETER UP TO 31,7 MM

PART.-NO.

COMPLETE PUNCH ASSEMBLY

Round	4019B01
Square	4019B02
Rectangle	4019B03
Oblong	4019B04
*O.D. Ground Special Shapes	4019B0G
*EDM Required Special Shapes	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 Shapes	4029B0G
*EDM Required Special Shapes	4029B0E

PUNCH GUIDE

For all shapes	4039B05
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STRIPPER

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

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 SHIMS FOR PUNCH

Not necessary	
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ADDITIONAL COSTS FOR PUNCH GUIDE

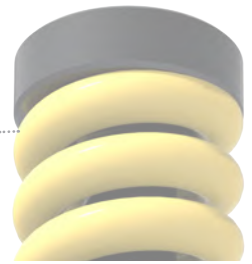
Additional keyway

SET OF COMPENSATING SHIMS FOR DIE

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

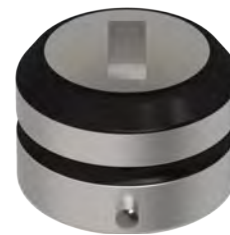
ADDITIONAL COSTS FOR DIE

Reinforced die
H-PM [®] Quality
ps:tornado-die (vacuum-style)



Head Unit
for PDC-system
(without extra charge)

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



PASS BETA-COMPACT ABS 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 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:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-45-90-135°

Asym. shapes: 0-90-180-270°

Tool shape integrated in guide

PASS BETA-COMPACT ABS I STATION B

DIAMETER UP TO 31,7 MM

PART.-NO.

COMPLETE PUNCH ASSEMBLY

Round	4018B01
Square	4018B02
Rectangle	4018B03
Oblong	4018B04
*O.D. Ground Special Shapes	4018B0G
*EDM Required Special Shapes	4018B0E

HEAD UNIT

For all shapes	4095B10
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PUNCH BODY (H-PM®)

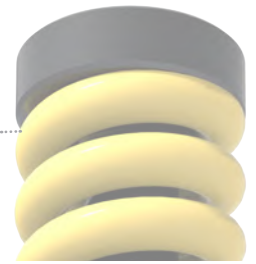
Round	4025B01
Square	4025B02
Rectangle	4025B03
Oblong	4025B04
*O.D. Ground Special Shapes	4025B0G
*EDM Required Special Shapes	4025B0E

PUNCH GUIDE

Round	4038B01
Square	4038B02
Rectangle	4038B03
Oblong	4038B04
*O.D. Ground Special Shapes	4038B0G
*EDM Required Special Shapes	4038B0E

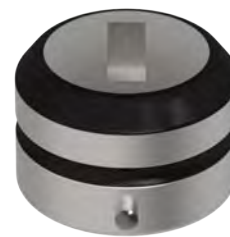
DIE (HWS)

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



Head Unit
for PDC-system
(without extra charge)

Part.-No. „see left“-PDC
e.g.: 4018B01-PDC



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:tornado-die (vacuum-style)

PASS ALPHA ABS 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

Oil channel for sheet lubrication



PUNCH BODY

Metric-thread M20 x 1,5

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:
All shapes: 0-90°

STRIPPER

Interchangeable stripper plate with oil channels

PASS ALPHA ABS I STATION B

DIAMETER UP TO 31,7 MM

PART.-NO.

COMPLETE PUNCH ASSEMBLY		
Round		40110B01
Square		40110B02
Rectangle		40110B03
Oblong		40110B04
*O.D. Ground Special Shapes		40110B0G
*EDM Required Special Shapes		40110B0E

HEAD UNIT		
For all shapes		40901B10

PUNCH BODY (H-PM®)		
Round		40210B01
Square		40210B02
Rectangle		40210B03
Oblong		40210B04
*O.D. Ground Special Shapes		40210B0G
*EDM Required Special Shapes		40210B0E

PUNCH GUIDE		
For all shapes		40310B05

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

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

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	

ADDITIONAL COSTS FOR PUNCH GUIDE	
Additional keyway	

ADDITIONAL COSTS FOR DIE	
Reinforced die	
H-PM® Quality	
ps:tornado-die (vacuum-style)	



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
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
1x0,4 mm/1x0,8 mm/1x1,2 mm	499C1S1	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

PASS BETA-V2[®] ABS I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

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

PASS 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 Shapes	4029C0G	
*EDM Required Special Shapes	4029C0E	

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

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



Reversible plate adapter
with keyway for
PDC-system

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
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

