

schreurs. Nichts als Perfektion.

# HARDLINE

## Die neue schreurs Serie für Bearbeitungen bis 65 HRC.

### NEU IM PROGRAMM

Kugel- / Torus- / Schaft- & HighFeed-Fräser

Für den Schrupp-, Vorschlicht- und Schlichteinsatz

Spezielle Geometrien für den Formen-, Werkzeug- & Gesenkbau

Innovative Beschichtung für exzellente Oberflächen



schreurs.  
PRÄZISIONSWERKZEUGE

# VHM-Kugelfräser für allgemeinen Einsatz bis zu 65 HRC. Schrubb-, Vorschlicht- und Schlicht-Einsatz mit hohen Schnittwerten und Standwegen

SHBN

h5

R  $\pm 0,005$

R  $\pm 0,01$

STH COATING

R  $\pm 0,005$   
-0.000/  
-0.010

R  $\pm 0,012$   
-0.005/  
-0.015

30° HELIX

CENTRE CUT

15° SHANK ANGLE

<math><700</math>  
N/mm<sup>2</sup>

700-  
1100  
N/mm<sup>2</sup>

1100-  
1300  
N/mm<sup>2</sup>

30-45  
HRC

45-55  
HRC

55-60  
HRC

60-65  
HRC

65-70  
HRC

INOX

AL

CU CuZn  
Gold PL

TI

CFK  
GFK

PLASTIC

GRAPHIT

Best.-Nr. / Order no.	d1	R	L1	L2	L	D	Z	Stk. €
SHBN - 2002 - 005 - S04 - STH	0,2	0,10	0,2	0,5	40	4	2	50,50 €
SHBN - 2002 - 010 - S04 - STH				1,0				50,50 €
SHBN - 2002 - 015 - S04 - STH				1,5				50,50 €
SHBN - 2002 - 020 - S04 - STH				2,0				50,50 €
SHBN - 2002 - 025 - S04 - STH				2,5				53,40 €
SHBN - 2002 - 030 - S04 - STH				3,0				53,40 €
SHBN - 2003 - 010 - S04 - STH	0,3	0,15	0,3	1,0	40	4	2	47,50 €
SHBN - 2003 - 015 - S04 - STH				1,5				47,50 €
SHBN - 2003 - 020 - S04 - STH				2,0				47,50 €
SHBN - 2003 - 025 - S04 - STH				2,5				48,70 €
SHBN - 2003 - 030 - S04 - STH				3,0				48,70 €
SHBN - 2004 - 010 - S04 - STH	0,4	0,20	0,4	1,0	40	4	2	45,90 €
SHBN - 2004 - 015 - S04 - STH				1,5				45,90 €
SHBN - 2004 - 020 - S04 - STH				2,0				45,90 €
SHBN - 2004 - 025 - S04 - STH				2,5				45,90 €
SHBN - 2004 - 030 - S04 - STH				3,0				45,90 €
SHBN - 2004 - 040 - S04 - STH				4,0				45,90 €
SHBN - 2004 - 050 - S04 - STH				5,0				45,90 €
SHBN - 2005 - 010 - S04 - STH	0,5	0,25	0,5	1,0	45	4	2	42,70 €
SHBN - 2005 - 015 - S04 - STH				1,5				42,70 €
SHBN - 2005 - 020 - S04 - STH				2,0				42,70 €
SHBN - 2005 - 030 - S04 - STH				3,0				42,70 €
SHBN - 2005 - 040 - S04 - STH				4,0				42,70 €
SHBN - 2005 - 050 - S04 - STH				5,0				43,50 €
SHBN - 2005 - 060 - S04 - STH				6,0				43,50 €
SHBN - 2005 - 080 - S04 - STH				8,0				43,50 €
SHBN - 2005 - 100 - S04 - STH				10,0				43,50 €
SHBN - 2006 - 010 - S04 - STH				0,6				0,30
SHBN - 2006 - 020 - S04 - STH	2,0	40,20 €						
SHBN - 2006 - 030 - S04 - STH	3,0	40,20 €						
SHBN - 2006 - 040 - S04 - STH	4,0	41,10 €						
SHBN - 2006 - 050 - S04 - STH	5,0	41,10 €						
SHBN - 2006 - 060 - S04 - STH	6,0	41,10 €						
SHBN - 2006 - 080 - S04 - STH	8,0	43,40 €						
SHBN - 2006 - 100 - S04 - STH	10,0	43,40 €						
SHBN - 2006 - 120 - S04 - STH	12,0	43,40 €						

Best.-Nr. / Order no.	d1	R	L1	L2	L	D	Z	Stk. €			
SHBN - 2008 - 020 - S04 - STH	0,8	0,40	0,8	2,0	45	4	2	37,70 €			
SHBN - 2008 - 030 - S04 - STH				3,0				37,70 €			
SHBN - 2008 - 040 - S04 - STH				4,0				38,60 €			
SHBN - 2008 - 050 - S04 - STH				5,0				38,60 €			
SHBN - 2008 - 060 - S04 - STH				6,0				39,50 €			
SHBN - 2008 - 080 - S04 - STH				8,0				39,50 €			
SHBN - 2008 - 100 - S04 - STH				10,0				39,50 €			
SHBN - 2010 - 020 - S04 - STH	1,0	0,50	1,0	2,0	45	4	2	34,10 €			
SHBN - 2010 - 030 - S04 - STH				3,0				34,10 €			
SHBN - 2010 - 040 - S04 - STH				4,0				34,10 €			
SHBN - 2010 - 050 - S04 - STH				5,0				34,10 €			
SHBN - 2010 - 060 - S04 - STH				6,0				34,10 €			
SHBN - 2010 - 080 - S04 - STH				8,0				34,10 €			
SHBN - 2010 - 100 - S04 - STH				10,0				36,20 €			
SHBN - 2010 - 120 - S04 - STH				12,0	36,20 €						
SHBN - 2010 - 140 - S04 - STH				14,0	36,20 €						
SHBN - 2010 - 160 - S04 - STH				16,0	37,00 €						
SHBN - 2010 - 180 - S04 - STH				18,0	37,90 €						
SHBN - 2010 - 200 - S04 - STH				20,0	37,90 €						
SHBN - 2010 - 020 - S06 - STH				1,0	0,50	1,0	2,0	50	6	2	38,40 €
SHBN - 2010 - 030 - S06 - STH							3,0				38,40 €
SHBN - 2010 - 040 - S06 - STH	4,0	38,40 €									
SHBN - 2010 - 050 - S06 - STH	5,0	38,40 €									
SHBN - 2010 - 060 - S06 - STH	6,0	38,40 €									
SHBN - 2010 - 080 - S06 - STH	8,0	38,40 €									
SHBN - 2010 - 100 - S06 - STH	10,0	39,30 €									
SHBN - 2010 - 120 - S06 - STH	12,0	39,30 €									
SHBN - 2010 - 140 - S06 - STH	14,0	39,30 €									
SHBN - 2010 - 160 - S06 - STH	16,0	41,40 €									
SHBN - 2010 - 180 - S06 - STH	18,0	42,40 €									
SHBN - 2010 - 200 - S06 - STH	20,0	42,40 €									
SHBN - 2012 - 040 - S04 - STH	1,2	0,60	1,2				4,0	45	4	2	35,30 €
SHBN - 2012 - 060 - S04 - STH							6,0				35,30 €
SHBN - 2012 - 080 - S04 - STH				8,0	35,30 €						
SHBN - 2012 - 100 - S04 - STH				10,0	36,20 €						
SHBN - 2012 - 120 - S04 - STH				12,0	36,20 €						
SHBN - 2012 - 160 - S04 - STH				16,0	37,00 €						
SHBN - 2012 - 200 - S04 - STH				20,0	37,00 €						
SHBN - 2012 - 040 - S06 - STH	1,2	0,60	1,2	4,0	50	6	2	39,30 €			
SHBN - 2012 - 060 - S06 - STH				6,0				39,30 €			
SHBN - 2012 - 080 - S06 - STH				8,0				39,30 €			
SHBN - 2012 - 100 - S06 - STH				10,0				40,30 €			
SHBN - 2012 - 120 - S06 - STH				12,0	40,30 €						
SHBN - 2012 - 160 - S06 - STH				16,0	43,40 €						
SHBN - 2012 - 200 - S06 - STH				20,0	43,40 €						
SHBN - 2014 - 060 - S04 - STH				1,4	0,70			1,4	6,0	45	4
SHBN - 2014 - 080 - S04 - STH	8,0	35,30 €									
SHBN - 2014 - 120 - S04 - STH	12,0	37,00 €									
SHBN - 2014 - 160 - S04 - STH	16,0	38,70 €									

Best.-Nr. / Order no.	d1	R	L1	L2	L	D	Z	Stk. €					
SHBN - 2015 - 030 - S04 - STH	1,5	0,75	1,5	3,0	45	4	2	34,10 €					
SHBN - 2015 - 040 - S04 - STH				4,0				34,10 €					
SHBN - 2015 - 060 - S04 - STH				6,0				34,10 €					
SHBN - 2015 - 080 - S04 - STH				8,0				34,90 €					
SHBN - 2015 - 100 - S04 - STH				10,0				36,20 €					
SHBN - 2015 - 120 - S04 - STH				12,0	37,90 €								
SHBN - 2015 - 140 - S04 - STH				14,0	50			37,90 €					
SHBN - 2015 - 160 - S04 - STH				16,0	38,70 €								
SHBN - 2015 - 180 - S04 - STH				18,0	38,70 €								
SHBN - 2015 - 200 - S04 - STH				20,0	38,70 €								
SHBN - 2015 - 220 - S04 - STH				22,0	60			40,40 €					
SHBN - 2015 - 250 - S04 - STH				25,0	40,40 €								
SHBN - 2015 - 300 - S04 - STH				30,0	70			43,90 €					
SHBN - 2015 - 030 - S06 - STH				1,5	0,75			1,5	3,0	50	6	2	39,30 €
SHBN - 2015 - 040 - S06 - STH									4,0				39,30 €
SHBN - 2015 - 060 - S06 - STH	6,0	39,30 €											
SHBN - 2015 - 080 - S06 - STH	8,0	40,30 €											
SHBN - 2015 - 100 - S06 - STH	10,0	40,30 €											
SHBN - 2015 - 120 - S06 - STH	12,0	42,20 €											
SHBN - 2015 - 140 - S06 - STH	14,0	60	42,20 €										
SHBN - 2015 - 160 - S06 - STH	16,0	45,50 €											
SHBN - 2015 - 180 - S06 - STH	18,0	45,50 €											
SHBN - 2015 - 200 - S06 - STH	20,0	45,50 €											
SHBN - 2015 - 220 - S06 - STH	22,0	65	45,60 €										
SHBN - 2015 - 250 - S06 - STH	25,0	45,60 €											
SHBN - 2015 - 300 - S06 - STH	30,0	70	49,20 €										
SHBN - 2016 - 060 - S04 - STH	1,6	0,80	1,6			6,0	45		4	2			39,20 €
SHBN - 2016 - 080 - S04 - STH						8,0	39,20 €						
SHBN - 2016 - 120 - S04 - STH				12,0	50	41,10 €							
SHBN - 2016 - 160 - S04 - STH				16,0	41,10 €								
SHBN - 2016 - 200 - S04 - STH				20,0	43,10 €								
SHBN - 2018 - 060 - S04 - STH	1,8	0,90	1,8	6,0	45	4	2	39,20 €					
SHBN - 2018 - 080 - S04 - STH				8,0	39,20 €								
SHBN - 2018 - 120 - S04 - STH				12,0	50			41,10 €					
SHBN - 2018 - 160 - S04 - STH				16,0	41,10 €								
SHBN - 2018 - 200 - S04 - STH				20,0	43,10 €								
SHBN - 2020 - 040 - S04 - STH	2,0	1,00	2,0	4,0	45	4	2	34,10 €					
SHBN - 2020 - 060 - S04 - STH				6,0				34,10 €					
SHBN - 2020 - 080 - S04 - STH				8,0				34,10 €					
SHBN - 2020 - 100 - S04 - STH				10,0				34,10 €					
SHBN - 2020 - 120 - S04 - STH				12,0				34,90 €					
SHBN - 2020 - 140 - S04 - STH				14,0	50			34,90 €					
SHBN - 2020 - 160 - S04 - STH				16,0	35,70 €								
SHBN - 2020 - 180 - S04 - STH				18,0	35,70 €								
SHBN - 2020 - 200 - S04 - STH				20,0	37,90 €								
SHBN - 2020 - 220 - S04 - STH				22,0	60			37,90 €					
SHBN - 2020 - 250 - S04 - STH				25,0	37,90 €								
SHBN - 2020 - 300 - S04 - STH				30,0	70			42,90 €					
SHBN - 2020 - 350 - S04 - STH				35,0	42,90 €								
SHBN - 2020 - 400 - S04 - STH				40,0	80			47,40 €					

