ARNO®
WERKZEUGE
We have a passion for precision.

ARNO® AMS & SIM

09/2016

ARNO®-Mini-System AMS

- Minimum bore diameter from 0.7 mm
- Depth capacity up to 50 mm
- Secure insert location system
- Ground inserts

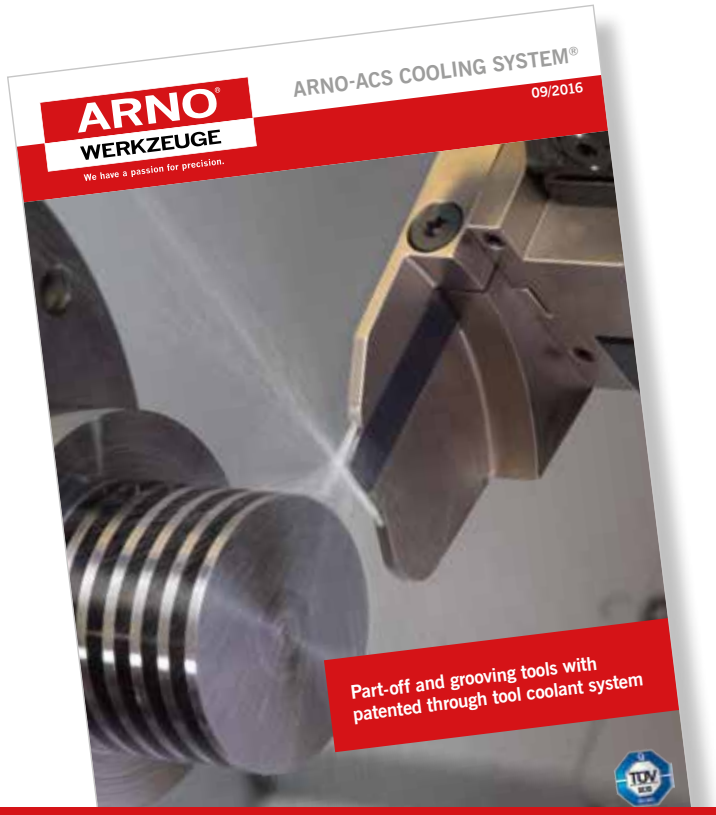
SIM – Modular Boring Bars

- Internal grooving from 6.7 mm minimum bore diameter
- Maximum depth capacity up to 80 mm
- Exceptional rigidity with accurate 3-point location

TÜV SÜD ISO 9001
Germany only

www.arno.de

Keeping you in the groove: ARNO®- grooving systems.



Brand new!

Request catalogue by visiting www.arno.de

SA-Grooving system

SE-Grooving system

Part-off holders and flange mounted holders

Contents

For further information about our grooving range please ask for our complete catalogue.

ARNO®-Mini-System

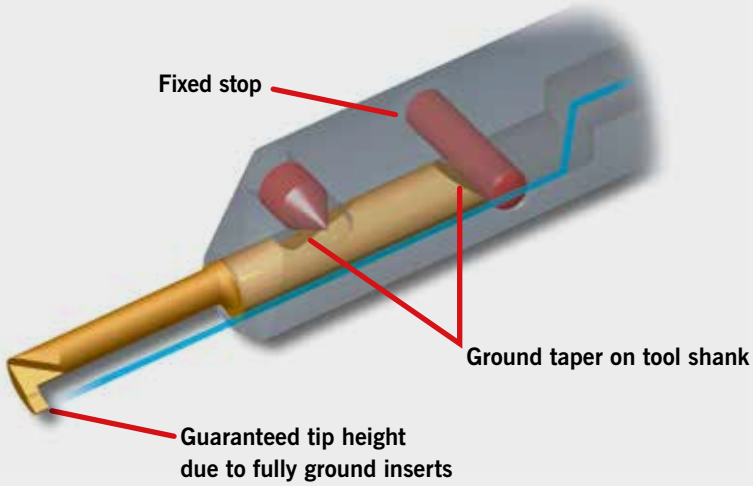
Diameter from 0.7 mm, depth up to 50 mm

Introduction

AMS is a modular boring system starting at D_{min} 0.7 mm with a maximum reach of 50 mm (depending on application). With the ground taper on the tool shank and the fixed stop in the sleeve the length remains accurately constant and guaranteed cutting edge repeatability is achieved. The cone of the threaded pin ensures secure tool locking and reduces cutting edge vibrations.

Features

- **Boring from diameter 0.7 mm**
- **Groove width starting at 0.8 mm**
- **Full radius grooving starting at R 0.5 mm**
- **Back turning and chamfering**
- **Pre-grooving and chamfering**
- **Centre chamfering**
- **Copying**
- **Threading from M3**
- **Face grooving starting at Ø 5 mm**
- **Cir-clip DIN 471/472**



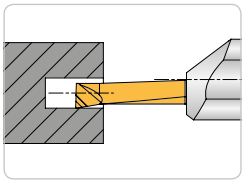
Holders

HAMS	16	06	R
H = Sleeve	Shank diameter 16 mm	Inserts shank diameter 6 mm	Version
A = ARNO®			R = Right-hand
M = Mini			L = Left-hand
S = Grooving			

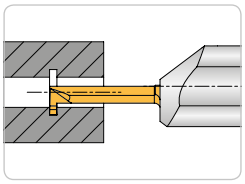
Inserts

AMS	D	25	08	06	01	100	40R
A = ARNO®	D = Turning	D_{min} = 2.5 mm	Groove width EB = 0.8 mm	Groove depth ET = 0.6 mm	Radius R = 0.1 mm	Maximum work length AKL = 10 mm	Shank diameter 4 mm, Right-hand
M = Mini	D20 = Turning						Version
S = Grooving	S = Grooving						R = Right-hand
	472 = Cir-clip 471/472						L = Left-hand
	K = Copying						
	K45 = Copying 45°						
	V = Pre-grooving						
	ZF = Centre chamfering						
	F = Chamfering						
	R = Back turning						
	G = Threading						
	GV = Full profile threading						
	WF = Whitworth thread						
	TR = Trapezoidal thread						
	UN = American std. thread						
	A = Axial grooving turning						

Program overview holders and inserts



Turning
Page 10



Grooving
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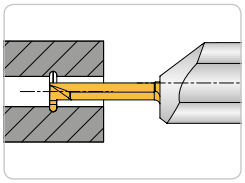
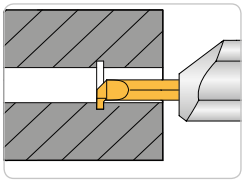
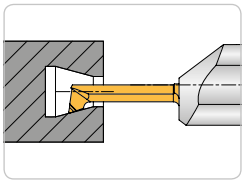


Radius grooving
Page 14

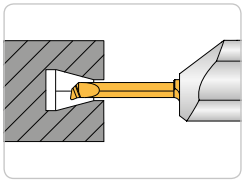


Cir-clip DIN 471/472
Page 15

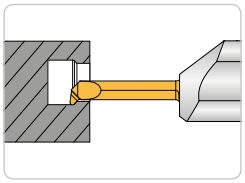


Copying
Page 16

NEW

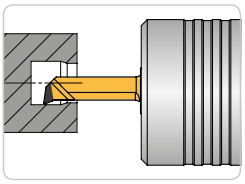


Copying – Re-inforced execution
Page 18



Copying 45°
Page 19

NEW



Copy turning – CBN brazed
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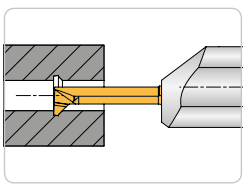
NEW



Pre-grooving and chamfering
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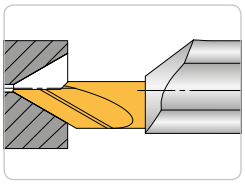
Program overview holders and inserts



Centre chamfering 45°/60°
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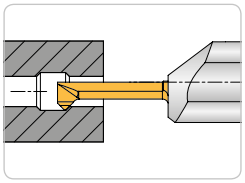
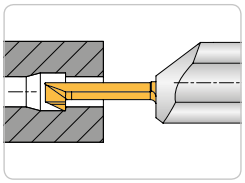
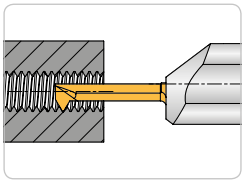


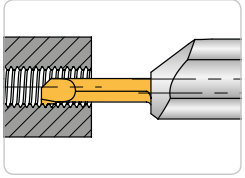
Chamfering 45°
Page 23



Back turning
Page 24



Threading 60° – Metric partial profile
Page 25



Threading 60° – Metric full profile
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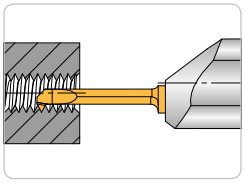
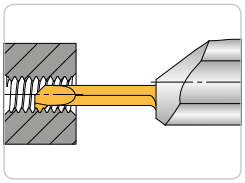


Whitworth thread 55° – Partial profile
Page 27



Whitworth pipe thread 55° DIN ISO 228 – Full profile
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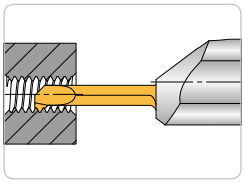

Whitworth pipe thread 55° BSW – Full profile
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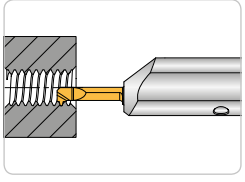

Trapezoidal 30° DIN ISO 103 – Partial profile
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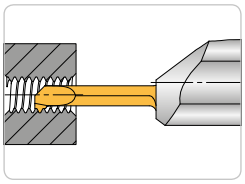

American standard thread 60° UN – full profile

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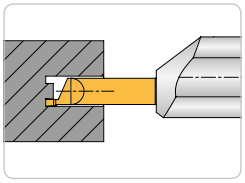

Axial grooving

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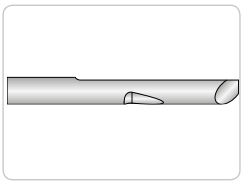

Blanks for special profiles

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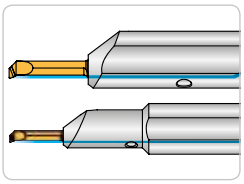

Holder – Standard / Holder – Off-set

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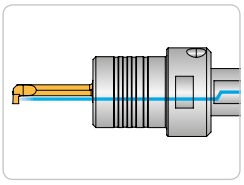

Hydraulic holder for lathes

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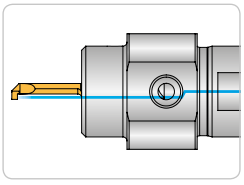

Holders for STAR – lathes

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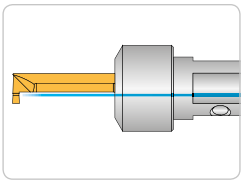

Holders for sliding head lathes

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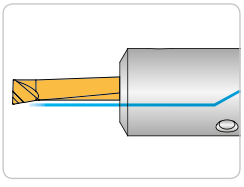

Holders for finishing

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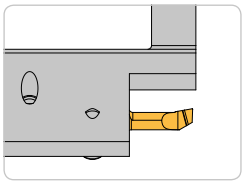

Holders for sliding head auto lathes and multi spindle machines

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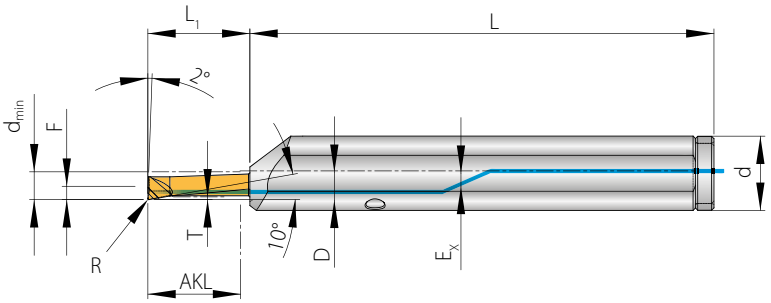
Turning



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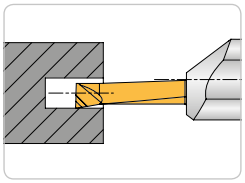


T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert									Holder						
d_{min}	AKL	T	EB	R	Designation	PG 44	F		D	d	L	L_1	E_x	Designation	PG 44
0.7	2	0.05	–	0.05	**AMS-D-07005005-020.40R**	●	0.3		4	12	100	4	2.35	**HAMS 1204 R**	●
0.7	2	0.05	–	0.05	**AMS-D-07005005-020.40R**	●	0.3		4	16	120	4	2.8	**HAMS 1604 R**	●
2.0	6	0.15	–	0.02	**AMS-D-20015002-060.40R**	●	0.9		4	12	100	8	2.35	**HAMS 1204 R**	●
	10				**AMS-D-20015002-100.40R**	●						12		**HAMS 1204 R**	●
2.0	6	0.15	–	0.02	**AMS-D-20015002-060.40R**	●	0.9		4	16	120	8	2.8	**HAMS 1604 R**	●
	10				**AMS-D-20015002-100.40R**	●						12		**HAMS 1604 R**	●
2.2	6	0.4	–	0.1	**AMS-D-220401-060.40R**	●	1.05		4	12	100	8	2.35	**HAMS 1204 R**	●
2.2	6	0.4	–	0.1	**AMS-D-220401-060.40R**	●	1.05		4	16	120	8	2.8	**HAMS 1604 R**	●
2.5	10	0.4	–	0.1	**AMS-D-250401-100.40R**	●	1.15		4	12	100	12	2.35	**HAMS 1204 R**	●
	15				**AMS-D-250401-150.40R**	●						17		**HAMS 1204 R**	●
	20				**AMS-D-250401-200.40R**	●						22		**HAMS 1204 R**	●
2.5	10	0.4	–	0.1	**AMS-D-250401-100.40R**	●	1.15		4	16	120	12	2.8	**HAMS 1604 R**	●
	15				**AMS-D-250401-150.40R**	●						17		**HAMS 1604 R**	●
	20				**AMS-D-250401-200.40R**	●						22		**HAMS 1604 R**	●
3.0	10	0.4	–	0.1	**AMS-D-300401-100.40R**	●	1.4		4	12	100	12	2.35	**HAMS 1204 R**	●
	15				**AMS-D-300401-150.40R**	●						17		**HAMS 1204 R**	●
	20				**AMS-D-300401-200.40R**	●						22		**HAMS 1204 R**	●
3.0	10	0.4	–	0.1	**AMS-D-300401-100.40R**	●	1.4		4	16	120	12	2.8	**HAMS 1604 R**	●
	15				**AMS-D-300401-150.40R**	●						17		**HAMS 1604 R**	●
	20				**AMS-D-300401-200.40R**	●						22		**HAMS 1604 R**	●
3.9	10	0.6	–	0.2	**AMS-D-390602-100.40R**	●	1.9		4	12	100	12	2.35	**HAMS 1204 R**	●
	15				**AMS-D-390602-150.40R/L**	●						17		**HAMS 1204 R/L**	●
	20				**AMS-D-390602-200.40R/L**	●						22		**HAMS 1204 R/L**	●
3.9	10	0.6	–	0.2	**AMS-D-390602-100.40R**	●	1.9		4	16	120	12	2.8	**HAMS 1604 R**	●
	15				**AMS-D-390602-150.40R/L**	●						17		**HAMS 1604 R/L**	●
	20				**AMS-D-390602-200.40R/L**	●						22		**HAMS 1604 R/L**	●
4.0	25	0.15	–	0.05	**AMS-D-40015005-250.40R/L**	●	1.9		4	12	100	27	2.35	**HAMS 1204 R/L**	●
	25	0.3		0.1	**AMS-D-400301-250.40R**	●						27		**HAMS 1204 R**	●
4.0	25	0.15	–	0.05	**AMS-D-40015005-250.40R/L**	●	1.9		4	16	120	27	2.8	**HAMS 1604 R/L**	●
	25	0.3		0.1	**AMS-D-400301-250.40R**	●						27		**HAMS 1604 R**	●

Dimensions in mm

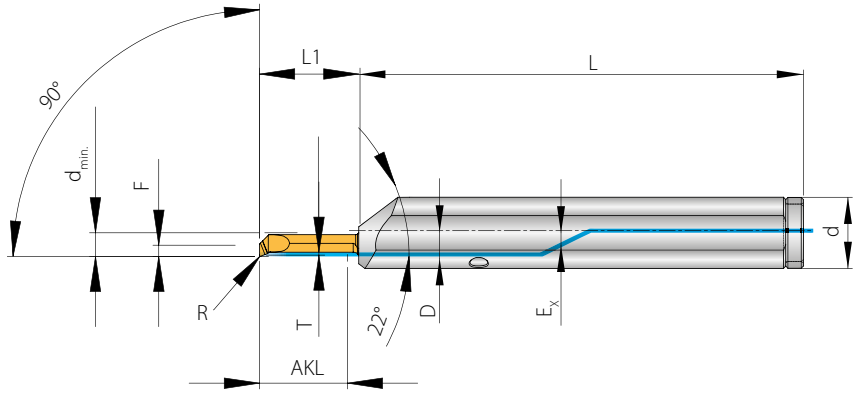
Insert									Holder						
d_{min}	AKL	T	EB	R	Designation	PG 44	F		D	d	L	L_1	E_x	Designation	PG 44
5.9	10	0.8	–	0.2	**AMS-D-590802-100.60R**	●	2.9		6	12	100	12	2.35	**HAMS 1206 R**	●
	15			0.1	**AMS-D-590801-150.60R**	●						17		**HAMS 1206 R**	●
	20			0.2	**AMS-D-590802-200.60R/L**	●						22		**HAMS 1206 R/L**	●
	20			0.4	**AMS-D-590804-200.60R**	●						22		**HAMS 1206 R**	●
	30			0.2	**AMS-D-590802-300.60R/L**	●						32		**HAMS 1206 R/L**	●
5.9	10	0.8	–	0.2	**AMS-D-590802-100.60R**	●	2.9		6	16	120	12	2.8	**HAMS 1606 R**	●
	15			0.1	**AMS-D-590801-150.60R**	●						17		**HAMS 1606 R**	●
	20			0.2	**AMS-D-590802-200.60R/L**	●						22		**HAMS 1606 R/L**	●
	20			0.4	**AMS-D-590804-200.60R**	●						22		**HAMS 1606 R**	●
	30			0.2	**AMS-D-590802-300.60R/L**	●						32		**HAMS 1606 R/L**	●
6.0	42	0.5	–	0.15	**AMS-D-6005015-420.60R**	●	2.9		6	12	100	44	2.35	**HAMS 1206 R**	●
6.0	42	0.5	–	0.15	**AMS-D-6005015-420.60R**	●	2.9		6	16	120	44	2.8	**HAMS 1606 R**	●
7.9	10	1.0	–	0.2	**AMS-D-791002-100.80R**	●	3.9		8	16	120	12	2.8	**HAMS 1608 R**	●
	25				**AMS-D-791002-250.80R/L**	●						27		**HAMS 1608 R/L**	●
8.2	30	0.4	–	0.2	**AMS-D-820402-300.80R**	●	3.9		8	16	120	32	2.8	**HAMS 1608 R**	●
10.2	20	1.0	–	0.2	**AMS-D-1021002-200.100R**	●	4.9		10	20	120	22	2.8	**HAMS 2010R**	●
	30				**AMS-D-1021002-300.100R**	●						32		**HAMS 2010R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L / 1608 R/L	AS 0044	KVR 16
HAMS 2010 R	AS 0044	KVR 20

Dimensions in mm

Turning



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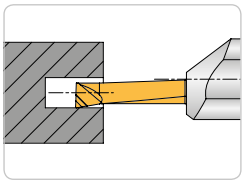

T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	T	EB	R	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
3.0	15	0.15	–	0.2	**AMS-D20-3001502-150.40R**	●	1.3	4	12	100	17	2.35	**HAMS 1204 R**	●
3.0	15	0.15	–	0.2	**AMS-D20-3001502-150.40R**	●	1.3	4	16	120	17	2.8	**HAMS 1604 R**	●
4.0	15	0.3	–	0.2	**AMS-D20-400302-150.40R**	●	1.9	4	12	100	17	2.35	**HAMS 1204 R**	●
4.0	15	0.3	–	0.2	**AMS-D20-400302-150.40R**	●	1.9	4	16	120	17	2.8	**HAMS 1604 R**	●
5.0	10	0.5	–	0.2	**AMS-D20-500502-100.60R**	●	2.3	6	12	100	12	2.35	**HAMS 1206 R**	●
5.0	10	0.5	–	0.2	**AMS-D20-500502-100.60R**	●	2.3	6	16	120	12	2.8	**HAMS 1606 R**	●
5.0	15	0.5	–	0.2	**AMS-D20-500502-150.60R**	●	2.3	6	12	100	17	2.35	**HAMS 1206 R**	●
5.0	15	0.5	–	0.2	**AMS-D20-500502-150.60R**	●	2.3	6	16	120	17	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

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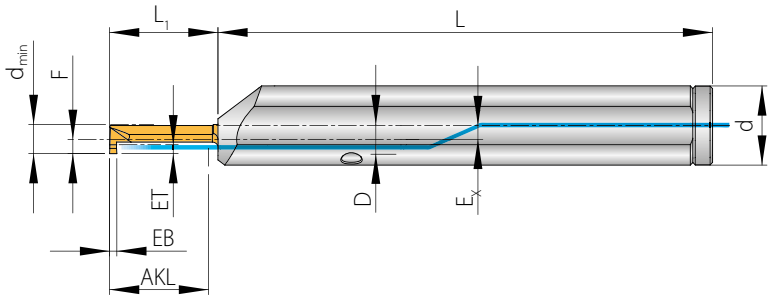
Dimensions in mm

