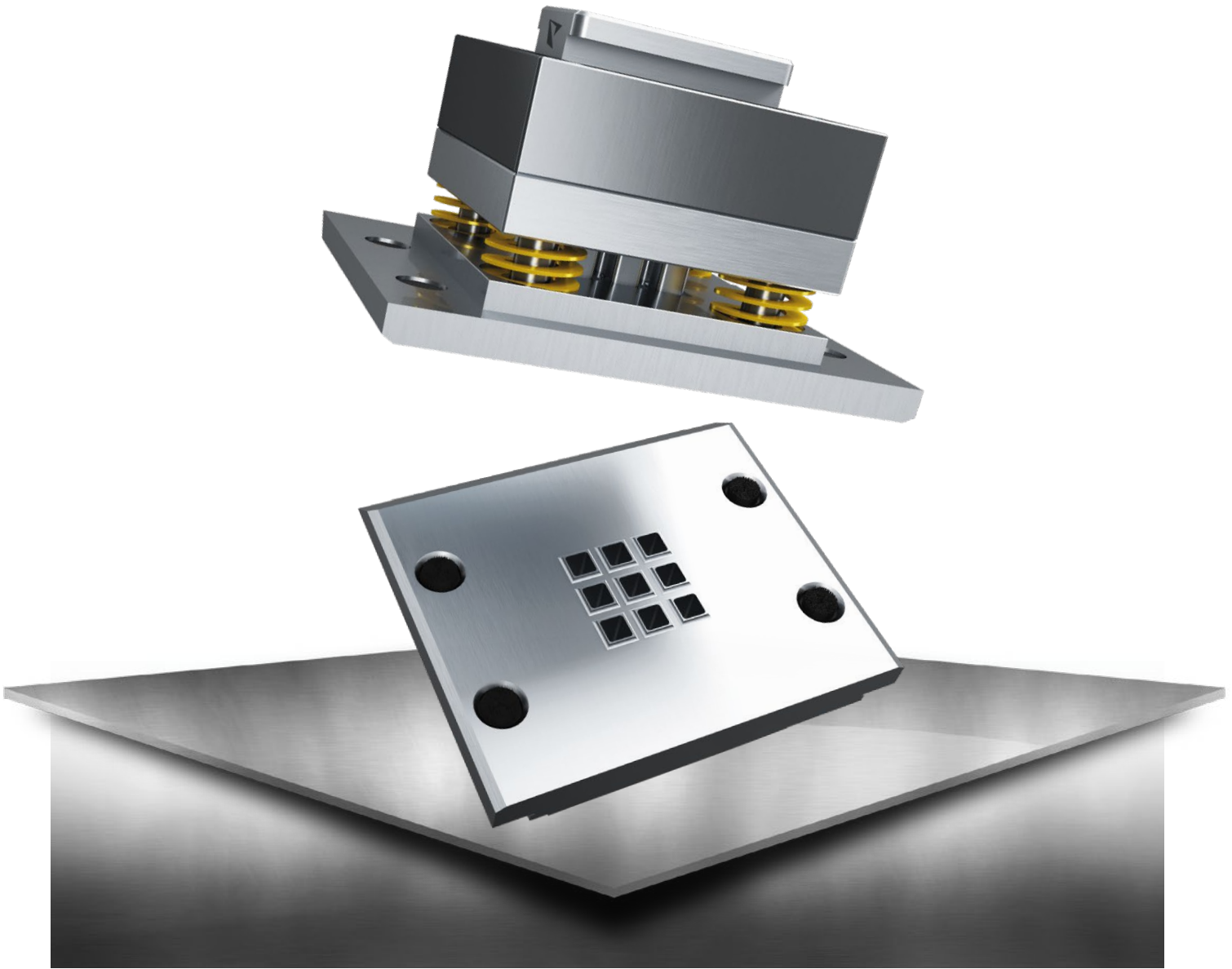


CATALOG 03/2023-US-S.1

SYSTEM SALVAGNINI



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TOOLS FOR STATION P1 - P20

PASS TOOLS FOR YOUR
SALVAGNINI SYSTEM

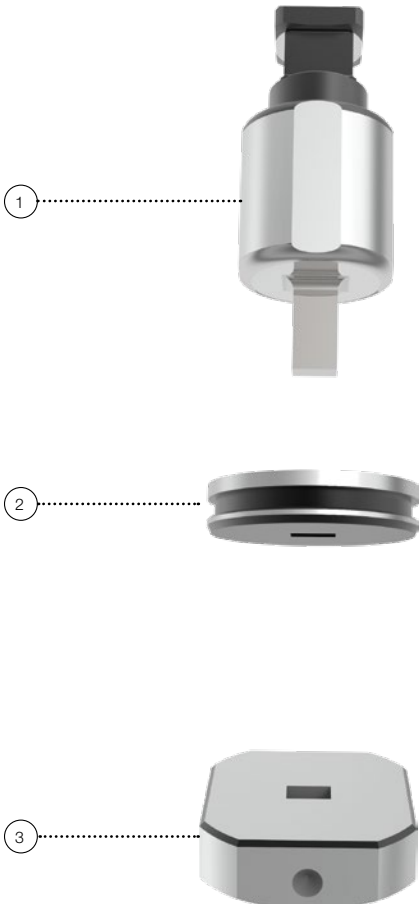
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PASS SYSTEM STANDARD (COMPACT VERSION)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 33 MM



	POS.-NO.	PART-NO.
PUNCH (H-PM®)		
Round	1	201301
Square	1	2013002
Rectangle	1	2013003
Oblong	1	2013004
O.D. Ground Special Shape	1	21530G
EDM Required Special Shape	1	21530E

	POS.-NO.	PART-NO.
STRIPPER		
Round	2	210301
Square	2	2103002
Rectangle	2	2103003
Oblong	2	2103004
O.D. Ground Special Shape	2	21730G
EDM Required Special Shape	2	21730E

	POS.-NO.	PART-NO.
DIE (SLUG-STOP) (H-PM®)		
Round	3	206301
Square	3	2063002
Rectangle	3	2063003
Oblong	3	2063004
O.D. Ground Special Shape	3	21630G
EDM Required Special Shape	3	21630E

SPARE PARTS		ADDITIONAL COSTS FOR PUNCH
-------------	--	----------------------------

Shims for die t = 0,3	203A33
Shims for die t = 0,5	205A35

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR STRIPPER

Polypunch

ADDITIONAL COSTS FOR DIES

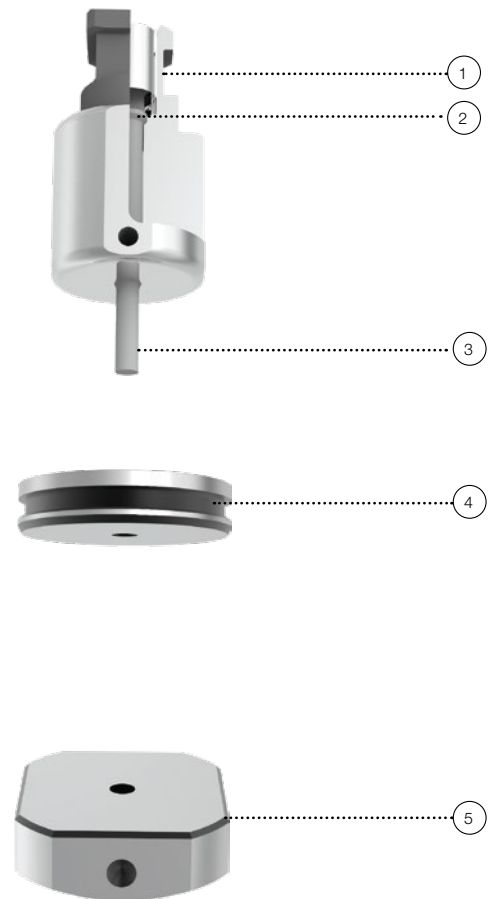
Reinforced
slug-snap

PASS SYSTEM P1 (NEEDLE INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 6 MM

	POS.-NO.	PART-NO.
UPPER PART		
Round	1-3	201401
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
PUNCH CHUCK		
Round	1+2	219401
PUNCH INSERT (SHAFT Ø 6 MM) (H-PM®)		
Round	3	207P1A1
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
STRIPPER		
Round	4	210301
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
DIE (SLUG-STOP) (H-PM®)		
Round	5	206301
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---



ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR STRIPPER

Polypunch

ADDITIONAL COSTS FOR DIES

Reinforced slug-snap

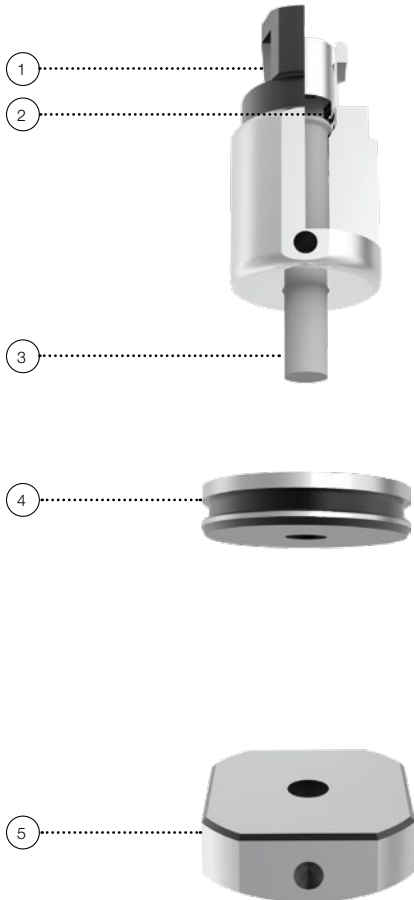
SPARE PARTS

Clamping screw	2	219403
Shims for die t = 0,3		203A33
Shims for die t = 0,5		205A35

PASS SYSTEM P1 (NEEDLE INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 10,5 MM



	POS.-NO.	PART-NO.
UPPER PART		
Round	1-3	201421
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
PUNCH CHUCK		
Round	1+2	219421
PUNCH INSERT (SHAFT Ø 10,5 MM) (H-PM®)		
Round	3	207P1B1
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
STRIPPER		
Round	4	210301
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
DIE (SLUG-STOP) (H-PM®)		
Round	5	206301
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---

SPARE PARTS		
Clamping screw	2	219423
Shims for die t = 0,3		203A33
Shims for die t = 0,5		205A35

ADDITIONAL COSTS FOR PUNCH

TICN coating
 T-MAX coating
 A-MAX coating
 Cutting part under 1,00 mm

ADDITIONAL COSTS FOR STRIPPER

Polypunch

ADDITIONAL COSTS FOR DIES

Reinforced
 slug-snap

PASS SYSTEM P2 (FOR 2 MM REGRINDING LENGTH)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 16 MM

	POS.-NO.	PART-NO.
UPPER PART		
Round	1-4	201441
Square	1-4	2014402
Rectangle	1-4	2014403
Oblong	1-4	2014404
O.D. Ground Special Shape	1-4	21544G
EDM Required Special Shape	1-4	21544E
PUNCH CHUCK		
For all shapes	1-3	219441
PUNCH INSERT (H-PM®)		
Round	4	207P2A1
Square	4	207P2A02
Rectangle	4	207P2A03
Oblong	4	207P2A04
O.D. Ground Special Shape	4	207P2AG
EDM Required Special Shape	4	207P2AE
STRIPPER		
Round	5	210301
Square	5	2103002
Rectangle	5	2103003
Oblong	5	2103004
O.D. Ground Special Shape	5	21730G
EDM Required Special Shape	5	21730E
DIE (SLUG-STOP) (H-PM®)		
Round	6	206301
Square	6	2063002
Rectangle	6	2063003
Oblong	6	2063004
O.D. Ground Special Shape	6	21630G
EDM Required Special Shape	6	21630E



ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR STRIPPER

Polypunch

ADDITIONAL COSTS FOR DIES

Reinforced
slug-snap

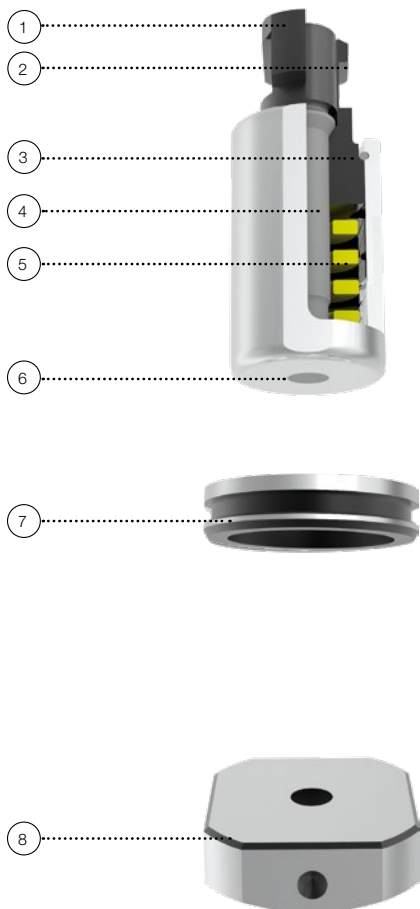
SPARE PARTS

Clamping screw	2	219444
Set shims for punch chuck (4 x 0,5 mm)	3	219443
Shims for die t = 0,3		203A33
Shims for die t = 0,5		205A35

PASS SYSTEM P4 (BLANK-HOLDER STYLE AND NEEDLE INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 6 MM



POS.-NO.

