



TRUMPF

THICK TURRET

SALVAGNINI

CATALOG 02/2015-WW-A.1
THICK TURRET

CATALOG 02/2015-WW-A.1



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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PASS STANDARD I STATION A

DIAMETER UP TO 12,7 MM



PUNCH BODY

Metric-thread M12 x 1,25

punch body made with premium H-PM
(higher hit counts)

Alignment pin for exact adjustment
(excludes round)



HEAD UNIT

Hexagon head screw
for simply assembling of
the punch assembly

Spring
for sheet thickness up to 6mm

2 mm length adjustment
by turning of the distance ring

PUNCH GUIDE

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

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. | PRICE IN € |
|--|-------------------------------|----------|------------|
| 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 | |
| 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 | | ADDITIONAL COSTS FOR PUNCH |
|--|----------|----------------------------------|
| Head screw | 4092A31 | TiCN coating |
| Spring | 4092A11 | T-MAX coating |
| Distance ring | 4092A21 | WT-shear |
| O-Ring (in punch guide) | 4092A51 | DOWT-shear |
| PU-ejector Ø 3x6 (in punch) | 4092P03 | 2 PT-shear |
| PU-ejector Ø 6x10 (in punch) | 4092P06 | 4 PT-shear |
| COMPENSATING SHIMS FOR PUNCH | | ADDITIONAL COSTS FOR PUNCH GUIDE |
| Piece (2 mm) | 499A4S2 | Additional keyway |
| SET OF COMPENSATING SHIMS FOR DIE | | ADDITIONAL COSTS FOR DIE |
| 1x0,4 mm/1x0,8 mm/1x1,2 mm dick | 499A1M1 | Reinforced die |
| Shimkeeper (0,5 mm) | 499A1M95 | H-PM® Quality |

PASS ALPHA I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister
for sheet thickness up to 4mm

Continously and easy length adjustment in
assembled status



PUNCH BODY

Metric-thread M12 x 1,25

Punch body made with premium H-PM
(higher hit counts)

Alignment pin for exact adjustment
(excludes round)



PUNCH GUIDE

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

Keyway:
all shapes: 0 - 90°



STRIPPER

Interchangeable stripper plate

PASS ALPHA I STATION A

DIAMETER UP TO 12,7 MM

| | | PART-NO. | PRICE IN € |
|--------------------------------|-------------------------------|----------|------------|
| 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 |
|--|----------|--|
| 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 | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |
| COMPENSATING SHIMS FOR PUNCH | | |
| Not necessary | | Additional keyway |
| SET OF COMPENSATING SHIMS FOR DIE | | |
| 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 4mm

Continously and easy length adjustment in
assembled status



PUNCH BODY

Metric-thread M12 x 1,25

Punch body made with premium HSS
(higher hit counts)

Alignment pin for exact adjustment
(excludes round)



PUNCH GUIDE

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

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. | PRICE IN € |
|--------------------------------|------------------------------|----------|------------|
| 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 | |
| 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 | | 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 | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |
| COMPENSATING SHIMS FOR PUNCH | | |
| Not necessary | | Additional keyway |
| COMPENSATING SHIMS FOR DIE | | |
| 1x0,4 mm/1x0,8 mm/1x1,2 mm | 499A1M1 | Reinforced die |
| Shimkeeper (0,5 mm) | 499A1M95 | H-PM® Quality |

PASS BETA-V2® I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister
for sheet thickness up to 6mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication

Suitable for PDC-system



PUNCH BODY

Oil channel for tool lubrication

Alignment pin for exact adjustment
(round version included)

punch body made with premium HSS
(higher hit counts)



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button

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

Keyway:
all shapes: 0 - 90 - 225°



STRIPPER

interchangeable stripper plate

PASS BETA-V2® I STATION A

DIAMETER UP TO 12,7 MM

| | | PART-NO. | PRICE IN € |
|--------------------------------|------------------------------|----------|------------|
| COMPLETE PUNCH ASSEMBLY | | | |
| | Round | 4010A01 | |
| | Square | 4010A02 | |
| | Rectangle | 4010A03 | |
| | Oblong | 4010A04 | |
| | *O.D. Ground Special Shapes | 4010A0G | |
| | *EDM Required Special Shapes | 4010A0E | |
| HEAD UNIT | | | |
| | for all shapes | 4090A10 | |
| PUNCH BODY (H-PM®) | | | |
| | Round | 4020A01 | |
| | Square | 4020A02 | |
| | Rectangle | 4020A03 | |
| | Oblong | 4020A04 | |
| | *O.D. Ground Special Shapes | 4020A0G | |
| | *EDM Required Special Shapes | 4020A0E | |
| PUNCH GUIDE | | | |
| | for all shapes | 4030A05 | |
| STRIPPER | | | |
| | Round | 4040A01 | |
| | Square | 4040A02 | |
| | Rectangle | 4040A03 | |
| | Oblong | 4040A04 | |
| | *O.D. Ground Special Shapes | 4040A0G | |
| | *EDM Required Special Shapes | 4040A0E | |
| DIE (HWS) | | | |
| | Round | 4052A01 | |
| | Square | 4052A02 | |
| | Rectangle | 4052A03 | |
| | Oblong | 4052A04 | |
| | *O.D. Ground Special Shapes | 4052A0G | |
| | *EDM Required Special Shapes | 4052A0E | |



| SPARE PARTS | | 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 | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |

| COMPENSATING SHIMS 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 |

PASS BETA-COMPACT I STATION A

DIAMETER UP TO 12,7 MM



HEAD UNIT

Canister
for sheet thickness up to 6mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication



PUNCH BODY

Oil channel for tool lubrication

Alignment pin for exact adjustment
(round version included)

Punch body made with premium H-PM
(higher hit counts)



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button

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

Keyway:
Round: 0°
Square: 0-45°
Rect./Oblong: 0-90-225°
asym. Shapes: 0-90-180-270°

