

ARNO[®]

WERKZEUGE

We have a passion for precision.

ACS – ARNO[®]-COOLING-SYSTEM

Part-off and grooving tools
with patented through tool coolant system



09/2014

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



Brand new!

Request catalogue by visiting
www.arno.de



SA-Grooving system



NC-Groove turning system



Short-Cut[®]



Clip-Groove[®]



Profil-Cut



ARNO[®]-Mini-System



SIM – boring bars



Part-off holders and flange mounted holders

Contents

Part-off and grooving with the ACS system

Part-off and grooving

Introduction	Page 4 – 5
Practical examples	Page 7
Program overview	Page 8 – 9
Tool shank options	Page 10

Monoblock holders

Designation system	Page 11
Monoblock holders	Page 12 – 27

Holders for monoblock holders with ACS

KMH holders	Page 28 – 31
-------------------	--------------

Blades

Designation system	Page 32
Blades	Page 33 – 34

Modules

Designation system	Page 35
Modules	Page 36 – 37

Inserts

Geometry	Page 38
Grade description	Page 39
Inserts	Page 40 – 45
Cutting data	Page 46

Flange mounted holders

Introduction	Page 48 – 49
Tool shank options	Page 50
Flange mounted holders	Page 52 – 67
Application reference	Page 68 – 69
Spare parts and accessories	Page 70

For further information please ask for our complete catalogue.

ACS – ARNO®-Cooling-System



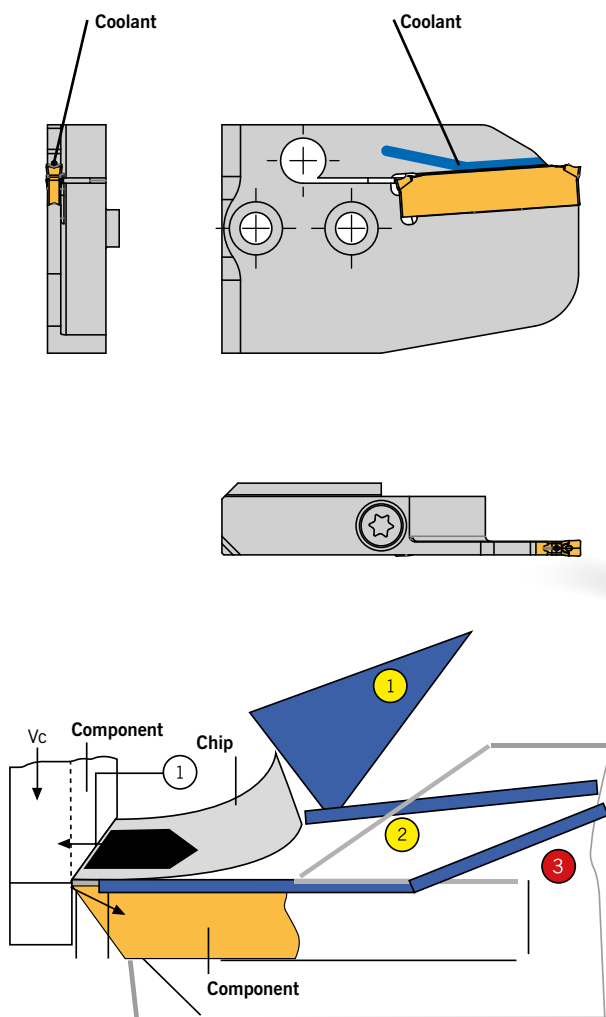
Coolant under the swarf

New technology for modules, blades and monoblock holders. The special coolant system ensures the flow is directed under the swarf and thereby improves tool life considerably.

The market place has already seen many coolant variations which often loses much of efficiency due to poor accuracy from the spray jet to the cutting edge and especially in applications with a deeper groove depth the desired coolant effect and swarf evacuation suffers from only little or no improvement.

ARNO®-Werkzeuge has realised this problem area and by developing the ARNO®-Cooling-System (ACS) solved the problem. This innovative design ensures optimum coolant to the cutting edge during machining. It comes in two variations: ACS1, with one coolant hole and ACS2 with two coolant holes

ACS1



- 1 External coolant from coolant jet
- 2 Through tool coolant via holder or clamp
- 3 New ACS-coolant through the insert seat



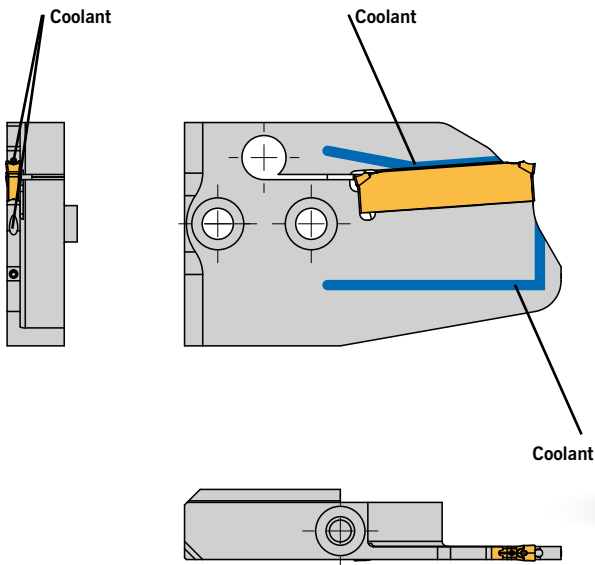
ACS2 - 2 is better than 1

Through a second coolant jet additional coolant gets right on the tool flank.

The coolant jet is going through the insert seat and aims directly at the cutting edge. A loss of effectivity – as seen on other systems – is not a problem. Even in the deepest grooves the cutting edge is kept cool. The coolant gets underneath the swarf and guarantees optimum cutting conditions.

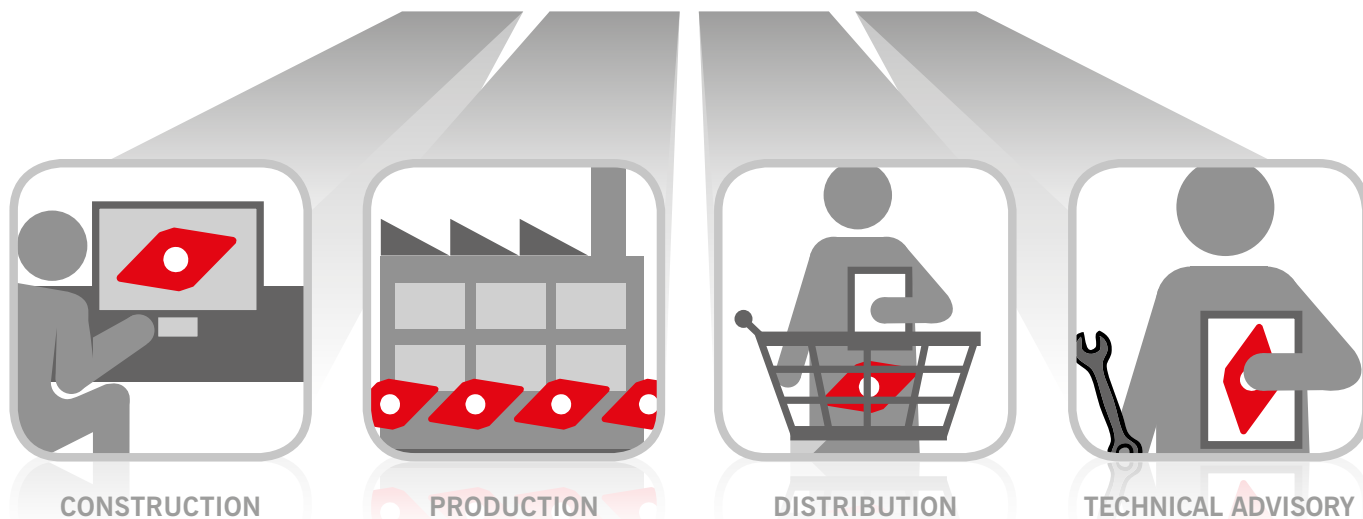
Additional benefits are the reduction of build-up edges and breakouts of the cutting edge. The ACS2 system has an additional coolant jet targeting the insert flank from underneath. This allows higher cutting parameters and longer tool life.

ACS2



ARNO[®]

WERKZEUGE



Quick, flexible and individual.

To have design, production and service all under one roof

is the perfect way of providing standard and special products.

95 % of the standard programme is available from stock. Order received before 6.00 pm CET are dispatched the very same day and in most cases supplied next day.


Our competent team of technical sales engineers will be available to support you on site.

Practical examples


The patented ARNO®-Cooling-System (ACS) increases tool life significantly due to the new and innovative cooling technology. The cutting edge is kept cool while the chip is guided out of the groove, even in deep

grooves. Multiple test at customers proved that the new ACS tools are increasing productivity significantly.

Practical test 1

Jet	
Part-off with ARNO®-ACS2 module Application length 15 mm Part-off width 3 mm $V_c = 120 \text{ m/min}$ $f_n = 0.12 \text{ mm/U}$ Module: MSA-SL-SA3503-65-ACS2 Insert: SA35-3003N-S1 AM5040	
ARNO® – without ACS	120 parts
ARNO®-ACS	300 parts
Information: <ul style="list-style-type: none"> • Material: (stainless steel) • Increase in productivity of over 100 % • Controlled and secure machining 	

Practical test 2

Bush	
Part-off with ARNO®-ACS2 module Application length 8 mm Part-off width 4 mm $V_c = 250 \text{ m/min}$ $f_n = 0.09 \text{ mm/U}$ Module: MSA-SL-SA3504-80-ACS2 Insert: SA35-4004N-ALU AN1015	
ARNO® – without ACS	500 parts
ARNO®-ACS	1.500 parts
Information: <ul style="list-style-type: none"> • Material: (Aluminium-Magnesium alloy) • Productivity increase of around 300 % • Component has a 24.5 mm bore 	

Parting-off – SA-Grooving system with internal coolant ACS

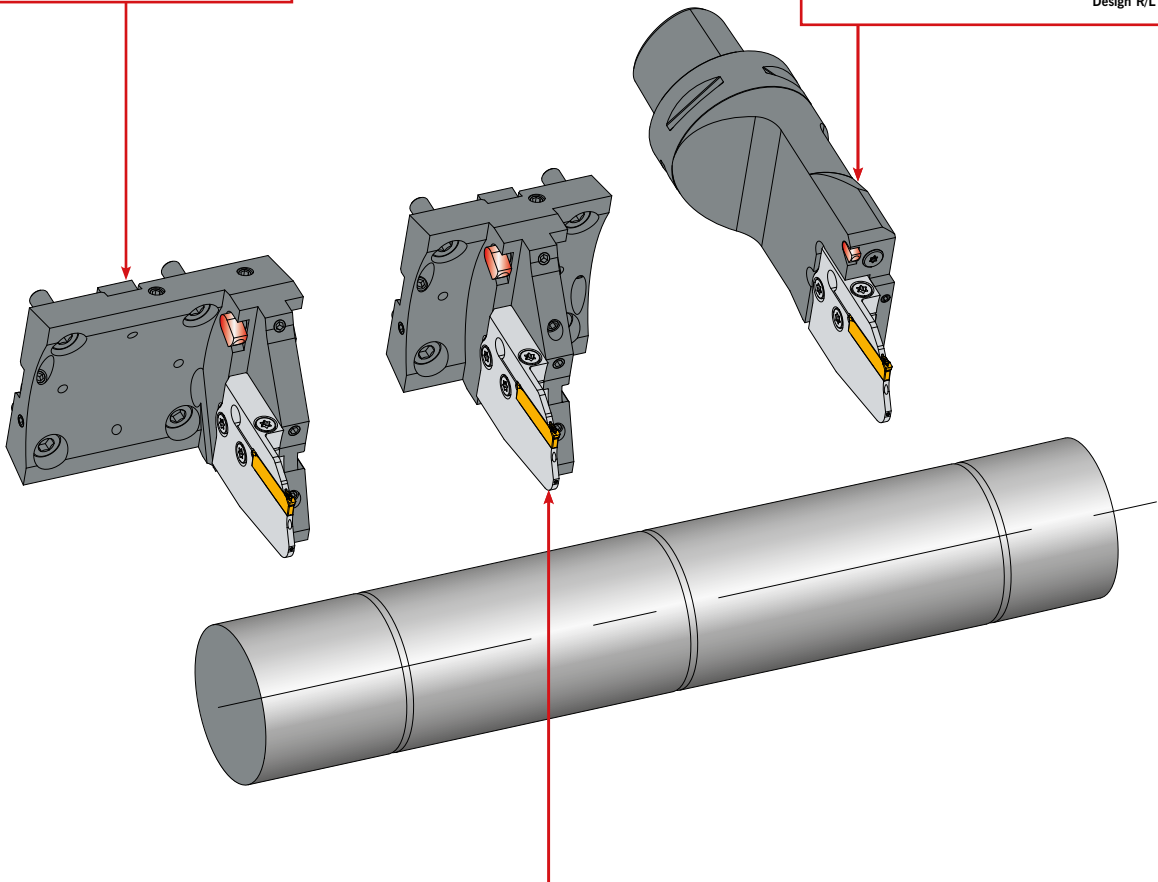


Flange mounted holders
BMT (Daewoo/Doosan; Mori Seiki; Miyano ...)

SA-Modules with ACS
EB = 3.0 – 4.0 mm
ET ≤ 52.5 mm
Design R/L

CAPTO tool holder with internal coolant
Available on request

SSA-Modules with ACS
EB = 3.0 – 4.0 mm
ET ≤ 52.5 mm
Design R/L



Flange mounted holders
BMT (Daewoo/Doosan;
Mori Seiki; Nakamura/Miyano ...)

SA-Modules with ACS
EB = 3.0 – 4.0 mm
ET ≤ 52.5 mm
Design R/L



KMH holders Form B/C

VDI 25/30/40

EB = 3.0 mm

ET ≤ 32.5 mm

Design R/L

SA-Monoblock holders HSA...-ACS-UN

EB = 3.0 mm

ET ≤ 32.5 mm

Design R/L

Flange mounted holders

VDI 30

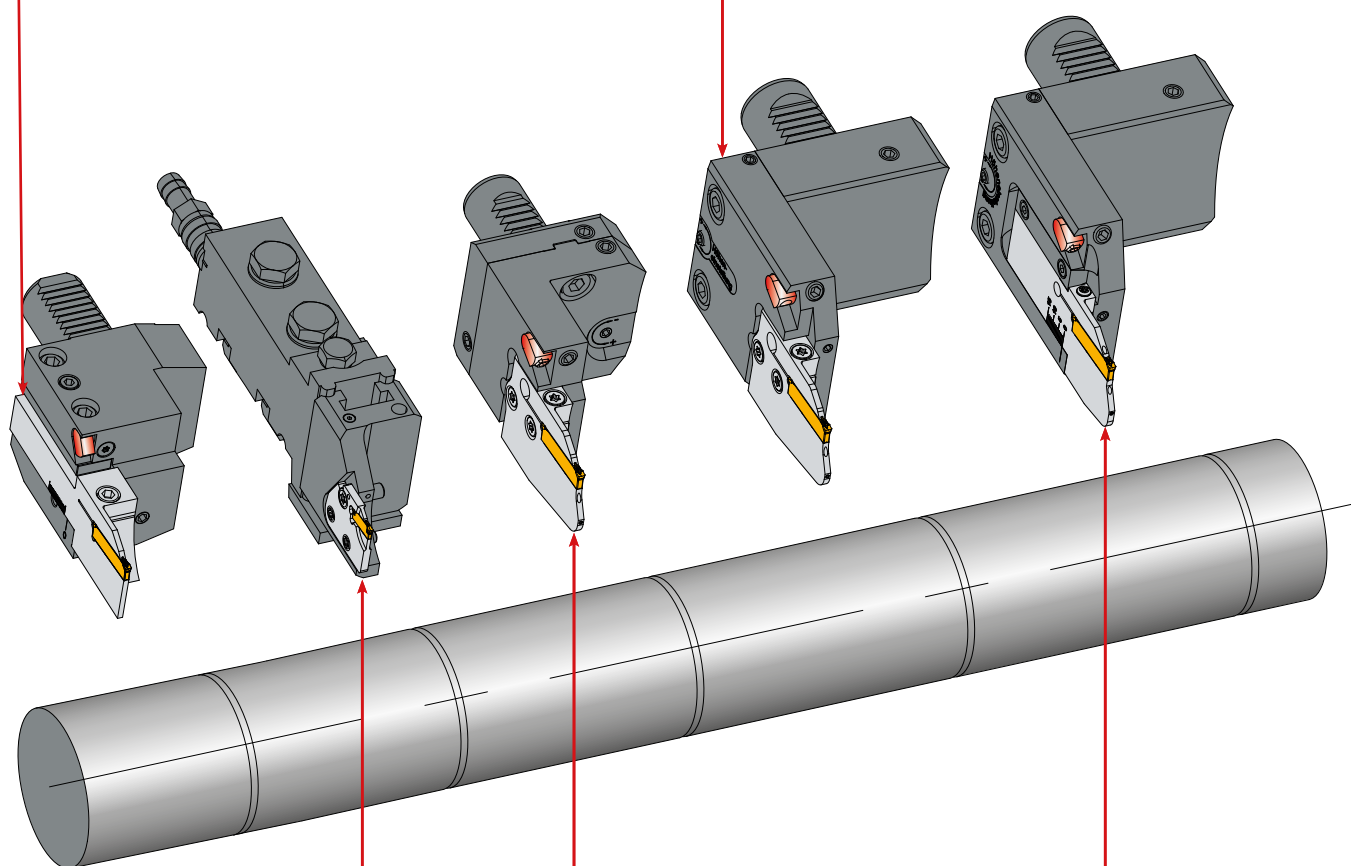
Design R/L

SA-Modules with ACS

EB = 3.0 – 4.0 mm

ET ≤ 52.5 mm

Design R/L



SA-Modules MSA-IN

Available on request

Flange mounted holders

VDI 25

Design R/L

SA-Modules with ACS

EB = 3.0 – 4.0 mm

ET ≤ 52.5 mm

Design R/L

Flange mounted holders

VDI 30

Design R/L

SA-Blades with ACS

EB = 3.0 mm

ET ≤ 32.5 mm

Design R/L

Monoblock holder ACS1 with various coolant connectors



Design - S shown

Page 12 – 21

KMH holders (VDI) form B + C with monoblock holders and modules with ACS



Page 18 – 31

Blades (KSA)