PART-NO.

UPPER PART			
Round	1-6	201521	
Square	---	---	
Rectangle	---	---	
Oblong	---	---	
O.D. Ground Special Shape	---	---	
EDM Required Special Shape	---	---	

PUNCH INSERT (SHAFT Ø 6 MM) (H-PM®)			
Round	4	207P4A1	
Square	---	---	
Rectangle	---	---	
Oblong	---	---	
O.D. Ground Special Shape	---	---	
EDM Required Special Shape	---	---	

ACTIVE STRIPPER			
Round	6+3	219525	
Square	---	---	
Rectangle	---	---	
Oblong	---	---	
O.D. Ground Special Shape	---	---	
EDM Required Special Shape	---	---	

STRIPPER			
Round 35 mm	7	210335	

DIE (SLUG-STOP) (H-PM®)			
Round	8	206301	
Square	---	---	
Rectangle	---	---	
Oblong	---	---	
O.D. Ground Special Shape	---	---	
EDM Required Special Shape	---	---	

SPARE PARTS			ADDITIONAL COSTS FOR PUNCH		
Punch head	1+2	219521	TICN coating		
Clamping screw	2	219528	T-MAX coating		
Retaining ring	3	219527	A-MAX coating		
Spring	5	219526	Cutting part under 1,00 mm		
Shims for die t = 0,3		203A33			
Shims for die t = 0,5		205A35			

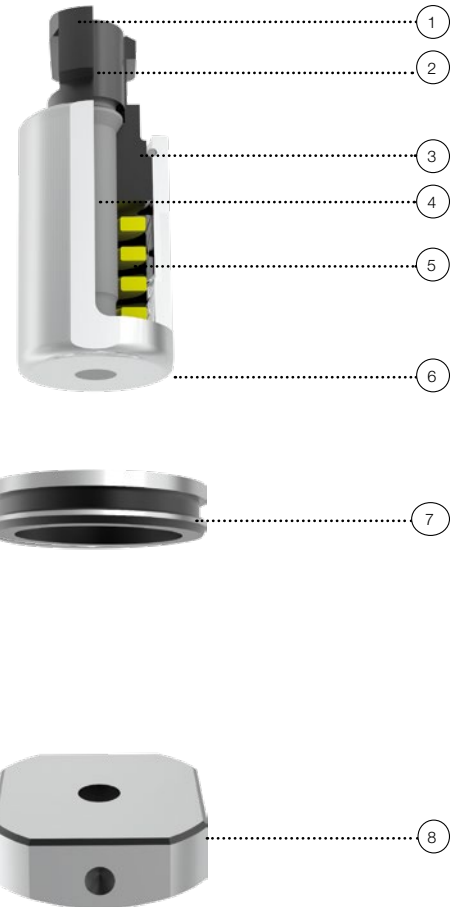
ADDITIONAL ACCESSORIES			ADDITIONAL COSTS FOR DIES		
Assembly socket		299201599	Reinforced		
			slug-snap		

PASS SYSTEM P4 (BLANK-HOLDER STYLE AND NEEDLE INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 10,5 MM

	POS.-NO.	PART-NO.
UPPER PART		
Round	1-6	201561
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
PUNCH INSERT (SHAFT Ø 10,5 MM) (H-PM®)		
Round	4	207P4B1
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
ACTIVE STRIPPER		
Round	6+3	219525
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
STRIPPER		
Round 35 mm	7	210335
DIE (SLUG-STOP) (H-PM®)		
Round	8	206301
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---

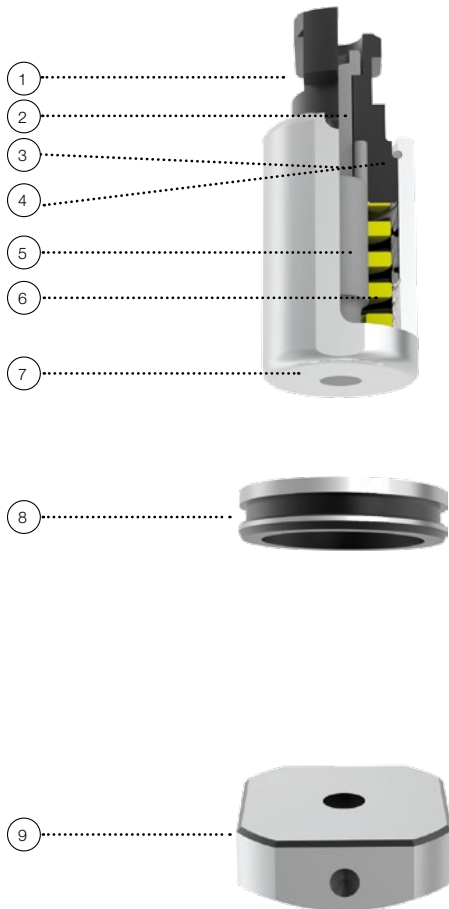


ADDITIONAL COSTS FOR PUNCH	SPARE PARTS
TICN coating	Punch head 1+2 219522
T-MAX coating	Clamping screw 2 219528
A-MAX coating	Retaining ring 3 219527
Cutting part under 1,00 mm	Spring 5 219526
ADDITIONAL COSTS FOR STRIPPER	Shims for die t = 0,3 203A33
Polypunch	Shims for die t = 0,5 205A35
ADDITIONAL COSTS FOR DIES	ADDITIONAL ACCESSORIES
Reinforced slug-snap	Assembly socket 299201599

PASS SYSTEM P5 (BLANK-HOLDER STYLE AND PUNCH INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 12,5 MM



	POS.-NO.	PART-NO.
UPPER PART		
Round	1-7	201531
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
PUNCH INSERT (H-PM®)		
Round	5	207P5A1
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
ACTIVE STRIPPER		
Round	7+4	219534
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---
STRIPPER		
Round 35 mm	8	210335
DIE (SLUG-STOP) (H-PM®)		
Round	9	206301
Square	---	---
Rectangle	---	---
Oblong	---	---
O.D. Ground Special Shape	---	---
EDM Required Special Shape	---	---

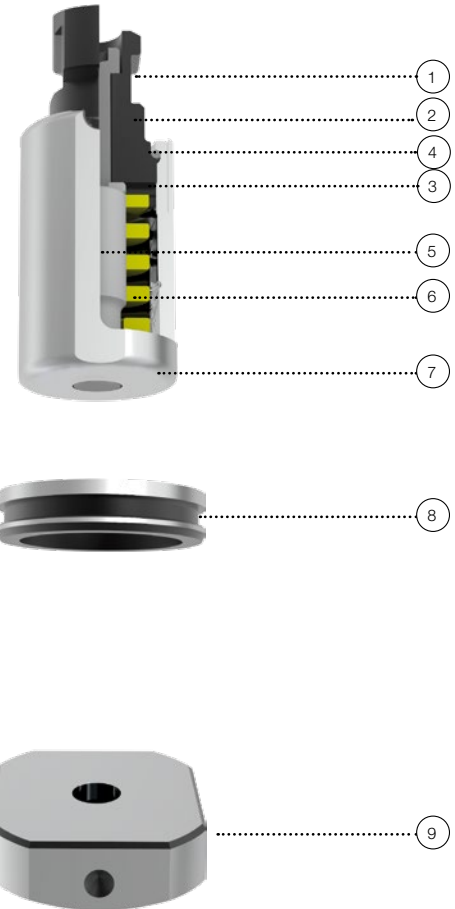
SPARE PARTS			ADDITIONAL COSTS FOR PUNCH	
Punch head	1-3	219532	TICN coating	
Clamping screw	2	219537	T-MAX coating	
Pin	3	219538	A-MAX coating	
Retaining ring	4	219536	Cutting part under 1,00 mm	
Spring	6	219535	ADDITIONAL COSTS FOR STRIPPER	
Shims for die t = 0,3		203A33	Polypunch	
Shims for die t = 0,5		205A35		
ADDITIONAL ACCESSORIES			ADDITIONAL COSTS FOR DIES	
Assembly socket		299201599	Reinforced	
			slug-snap	

PASS SYSTEM P6 (BLANK-HOLDER STYLE AND PUNCH INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

MAX. DIAMETER: 12,5 MM

	POS.-NO.	PART-NO.
UPPER PART		
Round	---	---
Square	1-7	2015102
Rectangle	1-7	2015103
Oblong	1-7	2015104
O.D. Ground Special Shape	1-7	20151G
EDM Required Special Shape	1-7	20151E
PUNCH INSERT (H-PM®)		
Round	---	---
Square	5	207P6A02
Rectangle	5	207P6A03
Oblong	5	207P6A04
O.D. Ground Special Shape	5	207P6AG
EDM Required Special Shape	5	207P6AE
ACTIVE STRIPPER		
Round	---	---
Square	7+4	2195102
Rectangle	7+4	2195103
Oblong	7+4	2195104
O.D. Ground Special Shape	7+4	21951G
EDM Required Special Shape	7+4	21951E
STRIPPER		
Round 35 mm	8	210335
DIE (SLUG-STOP) (H-PM®)		
Round	---	---
Square	9	2063002
Rectangle	9	2063003
Oblong	9	2063004
O.D. Ground Special Shape	9	21630G
EDM Required Special Shape	9	21630E



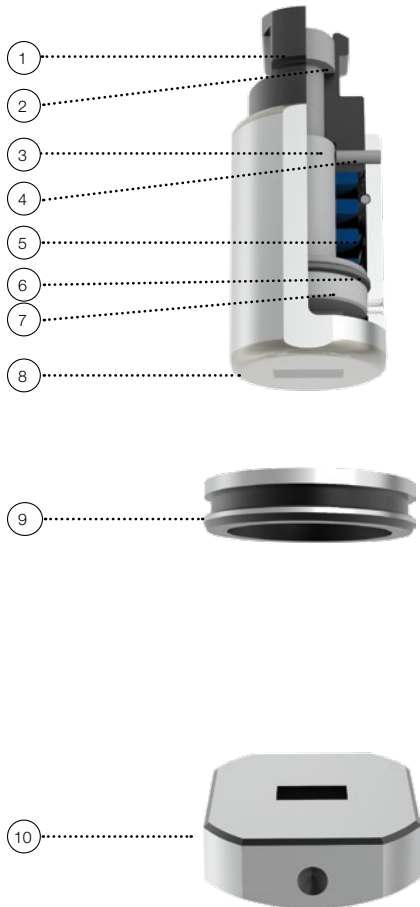
ADDITIONAL COSTS FOR PUNCH	
TICN coating	
T-MAX coating	
A-MAX coating	
Cutting part under 1,00 mm	
ADDITIONAL COSTS FOR STRIPPER	
Polypunch	
ADDITIONAL COSTS FOR DIES	
Reinforced slug-snap	

SPARE PARTS			
Punch head	1-3		219511
Clamping screw	2		219512
Location pin	3		219513
Retaining ring	4		219514
Spring	6		219516
Shims for die t = 0,3			203A33
Shims for die t = 0,5			205A35
ADDITIONAL ACCESSORIES			
Assembly socket			299201599

PASS SYSTEM P7 (BLANK-HOLDER STYLE AND PUNCH INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

DIAMETER: UP TO 26 MM



POS.-NO.