Tool shape integrated in guide

PASS BETA-COMPACT I STATION A

DIAMETER UP TO 12,7 MM

| | | PART-NO. | PRICE IN € |
|--------------------------------|------------------------------|----------|------------|
| COMPLETE PUNCH ASSEMBLY | | | |
| | Round | 4016A01 | |
| | Square | 4016A02 | |
| | Rectangle | 4016A03 | |
| | Oblong | 4016A04 | |
| | *O.D. Ground Special Shapes | 4016A0G | |
| | *EDM Required Special Shapes | 4016A0E | |
| HEAD UNIT | | | |
| | for all shapes | 4094A10 | |
| PUNCH BODY (H-PM®) | | | |
| | Round | 4024A01 | |
| | Square | 4024A02 | |
| | Rectangle | 4024A03 | |
| | Oblong | 4024A04 | |
| | *O.D. Ground Special Shapes | 4024A0G | |
| | *EDM Required Special Shapes | 4024A0E | |
| PUNCH GUIDE | | | |
| | Round | 4036A01 | |
| | Square | 4036A02 | |
| | Rectangle | 4036A03 | |
| | Oblong | 4036A04 | |
| | *O.D. Ground Special Shapes | 4036A0G | |
| | *EDM Required Special Shapes | 4036A0E | |
| DIE (HWS) | | | |
| | Round | 4052A01 | |
| | Square | 4052A02 | |
| | Rectangle | 4052A03 | |
| | Oblong | 4052A04 | |
| | *O.D. Ground Special Shapes | 4052A0G | |
| | *EDM Required Special Shapes | 4052A0E | |



| SPARE PARTS | ADDITIONAL COSTS FOR PUNCH |
|------------------------------|--|
| O-Ring (in punch guide) | TiCN coating |
| PU-ejector Ø 3x6 (in punch) | T-MAX coating |
| PU-ejector Ø 6x10 (in punch) | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |

| COMPENSATING SHIMS 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 | Reinforced die |
| Shimkeeper (0,5 mm) | H-PM® Quality |

PASS STANDARD I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Hexagon head screw for simply assembling of punch assembly

Spring
for sheet thickness up to 6mm

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
(higher hit counts)

Alignment pin for exact adjustment
(excludes round)



PUNCH GUIDE

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

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. | PRICE IN € |
|--|------------------------------|----------|------------|
| 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 | WT-coating |
| O-Ring (in punch guide) | 4092B51 | DOWT-shear |
| PU-ejector Ø 3x6 (in punch) | 4092P03 | 2 PT-shear |
| PU-ejector Ø 6x10 (in punch) | 4092P06 | 4 PT-shear |

| COMPENSATING SHIMS 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 4mm

Continously and easy length adjusment
in assembled status



PUNCH BODY

Metric-thread M20 x 1,5

Punch body made with premium H-PM
(higher hit counts)

Alignment pin for exact adjustment
(excludes round)



PUNCH GUIDE

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

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. | PRICE IN € |
|--------------------------------|------------------------------|----------|------------|
| 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 | | 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 | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |
| COMPENSATING SHIMS FOR PUNCH | | |
| Not necessary | | Additional keyway |
| SET OF COMPENSATING SHIMS FOR DIE | | |
| 1x0,4 mm/1x0,8 mm/1x1,2 mm | 499B1M1 | Reinforced die |
| Shimkeeper (0,5 mm) | 499B1M95 | H-PM® Quality |

PASS ALPHA-COMPACT I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 4mm

Continously and easy length adjustment
in assembled status



PUNCH BODY

Metric-thread M20x 1,5

Punch body made with premium H-PM

Alignment pin for exact adjustment
(excludes round)



PUNCH GUIDE

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

Keyway:
Round: 0°
Square: 0-45°
Rect./Oblong: 0-45-90-135°
asym. Shapes: 0-90-180-270°

Tool shapes integrated in guide

PASS ALPHA-COMPACT I STATION B

DIAMETER UP TO 31,7 MM

| | | PART-NO. | PRICE IN € |
|--------------------------------|------------------------------|----------|------------|
| 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 | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |
| COMPENSATING SHIMS FOR PUNCH | | |
| Not necessary | | Additional keyway |
| SET OF COMPENSATING SHIMS 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® I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 6mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication

Suitable for PDC-system



PUNCH BODY

Oil channel for tool lubrication

Alignment pin for exact adjustment
(round version included)

punch body made with premium H-PM
(higher hit counts)



PUNCH GUIDE

Simple length adjustment in assembled state
by pressing the locking button

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

Keyway:
all shapes: 0 - 90 - 225°



STRIPPER

Interchangeable stripper plate

PASS BETA-V2® I STATION B

DIAMETER UP TO 31,7 MM

| | | PART-NO. | PRICE IN € |
|--------------------------------|-------------------------------|----------|------------|
| COMPLETE PUNCH ASSEMBLY | | | |
| | Round | 4010B01 | |
| | Square | 4010B02 | |
| | Rectangle | 4010B03 | |
| | Oblong | 4010B04 | |
| | *O.D. Ground Special Shapes | 4010B0G | |
| | * EDM Required Special Shapes | 4010B0E | |
| HEAD UNIT | | | |
| | for all shapes | 4090B10 | |
| PUNCH BODY (H-PM®) | | | |
| | Round | 4020B01 | |
| | Square | 4020B02 | |
| | Rectangle | 4020B03 | |
| | Oblong | 4020B04 | |
| | *O.D. Ground Special Shapes | 4020B0G | |
| | * EDM Required Special Shapes | 4020B0E | |
| PUNCH GUIDE | | | |
| | for all shapes | 4030B05 | |
| STRIPPER | | | |
| | Round | 4040B01 | |
| | Square | 4040B02 | |
| | Rectangle | 4040B03 | |
| | Oblong | 4040B04 | |
| | *O.D. Ground Special Shapes | 4040B0G | |
| | * EDM Required Special Shapes | 4040B0E | |
| DIE (HWS) | | | |
| | Round | 4052B01 | |
| | Square | 4052B02 | |
| | Rectangle | 4052B03 | |
| | Oblong | 4052B04 | |
| | *O.D. Ground Special Shapes | 4052B0G | |
| | * EDM Required Special Shapes | 4052B0E | |



| SPARE PARTS | | 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 | WT-shear DOWT-shear 2 PT-shear 4 PT-shear |

| COMPENSATING SHIMS 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-COMPACT I STATION B

DIAMETER UP TO 31,7 MM



HEAD UNIT

Canister
for sheet thickness up to 6mm

Spring

10 mm length adjustment by thread

Oil channel for tool lubrication



PUNCH BODY

Oil channel for tool lubrication

Alignment pin for exact adjustment
(round version included)

Punch body made with premium H-PM
(higher hit counts)



PUNCH GUIDE

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

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

Keyway:

Round: 0°

Square: 0-45°

Rect./Oblong: 0-90-225°

asym. Shapes: 0-90-180-270°

Tool shape integrated in guide

PASS BETA-COMPACT I STATION B

DIAMETER UP TO 31,7 MM

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



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

PASS STANDARD I STATION C

DIAMETER UP TO 50.8 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6mm

3 mm length adjustment
by using compensating shims

Keyway: 0 - 90°

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

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. | PRICE IN € |
|----------------------------------|----------|------------|
| 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 | WT-shear |
| Quiding key with screws | 499C63 | 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® I STATION C