Page 32 – 34

SA-Modules (MSA)



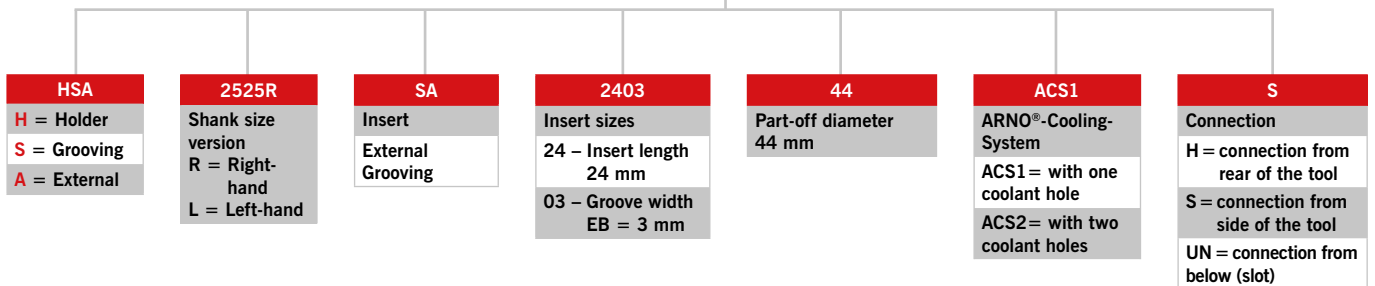
Page 35 – 37

Inserts

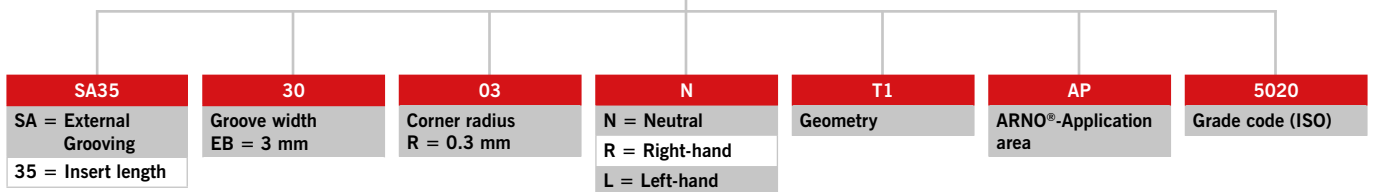


Page 38 – 45

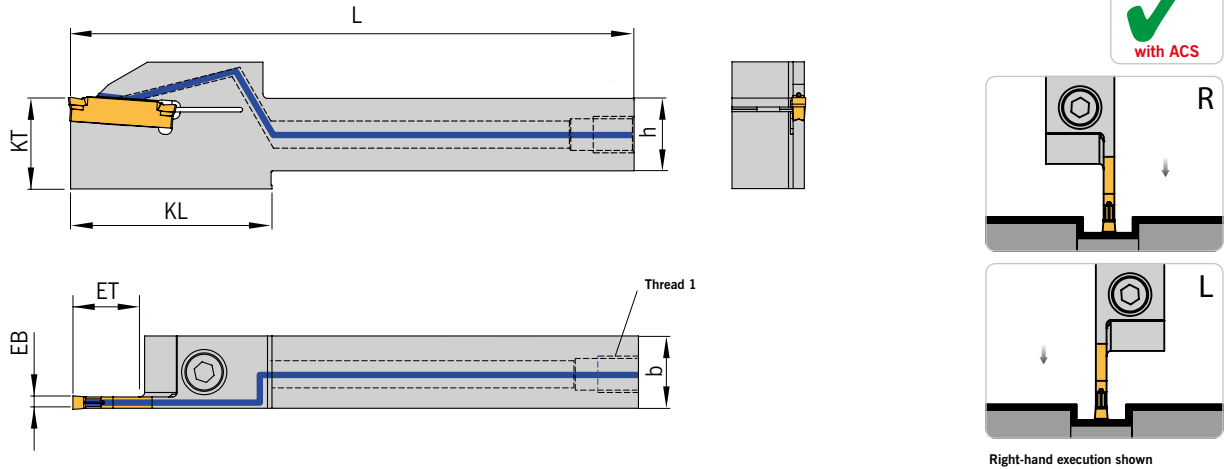
Monoblock holders



Inserts



HSA-ACS1-H



Monoblock holder with through tool coolant access from the back

Designation	EB	ET	D _{max}	D _r	h	b	L	L ₄	KL	KT	Thread 1	Thread 2	Insert
HSA 1616L-SA2403-32-ACS1-H1	3.0	16.0	32.0	-	16	16	110	-	-	-	M8x1	-	SA 24-30...
HSA 1616R-SA2403-32-ACS1-H1	3.0	16.0	32.0	-	16	16	110	-	-	-	M8x1	-	SA 24-30...
HSA 1616L-SA2403-44-ACS1-H1	3.0	22.0	44.0	61	16	16	125	-	40	20	M8x1	-	SA 24-30...
HSA 1616R-SA2403-44-ACS1-H1	3.0	22.0	44.0	61	16	16	125	-	40	20	M8x1	-	SA 24-30...
HSA 2020L-SA2403-32-ACS1-H1	3.0	16.0	32.0	-	20	20	125	-	-	-	M8x1	-	SA 24-30...
HSA 2020R-SA2403-32-ACS1-H1	3.0	16.0	32.0	-	20	20	125	-	-	-	M8x1	-	SA 24-30...
HSA 2020L-SA2403-44-ACS1-H1	3.0	22.0	44.0	61	20	20	125	-	-	-	M8x1	-	SA 24-30...
HSA 2020R-SA2403-44-ACS1-H1	3.0	22.0	44.0	61	20	20	125	-	-	-	M8x1	-	SA 24-30...
HSA 2525L-SA2403-44-ACS1-H1	3.0	22.0	44.0	61	25	25	150	-	-	-	M8x1	-	SA 24-30...
HSA 2525R-SA2403-44-ACS1-H1	3.0	22.0	44.0	61	25	25	150	-	-	-	M8x1	-	SA 24-30...
HSA 2020L-SA3503-52-ACS1-H1	3.0	26.0	52.0	68	20	20	150	-	44	44	M8x1	-	SA 35-30...
HSA 2020R-SA3503-52-ACS1-H1	3.0	26.0	52.0	68	20	20	150	-	44	44	M8x1	-	SA 35-30...
HSA 2020L-SA3503-65-ACS1-H1	3.0	32.5	65.0	80	20	20	150	-	50	50	M8x1	-	SA 35-30...
HSA 2020R-SA3503-65-ACS1-H1	3.0	32.5	65.0	80	20	20	150	-	50	50	M8x1	-	SA 35-30...
HSA 2525L-SA3503-52-ACS1-H1	3.0	26.0	52.0	68	25	25	150	-	44	44	M8x1	-	SA 35-30...
HSA 2525R-SA3503-52-ACS1-H1	3.0	26.0	52.0	68	25	25	150	-	44	44	M8x1	-	SA 35-30...
HSA 2525L-SA3503-65-ACS1-H1	3.0	32.5	65.0	80	25	25	150	-	50	50	M8x1	-	SA 35-30...
HSA 2525R-SA3503-65-ACS1-H1	3.0	32.5	65.0	80	25	25	150	-	50	50	M8x1	-	SA 35-30...
HSA 1616L-SA2403-32-ACS1-H2	3.0	16.0	32	-	16	16	110	-	-	-	G 1/8"	-	SA 24-30...
HSA 1616R-SA2403-32-ACS1-H2	3.0	16.0	32	-	16	16	110	-	-	-	G 1/8"	-	SA 24-30...
HSA 1616L-SA2403-44-ACS1-H2	3.0	22.0	44	61	16	16	125	-	40	20	G 1/8"	-	SA 24-30...
HSA 1616R-SA2403-44-ACS1-H2	3.0	22.0	44	61	16	16	125	-	40	20	G 1/8"	-	SA 24-30...
HSA 2020L-SA2403-32-ACS1-H2	3.0	16.0	32	-	20	20	125	-	-	-	G 1/8"	-	SA 24-30...
HSA 2020R-SA2403-32-ACS1-H2	3.0	16.0	32	-	20	20	125	-	-	-	G 1/8"	-	SA 24-30...
HSA 2020L-SA2403-44-ACS1-H2	3.0	22.0	44	61	20	20	125	-	-	-	G 1/8"	-	SA 24-30...
HSA 2020R-SA2403-44-ACS1-H2	3.0	22.0	44	61	20	20	125	-	-	-	G 1/8"	-	SA 24-30...
HSA 2525L-SA2403-44-ACS1-H2	3.0	22.0	44	61	25	25	150	-	-	-	G 1/8"	-	SA 24-30...
HSA 2525R-SA2403-44-ACS1-H2	3.0	22.0	44	61	25	25	150	-	-	-	G 1/8"	-	SA 24-30...
HSA 2020L-SA3503-52-ACS1-H2	3.0	26.0	52	68	20	20	150	-	44	30	G 1/8"	-	SA 35-30...
HSA 2020R-SA3503-52-ACS1-H2	3.0	26.0	52	68	20	20	150	-	44	30	G 1/8"	-	SA 35-30...
HSA 2020L-SA3503-65-ACS1-H2	3.0	32.5	65	80	20	20	150	-	50	30	G 1/8"	-	SA 35-30...
HSA 2020R-SA3503-65-ACS1-H2	3.0	32.5	65	80	20	20	150	-	50	30	G 1/8"	-	SA 35-30...
HSA 2525L-SA3503-52-ACS1-H2	3.0	26.0	52	68	25	25	150	-	44	30	G 1/8"	-	SA 35-30...

Monoblock holder with through tool coolant access from the back

Designation	EB	ET	D _{max}	D _R	h	b	L	L ₄	KL	KT	Thread 1	Thread 2	Insert
HSA 2525R-SA3503-52-ACS1-H2	3.0	26.0	52	68	25	25	150	-	44	30	G 1/8"	-	SA 35-30...
HSA 2525L-SA3503-65-ACS1-H2	3.0	32.5	65	80	25	25	150	-	50	30	G 1/8"	-	SA 35-30...
HSA 2525R-SA3503-65-ACS1-H2	3.0	32.5	65	80	25	25	150	-	50	30	G 1/8"	-	SA 35-30...
HSA 1616L-SA2403-32-ACS1-H3	3.0	16.0	32	-	16	16	110	-	-	-	G 1/4"	-	SA 24-30...
HSA 1616R-SA2403-32-ACS1-H3	3.0	16.0	32	-	16	16	110	-	-	-	G 1/4"	-	SA 24-30...
HSA 1616L-SA2403-44-ACS1-H3	3.0	22.0	44	61	16	16	125	-	40	20	G 1/4"	-	SA 24-30...
HSA 1616R-SA2403-44-ACS1-H3	3.0	22.0	44	61	16	16	125	-	40	20	G 1/4"	-	SA 24-30...
HSA 2020L-SA2403-32-ACS1-H3	3.0	16.0	32	-	20	20	125	-	-	-	G 1/4"	-	SA 24-30...
HSA 2020R-SA2403-32-ACS1-H3	3.0	16.0	32	-	20	20	125	-	-	-	G 1/4"	-	SA 24-30...
HSA 2020L-SA2403-44-ACS1-H3	3.0	22.0	44	61	20	20	125	-	-	-	G 1/4"	-	SA 24-30...
HSA 2020R-SA2403-44-ACS1-H3	3.0	22.0	44	61	20	20	125	-	-	-	G 1/4"	-	SA 24-30...
HSA 2525L-SA2403-44-ACS1-H3	3.0	22.0	44	61	25	25	150	-	-	-	G 1/4"	-	SA 24-30...
HSA 2525R-SA2403-44-ACS1-H3	3.0	22.0	44	61	25	25	150	-	-	-	G 1/4"	-	SA 24-30...
HSA 2020L-SA3503-52-ACS1-H3	3.0	26.0	52	68	20	20	150	-	44	30	G 1/4"	-	SA 35-30...
HSA 2020R-SA3503-52-ACS1-H3	3.0	26.0	52	68	20	20	150	-	44	30	G 1/4"	-	SA 35-30...
HSA 2020L-SA3503-65-ACS1-H3	3.0	32.5	65	80	20	20	150	-	50	30	G 1/4"	-	SA 35-30...
HSA 2020R-SA3503-65-ACS1-H3	3.0	32.5	65	80	20	20	150	-	50	30	G 1/4"	-	SA 35-30...
HSA 2525L-SA3503-52-ACS1-H3	3.0	26.0	52	68	25	25	150	-	44	30	G 1/4"	-	SA 35-30...
HSA 2525R-SA3503-52-ACS1-H3	3.0	26.0	52	68	25	25	150	-	44	30	G 1/4"	-	SA 35-30...
HSA 2525L-SA3503-65-ACS1-H3	3.0	32.5	65	80	25	25	150	-	50	30	G 1/4"	-	SA 35-30...
HSA 2525R-SA3503-65-ACS1-H3	3.0	32.5	65	80	25	25	150	-	50	30	G 1/4"	-	SA 35-30...

Remark: Accessories must be ordered separately.

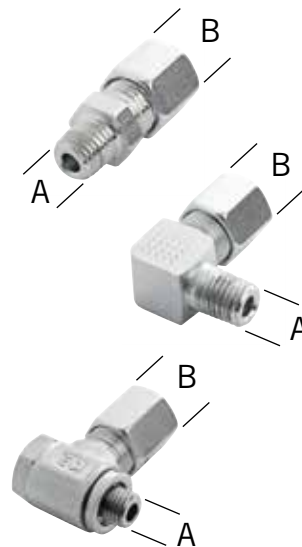
ARNO® SpecialDesign

The coolant inlet can be supplied to your specification, please complete enquiry sheet on page 16 or download this from: www.arno.de/service/downloads

Please refer to notes for using KMH tool holder (VDI) Form C on page 16!

Accessories

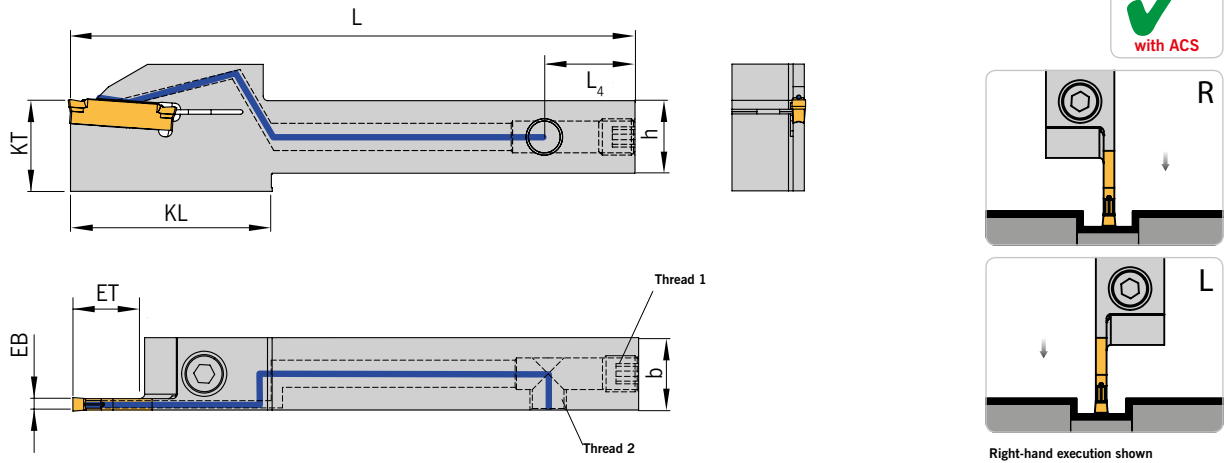
Designation	A	B
KA 001	M8x1	Ø 6 mm
KA 002	1/8"	Ø 6 mm
KA 003	1/4"	Ø 10 mm
KA 004	M8x1	Ø 6 mm
KA 005	1/8"	Ø 6 mm
KA 006	M8x1	Ø 6 mm
KA 007	1/8"	Ø 6 mm
KA 008	1/4"	Ø 10 mm



Spare parts

Holder	Screw	Key
HSA 1616... - HSA 2020...-SA24...-32-ACS1...	AS0022	KS8000
HSA 1616... - HSA 2525...-SA24...-44-ACS1...	DIN912 M5x16-12.9	Inbus 4 mm
HSA 2020... - HSA 2525...-SA35...-52-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm
HSA 2020... - HSA 2525...-SA35...-65-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm

HSA-ACS1-S



Monoblock holder with through tool coolant access from the side

Designation	EB	ET	D _{max}	D _R	h	b	L	L ₄	KL	KT	Thread 1	Thread 2	Insert
HSA 1616L-SA2403-32-ACS1-S1	3.0	16.0	32	-	16	16	110	20	-	-	M8x1	M8x1	SA 24-30...
HSA 1616R-SA2403-32-ACS1-S1	3.0	16.0	32	-	16	16	110	20	-	-	M8x1	M8x1	SA 24-30...
HSA 1616L-SA2403-44-ACS1-S1	3.0	22.0	44	61	16	16	125	20	40	20	M8x1	M8x1	SA 24-30...
HSA 1616R-SA2403-44-ACS1-S1	3.0	22.0	44	61	16	16	125	20	40	20	M8x1	M8x1	SA 24-30...
HSA 2020L-SA2403-32-ACS1-S1	3.0	16.0	32	-	20	20	125	20	-	-	M8x1	M8x1	SA 24-30...
HSA 2020R-SA2403-32-ACS1-S1	3.0	16.0	32	-	20	20	125	20	-	-	M8x1	M8x1	SA 24-30...
HSA 2020L-SA2403-44-ACS1-S1	3.0	22.0	44	61	20	20	125	20	-	-	M8x1	M8x1	SA 24-30...
HSA 2020R-SA2403-44-ACS1-S1	3.0	22.0	44	61	20	20	125	20	-	-	M8x1	M8x1	SA 24-30...
HSA 2525L-SA2403-44-ACS1-S1	3.0	22.0	44	61	25	25	150	20	-	-	M8x1	M8x1	SA 24-30...
HSA 2525R-SA2403-44-ACS1-S1	3.0	22.0	44	61	25	25	150	20	-	-	M8x1	M8x1	SA 24-30...
HSA 2020L-SA3503-52-ACS1-S1	3.0	26.0	52	68	20	20	150	20	44	30	M8x1	M8x1	SA 35-30...
HSA 2020R-SA3503-52-ACS1-S1	3.0	26.0	52	68	20	20	150	20	44	30	M8x1	M8x1	SA 35-30...
HSA 2020L-SA3503-65-ACS1-S1	3.0	33.0	65	80	20	20	150	20	50	30	M8x1	M8x1	SA 35-30...
HSA 2020R-SA3503-65-ACS1-S1	3.0	33.0	65	80	20	20	150	20	50	30	M8x1	M8x1	SA 35-30...
HSA 2525L-SA3503-52-ACS1-S1	3.0	26.0	52	68	25	25	150	20	44	30	M8x1	M8x1	SA 35-30...
HSA 2525R-SA3503-52-ACS1-S1	3.0	26.0	52	68	25	25	150	20	44	30	M8x1	M8x1	SA 35-30...
HSA 2525L-SA3503-65-ACS1-S1	3.0	32.5	65	80	25	25	150	20	50	30	M8x1	M8x1	SA 35-30...
HSA 2525R-SA3503-65-ACS1-S1	3.0	32.5	65	80	25	25	150	20	50	30	M8x1	M8x1	SA 35-30...
HSA 1616L-SA2403-32-ACS1-S2	3.0	16.0	32	-	16	16	110	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 1616R-SA2403-32-ACS1-S2	3.0	16.0	32	-	16	16	110	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 1616L-SA2403-44-ACS1-S2	3.0	22.0	44	61	16	16	125	20	40	20	M8x1	G 1/8"	SA 24-30...
HSA 1616R-SA2403-44-ACS1-S2	3.0	22.0	44	61	16	16	125	20	40	20	M8x1	G 1/8"	SA 24-30...
HSA 2020L-SA2403-32-ACS1-S2	3.0	16.0	32	-	20	20	125	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 2020R-SA2403-32-ACS1-S2	3.0	16.0	32	-	20	20	125	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 2020L-SA2403-44-ACS1-S2	3.0	22.0	44	61	20	20	125	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 2020R-SA2403-44-ACS1-S2	3.0	22.0	44	61	20	20	125	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 2525L-SA2403-44-ACS1-S2	3.0	22.0	44	61	25	25	150	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 2525R-SA2403-44-ACS1-S2	3.0	22.0	44	61	25	25	150	20	-	-	M8x1	G 1/8"	SA 24-30...
HSA 2020L-SA3503-52-ACS1-S2	3.0	26.0	52	68	20	20	150	20	44	30	M8x1	G 1/8"	SA 35-30...
HSA 2020R-SA3503-52-ACS1-S2	3.0	26.0	52	68	20	20	150	20	44	30	M8x1	G 1/8"	SA 35-30...
HSA 2020L-SA3503-65-ACS1-S2	3.0	32.5	65	80	20	20	150	20	50	30	M8x1	G 1/8"	SA 35-30...
HSA 2020R-SA3503-65-ACS1-S2	3.0	32.5	65	80	20	20	150	20	50	30	M8x1	G 1/8"	SA 35-30...
HSA 2525L-SA3503-52-ACS1-S2	3.0	26.0	52	68	25	25	150	20	44	30	M8x1	G 1/8"	SA 35-30...

Monoblock holder with through tool coolant access from the side

Designation	EB	ET	D _{max}	D _R	h	b	L	L ₄	KL	KT	Thread 1	Thread 2	Insert
HSA 2525R-SA3503-52-ACS1-S2	3.0	26.0	52	68	25	25	150	20	44	30	M8x1	G 1/8"	SA 35-30...
HSA 2525L-SA3503-65-ACS1-S2	3.0	32.5	65	80	25	25	150	20	50	30	M8x1	G 1/8"	SA 35-30...
HSA 2525R-SA3503-65-ACS1-S2	3.0	32.5	65	80	25	25	150	20	50	30	M8x1	G 1/8"	SA 35-30...

Remark: Accessories must be ordered separately.

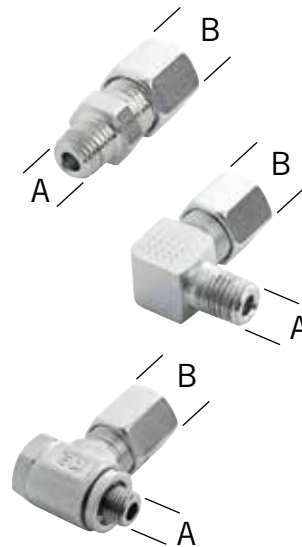


The coolant inlet can be supplied to your specification, please complete enquiry sheet on page 16 or download this from: www.arno.de/service/downloads

Please refer to notes for using KMH tool holder (VDI) Form C on page 16!

Accessories

Designation		A	B
KA 001	Coolant supply – straight	M8x1	Ø 6 mm
KA 002		1/8"	Ø 6 mm
KA 003		1/4"	Ø 10 mm
KA 004	Coolant supply – angled and fixed	M8x1	Ø 6 mm
KA 005		1/8"	Ø 6 mm
KA 006	Swivelling screw-fitting	M8x1	Ø 6 mm
KA 007		1/8"	Ø 6 mm
KA 008		1/4"	Ø 10 mm



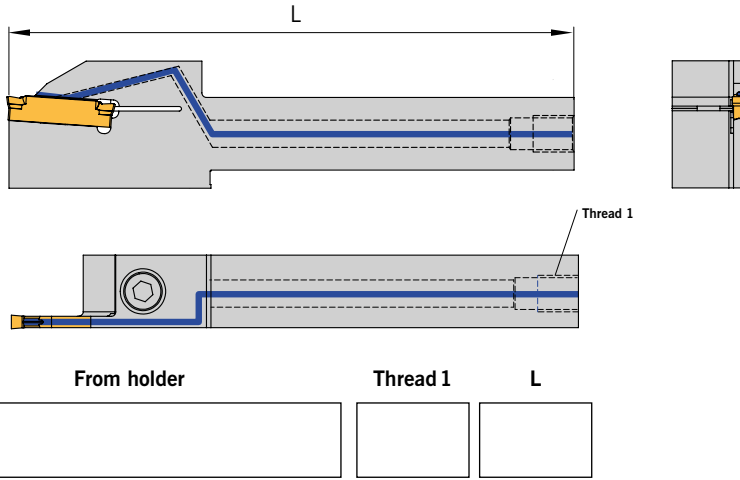
Spare parts

Holder	Screw	Key
HSA 1616... - HSA 2020...-SA24...-32-ACS1...	AS0022	KS8000
HSA 1616... - HSA 2525...-SA24...-44-ACS1...	DIN912 M5x16-12.9	Inbus 4 mm
HSA 2020... - HSA 2525...-SA35...-52-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm
HSA 2020... - HSA 2525...-SA35...-65-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm

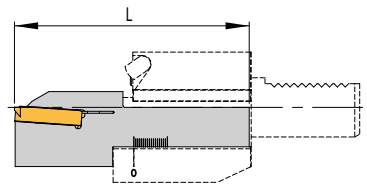
Monoblock holder with through tool coolant access from the back



This tool we produce to the price of the standard tool.



Monoblock holder with through tool coolant access from the side



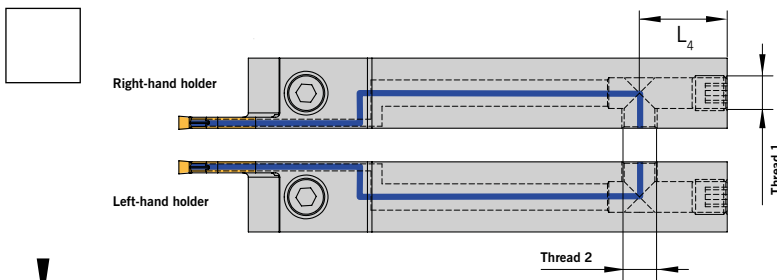
Remark by using the KMH holders (VDI) Form C

When using VDI holders Form C, please set overall length (L) by following maximum lengths:

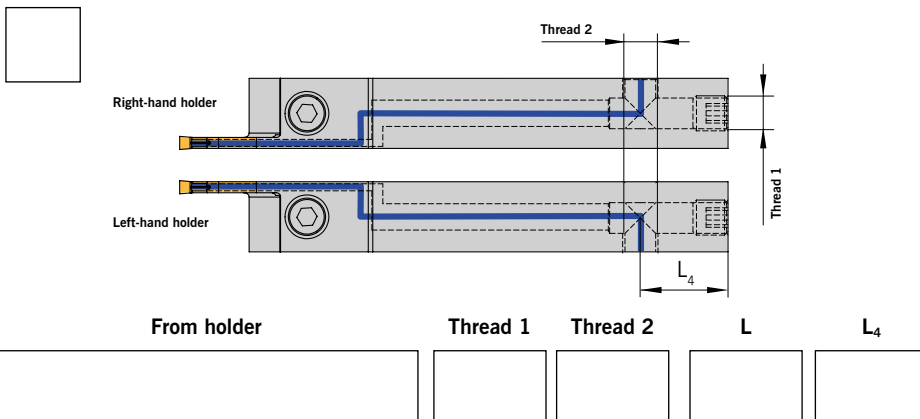
Designation	L
HSA 1616L-SA2403-32-ACS1-..	92.0
HSA 1616R-SA2403-32-ACS1-..	92.0
HSA 1616L-SA2403-44-ACS1-..	99.0
HSA 1616R-SA2403-44-ACS1-..	99.0
HSA 2020L-SA2403-32-ACS1-..	96.0
HSA 2020R-SA2403-32-ACS1-..	96.0
HSA 2020L-SA2403-44-ACS1-..	103.0
HSA 2020R-SA2403-44-ACS1-..	103.0
HSA 2020L-SA3503-52-ACS1-..	113.0
HSA 2020R-SA3503-52-ACS1-..	113.0
HSA 2020L-SA3503-65-ACS1-..	119.0
HSA 2020R-SA3503-65-ACS1-..	119.0
HSA 2525L-SA2403-44-ACS1-..	115.5
HSA 2525R-SA2403-44-ACS1-..	115.5
HSA 2525L-SA3503-52-ACS1-..	128.0
HSA 2525R-SA3503-52-ACS1-..	128.0
HSA 2525L-SA3503-65-ACS1-..	134.0
HSA 2525R-SA3503-65-ACS1-..	134.0

Please select:

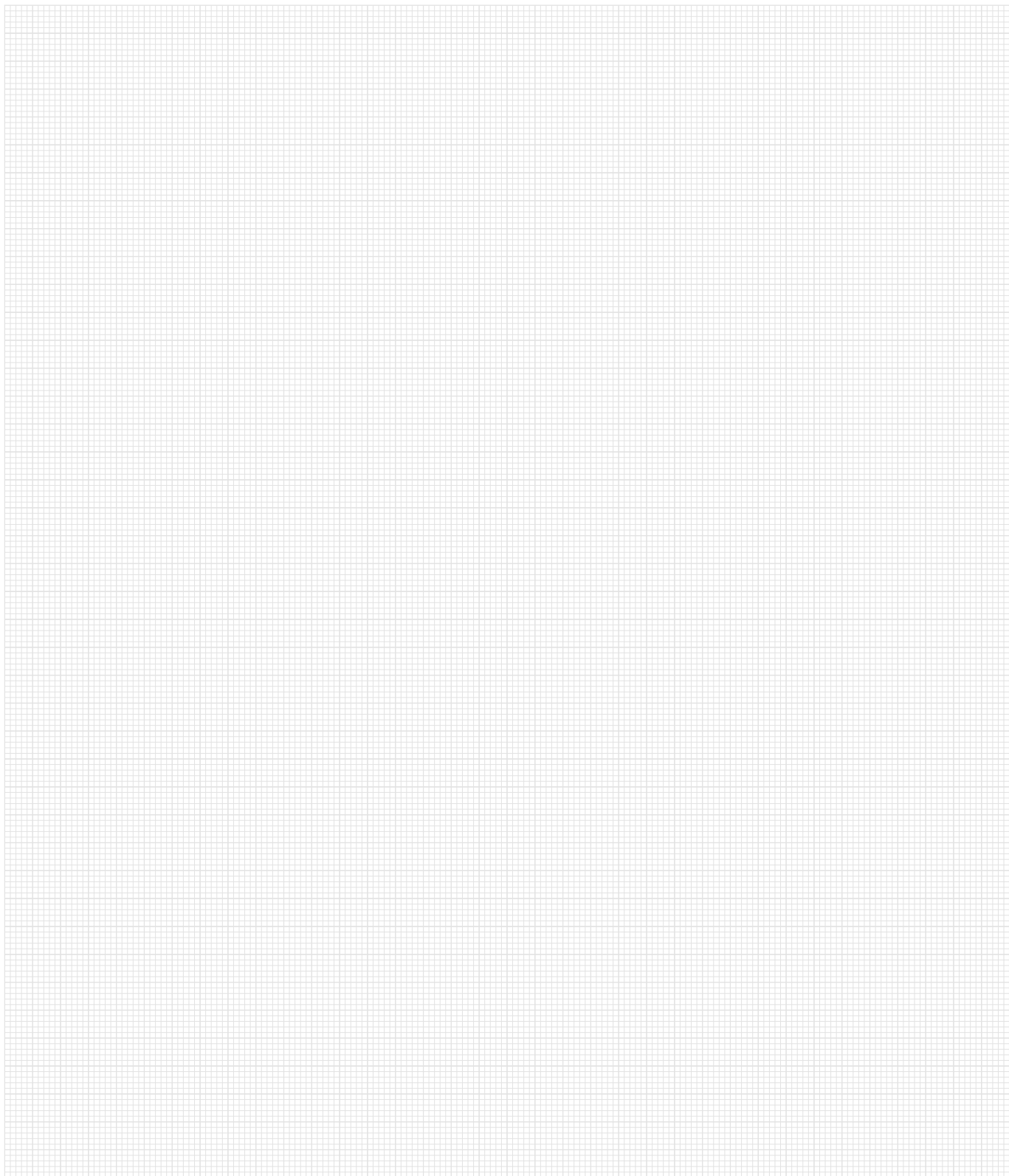
Design S. – Thread 2 is on the same side as the cutting edge



Design SG. – Thread 2 is on the opposite side of the cutting edge



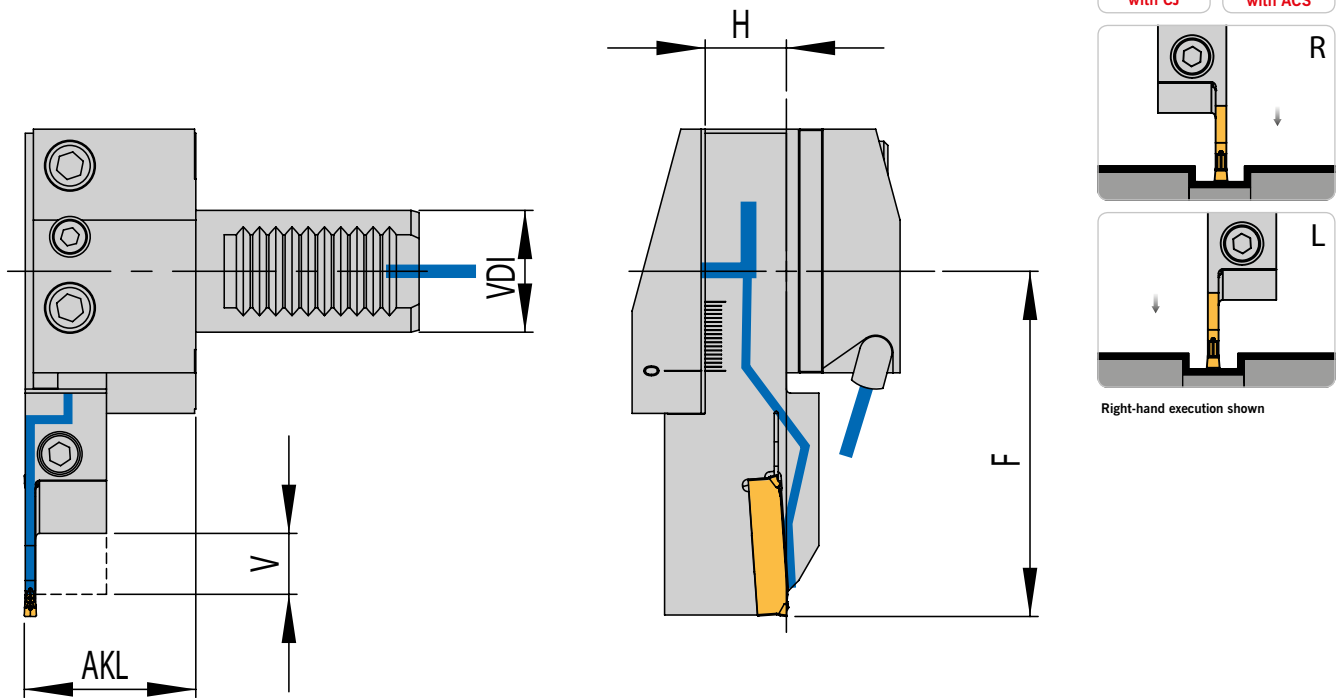
Download this form from: www.arno.de/service/downloads



For more information see:

www.arno.de

HSA-ACS1-UN with KMH01 – Form B



HANDLING:
 Please select the KMH holder (VDI) and holder type from table 1.
 According to holder type please select suitable monoblock holder and insert from table 2.