PART-NO.

UPPER PART			
Round	1-8	201551	
Square	1-8	2015502	
Rectangle	1-8	2015503	
Oblong	1-8	2015504	
O.D. Ground Special Shape	1-8	20155G	
EDM Required Special Shape	1-8	20155E	

PUNCH INSERT (H-PM®)			
Round	3	207P7B1	
Square	3	207P7B02	
Rectangle	3	207P7B03	
Oblong	3	207P7B04	
O.D. Ground Special Shape	3	207P7BG	
EDM Required Special Shape	3	207P7BE	

ACTIVE STRIPPER			
Round	8+7	219552	
Square	8+7	2195502	
Rectangle	8+7	2195503	
Oblong	8+7	2195504	
O.D. Ground Special Shape	8+7	21955G	
EDM Required Special Shape	8+7	21955E	

STRIPPER			
Round 35 mm	9	210335	

DIE (SLUG-STOP) (H-PM®)			
Round	10	206301	
Square	10	2063002	
Rectangle	10	2063003	
Oblong	10	2063004	
O.D. Ground Special Shape	10	21630G	
EDM Required Special Shape	10	21630E	

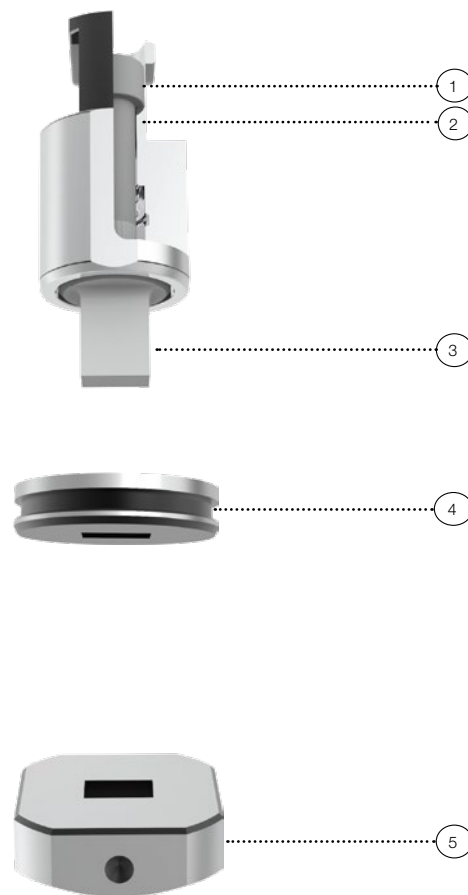
SPARE PARTS			ADDITIONAL COSTS FOR PUNCH		
Punch head	1+2+4	219551	TICN coating		
Clamping screw	2	219553	T-MAX coating		
Location pin	4	219556	A-MAX coating		
Spring	5	219557	Cutting part under 1,00 mm		
pressure disc	6	219558			
Retaining ring	7	219559			
Shims for die t = 0,3		203A33			
Shims for die t = 0,5		205A35			
ADDITIONAL ACCESSORIES			ADDITIONAL COSTS FOR STRIPPER		
Assembling circlip pliers		220300	Polypunch		
Assembly pin		220994			
			ADDITIONAL COSTS FOR DIES		
			Reinforced		
			slug-snap		

PASS SYSTEM P8 (PUNCH INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

DIAMETER: UP TO 33 MM

	POS.-NO.	PART-NO.
UPPER PART		
Round	1-3	201651
Square	1-3	2016502
Rectangle	1-3	2016503
Oblong	1-3	2016504
O.D. Ground Special Shape	1-3	21565G
EDM Required Special Shape	1-3	21565E
PUNCH HOLDER		
For all shapes	1+2	219651
PUNCH INSERT (H-PM®)		
Round	3	207P8B1
Square	3	207P8B02
Rectangle	3	207P8B03
Oblong	3	207P8B04
O.D. Ground Special Shape	3	207P8BG
EDM Required Special Shape	3	207P8BE
STRIPPER		
Round	4	210301
Square	4	2103002
Rectangle	4	2103003
Oblong	4	2103004
O.D. Ground Special Shape	4	21730G
EDM Required Special Shape	4	21730E
DIE (SLUG-STOP) (H-PM®)		
Round	5	206301
Square	5	2063002
Rectangle	5	2063003
Oblong	5	2063004
O.D. Ground Special Shape	5	21630G
EDM Required Special Shape	5	21630E



ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

SPARE PARTS

Clamping screw	2	219654
Shims for die t = 0,3		203A33
Shims for die t = 0,5		205A35

ADDITIONAL COSTS FOR STRIPPER

Polypunch

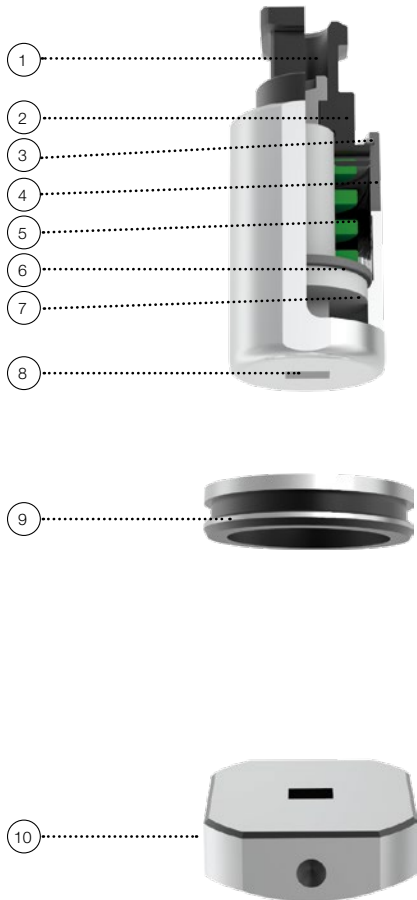
ADDITIONAL COSTS FOR DIES

Reinforced
slug-snap

PASS SYSTEM P9 (BLANK-HOLDER STYLE AND PUNCH INSERT)

TYPE: 33 MM / 70 KN / P1 - P20

DIAMETER: UP TO 26,5 MM



POS.-NO.

PART-NO.

UPPER PART

Round	1-8	201571
Square	1-8	2015702
Rectangle	1-8	2015703
Oblong	1-8	2015704
O.D. Ground Special Shape	1-8	20157G
EDM Required Special Shape	1-8	20157E

PUNCH INSERT (H-PM®)

Round	6	207P9B1
Square	6	207P9B02
Rectangle	6	207P9B03
Oblong	6	207P9B04
O.D. Ground Special Shape	6	207P9BG
EDM Required Special Shape	6	207P9BE

ACTIVE STRIPPER

Round	8+3	219571
Square	8+3	2195702
Rectangle	8+3	2195703
Oblong	8+3	2195704
O.D. Ground Special Shape	8+3	21957G
EDM Required Special Shape	8+3	21957E

STRIPPER

Round 35 mm	9	210335
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DIE (SLUG-STOP) (H-PM®)

Round	10	206301
Square	10	2063002
Rectangle	10	2063003
Oblong	10	2063004
O.D. Ground Special Shape	10	21630G
EDM Required Special Shape	10	21630E

SPARE PARTS

Punch head	1+2+4	219572
Clamping screw	2	219573
Location pin	4	219576
Spring	5	219577
pressure disc	7	219578
Retaining ring	3	219579
Shims for die t = 0,3		203A33
Shims for die t = 0,5		205A35

ADDITIONAL ACCESSORIES

Assembly socket	299201599
-----------------	-----------

ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR STRIPPER

Polypunch

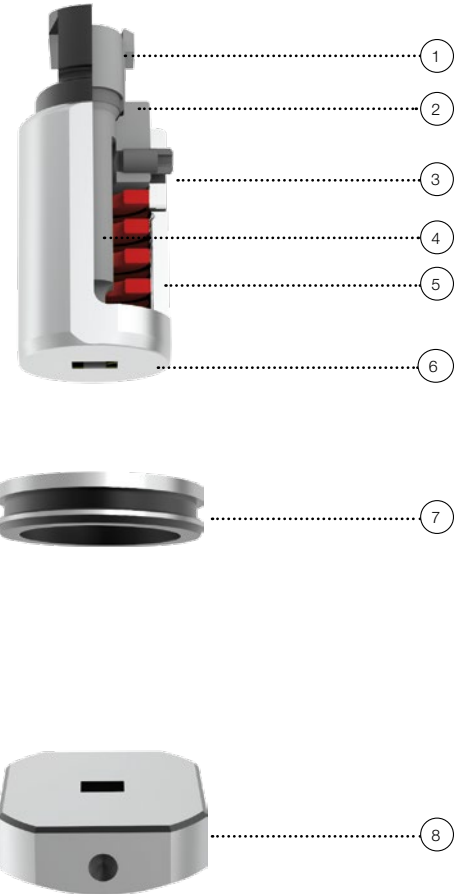
ADDITIONAL COSTS FOR DIES

Reinforced
slug-snap

PASS SYSTEM P10 (BLANK-HOLDER STYLE AND NEEDLE INSERT)

TYPE: 33 MM / 70 KN / P1 - P20
DIAMETER: UP TO 10,5 MM

	POS.-NO.	PART-NO.
UPPER PART		
Round	1-6	201661
Square	1-6	2016602
Rectangle	1-6	2016603
Oblong	1-6	2016604
O.D. Ground Special Shape	1-6	21566G
EDM Required Special Shape	1-6	21566E
PUNCH INSERT (SHAFT Ø 10,5 MM) (H-PM®)		
Round	4	207P10A1
Square	4	207P10A02
Rectangle	4	207P10A03
Oblong	4	207P10A04
O.D. Ground Special Shape	4	207P10AG
EDM Required Special Shape	4	207P10AE
ACTIVE STRIPPER		
Round	6+3	219661
Square	6+3	2196602
Rectangle	6+3	2196603
Oblong	6+3	2196604
O.D. Ground Special Shape	6+3	21966G
EDM Required Special Shape	6+3	21966E
STRIPPER		
Round 35 mm	7	210335
DIE (SLUG-STOP) (H-PM®)		
Round	8	206301
Square	8	2063002
Rectangle	8	2063003
Oblong	8	2063004
O.D. Ground Special Shape	8	21630G
EDM Required Special Shape	8	21630E



ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm
ADDITIONAL COSTS FOR STRIPPER
Polypunch

SPARE PARTS		
Punch head	1+2	219671
Clamping screw	2	219666
Spring	5	219663
Special threadscrew	3	219665
Shims for die t = 0,3		203A33
Shims for die t = 0,5		205A35

ADDITIONAL COSTS FOR DIES
Reinforced slug-snap

ADDITIONAL ACCESSORIES		
Assembly socket		299201599



PASS STANDARD SYSTEM FOR P2R

PASS TOOLS FOR YOUR SALVAGNINI SYSTEM

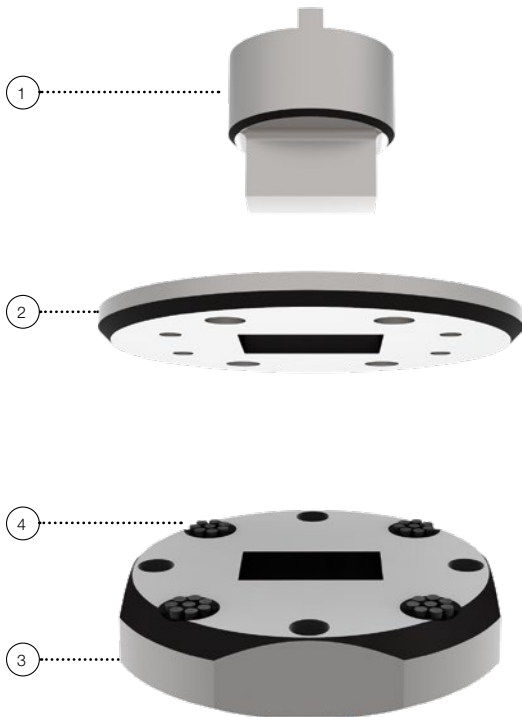
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PASS System Standard (blank-holder style)	up to 50,8 mm	page 21
PASS System Standard (compact version)	up to 60 mm	page 22