Best.-Nr. / Order no.	d1	R	L1	L2	L	D	Z	Stk. €			
SHBN - 2020 - 040 - S06 - STH	2,0	1,00	2,0	4,0	50	6	2	39,30 €			
SHBN - 2020 - 060 - S06 - STH				6,0				39,30 €			
SHBN - 2020 - 080 - S06 - STH				8,0				39,30 €			
SHBN - 2020 - 100 - S06 - STH				10,0				39,30 €			
SHBN - 2020 - 120 - S06 - STH				12,0				40,30 €			
SHBN - 2020 - 140 - S06 - STH				14,0	40,30 €						
SHBN - 2020 - 160 - S06 - STH				16,0	60			6	2	42,40 €	
SHBN - 2020 - 180 - S06 - STH				18,0						42,40 €	
SHBN - 2020 - 200 - S06 - STH				20,0	42,40 €						
SHBN - 2020 - 220 - S06 - STH				22,0	65			6	2	44,60 €	
SHBN - 2020 - 250 - S06 - STH				25,0						44,60 €	
SHBN - 2020 - 300 - S06 - STH				30,0	70			6	2	50,40 €	
SHBN - 2020 - 350 - S06 - STH				35,0	75			6	2	55,00 €	
SHBN - 2020 - 400 - S06 - STH				40,0	80			6	2	56,80 €	
SHBN - 2025 - 080 - S04 - STH				2,5	1,25			2,0	8,0	45	4
SHBN - 2025 - 100 - S04 - STH	10,0	36,10 €									
SHBN - 2025 - 120 - S04 - STH	12,0	50	37,90 €								
SHBN - 2025 - 160 - S04 - STH	16,0	60	6			2	37,90 €				
SHBN - 2025 - 200 - S04 - STH	20,0						38,80 €				
SHBN - 2025 - 250 - S04 - STH	25,0	60	6			2	41,80 €				
SHBN - 2025 - 080 - S06 - STH	2,5	1,25	2,5	8,0	50	6	2	43,50 €			
SHBN - 2025 - 100 - S06 - STH				10,0				43,50 €			
SHBN - 2025 - 120 - S06 - STH				12,0				44,60 €			
SHBN - 2025 - 160 - S06 - STH				16,0				60	6	2	44,60 €
SHBN - 2030 - 060 - STH	3,0	1,50	3,0	6,0	50	6	2	38,40 €			
SHBN - 2030 - 080 - STH				8,0				38,40 €			
SHBN - 2030 - 100 - STH				10,0				39,30 €			
SHBN - 2030 - 120 - STH				12,0				39,30 €			
SHBN - 2030 - 160 - STH				16,0				60	6	2	41,40 €
SHBN - 2030 - 200 - STH				20,0	41,40 €						
SHBN - 2030 - 250 - STH				25,0	65			6	2	43,50 €	
SHBN - 2030 - 300 - STH				30,0	70			6	2	48,00 €	
SHBN - 2030 - 350 - STH				35,0	75			6	2	52,30 €	
SHBN - 2030 - 400 - STH				40,0	80			6	2	56,80 €	
SHBN - 2040 - 080 - STH	4,0	2,00	4,0	8,0	50	6	2	39,30 €			
SHBN - 2040 - 100 - STH				10,0				39,30 €			
SHBN - 2040 - 120 - STH				12,0				39,30 €			
SHBN - 2040 - 160 - STH				16,0				60	6	2	41,40 €
SHBN - 2040 - 200 - STH				20,0							41,40 €
SHBN - 2040 - 250 - STH				25,0	65			6	2	43,50 €	
SHBN - 2040 - 300 - STH				30,0	70			6	2	49,20 €	
SHBN - 2040 - 350 - STH				35,0	75			6	2	52,30 €	
SHBN - 2040 - 400 - STH				40,0	80			6	2	56,80 €	
SHBN - 2040 - 450 - STH				45,0	90			6	2	59,70 €	
SHBN - 2050 - 160 - STH	5,0	2,50	6,0	16,0	60	6	2	42,40 €			
SHBN - 2050 - 200 - STH				20,0				42,40 €			
SHBN - 2050 - 250 - STH				25,0				70	6	2	46,80 €
SHBN - 2050 - 300 - STH				30,0	75			6	2	49,70 €	
SHBN - 2050 - 400 - STH				40,0	80			6	2	52,60 €	
SHBN - 2050 - 450 - STH				45,0	90			6	2	55,20 €	
SHBN - 2050 - 500 - STH				50,0	100			6	2	59,20 €	
SHBN - 2060 - 150 - STH	6,0	3,00	10,0	15,0	55	6	2	39,90 €			
SHBN - 2060 - 300 - STH	30,0			110				6	2	45,50 €	
SHBN - 2080 - 250 - STH	8,0	4,00	12,0	25,0	60	8	2	48,40 €			
SHBN - 2100 - 300 - STH	10,0	5,00	16,0	30,0	70	10	2	59,60 €			
SHBN - 2120 - 300 - STH	12,0	6,00	18,0	30,0	75	12	2	71,40 €			

# VHM-Kugelfräser für allgemeinen Einsatz bis zu 65 HRC. Schrupp-, Vorschlicht- und Schlicht-Einsatz mit hohen Schnittwerten und Standwegen

SHBS

h5

R  $\pm 0,005$

R  $\pm 0,01$

R  $\pm 0,015$

STH COATING

$\pm 0,000 / -0,010$

$\pm 0,005 / -0,015$

$\pm 0,010 / -0,020$

30° HELIX

CENTRE CUT

15° SHANK ANGLE

<700 N/mm<sup>2</sup>

700-1100 N/mm<sup>2</sup>

1100-1300 N/mm<sup>2</sup>

30-45 HRC

45-55 HRC

55-60 HRC

60-65 HRC

65-70 HRC

INOX

AL

CU CuZn Gold PL

TI

CFK GFK

PLASTIC

GRAPHIT

Best.-Nr. / Order no.	d1	R	L1	L	D	Z	Stk. €
SHBS - 2002 - S04 - STH	0,2	0,10	0,4	40	4	2	51,30 €
SHBS - 2003 - S04 - STH	0,3	0,15	0,6	40	4	2	46,80 €
SHBS - 2004 - S04 - STH	0,4	0,20	0,8	40	4	2	45,00 €
SHBS - 2005 - S04 - STH	0,5	0,25	1,0	45	4	2	41,30 €
SHBS - 2006 - S04 - STH	0,6	0,30	1,2	45	4	2	37,80 €
SHBS - 2008 - S04 - STH	0,8	0,40	2,0	45	4	2	35,10 €
SHBS - 2010 - S04 - STH	1,0	0,50	2,5	50	4	2	33,30 €
SHBS - 2010 - S06 - STH					6		37,40 €
SHBS - 2015 - S04 - STH	1,5	0,75	4,0	50	4	2	33,30 €
SHBS - 2015 - S06 - STH					6		37,40 €
SHBS - 2020 - S04 - STH	2,0	1,00	5,0	50	4	2	30,30 €
SHBS - 2020 - S06 - STH					6		34,10 €
SHBS - 2025 - S04 - STH	2,5	1,25	6,0	50	4	2	30,30 €
SHBS - 2025 - S06 - STH				75			6
SHBS - 2030 - S06 - STH	3,0	1,50	8,0	60	6	2	35,30 €
SHBS - 2040 - S06 - STH	4,0	2,00	8,0	70	6	2	35,30 €
SHBS - 2050 - S06 - STH	5,0	2,50	10,0	75	6	2	38,50 €
SHBS - 2060 - 060 - STH	6,0	3,00	10,0	60	6	2	36,60 €
SHBS - 2060 - 080 - STH			12,0	80			38,50 €
SHBS - 2080 - 060 - STH	8,0	4,00	8,0	50	8	2	49,20 €
SHBS - 2080 - 090 - STH			14,0	90			50,50 €
SHBS - 2100 - 70 - STH			10,0	70			62,30 €
SHBS - 2100 - 100 - STH	10,0	5,00	18,0	100	10	2	65,30 €
SHBS - 2120 - 70 - STH	12,0	6,00	12,0	70	12	2	79,10 €
SHBS - 2120 - 110 - STH			22,0	110			86,10 €
SHBS - 2160 - 130 - STH	16,0	8,00	30,0	130	16	2	138,20 €

# VHM-Torusfräser 2-Schneider für Schrupp-, Vorschlicht- und Schlicht-Einsatz. Große Auswahl an Eckradien und Durchmesser-/Längen-Verhältnis

