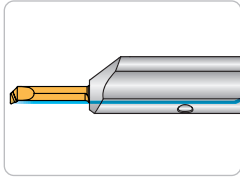


**KONRAD  
TOOLS**

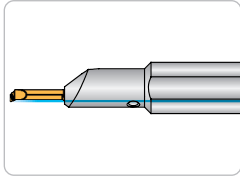


**MCS -  
MINI CUTTING SYSTEM**

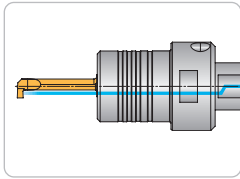
# MINI CUTTING SYSTEM (MCS) - HOLDERS



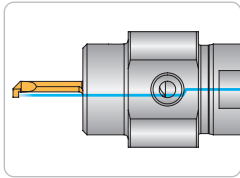
MCS STANDARD HOLDER



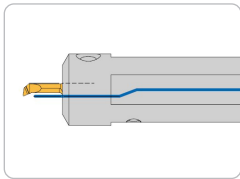
MCS OFFSET HOLDER



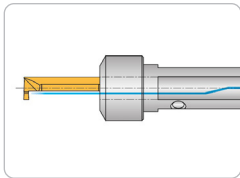
MCS HYDRAULIC HOLDER



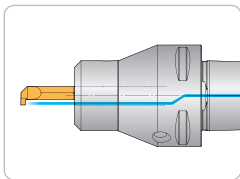
MCS HOLDER - STAR LATHES



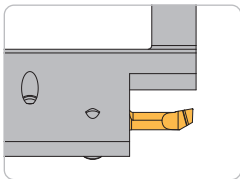
MCS HOLDER - STAR LATHES



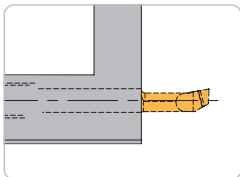
MCS HOLDER FOR LATHES



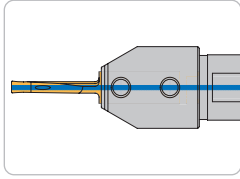
MCS HOLDER - POLYGONAL SHANK



HOLDER FOR SLIDING HEAD AUTO LATHES AND  
MULTI SPINDLE MACHINES

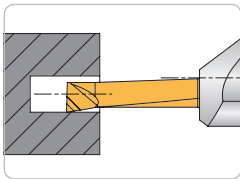


HOLDER FOR SLIDING HEAD AUTO LATHES ON  
COUNTER SPINDLE



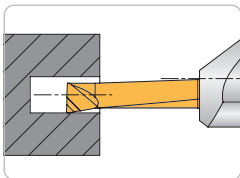
MCS AXIAL GROOVING HOLDER

## MINI CUTTING SYSTEM (MCS) - INSERTS



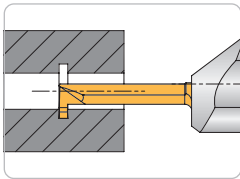
TURNING

$D_{\min} = 0,7 - 10,2 \text{ mm}$



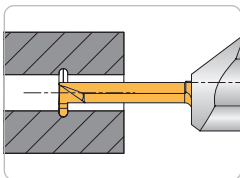
TURNING 20°

$D_{\min} = 3,0 - 5,0 \text{ mm}$



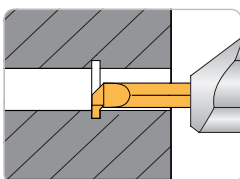
GROOVING

$D_{\min} = 2,5 - 7,9 \text{ mm}$



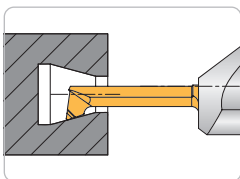
RADIUS GROOVING

$D_{\min} = 3,9 - 8,2 \text{ mm}$



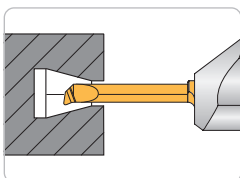
CIR-CLIP DIN 471/472

$D_{\min} = 4,1 - 10,4 \text{ mm}$



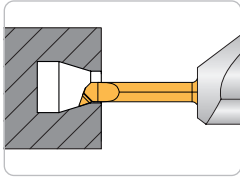
COPYING

$D_{\min} = 0,7 - 10,2 \text{ mm}$



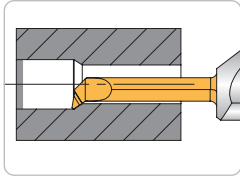
COPYING – RE-INFORCED EXECUTION

$D_{\min} = 1,5 - 10,8 \text{ mm}$



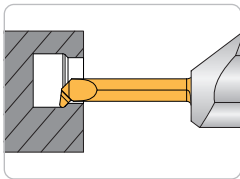
**COPYING 20°**

$D_{\min} = 6,0 \text{ mm}$



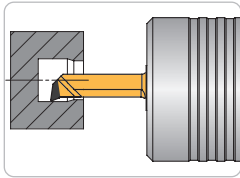
**COPYING 32°**

$D_{\min} = 2,9 - 8,0 \text{ mm}$



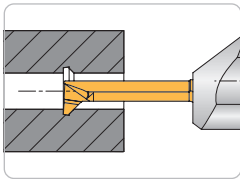
**COPYING 45°**

$D_{\min} = 1,6 - 8,9 \text{ mm}$



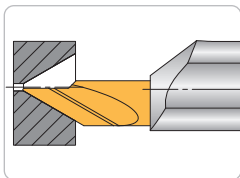
**COPY TURNING – CBN BRAZED**

$D_{\min} = 3,0 - 6,0 \text{ mm}$

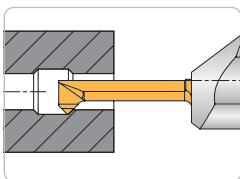


**PRE-GROOVING AND CHAMFERING**

$D_{\min} = 1,5 - 10,8 \text{ mm}$

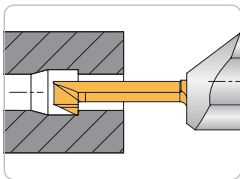


**CENTRE CHAMFERING 45°/60°**



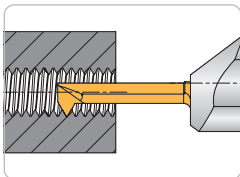
**CHAMFERING 45°**

$D_{\min} = 2,5 - 5,9 \text{ mm}$



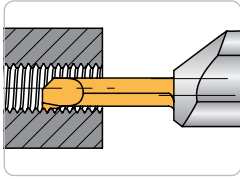
**BACK TURNING**

$D_{\min} = 3,9 - 5,9 \text{ mm}$



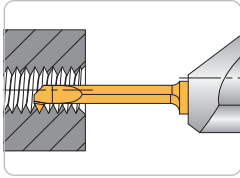
**THREADING 60°  
– METRIC PARTIAL PROFILE**

$D_{\min} = 2,3 - 6,0 \text{ mm}$



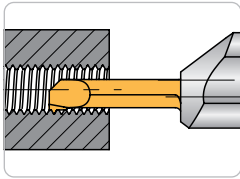
**THREADING 60°  
– METRIC FULL PROFILE**

$D_{\min} = 3,7 - 6,0 \text{ mm}$



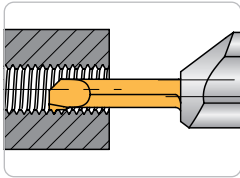
**WHITWORTH THREAD 55°  
– PARTIAL PROFILE**

$D_{\min} = 3,3 - 6,0 \text{ mm}$



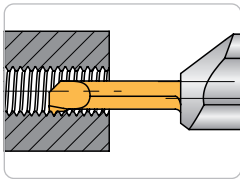
**WHITWORTH PIPE THREAD 55° DIN ISO  
228 – FULL PROFILE**

$D_{\min} = 4,0 - 11,0 \text{ mm}$



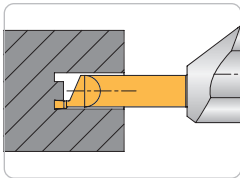
**WHITWORTH PIPE THREAD 55° BSW  
– FULL PROFILE**

$D_{\min} = 3,4 - 6,5 \text{ mm}$



**TRAPEZOIDAL 30° DIN ISO 103  
– PARTIAL PROFILE**

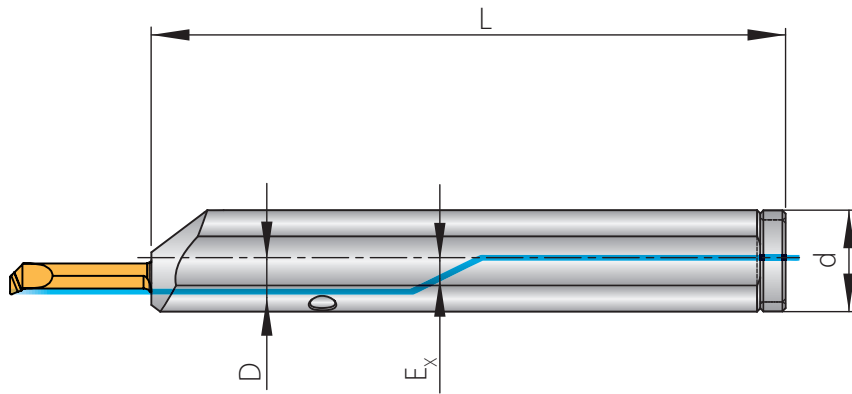
$D_{\min} = 6,5 - 8,0 \text{ mm}$



**AXIAL GROOVING**

$D_{\min} = 5,0 - 9,0 \text{ mm}$

MCS standard holder

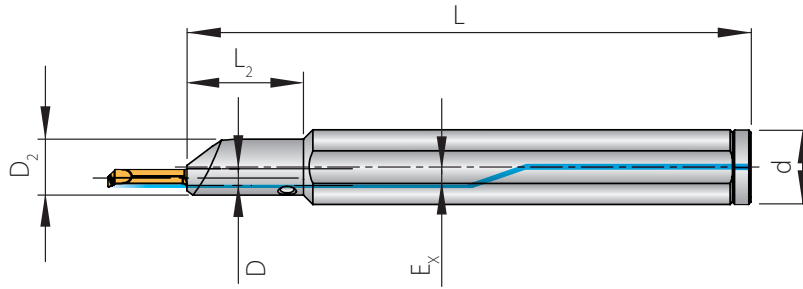


DESIGNATION	D	d	L	E <sub>x</sub>	INSERT
HMCSL/R 1204	4	12	100	2,35	MCS...40L/R
HMCSL/R 1206	6	12	100	2,35	MCS...60L/R
HMCSL/R 1606	6	16	120	2,8	MCS...60L/R
HMCSL/R 1608	8	16	120	2,8	MCS...80L/R
HMCSR 2010	10	20	120	2,8	MCS...100L/R

SPARE PARTS:

HOLDER	SCREW	KEY	COOLANT SEAL RING
HMCS 1204 ..-HMCS 1206 ..	A-043	K-311	SR-12R
HMCS 1606 ..-HMCS 1608 ..	A-044	K-111	SR-16R
HMCS 2010 ..	A-044	K-111	SR-20R

MCS offset holder

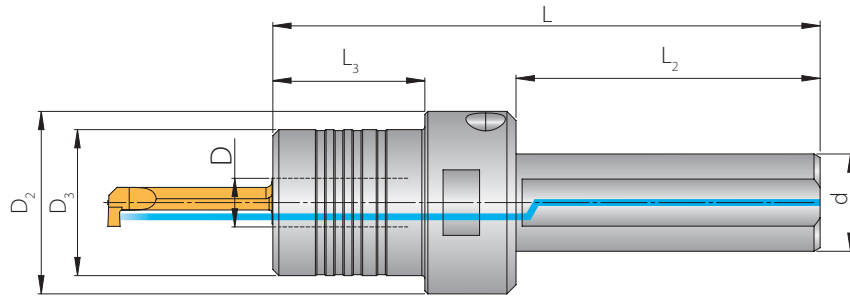


DESIGNATION	D	D <sub>2</sub>	d	L	L <sub>2</sub>	E <sub>x</sub>	INSERT
HMCSL/R 1604	4	12	16	120	25	2,35	MCS...40L/R