DIAMETER UP TO 50,8 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system

PUNCH BODY

Thread M12 with oil channel for tool lubrication

Punch body made with premium H-PM
(higher hit counts)



STRIPPER

Interchangeable stripper plate



PASS BETA-V2® I STATION C

DIAMETER UP TO 50,8 MM

| | PART-NO. | PRICE IN € |
|----------------------------------|----------|------------|
| GUIDE ASSEMBLY for all shapes | 4030C01 | |

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

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

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



SPARE PARTS

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

ADDITIONAL COSTS FOR PUNCH

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

COMPENSATING SHIMS 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

ADDITIONAL COSTS FOR DIE

H-PM® Quality

PASS BETA-V2® SLITTING TOOL I STATION C



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING TOOL ADAPTER

2 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM
(higher hit counts)

STRIPPER

Interchangeable stripper plate

PASS BETA-V2® SLITTING TOOL I STATION C

| | PART-NO. | PRICE IN € |
|----------------------------------|----------|------------|
| GUIDE ASSEMBLY for all shapes | 4030C01 | |

| SLITTING TOOL ADAPTER | | |
|-----------------------|----------|--|
| for all shapes | 4220CT00 | |

| SLITTING TOOL (MAX. 6,35X50) / (H-PM®) | | |
|--|----------|--|
| Rectangle | 4020CT03 | |
| Oblong | 4020CT04 | |
| *Trapezoid G09 | 4020CT0G | |
| *Double Trapezoid E03 | 4020CT0E | |

| STRIPPER | | |
|-----------------------|----------|--|
| Rectangle | 4040CT03 | |
| Oblong | 4040CT04 | |
| *Trapezoid G09 | 4040CT0G | |
| *Double Trapezoid E03 | 4040CT0E | |

| REVERSIBLE PLATE ADAPTER | | |
|--------------------------|----------|--|
| | 4390CT00 | |

| REVERSIBLE PLATE (H-PM®) | | |
|--------------------------|----------|--|
| Rectangle | 4052CT03 | |
| Oblong | 4052CT04 | |
| *Trapezoid G09 | 4052CT0G | |
| *Double Trapezoid E03 | 4052CT0E | |



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

PASS STANDARD I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6mm

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
(higher hit counts)

STRIPPER

Interchangeable stripper plate

PASS STANDARD I STATION D

DIAMETER UP TO 88,9 MM

| | PART-NO. | PRICE IN € |
|----------------|----------------|------------|
| 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 | WT-shear |
| Quiding key with screws | 499D63 | 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® I STATION D

DIAMETER UP TO 88,9 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



PUNCH BODY

Thread M12 with oil channel for tool lubrication

Punch body made with premium H-PM
(higher hit counts)



STRIPPER

Interchangeable stripper plate

PASS BETA-V2® I STATION D

DIAMETER UP TO 88,9 MM

| | PART-NO. | PRICE IN € |
|----------------|----------------|------------|
| GUIDE ASSEMBLY | for all shapes | 4030D01 |

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

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

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



| SPARE PARTS | | ADDITIONAL COSTS FOR PUNCH |
|-----------------------------------|---------|---|
| PU-ejector Ø 3x6 (in punch) | 4092P03 | TiCN coating |
| PU-ejector Ø 6x10 (in punch) | 4092P06 | T-MAX coating WT-coating DOW-shear 2 PT-shear 4 PT-shear Additional keyway |
| COMPENSATING SHIMS 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 | 499D2M1 | H-PM® Quality |

PASS BETA-V2® SLITTING TOOL I STATION D



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication



SLITTING TOOL

Punch body made with premium H-PM (higher hit counts)

STRIPPER

Interchangeable stripper plate

PASS BETA-V2® SLITTING TOOL I STATION D

| | PART-NO. | PRICE IN € |
|----------------------------------|----------|------------|
| GUIDE ASSEMBLY for all shapes | 4030D01 | |

| SLITTING TOOL ADAPTER | | |
|-----------------------|----------|--|
| for all shapes | 4220DT00 | |

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

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

| REVERSIBLE PLATE ADAPTER | | |
|--------------------------|----------|--|
| | 4390DT00 | |

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



| SPARE PARTS | | ADDITIONAL COSTS FOR PUNCH |
|--|---------|----------------------------------|
| PU-ejector Ø 3x6 (in punch) | 4092P03 | TICN coating |
| PU-ejector Ø 6x10 (in punch) | 4092P06 | T-MAX coating |
| | | WT-shear |
| | | DOWT-shear |
| | | 2 PT-shear |
| | | 4 PT-shear |
| | | Additional keyway |
| COMPENSATING SHIMS 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® SLITTING TOOL I STATION D

CLOSE TO CLAMP



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication



SLITTING TOOL

Punch body made with premium H-PM (higher hit counts)

STRIPPER

Interchangeable stripper plate

One or two-sided relief for punching close to clamp

PASS BETA-V2® SLITTING TOOL I STATION D

CLOSE TO CLAMP

| | PART-NO. | PRICE IN € |
|---|-------------|------------|
| GUIDE ASSEMBLY | | |
| for all shapes | 4030DTP01 | |
| SLITTING TOOL ADAPTER | | |
| for all shapes | 4220DT00 | |
| SLITTING TOOL (MAX. 6,35X85) / (H-PM®) | | |
| Rectangle | 4020DT03 | |
| Oblong | 4020DT04 | |
| *Trapezoid G09 | 4020DT0G | |
| *Double Trapezoid E03 | 4020DT0E | |
| STRIPPER ONE-SIDED FREE | | |
| Rectangle | 4040DTP03-1 | |
| Oblong | 4040DTP04-1 | |
| *Trapezoid G09 | 4040DTP0G-1 | |
| *Double Trapezoid E03 | 4040DTP0E-1 | |
| STRIPPER TWO-SIDED FREE | | |
| Rectangle | 4040DTP03-2 | |
| Oblong | 4040DTP04-2 | |
| *Trapezoid G09 | 4040DTP0G-2 | |
| *Double Trapezoid E03 | 4040DTP0E-2 | |
| DIE ONE-SIDED FREE (HWS) | | |
| Rectangle | 4052DTP03-1 | |
| Oblong | 4052DTP04-1 | |
| *Trapezoid G09 | 4052DTP0G-1 | |
| *Double Trapezoid E03 | 4052DTP0E-1 | |
| DIE TWO-SIDED FREE (HWS) | | |
| Rectangle | 4052DTP03-2 | |
| Oblong | 4052DTP04-2 | |
| *Trapezoid G09 | 4052DTP0G-2 | |
| *Double Trapezoid E03 | 4052DTP0E-2 | |



| | | |
|---|---------|---|
| SPARE PARTS | | ADDITIONAL COSTS FOR PUNCH |
| PU-ejector Ø 3x6 (in punch) | 4092P03 | TiCN coating |
| PU-ejector Ø 6x10 (in punch) | 4092P06 | T-MAX coating WT-shear DOWT-shear 2 PT-shear 4 PT-shear Additonal keyway |
| COMPENSATING SHIMS FOR SLITTING TOOL ADAPTER | | ADDITIONAL COSTS FOR PUNCH GUIDE |
| Not necessary | | Additonal 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 CLEAN CUT

FOR MACHINE TYPE THICK TURRET - STATION D

Function:

The PASS Clean Cut for THICK TURRET machines was developed to obtain slitting perforations without any witness-marks.