SHRN-2

h5

R00505  
**ER**  
±0,005

R1-15  
**ER**  
±0,01

R2-3  
**ER**  
±0,015

**STH**  
COATING

R02-5  
-0.000/  
-0.010

R06-12  
-0.005/  
-0.015

R016  
-0.010/  
-0.020

30° HELIX

CENTRE CUT

R02-5  
15°  
SHANK ANGLE

<700  
N/mm<sup>2</sup>

700-  
1100  
N/mm<sup>2</sup>

1100-  
1300  
N/mm<sup>2</sup>

30-45  
HRC

45-55  
HRC

55-60  
HRC

60-65  
HRC

65-70  
HRC

INOX

AL

CU CuZn  
Gold PL

TI

CFK  
GFK

PLASTIC

GRAPHIT

Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 2002 - R0005 - 010 - STH	0,2	0,05	0,2	1,0	40	4	2	50,60 €
SHRN - 2002 - R0005 - 015 - STH				1,5				50,60 €
SHRN - 2002 - R0005 - 020 - STH				2,0				53,50 €
SHRN - 2003 - R0005 - 010 - STH	0,3	0,05	0,3	1,0	40	4	2	44,30 €
SHRN - 2003 - R0005 - 020 - STH				2,0				44,30 €
SHRN - 2003 - R0005 - 030 - STH				3,0				44,30 €
SHRN - 2003 - R0005 - 040 - STH	0,4	0,05	0,4	4,0	40	4	2	44,30 €
SHRN - 2004 - R0005 - 010 - STH				1,0				41,00 €
SHRN - 2004 - R0005 - 020 - STH				2,0				41,00 €
SHRN - 2004 - R0005 - 030 - STH				3,0				41,00 €
SHRN - 2004 - R0005 - 040 - STH				4,0				41,00 €
SHRN - 2004 - R0005 - 050 - STH				5,0				44,30 €
SHRN - 2004 - R0005 - 060 - STH	6,0	44,30 €						
SHRN - 2004 - R001 - 010 - STH	0,4	0,10	0,4	1,0	40	4	2	41,00 €
SHRN - 2004 - R001 - 015 - STH				1,5				41,00 €
SHRN - 2004 - R001 - 020 - STH				2,0				41,00 €
SHRN - 2004 - R001 - 030 - STH				3,0				41,00 €
SHRN - 2004 - R001 - 040 - STH				4,0				41,00 €
SHRN - 2005 - R0005 - 010 - STH	0,5	0,05	0,5	1,0	45	4	2	39,30 €
SHRN - 2005 - R0005 - 015 - STH				1,5				39,30 €
SHRN - 2005 - R0005 - 020 - STH				2,0				39,30 €
SHRN - 2005 - R0005 - 025 - STH				2,5				39,30 €
SHRN - 2005 - R0005 - 030 - STH				3,0				39,30 €
SHRN - 2005 - R0005 - 040 - STH				4,0				39,30 €
SHRN - 2005 - R0005 - 050 - STH				5,0				41,00 €
SHRN - 2005 - R0005 - 060 - STH				6,0				41,00 €
SHRN - 2005 - R0005 - 080 - STH	8,0	41,00 €						
SHRN - 2005 - R001 - 010 - STH	0,5	0,10	0,5	1,0	45	4	2	39,30 €
SHRN - 2005 - R001 - 015 - STH				1,5				39,30 €
SHRN - 2005 - R001 - 020 - STH				2,0				39,30 €
SHRN - 2005 - R001 - 025 - STH				2,5				39,30 €
SHRN - 2005 - R001 - 030 - STH				3,0				39,30 €
SHRN - 2005 - R001 - 040 - STH				4,0				39,30 €
SHRN - 2005 - R001 - 050 - STH				5,0				41,00 €
SHRN - 2005 - R001 - 060 - STH				6,0				41,00 €
SHRN - 2005 - R001 - 080 - STH	8,0	41,00 €						

Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €	
SHRN - 2006 - R0005 - 020 - STH	0,6	0,05	0,6	2,0	45	4	2	37,60 €	
SHRN - 2006 - R0005 - 030 - STH				3,0				37,60 €	
SHRN - 2006 - R0005 - 040 - STH				4,0				37,60 €	
SHRN - 2006 - R0005 - 060 - STH				6,0				39,30 €	
SHRN - 2006 - R0005 - 080 - STH				8,0				39,30 €	
SHRN - 2006 - R0005 - 100 - STH				10,0				50	39,30 €
SHRN - 2006 - R001 - 020 - STH	0,6	0,10	0,6	2,0	45	4	2	37,60 €	
SHRN - 2006 - R001 - 030 - STH				3,0				37,60 €	
SHRN - 2006 - R001 - 040 - STH				4,0				37,60 €	
SHRN - 2006 - R001 - 060 - STH				6,0				39,30 €	
SHRN - 2006 - R001 - 080 - STH				8,0				39,30 €	
SHRN - 2006 - R001 - 100 - STH				10,0				50	39,30 €
SHRN - 2007 - R001 - 020 - STH	0,7	0,10	0,7	2,0	45	4	2	36,40 €	
SHRN - 2007 - R001 - 040 - STH				4,0				36,40 €	
SHRN - 2007 - R001 - 060 - STH				6,0				36,40 €	
SHRN - 2007 - R001 - 080 - STH				8,0				38,10 €	
SHRN - 2007 - R001 - 100 - STH				10,0				38,10 €	
SHRN - 2008 - R0005 - 020 - STH	0,8	0,05	0,8	2,0	45	4	2	36,40 €	
SHRN - 2008 - R0005 - 040 - STH				4,0				36,40 €	
SHRN - 2008 - R0005 - 060 - STH				6,0				36,40 €	
SHRN - 2008 - R0005 - 080 - STH				8,0				36,40 €	
SHRN - 2008 - R0005 - 100 - STH				10,0				50	36,40 €
SHRN - 2008 - R0005 - 120 - STH				12,0				50	39,70 €
SHRN - 2008 - R001 - 020 - STH	0,8	0,10	0,8	2,0	45	4	2	36,40 €	
SHRN - 2008 - R001 - 040 - STH				4,0				36,40 €	
SHRN - 2008 - R001 - 060 - STH				6,0				36,40 €	
SHRN - 2008 - R001 - 080 - STH				8,0				36,40 €	
SHRN - 2008 - R001 - 100 - STH				10,0				50	36,40 €
SHRN - 2008 - R001 - 120 - STH				12,0				50	39,70 €
SHRN - 2008 - R002 - 020 - STH	0,8	0,20	0,8	2,0	45	4	2	36,40 €	
SHRN - 2008 - R002 - 040 - STH				4,0				36,40 €	
SHRN - 2008 - R002 - 060 - STH				6,0				36,40 €	
SHRN - 2008 - R002 - 080 - STH				8,0				36,40 €	
SHRN - 2008 - R002 - 100 - STH				10,0				50	36,40 €
SHRN - 2008 - R002 - 120 - STH				12,0				50	39,70 €
SHRN - 2010 - R0005 - 040 - STH	1,0	0,05	1,0	4,0	45	4	2	34,30 €	
SHRN - 2010 - R0005 - 060 - STH				6,0				34,30 €	
SHRN - 2010 - R0005 - 080 - STH				8,0				34,30 €	
SHRN - 2010 - R0005 - 100 - STH				10,0				50	36,00 €
SHRN - 2010 - R0005 - 120 - STH				12,0				50	36,00 €
SHRN - 2010 - R0005 - 140 - STH				14,0				50	36,00 €
SHRN - 2010 - R0005 - 160 - STH				16,0				50	36,00 €
SHRN - 2010 - R001 - 040 - STH	1,0	0,10	1,0	4,0	45	4	2	34,30 €	
SHRN - 2010 - R001 - 060 - STH				6,0				34,30 €	
SHRN - 2010 - R001 - 080 - STH				8,0				34,30 €	
SHRN - 2010 - R001 - 100 - STH				10,0				50	36,00 €
SHRN - 2010 - R001 - 120 - STH				12,0				50	36,00 €
SHRN - 2010 - R001 - 140 - STH				14,0				50	36,00 €
SHRN - 2010 - R001 - 160 - STH				16,0				50	36,00 €



Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 2010 - R002 - 040 - STH	1,0	0,20	1,0	4,0	45	4	2	34,30 €
SHRN - 2010 - R002 - 060 - STH				6,0				34,30 €
SHRN - 2010 - R002 - 080 - STH				8,0				34,30 €
SHRN - 2010 - R002 - 100 - STH				10,0				36,00 €
SHRN - 2010 - R002 - 120 - STH				12,0	50			36,00 €
SHRN - 2010 - R002 - 140 - STH				14,0	36,00 €			
SHRN - 2010 - R002 - 160 - STH				16,0	36,00 €			
SHRN - 2010 - R003 - 040 - STH				1,0	0,30			1,0
SHRN - 2010 - R003 - 060 - STH	6,0	34,30 €						
SHRN - 2010 - R003 - 080 - STH	8,0	34,30 €						
SHRN - 2010 - R003 - 100 - STH	10,0	36,00 €						
SHRN - 2010 - R003 - 120 - STH	12,0	50	36,00 €					
SHRN - 2010 - R003 - 140 - STH	14,0	36,00 €						
SHRN - 2010 - R003 - 160 - STH	16,0	36,00 €						
SHRN - 2012 - R001 - 040 - STH	1,2	0,10	1,2			4,0	45	
SHRN - 2012 - R001 - 060 - STH				6,0	34,30 €			
SHRN - 2012 - R001 - 080 - STH				8,0	34,30 €			
SHRN - 2012 - R001 - 100 - STH				10,0	50	36,00 €		
SHRN - 2012 - R001 - 120 - STH				12,0	36,00 €			
SHRN - 2012 - R001 - 140 - STH				14,0	36,00 €			
SHRN - 2012 - R001 - 160 - STH				16,0	36,00 €			
SHRN - 2012 - R002 - 040 - STH				1,2	0,20	1,2	4,0	45
SHRN - 2012 - R002 - 060 - STH	6,0	34,30 €						
SHRN - 2012 - R002 - 080 - STH	8,0	34,30 €						
SHRN - 2012 - R002 - 100 - STH	10,0	50	36,00 €					
SHRN - 2012 - R002 - 120 - STH	12,0	36,00 €						
SHRN - 2012 - R002 - 140 - STH	14,0	36,00 €						
SHRN - 2012 - R002 - 160 - STH	16,0	36,00 €						
SHRN - 2012 - R003 - 040 - STH	1,2	0,30	1,2				4,0	45
SHRN - 2012 - R003 - 060 - STH				6,0	34,30 €			
SHRN - 2012 - R003 - 080 - STH				8,0	34,30 €			
SHRN - 2012 - R003 - 100 - STH				10,0	50	36,00 €		
SHRN - 2012 - R003 - 120 - STH				12,0	36,00 €			
SHRN - 2012 - R003 - 140 - STH				14,0	36,00 €			
SHRN - 2012 - R003 - 160 - STH				16,0	36,00 €			
SHRN - 2015 - R001 - 040 - STH				1,5	0,10	1,5	4,0	45
SHRN - 2015 - R001 - 060 - STH	6,0	34,30 €						
SHRN - 2015 - R001 - 080 - STH	8,0	34,30 €						
SHRN - 2015 - R001 - 100 - STH	10,0	50	36,00 €					
SHRN - 2015 - R001 - 120 - STH	12,0	36,00 €						
SHRN - 2015 - R001 - 140 - STH	14,0	36,00 €						
SHRN - 2015 - R001 - 160 - STH	16,0	36,00 €						
SHRN - 2015 - R001 - 200 - STH	20,0	60	37,60 €					
SHRN - 2015 - R001 - 220 - STH	22,0	41,00 €						
SHRN - 2015 - R002 - 040 - STH	1,5	0,20	1,5	4,0	45	4	2	34,30 €
SHRN - 2015 - R002 - 060 - STH				6,0				34,30 €
SHRN - 2015 - R002 - 080 - STH				8,0				34,30 €
SHRN - 2015 - R002 - 100 - STH				10,0				50
SHRN - 2015 - R002 - 120 - STH				12,0	36,00 €			
SHRN - 2015 - R002 - 140 - STH				14,0	36,00 €			
SHRN - 2015 - R002 - 160 - STH				16,0	36,00 €			
SHRN - 2015 - R002 - 200 - STH				20,0	37,60 €			
SHRN - 2015 - R002 - 220 - STH				22,0	41,00 €			

Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 2015 - R003 - 040 - STH	1,5	0,30	1,5	4,0	45	4	2	34,30 €
SHRN - 2015 - R003 - 060 - STH				6,0				34,30 €
SHRN - 2015 - R003 - 080 - STH				8,0				34,30 €
SHRN - 2015 - R003 - 100 - STH				10,0				36,00 €
SHRN - 2015 - R003 - 120 - STH				12,0	36,00 €			
SHRN - 2015 - R003 - 140 - STH				14,0	36,00 €			
SHRN - 2015 - R003 - 160 - STH				16,0	36,00 €			
SHRN - 2015 - R003 - 200 - STH				20,0	37,60 €			
SHRN - 2015 - R003 - 220 - STH				22,0	41,00 €			
SHRN - 2015 - R005 - 040 - STH				1,5	0,50			1,5
SHRN - 2015 - R005 - 060 - STH	6,0	34,30 €						
SHRN - 2015 - R005 - 080 - STH	8,0	34,30 €						
SHRN - 2015 - R005 - 100 - STH	10,0	36,00 €						
SHRN - 2015 - R005 - 120 - STH	12,0	36,00 €						
SHRN - 2015 - R005 - 140 - STH	14,0	36,00 €						
SHRN - 2015 - R005 - 160 - STH	16,0	36,00 €						
SHRN - 2015 - R005 - 200 - STH	20,0	37,60 €						
SHRN - 2015 - R005 - 220 - STH	22,0	41,00 €						
SHRN - 2020 - R001 - 060 - STH	2,0	0,10	2,0			6,0	45	
SHRN - 2020 - R001 - 080 - STH				8,0	34,30 €			
SHRN - 2020 - R001 - 100 - STH				10,0	36,00 €			
SHRN - 2020 - R001 - 120 - STH				12,0	36,00 €			
SHRN - 2020 - R001 - 140 - STH				14,0	36,00 €			
SHRN - 2020 - R001 - 160 - STH				16,0	37,60 €			
SHRN - 2020 - R001 - 200 - STH				20,0	37,60 €			
SHRN - 2020 - R001 - 250 - STH				25,0	41,00 €			
SHRN - 2020 - R001 - 300 - STH				30,0	43,50 €			
SHRN - 2020 - R002 - 060 - STH				2,0	0,20	2,0	6,0	45
SHRN - 2020 - R002 - 080 - STH	8,0	34,30 €						
SHRN - 2020 - R002 - 100 - STH	10,0	36,00 €						
SHRN - 2020 - R002 - 120 - STH	12,0	36,00 €						
SHRN - 2020 - R002 - 140 - STH	14,0	36,00 €						
SHRN - 2020 - R002 - 160 - STH	16,0	37,60 €						
SHRN - 2020 - R002 - 200 - STH	20,0	37,60 €						
SHRN - 2020 - R002 - 250 - STH	25,0	41,00 €						
SHRN - 2020 - R002 - 300 - STH	30,0	43,50 €						
SHRN - 2020 - R003 - 060 - STH	2,0	0,30	2,0				6,0	45
SHRN - 2020 - R003 - 080 - STH				8,0	34,30 €			
SHRN - 2020 - R003 - 100 - STH				10,0	36,00 €			
SHRN - 2020 - R003 - 120 - STH				12,0	36,00 €			
SHRN - 2020 - R003 - 140 - STH				14,0	36,00 €			
SHRN - 2020 - R003 - 160 - STH				16,0	37,60 €			
SHRN - 2020 - R003 - 200 - STH				20,0	37,60 €			
SHRN - 2020 - R003 - 250 - STH				25,0	41,00 €			
SHRN - 2020 - R003 - 300 - STH				30,0	43,50 €			
SHRN - 2020 - R005 - 060 - STH				2,0	0,50	2,0	6,0	45
SHRN - 2020 - R005 - 080 - STH	8,0	34,30 €						
SHRN - 2020 - R005 - 100 - STH	10,0	34,30 €						
SHRN - 2020 - R005 - 120 - STH	12,0	36,00 €						
SHRN - 2020 - R005 - 140 - STH	14,0	36,00 €						
SHRN - 2020 - R005 - 160 - STH	16,0	36,00 €						
SHRN - 2020 - R005 - 200 - STH	20,0	37,60 €						
SHRN - 2020 - R005 - 250 - STH	25,0	41,00 €						
SHRN - 2020 - R005 - 300 - STH	30,0	43,50 €						

Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 2025 - R001 - 100 - STH	2,5	0,10	2,5	10,0	50	4	2	34,30 €
SHRN - 2025 - R001 - 160 - STH				16,0				36,00 €
SHRN - 2025 - R001 - 200 - STH				20,0				37,60 €
SHRN - 2025 - R001 - 250 - STH				25,0				41,00 €
SHRN - 2025 - R001 - 300 - STH				30,0				43,50 €
SHRN - 2025 - R002 - 100 - STH	2,5	0,20	2,5	10,0	50	4	2	34,30 €
SHRN - 2025 - R002 - 160 - STH				16,0				36,00 €
SHRN - 2025 - R002 - 200 - STH				20,0				37,60 €
SHRN - 2025 - R002 - 250 - STH				25,0				41,00 €
SHRN - 2025 - R002 - 300 - STH				30,0				43,50 €
SHRN - 2025 - R003 - 100 - STH	2,5	0,30	2,5	10,0	50	4	2	34,30 €
SHRN - 2025 - R003 - 160 - STH				16,0				36,00 €
SHRN - 2025 - R003 - 200 - STH				20,0				37,60 €
SHRN - 2025 - R003 - 250 - STH				25,0				41,00 €
SHRN - 2025 - R003 - 300 - STH				30,0				43,50 €
SHRN - 2025 - R005 - 100 - STH	2,5	0,50	2,5	10,0	50	4	2	34,30 €
SHRN - 2025 - R005 - 160 - STH				16,0				36,00 €
SHRN - 2025 - R005 - 200 - STH				20,0				37,60 €
SHRN - 2025 - R005 - 250 - STH				25,0				41,00 €
SHRN - 2025 - R005 - 300 - STH				30,0				43,50 €
SHRN - 2030 - R001 - 100 - STH	3,0	0,10	3,0	10,0	50	6	2	35,50 €
SHRN - 2030 - R001 - 120 - STH				12,0				37,20 €
SHRN - 2030 - R001 - 160 - STH				16,0				37,20 €
SHRN - 2030 - R001 - 200 - STH				20,0				38,90 €
SHRN - 2030 - R001 - 250 - STH				25,0				41,80 €
SHRN - 2030 - R001 - 300 - STH				30,0				44,30 €
SHRN - 2030 - R001 - 350 - STH				35,0				48,90 €
SHRN - 2030 - R001 - 400 - STH				40,0				53,90 €
SHRN - 2030 - R002 - 100 - STH	3,0	0,20	3,0	10,0	50	6	2	35,50 €
SHRN - 2030 - R002 - 120 - STH				12,0				37,20 €
SHRN - 2030 - R002 - 160 - STH				16,0				37,20 €
SHRN - 2030 - R002 - 200 - STH				20,0				38,90 €
SHRN - 2030 - R002 - 250 - STH				25,0				41,80 €
SHRN - 2030 - R002 - 300 - STH				30,0				44,30 €
SHRN - 2030 - R002 - 350 - STH				35,0				48,90 €
SHRN - 2030 - R002 - 400 - STH				40,0				53,90 €
SHRN - 2030 - R003 - 100 - STH	3,0	0,30	3,0	10,0	50	6	2	35,50 €
SHRN - 2030 - R003 - 120 - STH				12,0				37,20 €
SHRN - 2030 - R003 - 160 - STH				16,0				37,20 €
SHRN - 2030 - R003 - 200 - STH				20,0				38,90 €
SHRN - 2030 - R003 - 250 - STH				25,0				41,80 €
SHRN - 2030 - R003 - 300 - STH				30,0				44,30 €
SHRN - 2030 - R003 - 350 - STH				35,0				48,90 €
SHRN - 2030 - R003 - 400 - STH				40,0				53,90 €
SHRN - 2030 - R005 - 100 - STH	3,0	0,50	3,0	10,0	50	6	2	35,50 €
SHRN - 2030 - R005 - 120 - STH				12,0				37,20 €
SHRN - 2030 - R005 - 160 - STH				16,0				37,20 €
SHRN - 2030 - R005 - 200 - STH				20,0				38,90 €
SHRN - 2030 - R005 - 250 - STH				25,0				41,80 €
SHRN - 2030 - R005 - 300 - STH				30,0				44,30 €
SHRN - 2030 - R005 - 350 - STH				35,0				48,90 €
SHRN - 2030 - R005 - 400 - STH				40,0				53,90 €

Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 2030 - R010 - 100 - STH	3,0	1,00	3,0	10,0	50	6	2	35,50 €
SHRN - 2030 - R010 - 120 - STH				12,0	55			37,20 €
SHRN - 2030 - R010 - 160 - STH				16,0	60			37,20 €
SHRN - 2030 - R010 - 200 - STH				20,0	65			38,90 €
SHRN - 2030 - R010 - 250 - STH				25,0	70			41,80 €
SHRN - 2030 - R010 - 300 - STH				30,0	75			44,30 €
SHRN - 2030 - R010 - 350 - STH				35,0	80			48,90 €
SHRN - 2030 - R010 - 400 - STH				40,0	85			53,90 €
SHRN - 2040 - R001 - 120 - STH				4,0	0,10			4,0
SHRN - 2040 - R001 - 160 - STH	16,0	60	37,20 €					
SHRN - 2040 - R001 - 200 - STH	20,0	65	38,90 €					
SHRN - 2040 - R001 - 250 - STH	25,0	70	41,80 €					
SHRN - 2040 - R001 - 300 - STH	30,0	75	44,30 €					
SHRN - 2040 - R001 - 350 - STH	35,0	80	48,90 €					
SHRN - 2040 - R001 - 400 - STH	40,0	85	53,90 €					
SHRN - 2040 - R001 - 450 - STH	45,0	90	57,70 €					
SHRN - 2040 - R001 - 500 - STH	50,0	100	62,30 €					
SHRN - 2040 - R002 - 120 - STH	4,0	0,20	4,0	12,0	55	6	2	37,20 €
SHRN - 2040 - R002 - 160 - STH				16,0	60			37,20 €
SHRN - 2040 - R002 - 200 - STH				20,0	65			38,90 €
SHRN - 2040 - R002 - 250 - STH				25,0	70			41,80 €
SHRN - 2040 - R002 - 300 - STH				30,0	75			44,30 €
SHRN - 2040 - R002 - 350 - STH				35,0	80			48,90 €
SHRN - 2040 - R002 - 400 - STH				40,0	85			53,90 €
SHRN - 2040 - R002 - 450 - STH				45,0	90			57,70 €
SHRN - 2040 - R002 - 500 - STH				50,0	100			62,30 €
SHRN - 2040 - R003 - 120 - STH	4,0	0,30	4,0	12,0	55	6	2	37,20 €
SHRN - 2040 - R003 - 160 - STH				16,0	60			37,20 €
SHRN - 2040 - R003 - 200 - STH				20,0	65			38,90 €
SHRN - 2040 - R003 - 250 - STH				25,0	70			41,80 €
SHRN - 2040 - R003 - 300 - STH				30,0	75			44,30 €
SHRN - 2040 - R003 - 350 - STH				35,0	80			48,90 €
SHRN - 2040 - R003 - 400 - STH				40,0	85			53,90 €
SHRN - 2040 - R003 - 450 - STH				45,0	90			57,70 €
SHRN - 2040 - R003 - 500 - STH				50,0	100			62,30 €
SHRN - 2040 - R005 - 120 - STH	4,0	0,50	4,0	12,0	55	6	2	37,20 €
SHRN - 2040 - R005 - 160 - STH				16,0	60			37,20 €
SHRN - 2040 - R005 - 200 - STH				20,0	65			38,90 €
SHRN - 2040 - R005 - 250 - STH				25,0	70			41,80 €
SHRN - 2040 - R005 - 300 - STH				30,0	75			44,30 €
SHRN - 2040 - R005 - 350 - STH				35,0	80			48,90 €
SHRN - 2040 - R005 - 400 - STH				40,0	85			53,90 €
SHRN - 2040 - R005 - 450 - STH				45,0	90			57,70 €
SHRN - 2040 - R005 - 500 - STH				50,0	100			62,30 €
SHRN - 2040 - R010 - 120 - STH	4,0	1,00	4,0	12,0	55	6	2	37,20 €
SHRN - 2040 - R010 - 160 - STH				16,0	60			37,20 €
SHRN - 2040 - R010 - 200 - STH				20,0	65			38,90 €
SHRN - 2040 - R010 - 250 - STH				25,0	70			41,80 €
SHRN - 2040 - R010 - 300 - STH				30,0	75			44,30 €
SHRN - 2040 - R010 - 350 - STH				35,0	80			48,90 €
SHRN - 2040 - R010 - 400 - STH				40,0	85			53,90 €
SHRN - 2040 - R010 - 450 - STH				45,0	90			57,70 €
SHRN - 2040 - R010 - 500 - STH				50,0	100			62,30 €

Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 2050 - R002 - 250 - STH	5,0	0,20	6,0	25,0	70	6	2	41,80 €
SHRN - 2050 - R002 - 400 - STH				40,0	80			53,90 €
SHRN - 2050 - R002 - 500 - STH				50,0	100			62,30 €
SHRN - 2050 - R005 - 250 - STH	5,0	0,50	6,0	25,0	70	6	2	41,80 €
SHRN - 2050 - R005 - 400 - STH				40,0	80			53,90 €
SHRN - 2050 - R005 - 500 - STH				50,0	100			62,30 €
SHRN - 2050 - R010 - 250 - STH	5,0	1,00	6,0	25,0	70	6	2	41,80 €
SHRN - 2050 - R010 - 400 - STH				40,0	80			53,90 €
SHRN - 2050 - R010 - 500 - STH				50,0	100			62,30 €
SHRN - 2060 - R001 - 400 - STH	6,0	0,10	7,0	40,0	90	6	2	51,40 €
SHRN - 2060 - R002 - 400 - STH	6,0	0,20	7,0	40,0	90	6	2	51,40 €
SHRN - 2060 - R002 - 600 - STH				60,0	110			65,60 €
SHRN - 2060 - R003 - 400 - STH	6,0	0,30	7,0	40,0	90	6	2	51,40 €
SHRN - 2060 - R005 - 400 - STH	6,0	0,50	7,0	40,0	90	6	2	51,40 €
SHRN - 2060 - R005 - 600 - STH				60,0	110			65,60 €
SHRN - 2060 - R010 - 400 - STH	6,0	1,00	7,0	40,0	90	6	2	51,40 €
SHRN - 2060 - R010 - 600 - STH				60,0	110			65,60 €
SHRN - 2080 - R002 - 220 - STH	8,0	0,20	9,0	22,0	65	8	2	47,70 €
SHRN - 2080 - R002 - 400 - STH				40,0	100			65,20 €
SHRN - 2080 - R003 - 220 - STH	8,0	0,30	9,0	22,0	65	8	2	47,70 €
SHRN - 2080 - R003 - 400 - STH				40,0	100			65,20 €
SHRN - 2080 - R005 - 400 - STH	8,0	0,50	9,0	40,0	100	8	2	65,20 €
SHRN - 2080 - R005 - 600 - STH				60,0	120			79,00 €
SHRN - 2080 - R010 - 400 - STH	8,0	1,00	9,0	40,0	100	8	2	65,20 €
SHRN - 2080 - R010 - 600 - STH				60,0	120			79,00 €
SHRN - 2100 - R002 - 450 - STH	10,0	0,20	11,0	45,0	100	10	2	86,90 €
SHRN - 2100 - R002 - 600 - STH				60,0	120			95,70 €
SHRN - 2100 - R005 - 450 - STH	10,0	0,50	11,0	45,0	100	10	2	86,90 €
SHRN - 2100 - R005 - 600 - STH				60,0	120			95,70 €
SHRN - 2100 - R010 - 450 - STH	10,0	1,00	11,0	45,0	100	10	2	86,90 €
SHRN - 2100 - R010 - 600 - STH				60,0	120			95,70 €
SHRN - 2120 - R005 - 500 - STH	12,0	0,50	13,0	50,0	110	12	2	111,90 €
SHRN - 2120 - R005 - 700 - STH				70,0	130			120,80 €
SHRN - 2120 - R010 - 500 - STH	12,0	1,00	13,0	50,0	110	12	2	111,90 €
SHRN - 2120 - R010 - 700 - STH				70,0	130			120,80 €

# VHM-Torusfräser 4-Schneider für Schrupp-, Vorschlicht- und Schlicht-Einsatz; große Auswahl an Eckradien und Durchmesser-/Längen-Verhältnis

SHRN - 4

h5

R00205  
**ER**  
±0,005

R1-1.5  
**ER**  
±0,01

R23  
**ER**  
±0,015

STH  
COATING

φ1-5  
-0.000/  
-0.010

φ6-12  
-0.005/  
-0.015

30° HELIX

CENTRE  
CUT

φ08-5  
15°  
SHANK  
ANGLE

<700  
N/mm<sup>2</sup>

700-  
1100  
N/mm<sup>2</sup>

1100-  
1300  
N/mm<sup>2</sup>

30-45  
HRC

45-55  
HRC

55-60  
HRC

60-65  
HRC

65-70  
HRC

INOX

AL

CU CuZn  
Gold PL

TI

CFK  
GFK

PLASTIC

GRAPHIT

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €	
SHRN - 4008 - R0002 - 020 - STH	0,8	0,02	0,8	2,0	45	4	4	40,10 €	
SHRN - 4008 - R0002 - 040 - STH				4,0				40,10 €	
SHRN - 4008 - R0002 - 060 - STH				6,0				40,10 €	
SHRN - 4008 - R0002 - 080 - STH				8,0				40,10 €	
SHRN - 4008 - R0002 - 100 - STH				10,0				40,10 €	
SHRN - 4008 - R0002 - 120 - STH				12,0				50	46,40 €
SHRN - 4008 - R0005 - 020 - STH	0,8	0,05	0,8	2,0	45	4	4	40,10 €	
SHRN - 4008 - R0005 - 040 - STH				4,0				40,10 €	
SHRN - 4008 - R0005 - 060 - STH				6,0				40,10 €	
SHRN - 4008 - R0005 - 080 - STH				8,0				40,10 €	
SHRN - 4008 - R0005 - 100 - STH				10,0				40,10 €	
SHRN - 4008 - R0005 - 120 - STH				12,0				50	46,40 €
SHRN - 4008 - R001 - 020 - STH	0,8	0,10	0,8	2,0	45	4	4	40,10 €	
SHRN - 4008 - R001 - 040 - STH				4,0				40,10 €	
SHRN - 4008 - R001 - 060 - STH				6,0				40,10 €	
SHRN - 4008 - R001 - 080 - STH				8,0				40,10 €	
SHRN - 4008 - R001 - 100 - STH				10,0				40,10 €	
SHRN - 4008 - R001 - 120 - STH				12,0				50	46,40 €
SHRN - 4010 - R0002 - 040 - STH	1,0	0,02	1,0	4,0	45	4	4	37,80 €	
SHRN - 4010 - R0002 - 060 - STH				6,0				37,80 €	
SHRN - 4010 - R0002 - 080 - STH				8,0				37,80 €	
SHRN - 4010 - R0002 - 100 - STH				10,0				50	39,60 €
SHRN - 4010 - R0002 - 120 - STH				12,0				39,60 €	
SHRN - 4010 - R0002 - 140 - STH				14,0				39,60 €	
SHRN - 4010 - R0002 - 160 - STH	16,0	39,60 €							
SHRN - 4010 - R0005 - 040 - STH	1,0	0,05	1,0	4,0	45	4	4	37,80 €	
SHRN - 4010 - R0005 - 060 - STH				6,0				37,80 €	
SHRN - 4010 - R0005 - 080 - STH				8,0				37,80 €	
SHRN - 4010 - R0005 - 100 - STH				10,0				50	39,60 €
SHRN - 4010 - R0005 - 120 - STH				12,0				39,60 €	
SHRN - 4010 - R0005 - 140 - STH				14,0				39,60 €	
SHRN - 4010 - R0005 - 160 - STH	16,0	39,60 €							
SHRN - 4010 - R001 - 040 - STH	1,0	0,10	1,0	4,0	45	4	4	37,80 €	
SHRN - 4010 - R001 - 060 - STH				6,0				37,80 €	
SHRN - 4010 - R001 - 080 - STH				8,0				37,80 €	
SHRN - 4010 - R001 - 100 - STH				10,0				50	39,60 €
SHRN - 4010 - R001 - 120 - STH				12,0				39,60 €	
SHRN - 4010 - R001 - 140 - STH				14,0				39,60 €	
SHRN - 4010 - R001 - 160 - STH	16,0	39,60 €							