PASS BETA-V2® ABS SLITTING TOOL | STATION C



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

Suitable for PDC-system

SLITTING TOOL ADAPTER

2 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING TOOL

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

PASS BETA-V2[®] ABS SLITTING TOOL I STATION C

	PART.-NO.
GUIDE ASSEMBLY	
For all shapes	4039C01
SLITTING TOOL ADAPTER	
For all shapes	4229CT00
SLITTING TOOL (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 ADAPTER	
	4399CT00
REVERSIBLE PLATE (H-PM[®])	
Rectangle	4052CT03
Oblong	4052CT04
*Trapezoid G09	4052CT0G
*Double Trapezoid E03	4052CT0E



Reversible plate adapter with keyway for PDC-system

Part-no.: „see left“ -2 (e.g.: 4052CT04-2)

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
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 ALPHA-V2 ABS I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M14

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

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

PASS 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 Shapes	4021C0G
	*EDM Required Special Shapes	4021C0E

PUNCH GUIDE		
	For all shapes	---

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

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



Reversible plate adapter
with keyway for
PDC-system

Part-no.: „see left“ -2
(e.g.: 4052C04-2)

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	499C2M1	H-PM® Quality
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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

PASS BETA-V2® ABS I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

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

PASS 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 Shapes	4029D0G
	*EDM Required Special Shapes	4029D0E

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

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



Reversible plate adapter
with keyway for
PDC-system

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

COMPENSATING SHIM FOR PUNCH		ADDITIONAL COSTS FOR PUNCH
Not necessary		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

PASS BETA-V2[®] ABS SLITTING TOOL | STATION D



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

Suitable for PDC-system

SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING TOOL

Punch body made with premium H-PM[®]

STRIPPER

Interchangeable stripper plate with oil channels

PASS BETA-V2® ABS SLITTING TOOL | STATION D

PART.-NO.

GUIDE ASSEMBLY		
	For all shapes	4039D01

SLITTING TOOL ADAPTER		
	For all shapes	4229DT00

SLITTING TOOL (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 ADAPTER		
		4399DT00

REVERSIBLE PLATE (H-PM®)		
	Rectangle	4052DT03
	Oblong	4052DT04
	*O.D. Ground Special Shapes	4052DT0G
	*EDM Required Special Shapes	4052DT0E



Reversible plate adapter
with keyway for
PDC-system

Part-no.: „see left“ -2
(e.g.: 4052DT04-2)

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

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	

PASS BETA-V2® ABS SLITTING TOOL I STATION D - CLOSE TO CLAMP



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

Suitable for PDC-system

SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING TOOL

Punch body made with premium H-PM®

STRIPPER

Interchangeable stripper plate with oil channels

One or two-sided relief for punching close to clamp

PASS BETA-V2[®] ABS SLITTING TOOL I STATION D - CLOSE TO CLAMP

PART.-NO.

GUIDE ASSEMBLY		
	For all shapes	4039DTP01

SLITTING TOOL ADAPTER		
	For all shapes	4229DT00

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

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		
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	
Additional keyway	

COMPENSATING SHIM FOR SLITTING TOOL ADAPTER		
	Not necessary	

ADDITIONAL COSTS FOR PUNCH GUIDE	
	Additional keyway

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

ADDITIONAL COSTS FOR DIE	
	H-PM [®] Quality



Reversible plate adapter
with keyway for
PDC-system

Part-no.: „see left“ -2
(e.g.: 4052DTP04-2)

PASS ALPHA-V2 ABS I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M14

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

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

PASS 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 Shapes	4021D0G
	*EDM Required Special Shapes	4021D0E

PUNCH GUIDE		
	For all shapes	---

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

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



Reversible plate adapter
with keyway for
PDC-system

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

COMPENSATING SHIM FOR PUNCH		
Not necessary		

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

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

PASS BETA-V2® ABS I STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

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

PASS 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 Shapes	4029E0G
	*EDM Required Special Shapes	4029E0E

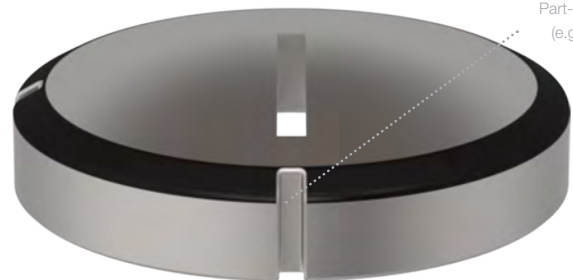
STRIPPER		
	Round	4049E01
	Square	4049E02
	Rectangle	4049E03
	Oblong	4049E04
	*O.D. Ground Special Shapes	4049E0G
	*EDM Required Special Shapes	4049E0E

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



Reversible plate adapter with keyway for PDC-system

Part-no.: „see left“ -2 (e.g.: 4052E04-2)



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
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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	499E2M1	H-PM® Quality
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PASS BETA-V2[®] ABS SLITTING TOOL | STATION E



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

Suitable for PDC-system

SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING TOOL

Punch body made with premium H-PM[®]

STRIPPER

Interchangeable stripper plate with oil channels

PASS BETA-V2[®] ABS SLITTING TOOL | STATION E

PART.-NO.