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



When using the PASS Clean Cut no witness marks are made and only smooth and clean cuts can be seen - without the need of additional rework.

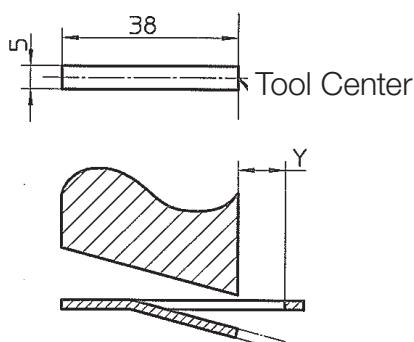


Functional principle of the tool:

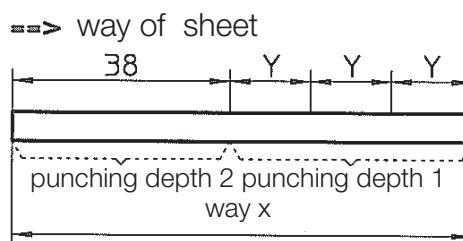
Continuous slitting. The shavings will be guided within the die and will be separated into pieces with the second slitting unit.

Programming information:

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



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



Technical handling of the tool:

The upper part has got a total length of 208,5 mm (see drawing 499110001).
The die is spring-loaded and 4 mm higher (see drawing 499110001).

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

Step 1:

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

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

Step 2:

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

PASS CLEAN CUT

FOR MACHINE TYP THICK TURRET - STATION D

| | PART-NO. | PRICE IN € |
|--|-------------|------------|
| TOOL - COMPLETE | | |
| | 499110001 | |
| UPPER PART - COMPLETE | | |
| | 499110001-1 | |
| DIE - COMPLETE | | |
| | 499110001-2 | |
| SPARE PARTS TO UPPER ASSY | | |
| Punch insert (Re 5x38) | 499110040 | |
| Stripper plate | 499110030 | |
| SPARE PARTS TO DIE ASSY | | |
| Die plate | 199110050 | |
| Guillotine unit cpl. | 199110001-3 | |
| Slitting plate - top | 199110140 | |
| Slitting plate - bottom | 199110150 | |
| Set springs for die plate (4x) | 199110903 | |
| Set shoulder screws for die plate (4x) | 199110904 | |



TECHNICAL INFORMATION

| | |
|------------|--------------------------------------|
| Aluminium: | 0,5 - 1,2 mm (tool direction: 16 mm) |
| Steel: | 0,5 - 1,2 mm (tool direction: 16 mm) |
| Inox: | 0,5 - 1,2 mm (tool direction: 16 mm) |

| | |
|------------|---------------------------------------|
| Aluminium: | 1,25 - 1,5 mm (tool direction: 12 mm) |
| Steel: | 1,25 - 1,5 mm (tool direction: 12 mm) |

| | |
|------------|--------------------------------------|
| Aluminium: | 1,6 - 2,0 mm (tool direction: 10 mm) |
|------------|--------------------------------------|

ADDITIONAL COSTS FOR SLITTING BLADE

| |
|-------------------------------------|
| TiCN coating (for Inox-sheet) |
| A-MAX coating (for Aluminium sheet) |
| T-MAX coating (for Zinc steel) |

ADDITIONAL COSTS FOR STRIPPER

Polished version for low-scratch material handling

MAX. REGRINDING LENGTH

| | |
|-----------------------------|--------|
| Punch: (Lmin = 201,5 mm) | 7 mm |
| Die plate: (Hmin = 33,5 mm) | 0,5 mm |

ADDITIONAL COSTS FOR DIE PLATE

Polished version for low-scratch material handling

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
(higher hit counts)

STRIPPER

Interchangeable stripper plate

PASS STANDARD I STATION E

DIAMETER UP TO 114,3 MM

| | PART-NO. | PRICE IN € |
|----------------|----------|------------|
| 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 | WT-shear |
| Quiding key with screws | 499E63 | 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® I STATION E

DIAMETER UP TO 114.3 MM



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



PUNCH BODY

Thread M12 with oil channel

Punch body made with premium H-PM (higher hit counts)



STRIPPER

Interchangeable stripper plate

PASS BETA-V2® I STATION E

DIAMETER UP TO 114,3 MM

| | PART-NO. | PRICE IN € |
|----------------|----------|------------|
| GUIDE ASSEMBLY | | |
| for all shapes | 4030E01 | |



| PUNCH BODY (H-PM®) | | |
|------------------------------|---------|--|
| Round | 4020E01 | |
| Square | 4020E02 | |
| Rectangle | 4020E03 | |
| Oblong | 4020E04 | |
| *O.D. Ground Special Shapes | 4020E0G | |
| *EDM Required Special Shapes | 4020E0E | |

| STRIPPER | | |
|------------------------------|---------|--|
| Round | 4040E01 | |
| Square | 4040E02 | |
| Rectangle | 4040E03 | |
| Oblong | 4040E04 | |
| *O.D. Ground Special Shapes | 4040E0G | |
| *EDM Required Special Shapes | 4040E0E | |

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



| SPARE PARTS | | ADDITIONAL COSTS FOR PUNCH | |
|-----------------------------------|---------|----------------------------------|---------------|
| PU-ejector Ø 3x6 (in punch) | 4092P03 | TiCN coating | |
| PU-ejector Ø 6x10 (in punch) | 4092P06 | T-MAX coating | |
| <hr/> | | | |
| COMPENSATING SHIMS FOR PUNCH | | ADDITIONAL COSTS FOR PUNCH GUIDE | |
| Not necessary | | Additional keyway | |
| SET OF COMPENSATING SHIMS FOR DIE | | ADDITIONAL COSTS FOR DIE | |
| 1x0,4 mm/1x0,8 mm/1x1,2 mm | 499E2M1 | 45,10 | H-PM® Quality |