PASS SYSTEM STANDARD (BLANK-HOLDER STYLE)

TYPE: 42 MM / 120 KN / P2R

MAX. DIAMETER: 42 MM



	POS.-NO.	PART-NO.
PUNCH (H-PM®)		
Round	1	201L01
Square	1	201L002
Rectangle	1	201L003
Oblong	1	201L004
O.D. Ground Special Shape	1	215LOG
EDM Required Special Shape	1	215LOE
STRIPPER		
Round	2	210L01
Square	2	210L002
Rectangle	2	210L003
Oblong	2	210L004
O.D. Ground Special Shape	2	217LOG
EDM Required Special Shape	2	217LOE
DIE (SLUG-STOP) (H-PM®)		
Round	3	206L01
Square	3	206L002
Rectangle	3	206L003
Oblong	3	206L004
O.D. Ground Special Shape	3	216LOG
EDM Required Special Shape	3	216LOE

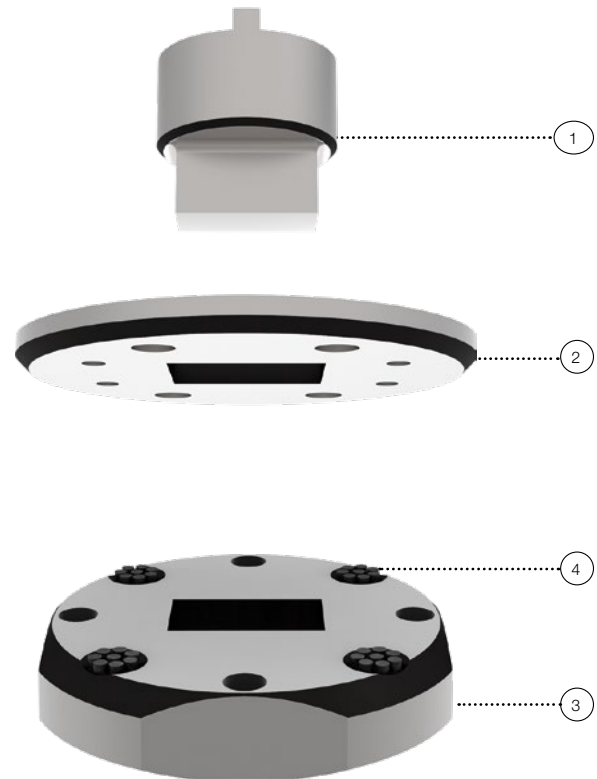
SPARE PARTS			ADDITIONAL COSTS FOR PUNCH	
Shims for die t = 0,3		203A01	TICN coating	
Shims for die t = 0,5		205A01	T-MAX coating	
Brush inserts Ø 13 mm (piece)	4	200B00	A-MAX coating	
Brush inserts Ø 8 mm (piece)	4	200B01	Cutting part under 1,00 mm	
			ADDITIONAL COSTS FOR DIES	
			Reinforced	
			slug-snap	

PASS SYSTEM STANDARD (BLANK-HOLDER STYLE)

TYPE: 50,8 MM / 120 KN / P2R

MAX. DIAMETER: 50,8 MM

	POS.-NO.	PART-NO.
PUNCH (H-PM®)		
Round	1	20115001
Square	1	20115002
Rectangle	1	20115003
Oblong	1	20115004
O.D. Ground Special Shape	1	215150G
EDM Required Special Shape	1	215150E
STRIPPER		
Round	2	21015001
Square	2	21015002
Rectangle	2	21015003
Oblong	2	21015004
O.D. Ground Special Shape	2	217150G
EDM Required Special Shape	2	217150E
DIE (SLUG-STOP) (H-PM®)		
Round	3+4	20615001
Square	3+4	20615002
Rectangle	3+4	20615003
Oblong	3+4	20615004
O.D. Ground Special Shape	3+4	216150G
EDM Required Special Shape	3+4	216150E



ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR DIES

Reinforced
slug-snap

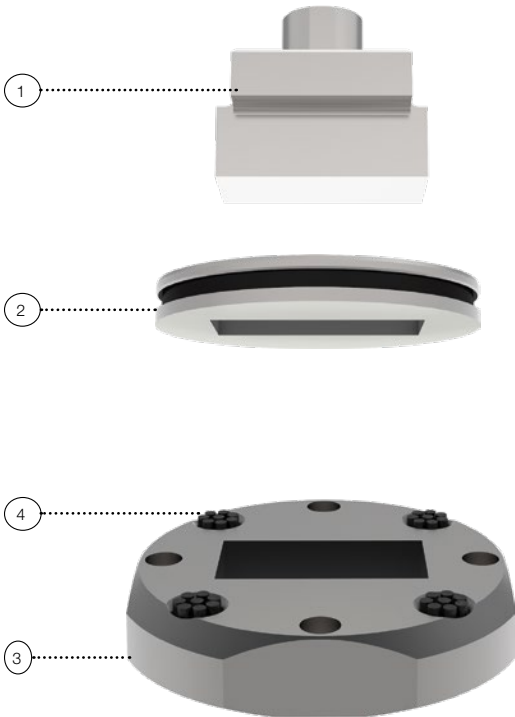
SPARE PARTS

Shims for die t = 0,3		203A01
Shims for die t = 0,5		205A01
Brush inserts Ø 13 mm (piece)	4	200B00
Brush inserts Ø 8 mm (piece)	4	200B01

PASS SYSTEM STANDARD (COMPACT VERSION)

TYPE: 60 MM / 120 KN / P2R

MAX. DIAMETER: 60 MM



	POS.-NO.	PART-NO.
PUNCH (H-PM®)		
Round	1	201L11
Square	1	201L102
Rectangle	1	201L103
Oblong	1	201L104
O.D. Ground Special Shape	1	215L1G
EDM Required Special Shape	1	215L1E

	POS.-NO.	PART-NO.
STRIPPER		
Round	2	210L11
Square	2	210L102
Rectangle	2	210L103
Oblong	2	210L104
O.D. Ground Special Shape	2	217L1G
EDM Required Special Shape	2	217L1E

	POS.-NO.	PART-NO.
DIE (SLUG-STOP) (H-PM®)		
Round	3+4	206L11
Square	3+4	206L102
Rectangle	3+4	206L103
Oblong	3+4	206L104
O.D. Ground Special Shape	3+4	216L1G
EDM Required Special Shape	3+4	216L1E

SPARE PARTS		
Shims for die t = 0,3		203A11
Shims for die t = 0,5		205A11
Brush inserts Ø 13 mm (piece)	4	200B00
Brush inserts Ø 8 mm (piece)	4	200B01

ADDITIONAL COSTS FOR PUNCH
TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR DIES
Reinforced
slug-snap



PASS STANDARD SYSTEM FOR P21 - P24

PASS TOOLS FOR YOUR
SALVAGNINI SYSTEM

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PASS System Standard (compact version) Type 90	90x90 mm	page 27
PASS System Standard (compact version) Type 70	70x90 mm	page 28

PASS SYSTEM STANDARD (COMPACT VERSION)

TYPE 90

TYPE: 90 MM / 260 KN / P22 AND P23

MAX. DIAMETER: 70X90 MM



POS.-NO.

PART-NO.

PUNCH HOLDER			
For all shapes	1	200L61	

PUNCH (H-PM®)			
Round	2	201L61	
Square	2	201L602	
Rectangle	2	201L603	
Oblong	2	201L604	
O.D. Ground Special Shape	2	215L6G	
EDM Required Special Shape	2	215L6E	

STRIPPER			
Round	3+5	210L61	
Square	3+5	210L602	
Rectangle	3+5	210L603	
Oblong	3+5	210L604	
O.D. Ground Special Shape	3+5	217L6G	
EDM Required Special Shape	3+5	217L6E	

DIE (SLUG-STOP) (H-PM®)			
Round	4+5	206L61	
Square	4+5	206L602	
Rectangle	4+5	206L603	
Oblong	4+5	206L604	
O.D. Ground Special Shape	4+5	216L6G	
EDM Required Special Shape	4+5	216L6E	

SPARE PARTS			ADDITIONAL COSTS FOR PUNCH		
Shims for die t = 0,3		203A06	TICN coating		
Shims for die t = 0,5		205A06	T-MAX coating		
Brush inserts Ø 13 mm (piece)	5	200B00	A-MAX coating		
Brush inserts Ø 8 mm (piece)	5	200B01	Cutting part under 1,00 mm		

ADDITIONAL COSTS FOR DIES		
Reinforced		
slug-snap		

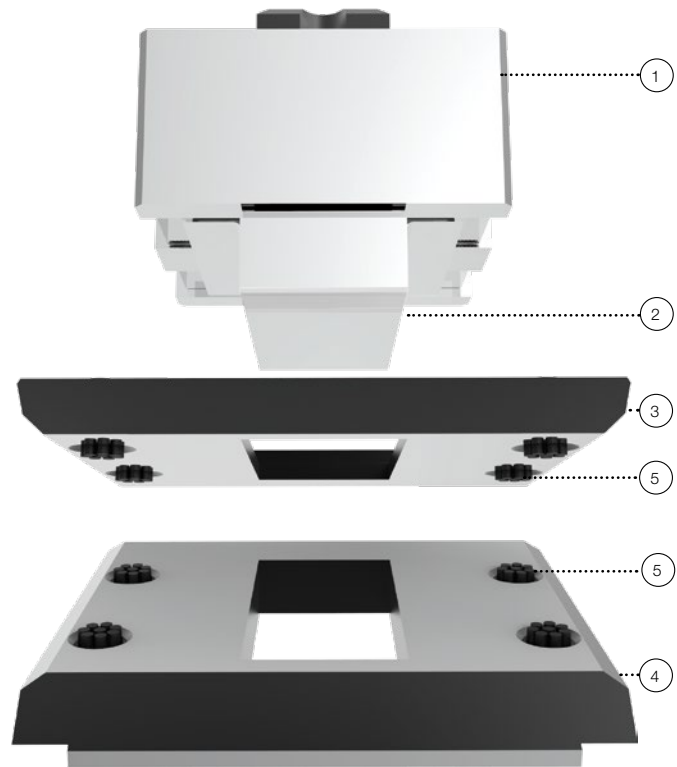
PASS SYSTEM STANDARD (COMPACT VERSION)

TYPE 90

TYPE: 90 MM / 260 KN / P21 AND P24

MAX. DIAMETER: 90X90 MM

	POS.-NO.	PART-NO.
PUNCH HOLDER		
For all shapes	1	200L71
PUNCH (H-PM®)		
Round	2	201L71
Square	2	201L702
Rectangle	2	201L703
Oblong	2	201L704
O.D. Ground Special Shape	2	215L7G
EDM Required Special Shape	2	215L7E
STRIPPER		
Round	3+5	210L71
Square	3+5	210L702
Rectangle	3+5	210L703
Oblong	3+5	210L704
O.D. Ground Special Shape	3+5	217L7G
EDM Required Special Shape	3+5	217L7E
DIE (SLUG-STOP) (H-PM®)		
Round	4+5	206L71
Square	4+5	206L702
Rectangle	4+5	206L703
Oblong	4+5	206L704
O.D. Ground Special Shape	4+5	216L7G
EDM Required Special Shape	4+5	216L7E



ADDITIONAL COSTS FOR PUNCH

TICN coating
T-MAX coating
A-MAX coating
Cutting part under 1,00 mm

ADDITIONAL COSTS FOR DIES

Reinforced
slug-snap

SPARE PARTS

Shims for die t = 0,3		203A07
Shims for die t = 0,5		205A07
Brush inserts Ø 13 mm (piece)	5	200B00
Brush inserts Ø 8 mm (piece)	5	200B01

PASS SYSTEM STANDARD (COMPACT VERSION)