GUIDE ASSEMBLY		
	For all shapes	4039E01

SLITTING TOOL ADAPTER		
	For all shapes	4229ET00

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

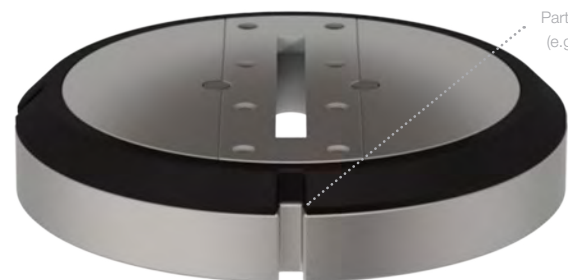
STRIPPER		
	Rectangle	4049ET03
	Oblong	4049ET04
	*Trapezoid G09	4049ET0G
	*Double Trapezoid E03	4049ET0E

REVERSIBLE PLATE ADAPTER		
		4399ET00

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



Reversible plate adapter with keyway for PDC-system



Part-no.: „see left“ -2 (e.g.: 4052ET04-2)

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

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	

PASS BETA-V2® ABS SLITTING TOOL I

STATION E - CLOSE TO CLAMP



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

Suitable for PDC-system



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for sheet lubrication

SLITTING TOOL

Punch body made with premium H-PM®



STRIPPER

Interchangeable stripper plate with oil channels

One or two-sided relief for punching close to clamp

PASS BETA-V2[®] ABS SLITTING TOOL I

STATION E - CLOSE TO CLAMP

PART-NO.

GUIDE ASSEMBLY		
	For all shapes	4039ETP01

SLITTING TOOL ADAPTER		
	For all shapes	4229ET00

SLITTING TOOL (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		
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



Reversible plate adapter
with keyway for
PDC-system

Part-no.: „see left“ -2
(e.g.: 4052ETP04-2)

PASS ALPHA-V2 ABS I STATION E

DIAMETER UP TO 114,3 MM



GUIDE ASSEMBLY

Screw M14

Springs for sheet thickness up to 6 mm

Oil channel for sheet 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

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

PASS ALPHA-V2 ABS | 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 Shapes	4021E0G
	*EDM Required Special Shapes	4021E0E