SPARE PARTS:

HOLDER	SCREW	KEY	COOLANT SEAL RING
HMCS 1604 ..	A-043	K-311	SR-16R

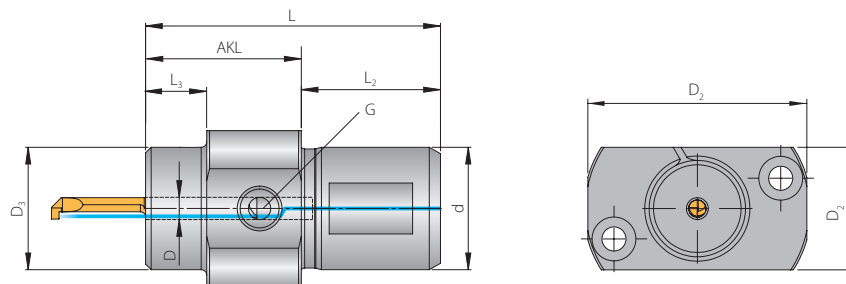
MCS hydraulic holder



DESIGNATION	D	D <sub>2</sub>	D <sub>3</sub>	d	L	L <sub>2</sub>	L <sub>3</sub>	INSERT
HMCSR 1604-HYD	4	30	18	16	82,5	50	18	MSC...40R
HMCSR 1606-HYD	6	30	20	16	90	50	25	MSC...60R
HMCSR 1608-HYD	8	30	24	16	90	50	25	MSC...80R



MCS holder - STAR lathes

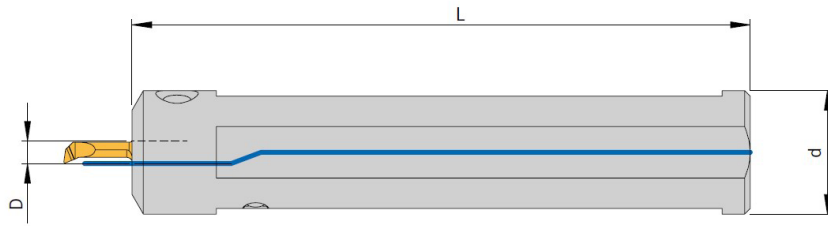


DESIGNATION	D	D <sub>2</sub>	D <sub>3</sub>	d	AKL	L	L <sub>2</sub>	L <sub>3</sub>	G	INSERT
HMCSR 2204-S28	4	28 x 50	22	22	28	53	25	11	M8x1	MSC...40R
HMCSR 2204-S50	4	28 x 50	22	22	50	75	25	33	G 1/8	MSC...40R
HMCSR 2204-S50A	4	32,5 x 37,5	22	22	75	50	35	33	G 1/8	MSC...40R
HMCSR 2206-S33	6	28 x 50	22	22	28	53	25	16	M8x1	MSC...60R
HMCSR 2206-S50	6	28 x 50	22	22	50	75	25	33	G 1/8	MSC...60R
HMCSR 2206-S50A	6	32,5 x 37,5	22	22	75	50	25	33	G 1/8	MSC...60R
HMCSR 3004-A	4	28 X 50	22	30	28	53	25	11	M8x1	MSC...40R
HMCSR 3204-A	4	28 x 50	22	32	28	53	25	11	M8x1	MSC...40R

SPARE PARTS:

HOLDER	SCREW	KEY
HMCS 2204...-HMCS 3204..	A-044	AD-1111

MCS holder - STAR lathes

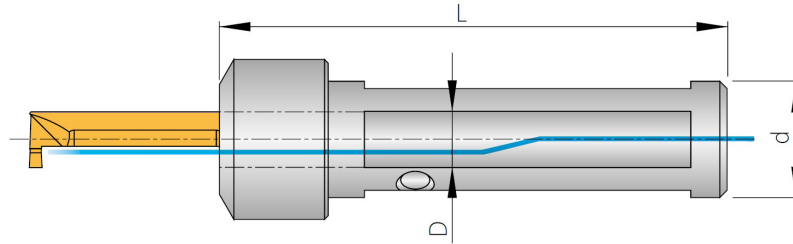


DESIGNATION	D	d	L	INSERT
HMCSR-US 2204-A	4	22	110	MCS-...40R

SPARE PARTS:

HOLDER	SCREW	KEY	
HMCS 2204 ..	A-044	AD-1111	

## MCS holder for lathes

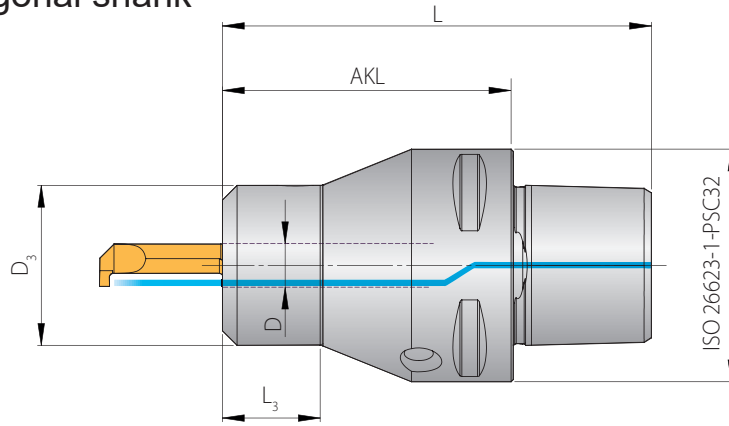


DESIGNATION	D	d	L	Connection	INSERT
<b>CITIZEN</b>					
HMCSR 1"04	4	1"	100	G 1/4"	MSC...40R
HMCSR 1"06	6	1"	100	G 1/4"	MSC...60R
HMCSR 1"08	8	1"	100	G 1/4"	MSC...80R
HMCSR 3/4"04	4	3/4"	100	G 1/8"	MSC...40R
HMCSR 3/4"06	6	3/4"	100	G 1/8"	MSC...60R
HMCSR 3/4"08	8	3/4"	100	G 1/8"	MSC...80R
<b>STAR</b>					
HMCSR 1604-S	4	16	70	G 1/8"	MSC...40R
HMCSR 1606-S	6	16	70	G 1/8"	MSC...60R
HMCSR 1608-S	8	16	70	G 1/8"	MSC...80R
HMCSR 2204-S	4	22	110	G 1/8"	MSC...40R
HMCSR 2204-SG1/4"	4	22	110	G 1/4"	MSC...40R
HMCSR 2206-S	6	22	110	G 1/8"	MSC...60R
HMCSR 2206-SG1/4"	6	22	110	G 1/4"	MSC...60R
HMCSR 2208-S	8	22	110	G 1/8"	MSC...80R
<b>TORNOS, TSUGAMI, HANWA</b>					
HMCSR 2004-T2	4	20	90	G 1/8"	MSC...40R
HMCSR 2006-T2	6	20	90	G 1/8"	MSC...60R
HMCSR 2008-T2	8	20	90	G 1/8"	MSC...80R
HMCSR 2504-T2	4	25	100	G 1/8"	MSC...40R
HMCSR 2504-T1	4	25	170	G 1/8"	MSC...40R
HMCSR 2506-T2	6	25	100	G 1/8"	MSC...60R
HMCSR 2506-T1	6	25	170	G 1/8"	MSC...60R
HMCSR 2508-T2	8	25	100	G 1/8"	MSC...80R

**SPARE PARTS:**

HOLDER	SCREW	KEY	
HMCS 1"..-HMCS 3/4"..	A-044	AD-1111	
HMCS 1604..	A-044	AD-1111	
HMCS 1606 - HMCS 1608..	A-044	AD-1111	
HMCS 2004..-HMCS 2508..	A-044	AD-1111	

MCS holder - polygonal shank

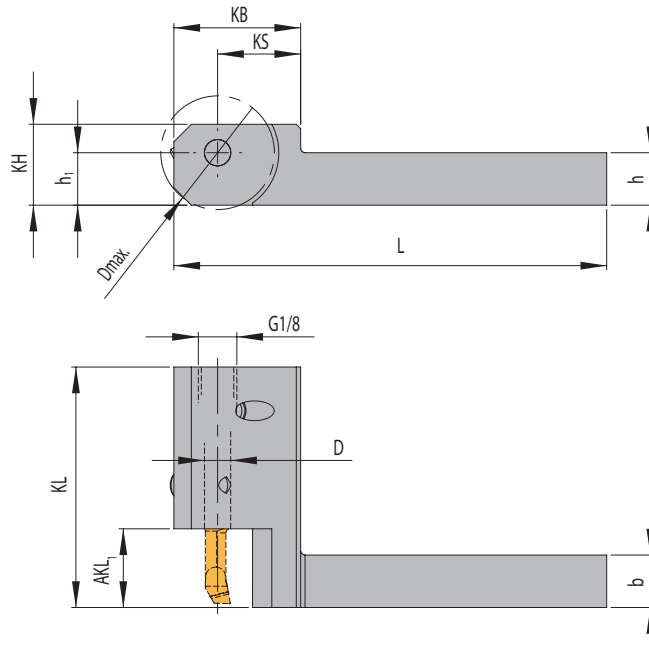


DESIGNATION	PSC	D	D <sub>3</sub>	L	AKL	L <sub>3</sub>	INSERT
HMCSR PSC3.3204	PSC32	4	22	59	40	13	MCS...40R
HMCSR PSC3.3206	PSC32	6	22	59	40	13	MCS...60R

SPARE PARTS:

HOLDER	SCREW	KEY	
HMCS 32...PSC	A-044	AD-1111	

Holder for sliding head auto lathes and multi spindle machines

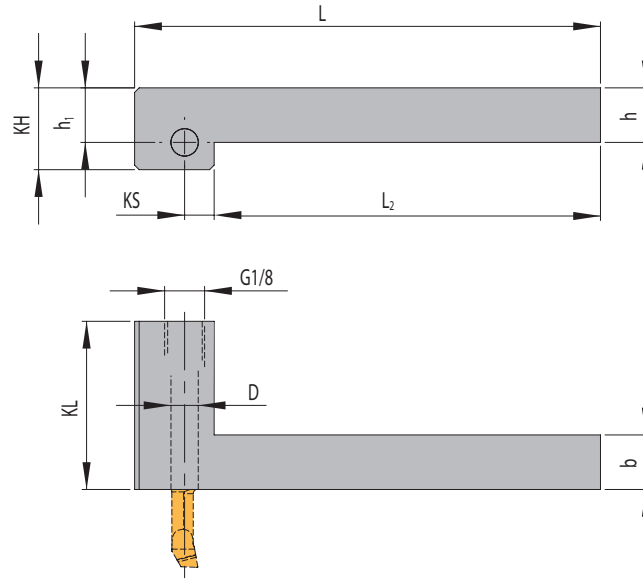


DESIGNATION	D	h	b	L	KB	KS	KL	AKL <sub>1</sub>	KH	h <sub>1</sub>	D <sub>max</sub>	Connection	INSERT
HMCSR 1204-12	4	12	12	98	28	19	52,5	18	18,5	12	26	G 1/8"	MCS...40R
HMCSR 1206-12	6	12	12	99	29	19	55	18	18,5	12	26	G 1/8"	MCS...60R

SPARE PARTS:

HOLDER	SCREW	KEY	
HMCS 1204..	A-043	AD-3111	
HMCS 1206..	A-044	AD-1111	

Holder for sliding head auto lathes on counter spindle

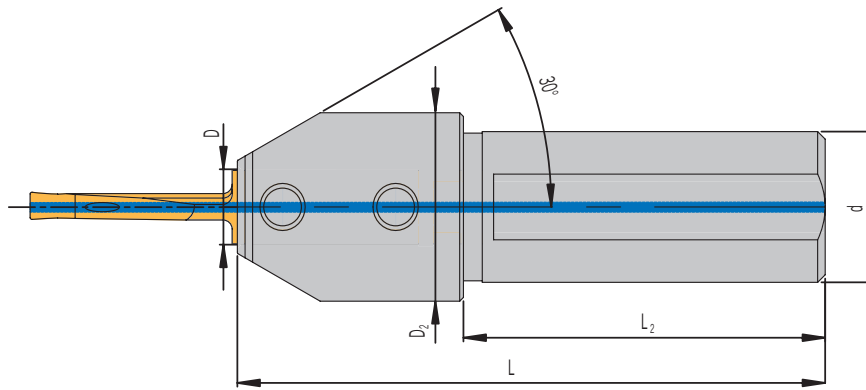


DESIGNATION	D	h	b	L	L <sub>2</sub>	KS	KL	KH	h <sub>1</sub>	Connection	INSERT
HMCS R 1206-12G	6	12	12	102,5	85	19	52,5	18,5	12	G 1/8"	MCS...40R

SPARE PARTS:

HOLDER	SCREW	KEY	
HMCS 1206..	A-044	AD-1111	

MCS axial grooving holder

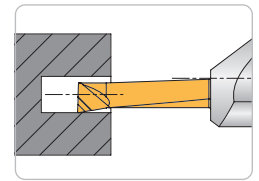
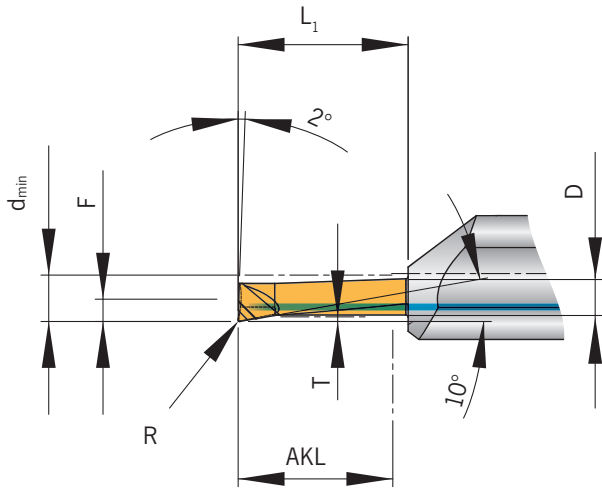


DESIGNATION	D	D <sub>2</sub>	d	L	L <sub>2</sub>	INSERT
HFGI 2006	6	25	20	78	48	FGI15... FGI20...
HFGI 2008	8	25	20	78	48	FGI25... FGI30...
HFGI 2010	10	25	20	78	48	FGI40...
HFGI 2508	8	30	25	78	48	FGI25... FGI30...
HFGI 2510	10	30	25	78	48	FGI40...

SPARE PARTS:

HOLDER	SCREW		
HFGI 2006	2 x DIN913-M5x10		
HFGI 2008 - 2510	2 x DIN913-M6x8		

MCS - Turning

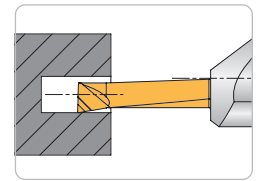
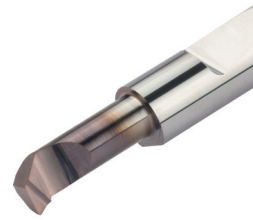
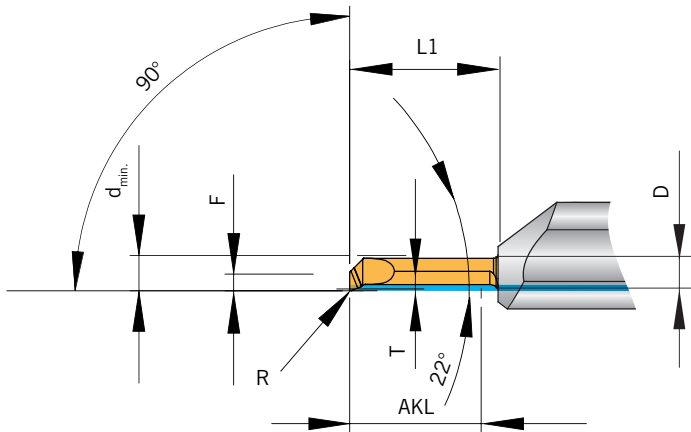


MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44	
									GRADE → SUITABLE HOLDER ↓	A32-BZ2	CBN1
MCS-T-07005005-020.40R	0,7	2	0,05	0,05	0,3	4	4		HMCS...04	●	
MCS-T-20015002-060.40R	2	6	0,15	0,02	0,9	8	4			●	
MCS-T-20015002-100.40R	2	10	0,15	0,02	0,9	12	4			●	
MCS-T-220401-060.40R	2,2	6	0,4	0,1	1,05	8	4			●	
MCS-T-250401-100.40R	2,5	10	0,4	0,1	1,15	12	4			●	
MCS-T-250401-150.40R	2,5	15	0,4	0,1	1,15	17	4			●	
MCS-T-250401-200.40R	2,5	20	0,4	0,1	1,15	22	4			●	
MCS-T-300401-100.40R	3	10	0,4	0,1	1,4	12	4			●	
MCS-T-300401-150.40R	3	15	0,4	0,1	1,4	17	4			●	
MCS-T-300401-200.40R	3	20	0,4	0,1	1,4	22	4			●	
MCS-T-300402-100.40R	3	10	0,4	0,2	1,4	12	4			●	
MCS-T-300402-150.40R	3	15	0,4	0,2	1,4	17	4			●	
MCS-T-300402-200.40R	3	20	0,4	0,2	1,4	22	4			●	
MCS-T-390602-100.40R	3,9	10	0,6	0,2	1,9	12	4			●	
MCS-T-390602-150.40L/R	3,9	15	0,6	0,2	1,9	17	4			●	
MCS-T-390602-200.40L/R	3,9	20	0,6	0,2	1,9	22	4			●	
MCS-T-40015005-250.40L/R	4	25	0,15	0,05	1,9	27	4			●	
MCS-T-400301-250.40R	4	25	0,3	0,1	1,9	27	4			●	
MCS-T-590801-150.60R	5,9	15	0,8	0,1	2,9	17	6			HMCS...06	●
MCS-T-590802-100.60R	5,9	10	0,8	0,2	2,9	12	6				●
MCS-T-590802-200.60L/R	5,9	20	0,8	0,2	2,9	22	6		●		
MCS-T-590802-300.60L/R	5,9	30	0,8	0,2	2,9	32	6		●		
MCS-T-590804-200.60R	5,9	20	0,8	0,4	2,9	22	6		●		
MCS-T-6005015-420.60R	6	42	0,5	0,15	2,9	44	6		●		
MCS-T-791002-100.80R	7,9	10	1	0,2	3,9	12	8		HMCS...08	●	
MCS-T-791002-250.80L/R	7,9	25	1	0,2	3,9	27	8			●	
MCS-T-820402-300.80R	8,2	30	0,4	0,2	3,9	32	8		●		
MCS-T-1021002-200.100R	10,2	20	1	0,2	4,9	22	10		HMCS...10	●	
MCS-T-1021002-300.100R	10,2	30	1	0,2	4,9	32	10			●	



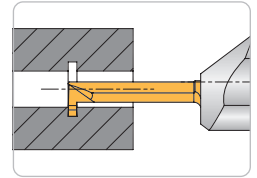
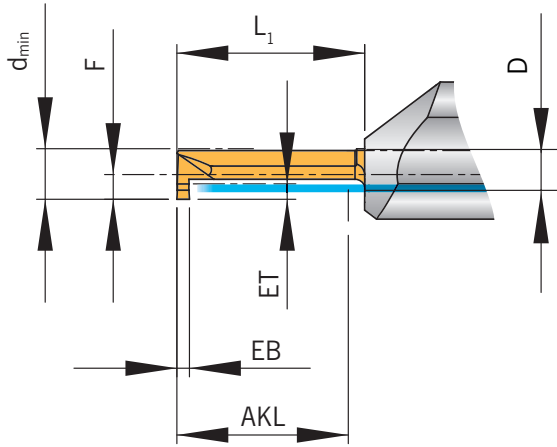
MCS - Turning - 22°



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-T20-3001502-150.40R	3	15	0,15	0,2	1,3	17	4		HMCS...04	●
MCS-T20-400302-150.40R	4	15	0,3	0,2	1,9	17	4			●
MCS-T20-500502-100.60R	5	10	0,5	0,2	2,3	12	6		HMCS...06	●
MCS-T20-500502-150.60R	5	15	0,5	0,2	2,3	17	6			●

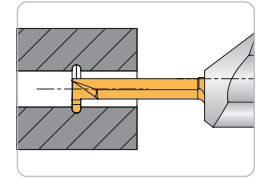
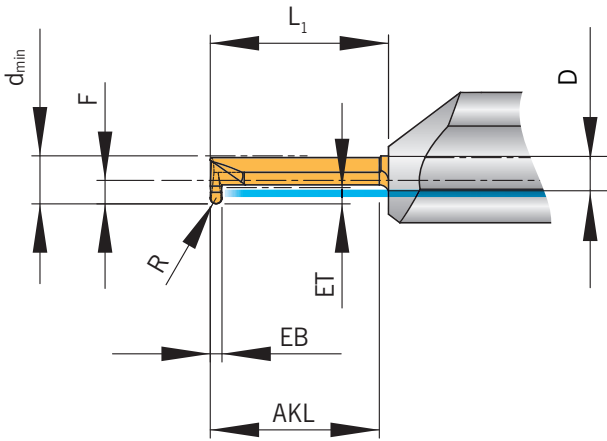
MCS - Grooving



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	EB	ET	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-G-S-25080600-100.40R	2,5	10	0,8	0,6	1,15	12	4		HMCS...04	●
MCS-G-S-25080600-150.40R	2,5	15	0,8	0,6	1,15	17	4			●
MCS-G-S-25080600-200.40R	2,5	20	0,8	0,6	1,15	22	4			●
MCS-G-S-30080600-100.40R	3	10	0,8	0,6	1,4	12	4			●
MCS-G-S-30080600-150.40R	3	15	0,8	0,6	1,4	17	4			●
MCS-G-S-30080600-200.40R	3	20	0,8	0,6	1,4	22	4			●
MCS-G-S-39100800-100.40R	3,9	10	1	0,8	1,9	12	4			●
MCS-G-S-39100800-150.40L/R	3,9	15	1	0,8	1,9	17	4			●
MCS-G-S-39100800-200.40R	3,9	20	1	0,8	1,9	22	4			●
MCS-G-S-59101800-200.60L/R	5,9	20	1	1,8	2,9	22	6		HMCS...06	●
MCS-G-S-59151800-100.60R	5,9	10	1,5	1,8	2,9	12	6			●
MCS-G-S-59151800-200.60L/R	5,9	20	1,5	1,8	2,9	22	6			●
MCS-G-S-59151800-300.60R	5,9	30	1,5	1,8	2,9	32	6			●
MCS-G-S-69202500-150.80L/R	6,9	15	2	2,5	3,9	17	8		HMCS...08	●
MCS-G-S-79182500-100.80R	7,9	10	1,8	2,5	3,9	12	8			●
MCS-G-S-79182500-250.80R	7,9	25	1,8	2,5	3,9	27	8			●