TYPE 70

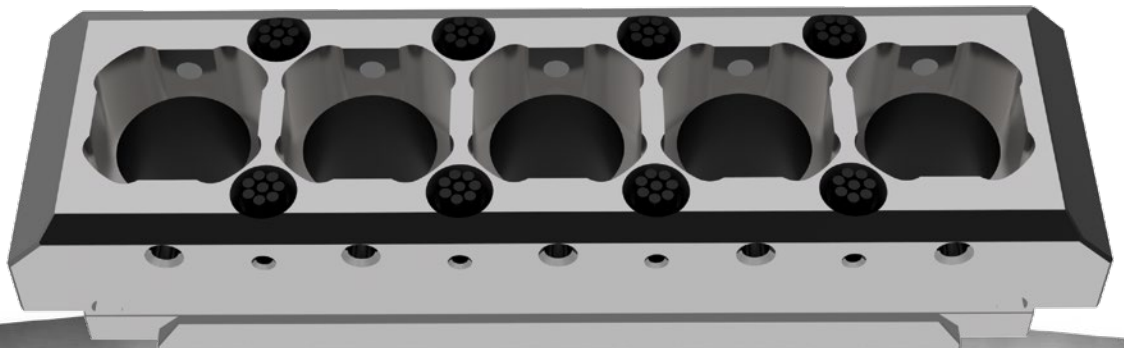
TYPE: 70 MM / 260 KN / P21 TO P24

MAX. DIAMETER: 70X90 MM



	POS.-NO.	PART-NO.
PUNCH HOLDER		
For all shapes	1	200L81
PUNCH (H-PM®)		
Round	2	201L81
Square	2	201L802
Rectangle	2	201L803
Oblong	2	201L804
O.D. Ground Special Shape	2	215L8G
EDM Required Special Shape	2	215L8E
STRIPPER		
Round	3+5	210L81
Square	3+5	210L802
Rectangle	3+5	210L803
Oblong	3+5	210L804
O.D. Ground Special Shape	3+5	217L8G
EDM Required Special Shape	3+5	217L8E
DIE (SLUG-STOP) (H-PM®)		
Round	4+5	206L81
Square	4+5	206L802
Rectangle	4+5	206L803
Oblong	4+5	206L804
O.D. Ground Special Shape	4+5	216L8G
EDM Required Special Shape	4+5	216L8E

SPARE PARTS			ADDITIONAL COSTS FOR PUNCH	
Shims for die t = 0,3		203A08	TICN coating	
Shims for die t = 0,5		205A08	T-MAX coating	
Brush inserts Ø 13 mm (piece)	5	200B00	A-MAX coating	
Brush inserts Ø 8 mm (piece)	5	200B01	Cutting part under 1,00 mm	
			ADDITIONAL COSTS FOR DIES	
			Reinforced	
			slug-snap	



TOOLING CASSETTES

PASS TOOLS FOR YOUR SALVAGNINI SYSTEM

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PASS Tooling Cassette Polypunch to Type „SALVAGNINI S4“	Station P31 up to P35	up to 33 mm	page 42

PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 33 MM / 120 KN / P2R (COMPACT VERSION)

MAX. DIAMETER: 33 MM

PART-NO.

CASSETTE FOR PUNCH	299X33000
DIE CASSETTE	299X33080



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 42 MM / 120 KN / P2R (SPRING LOADED VERSION)

MAX. DIAMETER: 42 MM

PART-NO.

CASSETTE FOR PUNCH

299X42000

DIE CASSETTE

299X60080



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 50,8 MM / 120 KN / P2R (SPRING LOADED VERSION)

MAX. DIAMETER: 50,8 MM

PART-NO.

CASSETTE FOR PUNCH	299X50800
DIE CASSETTE	299X60080



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 60 MM / 120 KN / P2R (COMPACT VERSION)

MAX. DIAMETER: 60 MM

PART-NO.

CASSETTE FOR PUNCH

299X60000

DIE CASSETTE

299X60080



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 33 MM / 70 KN / P1 TO P20

MAX. DIAMETER: 33 MM

PART-NO.

CASSETTE FOR PUNCH

299X33020

DIE CASSETTE

299X33090



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 70 MM / 260 KN / P21 TO P24 / FRONT & REAR

MAX. DIAMETER: 70X90 MM

PART-NO.

CASSETTE FOR PUNCH

299X77010

DIE CASSETTE

299X77080



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 90 MM / 260 KN / P21 AND P22 / FRONT

MAX. DIAMETER: 70X90 MM / 90X90 MM

PART-NO.

CASSETTE FOR PUNCH	299X79010
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DIE CASSETTE	299X79080
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PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S4“

TYPE: 90 MM / 260 KN / P23 AND P24 / REAR

MAX. DIAMETER: 70X90 MM / 90X90 MM

PART-NO.

CASSETTE FOR PUNCH

299X79020

DIE CASSETTE

299X79090



PASS TOOLING CASSETTE TO TYPE

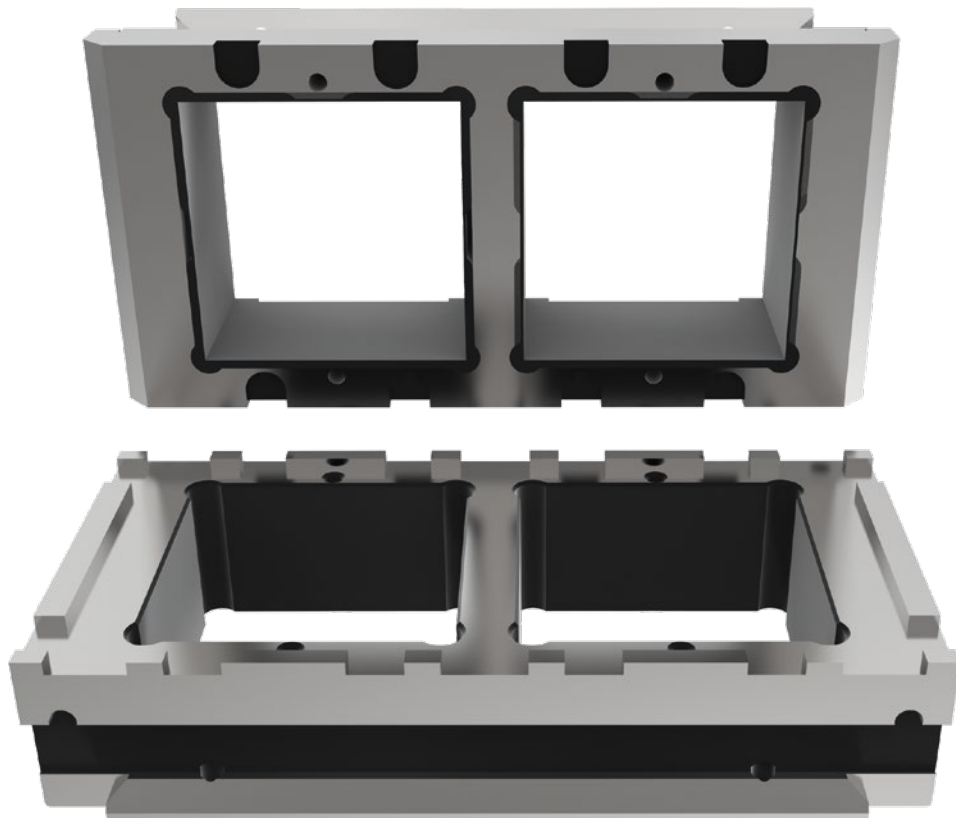
„SALVAGNINI S2“

TYPE: 90 MM / 260 KN / P21 TO P24

MAX. DIAMETER: 90X90 MM / 90X90 MM

PART-NO.

CASSETTE FOR PUNCH	299X99510
DIE CASSETTE	299X99520



PASS TOOLING CASSETTE TO TYPE

„SALVAGNINI S2“

TYPE: 33 MM / 70 KN / P1 TO P20

MAX. DIAMETER: 33 MM

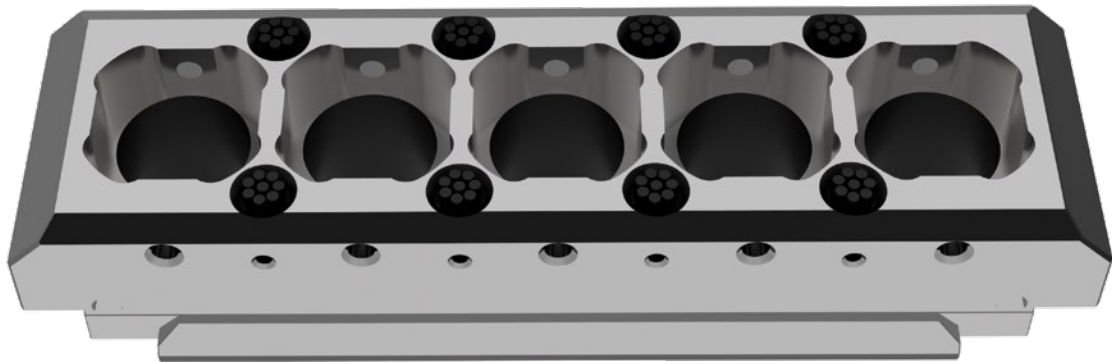
PART-NO.

CASSETTE FOR PUNCH

299X33520

DIE CASSETTE

299X33590



PASS TOOLING CASSETTE POLYPUNCH TO TYPE „SALVAGNINI S4“

TYPE: 33 MM / 40 KN / P31 TO P35

MAX. DIAMETER: 33 MM

PART-NO.

CASSETTE FOR PUNCH

299XPO000

DIE CASSETTE

299XPO070



A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.



ACCESSORIES

PASS ACCESSORIES FOR YOUR
SALVAGNINI SYSTEM

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ps:®shear-blades	500 mm	page 47

ps:® shear-blades

TYPE: 400 MM

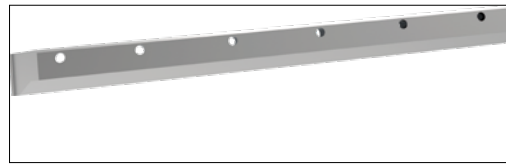
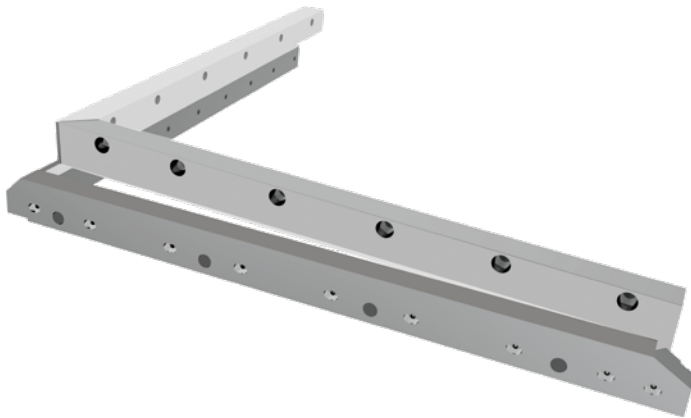
MADE OF X3-PM STEEL FOR LONG-LASTING LIFETIME

PART-NO.