PASS BETA-V2® SLITTING TOOL I STATION E



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM (higher hit counts)

STRIPPER

Interchangeable stripper plate

PASS BETA-V2® SLITTING TOOL I STATION E

| | PART-NO. | PRICE IN € |
|----------------------------------|----------|------------|
| GUIDE ASSEMBLY for all shapes | 4030E01 | |

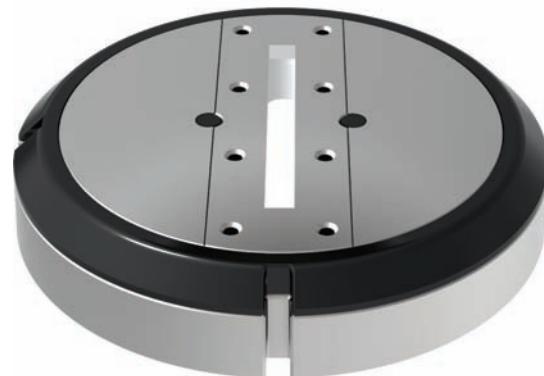
| SLITTING TOOL ADAPTER | | |
|-----------------------|----------|--|
| for all shapes | 4220ET00 | |

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

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

| REVERSIBLE PLATE ADAPTER | | |
|--------------------------|----------|--|
| | 4390ET00 | |

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



SPARE PARTS

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

ADDITIONAL COSTS FOR PUNCH

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

COMPENSATING SHIMS FOR SLITTING TOOL ADAPTER

Not necessary

ADDITIONAL COSTS FOR PUNCH GUIDE

Additional keyway

SET OF COMPENSATING SHIMS FOR REVERSIBLE PLATE

1x0,4 mm/1x0,8 mm/1x1,2 mm 499ET60

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



GUIDE ASSEMBLY

Screw M12

Springs for sheet thickness up to 6 mm

Oil channel for tool lubrication

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

Keyway: 0 - 90°

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

Fast and easy clamping system for stripper

Suitable for PDC-system



SLITTING TOOL ADAPTER

4 fixing threads M6

Thread M12 with oil channel for tool lubrication

SLITTING TOOL

Punch body made with premium H-PM (higher hit counts)



STRIPPER

Interchangeable stripper plate

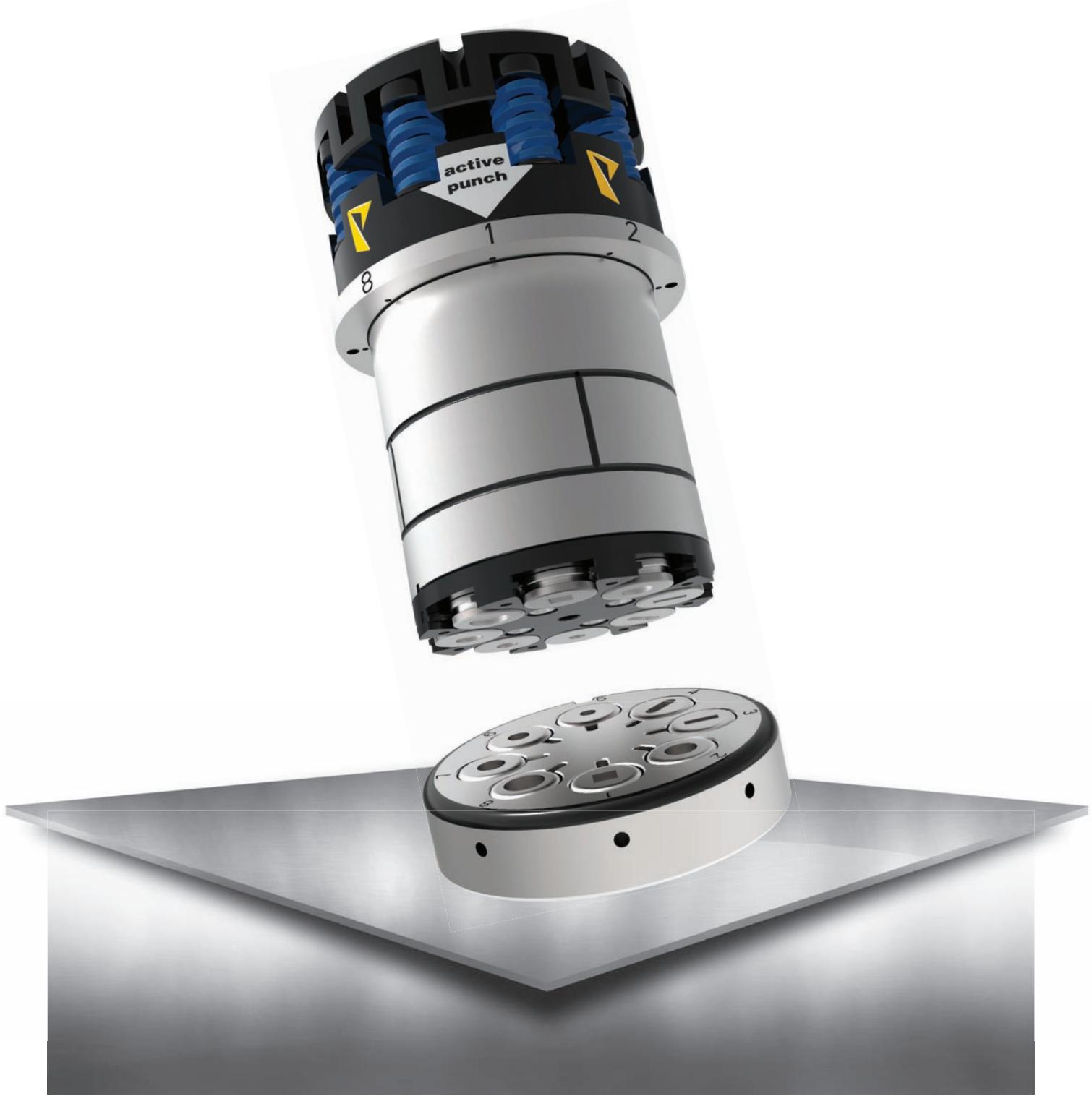
One or two-sided relief for punching close to clamp