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 4010 - R002 - 040 - STH	1,0	0,20	1,0	4,0	45	4	4	37,80 €
SHRN - 4010 - R002 - 060 - STH				6,0				37,80 €
SHRN - 4010 - R002 - 080 - STH				8,0				37,80 €
SHRN - 4010 - R002 - 100 - STH				10,0	50			39,60 €
SHRN - 4010 - R002 - 120 - STH				12,0				39,60 €
SHRN - 4010 - R002 - 140 - STH				14,0				39,60 €
SHRN - 4010 - R002 - 160 - STH				16,0				39,60 €
SHRN - 4010 - R003 - 040 - STH	1,0	0,30	1,0	4,0	45	4	4	37,80 €
SHRN - 4010 - R003 - 060 - STH				6,0				37,80 €
SHRN - 4010 - R003 - 080 - STH				8,0				37,80 €
SHRN - 4010 - R003 - 100 - STH				10,0	50			39,60 €
SHRN - 4010 - R003 - 120 - STH				12,0				39,60 €
SHRN - 4010 - R003 - 140 - STH				14,0				39,60 €
SHRN - 4010 - R003 - 160 - STH				16,0				39,60 €
SHRN - 4012 - R0002 - 040 - STH	1,2	0,02	1,2	4,0	45	4	4	37,80 €
SHRN - 4012 - R0002 - 060 - STH				6,0				37,80 €
SHRN - 4012 - R0002 - 080 - STH				8,0				37,80 €
SHRN - 4012 - R0002 - 100 - STH				10,0	50			39,60 €
SHRN - 4012 - R0002 - 120 - STH				12,0				39,60 €
SHRN - 4012 - R0002 - 140 - STH				14,0				39,60 €
SHRN - 4012 - R0002 - 160 - STH				16,0				39,60 €
SHRN - 4012 - R0005 - 040 - STH	1,2	0,05	1,2	4,0	45	4	4	37,80 €
SHRN - 4012 - R0005 - 060 - STH				6,0				37,80 €
SHRN - 4012 - R0005 - 080 - STH				8,0				37,80 €
SHRN - 4012 - R0005 - 100 - STH				10,0	50			39,60 €
SHRN - 4012 - R0005 - 120 - STH				12,0				39,60 €
SHRN - 4012 - R0005 - 140 - STH				14,0				39,60 €
SHRN - 4012 - R0005 - 160 - STH				16,0				39,60 €
SHRN - 4012 - R001 - 040 - STH	1,2	0,10	1,2	4,0	45	4	4	37,80 €
SHRN - 4012 - R001 - 060 - STH				6,0				37,80 €
SHRN - 4012 - R001 - 080 - STH				8,0				37,80 €
SHRN - 4012 - R001 - 100 - STH				10,0	50			39,60 €
SHRN - 4012 - R001 - 120 - STH				12,0				39,60 €
SHRN - 4012 - R001 - 140 - STH				14,0				39,60 €
SHRN - 4012 - R001 - 160 - STH				16,0				39,60 €
SHRN - 4012 - R002 - 040 - STH	1,2	0,20	1,2	4,0	45	4	4	37,80 €
SHRN - 4012 - R002 - 060 - STH				6,0				37,80 €
SHRN - 4012 - R002 - 080 - STH				8,0				37,80 €
SHRN - 4012 - R002 - 100 - STH				10,0	50			39,60 €
SHRN - 4012 - R002 - 120 - STH				12,0				39,60 €
SHRN - 4012 - R002 - 140 - STH				14,0				39,60 €
SHRN - 4012 - R002 - 160 - STH				16,0				39,60 €
SHRN - 4012 - R003 - 040 - STH	1,2	0,30	1,2	4,0	45	4	4	37,80 €
SHRN - 4012 - R003 - 060 - STH				6,0				37,80 €
SHRN - 4012 - R003 - 080 - STH				8,0				37,80 €
SHRN - 4012 - R003 - 100 - STH				10,0	50			39,60 €
SHRN - 4012 - R003 - 120 - STH				12,0				39,60 €
SHRN - 4012 - R003 - 140 - STH				14,0				39,60 €
SHRN - 4012 - R003 - 160 - STH				16,0				39,60 €

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 4015 - R0002 - 060 - STH	1,5	0,02	1,5	6,0	45	4	4	37,80 €
SHRN - 4015 - R0002 - 080 - STH				8,0				37,80 €
SHRN - 4015 - R0002 - 100 - STH				10,0				39,60 €
SHRN - 4015 - R0002 - 120 - STH				12,0				39,60 €
SHRN - 4015 - R0002 - 140 - STH				14,0	39,60 €			
SHRN - 4015 - R0002 - 160 - STH				16,0	39,60 €			
SHRN - 4015 - R0002 - 200 - STH				20,0	41,00 €			
SHRN - 4015 - R0005 - 060 - STH				1,5	0,05			1,5
SHRN - 4015 - R0005 - 080 - STH	8,0	37,80 €						
SHRN - 4015 - R0005 - 100 - STH	10,0	39,60 €						
SHRN - 4015 - R0005 - 120 - STH	12,0	39,60 €						
SHRN - 4015 - R0005 - 140 - STH	14,0	39,60 €						
SHRN - 4015 - R0005 - 160 - STH	16,0	39,60 €						
SHRN - 4015 - R0005 - 200 - STH	20,0	41,00 €						
SHRN - 4015 - R001 - 060 - STH	1,5	0,10	1,5			6,0	45	
SHRN - 4015 - R001 - 080 - STH				8,0	37,80 €			
SHRN - 4015 - R001 - 100 - STH				10,0	39,60 €			
SHRN - 4015 - R001 - 120 - STH				12,0	39,60 €			
SHRN - 4015 - R001 - 140 - STH				14,0	39,60 €			
SHRN - 4015 - R001 - 160 - STH				16,0	39,60 €			
SHRN - 4015 - R001 - 200 - STH				20,0	41,00 €			
SHRN - 4015 - R002 - 060 - STH				1,5	0,20	1,5	6,0	45
SHRN - 4015 - R002 - 080 - STH	8,0	37,80 €						
SHRN - 4015 - R002 - 100 - STH	10,0	39,60 €						
SHRN - 4015 - R002 - 120 - STH	12,0	39,60 €						
SHRN - 4015 - R002 - 140 - STH	14,0	39,60 €						
SHRN - 4015 - R002 - 160 - STH	16,0	39,60 €						
SHRN - 4015 - R002 - 200 - STH	20,0	41,00 €						
SHRN - 4015 - R003 - 060 - STH	1,5	0,30	1,5				6,0	45
SHRN - 4015 - R003 - 080 - STH				8,0	37,80 €			
SHRN - 4015 - R003 - 100 - STH				10,0	39,60 €			
SHRN - 4015 - R003 - 120 - STH				12,0	39,60 €			
SHRN - 4015 - R003 - 140 - STH				14,0	39,60 €			
SHRN - 4015 - R003 - 160 - STH				16,0	39,60 €			
SHRN - 4015 - R003 - 200 - STH				20,0	41,00 €			
SHRN - 4015 - R005 - 060 - STH				1,5	0,50	1,5	6,0	45
SHRN - 4015 - R005 - 080 - STH	8,0	37,80 €						
SHRN - 4015 - R005 - 100 - STH	10,0	39,60 €						
SHRN - 4015 - R005 - 120 - STH	12,0	39,60 €						
SHRN - 4015 - R005 - 140 - STH	14,0	39,60 €						
SHRN - 4015 - R005 - 160 - STH	16,0	39,60 €						
SHRN - 4015 - R005 - 200 - STH	20,0	41,00 €						
SHRN - 4020 - R0002 - 060 - STH	2,0	0,02	2,0				6,0	45
SHRN - 4020 - R0002 - 080 - STH				8,0	37,80 €			
SHRN - 4020 - R0002 - 100 - STH				10,0	39,60 €			
SHRN - 4020 - R0002 - 120 - STH				12,0	39,60 €			
SHRN - 4020 - R0002 - 140 - STH				14,0	39,60 €			
SHRN - 4020 - R0002 - 160 - STH				16,0	39,60 €			
SHRN - 4020 - R0002 - 180 - STH				18,0	39,60 €			
SHRN - 4020 - R0002 - 200 - STH				20,0	39,60 €			
SHRN - 4020 - R0002 - 220 - STH				22,0	44,60 €			
SHRN - 4020 - R0002 - 250 - STH				25,0	44,60 €			
SHRN - 4020 - R0002 - 300 - STH				30,0	49,10 €			



Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €					
SHRN - 4020 - R0005 - 060 - STH	2,0	0,05	2,0	6,0	45	4	4	37,80 €					
SHRN - 4020 - R0005 - 080 - STH				8,0				37,80 €					
SHRN - 4020 - R0005 - 100 - STH				10,0				39,60 €					
SHRN - 4020 - R0005 - 120 - STH				12,0				39,60 €					
SHRN - 4020 - R0005 - 140 - STH				14,0	39,60 €								
SHRN - 4020 - R0005 - 160 - STH				16,0	39,60 €								
SHRN - 4020 - R0005 - 180 - STH				18,0	39,60 €								
SHRN - 4020 - R0005 - 200 - STH				20,0	39,60 €								
SHRN - 4020 - R0005 - 220 - STH				22,0	44,60 €								
SHRN - 4020 - R0005 - 250 - STH				25,0	44,60 €								
SHRN - 4020 - R0005 - 300 - STH				30,0	49,10 €								
SHRN - 4020 - R001 - 060 - STH				2,0	0,10			2,0	6,0	45	4	4	37,80 €
SHRN - 4020 - R001 - 080 - STH									8,0				37,80 €
SHRN - 4020 - R001 - 100 - STH									10,0				39,60 €
SHRN - 4020 - R001 - 120 - STH	12,0	39,60 €											
SHRN - 4020 - R001 - 140 - STH	14,0	39,60 €											
SHRN - 4020 - R001 - 160 - STH	16,0	39,60 €											
SHRN - 4020 - R001 - 180 - STH	18,0	39,60 €											
SHRN - 4020 - R001 - 200 - STH	20,0	39,60 €											
SHRN - 4020 - R001 - 220 - STH	22,0	44,60 €											
SHRN - 4020 - R001 - 250 - STH	25,0	44,60 €											
SHRN - 4020 - R001 - 300 - STH	30,0	49,10 €											
SHRN - 4020 - R002 - 060 - STH	2,0	0,20	2,0			6,0	45		4	4			37,80 €
SHRN - 4020 - R002 - 080 - STH						8,0							37,80 €
SHRN - 4020 - R002 - 100 - STH						10,0							39,60 €
SHRN - 4020 - R002 - 120 - STH				12,0	39,60 €								
SHRN - 4020 - R002 - 140 - STH				14,0	39,60 €								
SHRN - 4020 - R002 - 160 - STH				16,0	39,60 €								
SHRN - 4020 - R002 - 180 - STH				18,0	39,60 €								
SHRN - 4020 - R002 - 200 - STH				20,0	39,60 €								
SHRN - 4020 - R002 - 220 - STH				22,0	44,60 €								
SHRN - 4020 - R002 - 250 - STH				25,0	44,60 €								
SHRN - 4020 - R002 - 300 - STH				30,0	49,10 €								
SHRN - 4020 - R003 - 060 - STH				2,0	0,30	2,0	6,0	45			4	4	37,80 €
SHRN - 4020 - R003 - 080 - STH							8,0						37,80 €
SHRN - 4020 - R003 - 100 - STH							10,0						39,60 €
SHRN - 4020 - R003 - 120 - STH	12,0	39,60 €											
SHRN - 4020 - R003 - 140 - STH	14,0	39,60 €											
SHRN - 4020 - R003 - 160 - STH	16,0	39,60 €											
SHRN - 4020 - R003 - 180 - STH	18,0	39,60 €											
SHRN - 4020 - R003 - 200 - STH	20,0	39,60 €											
SHRN - 4020 - R003 - 220 - STH	22,0	44,60 €											
SHRN - 4020 - R003 - 250 - STH	25,0	44,60 €											
SHRN - 4020 - R003 - 300 - STH	30,0	49,10 €											
SHRN - 4020 - R005 - 060 - STH	2,0	0,50	2,0				6,0	45	4	4			37,80 €
SHRN - 4020 - R005 - 080 - STH							8,0						37,80 €
SHRN - 4020 - R005 - 100 - STH							10,0						39,60 €
SHRN - 4020 - R005 - 120 - STH				12,0	39,60 €								
SHRN - 4020 - R005 - 140 - STH				14,0	39,60 €								
SHRN - 4020 - R005 - 160 - STH				16,0	39,60 €								
SHRN - 4020 - R005 - 180 - STH				18,0	39,60 €								
SHRN - 4020 - R005 - 200 - STH				20,0	39,60 €								
SHRN - 4020 - R005 - 220 - STH				22,0	44,60 €								
SHRN - 4020 - R005 - 250 - STH				25,0	44,60 €								
SHRN - 4020 - R005 - 300 - STH				30,0	49,10 €								