Grooving



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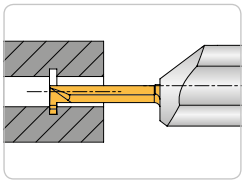
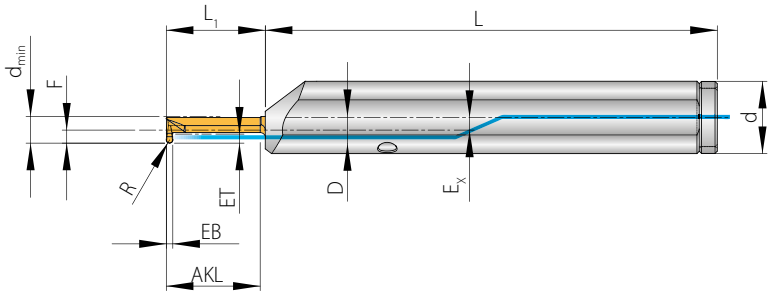


EB = Groove width (mm)
ET = Groove depth (mm)
F = F-Dimension (mm)

Insert									Holder						
d_{min}	AKL	EB + 0.03	ET	R	Designation	PG 44	F		D	d	L	L_1	E_x	Designation	PG 44
2.5	10	0.8	0.6	–	AMS-S-25080600-100.40R	●	1.15		4	12	100	12	2.35	HAMS 1204 R	●
	15			–	AMS-S-25080600-150.40R	●						17		HAMS 1204 R	●
	20			–	AMS-S-25080600-200.40R	●						22		HAMS 1204 R	●
2.5	10	0.8	0.6	–	AMS-S-25080600-100.40R	●	1.15		4	16	120	12	2.8	HAMS 1604 R	●
	15			–	AMS-S-25080600-150.40R	●						17		HAMS 1604 R	●
	20			–	AMS-S-25080600-200.40R	●						22		HAMS 1604 R	●
3.0	10	0.8	0.6	–	AMS-S-30080600-100.40R	●	1.4		4	12	100	12	2.35	HAMS 1204 R	●
	15			–	AMS-S-30080600-150.40R	●						17		HAMS 1204 R	●
	20			–	AMS-S-30080600-200.40R	●						22		HAMS 1204 R	●
3.0	10	0.8	0.6	–	AMS-S-30080600-100.40R	●	1.4		4	16	120	12	2.8	HAMS 1604 R	●
	15			–	AMS-S-30080600-150.40R	●						17		HAMS 1604 R	●
	20			–	AMS-S-30080600-200.40R	●						22		HAMS 1604 R	●
3.9	10	1.0	0.8	–	AMS-S-39100800-100.40R	●	1.4		4	12	100	12	2.35	HAMS 1204 R	●
	15			–	AMS-S-39100800-150.40R/L	●						17		HAMS 1204 R/L	●
	20			–	AMS-S-39100800-200.40R	●						22		HAMS 1204 R	●
3.9	10	1.0	0.8	–	AMS-S-39100800-100.40R	●	1.4		4	16	120	12	2.8	HAMS 1604 R	●
	15			–	AMS-S-39100800-150.40R/L	●						17		HAMS 1604 R/L	●
	20			–	AMS-S-39100800-200.40R	●						22		HAMS 1604 R	●
5.9	20	1.0	1.8	–	AMS-S-59101800-200.60R	●	2.9		6	12	100	22	2.35	HAMS 1206 R	●
	10	1.5		–	AMS-S-59151800-100.60R	●						12		HAMS 1206 R	●
	20			–	AMS-S-59151800-200.60R	●						22		HAMS 1206 R	●
	30			–	AMS-S-59151800-300.60R	●						32		HAMS 1206 R	●
5.9	20	1.0	1.8	–	AMS-S-59101800-200.60R	●	2.9		6	16	120	22	2.8	HAMS 1606 R	●
	10	1.5		–	AMS-S-59151800-100.60R	●						12		HAMS 1606 R	●
	20			–	AMS-S-59151800-200.60R	●						22		HAMS 1606 R	●
	30			–	AMS-S-59151800-300.60R	●						32		HAMS 1606 R	●
6.9	15	2.0	2.5	–	AMS-S-69202500-150.80R/L	●	3.9		8	16	120	17	2.8	HAMS 1608 R/L	●
7.9	10	1.8	2.5	–	AMS-S-79182500-100.80R	●	3.9		8	16	120	12	2.8	HAMS 1608 R	●
	25			–	AMS-S-79182500-250.80R	●						27		HAMS 1608 R	●

Dimensions in mm

Radius grooving



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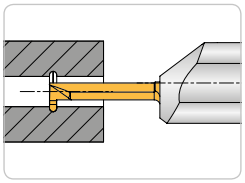

EB = Groove width (mm)
ET = Groove depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	EB + 0.03	ET	R	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
3.9	10	1.0	0.8	0.5	AMS-S-39100805-100.40R	●	1.9	4	12	100	12	2.35	HAMS 1204 R	●
	15			0.5	AMS-S-39100805-150.40R/L	●					17		HAMS 1204 R/L	●
	20			0.5	AMS-S-39100805-200.40R	●					22		HAMS 1204 R	●
3.9	10	1.0	0.8	0.5	AMS-S-39100805-100.40R	●	1.9	4	16	120	12	2.8	HAMS 1604 R	●
	15			0.5	AMS-S-39100805-150.40R/L	●					17		HAMS 1604 R/L	●
	20			0.5	AMS-S-39100805-200.40R	●					22		HAMS 1604 R	●
5.9	10	1.5	1.8	0.75	AMS-S-59151875-100.60R	●	2.9	6	12	100	12	2.35	HAMS 1206 R	●
	20			0.75	AMS-S-59151875-200.60R	●					22		HAMS 1206 R	●
	30			0.75	AMS-S-59151875-300.60R	●					32		HAMS 1206 R	●
5.9	10	1.5	1.8	0.75	AMS-S-59151875-100.60R	●	2.9	6	16	120	12	2.8	HAMS 1606 R	●
	20			0.75	AMS-S-59151875-200.60R	●					22		HAMS 1606 R	●
	30			0.75	AMS-S-59151875-300.60R	●					32		HAMS 1606 R	●
8.2	20	2.0	2.0	1.0	AMS-S-82202010-200.80R	●	3.9	8	16	120	22	2.8	HAMS 1608 R	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L / 1608 R/L	AS 0044	KVR 16

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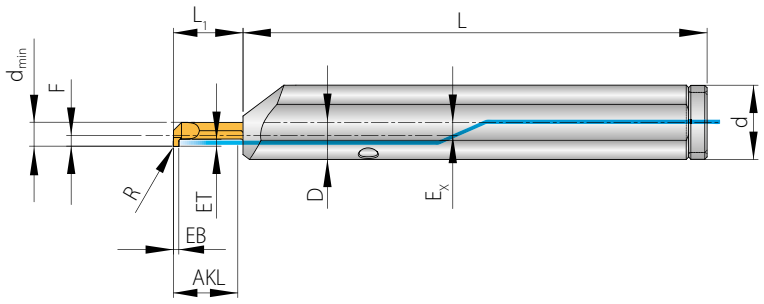
Dimensions in mm

Cir-clip DIN 471/472



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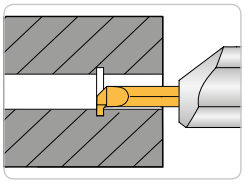


ET = Groove depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	EB ± 0.025	ET	R	Designation	PG 44	F	D	d	L	L_1	E_X	Designation	PG 44
4.1	15	0.99	1.1	0.05	AMS-472-41099110-150.40R	●	1.9	4	12	100	17	2.35	HAMS 1204 R	●
		1.19			AMS-472-41119110-150.40R	●							HAMS 1204 R	●
		1.39			AMS-472-41139110-150.40R	●							HAMS 1204 R	●
		1.69			AMS-472-41169110-150.40R	●							HAMS 1204 R	●
4.1	15	0.99	1.1	0.05	AMS-472-41099110-150.40R	●	1.9	4	16	120	17	2.8	HAMS 1604 R	●
		1.19			AMS-472-41119110-150.40R	●							HAMS 1604 R	●
		1.39			AMS-472-41139110-150.40R	●							HAMS 1604 R	●
		1.69			AMS-472-41169110-150.40R	●							HAMS 1604 R	●
6.1	15	0.99	1.5	0.05	AMS-472-61099150-150.60R	●	2.9	6	12	100	17	2.35	HAMS 1206 R	●
		1.19			AMS-472-61119150-150.60R	●							HAMS 1206 R	●
		1.39			AMS-472-61139150-150.60R	●							HAMS 1206 R	●
		1.69			AMS-472-61169150-150.60R	●							HAMS 1206 R	●
		1.94			AMS-472-61194150-150.60R	●							HAMS 1206 R	●
6.1	15	0.99	1.5	0.05	AMS-472-61099150-150.60R	●	2.9	6	16	120	17	2.8	HAMS 1606 R	●
		1.19			AMS-472-61119150-150.60R	●							HAMS 1606 R	●
		1.39			AMS-472-61139150-150.60R	●							HAMS 1606 R	●
		1.69			AMS-472-61169150-150.60R	●							HAMS 1606 R	●
		1.94			AMS-472-61194150-150.60R	●							HAMS 1606 R	●
8.4	20	1.19	2.0	0.05	AMS-472-84119200-200.80R	●	3.9	8	16	120	22	2.8	HAMS 1608 R	●
		1.39	2.0		AMS-472-84139200-200.80R	●							HAMS 1608 R	●
		1.69	2.5		AMS-472-84169250-200.80R	●							HAMS 1608 R	●
		1.94	2.5		AMS-472-84194250-200.80R	●							HAMS 1608 R	●
		2.24	3.0		AMS-472-84224300-200.80R	●							HAMS 1608 R	●
		2.74	3.5		AMS-472-84274350-200.80R	●							HAMS 1608 R	●
		3.28	3.5		AMS-472-84328350-200.80R	●							HAMS 1608 R	●
10.4	25	1.39	3.5	0.05	AMS-472-104139350-250.100R	●	4.9	10	20	120	27	2.8	HAMS 2010 R	●
		1.69			AMS-472-104169350-250.100R	●							HAMS 2010 R	●
		1.94			AMS-472-104194350-250.100R	●							HAMS 2010 R	●
		2.24			AMS-472-104224350-250.100R	●							HAMS 2010 R	●
		2.74			AMS-472-104274350-250.100R	●							HAMS 2010 R	●
		3.28			AMS-472-104328350-250.100R	●							HAMS 2010 R	●

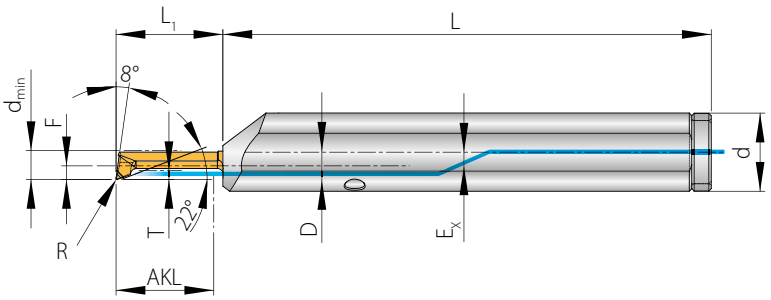
Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16

Holder	Screw	Coolant seal ring
HAMS 1606 R/L / 1608 R/L	AS 0044	KVR 16
HAMS 2010 R	AS 0044	KVR 20

Dimensions in mm

Copying



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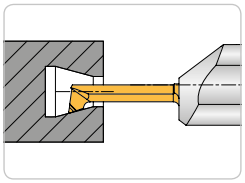


T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

	Insert								Holder						
	d_{min}	AKL	T	EB	R	Designation	PG 44	F	D	d	L	L_1	E_X	Designation	PG 44
NEW	1.5	11	0.1	–	0.05	AMS-K-1501005-110.40R	●	1.3	4	12	100	12	2.35	HAMS 1204 R	●
		6	0.15		0.1	AMS-K-1501501-060.40R	●					7		HAMS 1204 R	●
NEW	1.5	11	0.1	–	0.05	AMS-K-1501005-110.40R	●	1.3	4	16	120	12	2.8	HAMS 1604 R	●
		6	0.15		0.1	AMS-K-1501501-060.40R	●					7		HAMS 1604 R	●
	2.0	10	0.1	–	0.05	AMS-K-20015005-100.40R/L	●	0.9	4	12	100	11	2.35	HAMS 1204 R/L	●
		6	0.3			AMS-K-2003005-060.40R	●					7		HAMS 1204 R	●
		10	0.3			AMS-K-2003005-100.40R	●					11		HAMS 1204 R	●
	2.0	10	0.1	–	0.05	AMS-K-20015005-100.40R/L	●	0.9	4	16	120	11	2.8	HAMS 1604 R/L	●
		6	0.3			AMS-K-2003005-060.40R	●					7		HAMS 1604 R	●
		10	0.3			AMS-K-2003005-100.40R	●					11		HAMS 1604 R	●
	2.2	15	0.2	–	0.1	AMS-K-220201-150.40R	●	0.95	4	12	100	16	2.35	HAMS 1204 R	●
	2.2	15	0.2	–	0.1	AMS-K-220201-150.40R	●	0.95	4	16	120	16	2.8	HAMS 1604 R	●
	2.5	10	0.4	–	0.1	AMS-K-250401-100.40R	●	1.15	4	12	100	12	2.35	HAMS 1204 R	●
		15				AMS-K-250401-150.40R	●					17		HAMS 1204 R	●
		20				AMS-K-250401-200.40R	●					22		HAMS 1204 R	●
	2.5	10	0.4	–	0.1	AMS-K-250401-100.40R	●	1.15	4	16	120	12	2.8	HAMS 1604 R	●
		15				AMS-K-250401-150.40R	●					17		HAMS 1604 R	●
		20				AMS-K-250401-200.40R	●					22		HAMS 1604 R	●
	3.0	10	0.4	–	0.1	AMS-K-300401-100.40R	●	1.4	4	12	100	12	2.35	HAMS 1204 R	●
		15				AMS-K-300401-150.40R	●					17		HAMS 1204 R	●
		20				AMS-K-300401-200.40 R/L	●					22		HAMS 1204 R/L	●
	3.0	10	0.4	–	0.1	AMS-K-300401-100.40R	●	1.4	4	16	120	12	2.8	HAMS 1604 R	●
		15				AMS-K-300401-150.40R	●					17		HAMS 1604 R	●
		20				AMS-K-300401-200.40 R/L	●					22		HAMS 1604 R/L	●
	3.9	10	0.8	–	0.2	AMS-K-390802-100.40R	●	1.9	4	12	100	12	2.35	HAMS 1204 R	●
		15				AMS-K-390802-150.40R/L	●					17		HAMS 1204 R/L	●
		20				AMS-K-390802-200.40R/L	●					22		HAMS 1204 R/L	●
		20	1.3		0.4	AMS-K-391304-200.40R	●					22		HAMS 1204 R	●

Dimensions in mm

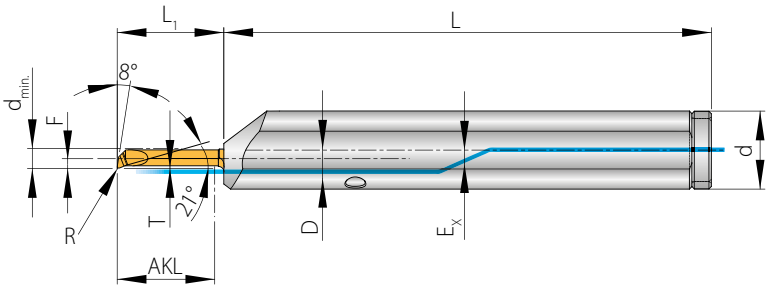
Insert								Holder						
d_{min}	AKL	T	EB	R	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
3.9	10	0.8	–	0.2	AMS-K-390802-100.40R	●	1.9	4	16	120	12	2.8	HAMS 1604 R	●
	15				AMS-K-390802-150.40R/L	●					17		HAMS 1604 R/L	●
	20				AMS-K-390802-200.40R/L	●					22		HAMS 1604 R/L	●
	20	1.3		0.4	AMS-K-391304-200.40R	●					22		HAMS 1604 R	●
4.0	12	0.6	–	0.4	AMS-K-400604-120.40R	●	1.9	4	12	100	14	2.35	HAMS 1204 R	●
	15				AMS-K-400604-150.40R	●					17		HAMS 1204 R	●
	20			0.2	AMS-K-400602-200.40R	●					22		HAMS 1204 R	●
4.0	12	0.6	–	0.4	AMS-K-400604-120.40R	●	1.9	4	16	120	14	2.8	HAMS 1604 R	●
	15				AMS-K-400604-150.40R	●					17		HAMS 1604 R	●
	20			0.2	AMS-K-400602-200.40R	●					22		HAMS 1604 R	●
5.0	10	0.5	–	0.2	AMS-K-500502-100.60R/L	●	2.3	6	12	100	12	2.35	HAMS 1206 R/L	●
	15				AMS-K-500502-150.60R	●					17		HAMS 1206 R	●
	20				AMS-K-500502-200.60R	●					22		HAMS 1206 R	●
	25				AMS-K-500502-250.60R/L	●					26		HAMS 1206 R/L	●
	30				AMS-K-500502-300.60R	●					31		HAMS 1206 R	●
5.0	10	0.5	–	0.2	AMS-K-500502-100.60R/L	●	2.3	6	16	120	12	2.8	HAMS 1606 R/L	●
	15				AMS-K-500502-150.60R	●					17		HAMS 1606 R	●
	20				AMS-K-500502-200.60R	●					22		HAMS 1606 R	●
	25				AMS-K-500502-250.60R/L	●					26		HAMS 1606 R/L	●
	30				AMS-K-500502-300.60R	●					31		HAMS 1606 R	●
5.9	35	0.5	–	0.2	AMS-K-590502-350.60R	●	2.9	6	12	100	37	2.35	HAMS 1206 R	●
	40				AMS-K-590502-400.60R	●					42		HAMS 1206 R	●
	50				AMS-K-590502-500.60R	●					52		HAMS 1206 R	●
	10	1.8			AMS-K-591802-100.60R	●					12		HAMS 1206 R	●
	20				AMS-K-591802-200.60R	●					22		HAMS 1206 R	●
	30				AMS-K-591802-300.60 R/L	●					32		HAMS 1206 R/L	●
5.9	35	0.5	–	0.2	AMS-K-590502-350.60R	●	2.9	6	16	120	37	2.8	HAMS 1606 R	●
	40				AMS-K-590502-400.60R	●					42		HAMS 1606 R	●
	50				AMS-K-590502-500.60R	●					52		HAMS 1606 R	●
	10	1.8			AMS-K-591802-100.60R	●					12		HAMS 1606 R	●
	20				AMS-K-591802-200.60R	●					22		HAMS 1606 R	●
	30				AMS-K-591802-300.60 R/L	●					32		HAMS 1606 R/L	●
6.0	42	0.5	–	0.15	AMS-K-6005015-420.60R	●	2.3	6	12	100	44	2.35	HAMS 1206 R	●
6.0	42	0.5	–	0.15	AMS-K-6005015-420.60R	●	2.3	6	16	120	44	2.8	HAMS 1606 R	●
7.2	45	0.5	–	0.2	AMS-K-720502-450.80R	●	3.45	8	16	120	47	2.8	HAMS 1608 R	●
8.0	50	0.5	–	0.2	AMS-K-800502-500.80R	●	3.9	8	16	120	52	2.8	HAMS 1608 R	●
8.9	20	3.9	–	0.2	AMS-K-893902-200.80R	●	3.9	8	16	120	22	2.8	HAMS 1608 R	●
	30				AMS-K-893902-300.80R	●					32		HAMS 1608 R	●
10.8	25	4.9	–	0.2	AMS-K-1084902-250.100R	●	4.9	10	20	120	27	2.8	HAMS 2010R	●
	35				AMS-K-1084902-350.100R	●					37		HAMS 2010R	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L / 1608 R/L	AS 0044	KVR 16
HAMS 2010 R	AS 0044	KVR 20

Dimensions in mm

Copying – Re-inforced execution



with ic

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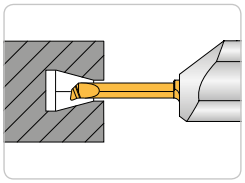


T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

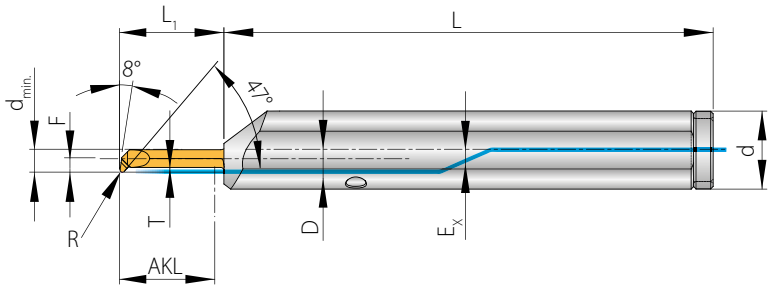
Insert								Holder						
d_{min}	AKL	T	EB	R	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
3.0	10	0.2	–	0.2	**AMS-K-300202-100.40R/L**	●	1.3	4	12	100	12	2.35	**HAMS 1204 R/L**	●
	15				**AMS-K-300202-150.40R**	●					17		**HAMS 1204 R**	●
3.0	10	0.2	–	0.2	**AMS-K-300202-100.40R/L**	●	1.3	4	16	120	12	2.8	**HAMS 1604 R/L**	●
	15				**AMS-K-300202-150.40R**	●					17		**HAMS 1604 R**	●
3.2	10	0.2	–	0.15	**AMS-K-3202015-100.40R**	●	1.45	4	12	100	12	2.35	**HAMS 1204 R**	●
3.2	10	0.2	–	0.15	**AMS-K-3202015-100.40R**	●	1.45	4	16	120	12	2.8	**HAMS 1604 R**	●
4.0	10	0.3	–	0.2	**AMS-K-400302-100.40R/L**	●	1.9	4	12	100	12	2.35	**HAMS 1204 R/L**	●
	25			0.1	**AMS-K-400301-250.40R**	●	1.5				27		**HAMS 1204 R**	●
4.0	10	0.3	–	0.2	**AMS-K-400302-100.40R/L**	●	1.9	4	16	120	12	2.8	**HAMS 1604 R/L**	●
	25			0.1	**AMS-K-400301-250.40R**	●	1.5				27		**HAMS 1604 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16