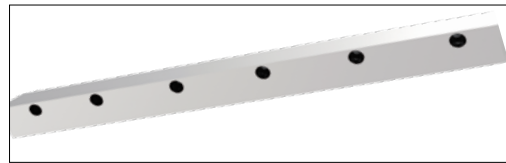
SHEAR BLADES - 400 MM

Set

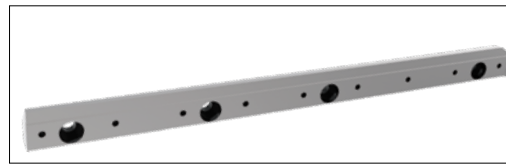
SCHEERMESSE400



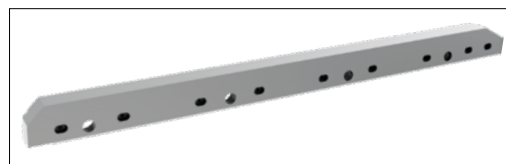
TOP X



TOP Y



BOTTOM X



BOTTOM Y

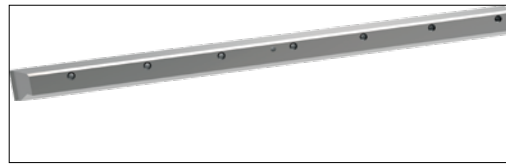
MADE OF X3-PM STEEL FOR LONG-LASTING LIFETIME

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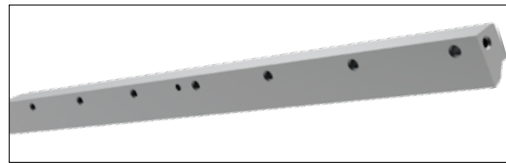
SHEAR BLADES - 500 MM

Set

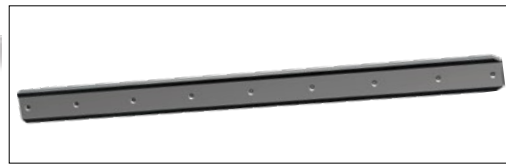
SCHERMESSER500



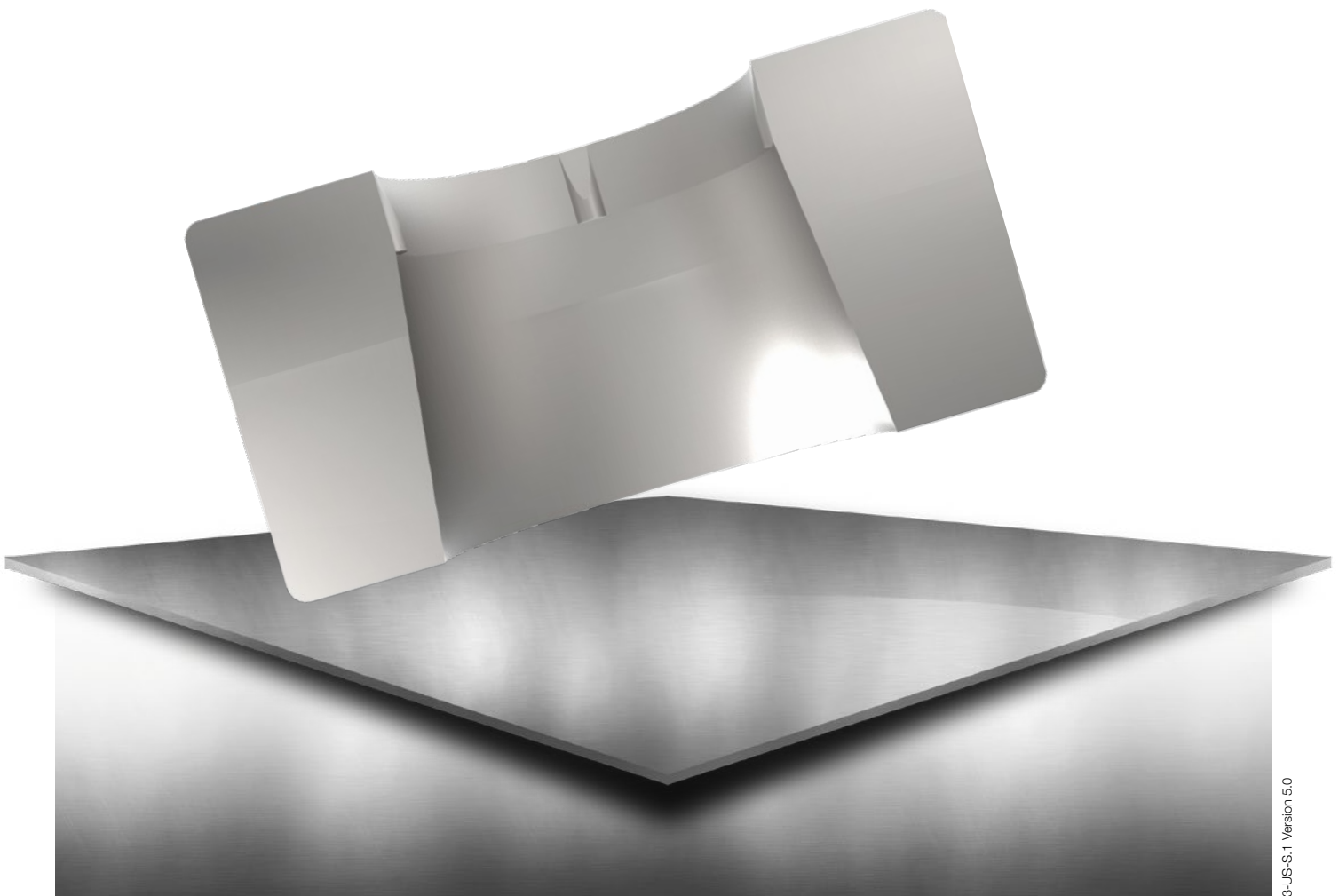
TOP X



TOP Y



BOTTOM
X AND Y



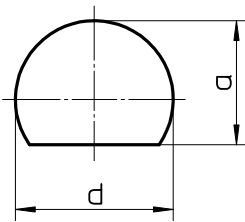
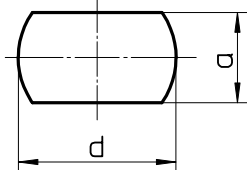
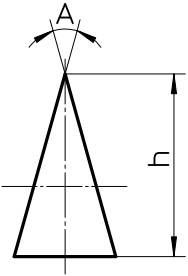
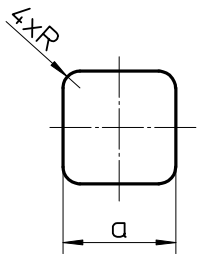
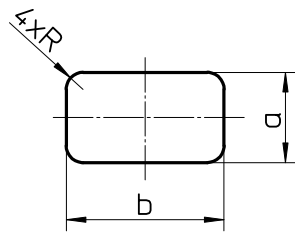
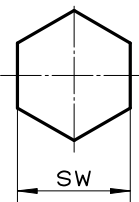
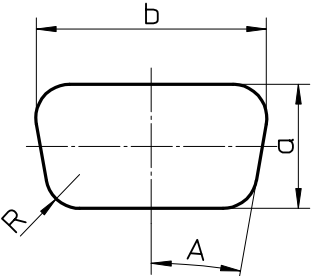
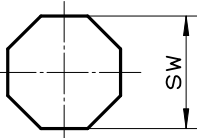
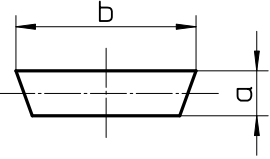
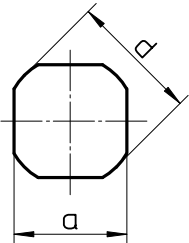
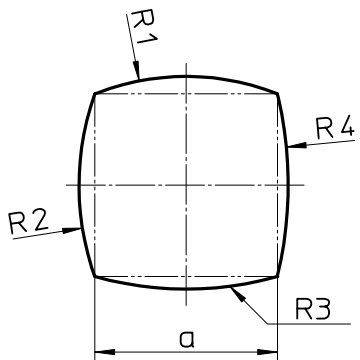
TECHNICAL INFORMATION

INFORMATION ABOUT OUR TOOLS FOR YOUR SALVAGNINI SYSTEM

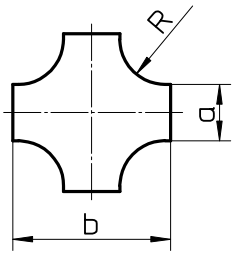
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Lifetime of tools regrind advice	page 53
PASS coating versions / draw-polishing	page 54
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Punches with different shear types	page 56
PASS back taper on punches	page 57
PASS corner radius on punches	page 58
PASS punches with reinforced shoulder	page 59

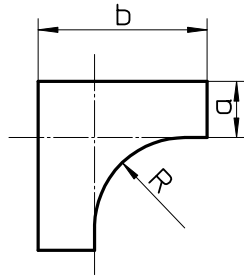
O.D. GROUND SPECIAL SHAPES

 <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>	

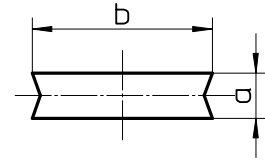
EDM REQUIRED SPECIAL SHAPES



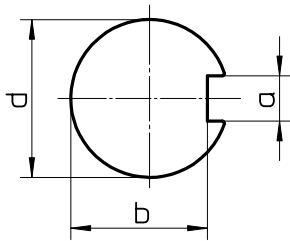
E01



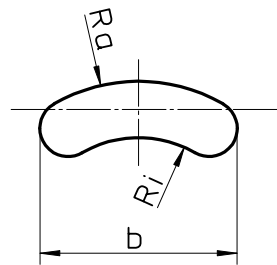
E02



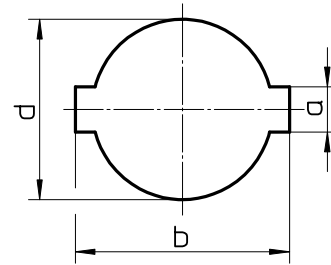
E03



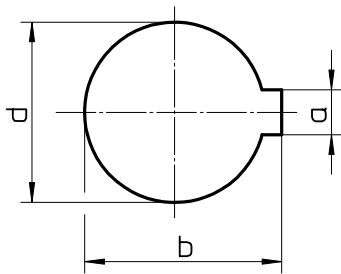
E04



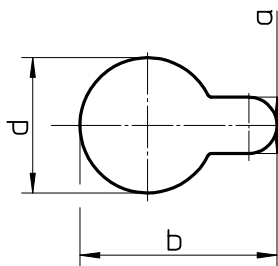
E05



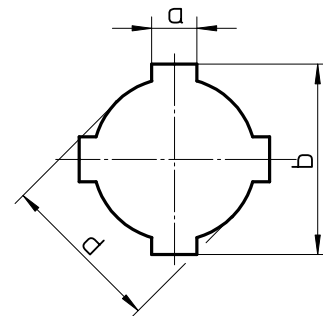
E06



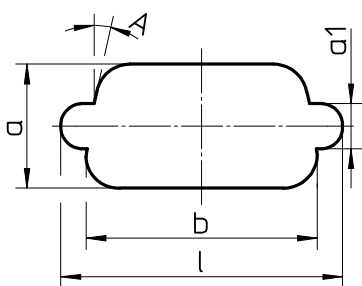
E07



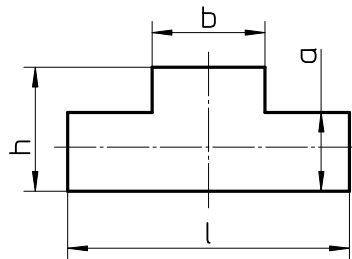
E08



E09



E10



E11

PASS TOOL VARIETY

HWS

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

Advantages for customer:

- excellent cost in accordance to performance

H-PM®

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

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

Advantage for customer:

- excellent cost in accordance to performance
- good stability for edges by increased toughness
- high tool lifetime due to the uniformed microstructure
- increased current hit-flex-capability; suitable as an excellent base for dies

X3-PM

The X3-PM tools are made of a high-end powder-metallurgical steel with the best possible performance characteristics for punches in the punching technology due to the best possible degree of purity.

The segregational uniformed microstructure with high vanadium concentration in the complete cross-section of the punch guarantees best possible wear resistance regarding tool lifetime.

Advantage for customer:

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

X8-PM

The X8-PM tools are made of a high-end powder-metallurgical steel the best possible performance characteristics for dies in the punching technology caused by best possible degree of purity.