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 4025 - R001 - 100 - STH	2,5	0,10	2,5	10,0	50	4	4	39,60 €
SHRN - 4025 - R001 - 120 - STH				12,0				39,60 €
SHRN - 4025 - R001 - 160 - STH				16,0				39,60 €
SHRN - 4025 - R001 - 200 - STH				20,0				39,60 €
SHRN - 4025 - R001 - 250 - STH				25,0				44,60 €
SHRN - 4025 - R001 - 300 - STH				30,0				49,10 €
SHRN - 4025 - R002 - 100 - STH	2,5	0,20	2,5	10,0	50	4	4	39,60 €
SHRN - 4025 - R002 - 120 - STH				12,0				39,60 €
SHRN - 4025 - R002 - 160 - STH				16,0				39,60 €
SHRN - 4025 - R002 - 200 - STH				20,0				39,60 €
SHRN - 4025 - R002 - 250 - STH				25,0				44,60 €
SHRN - 4025 - R002 - 300 - STH				30,0				49,10 €
SHRN - 4025 - R003 - 100 - STH	2,5	0,30	2,5	10,0	50	4	4	39,60 €
SHRN - 4025 - R003 - 120 - STH				12,0				39,60 €
SHRN - 4025 - R003 - 160 - STH				16,0				39,60 €
SHRN - 4025 - R003 - 200 - STH				20,0				39,60 €
SHRN - 4025 - R003 - 250 - STH				25,0				44,60 €
SHRN - 4025 - R003 - 300 - STH				30,0				49,10 €
SHRN - 4025 - R005 - 100 - STH	2,5	0,50	2,5	10,0	50	4	4	39,60 €
SHRN - 4025 - R005 - 120 - STH				12,0				39,60 €
SHRN - 4025 - R005 - 160 - STH				16,0				39,60 €
SHRN - 4025 - R005 - 200 - STH				20,0				39,60 €
SHRN - 4025 - R005 - 250 - STH				25,0				44,60 €
SHRN - 4025 - R005 - 300 - STH				30,0				49,10 €
SHRN - 4030 - R001 - 100 - STH	3,0	0,10	3,0	10,0	50	6	4	38,30 €
SHRN - 4030 - R001 - 120 - STH				12,0				40,10 €
SHRN - 4030 - R001 - 160 - STH				16,0				40,10 €
SHRN - 4030 - R001 - 200 - STH				20,0				41,90 €
SHRN - 4030 - R001 - 250 - STH				25,0				45,50 €
SHRN - 4030 - R001 - 300 - STH				30,0				48,20 €
SHRN - 4030 - R001 - 350 - STH				35,0				51,30 €
SHRN - 4030 - R001 - 400 - STH				40,0				56,30 €
SHRN - 4030 - R002 - 100 - STH	3,0	0,20	3,0	10,0	50	6	4	38,30 €
SHRN - 4030 - R002 - 120 - STH				12,0				40,10 €
SHRN - 4030 - R002 - 160 - STH				16,0				40,10 €
SHRN - 4030 - R002 - 200 - STH				20,0				41,90 €
SHRN - 4030 - R002 - 250 - STH				25,0				45,50 €
SHRN - 4030 - R002 - 300 - STH				30,0				48,20 €
SHRN - 4030 - R002 - 350 - STH				35,0				51,30 €
SHRN - 4030 - R002 - 400 - STH				40,0				56,30 €
SHRN - 4030 - R003 - 100 - STH	3,0	0,30	3,0	10,0	50	6	4	38,30 €
SHRN - 4030 - R003 - 120 - STH				12,0				40,10 €
SHRN - 4030 - R003 - 160 - STH				16,0				40,10 €
SHRN - 4030 - R003 - 200 - STH				20,0				41,90 €
SHRN - 4030 - R003 - 250 - STH				25,0				45,50 €
SHRN - 4030 - R003 - 300 - STH				30,0				48,20 €
SHRN - 4030 - R003 - 350 - STH				35,0				51,30 €
SHRN - 4030 - R003 - 400 - STH				40,0				56,30 €

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 4030 - R005 - 100 - STH	3,0	0,50	3,0	10,0	50	6	4	38,30 €
SHRN - 4030 - R005 - 120 - STH				12,0				40,10 €
SHRN - 4030 - R005 - 160 - STH				16,0				40,10 €
SHRN - 4030 - R005 - 200 - STH				20,0				41,90 €
SHRN - 4030 - R005 - 250 - STH				25,0				45,50 €
SHRN - 4030 - R005 - 300 - STH				30,0				48,20 €
SHRN - 4030 - R005 - 350 - STH				35,0				51,30 €
SHRN - 4030 - R005 - 400 - STH				40,0				56,30 €
SHRN - 4030 - R010 - 100 - STH				3,0				1,00
SHRN - 4030 - R010 - 120 - STH	12,0	40,10 €						
SHRN - 4030 - R010 - 160 - STH	16,0	40,10 €						
SHRN - 4030 - R010 - 200 - STH	20,0	41,90 €						
SHRN - 4030 - R010 - 250 - STH	25,0	45,50 €						
SHRN - 4030 - R010 - 300 - STH	30,0	48,20 €						
SHRN - 4030 - R010 - 350 - STH	35,0	51,30 €						
SHRN - 4030 - R010 - 400 - STH	40,0	56,30 €						
SHRN - 4040 - R001 - 130 - STH	4,0	0,10	4,0		13,0	55	6	
SHRN - 4040 - R001 - 160 - STH				16,0	40,50 €			
SHRN - 4040 - R001 - 200 - STH				20,0	42,30 €			
SHRN - 4040 - R001 - 250 - STH				25,0	45,90 €			
SHRN - 4040 - R001 - 300 - STH				30,0	48,60 €			
SHRN - 4040 - R001 - 350 - STH				35,0	51,30 €			
SHRN - 4040 - R001 - 400 - STH				40,0	56,70 €			
SHRN - 4040 - R001 - 450 - STH				45,0	62,60 €			
SHRN - 4040 - R001 - 500 - STH				50,0	69,80 €			
SHRN - 4040 - R001 - 600 - STH				60,0	78,80 €			
SHRN - 4040 - R002 - 130 - STH	4,0	0,20	4,0	13,0	55	6	4	40,50 €
SHRN - 4040 - R002 - 160 - STH				16,0				40,50 €
SHRN - 4040 - R002 - 200 - STH				20,0				42,30 €
SHRN - 4040 - R002 - 250 - STH				25,0				45,90 €
SHRN - 4040 - R002 - 300 - STH				30,0				48,60 €
SHRN - 4040 - R002 - 350 - STH				35,0				51,30 €
SHRN - 4040 - R002 - 400 - STH				40,0				56,70 €
SHRN - 4040 - R002 - 450 - STH				45,0				62,60 €
SHRN - 4040 - R002 - 500 - STH				50,0				69,80 €
SHRN - 4040 - R002 - 600 - STH				60,0				78,80 €
SHRN - 4040 - R003 - 130 - STH	4,0	0,30	4,0	13,0	55	6	4	40,50 €
SHRN - 4040 - R003 - 160 - STH				16,0				40,50 €
SHRN - 4040 - R003 - 200 - STH				20,0				42,30 €
SHRN - 4040 - R003 - 250 - STH				25,0				45,90 €
SHRN - 4040 - R003 - 300 - STH				30,0				48,60 €
SHRN - 4040 - R003 - 350 - STH				35,0				51,30 €
SHRN - 4040 - R003 - 400 - STH				40,0				56,70 €
SHRN - 4040 - R003 - 450 - STH				45,0				62,60 €
SHRN - 4040 - R003 - 500 - STH				50,0				69,80 €
SHRN - 4040 - R003 - 600 - STH				60,0				78,80 €