ARNO® SpecialDesign | For your special solutions see page 40

Copying 45°



with ic

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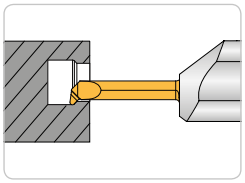
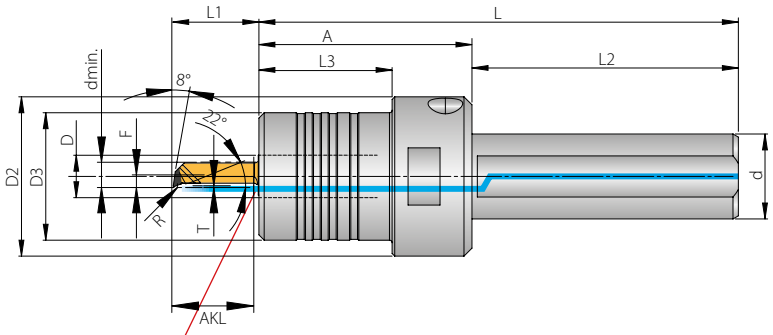


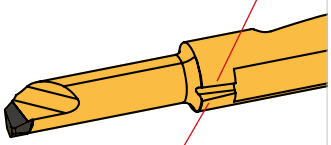
T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	T	EB	R	Designation	PG 44	F	D	d	L	L_1	E_X	Designation	PG 44
3.9	20	0.6	–	0.15	AMS-K45-3906015-200.40R	●	1.9	4	12	100	22	2.35	HAMS 1204 R	●
	20	1.3	–	0.4	AMS-K45-391304-200.40R	●					22		HAMS 1204 R	●
3.9	20	0.6	–	0.15	AMS-K45-3906015-200.40R	●	1.9	4	16	120	22	2.8	HAMS 1604 R	●
	20	1.3	–	0.4	AMS-K45-391304-200.40R	●					22		HAMS 1604 R	●
4.0	12	0.6	–	0.4	AMS-K45-400604-120.40R	●	1.9	4	12	100	14	2.35	HAMS 1204 R	●
	15				AMS-K45-400604-150.40R	●					17		HAMS 1204 R	●
	20	0.8		0.15	AMS-K45-4008015-200.40R	●					22		HAMS 1204 R	●
4.0	12	0.6	–	0.4	AMS-K45-400604-120.40R	●	1.9	4	16	120	14	2.8	HAMS 1604 R	●
	15				AMS-K45-400604-150.40R	●					17		HAMS 1604 R	●
	20	0.8		0.15	AMS-K45-4008015-200.40R	●					22		HAMS 1604 R	●
5.0	25	1.0	–	0.15	AMS-K45-5010015-250.60R	●	2.45	6	12	100	27	2.35	HAMS 1206 R	●
5.0	25	1.0	–	0.15	AMS-K45-5010015-250.60R	●	2.45	6	16	120	27	2.8	HAMS 1606 R	●
5.9	30	1.8	–	0.15	AMS-K45-5918015-300.60R	●	2.9	6	12	100	32	2.35	HAMS 1206 R	●
5.9	30	1.8	–	0.15	AMS-K45-5918015-300.60R	●	2.9	6	16	120	32	2.8	HAMS 1606 R	●
6.9	10	2.9	–	0.2	AMS-K45-692902-100.60R	●	2.9	6	12	100	12	2.35	HAMS 1206 R	●
	15				AMS-K45-692902-150.60R	●					17		HAMS 1206 R	●
	20				AMS-K45-692902-200.60R	●					22		HAMS 1206 R	●
NEW	30				AMS-K45-692902-300.60R	●					32		HAMS 1206 R	●
6.9	10	2.9	–	0.2	AMS-K45-692902-100.60R	●	2.9	6	16	120	12	2.8	HAMS 1606 R	●
	15				AMS-K45-692902-150.60R	●					17		HAMS 1606 R	●
	20				AMS-K45-692902-200.60R	●					22		HAMS 1606 R	●
NEW	30				AMS-K45-692902-300.60R	●					32		HAMS 1606 R	●
8.9	15	3.9	–	0.2	AMS-K45-893902-150.80R	●	3.9	8	16	120	17	2.8	HAMS 1608 R	●
	20				AMS-K45-893902-200.80R	●					22		HAMS 1608 R	●
	30				AMS-K45-893902-300.80R	●					32		HAMS 1608 R	●

Dimensions in mm

Copy turning – CBN brazed





Additional groove for effective coolant supply for minimum diameter 3.0 mm / 4.0 mm and 5.0 mm

with ic

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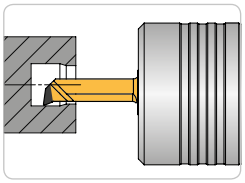

T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

	Insert									Holder						
	d_{min}	AKL	T	EB	R	Designation	PG 44	F		D	d	L	L_1	E_X	Designation	PG 44
NEW	3.0	10	0.2	–	0.1	**AMS-K-300201-100.60R AH7525***	●	1.5		6	12	100	12	2.35	**HAMS 1206 R**	●
NEW	3.0	10	0.2	–	0.1	**AMS-K-300201-100.60R AH7525***	●	1.5		6	16	120	12	2.8	**HAMS 1606 R**	●
NEW	3.0	10	0.2	–	0.1	**AMS-K-300201-100.60R AH7525***	●	1.5		6	16	90	12	–	**HAMS 1606R-HYD.**	●
NEW	4.0	13	0.3	–	0.2	**AMS-K-400302-130.60R AH7525***	●	2.0		6	12	100	15	2.35	**HAMS 1206 R**	●
NEW	4.0	13	0.3	–	0.2	**AMS-K-400302-130.60R AH7525***	●	2.0		6	16	120	15	2.8	**HAMS 1606 R**	●
NEW	4.0	13	0.3	–	0.2	**AMS-K-400302-130.60R AH7525***	●	2.0		6	16	90	15	–	**HAMS 1606R-HYD.**	●
NEW	5.0	15	0.4	–	0.2	**AMS-K-500402-150.60R AH7525***	●	2.5		6	12	100	17	2.35	**HAMS 1206 R**	●
NEW	5.0	15	0.4	–	0.2	**AMS-K-500402-150.60R AH7525***	●	2.5		6	16	120	17	2.8	**HAMS 1606 R**	●
NEW	5.0	15	0.4	–	0.2	**AMS-K-500402-150.60R AH7525***	●	2.5		6	16	90	17	–	**HAMS 1606R-HYD.**	●
NEW	6.0	18	0.4	–	0.2	**AMS-K-600402-180.60R AH7525***	●	3.0		6	12	100	20	2.35	**HAMS 1206 R**	●
NEW	6.0	18	0.4	–	0.2	**AMS-K-600402-180.60R AH7525***	●	3.0		6	16	120	20	2.8	**HAMS 1606 R**	●
NEW	6.0	18	0.4	–	0.2	**AMS-K-600402-180.60R AH7525***	●	3.0		6	16	90	20	–	**HAMS 1606R-HYD.**	●

*Available Q4/2016

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1206 R	AS 0043	KVR 12
HAMS 1606 R	AS 0044	KVR 16
HAMS 1606R-HYD.	–	–

Dimensions in mm

Pre-grooving and chamfering

with ic

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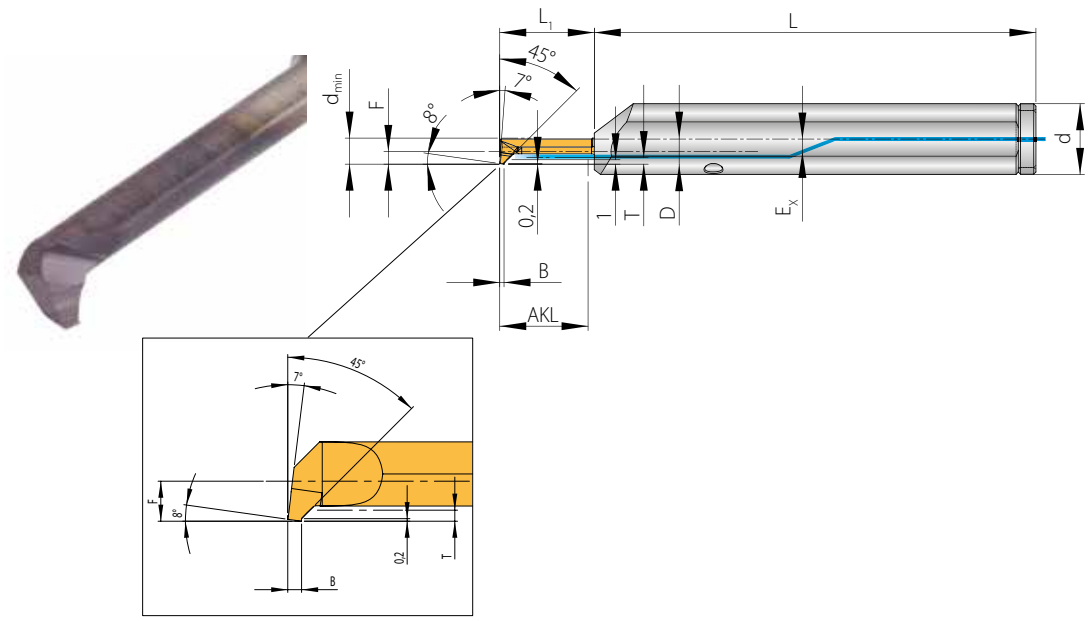

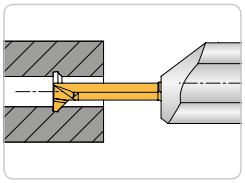

B = Width (mm)
T = Depth (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	$B^{+0.03}$	T	Designation	PG 44	F		D	d	L	L_1	E_x	Designation	PG 44
5.0	20	1.0	0.8	**AMS-V-50100800-200.60R**	●	2.4		6	12	100	22	2.35	**HAMS 1206 R**	●
5.9	20			**AMS-V-59100800-200.60R**	●	2.9							**HAMS 1206 R**	●
5.0	20	1.0	0.8	**AMS-V-50100800-200.60R**	●	2.4		6	16	120	22	2.8	**HAMS 1606 R**	●
5.9	20			**AMS-V-59100800-200.60R**	●	2.9							**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1206 R/L	AS 0043	KVR 12
HAMS 1606 R/L	AS 0044	KVR 16

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Dimensions in mm

Centre chamfering 45° / 60°

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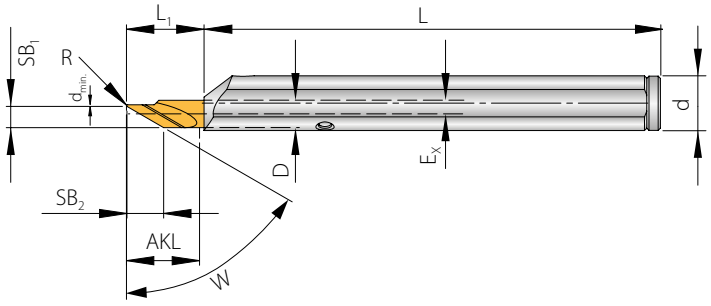

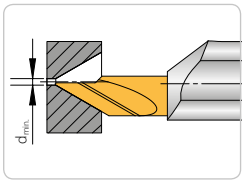

SB_1 = Cutting width (mm)
SB_2 = Cutting depth (mm)
R = Radius (mm)
W = Angle (degree)
F = F-Dimension (mm)

Insert									Holder						
d_{min}	SB_1	SB_2	W	AKL	R	Designation	PG 44	F	D	d	L	L_1	E_X	Designation	PG 44
1.0	4.5	4.5	45°	15	0.2	**AMS-ZF45-104502-150.60R/L**	●	2.0	6	12	100	17	2.35	**HAMS 1206 R/L**	●
		7.9	60°			**AMS-ZF60-108002-150.60R/L**	●					17		**HAMS 1206 R/L**	●
1.0	4.5	4.5	45°	15	0.2	**AMS-ZF45-104502-150.60R/L**	●	2.0	6	16	120	17	2.8	**HAMS 1606 R/L**	●
		7.9	60°			**AMS-ZF60-108002-150.60R/L**	●					17		**HAMS 1606 R/L**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1206 R/L	AS 0043	KVR 12
HAMS 1606 R/L	AS 0044	KVR 16

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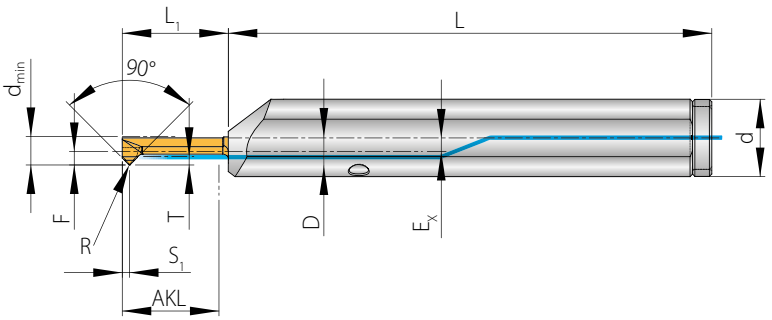
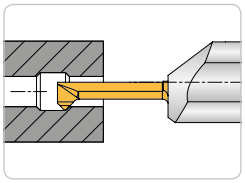
Chamfering 45°



with ic

Page 40–44



T = Depth (mm)
R = Radius
S_1 = S-Dimension (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	T	S_1	R	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
2.5	15	0.4	1.0	0.1	**AMS-F-250401-150.40R**	●	1.15	4	12	100	17	2.35	**HAMS 1204 R**	●
2.5	15	0.4	1.0	0.1	**AMS-F-250401-150.40R**	●	1.15	4	16	120	17	2.8	**HAMS 1604 R**	●
3.0	15	0.4	1.0	0.1	**AMS-F-300401-150.40R**	●	1.4	4	12	100	17	2.35	**HAMS 1204 R**	●
3.0	15	0.4	1.0	0.1	**AMS-F-300401-150.40R**	●	1.4	4	16	120	17	2.8	**HAMS 1604 R**	●
3.9	15	0.8	1.2	0.2	**AMS-F-390802-150.40R**	●	1.9	4	12	100	17	2.35	**HAMS 1204 R**	●
3.9	15	0.8	1.2	0.2	**AMS-F-390802-150.40R**	●	1.9	4	16	120	17	2.8	**HAMS 1604 R**	●
5.9	20	1.8	2.0	0.2	**AMS-F-591802-200.60R**	●	2.9	6	12	100	22	2.35	**HAMS 1206 R**	●
5.9	20	1.8	2.0	0.2	**AMS-F-591802-200.60R**	●	2.9	6	16	120	22	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

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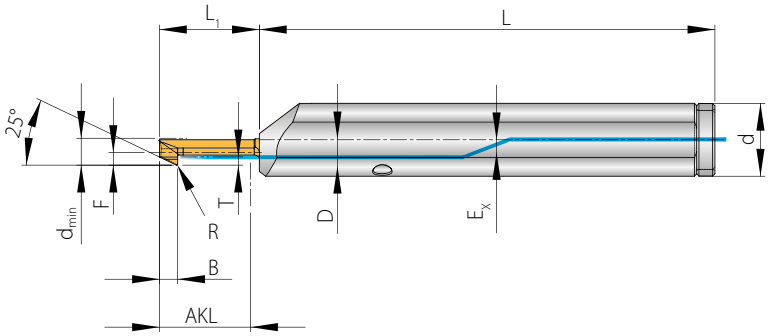
Dimensions in mm

Back turning



with ic

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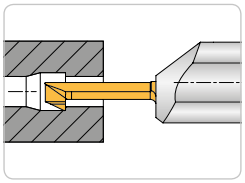

B = Width (mm)
T = Depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	B	T	R	Designation	PG 44	F	D	d	L	L_1	E_X	Designation	PG 44
3.9	15	4	1	0.2	**AMS-R-39401002-150.40R**	●	1.9	4	12	100	17	2.35	**HAMS 1204 R**	●
3.9	15	4	1	0.2	**AMS-R-39401002-150.40R**	●	1.9	4	16	120	17	2.8	**HAMS 1604 R**	●
5.9	20	4	2	0.2	**AMS-R-59402002-200.60R**	●	2.9	6	12	100	22	2.35	**HAMS 1206 R**	●
5.9	20	4	2	0.2	**AMS-R-59402002-200.60R**	●	2.9	6	16	120	22	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

ARNO® SpecialDesign | For your special solutions see page 40

Dimensions in mm

Threading 60° – Metric partial profile

with ic

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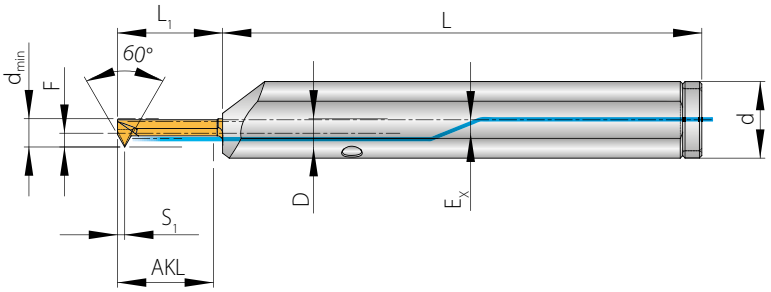
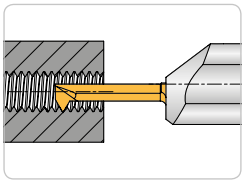




S_1 = S-Dimension (mm)
F = F-Dimension (mm)

MF – ISO-Metric – Fine

Insert								Holder						
d_{min}	AKL	Thread	P Pitch	S_1	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
2.3	5	–	0.2–0.5	0.45	**AMS-G-MF020050-050.40R**	●	1.1	4	12	100	6.5	2.35	**HAMS 1204 R**	●
2.3	5	–	0.2–0.5	0.45	**AMS-G-MF020050-050.40R**	●	1.1	4	16	120	6.5	2.8	**HAMS 1604 R**	●
3.0	15	M4	0.5–0.7	0.7	**AMS-G-MF050070-150.40R**	●	1.4	4	12	100	17	2.35	**HAMS 1204 R**	●
3.0	15	M4	0.5–0.7	0.7	**AMS-G-MF050070-150.40R**	●	1.4	4	16	120	17	2.8	**HAMS 1604 R**	●
4.0	15	M5	0.5–1.0	0.7	**AMS-G-MF050100-150.40R**	●	1.9	4	12	100	17	2.35	**HAMS 1204 R**	●
4.0	15	M5	0.5–1.0	0.7	**AMS-G-MF050100-150.40R**	●	1.9	4	16	120	17	2.8	**HAMS 1604 R**	●
6.0	20	M8	0.5–1.5	0.8	**AMS-G-MF050150-200.60R**	●	2.9	6	12	100	22	2.35	**HAMS 1206 R**	●
6.0	20	M8	0.5–1.5	0.8	**AMS-G-MF050150-200.60R**	●	2.9	6	16	120	22	2.8	**HAMS 1606 R**	●

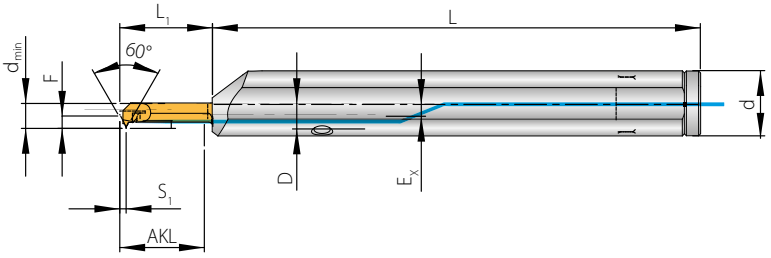
Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

ARNO® SpecialDesign | For your special solutions see page 40

Dimensions in mm

Threading 60° – Metric full profile



with ic

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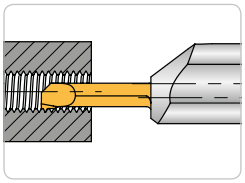


S_1 = S-Dimension (mm)
F = F-Dimension (mm)