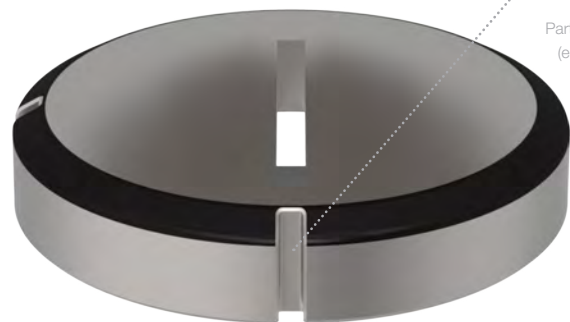
PUNCH GUIDE		
	For all shapes	---

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

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



Reversible plate adapter with keyway for PDC-system



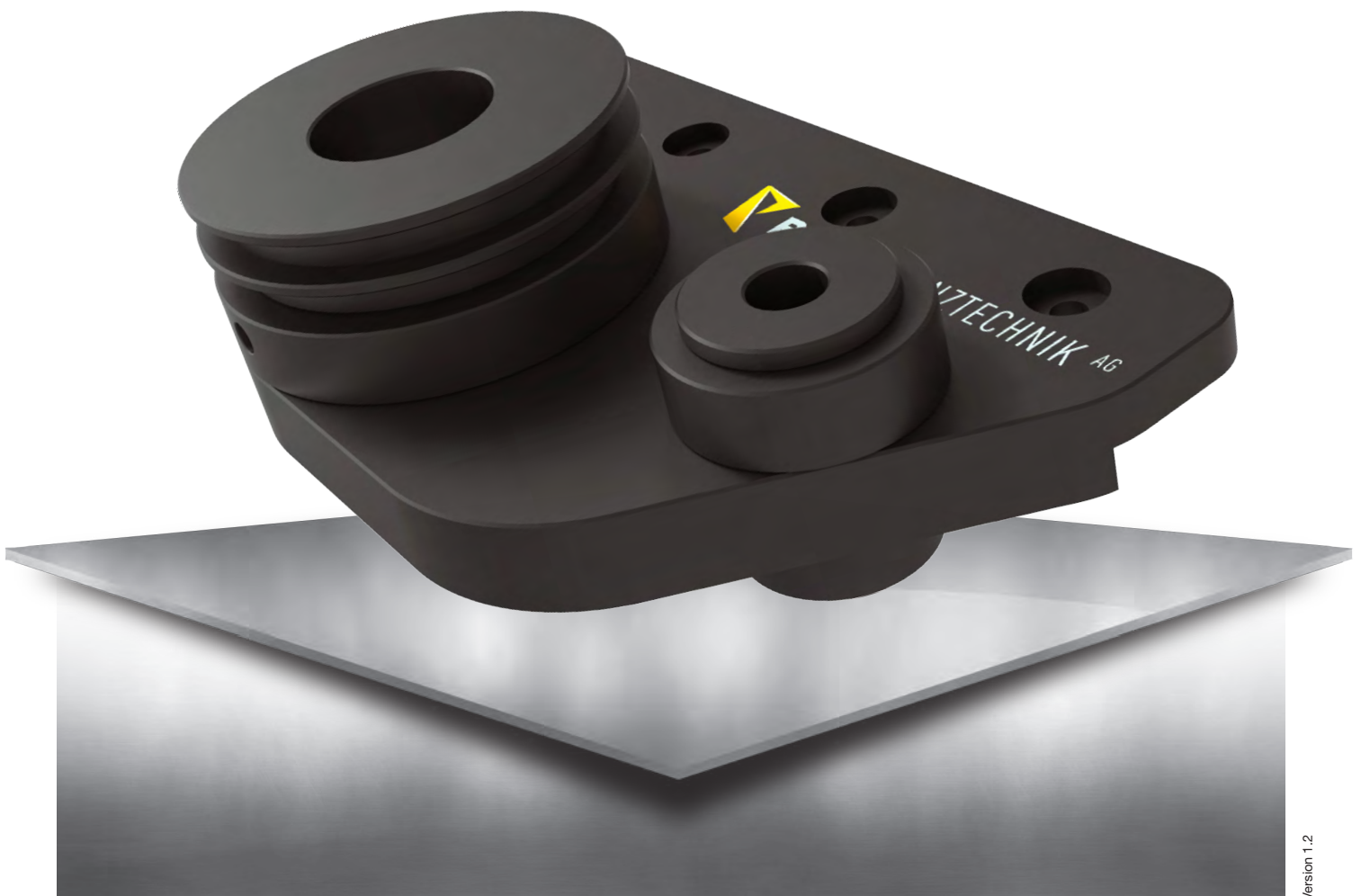
Part-no.: „see left“ -2 (e.g.: 4052E04-2)

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 DIE
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Not necessary		
SET OF COMPENSATING SHIMS FOR DIE		
1x0,4 mm/1x0,8 mm/1x1,2 mm	499E2M1	H-PM® Quality



ACCESSORIES

PASS ACCESSORIES FOR YOUR
THICK TURRET SYSTEM

INDEX

PASS Assembly Adapter Kit	page 60
PASS Assembling Set	page 61
PASS Adapter	page 62
PASS Dies	page 63

PASS ASSEMBLY ADAPTER KIT

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



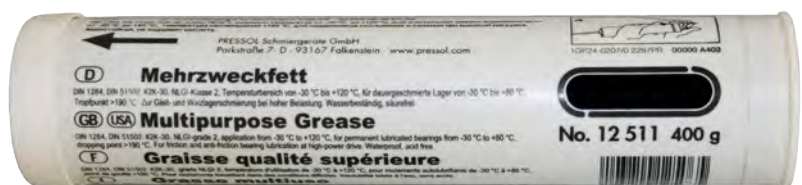
EQUIPPED PLATE WITH ADAPTER

PASS ASSEMBLING SET

FOR PASS GUIDE ASSEMBLY STAT. C, D, E AND FOR PASS MULTITOOLS/ 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.
PASS ADAPTER		
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