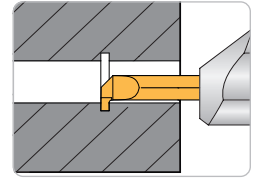
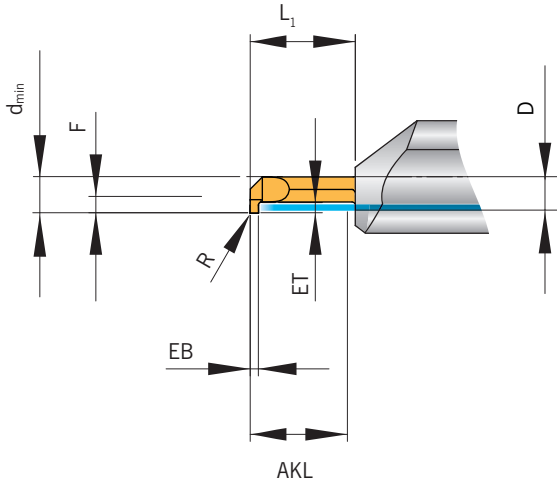
MCS - Radius grooving



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	EB	ET	R	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-G-S-39100805-100.40R	3,9	10	1	0,8	0,5	1,9	12	4	HMCS...04	●
MCS-G-S-39100805-150.40L/R	3,9	15	1	0,8	0,5	1,9	17	4		●
MCS-G-S-39100805-200.40R	3,9	20	1	0,8	0,5	1,9	22	4		●
MCS-G-S-59151875-100.60R	5,9	10	1,5	1,8	0,75	2,9	12	6	HMCS...06	●
MCS-G-S-59151875-200.60R	5,9	20	1,5	1,8	0,75	2,9	22	6		●
MCS-G-S-59151875-300.60R	5,9	30	1,5	1,8	0,75	2,9	32	6		●
MCS-G-S-82202010-200.80R	8,2	20	2	2	1	3,9	22	8	HMCS...08	●

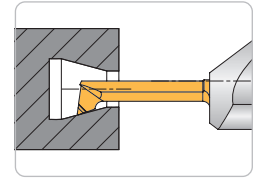
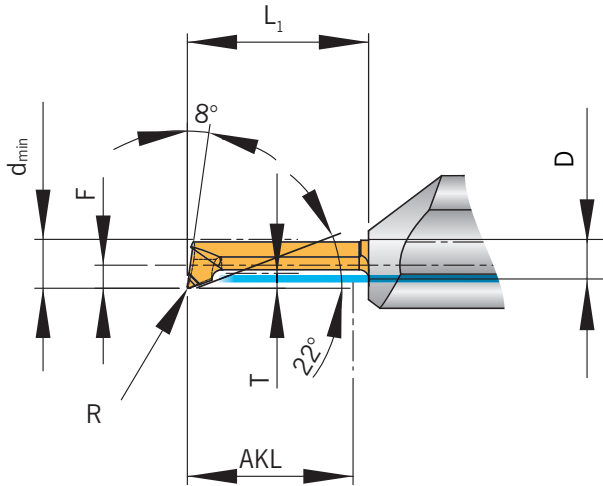
MCS - Cir-clip grooving DIN 471/472



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	$d_{min}$	AKL	EB	ET	R	F	$L_1$	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-GS-41099110-150.40R	4,1	15	0,99	1,1	0,05	1,9	17	4	HMCS...04	●
MCS-GS-41119110-150.40R	4,1	15	1,19	1,1	0,05	1,9	17	4		●
MCS-GS-41139110-150.40R	4,1	15	1,39	1,1	0,05	1,9	17	4		●
MCS-GS-41169110-150.40R	4,1	15	1,69	1,1	0,05	1,9	17	4		●
MCS-GS-61099150-150.60R	6,1	15	0,99	1,5	0,05	2,9	17	6	HMCS...06	●
MCS-GS-61119150-150.60R	6,1	15	1,19	1,5	0,05	2,9	17	6		●
MCS-GS-61139150-150.60R	6,1	15	1,39	1,5	0,05	2,9	17	6		●
MCS-GS-61169150-150.60R	6,1	15	1,69	1,5	0,05	2,9	17	6		●
MCS-GS-61194150-150.60R	6,1	15	1,94	1,5	0,05	2,9	17	6	●	
MCS-GS-84119200-200.80R	8,4	20	1,19	2	0,05	3,9	22	8	HMCS...08	●
MCS-GS-84139200-200.80R	8,4	20	1,39	2	0,05	3,9	22	8		●
MCS-GS-84169250-200.80R	8,4	20	1,69	2,5	0,05	3,9	22	8		●
MCS-GS-84194250-200.80R	8,4	20	1,94	2,5	0,05	3,9	22	8		●
MCS-GS-84224300-200.80R	8,4	20	2,24	3	0,05	3,9	22	8		●
MCS-GS-84274350-200.80R	8,4	20	2,74	3,5	0,05	3,9	22	8		●
MCS-GS-84328350-200.80R	8,4	20	3,28	3,5	0,05	3,9	22	8	●	
MCS-GS-104139350-250.100R	10,4	25	1,39	3,5	0,05	4,9	27	10	HMCS...10	●
MCS-GS-104169350-250.100R	10,4	25	1,69	3,5	0,05	4,9	27	10		●
MCS-GS-104194350-250.100R	10,4	25	1,94	3,5	0,05	4,9	27	10		●
MCS-GS-104224350-250.100R	10,4	25	2,24	3,5	0,05	4,9	27	10		●
MCS-GS-104274350-250.100R	10,4	25	2,74	3,5	0,05	4,9	27	10		●
MCS-GS-104328350-250.100R	10,4	25	3,28	3,5	0,05	4,9	27	10		●

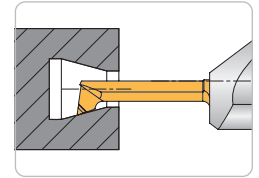
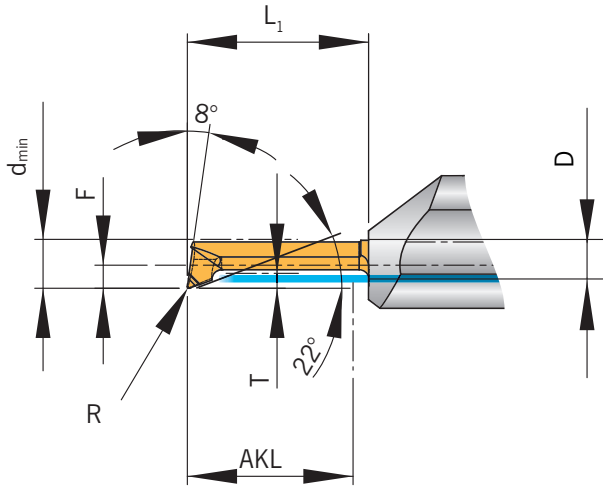
MCS - Copying



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	$d_{min}$	AKL	T	R	F	$L_1$	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44	
									GRADE → SUITABLE HOLDER ↓	A32-BZ2	CBN1
MCS-C-1501501-060.40R	1,5	6	0,15	0,1	1,3	7	4		HMCS...04	●	
MCS-C-1501005-110.40R	1,5	11	0,1	0,05	1,3	12	4			●	
MCS-C-2003005-060.40R	2	6	0,3	0,05	0,9	7	4			●	
MCS-C-2003005-100.40R	2	10	0,3	0,05	0,9	11	4			●	
MCS-C-20015005-100.40L/R	2	10	0,15	0,05	0,9	11	4			●	
MCS-C-2001005-150.40R	2	15	0,15	0,05	0,9	17	4			●	
MCS-C-220201-150.40R	2,2	15	0,2	0,1	0,95	16	4			●	
MCS-C-250401-100.40R	2,5	10	0,4	0,1	1,15	12	4			●	
MCS-C-250401-150.40R	2,5	15	0,4	0,1	1,15	17	4			●	
MCS-C-250401-200.40R	2,5	20	0,4	0,1	1,15	22	4			●	
MCS-C-300401-100.40R	3	10	0,4	0,1	1,4	12	4			●	
MCS-C-300401-150.40R	3	15	0,4	0,1	1,4	17	4			●	
MCS-C-300401-200.40L/R	3	20	0,4	0,1	1,4	22	4			●	
MCS-C-390802-100.40R	3,9	10	0,8	0,2	1,9	12	4			●	
MCS-C-390802-150.40L/R	3,9	15	0,8	0,2	1,9	17	4			●	
MCS-C-390802-200.40L/R	3,9	20	0,8	0,2	1,9	22	4			●	
MCS-C-391304-200.40R	3,9	20	1,3	0,4	1,9	22	4			●	
MCS-C-400604-120.40R	4	12	0,6	0,4	1,9	14	4			●	
MCS-C-400604-150.40R	4	15	0,6	0,4	1,9	17	4			●	
MCS-C-400602-200.40R	4	20	0,6	0,2	1,9	22	4			●	
MCS-C-400301-300.40R	4	30	0,3	0,1	1,5	32	4			●	
MCS-C-500502-100.60L/R	5	10	0,5	0,2	2,3	12	6			HMCS...06	●
MCS-C-500502-150.60L/R	5	15	0,5	1,2	2,3	17	6				●
MCS-C-500502-200.60R	5	20	0,5	0,2	2,3	22	6				●
MCS-C-500502-250.60L/R	5	25	0,5	0,2	2,3	26	6				●
MCS-C-500502-300.60R	5	30	0,5	0,2	2,3	31	6				●
MCS-C-591802-100.60R	5,9	10	1,8	0,2	2,9	12	6				●
MCS-C 591802-200.60L/R	5,9	20	1,8	0,2	2,9	22	6				●
MCS-C-591802-300.60L/R	5,9	30	1,8	0,2	2,9	32	6		●		

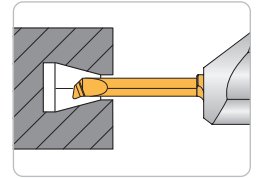
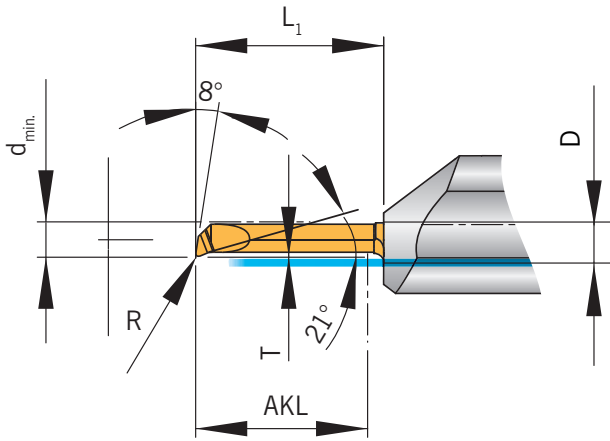
MCS - Copying



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-C-590502-350.60R	5,9	35	0,5	0,2	2,9	37	6		HMCS...06	●
MCS-C-590502-400.60R	5,9	40	0,5	0,2	2,9	42	6			●
MCS-C-590502-500.60R	5,9	50	0,5	0,2	2,9	52	6			●
MCS-C-6005015-420.60R	6	42	0,5	0,15	2,3	44	6			●
MCS-C-680502-200.80L/R	6,8	20	0,5	0,2	3,9	22	8		HMCS...08	●
MCS-C-680502-250.80L/R	6,8	25	0,5	0,2	3,9	27	8			●
MCS-C-720502-450.80R	7,2	45	0,5	0,2	3,45	47	8			●
MCS-C-791002-200.80R	7,9	20	1	0,2	3,9	22	8			●
MCS-C-791002-300.80R	7,9	30	1	0,2	3,9	32	8			●
MCS-C-791002-400.80R	7,9	40	1	0,2	3,9	42	8			●
MCS-C-800502-500.80R	8	50	0,5	0,2	3,9	52	8			●
MCS-C-893902-200.80R	8,9	20	3,9	0,2	3,9	22	8		HMCS...10	●
MCS-C-893902-300.80R	8,9	30	3,9	0,2	3,9	32	8			●
MCS-C-1084902-250.100R	10,8	25	4,9	0,2	4,9	27	10			●
MCS-C-1084902-350.100R	10,8	35	4,9	0,2	4,9	37	10		●	