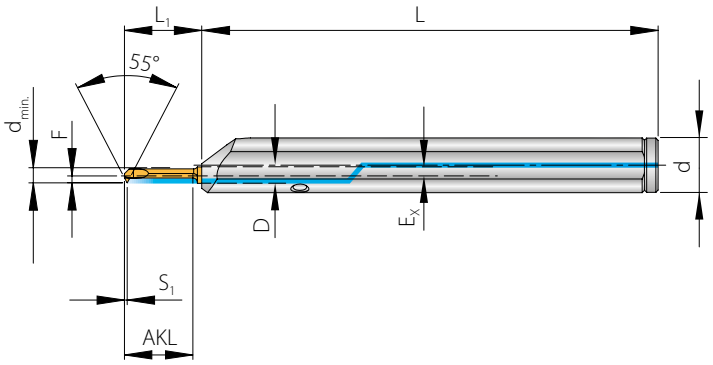
M – ISO-Metric

MF – ISO-Metric – Fine

Insert									Holder						
d_{min}	AKL	Thread	P Pitch	S_1	Designation	PG 44	F		D	d	L	L_1	E_X	Designation	PG 44
4.8	20	M6	1.0	0.7	**AMS-GV-M100-200.60R**	●	2.9		6	12	100	22	2.35	**HAMS 1206 R**	●
4.8	20	M6	1.0	0.7	**AMS-GV-M100-200.60R**	●	2.9		6	16	120	22	2.8	**HAMS 1606 R**	●
5.0	15	M6	1.0	0.7	**AMS-GV-M100-150.40R**	●	1.9		4	12	100	17	2.35	**HAMS 1204 R**	●
5.0	15	M6	1.0	0.7	**AMS-GV-M100-150.40R**	●	1.9		4	16	120	17	2.8	**HAMS 1604 R**	●
6.0	20	M8	1.25	0.8	**AMS-GV-M125-200.60R**	●	2.9		6	12	100	22	2.35	**HAMS 1206 R**	●
		M12	1.5	1.0	**AMS-GV-M150-200.60R**	●								**HAMS 1206 R**	●
6.0	20	M8	1.25	0.8	**AMS-GV-M125-200.60R**	●	2.9		6	16	120	22	2.8	**HAMS 1606 R**	●
		M12	1.5	1.0	**AMS-GV-M150-200.60R**	●								**HAMS 1606 R**	●
4.0	15	MF	0.5	0.4	**AMS-GV-MF050-150.40R**	●	1.9		4	12	100	17	2.35	**HAMS 1204 R**	●
			0.6		**AMS-GV-MF060-150.40R**	●								**HAMS 1204 R**	●
4.0	15	MF	0.5	0.4	**AMS-GV-MF050-150.40R**	●	1.9		4	16	120	17	2.8	**HAMS 1604 R**	●
			0.6		**AMS-GV-MF060-150.40R**	●								**HAMS 1604 R**	●
4.1	15	MF	0.7	0.5	**AMS-GV-MF070-150.40R**	●	1.9		4	12	100	17	2.35	**HAMS 1204 R**	●
4.1	15	MF	0.7	0.5	**AMS-GV-MF070-150.40R**	●	1.9		4	16	120	17	2.8	**HAMS 1604 R**	●
4.2	15	MF	0.75	0.5	**AMS-GV-MF075-150.40R**	●	1.9		4	12	100	17	2.35	**HAMS 1204 R**	●
4.2	15	MF	0.75	0.5	**AMS-GV-MF075-150.40R**	●	1.9		4	16	120	17	2.8	**HAMS 1604 R**	●
5.4	15	MF	0.5	0.4	**AMS-GV-MF050-150.60R**	●	2.5		6	12	100	17	2.35	**HAMS 1206 R**	●
5.4	15	MF	0.5	0.4	**AMS-GV-MF050-150.60R**	●	2.5		6	16	120	17	2.8	**HAMS 1606 R**	●
5.6	15	MF	0.75	0.5	**AMS-GV-MF075-150.60R**	●	2.6		6	12	100	17	2.35	**HAMS 1206 R**	●
5.6	15	MF	0.75	0.5	**AMS-GV-MF075-150.60R**	●	2.6		6	16	120	17	2.8	**HAMS 1606 R**	●
5.7	15	M100	1.0	0.7	**AMS-GV-M100-150.60R**	●	2.6		6	12	100	17	2.35	**HAMS 1206 R**	●
5.7	15	M100	1.0	0.7	**AMS-GV-M100-150.60R**	●	2.6		6	16	120	17	2.8	**HAMS 1606 R**	●

Dimensions in mm

Whitworth thread 55° – Partial profile



with ic

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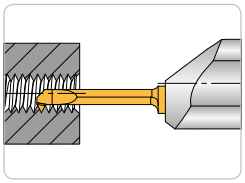

S_1 = S-Dimension (mm)
F = F-Dimension (mm)

WF – Whitworth – Fine

Insert									Holder						
d_{min}	AKL	Thread	P Pitch	S_1	Designation	PG 44	F		D	d	L	L_1	E_x	Designation	PG 44
3.3	15	WF	0.25–1.0	0.6	**AMS-G-WF33025100-150.40R**	●	1.5		4	12	100	17	2.35	**HAMS 1204 R**	●
3.3	15	WF	0.25–1.0	0.6	**AMS-G-WF33025100-150.40R**	●	1.5		4	16	120	17	2.8	**HAMS 1604 R**	●
4.3	15	WF	0.25–1.0	0.6	**AMS-G-WF43025100-150.40R**	●	1.9		4	12	100	17	2.35	**HAMS 1204 R**	●
4.3	15	WF	0.25–1.0	0.6	**AMS-G-WF43025100-150.40R**	●	1.9		4	16	120	17	2.8	**HAMS 1604 R**	●
6.0	15	WF	0.5–1.5	0.8	**AMS-G-WF60050150-150.60R**	●	2.9		6	12	100	17	2.35	**HAMS 1206 R**	●
6.0	15	WF	0.5–1.5	0.8	**AMS-G-WF60050150-150.60R**	●	2.9		6	16	120	17	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

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Dimensions in mm

Whitworth pipe thread 55° DIN ISO 228 – Full profile

with ic

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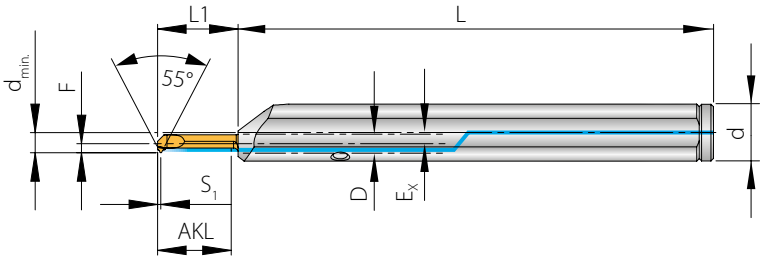

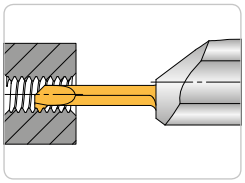

S_1 = S-Dimension (mm)
F = F-Dimension (mm)

Insert									Holder						
d_{min}	AKL	Thread	P Pitch	TPI	S_1	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
4	15	W228	1.27	20	0.7	**AMS-GV-W228/20-150.40R**	●	1.9	4	12	100	17	2.35	**HAMS 1204 R**	●
4	15	W228	1.27	20	0.7	**AMS-GV-W228/20-150.40R**	●	1.9	4	16	120	17	2.8	**HAMS 1604 R**	●
11	15	1/4"-19 BSP	1.33	19	0.95	**AMS-GV-W228/19-150.60R**	●	2.9	6	12	100	17	2.35	**HAMS 1206 R**	●
11	15	1/4"-19 BSP	1.33	19	0.95	**AMS-GV-W228/19-150.60R**	●	2.9	6	16	120	17	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

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Whitworth pipe thread 55° BSW – Full profile

with ic

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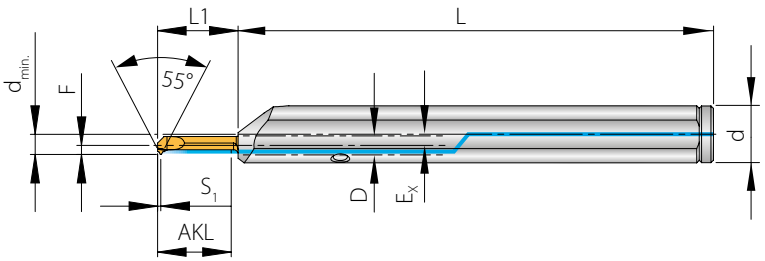
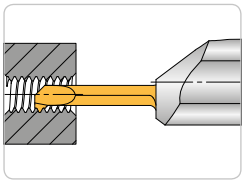




S_1 = S-Dimension (mm)
F = F-Dimension (mm)

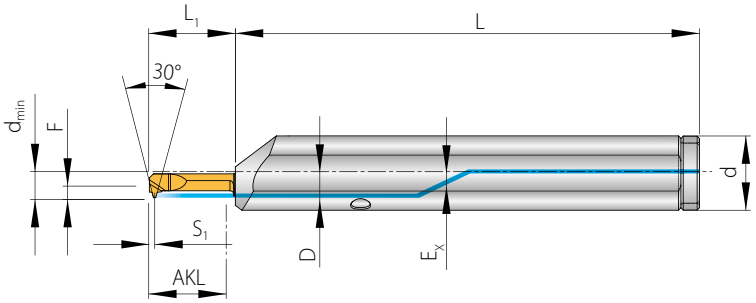
Insert									Holder						
d_{min}	AKL	Thread	TPI	S_1	Designation	PG 44	F		D	d	L	L_1	E_X	Designation	PG 44
3.4	15	3/16"-24 BSW	24	0.75	**AMS-GV-BSW24-150.40R**	●	1.3		4	12	100	17	2.35	**HAMS 1204 R**	●
3.4	15	3/16"-24 BSW	24	0.75	**AMS-GV-BSW24-150.40R**	●	1.3		6	16	120	17	2.8	**HAMS 1604 R**	●
3.4	15	3/16"-24 BSW	24	0.75	**AMS-GV-BSW24-150.60R**	●	0.3		6	12	100	17	2.35	**HAMS 1206 R**	●
3.4	15	3/16"-24 BSW	24	0.75	**AMS-GV-BSW24-150.60R**	●	0.3		6	16	120	17	2.8	**HAMS 1606 R**	●
4.4	15	7/32"-28 BSF	28	0.65	**AMS-GV-BSW28-150.60R**	●	1.2		6	12	100	17	2.35	**HAMS 1206 R**	●
4.4	15	7/32"-28 BSF	28	0.65	**AMS-GV-BSW28-150.60R**	●	1.2		6	16	120	17	2.8	**HAMS 1606 R**	●
6.5	15	5/16"-22 BSF	22	0.9	**AMS-GV-BSW22-150.60R**	●	2.9		6	12	100	17	2.35	**HAMS 1206 R**	●
6.5	15	5/16"-22 BSF	22	0.9	**AMS-GV-BSW22-150.60R**	●	2.9		6	16	120	17	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

Dimensions in mm

Trapezoidal 30° DIN ISO 103 – Partial profile



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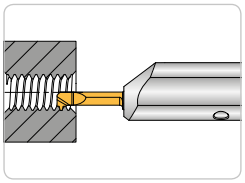

S_1 = S-Dimension (mm)
F = F-Dimension (mm)

Insert									Holder						
d_{min}	AKL	Thread	P Pitch	S_1	Designation	PG 44	F		D	d	L	L_1	E_X	Designation	PG 44
6.5	20	TR 8x1.5	1.5	0.85	**AMS-G-TR103/1.5R-200.60R**	●	2.9		6	12	100	22	2.35	**HAMS 1206 R**	●
6.5	20	TR 8x1.5	1.5	0.85	**AMS-G-TR103/1.5R-200.60R**	●	2.9		6	16	120	22	2.8	**HAMS 1606 R**	●
7.0	20	TR 9x2.0	2.0	1.3	**AMS-G-TR103/2.0R-200.60R**	●	2.9		6	12	100	22	2.35	**HAMS 1206 R**	●
7.0	20	TR 9x2.0	2.0	1.3	**AMS-G-TR103/2.0R-200.60R**	●	2.9		6	16	120	22	2.8	**HAMS 1606 R**	●
7.0	20	TR 9x2.0	2.0	1.3	**AMS-G-TR103/2.0R-200.80R**	●	2.6		8	16	120	22	2.8	**HAMS 1608 R**	●
8.0	20	TR 11x3.0	3.0	1.4	**AMS-G-TR103/3.0R-200.80R**	●	3.6		8	16	120	22	2.8	**HAMS 1608 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1206 R/L	AS 0043	KVR 12
HAMS 1606 R/L / HAMS 1608 R/L	AS 0044	KVR 16

Dimensions in mm

American standard thread 60° UN – full profile

with ic

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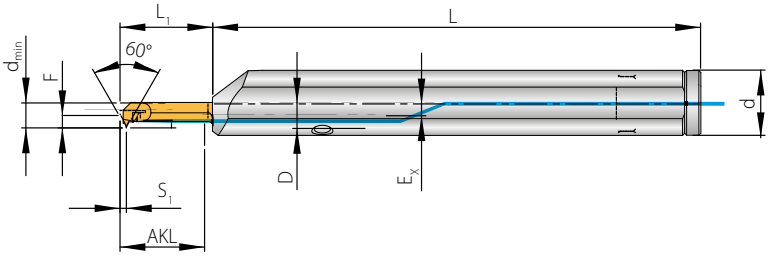
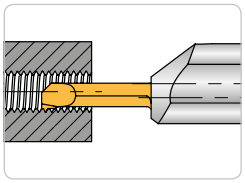




S_1 = S-Dimension (mm)
F = F-Dimension (mm)

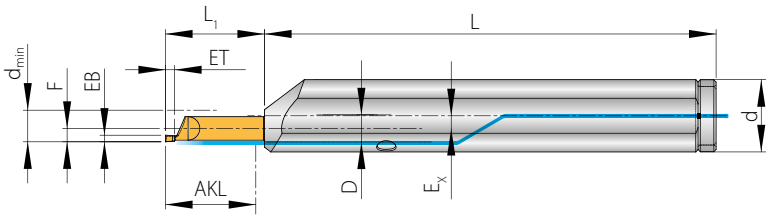
Insert								Holder						
d_{min}	AKL	Thread	TPI	S_1	Designation	PG 44	F	D	d	L	L_1	E_X	Designation	PG 44
2.6	15	No.6-32 UNC	32	0.6	**AMS-GV-UN32-150.40R**	●	0.45	4	12	100	17	2.35	**HAMS 1204 R**	●
2.6	15	No.6-32 UNC	32	0.6	**AMS-GV-UN32-150.40R**	●	0.45	4	16	120	17	2.8	**HAMS 1604 R**	●
2.6	15	No.6-32 UNC	32	0.6	**AMS-GV-UN32-150.60R**	●	-0.55	6	12	100	17	2.35	**HAMS 1206 R**	●
2.6	15	No.6-32 UNC	32	0.6	**AMS-GV-UN32-150.60R**	●	-0.55	6	16	120	17	2.8	**HAMS 1606 R**	●
3.6	15	No.10-24 UNC	24	0.75	**AMS-GV-UN24-150.40R**	●	1.4	4	12	100	17	2.35	**HAMS 1204 R**	●
3.6	15	No.10-24 UNC	24	0.75	**AMS-GV-UN24-150.40R**	●	1.4	4	16	120	17	2.8	**HAMS 1604 R**	●
3.6	15	No.10-24 UNC	24	0.75	**AMS-GV-UN24-150.60R**	●	0.4	6	12	100	17	2.35	**HAMS 1206 R**	●
3.6	15	No.10-24 UNC	24	0.75	**AMS-GV-UN24-150.60R**	●	0.4	6	16	120	17	2.8	**HAMS 1606 R**	●
4.4	15	No.12-28 UNF	28	0.65	**AMS-GV-UN28-150.40R**	●	1.9	4	12	100	17	2.35	**HAMS 1204 R**	●
4.4	15	No.12-28 UNF	28	0.65	**AMS-GV-UN28-150.40R**	●	1.9	4	16	120	17	2.8	**HAMS 1604 R**	●
4.8	15	1/4"-20 UNC	20	0.9	**AMS-GV-UN18-150.60R**	●	1.5	6	12	100	17	2.35	**HAMS 1206 R**	●
4.8	15	1/4"-20 UNC	20	0.9	**AMS-GV-UN18-150.60R**	●	1.5	6	16	120	17	2.8	**HAMS 1606 R**	●
5.3	15	1/4"-27 UNS	27	0.75	**AMS-GV-UN27-150.60R**	●	1.9	6	12	100	17	2.35	**HAMS 1206 R**	●
5.3	15	1/4"-27 UNS	27	0.75	**AMS-GV-UN27-150.60R**	●	1.9	6	16	120	17	2.8	**HAMS 1606 R**	●
6.2	15	5/16"-18 UNC	18	1.0	**AMS-GV-UN20-150.60R**	●	2.9	6	12	100	17	2.35	**HAMS 1206 R**	●
6.2	15	5/16"-18 UNC	18	1.0	**AMS-GV-UN20-150.60R**	●	2.9	6	16	120	17	2.8	**HAMS 1606 R**	●
7.6	15	3/8"-16 UNC	16	1.05	**AMS-GV-UN16-150.60R**	●	2.9	6	12	100	17	2.35	**HAMS 1206 R**	●
7.6	15	3/8"-16 UNC	16	1.05	**AMS-GV-UN16-150.60R**	●	2.9	6	16	120	17	2.8	**HAMS 1606 R**	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L	AS 0044	KVR 16

Dimensions in mm

Axial-Grooving



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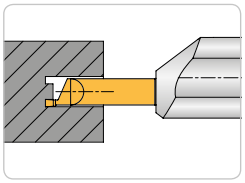

EB = Groove width (mm)
ET = Groove depth (mm)
R = Radius (mm)
F = F-Dimension (mm)

Insert								Holder						
d_{min}	AKL	EB$^{+0.03}$	ET	R	Designation	PG 44	F	D	d	L	L_1	E_x	Designation	PG 44
5.0	7.5	0.7	1.1	–	AMS-A-50071100-075.40R	●	1.9	4	12	100	9.7	2.35	HAMS 1204 R	●
	7.5	0.77	1.1	0.05	AMS-A-5007711005-075.40R	●					9.7		HAMS 1204 R	●
	7.5	0.8	1.2	–	AMS-A-50081200-075.40R	●					9.7		HAMS 1204 R	●
	7.5	0.9	1.3	–	AMS-A-50091300-075.40R	●					9.7		HAMS 1204 R	●
	7.5	1.0	1.5	–	AMS-A-50101500-075.40R	●					10		HAMS 1204 R	●
	7.5	1.2	1.5	–	AMS-A-50121500-075.40R	●					10		HAMS 1204 R	●
	10	2.0	5.0	0.05	AMS-A-502050005-100.40R/L	●					12		HAMS 1204 R/L	●
	15	1.2	1.5	–	AMS-A-50121500-150.40R	●					17		HAMS 1204 R	●
5.0	7.5	0.7	1.1	–	AMS-A-50071100-075.40R	●	1.9	4	16	120	9.7	2.8	HAMS 1604 R	●
	7.5	0.77	1.1	0.05	AMS-A-5007711005-075.40R	●					9.7		HAMS 1604 R	●
	7.5	0.8	1.2	–	AMS-A-50081200-075.40R	●					9.7		HAMS 1604 R	●
	7.5	0.9	1.3	–	AMS-A-50091300-075.40R	●					9.7		HAMS 1604 R	●
	7.5	1.0	1.5	–	AMS-A-50101500-075.40R	●					10		HAMS 1604 R	●
	7.5	1.2	1.5	–	AMS-A-50121500-075.40R	●					10		HAMS 1604 R	●
	10	2.0	5.0	0.05	AMS-A-502050005-100.40R/L	●					12		HAMS 1604 R/L	●
	15	1.2	1.5	–	AMS-A-50121500-150.40R	●					17		HAMS 1604 R	●
6.0	10	0.97	1.5	–	AMS-A-600971500-100.60R	●	2.4	6	12	100	12	2.35	HAMS 1206 R	●
	10	1.2			AMS-A-60121500-100.60R	●							HAMS 1206 R	●
	18	1.2			AMS-A-60121500-180.60R	●					20		HAMS 1206 R	●
6.0	10	0.97	1.5	–	AMS-A-600971500-100.60R	●	2.4	6	16	120	12	2.8	HAMS 1606 R	●
	10	1.2			AMS-A-60121500-100.60R	●							HAMS 1606 R	●
	18	1.2			AMS-A-60121500-180.60R	●					20		HAMS 1606 R	●
7.0	10	1.5	2.0	–	AMS-A-70152000-100.60R	●	2.9	6	12	100	12	2.35	HAMS 1206 R	●
	20				AMS-A-70152000-200.60R	●					22		HAMS 1206 R	●
7.0	10	1.5	2.0	–	AMS-A-70152000-100.60R	●	2.9	6	16	120	12	2.8	HAMS 1606 R	●
	20				AMS-A-70152000-200.60R	●					22		HAMS 1606 R	●
8.0	10	1.5	3.0	0.15	AMS-A-801530015-100.80R	●	2	8	16	120	12	2.8	HAMS 1608 R	●
9.0	10	1.5	2.0	–	AMS-A-90152000-100.80R	●	3.8	8	16	120	12	2.8	HAMS 1608 R	●
	25				AMS-A-90152000-250.80R	●					27		HAMS 1608 R	●

Spare parts

Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L / 1608 R/L	AS 0044	KVR 16

Dimensions in mm

Blanks for special profiles

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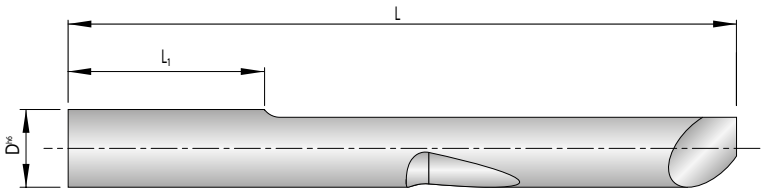


D = Ø Profile side (mm)
L_1 = Maximum work length (mm)

Left-hand execution shown

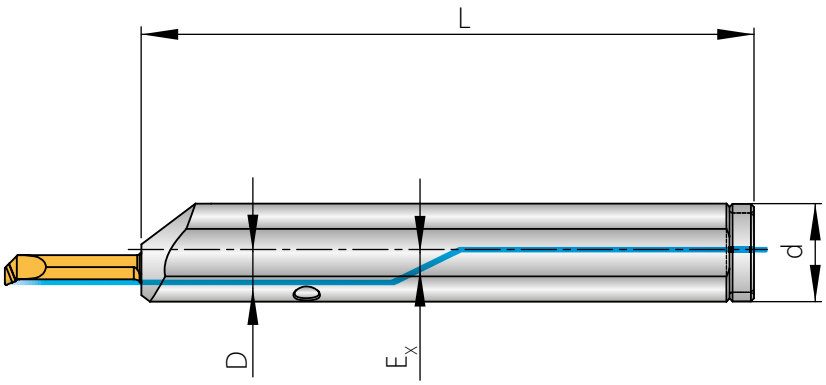
Blanks R/L				
Designation	**D^{h6}**	**L**	**L_1**	**PG 44**
H-AMS-100-40R	4.00	34.4	12	●
H-AMS-100-60R	6.00	40.6	12	●
H-AMS-100-80R	8.00	40.4	12	●
H-AMS-150-40R	4.00	39.4	17	●
H-AMS-200-40R	4.00	44.4	22	●
H-AMS-200-60R	6.00	50.6	22	●
H-AMS-300-60R	6.00	60.6	32	●
H-AMS-400-40R	4.00	64.4	42	●
H-AMS-500-80L	8.00	80.4	52	●
H-AMS-600-60R/L	6.00	90.6	62	●

Dimensions in mm

Holder – Standard

with ic

Page 40–44



Right-hand execution shown

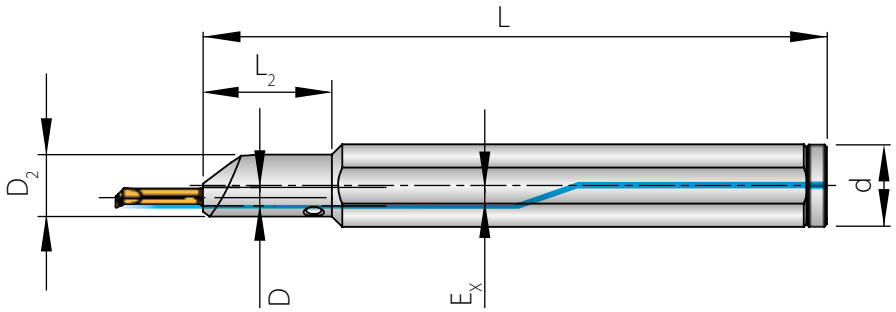
Holder					
Designation	**D**	**d**	**L**	**Ex**	**PG 44**
HAMS 1204 R	4	12	100	2.35	●
HAMS 1204 L	4				●
HAMS 1206 R	6				●
HAMS 1206 L	6				●
HAMS 1606 R	6	16	120	2.8	●
HAMS 1606 L	6				●
HAMS 1608 R	8				●
HAMS 1608 L	8				●
HAMS 2010 R	10	20	120	2.8	●

Remark: The inserts for these holders you will find on pages 10 to 33. Note measurement "D"!