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 4040 - R005 - 130 - STH	4,0	0,50	4,0	13,0	55	6	4	40,50 €
SHRN - 4040 - R005 - 160 - STH				16,0				40,50 €
SHRN - 4040 - R005 - 200 - STH				20,0	42,30 €			
SHRN - 4040 - R005 - 250 - STH				25,0	45,90 €			
SHRN - 4040 - R005 - 300 - STH				30,0	48,60 €			
SHRN - 4040 - R005 - 350 - STH				35,0	51,30 €			
SHRN - 4040 - R005 - 400 - STH				40,0	56,70 €			
SHRN - 4040 - R005 - 450 - STH				45,0	62,60 €			
SHRN - 4040 - R005 - 500 - STH				50,0	69,80 €			
SHRN - 4040 - R005 - 600 - STH				60,0	78,80 €			
SHRN - 4040 - R010 - 130 - STH				4,0	1,00			4,0
SHRN - 4040 - R010 - 160 - STH	16,0	40,50 €						
SHRN - 4040 - R010 - 200 - STH	20,0	42,30 €						
SHRN - 4040 - R010 - 250 - STH	25,0	45,90 €						
SHRN - 4040 - R010 - 300 - STH	30,0	48,60 €						
SHRN - 4040 - R010 - 350 - STH	35,0	51,30 €						
SHRN - 4040 - R010 - 400 - STH	40,0	56,70 €						
SHRN - 4040 - R010 - 450 - STH	45,0	62,60 €						
SHRN - 4040 - R010 - 500 - STH	50,0	69,80 €						
SHRN - 4040 - R010 - 600 - STH	60,0	78,80 €						
SHRN - 4050 - R001 - 160 - STH	5,0	0,10	5,0			16,0	60	
SHRN - 4050 - R001 - 300 - STH				30,0	48,60 €			
SHRN - 4050 - R001 - 400 - STH				40,0	56,70 €			
SHRN - 4050 - R001 - 500 - STH				50,0	69,80 €			
SHRN - 4050 - R002 - 160 - STH	5,0	0,20	5,0	16,0	60	6	4	42,30 €
SHRN - 4050 - R002 - 300 - STH				30,0				48,60 €
SHRN - 4050 - R002 - 400 - STH				40,0	56,70 €			
SHRN - 4050 - R002 - 500 - STH				50,0	69,80 €			
SHRN - 4050 - R003 - 160 - STH	5,0	0,30	5,0	16,0	60	6	4	42,30 €
SHRN - 4050 - R003 - 300 - STH				30,0				48,60 €
SHRN - 4050 - R003 - 400 - STH				40,0	56,70 €			
SHRN - 4050 - R003 - 500 - STH				50,0	69,80 €			
SHRN - 4050 - R005 - 160 - STH	5,0	0,50	5,0	16,0	60	6	4	42,30 €
SHRN - 4050 - R005 - 300 - STH				30,0				48,60 €
SHRN - 4050 - R005 - 400 - STH				40,0	56,70 €			
SHRN - 4050 - R005 - 500 - STH				50,0	69,80 €			
SHRN - 4050 - R005 - 600 - STH				60,0	78,80 €			
SHRN - 4050 - R010 - 160 - STH				5,0	1,00			5,0
SHRN - 4050 - R010 - 300 - STH	30,0	48,60 €						
SHRN - 4050 - R010 - 400 - STH	40,0	56,70 €						
SHRN - 4050 - R010 - 500 - STH	50,0	69,80 €						
SHRN - 4050 - R010 - 600 - STH	60,0	78,80 €						
SHRN - 4060 - R001 - 200 - STH	6,0	0,10	7,0	20,0	60	6	4	42,30 €
SHRN - 4060 - R001 - 400 - STH				40,0				56,70 €
SHRN - 4060 - R001 - 500 - STH				50,0	69,80 €			
SHRN - 4060 - R002 - 200 - STH	6,0	0,20	7,0	20,0	60	6	4	42,30 €
SHRN - 4060 - R002 - 400 - STH				40,0				56,70 €
SHRN - 4060 - R002 - 500 - STH				50,0	69,80 €			
SHRN - 4060 - R002 - 600 - STH				60,0	78,80 €			
SHRN - 4060 - R003 - 200 - STH	6,0	0,30	7,0	20,0	60	6	4	42,30 €
SHRN - 4060 - R003 - 400 - STH				40,0				56,70 €
SHRN - 4060 - R003 - 500 - STH				50,0	69,80 €			

Best. - Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRN - 4060 - R005 - 200 - STH	6,0	0,50	7,0	20,0	60	6	4	42,30 €
SHRN - 4060 - R005 - 400 - STH				40,0	80			56,70 €
SHRN - 4060 - R005 - 500 - STH				50,0	100			69,80 €
SHRN - 4060 - R005 - 600 - STH				60,0	110			78,80 €
SHRN - 4060 - R010 - 200 - STH	6,0	1,00	7,0	20,0	60	6	4	42,30 €
SHRN - 4060 - R010 - 400 - STH				40,0	80			56,70 €
SHRN - 4060 - R010 - 500 - STH				50,0	100			69,80 €
SHRN - 4060 - R010 - 600 - STH				60,0	110			78,80 €
SHRN - 4080 - R005 - 400 - STH	8,0	0,50	9,0	40,0	100	8	4	74,60 €
SHRN - 4080 - R005 - 600 - STH				60,0	120			92,90 €
SHRN - 4080 - R010 - 400 - STH	8,0	1,00	9,0	40,0	100	8	4	74,60 €
SHRN - 4080 - R010 - 600 - STH				60,0	120			92,90 €
SHRN - 4100 - R005 - 400 - STH	10,0	0,50	11,0	40,0	100	10	4	101,10 €
SHRN - 4100 - R005 - 600 - STH				60,0	120			127,70 €
SHRN - 4100 - R010 - 400 - STH	10,0	1,00	11,0	40,0	100	10	4	101,10 €
SHRN - 4100 - R010 - 600 - STH				60,0	120			127,70 €
SHRN - 4120 - R005 - 600 - STH	12,0	0,50	13,0	60,0	130	12	4	164,20 €
SHRN - 4120 - R010 - 600 - STH	12,0	1,00	13,0	60,0	130	12	4	168,70 €

# VHM-Schafffräser mit Eckenradius für Schrupp-, Vorschlicht- und Schlicht-Einsatz; Allrounder für Trochoid-, Besäum- und Abzeil-Bearbeitungen

SHRS


<700 N/mm<sup>2</sup>

700-1100 N/mm<sup>2</sup>

1100-1300 N/mm<sup>2</sup>

30-45 HRC

45-55 HRC

55-60 HRC

60-65 HRC

65-70 HRC

INOX

AL

CU CuZn Gold PL

TI

CFK GFK

PLASTIC

GRAPHIT

Best.-Nr. / Order no.	d1	ER	L1	L	D	Z	Stk. €
SHRS - 6030 - R001 - STH	3,0	0,10	7,5	60	6	6	49,60 €
SHRS - 6030 - R002 - STH		0,20					49,60 €
SHRS - 6030 - R003 - STH		0,30					49,60 €
SHRS - 6030 - R005 - STH		0,50					49,60 €
SHRS - 6040 - R001 - STH	4,0	0,10	10,0	60	6	6	49,60 €
SHRS - 6040 - R002 - STH		0,20					49,60 €
SHRS - 6040 - R003 - STH		0,30					49,60 €
SHRS - 6040 - R005 - STH		0,50					49,60 €
SHRS - 6040 - R010 - STH		1,00					49,60 €
SHRS - 6050 - R002 - STH	5,0	0,20	13,0	60	6	6	52,30 €
SHRS - 6050 - R003 - STH		0,30					52,30 €
SHRS - 6050 - R005 - STH		0,50					52,30 €
SHRS - 6050 - R010 - STH		1,00					52,30 €
SHRS - 6060 - R001 - STH	6,0	0,10	15,0	60	6	6	59,00 €
SHRS - 6060 - R002 - STH		0,20					59,00 €
SHRS - 6060 - R003 - STH		0,30					59,00 €
SHRS - 6060 - R005 - STH		0,50					59,00 €
SHRS - 6060 - R010 - STH		1,00					59,00 €
SHRS - 6080 - R002 - STH	8,0	0,20	20,0	70	8	6	78,90 €
SHRS - 6080 - R003 - STH		0,30					78,90 €
SHRS - 6080 - R005 - STH		0,50					78,90 €
SHRS - 6080 - R010 - STH		1,00					78,90 €
SHRS - 6080 - R015 - STH		1,50					78,90 €
SHRS - 6100 - R003 - STH	10,0	0,30	25,0	75	10	6	104,20 €
SHRS - 6100 - R005 - STH		0,50					104,20 €
SHRS - 6100 - R010 - STH		1,00					104,20 €
SHRS - 6100 - R020 - STH		2,00					104,20 €
SHRS - 6120 - R003 - STH	12,0	0,30	30,0	80	12	6	122,20 €
SHRS - 6120 - R005 - STH		0,50					122,20 €
SHRS - 6120 - R010 - STH		1,00					122,20 €
SHRS - 6120 - R020 - STH		2,00					122,20 €
SHRS - 6160 - R005 - STH	16,0	0,50	50,0	110	16	6	225,60 €
SHRS - 6160 - R010 - STH		1,00					225,60 €
SHRS - 6160 - R020 - STH		2,00					225,60 €

# VHM-HighFeed-Torusfräser für Schruppeinsatz mit stabiler Kerngeometrie

SHRF

h5

R0.2-0.5  
ER  
±0,005

R1-1.5  
ER  
±0,01

R2-3  
ER  
±0,015

STH  
COATING

φ1-5  
-0.000/  
-0.010

φ6-12  
-0.005/  
-0.015

φ16  
-0.010/  
-0.020

15°  
HELIX

CENTRE  
CUT

15°  
SHANK  
ANGLE

<700  
N/mm<sup>2</sup>

700-  
1100  
N/mm<sup>2</sup>

1100-  
1300  
N/mm<sup>2</sup>

30-45  
HRC

45-55  
HRC

55-60  
HRC

60-65  
HRC

65-70  
HRC

INOX

AL

CU CuZn  
Gold PL

TI


CFK  
GFK

PLASTIC


GRAPHIT


Best.-Nr. / Order no.	d1	ER	L1	L2	L	D	Z	Stk. €
SHRF - 4010 - R002 - 025 - STH	1,0	0,20	1,0	2,5	50	4	4	36,40 €
SHRF - 4015 - R005 - 040 - STH	1,5	0,50	1,5	4,0	50	4	4	36,40 €
SHRF - 4020 - R005 - 060 - STH	2,0	0,50	2,0	6,0	50	6	4	42,50 €
SHRF - 4030 - R005 - 080 - STH	3,0	0,50	3,0	8,0	50	6	4	42,50 €
SHRF - 4040 - R005 - 120 - STH	4,0	0,50	4,0	12,0	60	6	4	42,50 €
SHRF - 4040 - R005 - 160 - STH				16,0				42,50 €
SHRF - 4040 - R010 - 120 - STH	4,0	1,00	4,0	12,0	60	6	4	42,50 €
SHRF - 4040 - R010 - 160 - STH				16,0				42,50 €
SHRF - 4050 - R010 - 150 - STH	5,0	1,00	5,0	15,0	60	6	4	42,50 €
SHRF - 4060 - R015 - 150 - STH	6,0	1,50	6,0	15,0	60	6	4	42,50 €
SHRF - 4080 - R020 - 200 - STH	8,0	2,00	8,0	20,0	80	8	4	75,00 €
SHRF - 4080 - R020 - 300 - STH				30,0				110
SHRF - 4100 - R020 - 300 - STH	10,0	2,00	10,0	30,0	120	10	4	127,80 €
SHRF - 4120 - R020 - 350 - STH	12,0	2,00	12,0	35,0	130	12	4	150,50 €
SHRF - 4160 - R020 - 300 - STH	16,0	2,00	16,0	30,0	110	16	4	203,00 €

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