KMH holder – Form B

	Form	VDI	H _{Shank}	AKL	V*	KMH holder (VDI)	Holder type
Table 1	B1	25	16	32.3	15	KMH01-B1-25x16x30-IK	HSA 1616 L ...
		30	20	42.3	17	KMH01-B1-30x20x40-IK	HSA 2020 L ...
		40	25	47.3	22	KMH01-B1-40x25x44-IK	HSA 2525 L ...
	B2	25	16	32.3	15	KMH01-B2-25x16x30-IK	HSA 1616 R ...
		30	20	42.3	17	KMH01-B2-30x20x40-IK	HSA 2020 R ...
		40	25	47.3	22	KMH01-B2-40x25x44-IK	HSA 2525 R ...
	B3	25	16	32.3	15	KMH01-B3-25x16x30-IK	HSA 1616 R ...
		30	20	42.3	17	KMH01-B3-30x20x40-IK	HSA 2020 R ...
		40	25	47.3	22	KMH01-B3-40x25x44-IK	HSA 2525 R ...
	B4	25	16	32.3	15	KMH01-B4-25x16x30-IK	HSA 1616 L ...
		30	20	42.3	17	KMH01-B4-30x20x40-IK	HSA 2020 L ...
		40	25	47.3	22	KMH01-B4-40x25x44-IK	HSA 2525 L ...

* The tool holder can be extended by dimension "V" in the VDI holder.
 The coolant supply is guaranteed within the adjustment range. Dimension "F" changes accordingly.

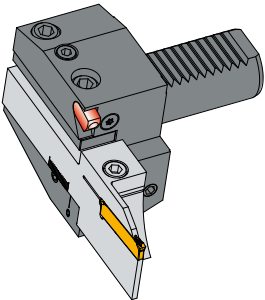
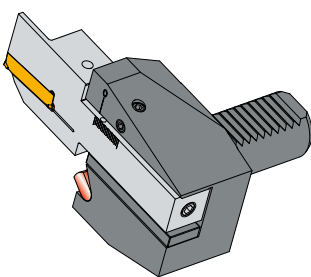
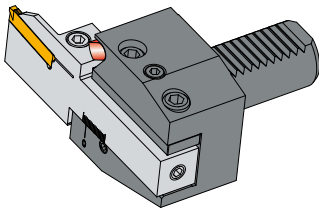
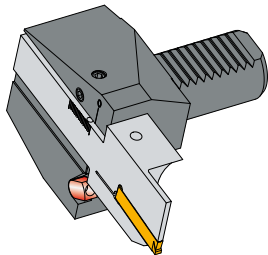
Monoblock holders – HSA-ACS1-UN

Holder type	D _{max}	EB	ET	Designation	F	D _R	H	Insert
HSA 1616 L ...	32	3	16	HSA 1616L-SA2403-32-ACS1-UN	68	–	16	SA 24-30...
	44	3	22	HSA 1616L-SA2403-44-ACS1-UN	75	61		
HSA 1616 R ...	32	3	16	HSA 1616R-SA2403-32-ACS1-UN	68	–	16	SA 24-30...
	44	3	22	HSA 1616R-SA2403-44-ACS1-UN	75	61		
HSA 2020 L ...	32	3	16	HSA 2020R-SA2403-32-ACS1-UN	62	–	20	SA 24-30...
	44	3	22	HSA 2020R-SA2403-44-ACS1-UN	68.5	61		
	52	3	26	HSA 2020R-SA3503-52-ACS1-UN	79	68		SA 35-30...
	65	3	32.5	HSA 2020R-SA3503-65-ACS1-UN	85	80		
HSA 2020 R ...	32	3	16	HSA 2020R-SA2403-32-ACS1-UN	62	–	20	SA 24-30...
	44	3	22	HSA 2020R-SA2403-44-ACS1-UN	68.5	61		
	52	3	26	HSA 2020R-SA3503-52-ACS1-UN	79	68		SA 35-30...
HSA 2525 L ...	44	3	22	HSA 2525L-SA2403-44-ACS1-UN	74	61	25	SA 24-30...
	52	3	26	HSA 2525L-SA3503-52-ACS1-UN	86.5	68		SA 35-30...
	65	3	32.5	HSA 2525L-SA3503-65-ACS1-UN	92.5	80		
HSA 2525 R ...	44	3	22	HSA 2525R-SA2403-44-ACS1-UN	74	61	25	SA 24-30...
	52	3	26	HSA 2525R-SA3503-52-ACS1-UN	86.5	68		SA 35-30...
	65	3	32.5	HSA 2525R-SA3503-65-ACS1-UN	92.5	80		

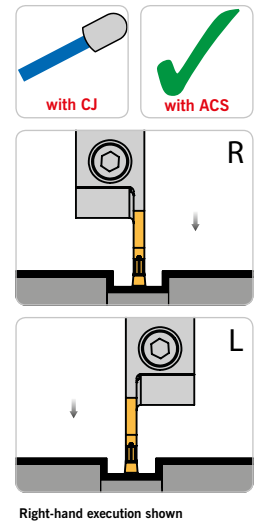
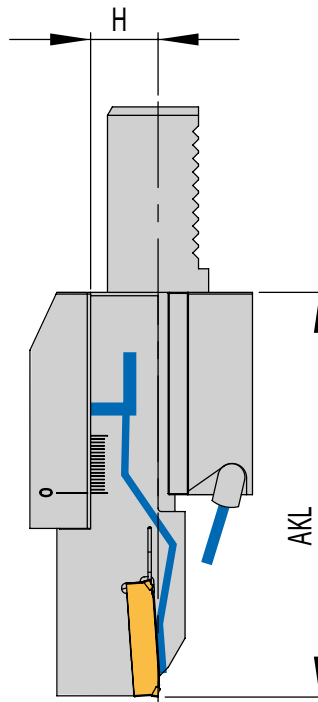
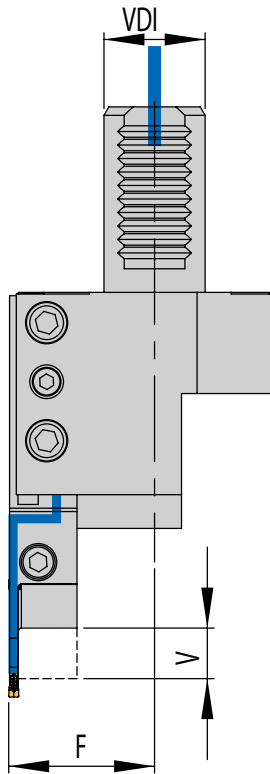
Spare parts

Holder	Screw	Key
HSA 1616... - HSA 2020...-SA24...-32-ACS1...	AS0022	KS8000
HSA 1616... - HSA 2525...-SA24...-44-ACS1...	DIN912 M5x16-12.9	Inbus 4 mm
HSA 2020... - HSA 2525...-SA35...-52-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm
HSA 2020... - HSA 2525...-SA35...-65-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm

Assembly options

Holder KMH01-B ... with left-hand monoblock holder		Holder KMH01-B ... with right-hand monoblock holder	
KMH01-B1 ...	KMH01-B4 ...	KMH01-B2 ...	KMH01-B3 ...
			
Normal assembly	Upside down assembly	Normal assembly	Upside down assembly

HSA-ACS1-UN with KMH01 – Form C



HANDLING:
 Please select the KMH holder (VDI) and holder type from table 1.
 According to holder type please select suitable monoblock holder and insert from table 2.

KMH holder – Form C

	Form	VDI	H _{Shank}	AKL	V*	KMH holder (VDI)	Holder type
Table 1	C1	25	16	35.3	15	KMH01-C1-25x16-IK	HSA 1616 R
		30	20	37.3	17	KMH01-C1-30x20-IK	HSA 2020 R
		40	25	46.3	22	KMH01-C1-40x25-IK	HSA 2525 R
	C2	25	16	35.3	15	KMH01-C2-25x16-IK	HSA 1616 L
		30	20	37.3	17	KMH01-C2-30x20-IK	HSA 2020 L
		40	25	46.3	22	KMH01-C2-40x25-IK	HSA 2525 L
	C3	25	16	35.3	15	KMH01-C3-25x16-IK	HSA 1616 L
		30	20	37.3	17	KMH01-C3-30x20-IK	HSA 2020 L
		40	25	46.3	22	KMH01-C3-40x25-IK	HSA 2525 L
	C4	25	16	35.3	15	KMH01-C4-25x16-IK	HSA 1616 R
		30	20	37.3	17	KMH01-C4-30x20-IK	HSA 2020 R
		40	25	46.3	22	KMH01-C4-40x25-IK	HSA 2525 R

* The tool holder can be extended by dimension "V" in the VDI holder.
 The coolant supply is guaranteed within the adjustment range. Dimension "AKL" changes accordingly.

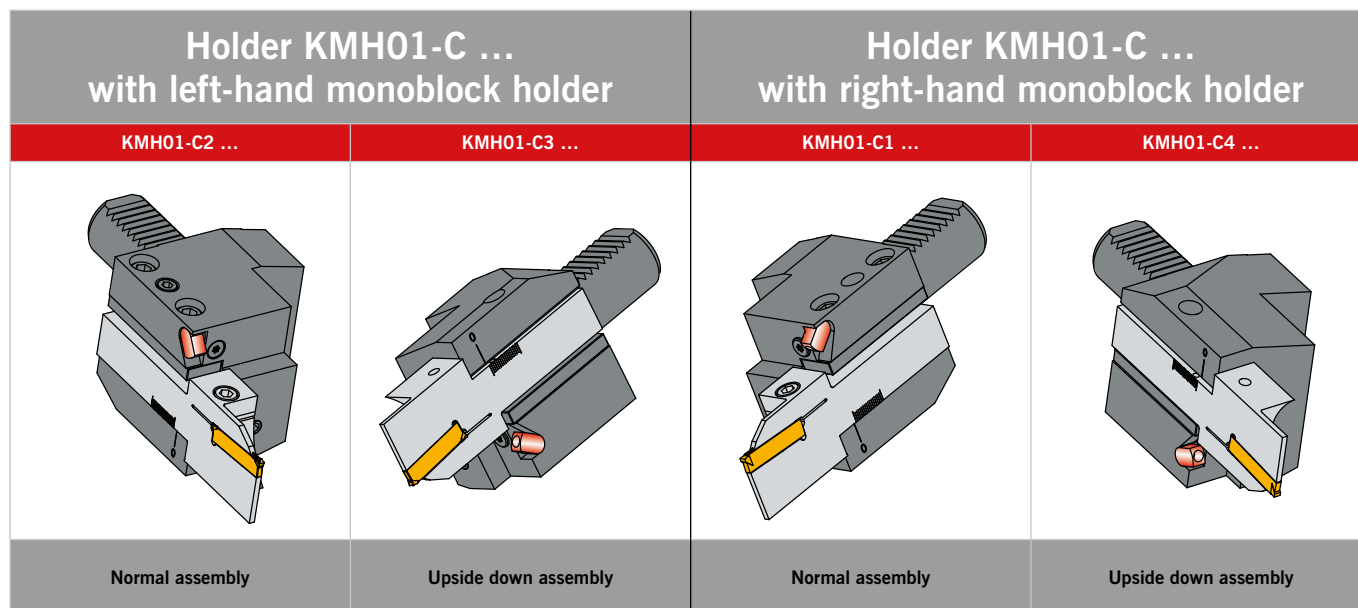
Monoblock holders – HSA-ACS1-UN

Holder type	D _{max}	EB	ET	Designation	AKL	D _R	H	Insert
HSA 1616 L ...	32	3	16	HSA 1616L-SA2403-32-ACS1-UN	93.0	–	16	SA 24-30...
	44	3	22	HSA 1616L-SA2403-44-ACS1-UN	100.0	61		
HSA 1616 R ...	32	3	16	HSA 1616R-SA2403-32-ACS1-UN	93.0	–	16	SA 24-30...
	44	3	22	HSA 1616R-SA2403-44-ACS1-UN	100.0	61		
HSA 2020 L ...	32	3	16	HSA 2020R-SA2403-32-ACS1-UN	97.0	–	20	SA 24-30...
	44	3	22	HSA 2020R-SA2403-44-ACS1-UN	104.0	61		
	52	3	26	HSA 2020R-SA3503-52-ACS1-UN	114.0	68		SA 35-30...
	65	3	32.5	HSA 2020R-SA3503-65-ACS1-UN	120.0	80		
HSA 2020 R ...	32	3	16	HSA 2020R-SA2403-32-ACS1-UN	97.0	–	20	SA 24-30...
	44	3	22	HSA 2020R-SA2403-44-ACS1-UN	104.0	61		
	52	3	26	HSA 2020R-SA3503-52-ACS1-UN	114.0	68		SA 35-30...
HSA 2525 L ...	44	3	22	HSA 2525L-SA2403-44-ACS1-UN	116.5	61	25	SA 24-30...
	52	3	26	HSA 2525L-SA3503-52-ACS1-UN	129.0	68		SA 35-30...
	65	3	32.5	HSA 2525L-SA3503-65-ACS1-UN	135.0	80		
HSA 2525 R ...	44	3	22	HSA 2525R-SA2403-44-ACS1-UN	116.5	61	25	SA 24-30...
	52	3	26	HSA 2525R-SA3503-52-ACS1-UN	129.0	68		SA 35-30...
	65	3	32.5	HSA 2525R-SA3503-65-ACS1-UN	135.0	80		

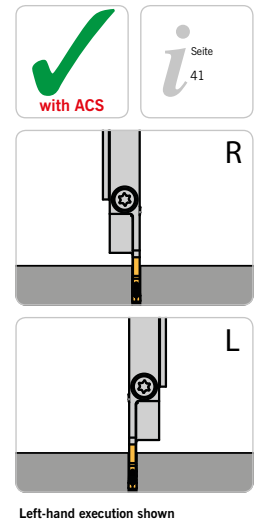
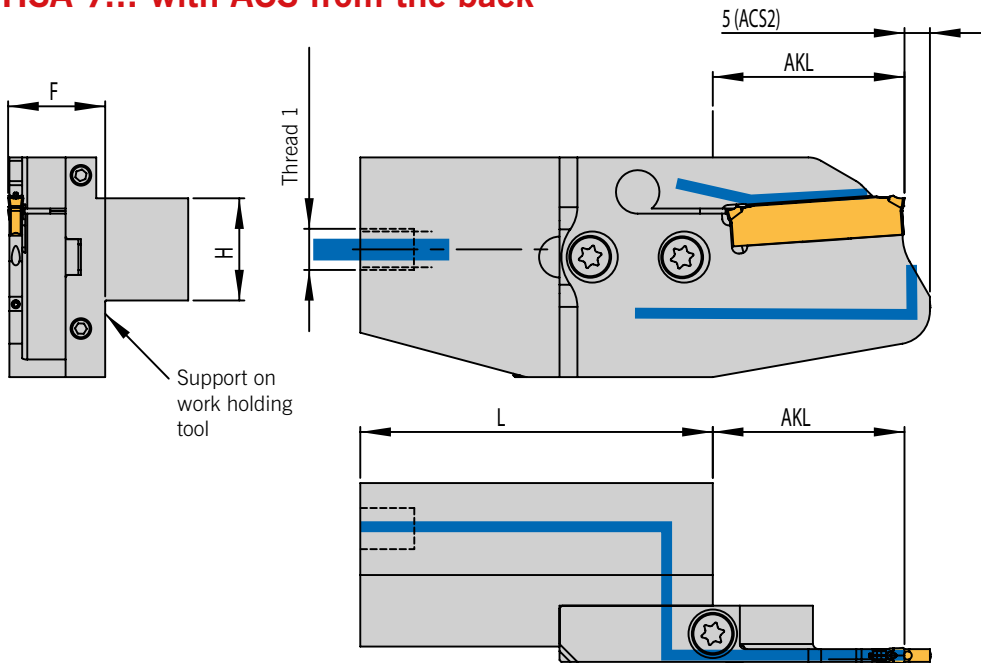
Spare parts

Holder	Screw	Key
HSA 1616... - HSA 2020...-SA24...-32-ACS1...	AS0022	KS8000
HSA 1616... - HSA 2525...-SA24...-44-ACS1...	DIN912 M5x16-12.9	Inbus 4 mm
HSA 2020... - HSA 2525...-SA35...-52-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm
HSA 2020... - HSA 2525...-SA35...-65-ACS1...	DIN912 M6x20-12.9	Inbus 5 mm

Assembly options



HSA-7... with ACS from the back



Holders for SA-Modules (MSA) with internal coolant (ACS) from the back

Designation	H	L	Thread 1
HSA-71629L-ACS-H1	16	54	M8x1
HSA-71629R-ACS-H1	16	54	M8x1
HSA-72032L-ACS-H1	20	69	M8x1
HSA-72032R-ACS-H1	20	69	M8x1
HSA-72536L-ACS-H1	25	84	M8x1
HSA-72536R-ACS-H1	25	84	M8x1
HSA-71629L-ACS-H2	16	54	G1/8"
HSA-71629R-ACS-H2	16	54	G1/8"
HSA-72032L-ACS-H2	20	69	G1/8"
HSA-72032R-ACS-H2	20	69	G1/8"
HSA-72536L-ACS-H2	25	84	G1/8"
HSA-72536R-ACS-H2	25	84	G1/8"
HSA-71629L-ACS-H3	16	54	G1/4"
HSA-71629R-ACS-H3	16	54	G1/4"
HSA-72032L-ACS-H3	20	69	G1/4"
HSA-72032R-ACS-H3	20	69	G1/4"
HSA-72536L-ACS-H3	25	84	G1/4"
HSA-72536R-ACS-H3	25	84	G1/4"

Module	AKL	F
MSA-...-32	22.0	19.0
MSA-...-44	27.0	
MSA-...-52	37.5	
MSA-...-65	37.5	
MSA-...-80	45.0	
MSA-...-105	58.0	
MSA-...-125	68.0	
MSA-...-140	75.5	

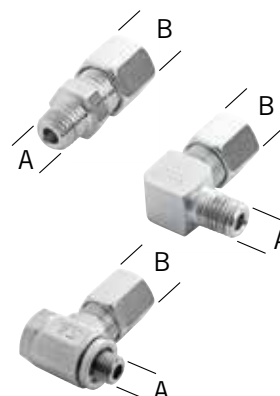
Remark: Holders HSA-7... are supplied without modules. Suitable modules can be found on pages 36 and 37. KMH holders (VDI) can be found on pages 24 to 27.