Holder – Off-set

with ic

Page 40–44



Right-hand execution shown

Holder							
Designation	**D**	**D_2**	**d**	**L**	**L_2**	**E_x**	**PG 44**
HAMS 1604 R	4	12	16	120	25	2.35	●
HAMS 1604 L							●

Remark: The inserts for these holders you will find on pages 10 to 33. Note measurement "D"!

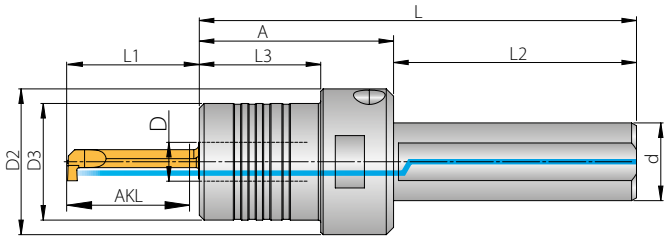
Spare parts

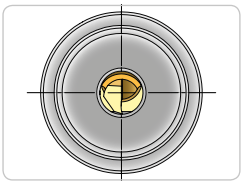
Holder	Screw	Coolant seal ring
HAMS 1204 R/L / 1206 R/L	AS 0043	KVR 12
HAMS 1604 R/L	AS 0043	KVR 16
HAMS 1606 R/L / 1608 R/L	AS 0044	KVR 16
HAMS 2010 R	AS 0044	KVR 20

Hydraulic holder

with ic

Page 40–44





AKL = Maximum work length (mm)
L_1 = Overhang (mm)
D = Shank diameter (mm)

Maximum work length		
D	AKL	L_1
4	2.0	4
4	5.0	6.5
4	6.0	8
4	7.5	10
4	10.0	12
4	15.0	17
4	20.0	22
6	10.0	12
6	18.0	20
6	20.0	22
6	30.0	32
6	40.0	42
6	50.0	52
8	10.0	12
8	25.0	27
8	30.0	32
8	42.0	44
8	45.0	47
8	50.0	52

Holder								
Designation	D	D_2	D_3	d	L	L_2	L_3	PG 47
HAMS 1604R-HYD.	4	30	18	16	82.5	50	18	●
HAMS 1606R-HYD.	6		20		90.0		25	●
HAMS 1608R-HYD.	8		24		90.0		25	●

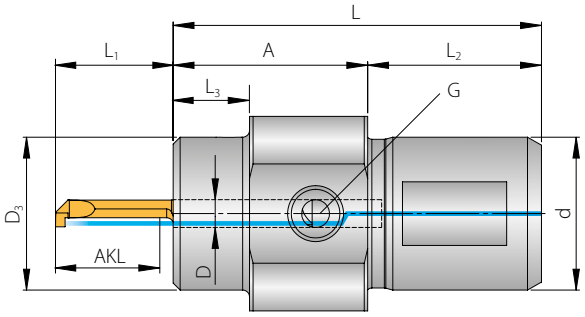
Remark: The inserts for these holders you will find on pages 10 to 33. Note measurement "D"!

Dimensions in mm

Holders for STAR-lathes

with ic

Page 40–44



AKL = Maximum work length (mm)
L_1 = Overhang (mm)
D = Shank diameter (mm)

Maximum work length		
D	AKL	L_1
4	2.0	4
4	5.0	6.5
4	6.0	8
4	7.5	10
4	10.0	12
4	15.0	17
4	20.0	22
6	10.0	12
6	18.0	20
6	20.0	22
6	30.0	32
6	40.0	42
6	50.0	52

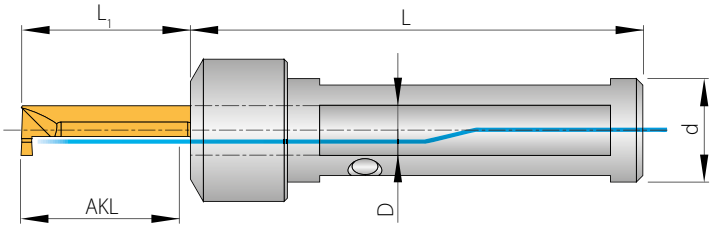
Holder									
Designation	D	D_2	D_3	d	L	A	L_2	G	PG 44
HAMS 2204-A28-SR	4	28 x 50	22	22	53	28	25	M8x1	●
HAMS 2206-A33-SR	6				58	33			●
HAMS 2204-A50-S2-SR	4	28 x 50	22	22	75	50	25	$G^1/_8$	●
HAMS 2206-A50-S2-SR	6				75	50			●

Remark: The inserts for these holders you will find on pages 10 to 33. Note measurement "D"!

Holders for sliding head lathes

with ic

Page 40–44



AKL = Maximum work length (mm)
L_1 = Overhang (mm)
D = Shank diameter (mm)

Maximum work length		
D	AKL	L_1
4	2.0	4
4	5.0	6.5
4	6.0	8
4	7.5	10
4	10.0	12
4	15.0	17
4	20.0	22
6	10.0	12
6	18.0	20
6	20.0	22
6	30.0	32
6	40.0	42
6	50.0	52
8	10.0	12
8	25.0	27
8	30.0	32
8	42.0	44
8	45.0	47
8	50.0	52

Holder						
Designation	D	d	L	Connection	Machine	PG 44
HAMS 3/4"04-CR	4	3/4"	100	G 1/8"	CITIZEN	●
HAMS 3/4"06-CR	6					●
HAMS 3/4"08-CR	8					●
HAMS 1"04-CR	4	1"	100	G 1/4"	CITIZEN	●
HAMS 1"06-CR	6					●
HAMS 1"08-CR	8					●
HAMS 1604-SR	4	16	70	G 1/8"	STAR	●
HAMS 1606-SR	6					●
HAMS 1608-SR	8					●
HAMS 2204-SR G1/4"	4	22	110	G 1/4"	STAR	●
HAMS 2206-SR G1/4"	6					●
HAMS 2204-SR	4	22	110	G 1/8"	STAR	●
HAMS 2206-SR	6					●
HAMS 2208-SR	8					●
HAMS 2004-TOR	4	20	90	G 1/8"	TORNOS. TSUGAMI. HANWA	●
HAMS 2006-TOR	6					●
HAMS 2008-TOR	8					●
HAMS 2504-TOR	4	25	100	G 1/8"	TORNOS. TSUGAMI. HANWA	●
HAMS 2506-TOR	6					●
HAMS 2508-TOR	8					●
HAMS 2804-TR	4	28	120	G 1/4"	TRAUB	●
HAMS 2806-TR	6					●

Remark: The inserts for these holders you will find on pages 10 to 33. Note measurement "D"!

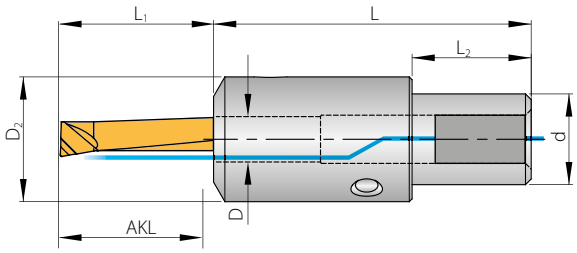
Holders with 2 flats = CITIZEN, TORNOS, TRAUB, TSUGAMI and HANWA.
Holders with 4 flats = STAR

Dimensions in mm

Holders for finishing

with ic

Page 40–44



AKL = Maximum work length (mm)
L_1 = Overhang (mm)
D = Shank diameter (mm)

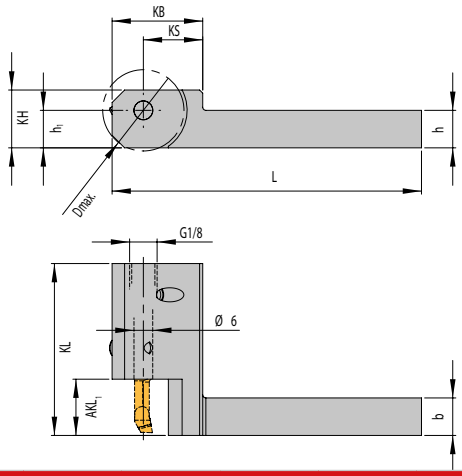
Maximum work length		
D	AKL	L_1
4	7.5	10
4	10.0	12
4	15.0	17
4	20.0	22
6	10.0	12
6	18.0	20
6	20.0	22
6	30.0	32
8	10.0	12
8	25.0	27

Holder						
Designation	D	d	D_2	L	L_2	PG 44
HAMS 1604-AR	4	16	22	56	21	●
HAMS 1606-AR	6					●
HAMS 1608-AR	8					●

Remark: The inserts for these holders you will find on pages 10 to 33. Note measurement "D"!

Holders for sliding head auto lathes and multi spindle machines

Page 40–44

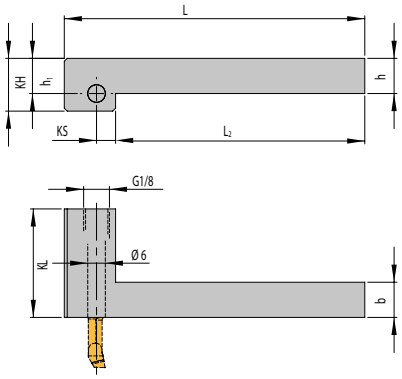


Holder											
Designation	**h x b**	**L**	**KB**	**KS**	**KL**	**AKL_1**	**KH**	**h_1**	**D_{max}**	**Connection**	**PG 44**
HAMS 121206-R	12 x 12	99	29	19.0	55.0	18	18.5	12	26	G 1/8"	●

Information: please use AMS-... .60R for these holders.

Holder for sliding head lathes on counter spindle

Page 40–44



Holder									
Designation	**h x b**	**L**	**L_2**	**KS**	**KL**	**KH**	**h_1**	**Connection**	**PG 44**
HAMS 121206-R-GS	12x12	102.5	85	6.5	37.0	18	12	G 1/8"	●

Information: please use AMS-... .60R for these holders.

ARNO® SpecialDesign

Do you need a special solution?

**Should your application require a purpose made tool, we can quote that too.
As the manufacturer we can offer special AMS inserts, accurately and quickly.
Please tell us the standard inserts and the dimensions you would like to have changed:**

Standard insert AMS- _____

Please change this dimensions: _____

_____

_____

_____

Draft drawing:

Address:

Company: _____

Address: _____

Contact: _____

E-Mail: _____

Phone: _____

**On www.arno.de/download you will find the form for downloading.
Or send an e-mail with the relevant information to anfrage@arno.de**

Grade description

AMS – Coated

PVD-multilayer coating
PVD coated carbide substrate with high heat and oxidation resistance. Universal grade for machining steel, stainless steel and cast materials.

AMS – AH7525 – Uncoated

Universal CBN grade for both smooth and interupted cutting. The tough grade is well suited for machining harderned steel (48–65 HRC).

Spare parts and accessories

Item	PG11
Screw	
AS 0043	●
AS 0044	●
Coolant seal ring	
KVR 12	●
KVR 16	●
KVR 20	●

Grooving

ISO	Material		Tensile strength (N/mm²)	Cutting speed V_c (m/min) AMS coated	AMS – AH7525 uncoated
P	Unalloyed steel and cast steel	< 0.15 % C/hardened and tempered	350	20 – 180	–
		0.15–0.45 % C/hardened and tempered	650	20 – 180	–
		> 0.45 % C/hardened and tempered	1000	20 – 180	–
	Low alloyed steel and cast steel	annealed	600	15 – 160	–
		hardened and tempered	900	15 – 160	–
			1200	15 – 160	–
	High alloyed steel	annealed	700	20 – 120	–
	High alloyed tool steel and cast steel	hardened	1100	20 – 120	–
	Stainless steel	ferritic, annealed	700	20 – 90	–
	Cast steel	martensitic, hardened and tempered	1000	20 – 180	–
M	Stainless steel	austenitic and austenitic/	450 – 600	20 – 90	–
		ferritic, chilled	600 – 900	15 – 80	–
K	Cast iron	pearlitic/ferritic	500 – 700	20 – 140	–
		pearlitic/martensitic	700 – 850	20 – 140	–
			800 – 1100	20 – 140	–
	Cast iron with nodular graphite	ferritic	550	20 – 130	–
		pearlitic	800	20 – 130	–
	Malleable cast iron	ferritic	450	20 – 120	–
		pearlitic	750	20 – 120	–
N	Aluminium alloys long chipping	not heat treatable	200	20 – 500	–
		heat treatable, heat treated	350	20 – 500	–
	Casted aluminium alloys	≤ 12 % Si, heat treated	250	20 – 500	–
		≤ 12 % Si, heat treatable, heat treated	300	20 – 500	–
		≤ 12 % Si, not heat treatable	450	20 – 500	–
	Copper and copper alloys (Brass/Bronze)	Lead alloys, Pb > 1 %	400	20 – 600	–
		Brass, Bronze	300	20 – 600	–
		Aluminium bronze	500	20 – 600	–
		Copper and elektrolyte copper	200	20 – 600	–
	Non-ferrous materials	Duroplastice	–	–	–
		Re-inforced plastics	–	–	–
		Hard rubber	–	–	–
S	High temperature resistant alloys	Fe-alloyed, annealed	700	15 – 75	–
		Fe-alloyed, heat treated	950	15 – 75	–
		Ni- or Co-alloyed, annealed	800	15 – 40	–
		Ni- or Co-alloyed, casting	1100	15 – 40	–
		Ni- or Co-alloyed, heat treated	1200	15 – 40	–
	Titanium alloys	Pure titan	500 – 700	–	–
	Alpha- and Beta-alloys	heat treated	700 – 1000	–	–
H	Hardened steel	hardened	55 HRC	–	60 – 150
			60 HRC	–	60 – 150
	Hard cast iron	casting	41 HRC	–	60 – 150
	Hardened cast iron	hardened	55 HRC	–	60 – 150

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

Recommended cutting data AH7525

Diameter	Vc [m/min]	f [mm/rev]	ap [mm]
2.0 mm to 3.0 mm	50–150	0.01–0.03	0.01–0.05
3.5 mm to 4.5 mm	50–150	0.01–0.05	0.01–0.10
5.0 mm to 6.0 mm	50–150	0.01–0.08	0.01–0.10

Recommended cutting data – Threading – Number of passes

Pitch		Number of passes					
Vc [m/min]		110–140	80–110	65–80	70–90	80–110	200–250
[mm]	Pitch/Inch	Steel strength [N/mm²]			Stainless steel	Cast	Aluminium
		400–700	700–1.000	> 1.000			
0.5	48	6	7	7	8	7	6
0.75	32	8	9	9	10	9	8
0.8	32	8	9	10	10	9	8
1	24	10	11	12	12	12	10
1.25	20–19	12	14	15	15	14	12
1.5	16	15	17	18	18	17	15
1.75	14	17	19	21	21	18	17
2	12	19	22	25	25	20	18
2.5	10	22	26	31	31	22	20
3.0–3.5	8	28	32	38	38	24	22

The above mentioned data are general recommendations for machining steel and non-ferrous materials. With hard materials we recommend to reduce cutting speed and increase number of passes.

By cutting edge breakage we suggest to increase number of passes, by edge wear reduce the number of passes.

Remark: The chip thickness should be constant at every pass, so with more cutting depth reduce the in-feed in order to obtain constant cutting forces.

Material and application

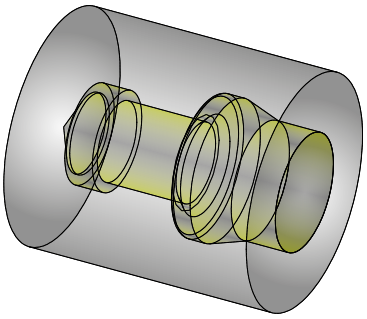
ISO	Material	Max. depth of cut a_p (mm)
P	Steel	0.5
M	Stainless steel	0.3
K	Cast	0.3
N	Non-ferrous, Aluminium	1.0

Application	Feed rate range
Grooving	0.01 – 0.02
Boring, turning and copying	0.02 – 0.05
Pre-grooving, chamfering and back turning	0.02 – 0.05
Axial groove turning	0.02 – 0.05

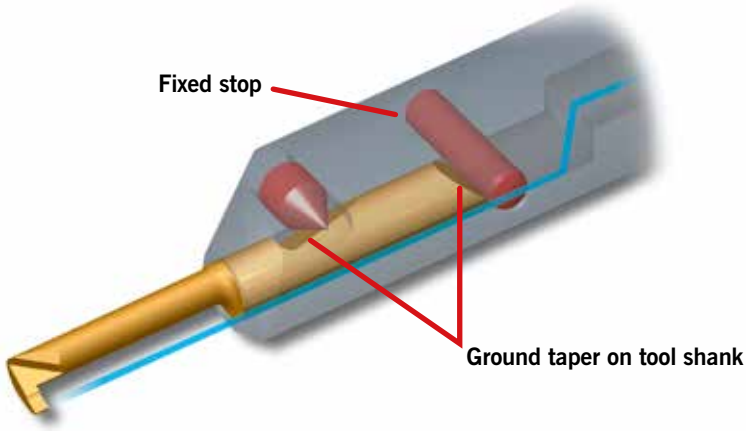
Dimensions in mm

Application example

Application Material 1.2343 with 800 N/mm²	Solution	Recommended cutting data	
		Revolution n [Rev/min]	Feed rate range f [mm/rev]
Pre-machining, drilling Ø 10 mm	SC10L-0023SP-05	3800	0.03
Pre-machining, drilling Ø 6 mm	SPC0060-0300 VHM / TiAlN	4200	0.1
Turning to core diameter for M8	AMS-D-590802-200.60R	4200	0.04
Relief groove, thread	AMS-S-59151800-200.60R	4200	0.02
Thread M8	AMS-G-M8-200.60R	1640	1.25
Turning, Form	AMS-K-591802-200.60R	3800	0.02 – 0.04



Assembling of ARNO®-Mini-System



With the ground taper on the tool shank and the fixed stop in the sleeve the length remains accurately constant and guaranteed cutting edge repeatability is achieved. The cone of the threaded pin ensures secure tool locking and reduces cutting edge vibrations.