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

| | PART-NO. | PRICE IN € |
|--|-------------|------------|
| GUIDE ASSEMBLY | | |
| for all shapes | 4030ETP01 | |
| SLITTING TOOL ADAPTER | | |
| for all shapes | 4220ET00 | |
| SLITTING TOOL (MAX. 6,35X111) / (H-PM®) | | |
| Rectangle | 4020ET03 | |
| Oblong | 4020ET04 | |
| *Trapezoid G09 | 4020ET0G | |
| *Double Trapezoid E03 | 4020ET0E | |
| STRIPPER ONE-SIDED FREE | | |
| Rectangle | 4040ETP03-1 | |
| Oblong | 4040ETP04-1 | |
| *Trapezoid G09 | 4040ETP0G-1 | |
| *Double Trapezoid E03 | 4040ETP0E-1 | |
| STRIPPER TWO-SIDED FREE | | |
| Rectangle | 4040ETP03-2 | |
| Oblong | 4040ETP04-2 | |
| *Trapezoid G09 | 4040ETP0G-2 | |
| *Double Trapezoid E03 | 4040ETP0E-2 | |
| DIE ONE-SIDED FREE (HWS) | | |
| Rectangle | 4052ETP03-1 | |
| Oblong | 4052ETP04-1 | |
| *Trapezoid G09 | 4052ETP0G-1 | |
| *Double Trapezoid E03 | 4052ETP0E-1 | |
| DIE TWO-SIDED FREE (HWS) | | |
| Rectangle | 4052ETP03-2 | |
| Oblong | 4052ETP04-2 | |
| *Trapezoid G09 | 4052ETP0G-2 | |
| *Double Trapezoid E03 | 4052ETP0E-2 | |



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



PASS MULTITOOLS FOR YOUR FINN-POWER MACHINES

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PASS MT8Ri3-16 Multitool

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PASS MT3Ri3-31,75 Multitool

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MT8RI3-16 MULTITOOL I INSERTS

FOR MACHINE TYP FINN-POWER

SUITABLE FOR SHEET SHICKNESS UP TO 6 MM*

Version 1



Version 2



| | POS.-NR. | PART-NR. | PRICE IN € |
|-------------------------------------|----------|-----------|------------|
| PUNCH (1*) | | | |
| Round | 1 | 413161-1 | |
| Square | 1 | 413162-1 | |
| Rectangle | 1 | 413163-1 | |
| Oblong | 1 | 413164-1 | |
| *O.D. Ground Special Shapes | 1 | 41316G-1 | |
| *EDM Required Special Shapes | 1 | 41316E-1 | |
| PUNCH (2*) | | | |
| Head unit | 2 | 450801800 | |
| Set compensating shims (10 St.) | 3 | 450801900 | |
| Round | 4 | 413161-2 | |
| Square | 4 | 413162-2 | |
| Rectangle | 4 | 413163-2 | |
| Oblong | 4 | 413164-2 | |
| *O.D. Ground Special Shapes | 4 | 41316G-2 | |
| *EDM Required Special Shapes | 4 | 41316E-2 | |
| STRIPPER | | | |
| Round | 5 | 415161 | |
| Square | 5 | 415162 | |
| Rectangle | 5 | 415163 | |
| Oblong | 5 | 415164 | |
| *O.D. Ground Special Shapes | 5 | 41516G | |
| *EDM Required Special Shapes | 5 | 41516E | |
| 8-STATION STRIPPER (3*) | | | |
| Optional - shape adaptable stripper | 6 | 450802000 | |
| DIE (HWS) | | | |
| Round | 7 | 414161 | |
| Square | 7 | 414162 | |
| Rectangle | 7 | 414163 | |
| Oblong | 7 | 414164 | |
| *O.D. Ground Special Shapes | 7 | 41416G | |
| *EDM Required Special Shapes | 7 | 41416E | |

INDEX

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

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

(2*) Punchin seperated version (for regrinding length up to 5mm) - max. sheet thickness:

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

(3*) Stripper - adaptable to shape (form)

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

ADDITIONAL COSTS FOR PUNCH

| |
|---------------|
| TiCN coating |
| T-MAX coating |
| WT-shear |
| DOWT-shear |
| 2 PT-shear |
| 4 PT-shear |

ADDITIONAL COSTS FOR DIE

| |
|----------------|
| Reinforced die |
| H-PM® Quality |

MT8RI3-16 MULTITOOL I ADAPTER

FOR MACHINE TYP FINN-POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*

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



INDEX

*** max. sheet thickness:

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

Alternatively, one 8-Station stripper, adaptable to shape, can be used in order to avoid marks on the sheet surface (e.g. when using polished Alu)
(Price: 817,95 €)

MT3RI3-31,75 MULTITOOL I INSERTS

FOR MACHINE TYP FINN-POWER

SUITABLE FOR SHEET THICKNESS UP TO 6 MM*



| | POS.-NR. | PART-NR. | PRICE IN € |
|-------------------------------------|----------|-----------|------------|
| PUNCH | | | |
| Head unit | 1 | 450301700 | |
| Round | 1 | 413191 | |
| Square | 1 | 413192 | |
| Rectangle | 1 | 413193 | |
| Oblong | 1 | 413194 | |
| *O.D. Ground Special Shapes | 1 | 41319G | |
| *EDM Required Special Shapes | 1 | 41319E | |
| STRIPPER | | | |
| Round | 2 | 415191 | |
| Square | 2 | 415192 | |
| Rectangle | 2 | 415193 | |
| Oblong | 2 | 415194 | |
| *O.D. Ground Special Shapes | 2 | 41519G | |
| *EDM Required Special Shapes | 2 | 41519E | |
| 3-STATION STRIPPER (1*) | | | |
| Optional - shape adaptable stripper | | 450302000 | |
| DIE (HWS) | | | |
| Round | 4 | 414191 | |
| Square | 4 | 414192 | |
| Rectangle | 4 | 414193 | |
| Oblong | 4 | 414194 | |
| *O.D. Ground Special Shapes | 4 | 41419G | |
| *EDM Required Special Shapes | 4 | 41419E | |

INDEX

max. sheet thickness:

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

ADDITIONAL COSTS FOR PUNCH

- TiCN coating
- T-MAX coating
- WT-shear
- DOWT-shear
- 2 PT-shear
- 4 PT-shear

(1*) Stripper - adaptable to shape (form)

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

ADDITIONAL COSTS FOR DIE

- Reinforced version
- H-PM® Quality

MT3RI3-31,75 MULTITOOL I ADAPTER

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

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



INDEX

*** max. sheet thickness:

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

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



ACCESSORIES

PASS ACCESSORIES FOR YOUR
THICK TURRET SYSTEM

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| PASS Shimkeeper | Page 59 |

PASS ASSEMBLY ADAPTER KIT

Station A



PART-NO.