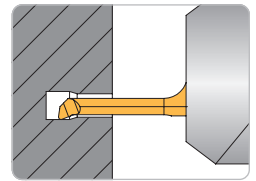
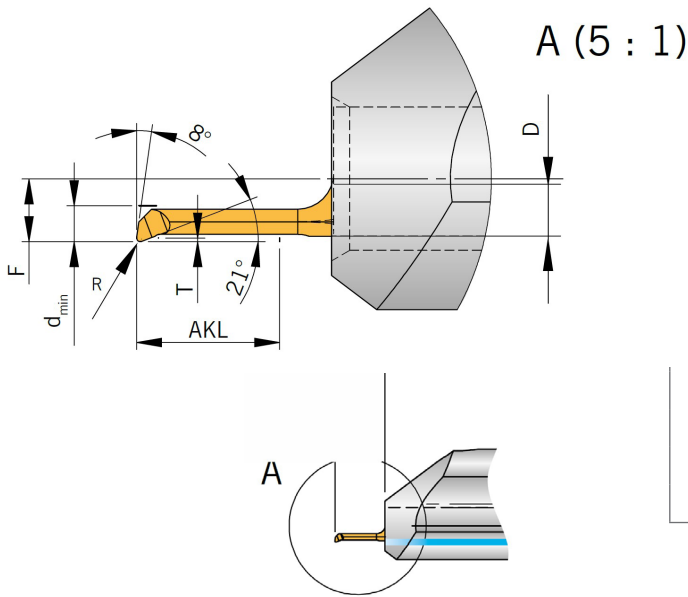
MCS - Copying (reinforced version)



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-C-300202-100.40L/R	3	10	0,2	0,2	1,3	12	4		HMCS...04	●
MCS-C-300202-150.40R	3	15	0,2	0,2	1,3	17	4			●
MCS-C-3202015-100.40R	3,2	10	0,2	0,15	1,45	12	4			●
MCS-C-400301-250.40R	4	25	0,3	0,1	1,5	27	4			●
MCS-C-400302-100.40L/R	4	10	0,3	0,2	1,9	12	4			●

MCS - Copying (reinforced offset version)

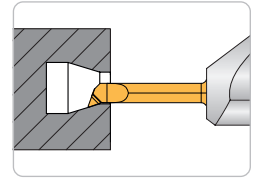
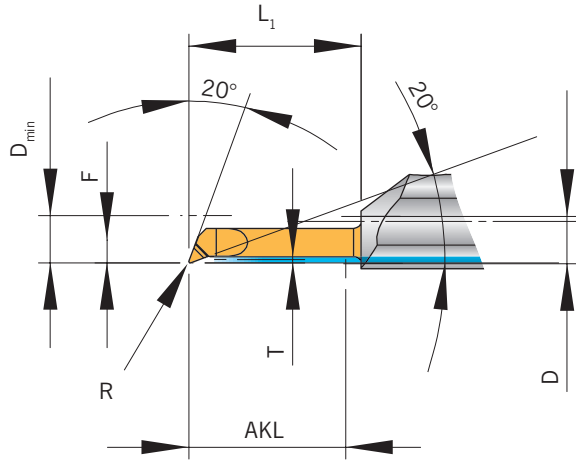


MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	VC (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-C-100101-040.40R	1	4	0,1	0,1	1,75	5,5	4		HMCS...04	●



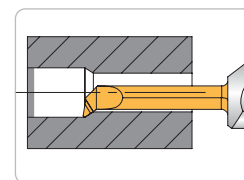
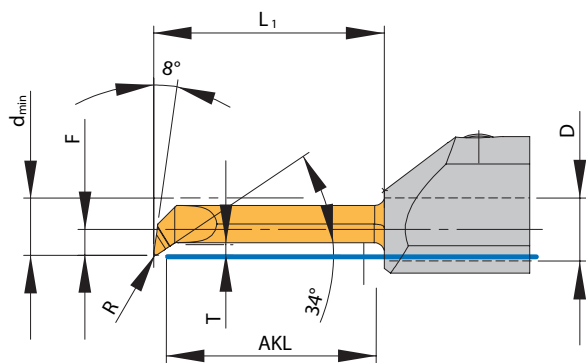
MCS - Copying 20/20°



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-C20-5005015-200.60L/R	6	20	0,5	0,2	2,9	22	6		HMCS...06	●

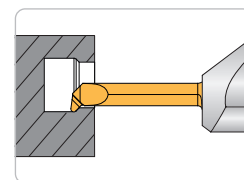
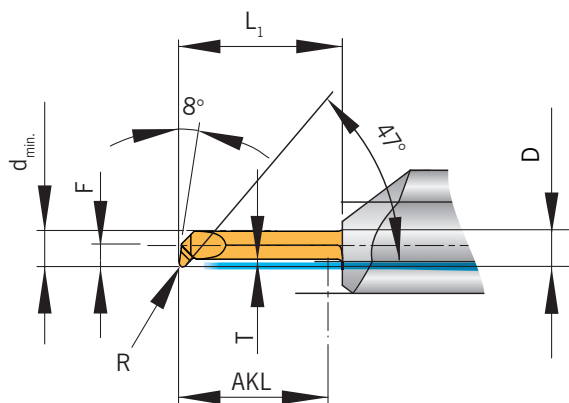
MCS - Copying 32°



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-C32-290701-100.40R	2,9	10	0,7	0,1	1,9	12	4		HMCS...04	●
MCS-C32-290701-200.40R	2,9	20	0,7	0,1	1,9	22	4			●
MCS-C32-390801-100.40R	3,9	10	0,8	0,1	1,9	12	4			●
MCS-C32-390801-160.40R	3,9	16	0,8	0,1	1,9	18	4			●
MCS-C32-390801-200.40R	3,9	20	0,8	0,1	1,9	22	4			●
MCS-C32-501002-150.60R	5	15	1	0,2	2,45	17	6		HMCS...06	●
MCS-C32-501002-200.60R	5	15	1	0,2	2,45	22	6			●
MCS-C32-501002-300.60R	5	30	1	0,2	2,45	32	6			●
MCS-C32-792002-250.80R	7,9	25	2	0,2	3,9	27	8		HMCS...08	●
MCS-C32-792002-300.80R	7,9	30	2	0,2	3,9	32	8			●
MCS-C32-792002-400.80R	7,9	40	2	0,2	3,9	42	8			●
MCS-C32-792002-500.80R	7,9	50	2	0,2	3,9	52	8			●
MCS-C32-802502-200.80R	8	20	2,5	0,2	3,9	22	8			●

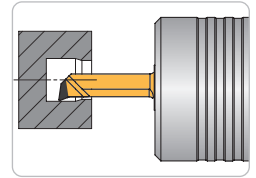
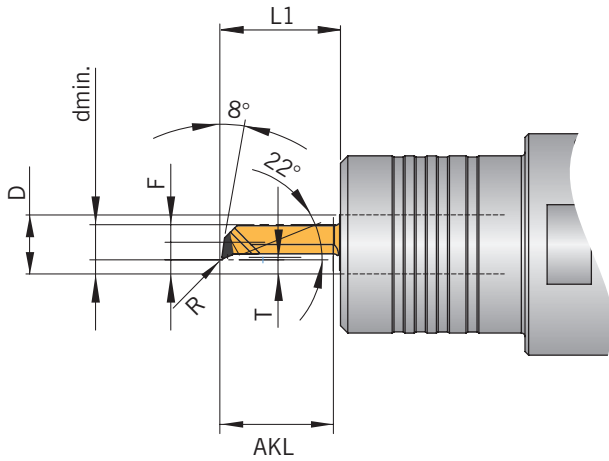
MCS - Copying 45°



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →		PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1	
MCS-C45-16015005-070.40L/R	1,6	7	0,15	0,05	0,9	9	4		HMCS...04	●	
MCS-C45-3906015-200.40R	3,9	20	0,6	0,15	1,9	22	4			●	
MCS-C45-391304-200.40R	3,9	20	1,3	0,4	1,9	22	4			●	
MCS-C45-400604-120.40R	4	12	0,6	0,4	1,9	14	4			●	
MCS-C45-400604-150.40R	4	15	0,6	0,4	1,9	17	4			●	
MCS-C45-4008015-200.40R	4	20	0,8	0,15	1,9	22	4			●	
MCS-C45-5010015-250.60R	5	25	1	0,15	2,45	27	6		HMCS...06	●	
MCS-C45-5918015-150.60L/R	5,9	15	1,8	0,15	2,9	17	6			●	
MCS-C45-5918015-300.60R	5,9	30	1,8	0,15	2,9	32	6			●	
MCS-C45-692902-100.60R	6,9	10	2,9	0,2	2,9	12	6			●	
MCS-C45-692902-150.60L/R	6,9	15	2,9	0,2	2,9	17	6			●	
MCS-C45-692902-200.60R	6,9	20	2,9	0,2	2,9	22	6			●	
MCS-C45-692902-300.60R	6,9	30	2,9	0,2	2,9	32	6		●		
MCS-C45-893902-150.80R	8,9	15	3,9	0,2	3,9	17	8		HMCS...08	●	
MCS-C45-893902-200.80R	8,9	20	3,9	0,2	3,9	22	8			●	
MCS-C45-893902-300.80R	8,9	30	3,9	0,2	3,9	32	8			●	

MCS - Copying CBN

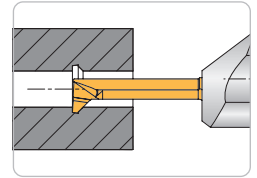
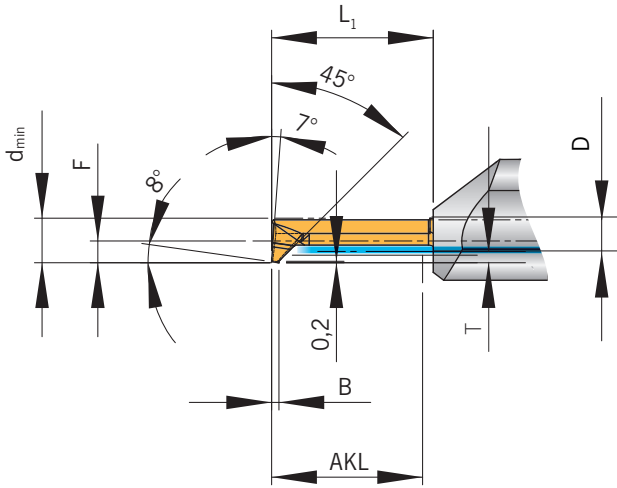


MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	R	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-C-300201-100.60R	3	10	0,2	0,1	1,5	12	6		HMCS...06	●
MCS-C-400302-130.60R	4	13	0,3	0,2	2	15	6			●
MCS-C-500402-150.60R	5	15	0,4	0,2	2,5	17	6			●
MCS-C-600402-180.60R	6	18	0,4	0,2	3	20	6			●