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





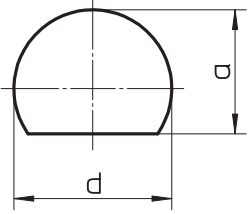
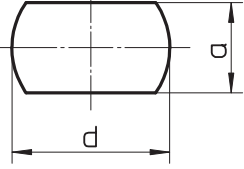
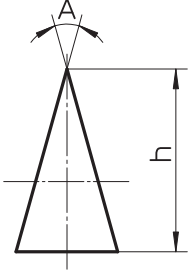
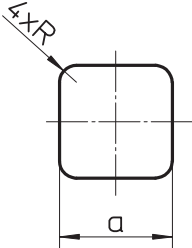
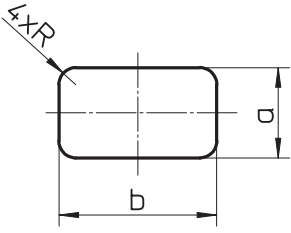
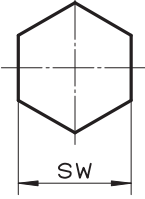
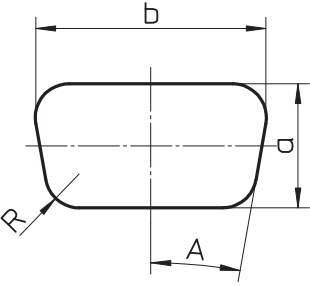
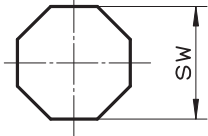
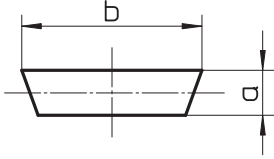
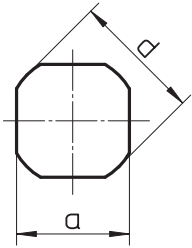
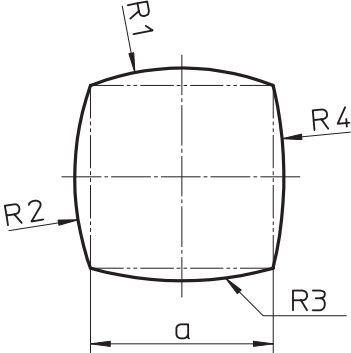
TECHNICAL INFORMATION

IMPORTANT INFORMATION ABOUT OUR TOOLS FOR YOUR THICK TURRET SYSTEM

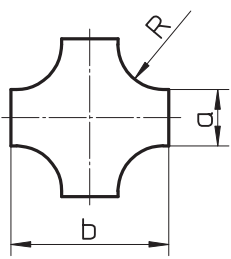
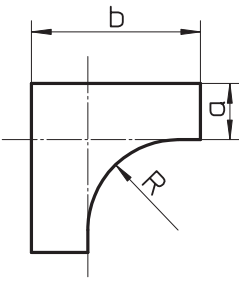
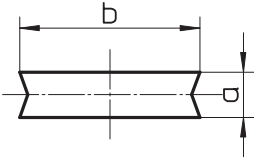
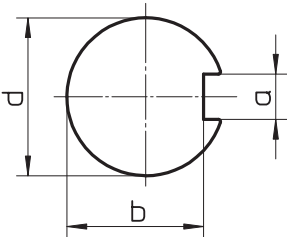
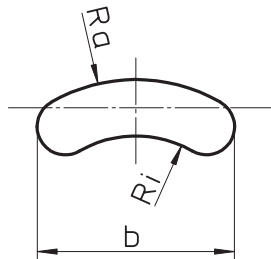
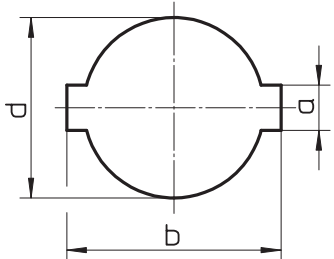
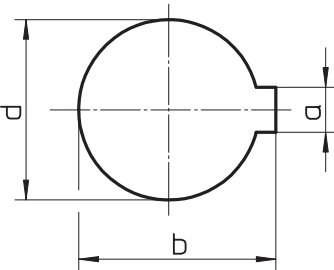
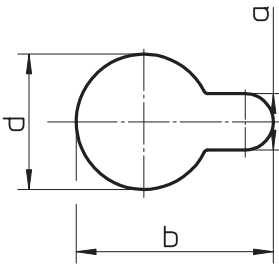
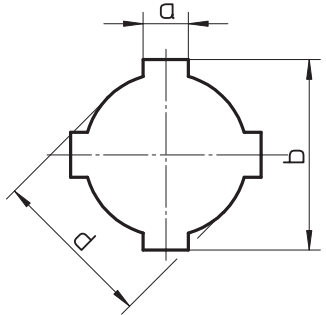
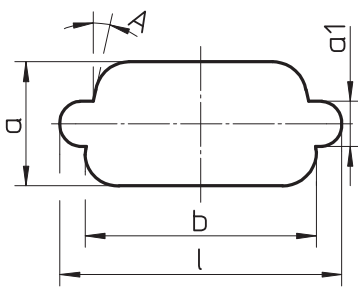
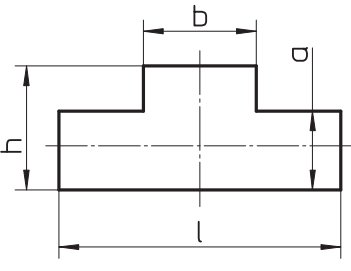
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O.D. GROUND SPECIAL SHAPES