PRICE IN €

COMPLETE SET ASSEMBLY KIT

Set consists of: 499M09SET

5 assembly adapter

1 assembling plate

Station B



Station C



Station D



Station E



equipped plate with adapter

PASS ASSEMBLING SET

FOR PASS GUIDE ASSEMBLY / STAT. C, D, E AND FOR PASS MULTITOOL GUIDE ASSEMBLY / STAT.D
/ FOR PASS ps:multi-thread

| PART-NO. | PRICE IN € |
|---|------------------|
| 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



| | | STATION | PART-NO. | PRICE IN € |
|-------------------------------|---------------|---------|----------|------------|
| MACHINE TYP: FINN-POWER & LVD | | | | |
| | Punch adapter | B/A | 401BAS1 | |
| | Die adapter | B/A | 401BAM1 | |
| | | | | |
| | Punch adapter | C/B | 401CBS1 | |
| | Die adapter | C/B | 401CBM1 | |
| | | | | |
| | Punch adapter | D/A | 401DAS1 | |
| | Die adapter | D/A | 401DAM1 | |
| | Punch adapter | D/B | 401DBS1 | |
| | Die adapter | D/B | 401DBM1 | |
| | | | | |
| | Punch adapter | D/C | 401DCS1 | |
| | Die adapter | D/C | 401DCM1 | |

| | | STATION | PART-NO. | PRICE IN € |
|--------------------------------------|---------------|---------|----------|------------|
| MACHINE TYP: PIVATIC & WEMO & DALCOS | | | | |
| | Punch adapter | B/A | 401BAS3 | |
| | Die adapter | B/A | 401BAM3 | |
| | | | | |
| | Punch adapter | C/B | 401CBS3 | |
| | Die adapter | C/B | 401CBM3 | |
| | | | | |
| | Punch adapter | D/A | 401DAS3 | |
| | Die adapter | D/A | 401DAM3 | |
| | Punch adapter | D/B | 401DBS3 | |
| | Die adapter | D/B | 401DBM3 | |
| | | | | |
| | Punch adapter | D/C | 401DCS3 | |
| | Die adapter | D/C | 401DCM3 | |

Die adapter

Surface-hardened and polished

2 Clamp screws



PASS DIES (WITH BRUSH INSERTS)

| | STATION | PART-NR. | PRICE IN € |
|-------------------------------------|---------|-----------|------------|
| 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 | |





SPECIAL SHAPES

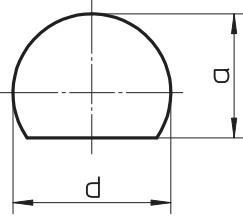
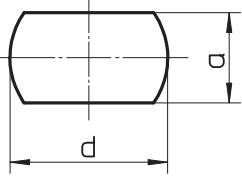
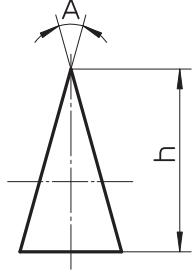
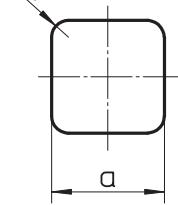
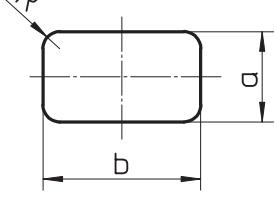
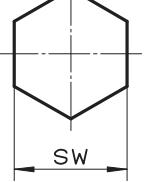
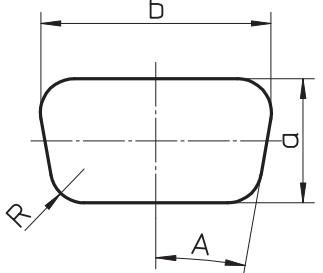
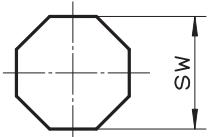
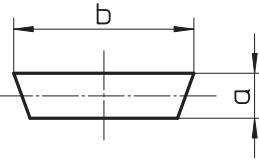
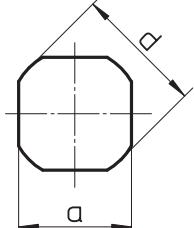
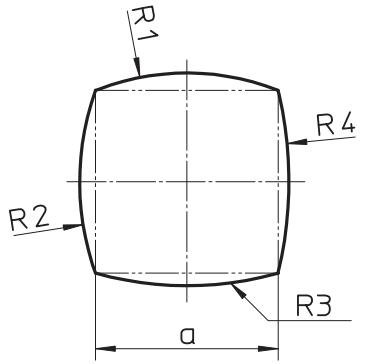
INFORMATION ABOUT OUR TOOLS
FOR YOUR THICK TURRET SYSTEM

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| EDM Required Special Shapes | Page 63 |

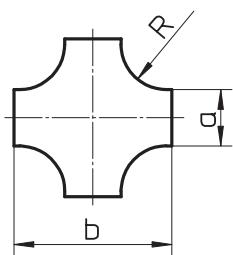
O.D. GROUND SPECIAL SHAPES

HK BIS 50,8 MM

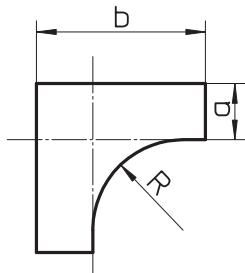
| | | |
|--|--|--|
|  G01 |  G02 |  G03 |
|  G04 |  G05 |  G06 |
|  G07 |  G08 |  G09 |
|  G10 |  G11 | |