ARNO® SpecialDesign

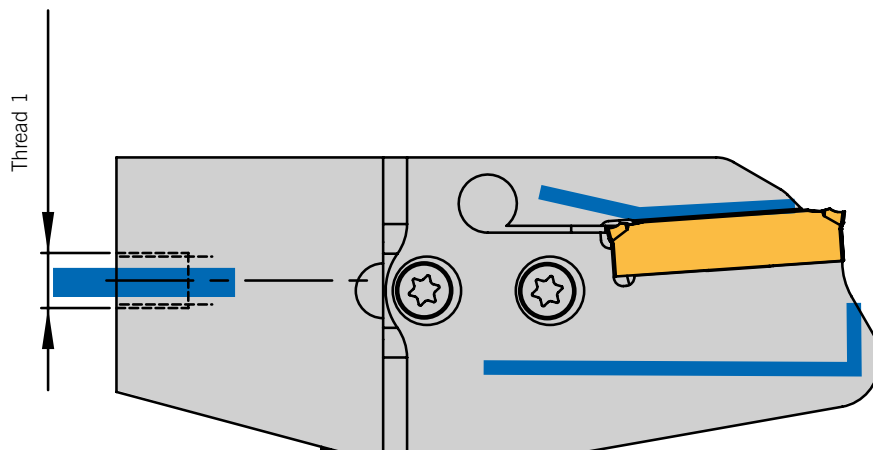
The coolant inlet can be supplied to your specification, please complete enquiry sheet on the next page or download this from: www.arno.de/service/downloads

Accessories

Designation	A	B
KA 001	M8x1	Ø 6 mm
KA 002	1/8"	Ø 6 mm
KA 003	1/4"	Ø 10 mm
KA 004	M8x1	Ø 6 mm
KA 005	1/8"	Ø 6 mm
KA 006	M8x1	Ø 6 mm
KA 007	1/8"	Ø 6 mm
KA 008	1/4"	Ø 10 mm



Holder HSA-7 with internal coolant ACS from the back



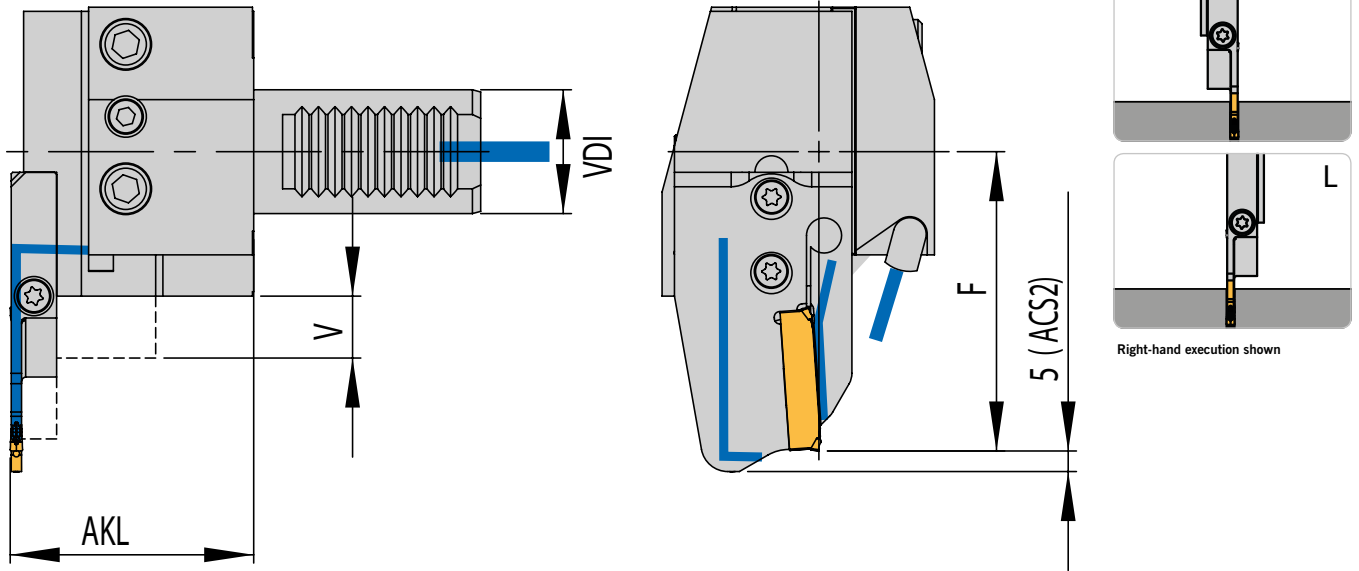
This tool we produce to the price of the standard tool.

From holder

Thread 1

Download this form from: www.arno.de/service/downloads

HSA-7-ACS-UN with KMH01 – Form B



HANDLING:
 Please select the KMH holder (VDI) and suitable holder from table 1.
 According to module type, please find suitable modules (page 36/37) and insert (starting page 38) from table 2.

Holder HSA-7-ACS-UN and KMH holder – Form B

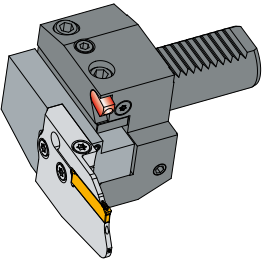
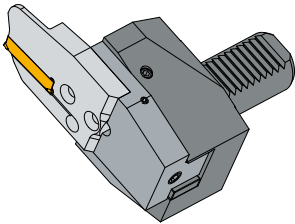
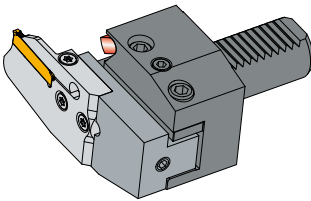
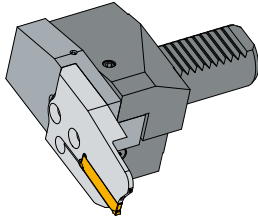
	Form	VDI	H _{Shank}	AKL	V*	KMH holder (VDI)	Holder SA-Module	Module type
Table 1	B1	25	16	49.0	15	KMH01-B1-25x16x30-IK	HSA 71629L-ACS-UN	MSA-SL-..
		30	20	59.0	17	KMH01-B1-30x20x40-IK	HSA 72032L-ACS-UN	
		40	25	63.0	22	KMH01-B1-40x25x44-IK	HSA 72536L-ACS-UN	
	B2	25	16	49.0	15	KMH01-B2-25x16x30-IK	HSA 71629R-ACS-UN	MSA-SR-..
		30	20	59.0	17	KMH01-B2-30x20x40-IK	HSA 72032R-ACS-UN	
		40	25	63.0	22	KMH01-B2-40x25x44-IK	HSA 72536R-ACS-UN	
	B3	25	16	49.0	15	KMH01-B3-25x16x30-IK	HSA 71629R-ACS-UN	MSA-SR-..
		30	20	59.0	17	KMH01-B3-30x20x40-IK	HSA 72032R-ACS-UN	
		40	25	63.0	22	KMH01-B3-40x25x44-IK	HSA 72536R-ACS-UN	
	B4	25	16	49.0	15	KMH01-B4-25x16x30-IK	HSA 71629L-ACS-UN	MSA-SL-..
		30	20	59.0	17	KMH01-B4-30x20x40-IK	HSA 72032L-ACS-UN	
		40	25	63.0	22	KMH01-B4-40x25x44-IK	HSA 72536L-ACS-UN	

* The tool holder can be extended by dimension "V" in the VDI holder.
 The coolant supply is guaranteed within the adjustment range by a mechanical limitation.
 Dimension "F" changes accordingly.
 Remark: Holders HSA-7... are supplied without modules.

Module **MSA-...**

		F _{VDI25}	F _{VDI30}	F _{VDI40}
Table 2	Module type			
	MSA-...-32	52.0	57.0	64.5
	MSA-...-44	57.0	62.0	69.5
	MSA-...-52	67.5	72.5	80.0
	MSA-...-65	67.5	72.5	80.0

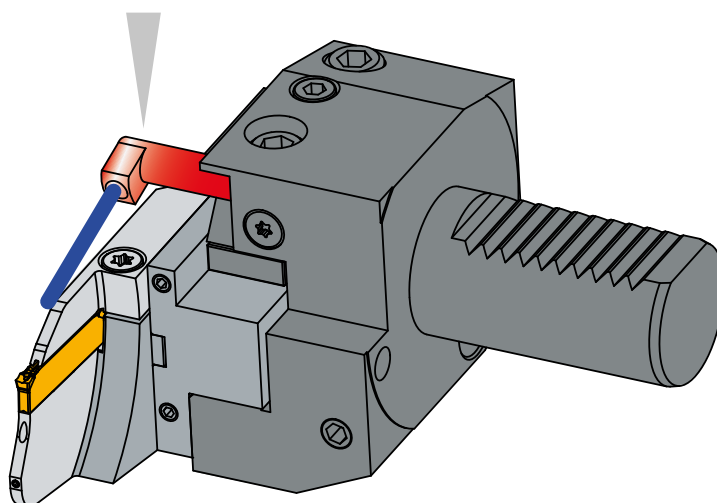
Assembly options

Holder KMH01-B ... with left-hand holder and left-hand module		Holder KMH01-B ... with right-hand holder and right-hand module	
KMH01-B1 ...	KMH01-B4 ...	KMH01-B2 ...	KMH01-B3 ...
			
Normal assembly	Upside down assembly	Normal assembly	Upside down assembly

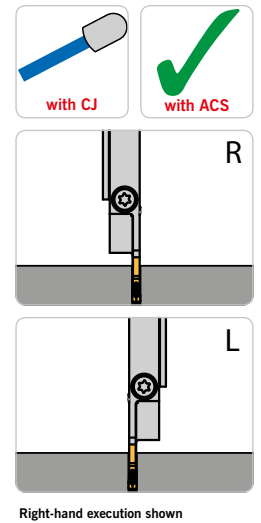
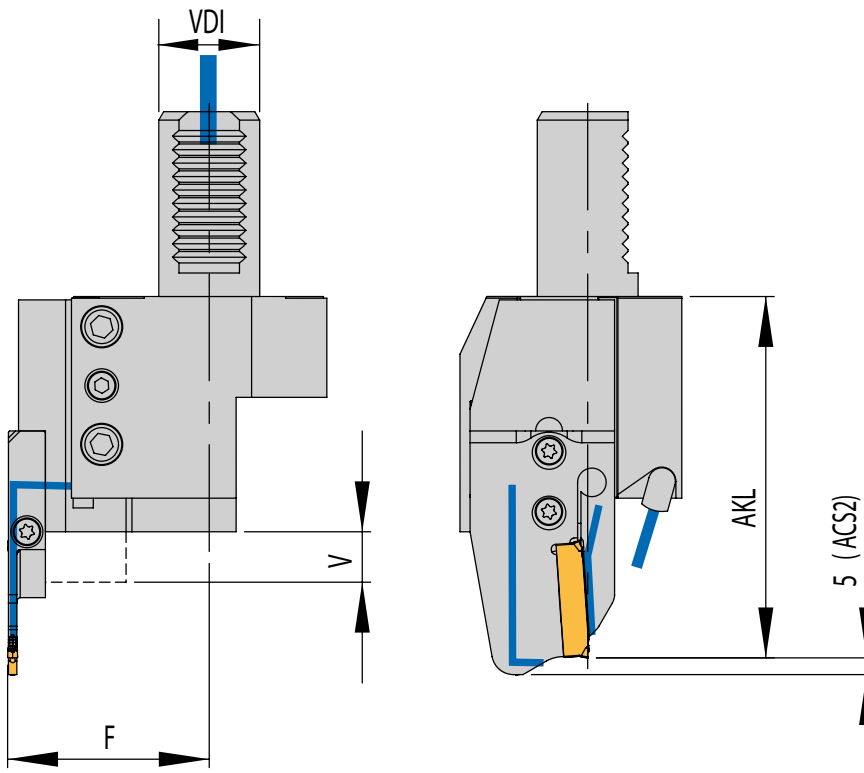
Additional coolant

If additional coolant is needed from external coolant jet, please use following part number:

VDI	Coolant jet
25	KMD0540
30	KMD0845
40	KMD0845



HSA-7-ACS-UN with KMH01 – Form C



HANDLING:
 Please select the KMH holder (VDI) and suitable holder from table 1.
 According to module type, please find suitable modules (page 36/37) and insert (starting page 38) from table 2.

Holder HSA-7-ACS-UN and KMH holder – Form C

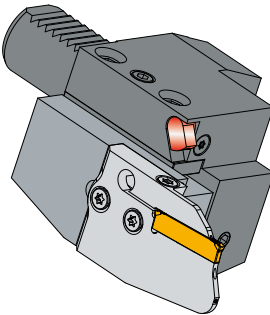
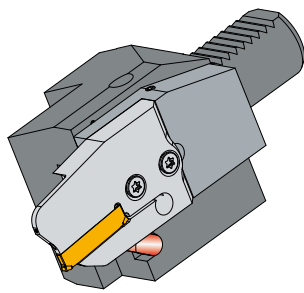
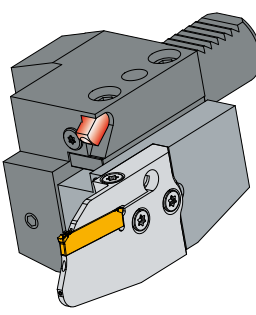
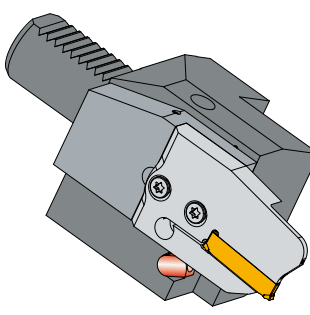
	Form	VDI	H _{Shank}	AKL	V*	KMH holder (VDI)	Holder SA-Module	Module type
Table 1	B1	25	16	49.0	15	KMH01-C1-25x16-IK	HSA 71629R-ACS-UN	MSA-SR-..
		30	20	59.0	17	KMH01-C1-30x20-IK	HSA 72032R-ACS-UN	
		40	25	63.0	22	KMH01-C1-40x25-IK	HSA 72536R-ACS-UN	
	B2	25	16	49.0	15	KMH01-C2-25x16-IK	HSA 71629L-ACS-UN	MSA-SL-..
		30	20	59.0	17	KMH01-C2-30x20-IK	HSA 72032L-ACS-UN	
		40	25	63.0	22	KMH01-C2-40x25-IK	HSA 72536L-ACS-UN	
	B3	25	16	49.0	15	KMH01-C3-25x16-IK	HSA 71629L-ACS-UN	MSA-SL-..
		30	20	59.0	17	KMH01-C3-30x20-IK	HSA 72032L-ACS-UN	
		40	25	63.0	22	KMH01-C3-40x25-IK	HSA 72536L-ACS-UN	
	B4	25	16	49.0	15	KMH01-C4-25x16-IK	HSA 71629R-ACS-UN	MSA-SR-..
		30	20	59.0	17	KMH01-C4-30x20-IK	HSA 72032R-ACS-UN	
		40	25	63.0	22	KMH01-C4-40x25-IK	HSA 72536R-ACS-UN	

* The tool holder can be extended by dimension "V" in the VDI holder.
 The coolant supply is guaranteed within the adjustment range by a mechanical limitation.
 Dimension "AKL" changes accordingly.
 Remark: Holders HSA-7... are supplied without modules.

Module **MSA-...**

		F _{VDI25}	F _{VDI30}	F _{VDI40}
Table 2	Module type			
	MSA-...-32	77.0	92.0	107.0
	MSA-...-44	82.0	97.0	112.0
	MSA-...-52	92.5	107.5	122.5
	MSA-...-65	92.5	107.5	122.5

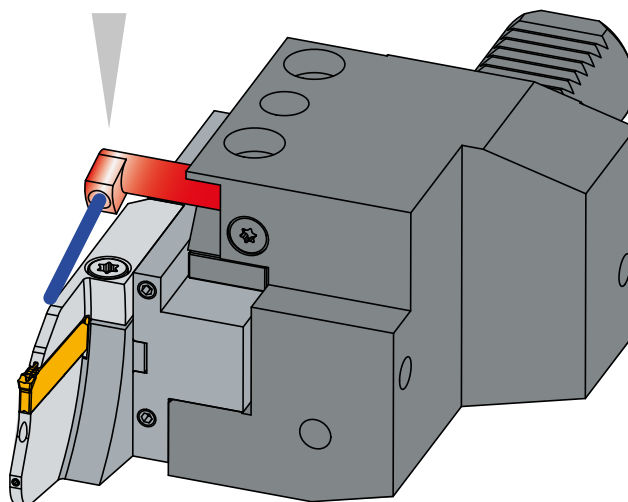
Assembly options

Holder KMH01-C ... with left-hand holder and left-hand module		Holder KMH01-C ... with right-hand holder and right-hand module	
KMH01-C2 ...	KMH01-C3 ...	KMH01-C1 ...	KMH01-C4 ...
			