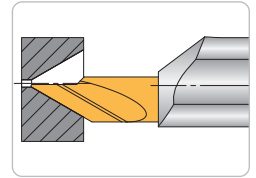
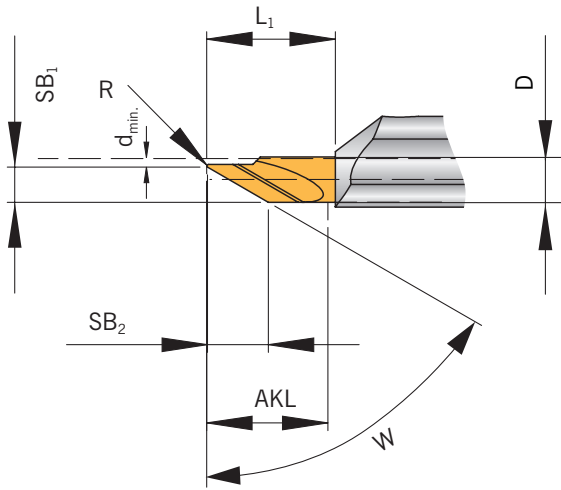
MCS - Pre-grooving and chamfering



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	T	B	F	L <sub>1</sub>	D	-	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-CH-50100800-200.60R	5	20	0,8	1	2,4	22	6		HMCS...06	●
MCS-CH-59100800-200.60R	5,9	20	0,8	1	2,9	22	6			●

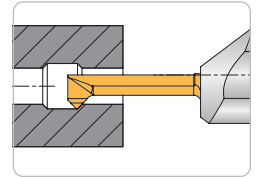
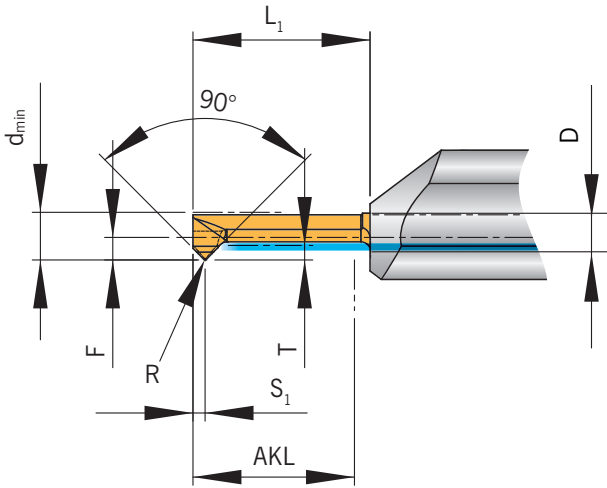
MCS - Centre chamfering 45° / 60°



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	SB <sub>1</sub>	SB <sub>2</sub>	W	AKL	R	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-CH45-104502-150.60L/R	1	4,5	4,5	45°	15	0,2	17	6	HMCS...06	●
MCS-CH60-108002-150.60L/R	1	4,5	7,9	60°	15	0,2	17	6		●

MCS - Chamfering 45°

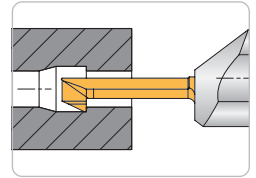
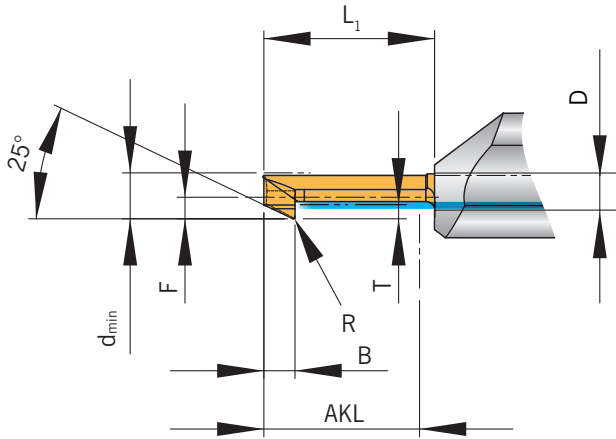


MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	S <sub>1</sub>	R	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-CH1-250401-150.40R	2,5	15	0,4	1	0,1	1,15	17	4	HMCS...04	●
MCS-CH1-300401-150.40R	3	15	0,4	1	0,1	1,4	17	4		●
MCS-CH1-390802-150.40R	3,9	15	0,8	1,2	0,2	1,9	17	4		●
MCS-CH1-591802-200.60R	5,9	20	1,8	2	0,2	2,9	22	6	HMCS...06	●



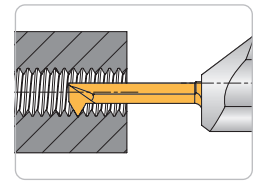
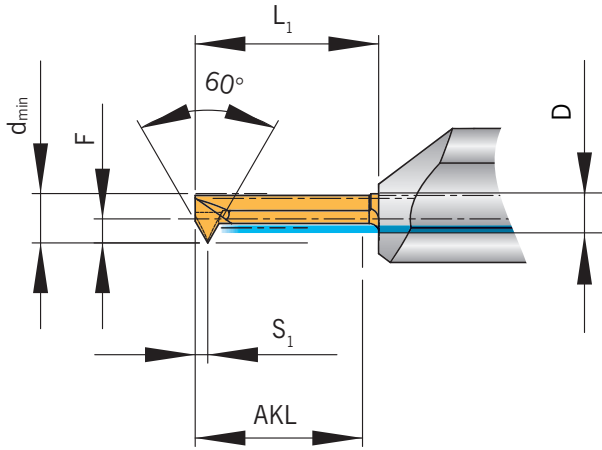
MCS - Back turning



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	T	B	R	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-BT-39401002-150.40R	3,9	15	1	4	0,2	1,9	17	4	HMCS...04	●
MCS-BT-59402002-200.60R	5,9	20	2	4	0,2	2,9	22	6	HMCS...06	●

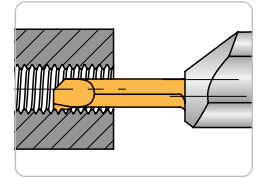
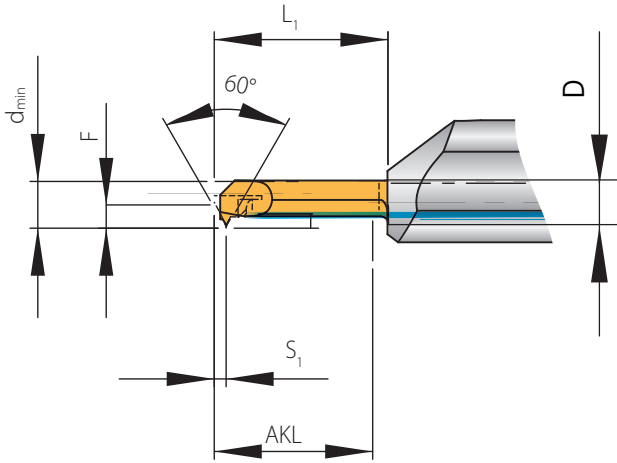
MCS - Threading 60° - metric partial profile



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	Thread	P - pitch	S <sub>1</sub>	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-TP-MF020050-050.40R	2,3	5	>M2,5	0,2 - 0,5	0,45	1,1	6,5	4	HMCS...04	●
MCS-TP-MF050070-150.40R	3	15	M4	0,5 - 0,7	0,7	1,4	17	4		●
MCS-TP-MF050100-150.40R	4	15	M5	0,5 - 1,0	0,7	1,9	17	4		●
MCS-TP-MF050150-200.60R	6	20	M8	0,5 - 1,5	0,8	2,9	22	6	HMCS...06	●

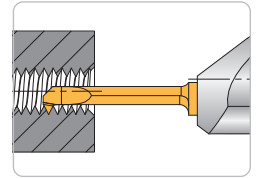
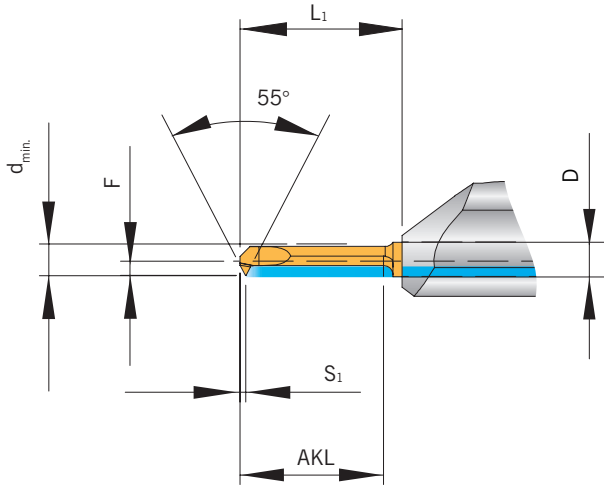
MCS - Threading 60° - metric full profile



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	Thread	P - pitch	S <sub>1</sub>	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-TF-MF025-150.40R	3,7	16	M4,5	0,25	0,4	1,9	18	4	HMCS...04	●
MCS-TF-MF035-150.40R	3,7	16	M4,5	0,35	0,4	1,9	18	4		●
MCS-TF-MF050-150.40R	4	15	MF	0,5	0,4	1,9	17	4		●
MCS-TF-MF060-150.40R	4	15	MF	0,6	0,4	1,9	17	4		●
MCS-TF-MF070-150.40R	4,1	15	MF	0,7	0,5	1,9	17	4		●
MCS-TF-MF075-150.40R	4,2	15	MF	0,75	0,5	1,9	17	4		●
MCS-TF-M100-150.40R	5	15	M6	1	0,7	1,9	17	4	HMCS...06	●
MCS-TF-M100-200.60R	4,8	20	M6	1	0,7	2,9	22	6		●
MCS-TF-MF025-150.60R	5,1	16	M4	0,25	0,4	2,5	18	6		●
MCS-TF-MF080-150.60R	5,3	16	M6	0,8	0,5	2,6	18	6		●
MCS-TF-MF050-150.60R	5,4	15	MF	0,5	0,4	2,5	17	6		●
MCS-TF-MF075-150.60R	5,6	15	MF	0,75	0,5	2,6	17	6		●
MCS-TF-M100-150.60R	5,7	15	M10	1	0,7	2,6	17	6		●
MCS-TF-M125-200.60R	6	20	M8	1,25	0,8	2,9	22	6		●
MCS-TF-M150-200.60R	6	20	M12	1,5	1	2,9	22	6		●

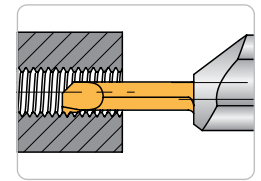
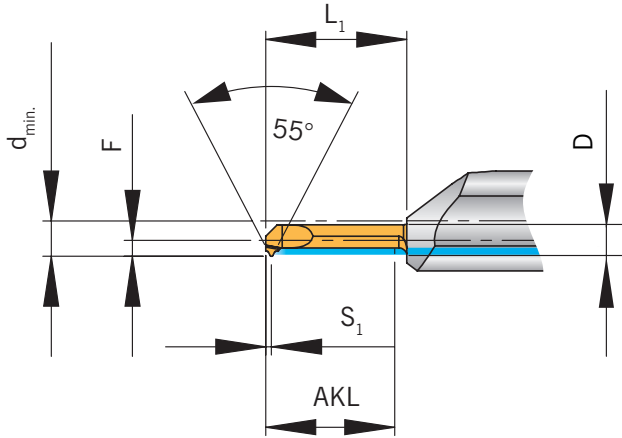
MCS - Whitworth thread 55° – partial profile



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	Thread	P - pitch	S <sub>1</sub>	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-TP-WF33025100-150.40R	3,3	15	WF	0,25 - 1,0	0,6	1,5	17	4	HMCS...04	●
MCS-TP-WF43025100-150.40R	4,3	15	WF	0,25 - 1,0	0,6	1,9	17	4		●
MCS-TP-WF60050150-150.60R	6	15	WF	0,5 - 1,5	0,8	2,9	17	6		●