EDM REQUIRED SPECIAL SHAPES

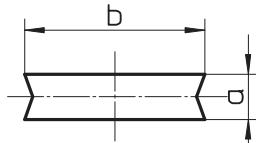
HK BIS 50,8 MM



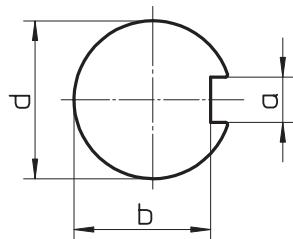
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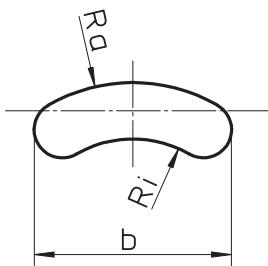
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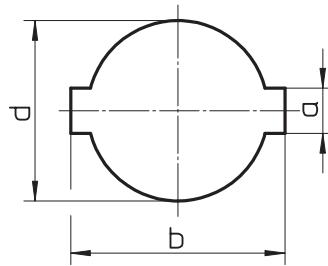
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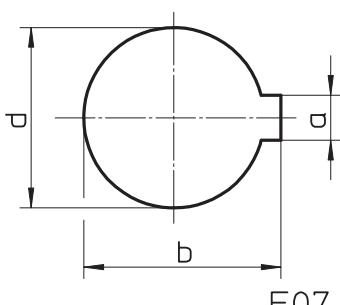
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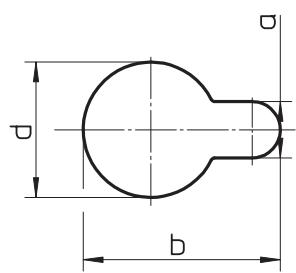
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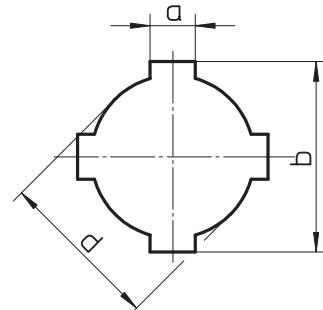
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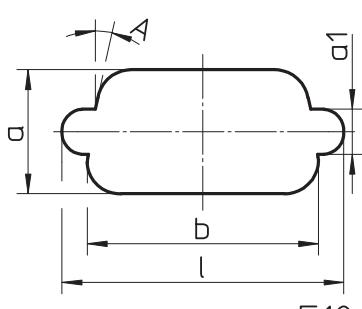
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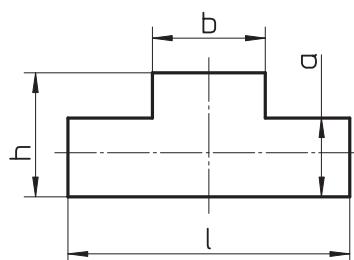
E08



E09



E10



E11



FOR ALL THOSE, WHO LIKE TO UNDERSTAND EXACTLY

IMPORTANT INFORMATION ABOUT OUR TOOLS
FOR YOUR THICK TURRET SYSTEM

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| Life-time of tools / regrinding advice | page 67 |

PASS STEEL IDENTIFICATIONS

HWS

HWS is known as 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® steel is known as steel made on a powder-metallurgical base with a high degree of purity.

This guarantees a segregational uniformed microstructure in the complete cross-section of the tool.

Advantage for customer:

- excellent cost in accordance to performance
- good stability for edges by increased toughness

high tool life-time due to the unformed microstructure

increased current hit-flex-capability; suitable as an excellent base for dies

X3-PM

The X3-PM is known as 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 resistant regarding tool life-time.

Advantage for customer:

- best efficiency by multiple increase of the punch hit count
- best possible stability for cutting edges
- extremely high abrasion resistance
- utmost compressive strength

X8-PM

The X8-PM is known as a high-end powder metallurgical steel with the best possible performance characteristics for dies in the punching technology caused by best possible degree of purity.

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

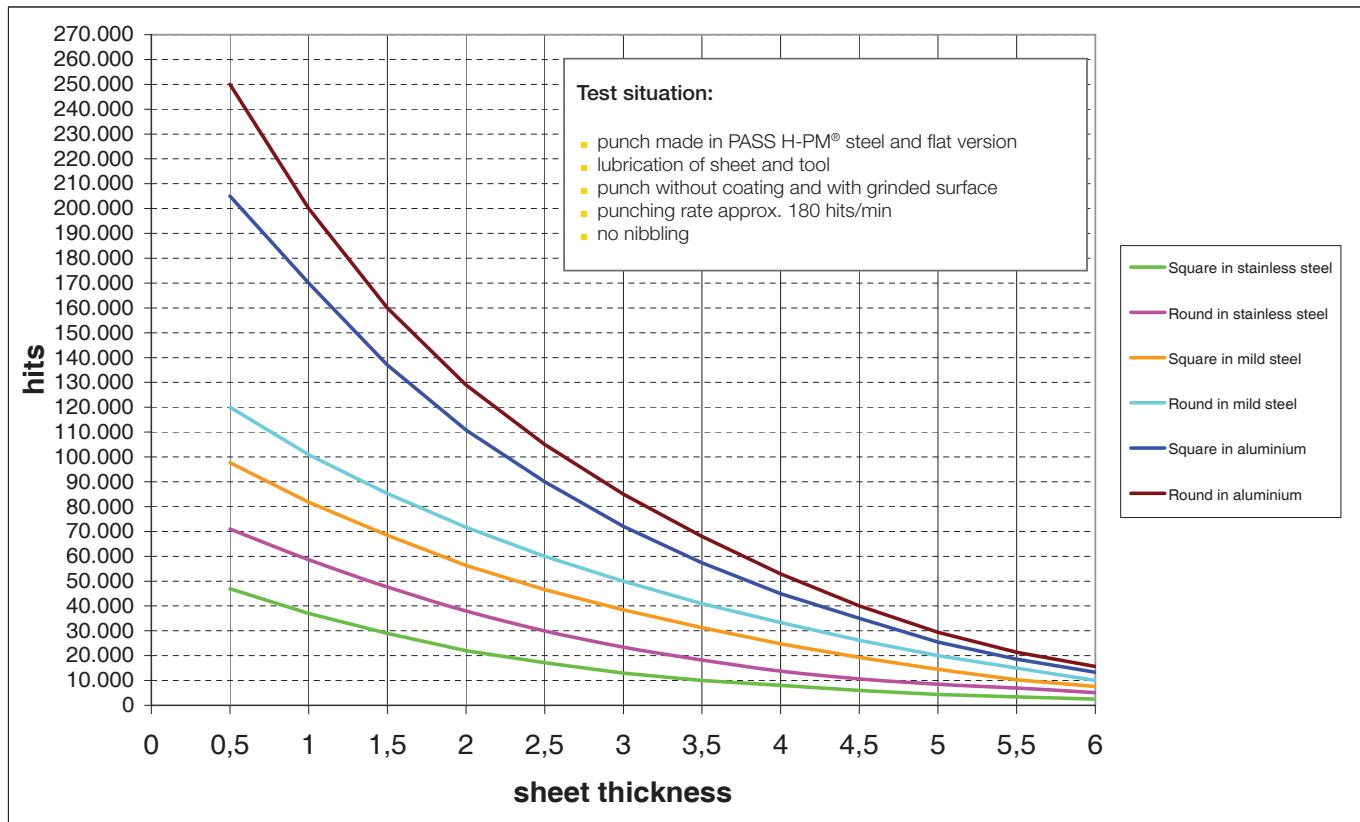
Advantage for customer:

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



LIFE-TIME OF TOOLS / REGRIND ADVICE

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



INFLUENCING FACTORS

FACTOR

| | |
|---|------------|
| Zinc coated sheet / stainless steel with foil / aluminium anodized | 0,5 - 0,8 |
| No sheet-lubrication | 0,4 - 0,6 |
| Punch coating (TICN for stainless steel / T-MAX for zinc coated steel / A-Max for aluminium / C-Max for copper) | 2,0 - 4,0 |
| PASS-punch made with special X3-PM steel | 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.

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



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