Normal assembly	Upside down assembly	Normal assembly	Upside down assembly

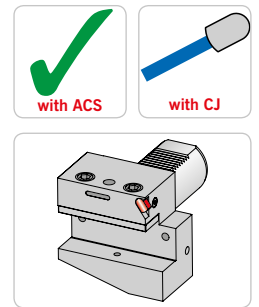
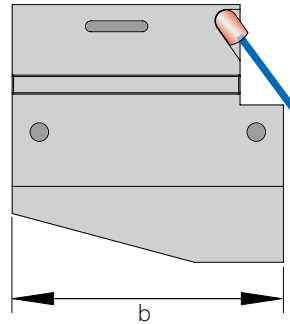
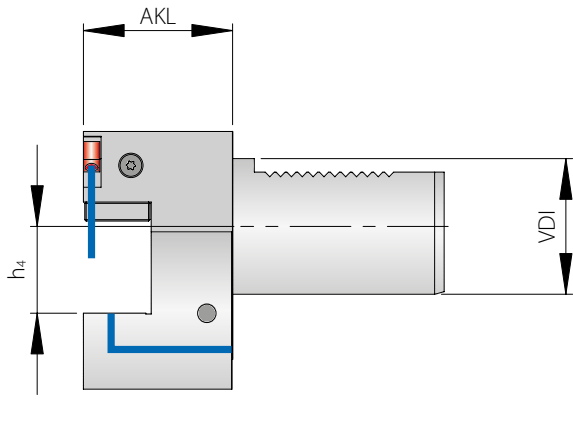
Additional coolant

If additional coolant is needed from external coolant jet, please use following part number:

VDI	Coolant jet
25	KMD0540
30	KMD0845
40	KMD0845



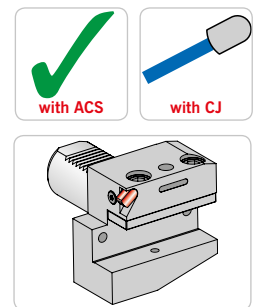
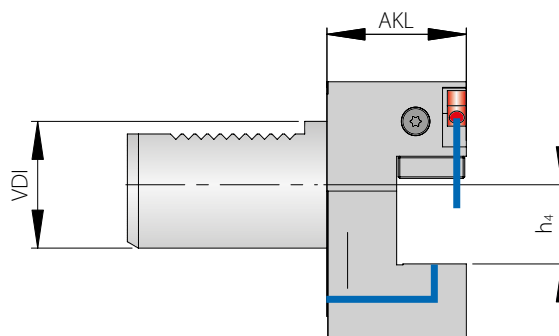
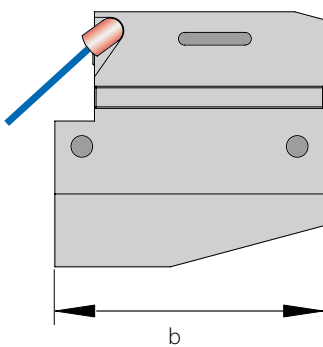
Form B1 – short with internal coolant



Basic holder

Designation	VDI	h4	AKL	b	Coolant jet	Screw for coolant jet
KMH01-B1-25X16X30-1K	25	16	30	55	KMD0519	AS0020
KMH01-B1-30X20X40-1K	30	20	40	70	KMD0830	AS0020
KMH01-B1-40X25X44-1K	40	25	44	85	KMD0830	AS0020

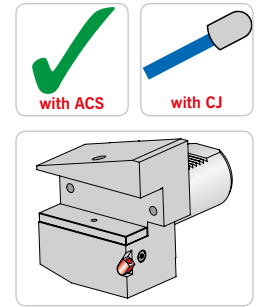
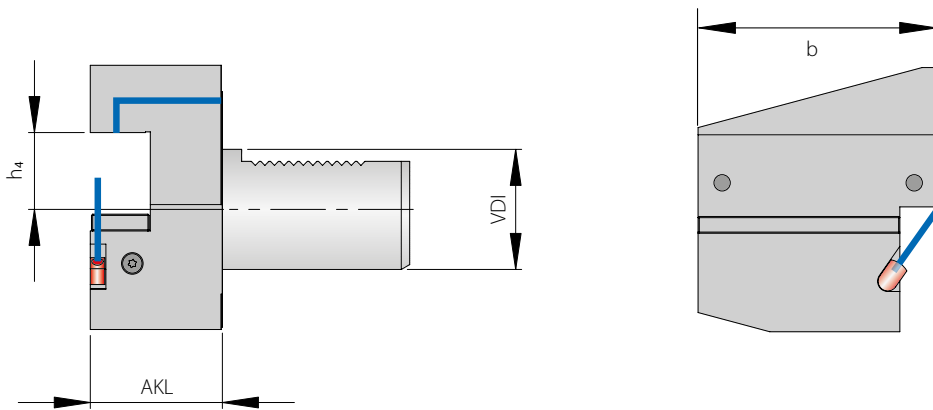
Form B2 – short with internal coolant



Basic holder

Designation	VDI	h4	AKL	b	Coolant jet	Screw for coolant jet
KMH01-B2-25X16X30-1K	25	16	30	55	KMD0519	AS0020
KMH01-B2-30X20X40-1K	30	20	40	70	KMD0830	AS0020
KMH01-B2-40X25X44-1K	40	25	44	85	KMD0830	AS0020

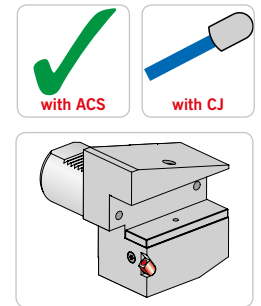
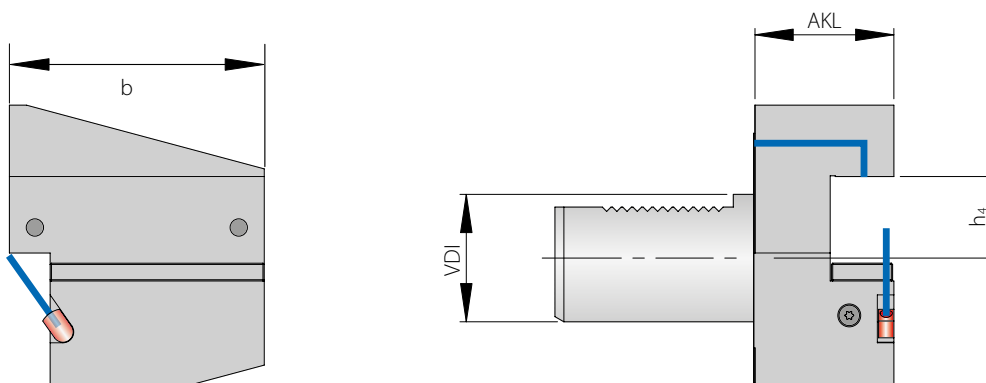
Form B3 – Upside down – short with internal coolant



Basic holder

Designation	VDI	h4	AKL	b	Coolant jet	Screw for coolant jet
KMH01-B3-25X16X30-1K	25	16	30	55	KMD0519	AS0020
KMH01-B3-30X20X40-1K	30	20	40	70	KMD0830	AS0020
KMH01-B3-40X25X44-1K	40	25	44	85	KMD0830	AS0020

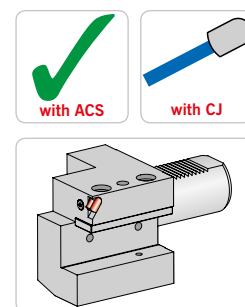
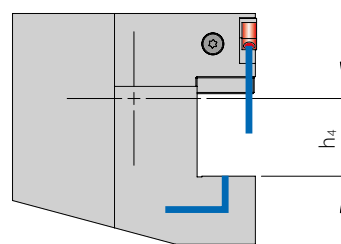
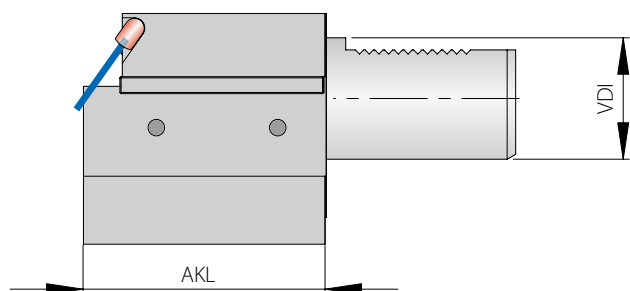
Form B4 – Upside down – short with internal coolant



Basic holder

Designation	VDI	h4	AKL	b	Coolant jet	Screw for coolant jet
KMH01-B4-25X16X30-1K	25	16	30	55	KMD0519	AS0020
KMH01-B4-30X20X40-1K	30	20	40	70	KMD0830	AS0020
KMH01-B4-40X25X44-1K	40	25	44	85	KMD0830	AS0020

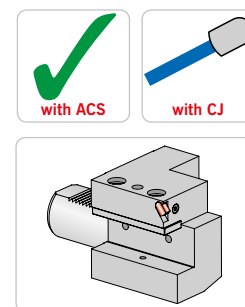
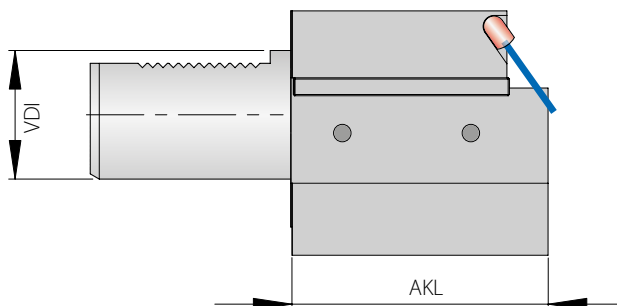
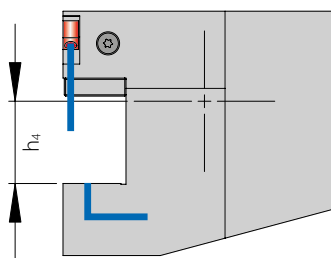
Form C1 – with internal coolant



Basic holder

Designation	VDI	h4	AKL	Coolant jet	Screw for coolant jet
KMH01-C1-25X16-IK	25	16	55	KMD0519	AS0020
KMH01-C1-30X20-IK	30	20	70	KMD0830	AS0020
KMH01-C1-40X25-IK	40	25	85	KMD0830	AS0020

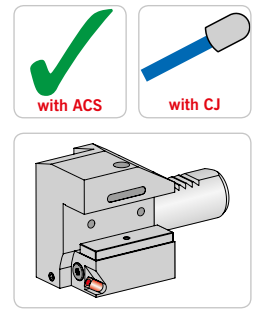
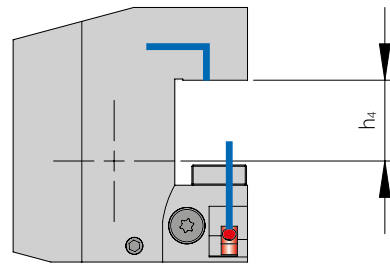
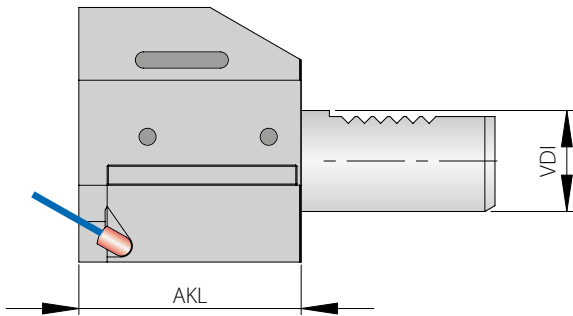
Form C2 – with internal coolant



Basic holder

Designation	VDI	h4	AKL	Coolant jet	Screw for coolant jet
KMH01-C2-25X16-IK	25	16	50	KMD0519	AS0020
KMH01-C2-30X20-IK	30	20	70	KMD0830	AS0020
KMH01-C2-40X25-IK	40	25	85	KMD0830	AS0020

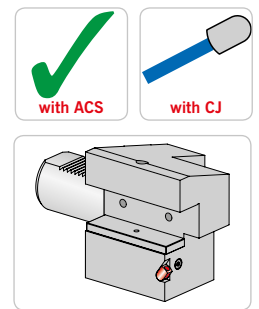
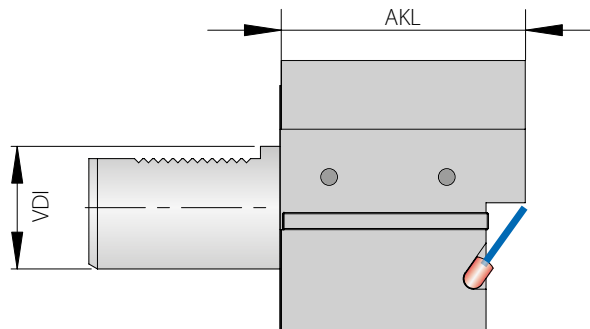
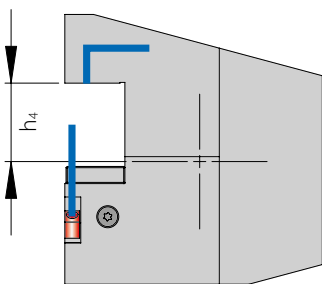
Form C3 – Upside down with internal coolant



Basic holder

Designation	VDI	h4	AKL	Coolant jet	Screw for coolant jet
KMH01-C3-25X16-1K	25	16	50	KMD0519	AS0020
KMH01-C3-30X20-1K	30	20	70	KMD0830	AS0020
KMH01-C3-40X25-1K	40	25	85	KMD0830	AS0020

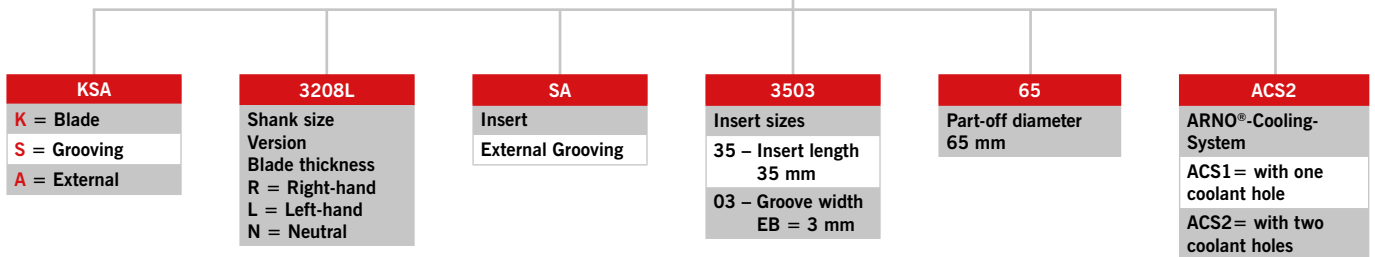
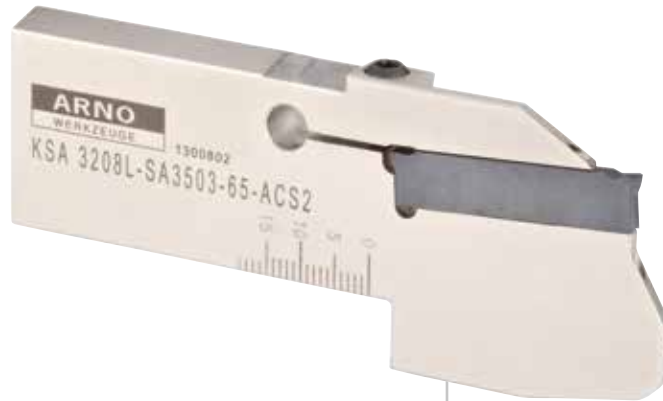
Form C4 – Upside down with internal coolant



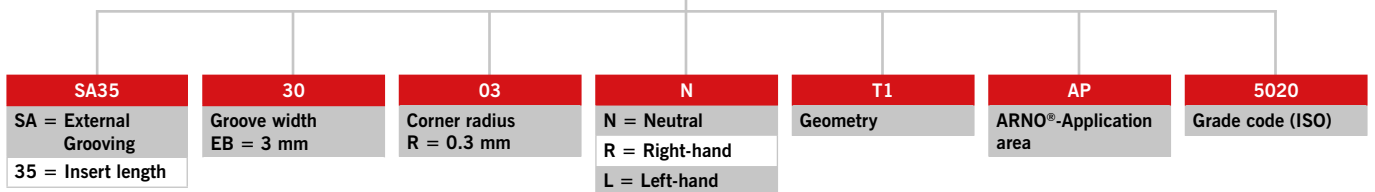
Basic holder

Designation	VDI	h4	AKL	Coolant jet	Screw for coolant jet
KMH01-C4-25X16-1K	25	16	55	KMD0519	AS0020
KMH01-C4-30X20-1K	30	20	70	KMD0830	AS0020
KMH01-C4-40X25-1K	40	25	85	KMD0830	AS0020

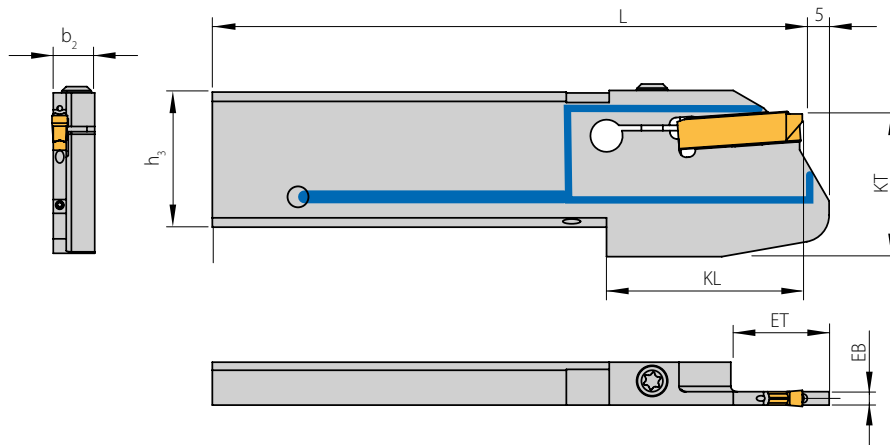
Blades



Inserts



KSA-ACS2



Part-off blade with ACS

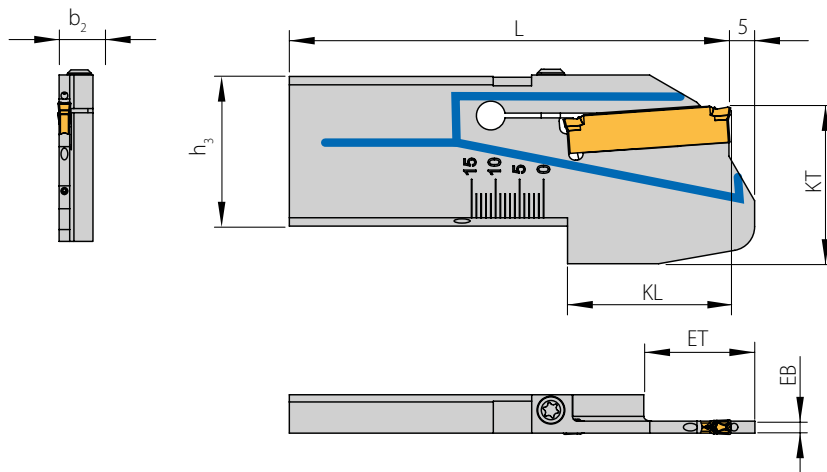
Designation	EB	ET	D _{max}	D _R	h ₃	b ₂	L	KL	KT	Insert
KSA 2608L-SA2403-44-ACS2	3.0	22.0	44	61	26	8.0	110	36.5	-	SA 24-30...