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

EDM REQUIRED SPECIAL SHAPES

 <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 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

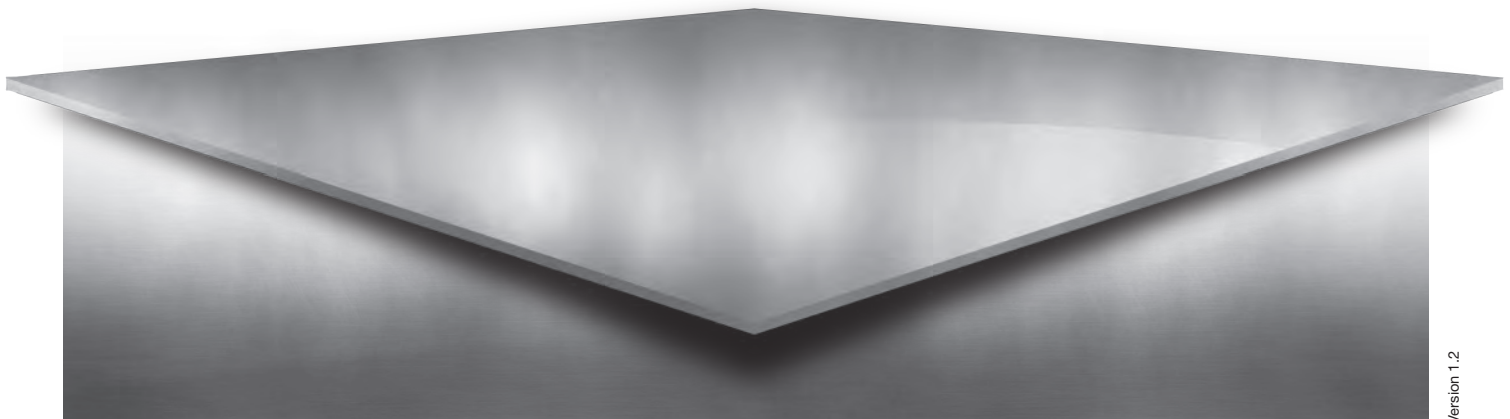
X8-PM

The X8-PM tools are made of a high-end powder-metallurgical steel 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.

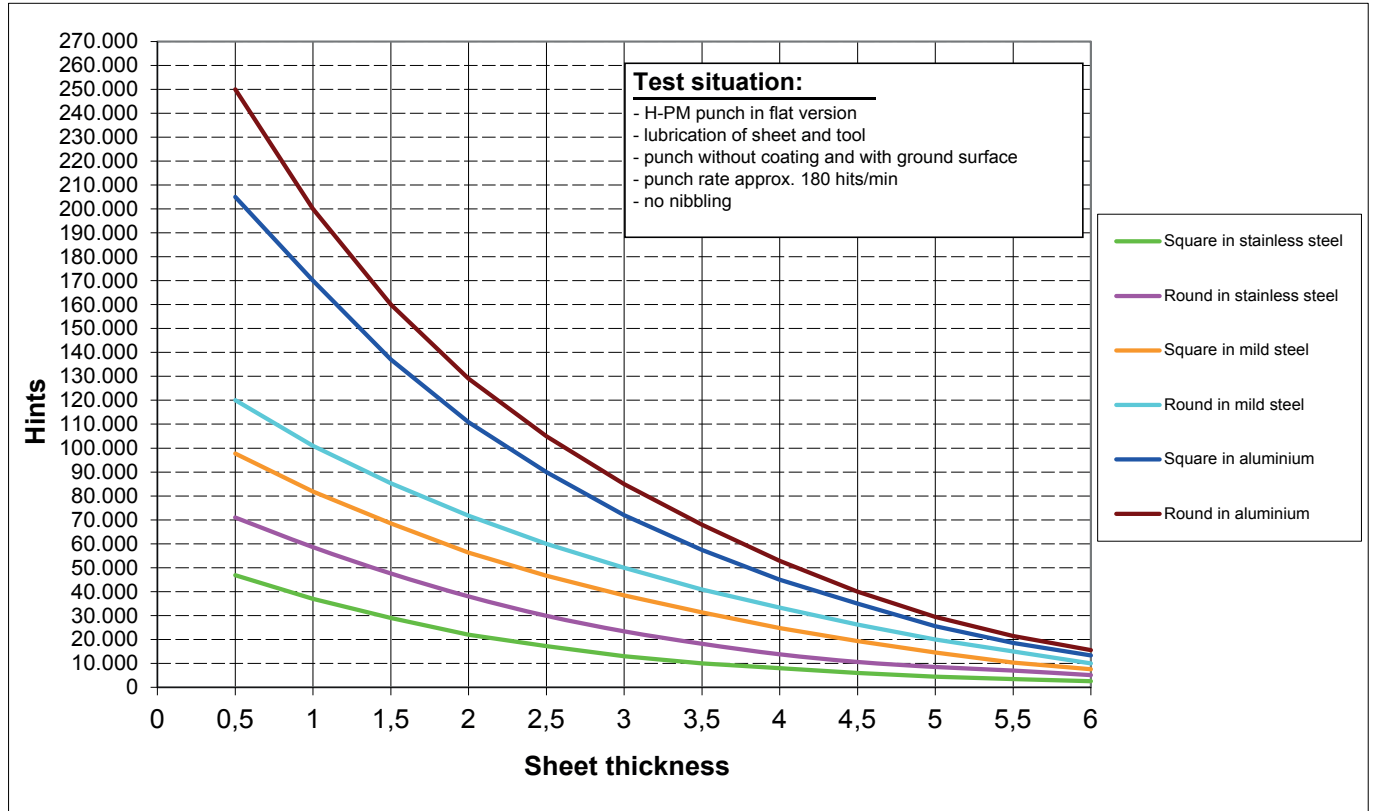
Advantage for customer:

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



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

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

PASS COATING VERSIONS/DRAW-POLISHING

TO REDUCE MATERIAL BUILD-UP

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

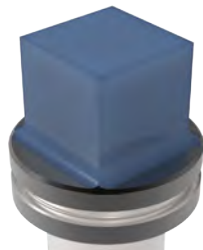
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

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

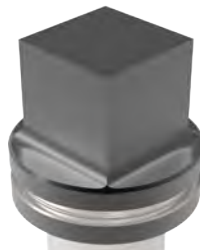
- zined steel
- aluminium sheets

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



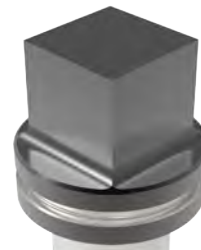
TiCN

for working with stainless steel



A-MAX

for dry processing with aluminium sheet



T-MAX

for working with galvanized sheet

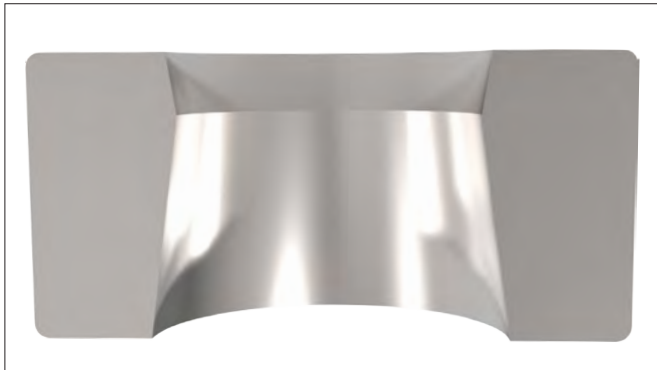
We recommend draw-polished punch edges to increase tool lifetime and reduce material build up (prices on request).



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).

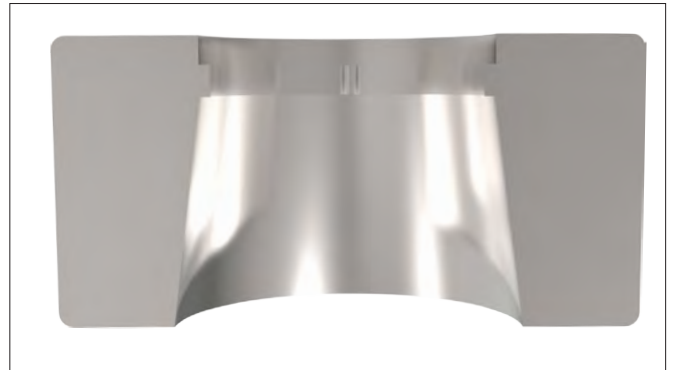
This means that the upper part of the cutting part is produced with a negative angle.