Dimensions in mm

SIM – Boring bars

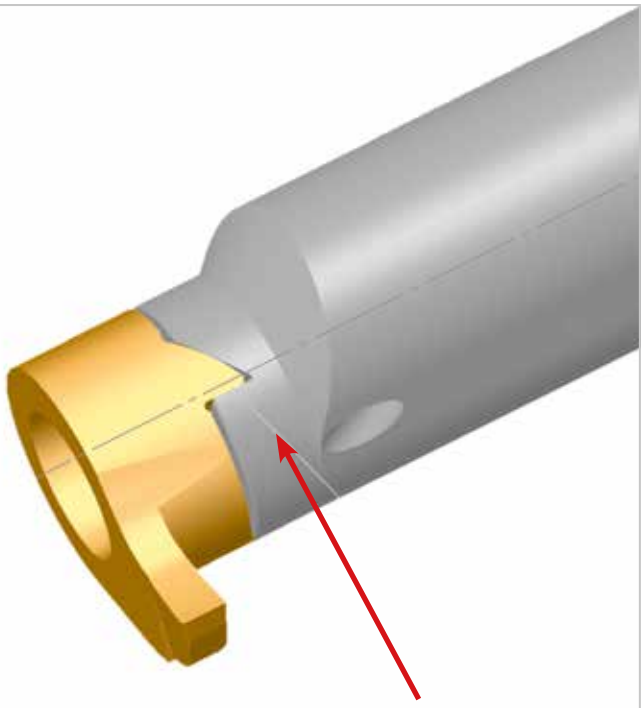
2

Modular internal grooving system

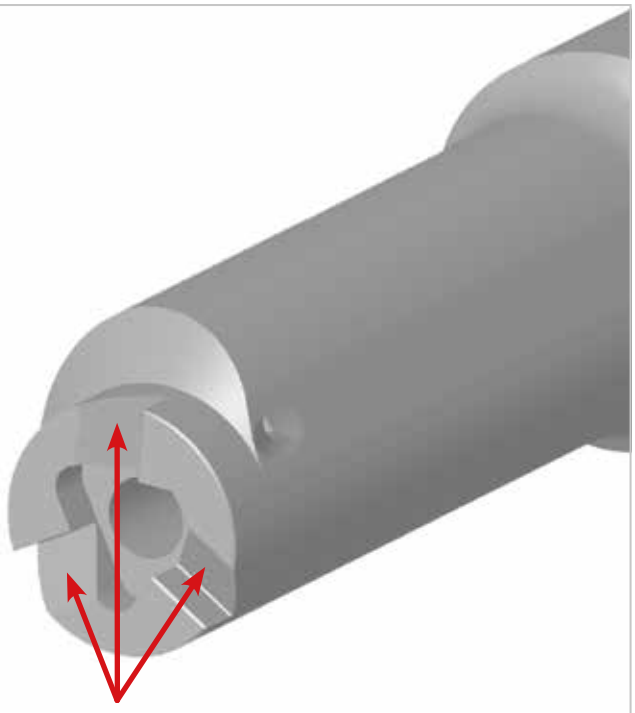
SIM – Boring bars

Mini boring system with minimum bore diameter from 6.7 mm

Advantages of the patented location



Right angled location flat
Optimum transfer of locking forces due to right angled location.



3-point location
3-point location guarantees high repeatability and positioning of the insert.

Introduction

SIM is a modular internal grooving system in 5 sizes starting at D_{min} 6.7 mm. Holders are available in steel or carbide execution (with brazed steel head) and screw on carbide insert.

Features

- **Vibration damped carbide shank with brazed steel head**
- **Shank has two location flats**
- **Through tool coolant**
- **Highest rigidity due to oval shaped shaft**
- **Reach into the bore up to 80 mm**
- **Depth of cut up to 4.5 mm**
- **Groove widths from 0.5 – 5 mm**
- **Easy insert replacement**
- **Application areas:**
  - **Radius grooving**
  - **Cir-clip grooving DIN 471/472**
  - **Copying**
  - **Pre-grooving**
  - **Chamfering**
  - **Threading**
- **Insert available with PVD coating**
- **Holders offered in steel and carbide execution**
- **Custom solutions on request**

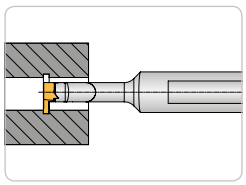
Boring bars

HSIMD	40	16	S	R
HSIM = Holder SIM D = Size (Z, A, B, C, D)	Maximum work length 40 mm	Shank diameter 16 mm	Version S = Steel otherwise Carbide / brazed	Version R = Right-hand L = Left-hand

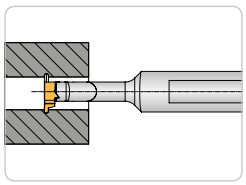
Inserts

SIM097A	V	20	30	01	W	R/L	AP	5020
SIM097 Insert A = Size (Z, A, B, C, D)	V = Radius K = Copying F = Chamfering G = Threading VF = Pre-crooving and chamfering R30 = Back turning 071-164 = Cir-clip 471/472	Groove width EB = 2 mm	Groove depth ET = 3 mm	Corner radius R = 0.1 mm	Location	Version R = Right-hand L = Left-hand	ARNO®-Application area	Grade code (ISO)

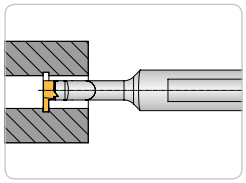
Program overview boring bars and inserts



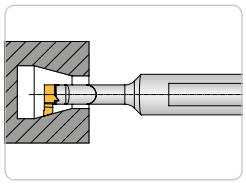
Grooving
Page 51



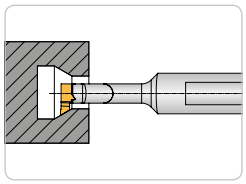
Radius grooving
Page 52



Cir-clip DIN 471/472
Page 53



Copying 15°
Page 54



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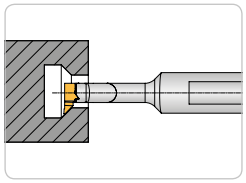
Page 55



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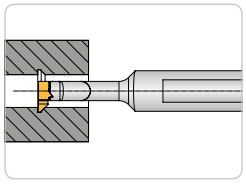
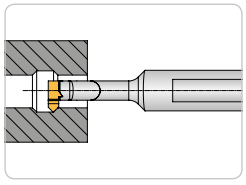
Page 56

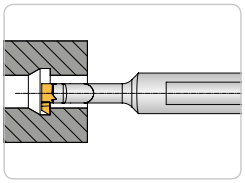


Pre-grooving and chamfering
Page 57



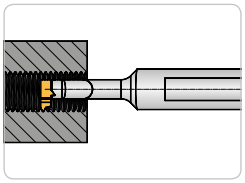
Chamfering 45°
Page 58

Program overview boring bars and inserts



Back turning

Page 59



Threading 60° Metric partial profile

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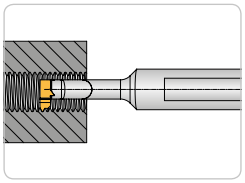

Threading 60° Metric full profile

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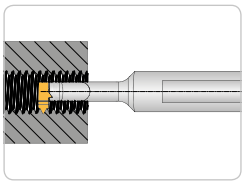

Whitworth pipe thread 55° DIN ISO 228-Full profile

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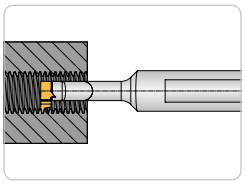

Trapezoidal 30° DIN ISO 103-Partial profile

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Grooving

with ic

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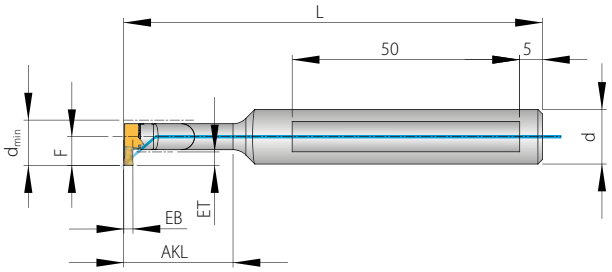

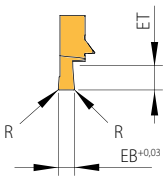

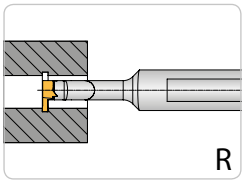

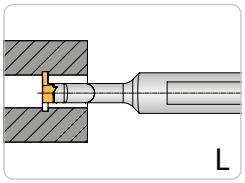

*) = Steel boring bar EB = Groove width (mm) ET = Groove depth (mm) R = Radius

Insert								Boring bar				
					PG 15							
d_{min}	ET	EB	R	Designation	AK1020	AP5020	F	Size	d	AKL	L	Designation	PG12
6.7	1.0	0.5	0.05	SIM067Z-0510005W R/L	●	●	3.85	Z	12	10	79.5	HSIMZ-1012S R/L*	●
		1.0	0.05	SIM067Z-1010005W R/L	●	●				18	87.5	HSIMZ-1812 R/L	●
		1.5	0.05	SIM067Z-1510005W R/L	●	●				20	89.5	HSIMZ-2012S R/L*	●
		2.0	0.1	SIM067Z-201001W R/L	●	●				26	95.5	HSIMZ-2612 R/L	●
7.7	2.0	0.5	0.05	SIM077Z-0520005W R/L	●	●	4.85			26	95.5	HSIMZ-2612S R/L*	●
		1.0	0.05	SIM077Z-1020005W R/L	●	●				36	105.5	HSIMZ-3612 R/L	●
		1.5	0.05	SIM077Z-1520005W R/L	●	●							
		2.0	0.1	SIM077Z-202001W R/L	●	●							
9.7	3.0						6.35	A	12	12	80	HSIMA-1212S R/L*	●
		1.0	0.05	SIM097A-1030005W R/L	●	●				15	83	HSIMA-1512 R/L	●
		1.5	0.05	SIM097A-1530005W R/L	●	●				24	92	HSIMA-2412 R/L	●
		1.5	0.20	SIM097A-153002W R	–	●				24	92	HSIMA-2412S R/L*	●
		2.0	0.10	SIM097A-203001W R/L	●	●				32	100	HSIMA-3212 R/L	●
		2.5	0.10	SIM097A-253001W R/L	●	●				48	115	HSIMA-4812 R/L	●
		3.0	0.20	SIM097A-303002W R/L	●	●							
11.7	1.0	0.7	–	SIM117B-071000W R/L	●	●	7.6	B	12				
	3.0	0.7	0.05	SIM117B-0730005W R	●	●				14	80	HSIMB-1412S R/L*	●
	3.5	1.0	0.05	SIM117B-1035005W R/L	●	●				29	95	HSIMB-2912S R/L*	●
		1.5	0.05	SIM117B-1535005W R/L	●	●				42	110	HSIMB-4212 R/L	●
		2.0	0.10	SIM117B-203501W R/L	●	●				56	120	HSIMB-5612 R/L	●
		2.5	0.10	SIM117B-253501W R/L	●	●							
		3.0	0.20	SIM117B-303502W R/L	●	●							
13.7	4.0	1.0	0.05	SIM137C-1040005W R/L	●	●	8.85	C	16	16	82	HSIMC-1616S R/L*	●
		1.5	0.05	SIM137C-1540005W R/L	●	●				34	100	HSIMC-3416S R/L*	●
		2.0	0.10	SIM137C-204001W R/L	●	●				45	110	HSIMC-4516 R/L	●
		2.5	0.10	SIM137C-254001W R/L	●	●				64	130	HSIMC-6416 R/L	●
		3.0	0.20	SIM137C-304002W R/L	●	●							
15.7	4.5	2.0	0.10	SIM157D-204501W R/L	●	●	10.1	D	16	18	108	HSIMD-1816S R/L*	●
		2.5	0.10	SIM157D-254501W R/L	●	●				40	130	HSIMD-4016S R/L	●
		3.0	0.20	SIM157D-304502W R/L	●	●				40	130	HSIMD-4016 R/L*	●
		3.5	0.20	SIM157D-354502W R/L	●	●				56	130	HSIMD-5616 R/L	●
		4.0	0.20	SIM157D-404502W R/L	●	●				80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Dimensions in mm

Radius grooving

with ic

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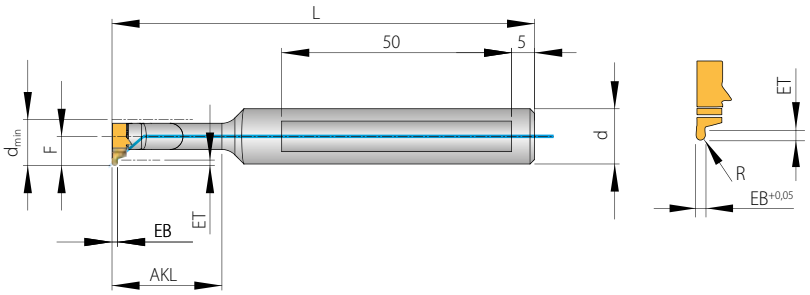

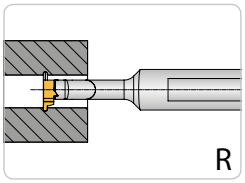

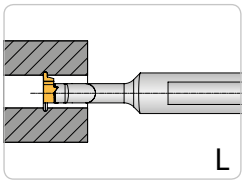

*) = Steel boring bar EB = Groove width (mm) ET = Groove depth (mm) R = Radius

Insert								Boring bar				
d_{min}	ET	EB	R	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
9.7	1.0	0.8	0.40	SIM097A-V-081004 R/L	●	●	6.35	A	12	12	80	HSIMA-1212S R/L*	●
		1.2	0.60	SIM097A-V-121006 R/L	●	●				15	83	HSIMA-1512 R/L	●
		1.8	0.90	SIM097A-V-181009 R/L	●	●				24	92	HSIMA-2412 R/L	●
										24	92	HSIMA-2412S R/L*	●
										32	100	HSIMA-3212 R/L	●
										48	115	HSIMA-4812 R/L	●
11.7	2.5	0.8	0.40	SIM117B-V-082504 R/L	●	●	7.6	B	12				
		1.0	0.50	SIM117B-V-102505 R/L	●	●				14	80	HSIMB-1412S R/L*	●
		1.2	0.60	SIM117B-V-122506 R/L	●	●				29	95	HSIMB-2912S R/L*	●
		1.8	0.90	SIM117B-V-182509 R/L	●	●				42	110	HSIMB-4212 R/L	●
		2.0	1.00	SIM117B-V-202510 R/L	●	●				56	120	HSIMB-5612 R/L	●
		3.0	1.50	SIM117B-V-302515 R/L	●	●							
13.7	4.0	1.2	0.60	SIM137C-V-124006 R/L	●	●	8.85	C	16	16	82	HSIMC-1616S R/L*	●
		1.8	0.90	SIM137C-V-184009 R/L	●	●				34	100	HSIMC-3416S R/L*	●
		2.0	1.00	SIM137C-V-204010 R/L	●	●				45	110	HSIMC-4516 R/L	●
		2.2	1.10	SIM137C-V-224011 R/L	●	●				64	130	HSIMC-6416 R/L	●
		3.0	1.50	SIM137C-V-304015 R/L	●	●							
15.7	4.5	1.8	0.90	SIM157D-V-184509 R/L	●	●	10.1	D	16	18	108	HSIMD-1816S R/L*	●
		2.2	1.10	SIM157D-V-224511 R/L	●	●				40	130	HSIMD-4016S R/L*	●
		3.0	1.50	SIM157D-V-304515 R/L	●	●				40	130	HSIMD-4016 R/L	●
		4.0	2.00	SIM157D-V-404520 R/L	●	●				56	130	HSIMD-5616 R/L	●
										80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Cir-clip DIN 471/472

with ic

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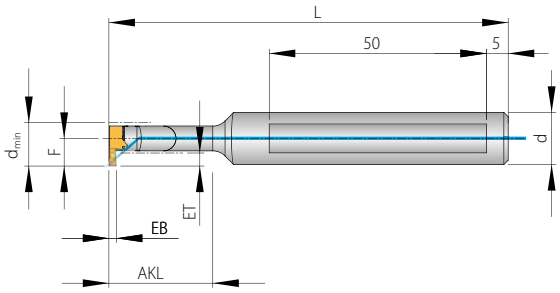

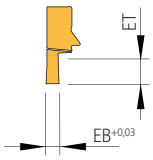

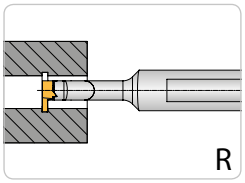

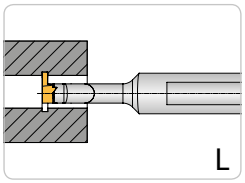

*) = Steel boring bar EB = Groove width (mm) ET = Groove depth (mm)

Insert								Boring bar			
				PG 15							
d_{min}	ET	EB	Designation	AK1020	AP5020	F	Size	d	AKL	L	Designation	PG 12
9.7	1.0	0.73	**SIM097A-071000W R/L**	●	●	6.35	A	12	12	80	**HSIMA-1212S R/L***	●
	1.0	0.83	**SIM097A-081000W R/L**	●	●				15	83	**HSIMA-1512 R/L**	●
	3.0	0.93	**SIM097A-093000W R/L**	●	●				24	92	**HSIMA-2412 R/L**	●
	3.0	1.19	**SIM097A-113000W R/L**	●	●				24	92	**HSIMA-2412S R/L***	●
	3.0	1.39	**SIM097A-133000W R/L**	●	●				32	100	**HSIMA-3212 R/L**	●
	3.0	1.69	**SIM097A-163000W R/L**	●	●				48	115	**HSIMA-4812 R/L**	●
11.7	1.0	0.73	**SIM117B-071000W R/L**	●	●	7.6	B	12				
	1.0	0.83	**SIM117B-081000W R/L**	●	●				14	80	**HSIMB-1412S R/L***	●
	3.5	0.93	**SIM117B-093500W R/L**	●	●				29	95	**HSIMB-2912S R/L***	●
	3.5	1.19	**SIM117B-113500W R/L**	●	●				42	110	**HSIMB-4212 R/L**	●
	3.5	1.39	**SIM117B-133500W R/L**	●	●				56	120	**HSIMB-5612 R/L**	●
	3.5	1.69	**SIM117B-163500W R/L**	●	●							
13.7	1.0	0.73	**SIM137C-071000W R/L**	●	●	8.85	C	16				
	1.0	0.83	**SIM137C-081000W R/L**	●	●				16	82	**HSIMC-1616S R/L***	●
	4.0	0.93	**SIM137C-094000W R/L**	●	●				34	100	**HSIMC-3416S R/L***	●
	4.0	1.19	**SIM137C-114000W R/L**	●	●				45	110	**HSIMC-4516 R/L**	●
	4.0	1.39	**SIM137C-134000W R/L**	●	●				64	130	**HSIMC-6416 R/L**	●
	4.0	1.69	**SIM137C-164000W R/L**	●	●							
15.7	1.0	0.73	**SIM157D-071000W R/L**	●	●	10.1	D	16	18	108	**HSIMD-1816S R/L***	●
	1.0	0.83	**SIM157D-081000W R/L**	●	●				40	130	**HSIMD-4016S R/L***	●
	4.5	0.93	**SIM157D-094500W R/L**	●	●				40	130	**HSIMD-4016 R/L**	●
	4.5	1.19	**SIM157D-114500W R/L**	●	●				56	130	**HSIMD-5616 R/L**	●
	4.5	1.39	**SIM157D-134500W R/L**	●	●				80	150	**HSIMD-8016 R/L**	●
	4.5	1.69	**SIM157D-164500W R/L**	●	●							

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

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with ic

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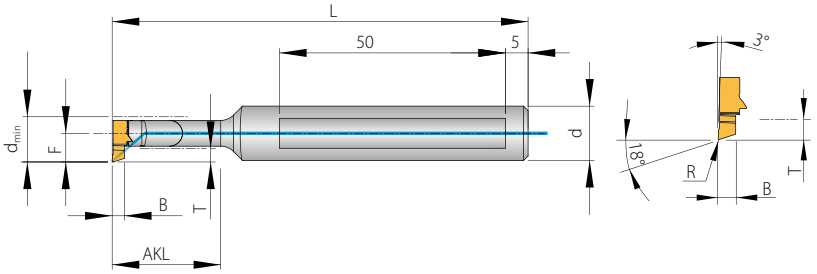

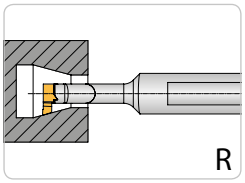

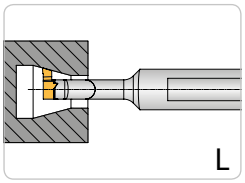

*) = Steel boring bar B = Groove width (mm) T = Groove depth (mm) R = Radius

Insert								Size	Boring bar				
d_{min}	T	B	R	Designation	PG 15 AK1020	PG 15 AP5020	F		d	AKL	L	Designation	PG 12
6.7	1.0	2.2	0.2	SIM067Z-K18-02 R/L	●	●	3.85	Z	12	10	79.5	HSIMZ-1012S R/L*	●
										18	87.5	HSIMZ-1812 R/L	●
			0.4	SIM067Z-K18-04 R/L	●	●				20	89.5	HSIMZ-2012S R/L*	●
										26	95.5	HSIMZ-2612 R/L	●
										26	95.5	HSIMZ-2612S R/L*	●
										36	105.5	HSIMZ-3612 R/L	●
9.7	3.0	2.70	0.2	SIM097A-K18-02 R/L	●	●	6.35	A	12	12	80	HSIMA-1212S R/L*	●
										15	83	HSIMA-1512 R/L	●
										24	92	HSIMA-2412 R/L	●
										24	92	HSIMA-2412S R/L*	●
										32	100	HSIMA-3212 R/L	●
										48	115	HSIMA-4812 R/L	●
11.7	3.5	3.70	0.2	SIM117B-K18-02 R/L	●	●	7.6	B	12	14	80	HSIMB-1412S R/L*	●
										29	95	HSIMB-2912S R/L*	●
										42	110	HSIMB-4212 R/L	●
										56	120	HSIMB-5612 R/L	●
13.7	4.0	3.70	0.2	SIM137C-K18-02 R/L	●	●	8.85	C	16	16	82	HSIMC-1616S R/L*	●
										34	100	HSIMC-3416S R/L*	●
										45	110	HSIMC-4516 R/L	●
										64	130	HSIMC-6416 R/L	●
15.7	4.5	4.70	0.2	SIM157D-K18-02 R/L	●	●	10.1	D	16	18	108	HSIMD-1816S R/L*	●
										40	130	HSIMD-4016S R/L*	●
										40	130	HSIMD-4016 R/L	●
										56	130	HSIMD-5616 R/L	●
										80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
Z	AS 0030	T5107-IP	0.6	M 2.0
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