D_{max} = Maximum diameter in solid
 D_R = Maximum diameter for tube material

Spare parts

Blade	Screw	Key
KSA...08...-SA24...	AS0022	T5215-IP

KSA-ACS2



Part-off blade with ACS for VDI flange mounted holders

Designation	EB	ET	D _{max}	D _R	h ₃	b ₂	L	KL	KT	Insert
KSA 3208L-SA2403-44-ACS2*	3.0	22.0	44	–	32	8.0	81.5	23.5	32.5	SA 24-30...
KSA 3208LX-SA2403-44-ACS2**	3.0	22.0	44	–	32	8.0	81.5	23.5	32.5	SA 24-30...
KSA 3208L-SA3503-65-ACS2*	3.0	32.5	65	–	32	8.0	92.0	34.0	32.5	SA 35-30...
KSA 3208LX-SA3503-65-ACS2**	3.0	32.5	65	–	32	8.0	92.0	34.0	32.5	SA 35-30...

D_{max} = Maximum diameter in solid

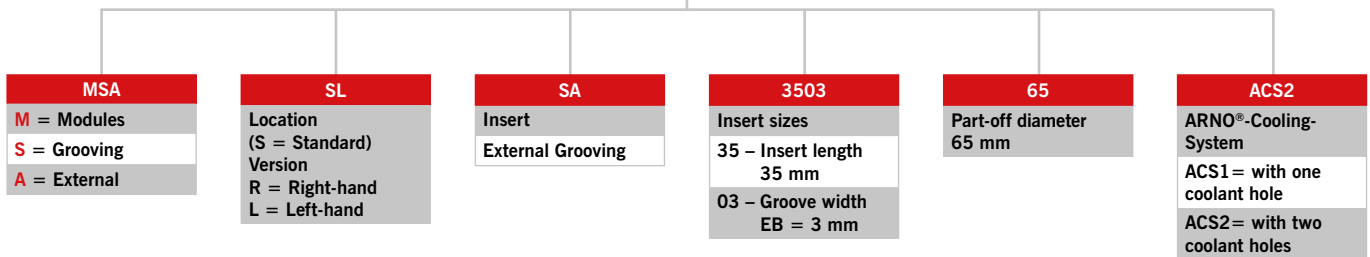
*The part-off blades suit to the flange mounted holders HVDI-30R-7-38-KSA-32L and HVDI-30L-7-60-KSA-32L page 56.

**The part-off blades suit to the flange mounted holders HVDI-30L-7-38-KSA-32LX and HVDI-30R-7-60-KSA-32LX page 56.

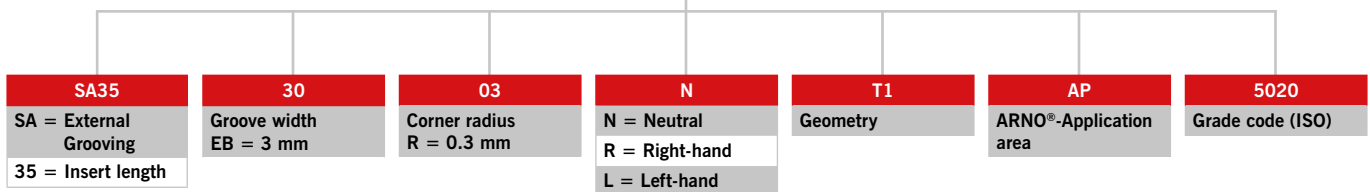
Spare parts

Blade	Screw	Key
KSA 3208...-ACS2	AS0022	T5215-IP

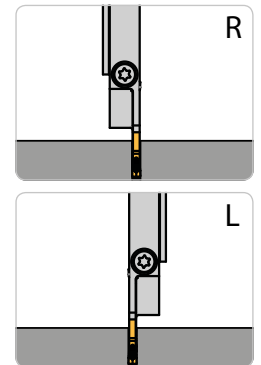
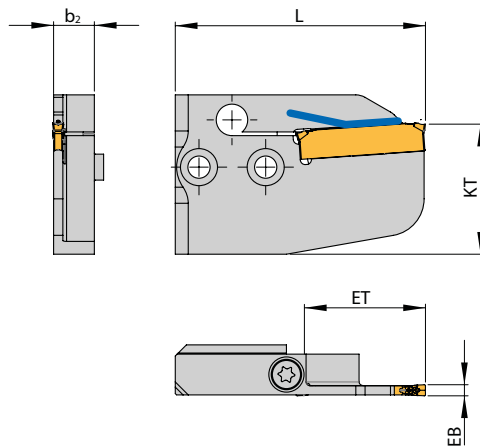
Module



Inserts



MSA-ACS1



Left-hand execution shown

Module with through tool coolant – ACS1

Designation	EB	ET	D_{max}	D_R	b_2	L	KT	Insert
MSA-SL-SA3503-65-ACS1	3.0	32.5	65	80	11.0	67.5	35.0	SA 35-30...
MSA-SR-SA3503-65-ACS1	3.0	32.5	65	80	11.0	67.5	35.0	SA 35-30...
MSA-SL-SA3506-105-ACS1	6.0	52.5	105	105	11.0	88.0	35.0	SA 35-60...

D_{max} = Maximum diameter in solid, D_R = Maximum diameter for tube material

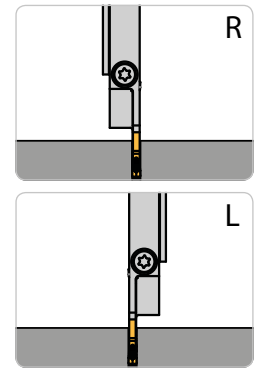
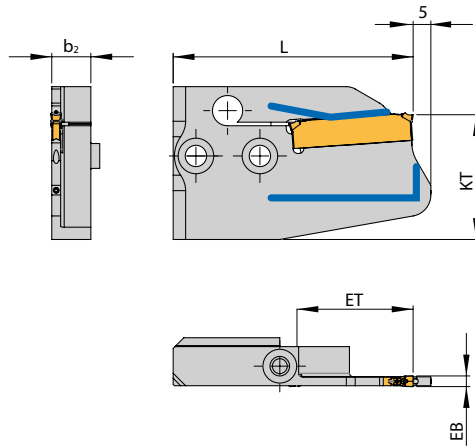
When using part-off modules from 105 mm diameter we recommend using a torque at torque setting of 3 Nm.

Remark: Suitable flange mounted holders with VDI can be found on page 52 – 67.

Spare parts

Module	Screw	Key
MSA-S R/L...	SA5T	T5220-IP

MSA-ACS2



Left-hand execution shown

Module with through tool coolant – ACS2

Designation	EB	ET	D_{max}	D_R	b_2	L	KT	Insert
MSA-SL-SA2403-32-ACS2	3.0	16.0	32	48	11.0	52.0	35.0	SA 24-30...
MSA-SR-SA2403-32-ACS2	3.0	16.0	32	48	11.0	52.0	35.0	SA 24-30...
MSA-SL-SA2403-44-ACS2	3.0	22.0	44	61	11.0	57.0	35.0	SA 24-30...
MSA-SR-SA2403-44-ACS2	3.0	22.0	44	61	11.0	57.0	35.0	SA 24-30...
MSA-SL-SA3503-52-ACS2	3.0	26.0	52	68	11.0	67.5	35.0	SA 35-30...
MSA-SR-SA3503-52-ACS2	3.0	26.0	52	68	11.0	67.5	35.0	SA 35-30...
MSA-SL-SA3503-65-ACS2	3.0	32.5	65	80	11.0	67.5	35.0	SA 35-30...
MSA-SR-SA3503-65-ACS2	3.0	32.5	65	80	11.0	67.5	35.0	SA 35-30...
MSA-SL-SA3503-69-ACS2	3.0	34.5	69	80	11.0	69.5	35.0	SA 35-30...
MSA-SL-SA3503-80-ACS2	3.0	40.0	80	80	11.0	75.0	35.0	SA 35-30...
MSA-SR-SA3503-80-ACS2	3.0	40.0	80	80	11.0	75.0	35.0	SA 35-30...
MSA-SL-SA3503-105-ACS2	3.0	52.5	105	105	11.0	88.0	35.0	SA 35-30...
MSA-SR-SA3503-105-ACS2	3.0	52.5	105	105	11.0	88.0	35.0	SA 35-30...
MSA-SL-SA3504-65-ACS2	4.0	32.5	65	80	11.0	67.5	35.0	SA 35-40...
MSA-SR-SA3504-65-ACS2	4.0	32.5	65	80	11.0	67.5	35.0	SA 35-40...

D_{max} = Maximum diameter in solid, D_R = Maximum diameter for tube material

When using part-off modules from 105 mm diameter we recommend using a torque at torque setting of 3 Nm.

Remark: Suitable flange mounted holders with VDI can be found on page 52 – 67.

Spare parts

Module	Screw	Key
MSA-S R/L...	SA5T	T5220-IP



F1

Very soft cutting geometry

- For low to medium strength materials with low built-up edge tendency
- Suitable for thin-walled components



T1

Very good swarf control and formation

- For steel and stainless steel
- Universal geometry machining, for thin-walled components



S1

Soft cutting geometry

- Especially for stainless steel
- Problem solver for steel machining



M1

Geometry with small negative chamfer

- For medium to high strength materials
- Suitable for all steels (stainless and cast)
- First choice where cutting conditions are solid



ALU

Geometry with a sharp edge

- First choice for aluminium and non-ferrous materials
- Periphery ground insert
- High positive design
- Polished chip breakers

Coated

AM5040

PVD coated carbide

A tough but universal grade for low to medium cutting speeds. The main application area being stainless steel and steel.

AP2220

CVD-multilayer coating

Grade with excellent combination of wear resistance and cutting edge stability. Main application area is alloy steel and cast materials. But under stable conditions also suitable for stainless steel at medium to high cutting speeds.

AP2240

NEW

CVD coated carbide grade

The AP2240 provides more toughness and heat resistance and thereby even more tool life. The strong cutting edge improves the process reliability. Main application area is steel and cast iron machining. Can also be used for stainless steel machining.

AP5020

PVD coated carbide

A universal grade for low to medium cutting speed. Main application areas are steel and stainless steel, but also suitable for part-off and grooving of high temperature alloys and non-ferrous materials.

AP5030

PVD coated carbide

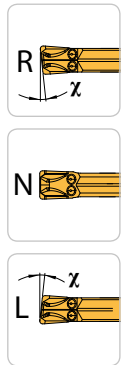
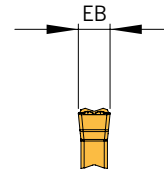
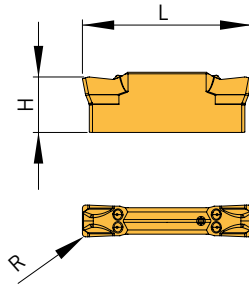
A universal grade mainly for steel applications. The slightly tougher substrate (ISO P30-P35) makes it suitable also for stainless steel.

Uncoated

AN1015

Uncoated carbide grade which in connection with a ground cutting edge is for finishing and roughing of aluminium alloys and non-ferrous materials. In order to reduce build up edge problems the insert is also highly polished.

SA16



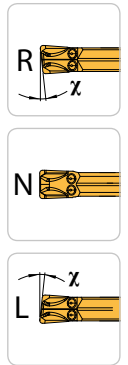
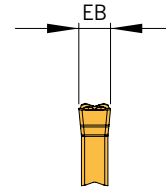
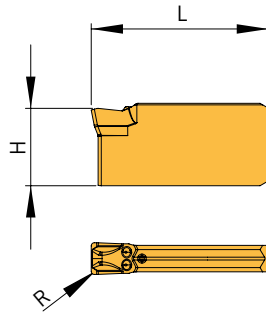
Designation	Grades										
						coated					uncoated
	EB	H	L	R	χ	AM5040	AP2220	AP2240	AP5020	AP5030	AN1015
SA16-2001L-S1-12**	2.0	5.5	16.00	0.1	12°	●					
SA16-2001R-S1-12**	2.0	5.5	16.00	0.1	12°	●					
SA16-2001L-T1-15**	2.0	5.5	16.00	0.1	15°				●		
SA16-2001R-T1-15**	2.0	5.5	16.00	0.1	15°				●		
SA16-2002N-F1	2.0	5.5	16.00	0.2	0°		●		●		
SA16-2002N-S1	2.0	5.5	16.00	0.2	0°	●			●		
SA16-2002N-T1	2.0	5.5	16.00	0.2	0°		●		●		
SA16-3002L-S1-12**	3.0	5.5	16.00	0.2	12°	●					
SA16-3002R-S1-12**	3.0	5.5	16.00	0.2	12°	●					
SA16-3003L-M1	3.0	5.5	16.00	0.3	6°		●		●		
SA16-3003R-M1	3.0	5.5	16.00	0.3	6°		●		●		
SA16-3003L-S1	3.0	5.5	16.00	0.3	6°	●					
SA16-3003R-S1	3.0	5.5	16.00	0.3	6°	●					
SA16-3003L-T1	3.0	5.5	16.00	0.3	6°		●		●		
SA16-3003R-T1	3.0	5.5	16.00	0.3	6°		●		●		
SA16-3003N-M1	3.0	5.5	16.00	0.3	0°		●		●		
SA16-3003N-S1	3.0	5.5	16.00	0.3	0°	●			●		
SA16-3003N-T1	3.0	5.5	16.00	0.3	0°		●		●		

Remark: When using left- or right-handed inserts the holder may be needing modification.
 **Ground version

● Main application
 ○ Secondary application

P	○	●	●	
M	●	○	○	
K		●		
N			○	
S			○	
H				

SA17 (single sided insert)



Designation	EB	H	L	R	χ	Grades					
						coated					uncoated
						AM5040	AP2220	AP2240	AP5020	AP5030	AN1015
SA17-3003N-M1	3.0	7.5	16.75	0.3	0°		●		●		
SA17-3003N-T1	3.0	7.5	16.75	0.3	0°				●		
SA17-4004N-M1	4.0	7.5	16.75	0.4	0°		●		●		
SA17-4004N-S1	4.0	7.5	16.75	0.4	0°	●					
SA17-2002N-ALU**	2.0	7.5	16.75	0.2							●
SA17-2001L-15-ALU**	2.0	7.5	16.75	0.1							●
SA17-2001R-15-ALU**	2.0	7.5	16.75	0.1							●
SA17-3003N-ALU**	3.0	7.5	16.75	0.3							●
SA17-3002L-15-ALU**	3.0	7.5	16.75	0.2							●
SA17-3002R-15-ALU**	3.0	7.5	16.75	0.2							●

Remark: When using left- or right-handed inserts the holder may be needing modification.