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

This is not recommended for:

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

SLUG-SNAP (SPECIAL VERSION - ADDITIONAL COSTS)



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

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

The slug-snap version is also more convenient for:

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

PUNCHES WITH DIFFERENT SHEAR TYPES

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

BACK TAPER ON PUNCHES

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

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

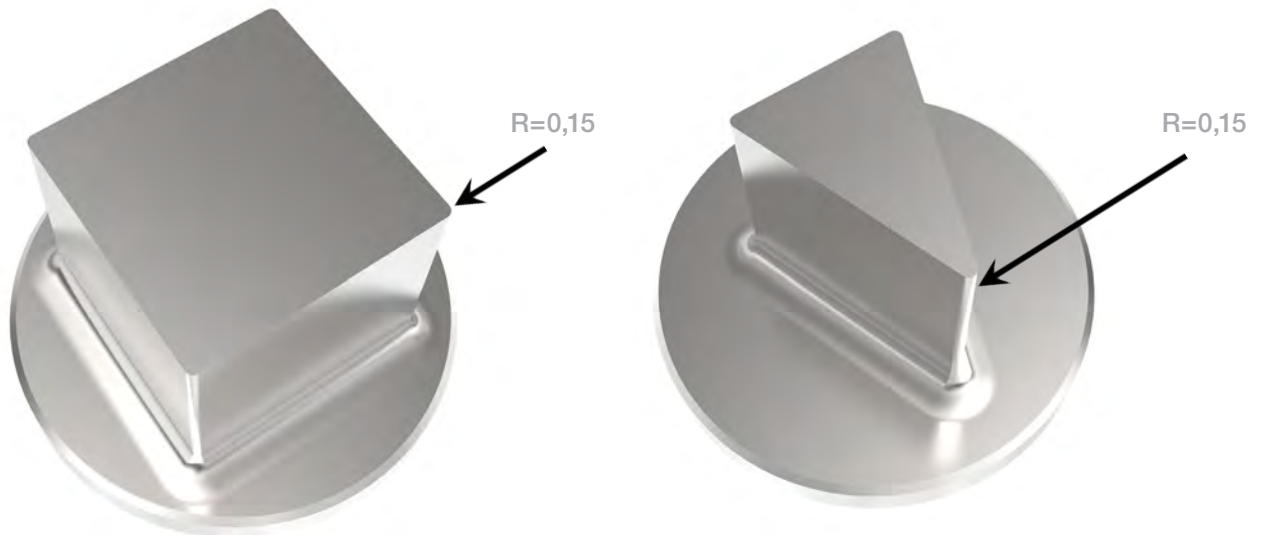
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal contour, e.g. cross-form, U-form, etc.) and in high quality sheets.



PASS CORNER EDGES ON PUNCHES

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

e.g.: square- and triangle punch

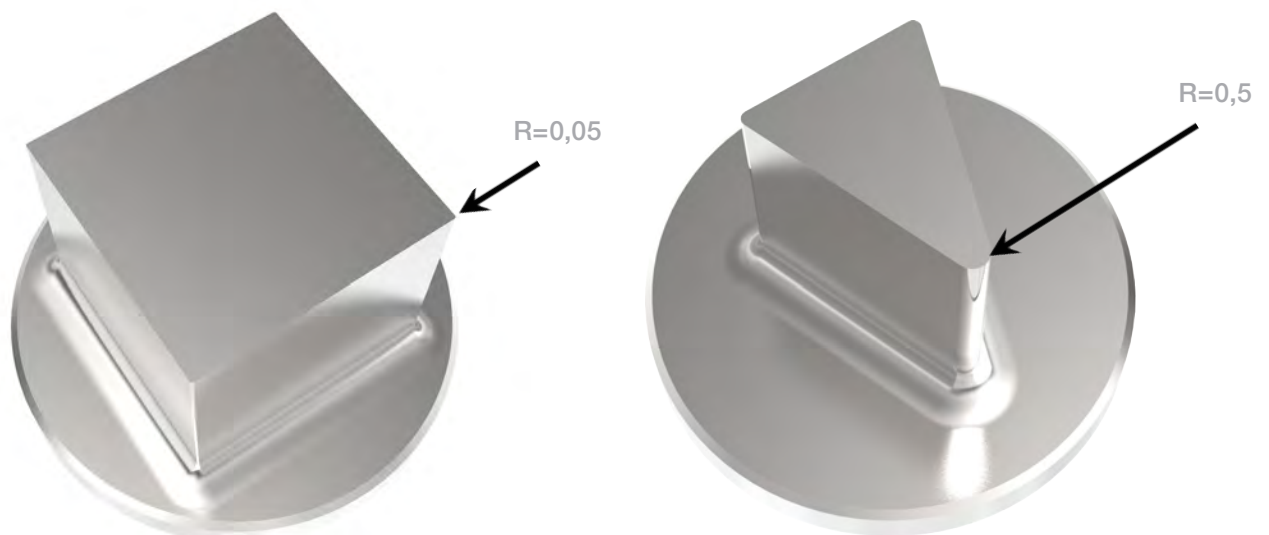


The corner radius can be changed on customer's request.

e.g.:

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

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



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