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with ic

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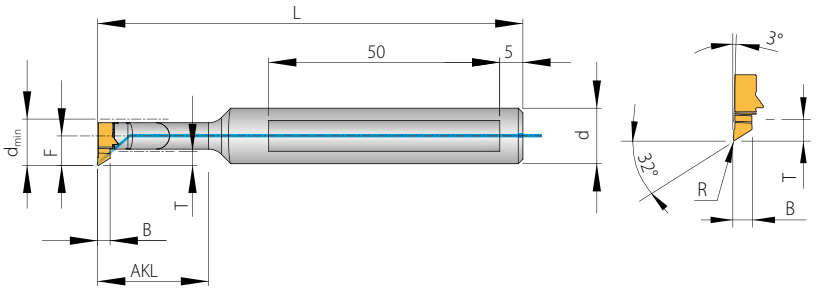
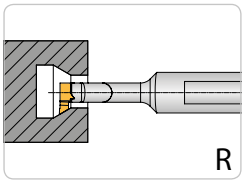
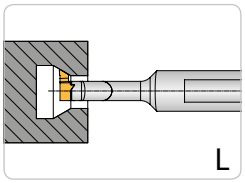


*) = Steel boring bar B = Groove width (mm) T = Groove depth (mm) R = Radius





Insert								Boring bar				
d_{min}	T	B	R	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
9.7	3.0	2.70	0.2	**SIM097A-K32-02 R/L**	●	●	6.35	A	12	12	80	**HSIMA-1212S R/L***	●
										15	83	**HSIMA-1512 R/L**	●
										24	92	**HSIMA-2412 R/L**	●
										24	92	**HSIMA-2412S R/L***	●
										32	100	**HSIMA-3212 R/L**	●
										48	115	**HSIMA-4812 R/L**	●
11.7	3.5	3.70	0.2	**SIM117B-K32-02 R/L**	●	●	7.6	B	12	14	80	**HSIMB-1412S R/L***	●
										29	95	**HSIMB-2912S R/L***	●
										42	110	**HSIMB-4212 R/L**	●
										56	120	**HSIMB-5612 R/L**	●
13.7	4.0	3.70	0.2	**SIM137C-K32-02 R/L**	●	●	8.85	C	16	16	82	**HSIMC-1616S R/L***	●
										34	100	**HSIMC-3416S R/L***	●
										45	110	**HSIMC-4516 R/L**	●
										64	130	**HSIMC-6416 R/L**	●
15.7	4.5	4.70	0.2	**SIM157D-K32-02 R/L**	●	●	10.1	D	16	18	108	**HSIMD-1816S R/L***	●
										40	130	**HSIMD-4016S R/L***	●
										40	130	**HSIMD-4016 R/L**	●
										56	130	**HSIMD-5616 R/L**	●
										80	150	**HSIMD-8016 R/L**	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Copying 45°

with ic

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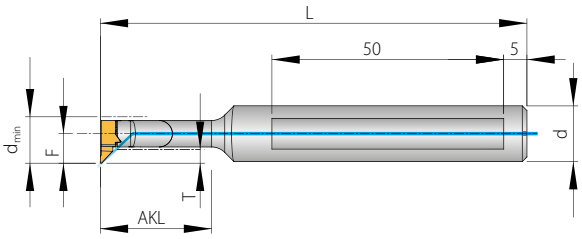

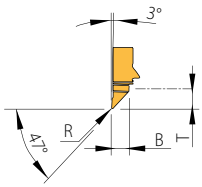

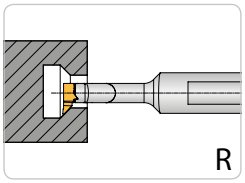

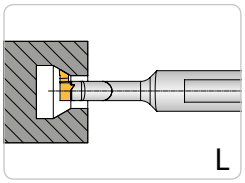

*) = Steel boring bar B = Groove width (mm) T = Groove depth (mm) R = Radius

Insert									Boring bar				
d_{min}	T	B	R	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
9.7	3.0	2.7	0.2	**SIM097A-K47-02 R/L**	●	●	6.35	A	12	12	80	**HSIMA-1212S R/L***	●
										15	83	**HSIMA-1512 R/L**	●
										24	92	**HSIMA-2412 R/L**	●
										24	92	**HSIMA-2412S R/L***	●
										32	100	**HSIMA-3212 R/L**	●
										48	115	**HSIMA-4812 R/L**	●
11.7	3.5	3.7	0.2	**SIM117B-K47-02 R/L**	●	●	7.6	B	12	14	80	**HSIMB-1412S R/L***	●
										29	95	**HSIMB-2912S R/L***	●
										42	110	**HSIMB-4212 R/L**	●
										56	120	**HSIMB-5612 R/L**	●
13.7	4.0	3.7	0.2	**SIM137C-K47-02 R/L**	●	●	8.85	C	16	16	82	**HSIMC-1616S R/L***	●
										34	100	**HSIMC-3416S R/L***	●
										45	110	**HSIMC-4516 R/L**	●
										64	130	**HSIMC-6416 R/L**	●
15.7	4.5	4.7	0.2	**SIM157D-K47-02 R/L**	●	●	10.1	D	16	18	108	**HSIMD-1816S R/L***	●
										40	130	**HSIMD-4016S R/L***	●
										40	130	**HSIMD-4016 R/L**	●
										56	130	**HSIMD-5616 R/L**	●
										80	150	**HSIMD-8016 R/L**	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Pre-grooving and chamfering

with ic

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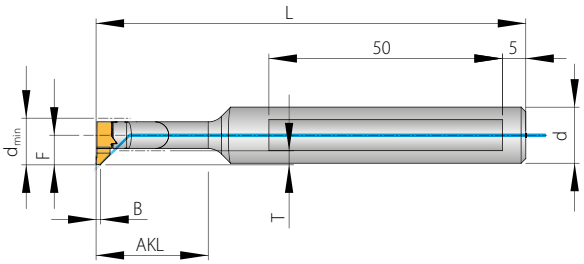

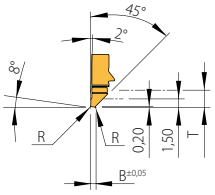

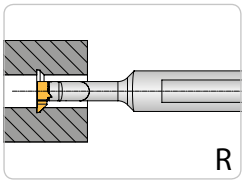

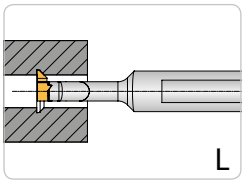

*) = Steel boring bar B = Groove width (mm) T = Groove depth (mm) R = Radius

Insert								Boring bar				
d_{min}	T	B	R	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
9.7	3.0	1.0	0.1	SIM097A-VF-0810-45 R/L	●	●	6.35	A	12	12	80	HSIMA-1212S R/L*	●
										15	83	HSIMA-1512 R/L	●
										24	92	HSIMA-2412 R/L	●
										24	92	HSIMA-2412S R/L*	●
										32	100	HSIMA-3212 R/L	●
										48	115	HSIMA-4812 R/L	●
11.7	3.5	1.0	0.1	SIM117B-VF-0810-45 R/L	●	●	7.6	B	12	14	80	HSIMB-1412S R/L*	●
										29	95	HSIMB-2912S R/L*	●
										42	110	HSIMB-4212 R/L	●
										56	120	HSIMB-5612 R/L	●
13.7	4.0	1.5	0.1	SIM137C-VF-0815-45 R/L	●	●	8.85	C	16	16	82	HSIMC-1616S R/L*	●
										34	100	HSIMC-3416S R/L*	●
										45	110	HSIMC-4516 R/L	●
										64	130	HSIMC-6416 R/L	●
15.7	4.5	1.5	0.1	SIM157D-VF-0815-45 R/L	●	●	10.1	D	16	18	108	HSIMD-1816S R/L*	●
										40	130	HSIMD-4016S R/L*	●
										40	130	HSIMD-4016 R/L	●
										56	130	HSIMD-5616 R/L	●
										80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Chamfering 45°

with ic

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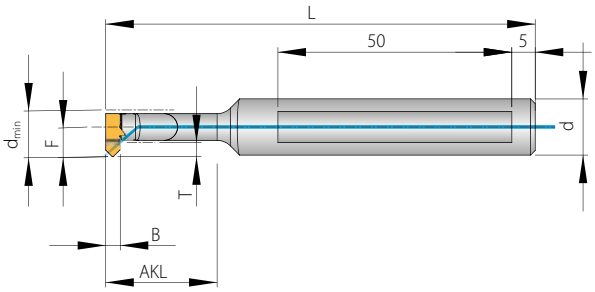

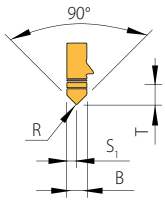

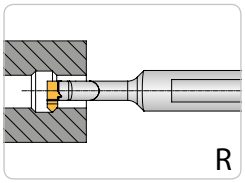

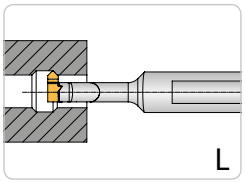

*) = Steel boring bar B = Groove width (mm) T = Groove depth (mm) R = Radius

Insert									Boring bar				
d_{min}	T	B	R	S_1	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
6.7	1.0	2.2	0.2	1.1	**SIM067Z-F45-02 R/L**	●	●	3.85	Z	12	10	79.5	**HSIMZ-1012S R/L***	●
											18	87.5	**HSIMZ-1812 R/L**	●
											20	89.5	**HSIMZ-2012S R/L***	●
											26	95.5	**HSIMZ-2612 R/L**	●
											26	95.5	**HSIMZ-2612S R/L***	●
											36	105.5	**HSIMZ-3612 R/L**	●
9.7	3.0	3.0	0.2	1.5	**SIM097A-F45-02 R/L**	●	●	6.35	A	12	12	80	**HSIMA-1212S R/L***	●
											15	83	**HSIMA-1512 R/L**	●
											24	92	**HSIMA-2412 R/L**	●
											24	92	**HSIMA-2412S R/L***	●
											32	100	**HSIMA-3212 R/L**	●
											48	115	**HSIMA-4812 R/L**	●
11.7	3.5	4.0	0.2	2.0	**SIM117B-F45-02 R/L**	●	●	7.6	B	12	14	80	**HSIMB-1412S R/L***	●
											29	95	**HSIMB-2912S R/L***	●
											42	110	**HSIMB-4212 R/L**	●
											56	120	**HSIMB-5612 R/L**	●
13.7	4.0	4.0	0.2	2.0	**SIM137C-F45-02 R/L**	●	●	8.85	C	16	16	82	**HSIMC-1616S R/L***	●
											34	100	**HSIMC-3416S R/L***	●
											45	110	**HSIMC-4516 R/L**	●
											64	130	**HSIMC-6416 R/L**	●
15.7	4.5	5.0	0.2	2.5	**SIM157D-F45-02 R/L**	●	●	10.1	D	16	18	108	**HSIMD-1816S R/L***	●
											40	130	**HSIMD-4016S R/L***	●
											40	130	**HSIMD-4016 R/L**	●
											56	130	**HSIMD-5616 R/L**	●
											80	150	**HSIMD-8016 R/L**	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
Z	AS 0030	T5107-IP	0.6	M 2.0
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Back turning

with ic

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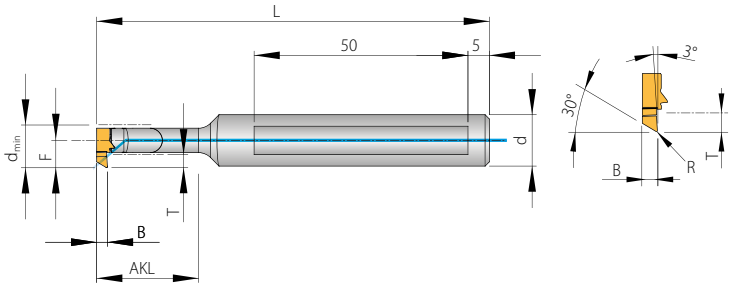

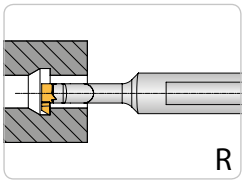

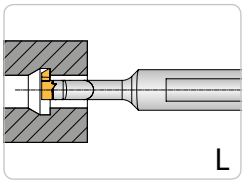

*) = Steel boring bar B = Groove width (mm) T = Groove depth (mm) R = Radius

Insert								Boring bar				
					PG 15							
d_{min}	T	B	R	Designation	AK1020	AP5020	F	Size	d	AKL	L	Designation	PG 12
6.7	1.0	2.51	0.1	SIM067Z-R30-01 R/L	●	●	3.85	Z	12	10	79.5	HSIMZ-1012S R/L*	●
										18	87.5	HSIMZ-1812 R/L	●
										20	89.5	HSIMZ-2012S R/L*	●
										26	95.5	HSIMZ-2612 R/L	●
										26	95.5	HSIMZ-2612S R/L*	●
										36	105.5	HSIMZ-3612 R/L	●
9.7	3.0	2.5	0.2	SIM097A-R30-02 R/L	●	●	6.35	A	12	12	80	HSIMA-1212S R/L*	●
										15	83	HSIMA-1512 R/L	●
										24	92	HSIMA-2412 R/L	●
										24	92	HSIMA-2412S R/L*	●
										32	100	HSIMA-3212 R/L	●
										48	115	HSIMA-4812 R/L	●
11.7	3.5	3.5	0.2	SIM117B-R30-02 R/L	●	●	7.6	B	12	14	80	HSIMB-1412S R/L*	●
										29	95	HSIMB-2912S R/L*	●
										42	110	HSIMB-4212 R/L	●
										56	120	HSIMB-5612 R/L	●
13.7	4.0	3.5	0.2	SIM137C-R30-02 R/L	●	●	8.85	C	16	16	82	HSIMC-1616S R/L*	●
										34	100	HSIMC-3416S R/L*	●
										45	110	HSIMC-4516 R/L	●
										64	130	HSIMC-6416 R/L	●
15.7	4.5	4.5	0.2	SIM157D-R30-02 R/L	●	●	10.1	D	16	18	108	HSIMD-1816S R/L*	●
										40	130	HSIMD-4016S R/L*	●
										40	130	HSIMD-4016 R/L	●
										56	130	HSIMD-5616 R/L	●
										80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
Z	AS 0030	T5107-IP	0.6	M 2.0
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Threading 60° Metric partial profile

with ic

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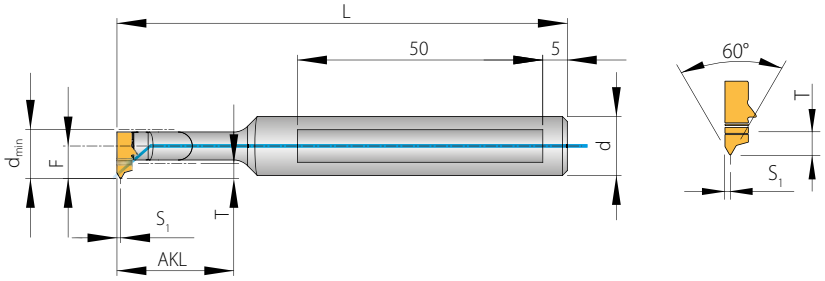

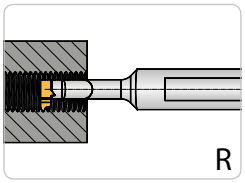

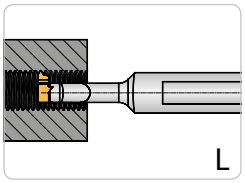

*) = Steel boring bar T = Groove depth (mm) M – ISO-Metric MF – ISO-Metric – Fine

Insert									Boring bar				
d_{min}	Typ	P Pitch	S_1	T	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
6.7				1.0				3.85	Z	12	10	79.5	HSIMZ-1012S R/L*	●
											18	87.5	HSIMZ-1812 R/L	●
	M	1.25	0.8		SIM067Z-G-M125 R/L	●	●				20	89.5	HSIMZ-2012S R/L*	●
	MF	0.5–1.00	0.8		SIM067Z-G-MF050100 R/L	●	●				26	95.5	HSIMZ-2612 R/L	●
											26	95.5	HSIMZ-2612S R/L*	●
											36	105.5	HSIMZ-3612 R/L	●
8.0				1.8				4.85	A	12	12	80	HSIMA-1212S R/L*	●
	MF	0.5–0.75	0.8		SIM080A-G-MF050075 R/L	●	●				15	83	HSIMA-1512 R/L	●
	MF	1.0–1.25	0.8		SIM080A-G-MF100125 R/L	●	●				24	92	HSIMA-2412 R/L	●
	M	1.5–1.75	1.0		SIM080A-G-M150175 R/L	●	●				24	92	HSIMA-2412S R/L*	●
											32	100	HSIMA-3212 R/L	●
											48	115	HSIMA-4812 R/L	●
10.7	MF	0.5–0.75	0.8	3.0	SIM107B-G-MF050075 R/L	●	●	6.8	B	12	14	80	HSIMB-1412S R/L*	●
	MF	1.0–1.25	0.8		SIM107B-G-MF100125 R/L	●	●				29	95	HSIMB-2912S R/L*	●
	MF	1.5–1.75	1.0		SIM107B-G-MF150175 R/L	●	●				42	110	HSIMB-4212 R/L	●
	M	2.0	1.3		SIM107B-G-M200 R/L	●	●				56	120	HSIMB-5612 R/L	●
	M	2.5	1.4		SIM107B-G-M250 R/L	●	●							
13.7	MF	0.5–0.75	0.8	4.2	SIM137C-G-MF050075 R/L	●	●	8.85	C	16	16	82	HSIMC-1616S R/L*	●
	MF	1.0–1.25	0.8		SIM137C-G-MF100125 R/L	●	●				34	100	HSIMC-3416S R/L*	●
	MF	1.5–1.75	1.0		SIM137C-G-MF150175 R/L	●	●				45	110	HSIMC-4516 R/L	●
	M	2.0	1.3		SIM137C-G-M200 R/L	●	●				64	130	HSIMC-6416 R/L	●
	M	2.5	1.4		SIM137C-G-M250 R/L	●	●							
15.7	MF	1.0–1.25	0.8	4.7	SIM157D-G-MF100125 R/L	●	●	10.1	D	16	18	108	HSIMD-1816S R/L*	●
	MF	1.5–1.75	1.0		SIM157D-G-MF150175 R/L	●	●				40	130	HSIMD-4016S R/L*	●
	MF	2.00	1.3		SIM157D-G-MF200 R/L	●	●				40	130	HSIMD-4016 R/L	●
	M	2.50	1.4		SIM157D-G-M250 R/L	●	●				56	130	HSIMD-5616 R/L	●
											80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
Z	AS 0030	T5107-IP	0.6	M 2.0
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Threading 60° Metric full profile

with ic

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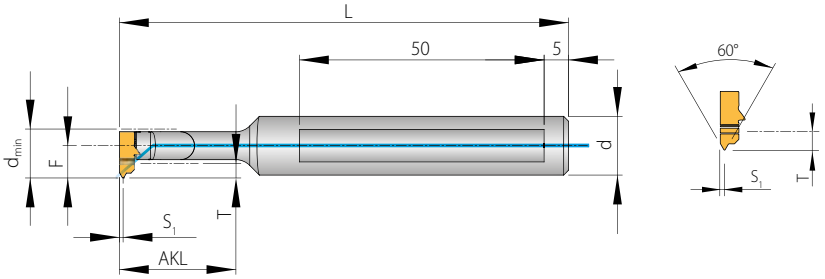
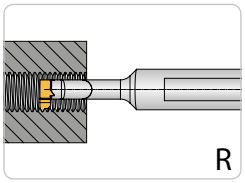
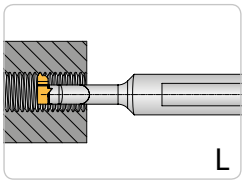






*) = Steel boring bar T = Groove depth (mm) M – ISO-Metric MF – ISO-Metric – Fine