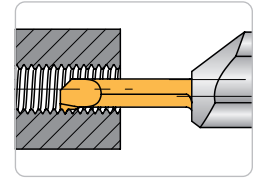
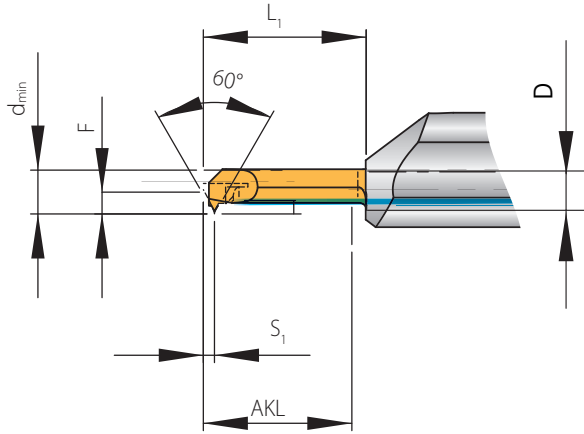
MCS - Whitworth pipe thread 55° - DIN ISO 228 – full profil



MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	Thread	P - pitch (TPI)	S <sub>1</sub>	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2 CBN1
MCS-TF-W228/20-150.40R	4	15	W228	1,27 (20)	0,7	1,9	17	4	HMCS...04	●
MCS-TF-W228/19-150.60R	11	15	1/4"-19 BSP	1,33 (19)	0,95	2,9	17	6	HMCS...06	●

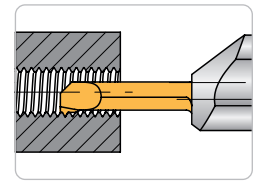
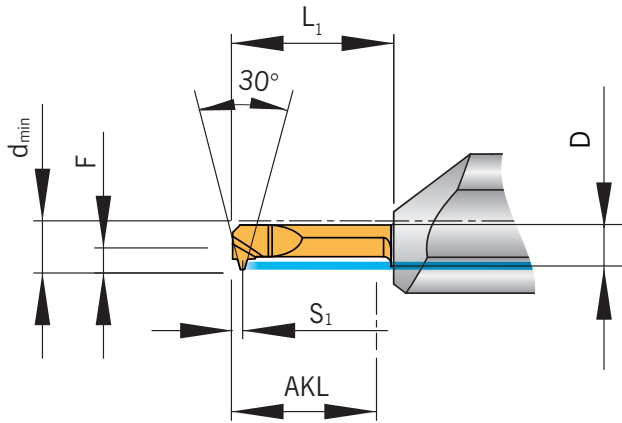
MCS - Whitworth pipe thread 55° BSW – full profil



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	$d_{min}$	AKL	Thread	TPI	$S_1$	F	$L_1$	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44	
									GRADE → SUITABLE HOLDER ↓	A32-BZ2	CBN1
MCS-TF-BSW24-150.40R	3,4	15	3/16"-24BSW	24	0,75	1,3	17	4	HMCS...04	●	
MCS-TF-BSW24-150.60R	3,4	15	3/16"-24BSW	24	0,75	0,3	17	6	HMCS...06	●	
MCS-TF-BSW28-150.60R	4,4	15	7/32"-28BSW	28	0,65	1,2	17	6		●	
MCS-TF-BSW22-150.60R	6,5	15	5/16"-22BSW	22	0,9	2,9	17	6		●	

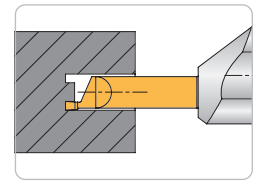
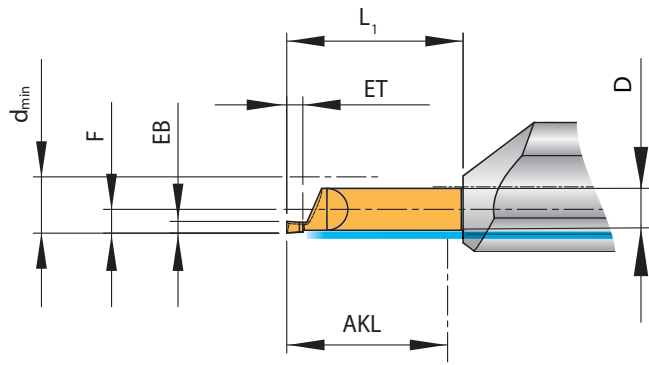
MCS - Trapezoidal 30° DIN ISO 103 – partial profile



MACHINING MATERIAL	STEEL	P	●	
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	
	NON-FERROUS METAL	N	●	
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		●

DESIGNATION	d <sub>min</sub>	AKL	Thread	P - pitch	S <sub>1</sub>	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-TP-TR103/1.5R-200.60R	6,5	20	TR 8x1.5	1,5	0,85	2,9	22	6	HMCS...06	●
MCS-TP-TR103/2.0R-200.60R	7	20	TR 9x2.0	2	1,3	2,9	22	6		●
MCS-TP-TR103/2.0R-200.80R	7	20	TR 9x2.0	2	1,3	2,6	22	8	HMCS...08	●
MCS-TP-TR103/3.0R-200.80R	8	20	TR 11x3.0	3	1,4	3,6	22	8		●

MCS - Axial grooving

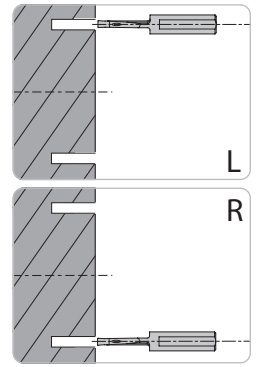
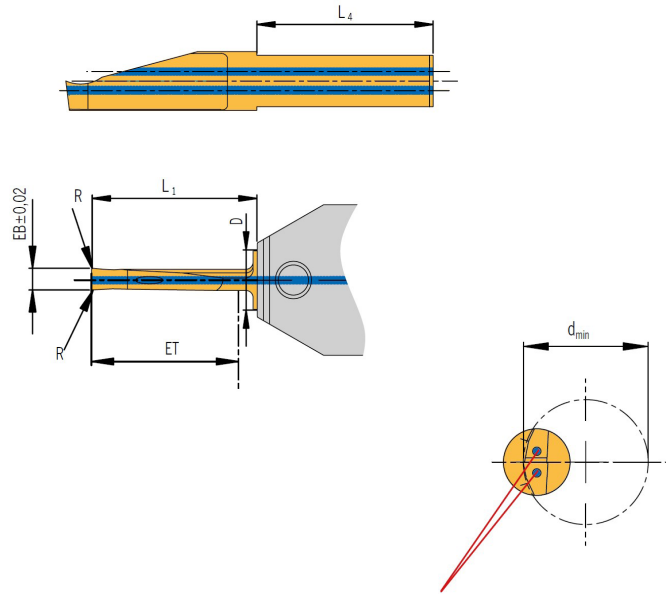


MACHINING MATERIAL	STEEL	P	●
	STAINLESS STEEL	M	●
	CAST IRON	K	●
	NON-FERROUS METAL	N	●
	EXOTIC ALLOY	S	●
	HARDENED STEEL	H	●

DESIGNATION	d <sub>min</sub>	AKL	EB	ET	R	F	L <sub>1</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44
									GRADE → SUITABLE HOLDER ↓	A32-BZ2
MCS-A-50071100-075.40R	5	7,5	0,7	1,1	0	1,9	9,7	4	HMCS...04	●
MCS-A-5007711005-075.40R	5	7,5	0,77	1,1	0,05	1,9	9,7	4		●
MCS-A-50081200-075.40R	5	7,5	0,8	1,2	0	1,9	9,7	4		●
MCS-A-50091300-075.40R	5	7,5	0,9	1,3	0	1,9	9,7	4		●
MCS-A-50101500-075.40R	5	7,5	1	1,5	0	1,9	10	4		●
MCS-A-501015005-075.40R	5	7,5	1	1,5	0,05	1,9	10	4		●
MCS-A-50121500-075.40R	5	7,5	1,2	1,5	0	1,9	10	4		●
MCS-A-50121500-150.40R	5	15	1,2	1,5	0	1,9	17	4		●
MCS-A-502050005-100.40L/R	5	10	2	5	0,05	1,9	12	4		●
MCS-A-600971500-100.60R	6	10	0,97	1,5	0	2,4	12	6	HMCS...06	●
MCS-A-60121500-100.60R	6	10	1,2	1,5	0	2,4	12	6		●
MCS-A-60121500-180.60R	6	18	1,2	1,5	0	2,4	20	6		●
MCS-A-70152000-100.60R	7	10	1,5	2	0	2,9	12	6		●
MCS-A-70152000-200.60R	7	20	1,5	2	0	2,9	22	6		●
MCS-A-801530015-100.80R	8	10	1,5	3	0,15	2	12	8	HMCS...08	●
MCS-A-90152000-100.80R	9	10	1,5	2	0	3,8	12	8		●
MCS-A-90152000-250.80R	9	25	1,5	2	0	3,8	27	8		●



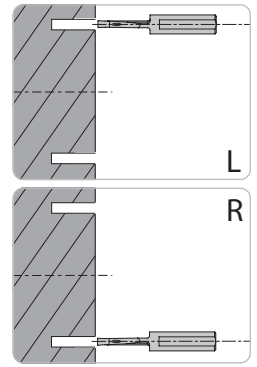
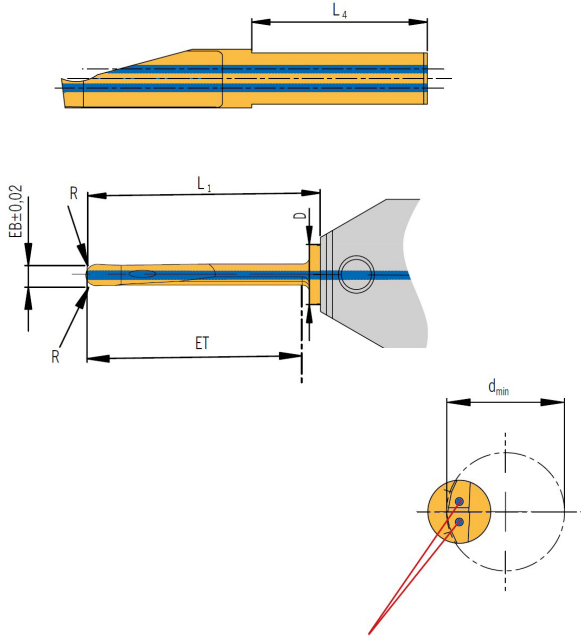
FGI - Axial grooving



MACHINING MATERIAL	STEEL	P	●	●
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	●
	NON-FERROUS METAL	N		●
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		

DESIGNATION	d <sub>min</sub>	EB	ET	R	L <sub>1</sub>	L <sub>4</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44	
								GRADE → SUITABLE HOLDER ↓	A82-AC2	D82-AB2
FGI151006L/R-A1	10	1,5	10	0,1	13	16	6	HFGI 2006	●	●
FGI151506L/R-A1	10	1,5	15	0,1	18	16	6	HFGI 2006	●	●
FGI201206L/R-A1	12	2	12	0,2	16	16	6	HFGI 2006	●	●
FGI202006L/R-A1	12	2	20	0,2	23	16	6	HFGI 2006	●	●
FGI252008L/R-A1	15	2,5	20	0,2	22	24	8	HFGI 2008 / 2508	●	●
FGI302008L/R-A1	15	3	20	0,2	22	24	8	HFGI 2008 / 2508	●	●
FGI303008L/R-A1	15	3	30	0,2	34	24	8	HFGI 2008 / 2508	●	●
FGI403010L/R-A1	30	4	30	0,2	34	24	10	HFGI 2510	●	●
FGI404010L/R-A1	30	4	40	0,2	44	24	10	HFGI 2510	●	●