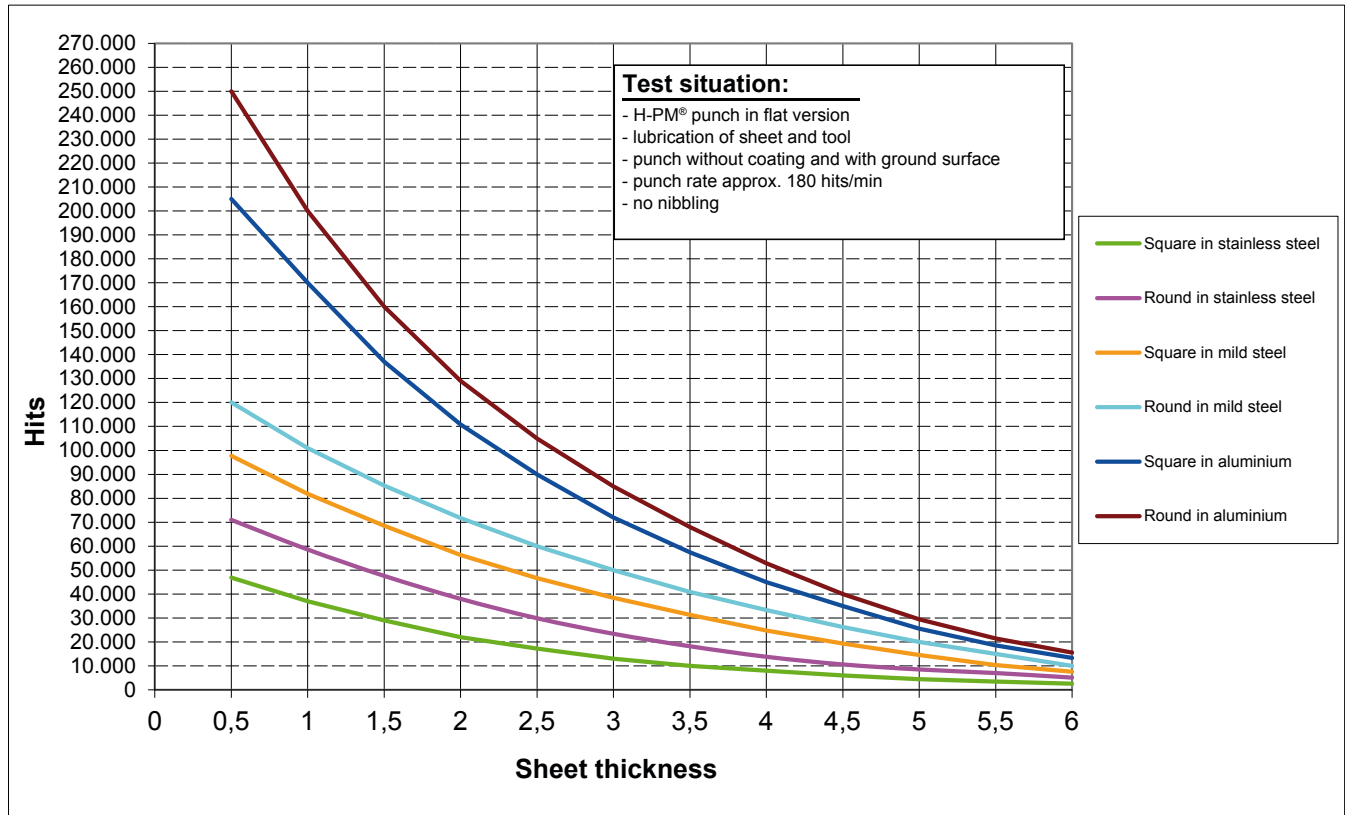
The high ductility of the segregational uniformed microstructure guarantees best possible fatigue limit. This kind of steel is especially suitable for dies with risk-breakage in regard to special shapes.

Advantage for customer:

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

LIFETIME OF TOOLS | REGRIND ADVICE

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



INFLUENCING FACTORS	FACTOR
Galvanised steel / stainless steel with foil / aluminium anodised	0,5 - 0,8
No sheet lubrication	0,4 - 0,6
Punch coating (TiCN for stainless steel / T-MAX for galvanised steel / A-MAX for aluminium)	2,0 - 4,0
PASS X3-PM punch	6,0 - 10,0
Nibbling	0,7 - 0,9
Notching	0,5 - 0,7
Shear	0,8 - 0,9
Punching rate > 300 hits / min.	0,8 - 0,9
Cutting part with EDM surface	0,4 - 0,8
Cutting part with polished surface	1,5 - 3,0
Cutting part smaller than 1,5x sheet thickness	0,6 - 0,8
Cutting part smaller than 1,0x sheet thickness	0,3 - 0,5
Using of a too small clearance	0,4 - 0,9

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

PASS COATING VERSIONS / DRAW-POLISHING

TO REDUCE MATERIAL BUILD-UP

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

Furthermore we attach great importance to a high quality hardening process by repeated temporing and deep-freeze subsequently.

This process guarantees an extremely high hardness with an outstanding wear resistance of our punching tools.

Associated with modern production methods (grinding of the cutting edges with special grinding wheels) we can ensure that the wide range of different sheet qualities can be punched up to 1.600 N/mm² – no matter if it concerns mild alloyed aluminium, mild steel, stainless steel or spring band steel.

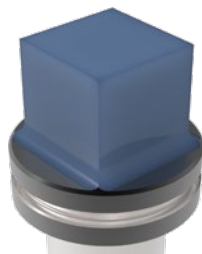
A high punch hardness as well as an excellent grinding surface are important in order to counteract the problem with edge build-up.

Tests show us that the well-known TiCN coating is a good coating to increase the lifetime (especially working with stainless steel). However, the problem of material buildup on the edges have not really been counteracted.

Built-up edges are known especially when working with

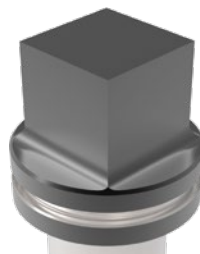
- galvanised steel
- aluminium

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



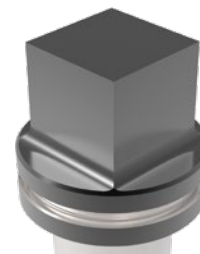
TiCN

for working with
stainless steel



A-MAX

for dry processing with
aluminium sheet



T-MAX

for working with
galvanised sheet / zincor

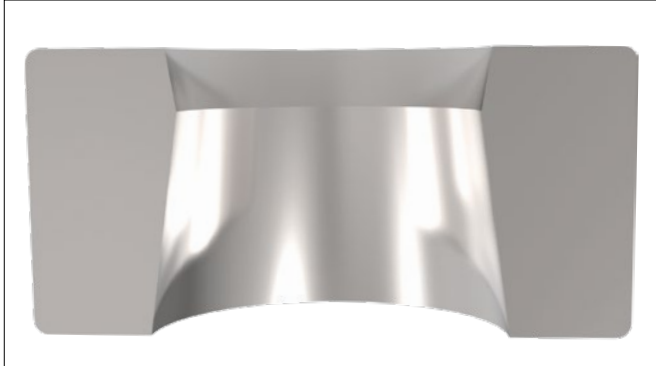
We recommend draw-polished punch edges to increase tool lifetime and reduce material build up (prices on request):



DIE VERSIONS

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

SLUG-STOP (STANDARD)



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

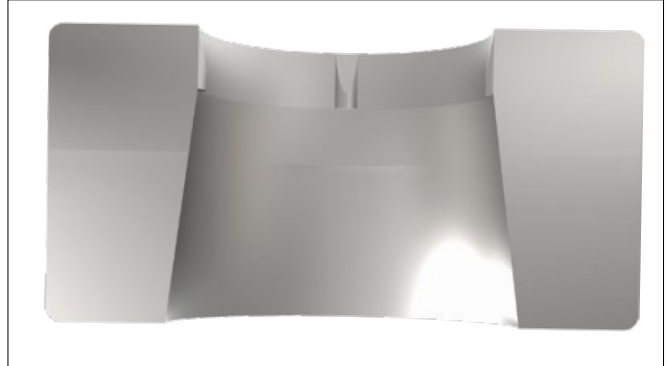
This means that the upper part of the cutting part is produced with a negative angle.

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

This is not recommended for:

- shapes smaller than 1,25 mm
- clearance smaller 0,1 mm

SLUG-SNAP (SPECIAL VERSION - ADDITIONAL COSTS)

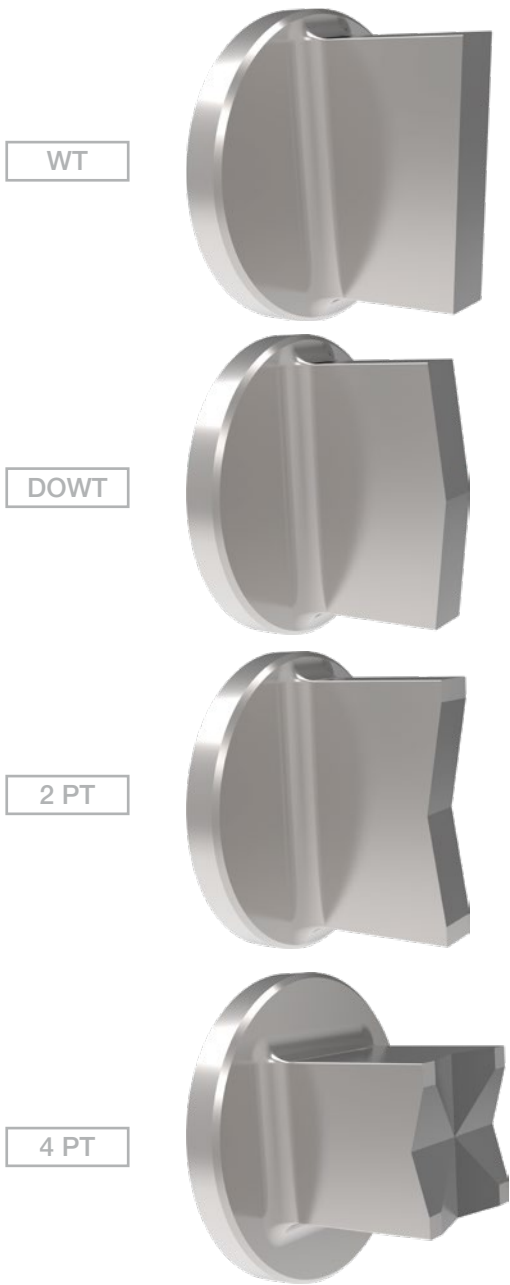


Alternatively we offer our slug-snap version (additional costs).

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

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

PUNCHES WITH DIFFERENT SHEAR TYPES



WT

DOWT

2 PT

4 PT

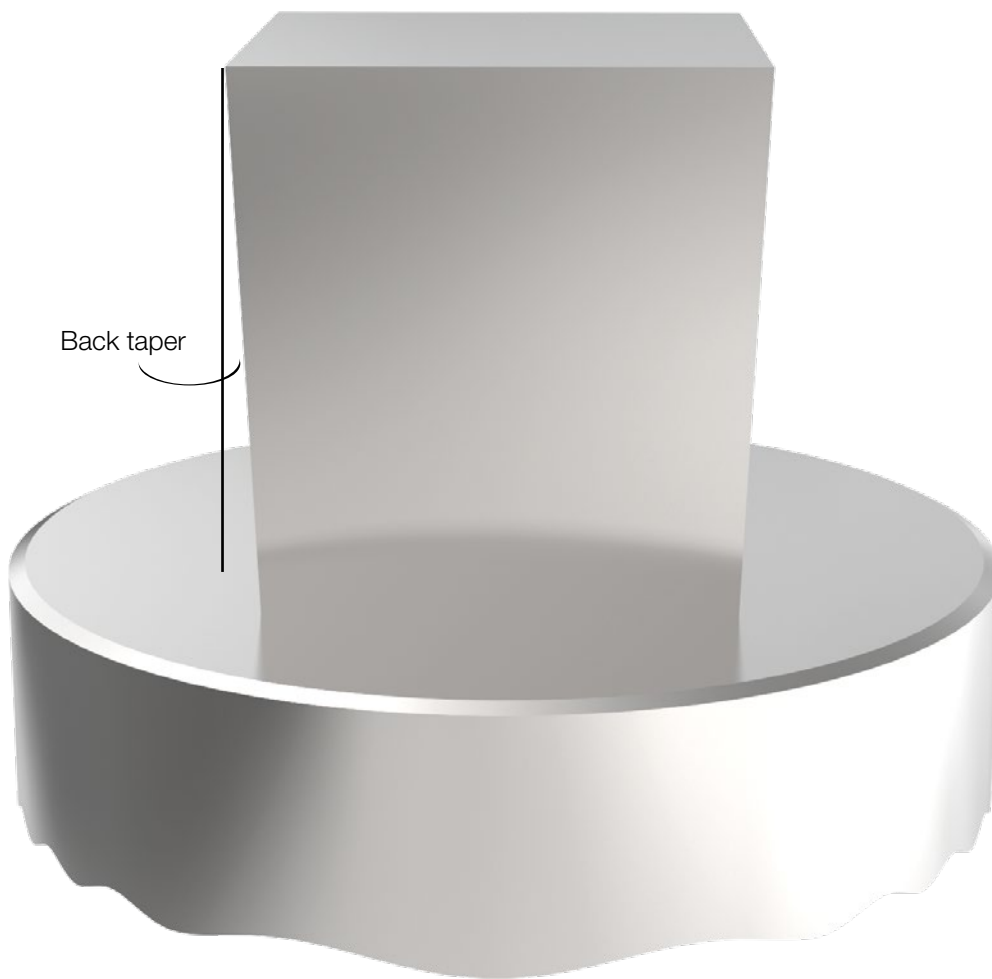
	DESCRIPTION
WT	
Advantage	easy regrindable
Disadvantage	lateral forces
DOWT	
Advantages	easy regrindable no lateral forces
Disadvantage	only reasonable for big shapes
2 PT	
Advantages	no lateral forces optimal die cutting
Disadvantages	only reasonable for big and slim shapes difficult to regrind
4 PT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