Insert									Boring bar				
d_{min}	Typ	P Pitch	S_1	T	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
8.0	M	1.5	1.0	1.8	**SIM080A-GV-M150 R/L**	●	●	4.85	A	12	12	80	**HSIMA-1212S R/L***	●
											15	83	**HSIMA-1512 R/L**	●
											24	92	**HSIMA-2412 R/L**	●
											24	92	**HSIMA-2412S R/L***	●
											32	100	**HSIMA-3212 R/L**	●
											48	115	**HSIMA-4812 R/L**	●
10.7	MF	1.0	0.8	3.0	**SIM107B-GV-MF100 R/L**	●	●	6.8	B	12	14	80	**HSIMB-1412S R/L***	●
	MF	1.5	1.0		**SIM107B-GV-MF150 R/L**	●	●				29	95	**HSIMB-2912S R/L***	●
	M	2.0	1.3		**SIM107B-GV-M200 R/L**	●	●				42	110	**HSIMB-4212 R/L**	●
	M	2.5	1.4		**SIM107B-GV-M250 R/L**	●	●				56	120	**HSIMB-5612 R/L**	●
	M	3.0	1.6		**SIM107B-GV-M300 R/L**	●	●							
13.7	MF	1.0	0.8	4.2	**SIM137C-GV-MF100 R/L**	●	●	8.85	C	16	16	82	**HSIMC-1616S R/L***	●
	MF	1.5	1.0		**SIM137C-GV-MF150 R/L**	●	●				34	100	**HSIMC-3416S R/L***	●
	M	2.0	1.3		**SIM137C-GV-M200 R/L**	●	●				45	110	**HSIMC-4516 R/L**	●
	M	2.5	1.4		**SIM137C-GV-M250 R/L**	●	●				64	130	**HSIMC-6416 R/L**	●
15.7	MF	1.0	0.8	4.7	**SIM157D-GV-MF100 R/L**	●	●	10.1	D	16	18	108	**HSIMD-1816S R/L***	●
	MF	1.5	1.0		**SIM157D-GV-MF150 R/L**	●	●				40	130	**HSIMD-4016S R/L***	●
	MF	2.0	1.3		**SIM157D-GV-MF200 R/L**	●	●				40	130	**HSIMD-4016 R/L**	●
	M	2.5	1.4		**SIM157D-GV-M250 R/L**	●	●				56	130	**HSIMD-5616 R/L**	●
	M	3.0	1.6		**SIM157D-GV-M300 R/L**	●	●				80	150	**HSIMD-8016 R/L**	●
	M	3.5	1.8		**SIM157D-GV-M350 R/L**	●	●							
	M	4.0	2.0		**SIM157D-GV-M400 R/L**	●	●							

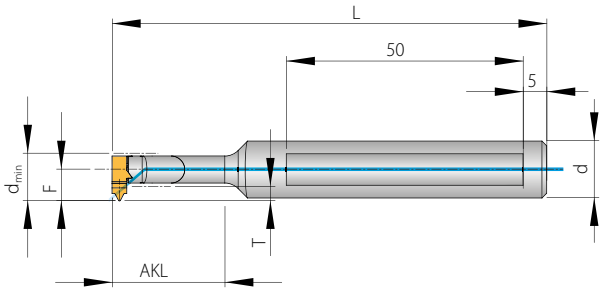
Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Whitworth pipe thread 55° DIN ISO 228-Full profile



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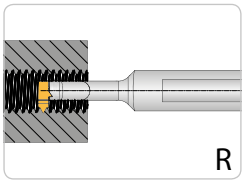

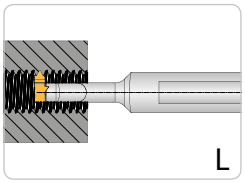

*) = Steel boring bar T = Groove depth (mm)

Insert											Boring bar				
d_{min}	Typ	P Pitch	(TPI)	S_1	T	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
10.7	W228	1.337	19	1.3	3.0	SIM107B-GV-W228/19 R/L	●	●	6.8	B	12	14	80	HSIMB-1412S R/L*	●
												29	95	HSIMB-2912S R/L*	●
		1.814	14	1.6		SIM107B-GV-W228/14 R/L	●	●				42	110	HSIMB-4212 R/L	●
												56	120	HSIMB-5612 R/L	●
15.7	W228				4.7				10.1	D	16	18	108	HSIMD-1816S R/L*	●
		1.814	14	1.6		SIM157D-GV-W228/14 R/L	●	●				40	130	HSIMD-4016S R/L*	●
		2.309	11	2.0		SIM157D-GV-W228/11 R/L	●	●				40	130	HSIMD-4016 R/L	●
												56	130	HSIMD-5616 R/L	●
												80	150	HSIMD-8016 R/L	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
B	AS 0032	T5109-IP	2.2	M 3.0
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Trapezoidal 30° DIN ISO 103-Partial profile

with ic

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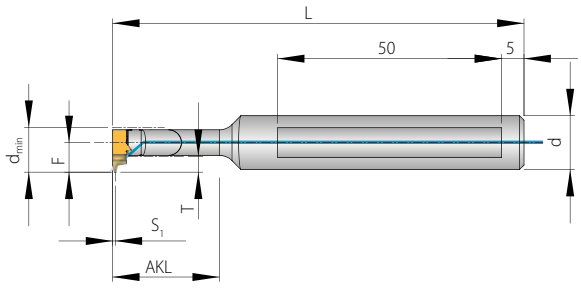

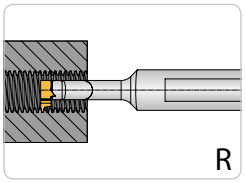

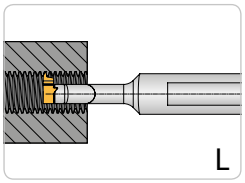

*) = Steel boring bar T = Groove depth (mm)

Insert									Boring bar				
d_{min}	Typ	P Pitch	S_1	T	Designation	PG 15 AK1020	PG 15 AP5020	F	Size	d	AKL	L	Designation	PG 12
								4.85	A	12	12	80	**HSIMA-1212S R/L***	●
8.2	TR103	1.5	0.6	1.9	**SIM082A-G-TR103/1.5 R/L**	●	●				15	83	**HSIMA-1512 R/L**	●
8.7	TR103	2.0	1.0	2.4	**SIM087A-G-TR103/2.0 R/L**	●	●				24	92	**HSIMA-2412 R/L**	●
8.7	TR103	3.0	1.2	2.4	**SIM087A-G-TR103/3.0 R/L**	●	●				24	92	**HSIMA-2412S R/L***	●
											32	100	**HSIMA-3212 R/L**	●
											48	115	**HSIMA-4812 R/L**	●
10.7	TR103	1.5	0.6	3.0	**SIM107B-G-TR103/1.5 R/L**	●	●	6.8	B	12	14	80	**HSIMB-1412S R/L***	●
10.7	TR103	2.0	1.0	3.0	**SIM107B-G-TR103/2.0 R/L**	●	●				29	95	**HSIMB-2912S R/L***	●
10.7	TR103	3.0	1.2	3.0	**SIM107B-G-TR103/3.0 R/L**	●	●				42	110	**HSIMB-4212 R/L**	●
10.7	TR103	4.0	1.6	3.0	**SIM107B-G-TR103/4.0 R/L**	●	●				56	120	**HSIMB-5612 R/L**	●
								8.85	C	16	16	82	**HSIMC-1616S R/L***	●
13.7	TR103	4.0	1.6	4.2	**SIM137C-G-TR103/4.0 R/L**	●	●				34	100	**HSIMC-3416S R/L***	●
13.7	TR103	5.0	2.0	4.2	**SIM137C-G-TR103/5.0 R/L**	●	●				45	110	**HSIMC-4516 R/L**	●
											64	130	**HSIMC-6416 R/L**	●
		2.0	1.0		**SIM157D-G-TR103/2.0 R/L**	●	●	10.1	D	16	18	108	**HSIMD-1816S R/L***	●
		3.0	1.2		**SIM157D-G-TR103/3.0 R/L**	●	●				40	130	**HSIMD-4016S R/L***	●
15.7	TR103	4.0	1.6	4.7	**SIM157D-G-TR103/4.0 R/L**	●	●				40	130	**HSIMD-4016 R/L**	●
		5.0	2.0		**SIM157D-G-TR103/5.0 R/L**	●	●				56	130	**HSIMD-5616 R/L**	●
		6.0	2.2		**SIM157D-G-TR103/6.0 R/L**	●	●				80	150	**HSIMD-8016 R/L**	●

Minimum quantity for all standard inserts: 2 pieces

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
A	AS 0031	T5108-IP	1.3	M 2.5
B	AS 0032	T5109-IP	2.2	M 3.0
C	AS 0033	T5110-IP	3.4	M 3.5
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Square holders

with ic
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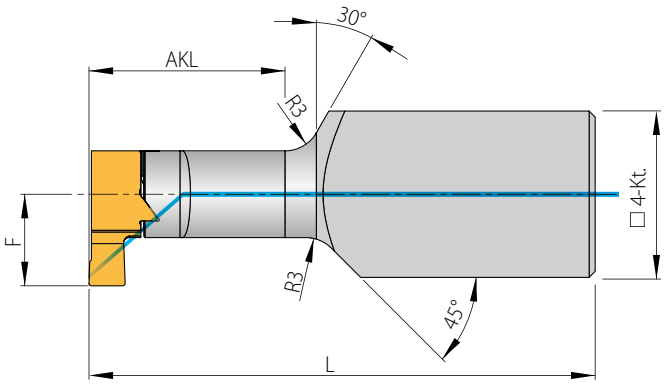
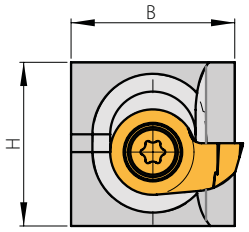




Square holders						
F	**Size**	**H x B**	**AKL**	**L**	**Designation**	**PG 12**
10.1	D	12x20	32	100	**HSIMD-321220 SL**	●

Spare parts

Boring Bars – Size	Screw	Key	Nm	Thread size
D	AS 0034	T5115-IP	5.0	M 4.0

Dimensions in mm

Grade description

Coated

AP5020

PVD-multilayer coating
For machining steel, stainless steel and cast materials. Universal grade with high heat and oxidation resistance.

Uncoated

AK1020

Uncoated fine grain carbide for machining aluminium and non-ferrous materials. Excellent also for material specific semi standard coatings.

Spare parts and accessories

Item	PG 11
Screw	
AS 0030	●
AS 0031	●
AS 0032	●
AS 0033	●
AS 0034	●
Key	
T5107-IP	●
T5108-IP	●
T5109-IP	●
T5110-IP	●
T5115-IP	●

Grooving

Grooving, turning and copying

ISO	Material		Tensile strength (N/mm²)	Cutting speed V_c (m/min) coated AP5020	Cutting speed V_c (m/min) uncoated AK1020
P	Unalloyed steel and cast steel	< 0.15 % C/hardened and tempered	350	20 – 180	20 – 130
		0.15 - 0.45 % C/hardened and tempered	650	20 – 180	20 – 130
		> 0.45 % C/hardened and tempered	1000	20 – 180	20 – 130
	Low alloyed steel and cast steel	annealed	600	15 – 160	15 – 110
		hardened and tempered	900	15 – 160	15 – 110
			1200	15 – 160	15 – 110
	High alloyed steel	annealed	700	20 – 120	20 – 85
	High alloyed tool steel and cast steel	hardened	1100	20 – 120	20 – 85
	Stainless steel	ferritic, annealed	700	20 – 90	20 – 60
	Cast steel	martensitic, hardened and tempered	1000	20 – 180	20 – 60
M	Stainless steel	austenitic and austenitic/	450 – 600	15 – 80	15 – 70
		ferritic, chilled	600 – 900	15 – 80	20 – 110
K	Cast iron	pearlitic/ferritic	500 – 700	20 – 160	20 – 110
		pearlitic/martensitic	700 – 850	20 – 160	20 – 110
			800 – 1100	20 – 160	20 – 110
	Cast iron with nodular graphite	ferritic	550	20 – 150	20 – 110
		pearlitic	800	20 – 150	20 – 110
	Malleable cast iron	ferritic	450	20 – 150	20 – 120
		pearlitic	750	20 – 150	20 – 120
N	Aluminium alloys long chipping	not heat treatable	200	20 – 500	20 – 600
		heat treatable, heat treated	350	20 – 500	20 – 600
	Casted aluminium alloys	≤ 12 % Si, heat treated	250	20 – 500	20 – 600
		≤ 12 % Si, heat treatable, heat treated	300	20 – 500	20 – 600
		≤ 12 % Si, not heat treatable	450	20 – 500	20 – 600
	Copper and copper alloys (Brass/Bronze)	Lead alloys, Pb > 1 %	400	20 – 600	15 – 500
		Brass, Bronze	300	20 – 600	15 – 500
		Aluminium bronze	500	20 – 600	15 – 500
		Copper and elektrolyte copper	200	20 – 600	15 – 500
	Non-ferrous materials	Duroplastice	–	–	–
		Re-inforced plastics	–	–	–
		Hard rubber	–	–	–
S	High temperature resistant alloys	Fe-alloyed, annealed	700	15 – 75	15 – 30
		Fe-alloyed, heat treated	950	15 – 75	15 – 30
		Ni- or Co-alloyed, annealed	800	15 – 40	15 – 40
		Ni- or Co-alloyed, casting	1100	15 – 40	15 – 40
		Ni- or Co-alloyed, heat treated	1200	15 – 40	15 – 40
	Titanium alloys	Pure titan	500 – 700	–	–
	Alpha- and Beta-alloys	heat treated	700 – 1000	–	–
H	Hardened steel	hardened	55 HRC	–	–
			60 HRC	–	–
	Hard cast iron	casting	41 HRC	–	–
	Hardened cast iron	hardened	55 HRC	–	–

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

Grooving

Threading

ISO	Material		Tensile strength (N/mm²)	Cutting speed Vc (m/min) coated AP5020	Cutting speed Vc (m/min) uncoated AK1020
P	Unalloyed steel and cast steel	< 0.15 % C/hardened and tempered	350	80 – 150	80 – 110
		0.15 - 0.45 % C/hardened and tempered	650	80 – 150	80 – 110
		> 0.45 % C/hardened and tempered	1000	60 – 120	60 – 90
	Low alloyed steel and cast steel	annealed	600	70 – 130	70 – 100
		hardened and tempered	900	70 – 120	70 – 90
			1200	70 – 115	70 – 85
	High alloyed steel	annealed	700	60 – 110	60 – 80
	High alloyed tool steel and cast steel	hardened	1100	50 – 90	50 – 70
	Stainless steel	ferritic, annealed	700	50 – 80	50 – 70
	Cast steel	martensitic, hardened and tempered	1000	50 – 80	50 – 70
M	Stainless steel	austenitic and austenitic/	450 – 600	70 – 120	70 – 90
		ferritic, chilled	600 – 900	40 – 90	40 – 65
K	Cast iron	pearlitic/ferritic	500 – 700	–	–
		pearlitic/martensitic	700 – 850	80 – 120	80 – 100
			800 – 1100	–	–
	Cast iron with nodular graphite	ferritic	550	80 – 100	80 – 90
		pearlitic	800	80 – 100	80 – 90
	Malleable cast iron	ferritic	450	70 – 150	70 – 110
		pearlitic	750	–	–
N	Aluminium alloys long chipping	not heat treatable	200	100 – 240	100 – 240
		heat treatable, heat treated	350	80 – 170	80 – 170
	Casted aluminium alloys	≤ 12 % Si, heat treated	250	–	–
		≤ 12 % Si, heat treatable, heat treated	300	–	–
		≤ 12 % Si, not heat treatable	450	–	–
	Copper and copper alloys (Brass/Bronze)	Lead alloys, Pb > 1 %	400	100 – 250	100 – 250
		Brass, Bronze	300	80 – 200	80 – 200
		Aluminium bronze	500	–	–
		Copper and elektrolyte copper	200	100 – 250	100 – 250
	Non-ferrous materials	Duroplastice	–	–	–
		Re-inforced plastics	–	–	–
		Hard rubber	–	–	–
S	High temperature resistant alloys	Fe-alloyed, annealed	700	–	–
		Fe-alloyed, heat treated	950	–	–
		Ni- or Co-alloyed, annealed	800	–	–
		Ni- or Co-alloyed, casting	1100	–	–
		Ni- or Co-alloyed, heat treated	1200	–	–
	Titanium alloys	Pure titan	500 – 700	–	–
	Alpha- and Beta-alloys	heat treated	700 – 1000	–	–
H	Hardened steel	hardened	55 HRC	–	–
			60 HRC	–	–
	Hard cast iron	casting	41 HRC	–	–
	Hardened cast iron	hardened	55 HRC	–	–

The recommended cutting data are only approximate values.
It may be necessary to adjust them to each individual machining application.

Recommended cutting data – Threading – Number of passes

Pitch		Number of passes					
Vc [m/min]		110–140	80–110	65–80	70–90	80–110	200–250
[mm]	Pitch/Inch	Steel strength (N/mm²)			Stainless steel	Cast	Aluminium
		400–700	700–1.000	> 1.000			
0.8	32	8	9	10	10	9	8
1	24	10	11	12	12	12	10
1.25	20–19	12	14	15	15	14	12
1.5	16	15	17	18	18	17	15
1.75	14	17	19	21	21	18	17
2	12	19	22	25	25	20	18
2.5	10	22	26	31	31	22	20
3.0–3.5	8	28	32	38	38	24	22

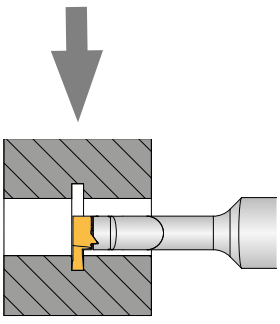
The above mentioned data are general recommendations for machining steel and non-ferrous materials. With hard materials we recommend to reduce cutting speed and increase number of passes.

By cutting edge breakage we suggest to increase number of passes, by edge wear reduce the number of passes.

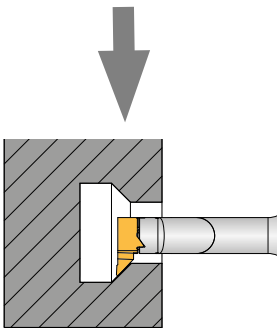
Remark: The chip thickness should be constant at every pass, so with more cutting depth reduce the in-feed in order to obtain constant cutting forces.

SIM – Boring bars – Feed rate

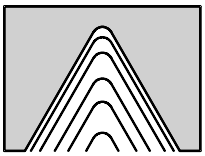
f (mm/rev) **0.01 – 0.05**



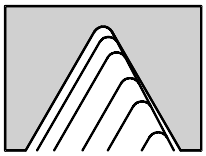
f (mm/rev) **0.03 – 0.10**



Threading



Radial infeed
Radial infeed is the simplest and quickest method. The feed is perpendicular to the turning axis and both flanks of the insert perform the cutting operation. Radial infeed is recommended when the pitch is smaller than 2 mm, for material with short chips, for workhardened materials and stainless steel.



Flank infeed
Infeed at an angle of 3° – 5° to the ank of the thread. Mainly used on NC-machines. Excellent chip control, therefore very suitable for internal threads and long chipping materials. Pitches greater than 2 mm.

Alternating flank infeed
Use of alternate flank infeed is recommended especially in large pitches and for long chipping materials. This method divides the work equally on both flanks, resulting in equal wear on both edges. Alternate flank infeed requires more complicated programming and is not available on all lathes.

Calculation of helix angle β

$$\beta = \frac{P\ (mm)}{D\ (mm)} \times 18.23$$

Example internal thread M10. Pitch 1.5 mm:

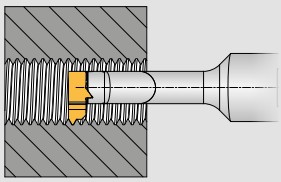
$$\beta = \frac{1.5\ mm}{9.03\ mm} \times 18.23 = 3.03^\circ \text{ helix angle}$$

β = Helix angle (degree)

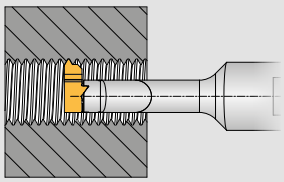
P = Pitch (mm)

D = Edge diameter (mm)

ISO – Internal thread



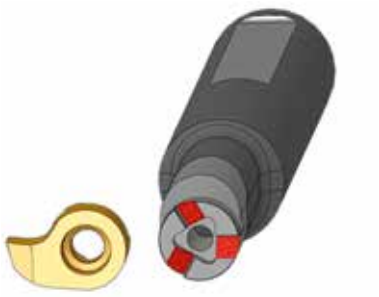
Holder and inserts in
Right-hand version



Holder and inserts in
Left-hand version

Assembly guide

Left boring bar
Left insert

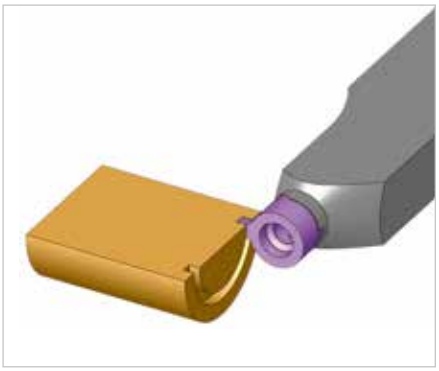


Right boring bar
Right insert

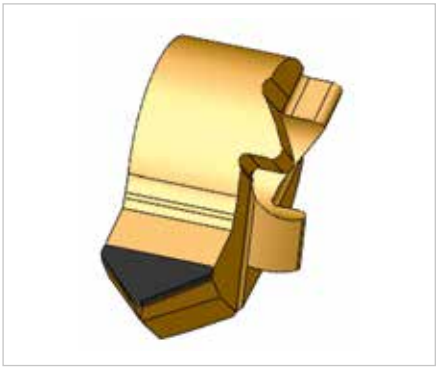
The 3-point location ensures accurate repeatability of the cutting edge height. However always be aware of the edge height. When machining small components small differences can cause big problems.

Suggestions:
- Always select smallest possible insert width, thereby the swarf remains flexible and evacuates the bore easier.
- To avoid swarf cloging we recommend grooving in steps or inserting a swarf release cut.
- Recommended coolant pressure = 5 bar.
- Clean insert pocket with compressed air when changing the insert.

Solutions



Special holder
Special design for face grooving.



Special insert
CBN brazed especially for hard turning.

Special solutions especially for your application!

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