FGI - Axial grooving - FULL RADIUS

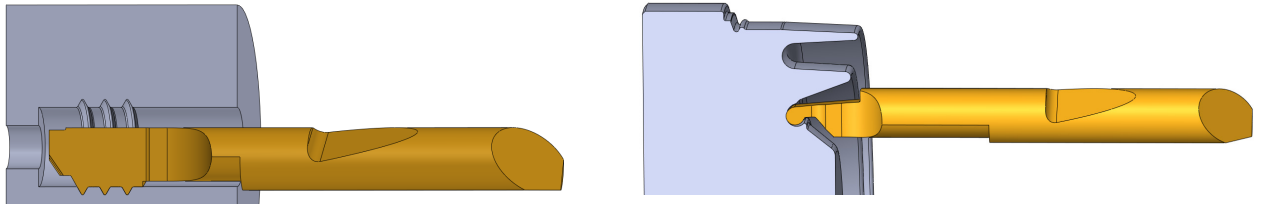


MACHINING MATERIAL	STEEL	P	●	●
	STAINLESS STEEL	M	●	
	CAST IRON	K	●	●
	NON-FERROUS METAL	N		●
	EXOTIC ALLOY	S	●	
	HARDENED STEEL	H		

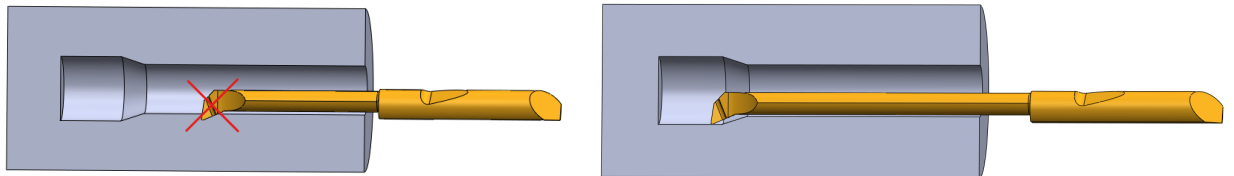
DESIGNATION	d <sub>min</sub>	EB	ET	R	L <sub>1</sub>	L <sub>4</sub>	D	Vc (M/MIN) CUTTING SPEED →	PAGE 44	
								GRADE → SUITABLE HOLDER ↓	A82-AC2	D82-AB2
FGI202006.RL/R-A1	12	2	20	1	23	16	6	HFGI 2006	●	●
FGI303008.RL/R-A1	15	3	30	1,5	34	24	8	HFGI 2008	●	●

MCS - custom design tool

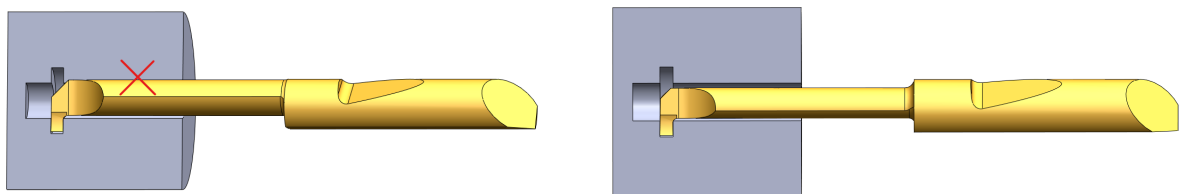
DO YOU NEED SPECIFIC SHAPE OF YOUR TOOL?



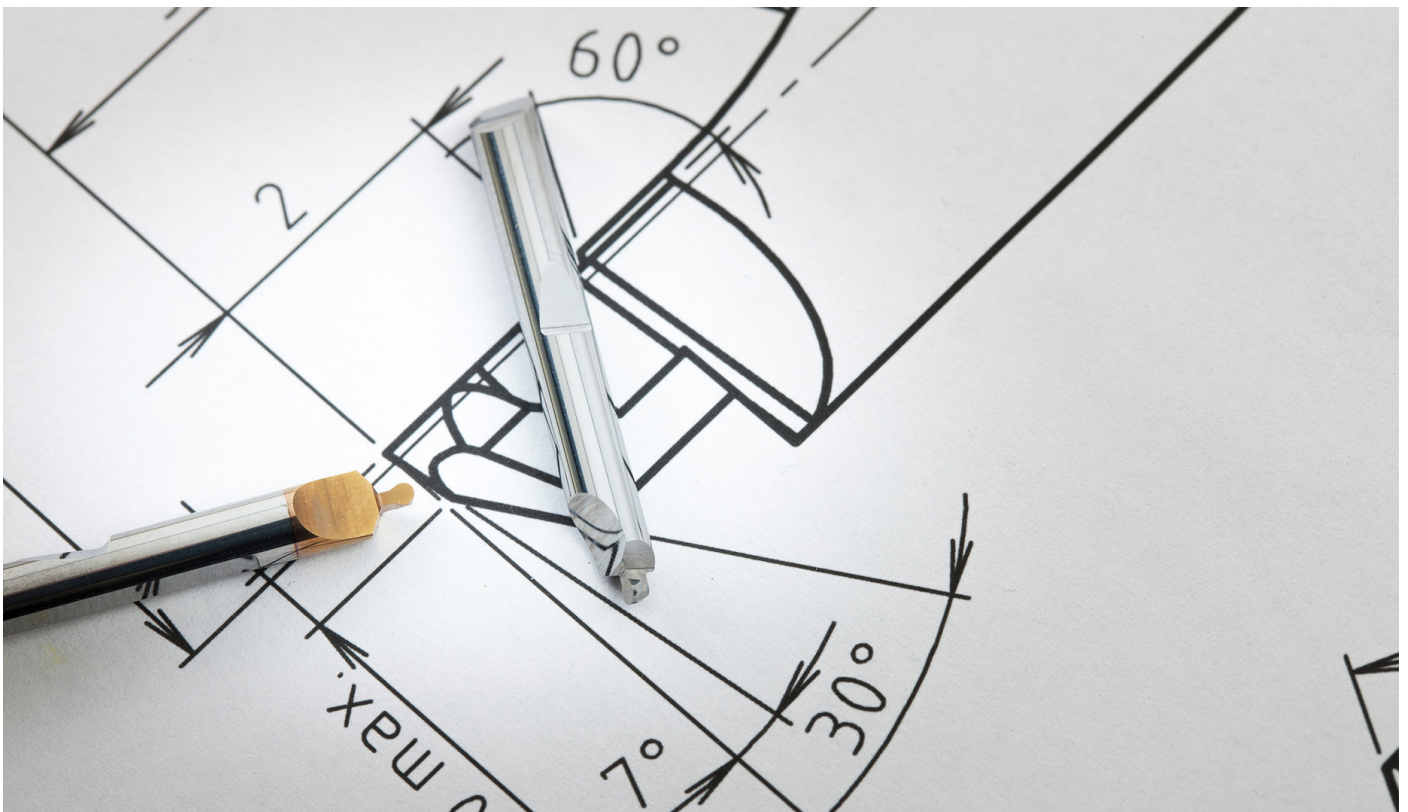
DO YOU NEED LONGER VERSION OF STANDARD TOOL?



DO YOU NEED TOOL FOR MACHINING SMALLER HOLE DIAMETER?



NO PROBLEM FOR US. WE ARE PREPARED FOR YOUR REQUEST.



CUTTING DATA

Material group	Structure of the material groups	Brinell hardness HB	Tensile strength Rm (N/mm <sup>2</sup> )	Chipping group	Cutting speed Vc (m/min)						
					A32-BZ2		CBN				
<b>P</b>	<b>Unalloyed steel</b>	C ≤ 0.25 % - annealed	125	428	P1	20 - 180					
		C = 0.25 % - 0.55 % - annealed	190	639	P2	20 - 180					
		C = 0.25 % - 0.55 % - hardened and tempered	210	708	P3	20 - 180					
		C ≤ 0.55 % - annealed	190	639	P4	20 - 180					
		C ≤ 0.55 % - hardened and tempered	300	1013	P5	20 - 180					
	<b>Low alloyed steel</b>	Machining steel (short-chipping) - annealed		220	745	P6	20 - 180				
			annealed	175	591	P7	15 - 160				
		hardened and tempered		300	1013	P8	15 - 160				
				380	1282	P9	15 - 160				
				430	1477	P10	15 - 160				
				430	1477	P10	15 - 160				
		<b>High alloyed steel and high alloyed tool steel</b>	annealed	200	675	P11	20 - 120				
			hardened	300	1013	P12	20 - 120				
			hardened	400	1361	P13	20 - 120				
		<b>Stainless steel</b>	ferretic / martensitic - annealed	200	675	P14	20 - 90				
martensitic, hardened and tempered	330		1114	P15	20 - 180						
<b>M</b>	<b>Stainless steel</b>	austenitic, chilled	200	675	M1	20 - 90					
		austenitic, precipitation-hardened (PH)	300	1013	M2	15 - 80					
		austenitic-ferritic, Duplex	230	778	M3	10 - 60					
<b>K</b>	<b>Malleable cast iron</b>	ferritic	200	675	K1	20 - 120					
		pearlitic	260	867	K2	20 - 120					
	<b>Cast iron</b>	low tensile strength	180	602	K3	20 - 140					
		high tensile strength / austenitic	245	825	K4	20 - 140					
		<b>Cast iron with nodular graphite GGV (CGI)</b>	ferritic	155	518	K5	20 - 130				
	pearlitic		265	885	K6	20 - 130					
			200	675	K7	20 - 120					
<b>N</b>	<b>Aluminium alloys long chipping</b>	not heat treatable	30	-	N1	20 - 500					
		heat treatable, heat treated	100	343	N2	20 - 500					
		≤ 12 % Si, not heat treatable	75	260	N3	20 - 500					
	<b>Casted aluminium alloys</b>	≤ 12 % Si, heat treatable, heat treated	90	314	N4	20 - 500					
		> 12 % Si, not heat treatable	130	447	N5	20 - 500					
	<b>Magnesium alloys</b>	> 12 % Si, not heat treatable	70	250	N6	-					
		Unalloyed, elektrolyte copper	100	343	N7	20 - 600					
	<b>Copper and copper alloys (Brass / Bronze)</b>	Brass, Bronze	90	314	N8	20 - 600					
		Cu-alloys, short-chipping	110	382	N9	20 - 600					
			300	1013	N10	-					
		<b>Non-ferrous materials</b>	Lead alloys (without abrasive filling material)	-	-	N11	-				
	Duroplastic (without abrasive filling material)		-	-	N12	-					
	Plastic glas fibre reinforced GFRP		-	-	N13	-					
	Plastic carbon fibre reinforced CFRP		-	-	N14	-					
	Plastic aramid fibre reinforced AFRP		-	-	N15	-					
	Graphite (tech.)		80 Shore	-	N16	-					
<b>S</b>	<b>High temperature resistant alloys</b>	Fe-based - annealed	200	675	S1	15 - 75					
		Fe-based - heat treated	280	943	S2	15 - 75					
		Ni- or Co-alloyed - annealed	250	839	S3	15 - 40					
		Ni- or Co-alloyed - heat treated	350	1177	S4	15 - 40					
		Ni- or Co-alloyed - casting	320	1076	S5	15 - 40					
	<b>Titanium alloys</b>	Pure titan	200	675	S6	-					
		α- and β-alloys, heat treated	375	1262	S7	-					
		β-alloys	410	1396	S8	-					
	<b>Wolfram alloys</b>		300	1013	S9	-					
	<b>Molybdän alloys</b>		300	1013	S10	-					
<b>H</b>	<b>Hardened steel</b>	hardened	50 HRC	-	H1	-	60 - 150				
		hardened	55 HRC	-	H2	-	60 - 150				
		hardened	60 HRC	-	H3	-	60 - 150				
	<b>Hardened cast iron</b>	hardened	55 HRC	-	H4	-	60 - 150				