PASS BACK TAPER ON PUNCHES

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

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

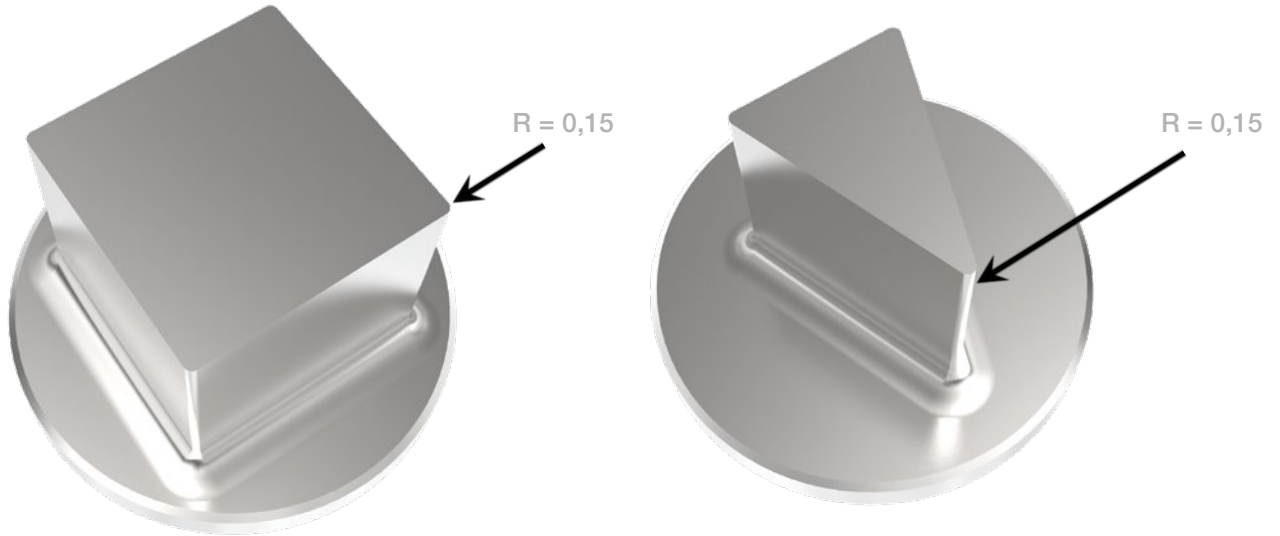
We recommend a line polished version for cutting parts, which have to be produced sink-eroded (special shape with internal shape, e.g. cross-form, U-form, etc.) and in high quality sheets.



PASS CORNER RADIUS ON PUNCHES

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

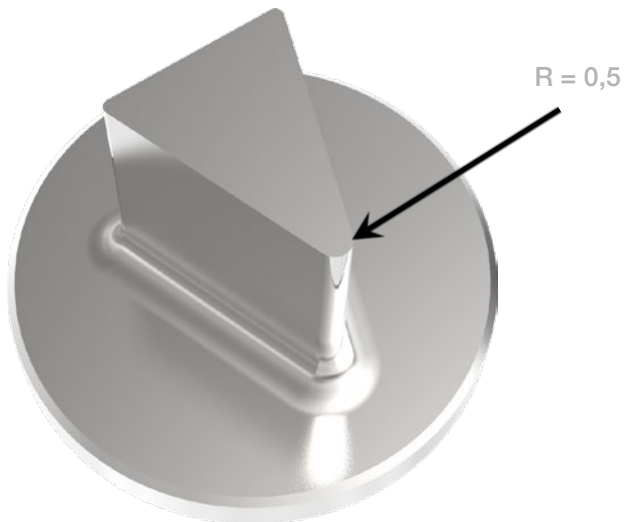
E.g.: square and triangle punch



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

E.g.:

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



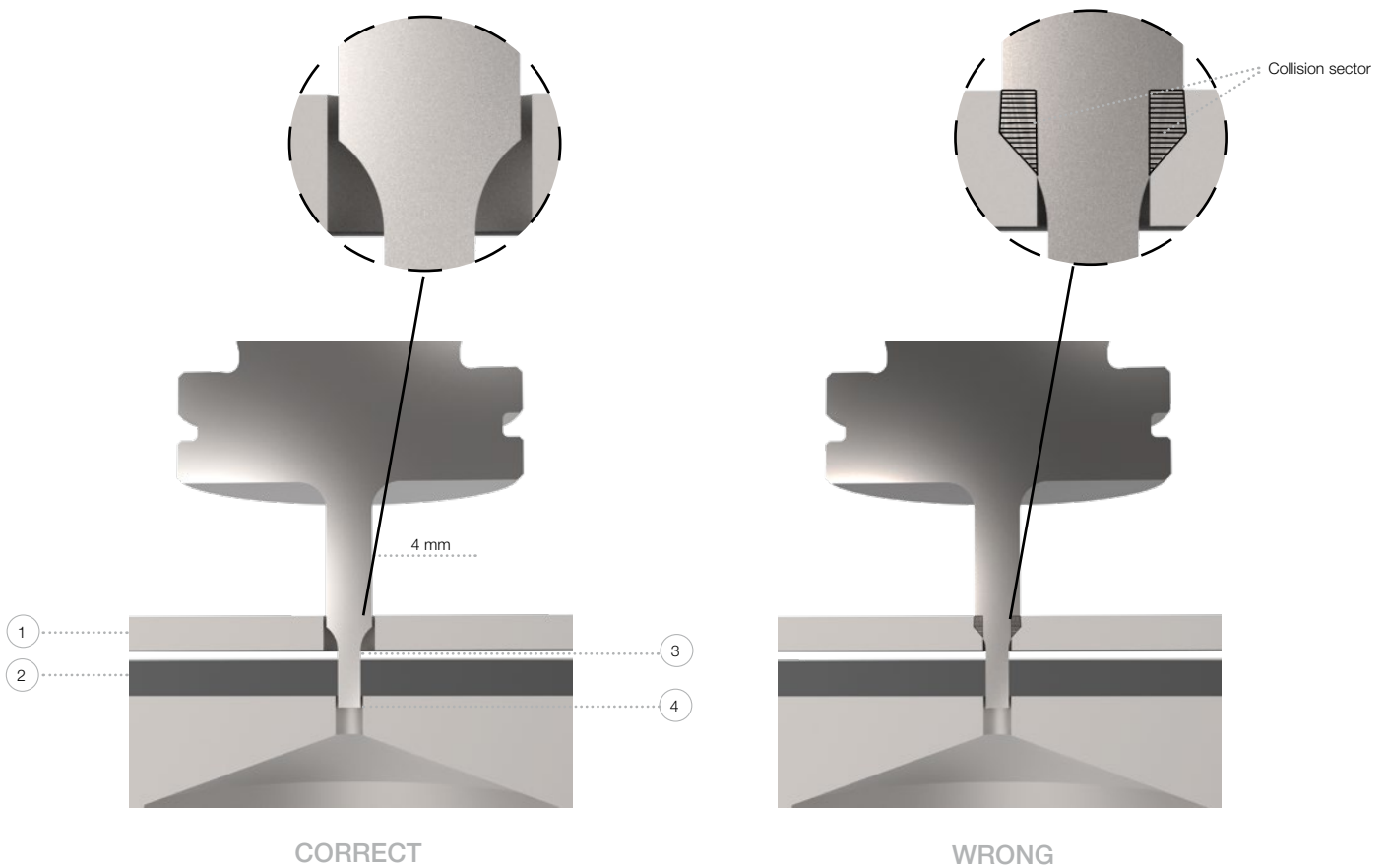
PASS PUNCHES WITH REINFORCED SHOULDER

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

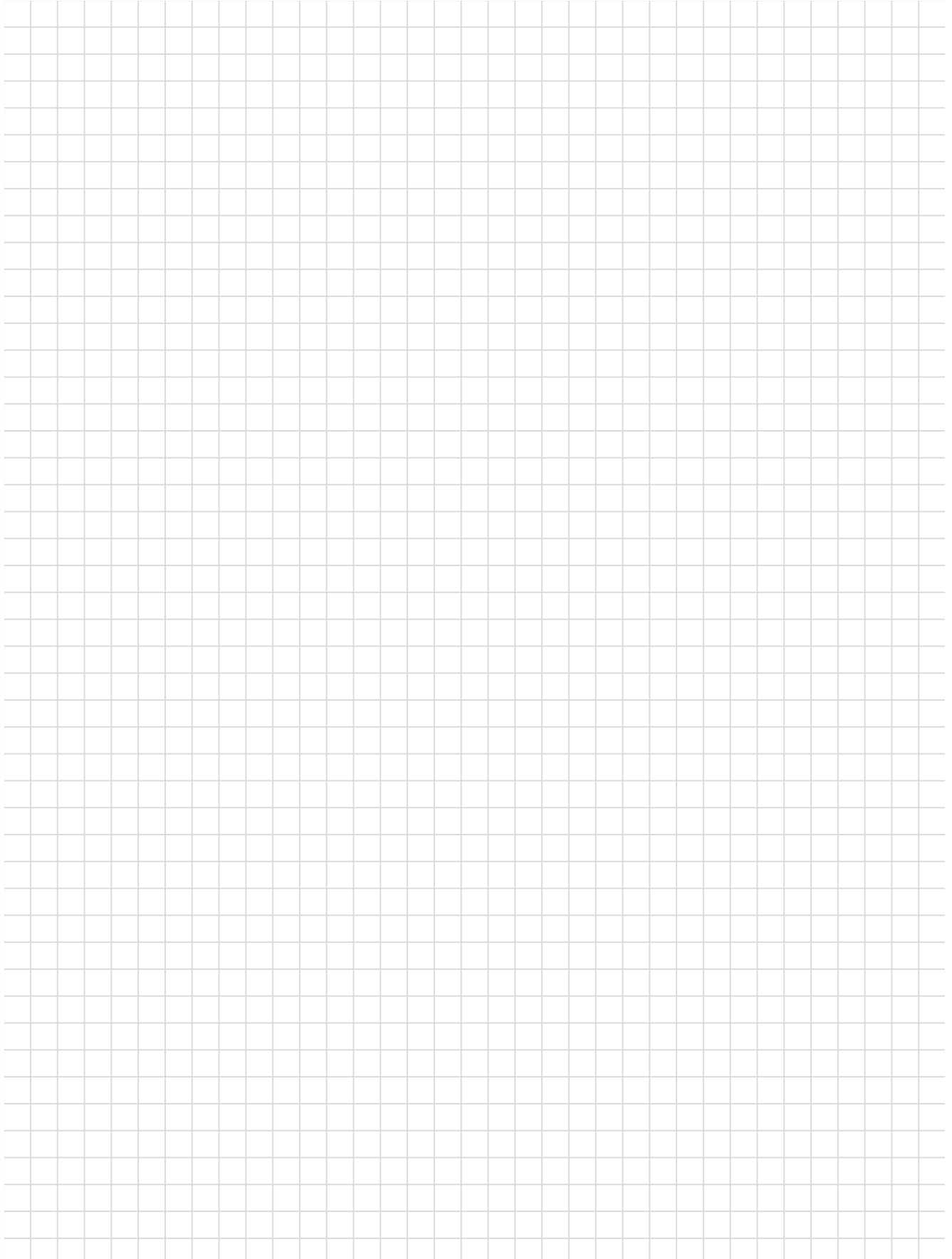
This guarantees that you will get a tool with highest stability in order to punch also thicker and high-strength sheets.

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

It might be possible that it gets necessary to use a stripper with an appropriate big shape (width min. 4,5 mm) in order to get sure that the reinforced punch shoulder can immerse into the stripper.



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



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