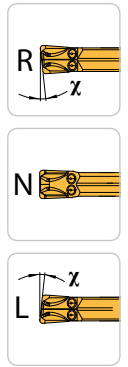
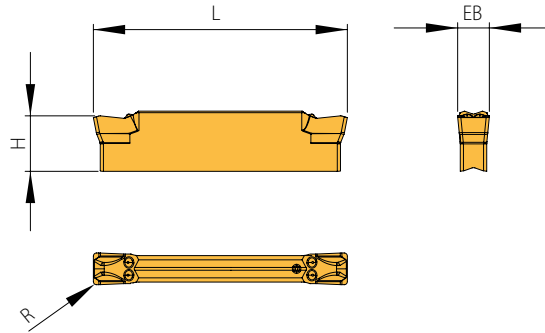
Single sided insert

**Ground version

- Main application
- Secondary application

P	○	●		●	
M	●	○		○	
K		●			○
N				○	●
S				○	○
H					

SA24



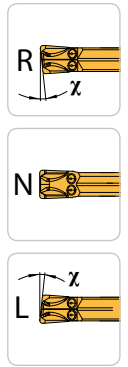
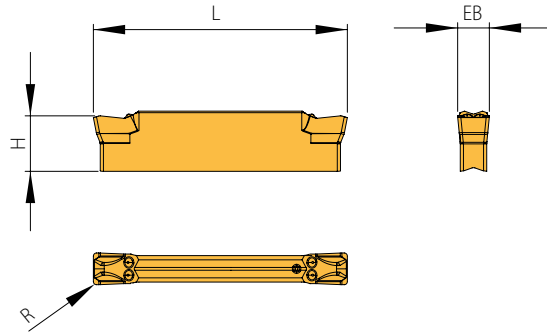
Designation	EB	H	L	R	χ	Grades					uncoated
						coated					
						AM5040	AP2220	AP2240	AP5020	AP5030	
SA24-1502N-S1	1.5	5.5	24.00	0.2	0°				●		
SA24-1502N-T1	1.5	5.5	24.00	0.2	0°				●		
SA24-2000R-T1-15**	2.0	5.5	24.00	0.0	15°				●		
SA24-2001L-S1-12**	2.0	5.5	24.00	0.1	12°	●					
SA24-2001R-S1-12**	2.0	5.5	24.00	0.1	12°	●					
SA24-2001L-S1-15**	2.0	5.5	24.00	0.1	15°				●		
SA24-2001R-S1-15**	2.0	5.5	24.00	0.1	15°				●		
SA24-2001L-T1-15**	2.0	5.5	24.00	0.1	15°				●		
SA24-2001R-T1-15**	2.0	5.5	24.00	0.1	15°				●		
SA24-2002L-S1-8**	2.0	5.5	24.00	0.2	8°				●		
SA24-2002R-S1-8**	2.0	5.5	24.00	0.2	8°				●		
SA24-2002N-F1	2.0	5.5	24.00	0.2	0°		●		●		
SA24-2002N-M1	2.0	5.5	24.00	0.2	0°		●		●		
SA24-2002N-S1	2.0	5.5	24.00	0.2	0°	●	●	●	●	●	
SA24-2002N-T1	2.0	5.5	24.00	0.2	0°		●	●	●		
SA24-2503N-S1	2.5	5.5	24.00	0.3	0°	●			●		
SA24-2503N-T1	2.5	5.5	24.00	0.3	0°				●		
SA24-3002L-S1-12**	3.0	5.5	24.00	0.2	12°	●					
SA24-3002R-S1-12**	3.0	5.5	24.00	0.2	12°	●					
SA24-3003L-M1	3.0	5.5	24.00	0.3	6°		●	●	●		
SA24-3003R-M1	3.0	5.5	24.00	0.3	6°		●	●	●		
SA24-3003L-S1	3.0	5.5	24.00	0.3	6°	●					
SA24-3003R-S1	3.0	5.5	24.00	0.3	6°	●					
SA24-3003L-T1	3.0	5.5	24.00	0.3	6°		●		●		
SA24-3003R-T1	3.0	5.5	24.00	0.3	6°		●		●		
SA24-3003N-M1	3.0	5.5	24.00	0.3	0°		●	●	●		
SA24-3003N-S1	3.0	5.5	24.00	0.3	0°	●		●	●		
SA24-3003N-T1	3.0	5.5	24.00	0.3	0°		●	●	●		
SA24-4004N-M1	4.0	5.5	24.00	0.4	0°		●		●		
SA24-4004N-S1	4.0	5.5	24.00	0.4	0°	●					

Remark: When using left- or right-handed inserts the holder may be needing modification.
 **Ground version

● Main application
 ○ Secondary application

P	○	●	●	●	●	
M	●	○	○	○	○	
K		●	●			
N				○		
S				○		
H						

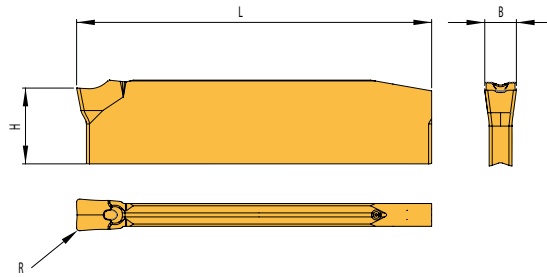
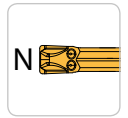
SA24



Designation	EB	H	L	R	χ	Grades					
						coated					uncoated
						AM5040	AP2220	AP2240	AP5020	AP5030	AN1015
SA24-4004N-T1	4.0	5.5	24.00	0.4	0°				●		
SA24-5005N-M1	5.0	7.5	24.00	0.5	0°				●		
SA24-5005N-S1	5.0	7.5	24.00	0.5	0°				●		
SA24-5005N-T1	5.0	7.5	24.00	0.5	0°				●		
SA24-2001L-ALU-15**	2.0	5.5	24.00	0.1	15°						●
SA24-2001R-ALU-15**	2.0	5.5	24.00	0.1	15°						●
SA24-2002N-ALU**	2.0	5.5	24.00	0.2	0°						●
SA24-3002L-ALU-15**	3.0	5.5	24.00	0.2	15°						●
SA24-3002R-ALU-15**	3.0	5.5	24.00	0.2	15°						●
SA24-3003N-ALU**	3.0	5.5	24.00	0.3	0°						●

Remark: When using left- or right-handed inserts the holder may be needing modification.	● Main application	P	●	
**Ground version	○ Secondary application	M	○	
		K		○
		N	○	●
		S	○	○
		H		

SA24E (single sided insert)

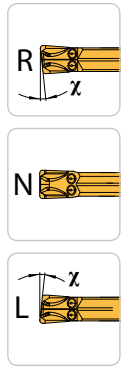
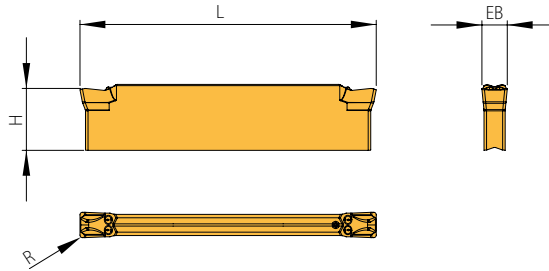


Designation	EB	H	L	R	Grades					
					coated					uncoated
					AM5040	AP2220	AP2240	AP5020	AP5030	AN1015
SA24E-2002N-S1	2.0	5.5	24.00	0.2				●		
SA24E-3003N-S1	3.0	5.5	24.00	0.3				●		

● Main application
 ○ Secondary application

P								●		
M								○		
K										
N								○		
S								○		
H										

SA35



Designation	EB	H	L	R	χ	Grades					AN1015
						AM5040	AP2220	AP2240	AP5020	AP5030	
SA35-2001L-S1-12**	2.0	7.5	35.00	0.1	12°	●					
SA35-2001R-S1-12**	2.0	7.5	35.00	0.1	12°	●					
SA35-2002L-M1	2.0	7.5	35.00	0.2	6°				●		
SA35-2002R-M1	2.0	7.5	35.00	0.2	6°				●		
SA35-2002N-F1	2.0	7.5	35.00	0.2	0°		●		●		
SA35-2002N-M1	2.0	7.5	35.00	0.2	0°				●		
SA35-2002N-S1	2.0	7.5	35.00	0.2	0°	●			●		
SA35-2002N-T1	2.0	7.5	35.00	0.2	0°		●		●		
SA35-3002L-S1-12**	3.0	7.5	35.00	0.2	12°	●					
SA35-3002R-S1-12**	3.0	7.5	35.00	0.2	12°	●					
SA35-3003L-M1	3.0	7.5	35.00	0.3	6°		●	●	●		
SA35-3003R-M1	3.0	7.5	35.00	0.3	6°		●	●	●		
SA35-3003L-S1	3.0	7.5	35.00	0.3	6°				●		
SA35-3003R-S1	3.0	7.5	35.00	0.3	6°				●		
SA35-3003L-T1	3.0	7.5	35.00	0.3	6°		●		●		
SA35-3003R-T1	3.0	7.5	35.00	0.3	6°		●		●		
SA35-3003N-M1	3.0	7.5	35.00	0.3	0°	●	●	●	●		
SA35-3003N-S1	3.0	7.5	35.00	0.3	0°	●		●	●	●	
SA35-3003N-T1	3.0	7.5	35.00	0.3	0°		●	●	●		
SA35-4004N-M1	4.0	7.5	35.00	0.4	0°		●		●		
SA35-4004N-S1	4.0	7.5	35.00	0.4	0°	●					
SA35-4004N-T1	4.0	7.5	35.00	0.4	0°				●		
SA35-6006N-M1	6.0	7.5	35.00	0.6	0°				●		
SA35-2001L-ALU-15**	2.0	7.5	35.00	0.1	15°						●
SA35-2001R-ALU-15**	2.0	7.5	35.00	0.1	15°						●
SA35-2002N-ALU**	2.0	7.5	35.00	0.2	0°						●
SA35-3002L-ALU-15**	3.0	7.5	35.00	0.2	15°						●
SA35-3002R-ALU-15**	3.0	7.5	35.00	0.2	15°						●
SA35-3003N-ALU**	3.0	7.5	35.00	0.3	0°						●
SA35-4004N-ALU**	4.0	7.5	35.00	0.4	0°						●

Remark: When using left- or right-handed inserts the holder may be needing modification.

**Ground version

● Main application

○ Secondary application

P	○	●	●	●	●	
M	●	○	○	○	○	
K		●	●			○
N				○		●
S				○		○
H						

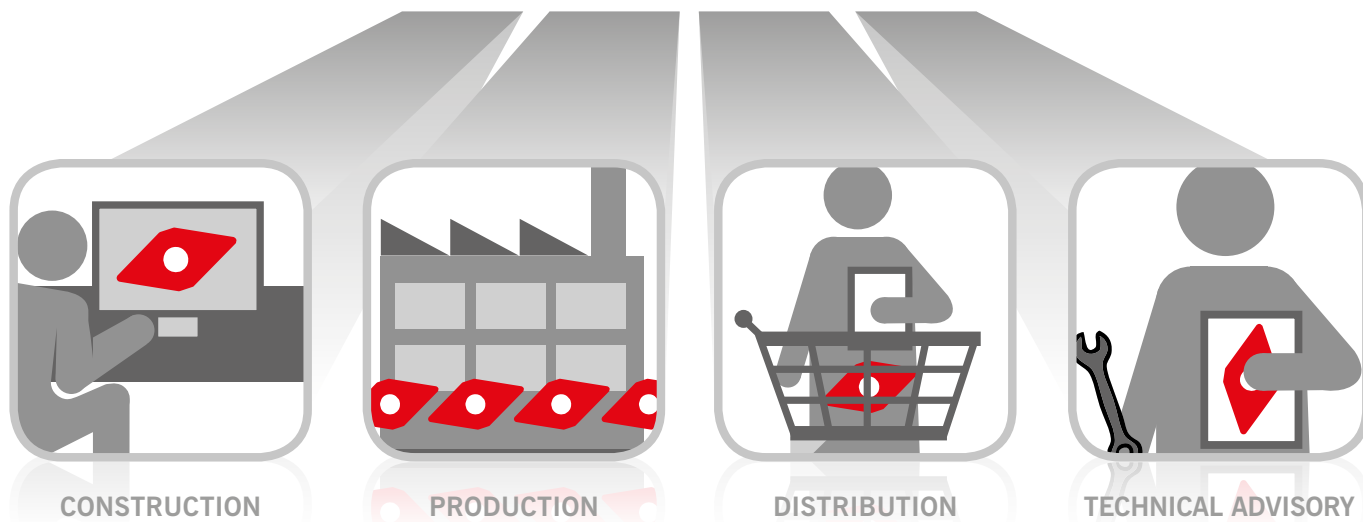
Grooving

ISO	Material	Tensile strength (N/mm ²)	Cutting speed V _c (m/min)					uncoated AN1015	
			coated						
			AM5040	AP2220	AP2240	AP5020	AP5030		
P	Unalloyed steel and cast steel	< 0.15 % C/hardened and tempered	350	120-200	130-250	130-250	120-220	120-200	-
		0.15-0.45% C/hardened and tempered	650	80-150	110-180	110-190	80-150	80-150	-
		> 0.45% C/hardened and tempered	1000	60-140	70-150	70-170	60-140	60-140	-
	Low alloyed steel and cast steel	annealed	600	80-160	120-190	120-200	80-170	80-170	-
		hardened and tempered	900	60-130	110-150	110-180	60-130	60-130	-
			1200	60-120	70-130	70-150	60-120	60-120	-
	High alloyed steel	annealed	700	80-140	90-140	90-170	80-140	80-140	-
	High alloyed tool steel and cast steel	hardened	1100	50-120	70-130	70-160	50-120	50-120	-
Stainless steel	ferritic, annealed	700	60-160	110-200	120-200	60-170	60-170	-	
Cast steel	martensitic, hardened and tempered	1000	50-100	60-130	60-100	50-100	50-100	-	
M	Stainless steel	ferritic / martensitic, annealed	450-600	60-160	100-200	100-170	60-180	60-170	-
		martensitic / austenitic, heat treated	600-900	50-90	120-150	60-90	50-90	50-90	-
K	Cast iron	pearlitic/ferritic	500-700	-	100-160	100-200	-	-	120-160
		pearlitic/martensitic	700-850	-	110-180	90-180	-	-	100-150
			800-1100	-	130-200	80-150	-	-	90-140
	Cast iron with nodular graphite	ferritic	550	-	100-160	100-160	-	-	130-170
		pearlitic	800	-	120-220	70-140	-	-	90-130
	Malleable cast iron	ferritic	450	-	90-180	100-200	-	-	140-200
	pearlitic	750	-	-	80-150	-	-	120-160	
N	Aluminium alloys long chipping	not heat treatable	200	-	-	-	100-500	-	300-500
		heat treatable, heat treated	350	-	-	-	100-300	-	200-300
	Casted aluminium alloys	≤ 12 % Si, heat treated	250	-	-	-	100-500	-	100-500
		≤ 12 % Si, heat treatable, heat treated	300	-	-	-	100-300	-	100-300
		≤ 12 % Si, not heat treatable	450	-	-	-	100-200	-	100-200
	Copper and copper alloys (Brass/Bronze)	Lead alloys, Pb > 1 %	400	-	-	-	100-500	-	250-500
		Brass, Bronze	300	-	-	-	100-500	-	200-500
		Aluminium bronze	500	-	-	-	100-300	-	150-300
		Copper and elektrolyte copper	200	-	-	-	100-300	-	150-300
	Non-ferrous materials	Duroplastic	-	-	-	-	80-180	-	80-180
Re-inforced plastics		-	-	-	-	60-150	-	60-150	
Hard rubber		-	-	-	-	100-220	-	100-200	
S	High temperature resistant alloys	Fe-alloyed, annealed	700	-	-	-	20-50	-	30-45
		Fe-alloyed, heat treated	950	-	-	-	20-40	-	20-35
		Ni- or Co-alloyed, annealed	800	-	-	-	15-25	-	15-25
		Ni- or Co-alloyed, casting	1100	-	-	-	10-20	-	10-20
		Ni- or Co-alloyed, heat treated	1200	-	-	-	10-20	-	10-20
	Titanium alloys	Pure titan	500-700	-	-	-	50-120	-	60-120
Alpha- and Beta-alloys	heat treated	700-1000	-	-	-	30-50	-	30-50	
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.

ARNO[®]

WERKZEUGE



Quick, flexible and individual.

To have design, production and service all under one roof

is the perfect way of providing standard and special products.

95 % of the standard programme is available from stock. Order received before 6.00 pm CET are dispatched the very same day and in most cases supplied next day.

Our competent team of technical sales engineers will be available to support you on site.

Part-off holders and flange mounted holders

Holder assembly



Holder assembly – upside down



Introduction

Machine specific flange mounted holders for use with SA part-off modules and blades. The modular holders can be mounted either normal or upside down. They are suitable for part-off range from Ø 32 to Ø 105 mm and for width from 3 to 6 mm. All flange mounted holders have coolant through and ACS.

Fakten

Part-off holders and flange mounted holders:

- Height adjustable
- With through tool coolant, ACS2
- Modular holders with
 - VDI
 - BMT
 - Daewoo/Doosan
 - Mori Seiki

and many more

Part-off holders



Part-off holders MSA – VDI25 – with ACS

Page **52**



Part-off holders MSA – VDI30 – with ACS

Page **54**



Part-off holders KSA – VDI30 – with ACS

Page **56**



Part-off holders Daewoo / Doosan BMT 45, 55, 65 with ACS

Page **58**



Part-off holders Daewoo / Doosan – BMT 45, 55, 65 with ACS

Page **60**



Part-off holders Mori Seiki – NZ/NL with ACS

Page **62**

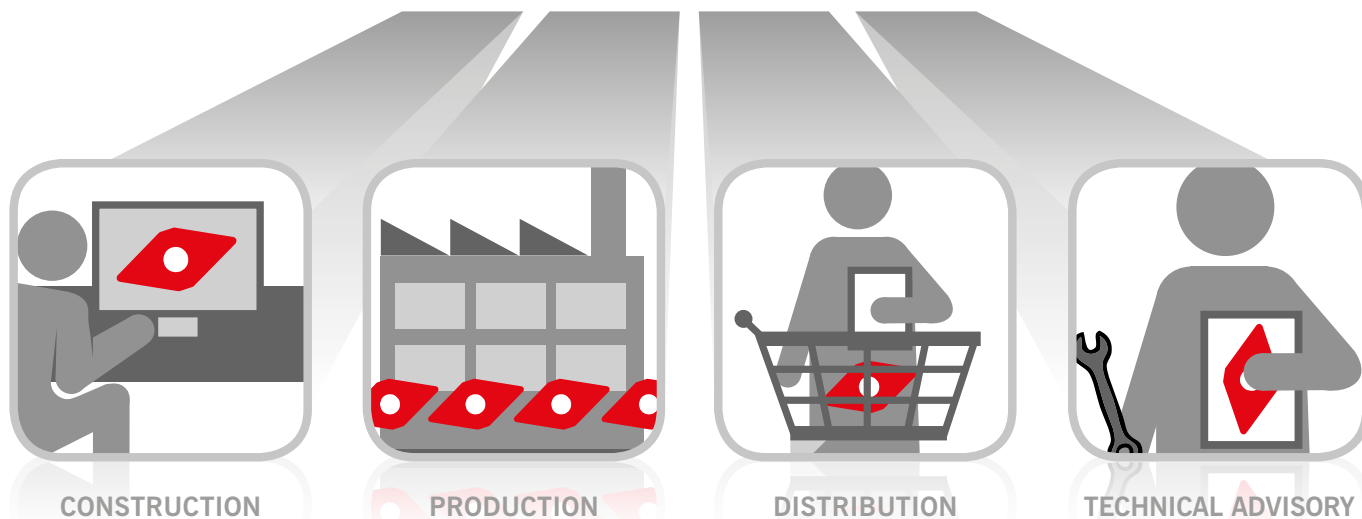


Part-off holders Mori Seiki – NZ/NL with ACS

Page **64**

ARNO[®]

WERKZEUGE



Quick, flexible and individual.

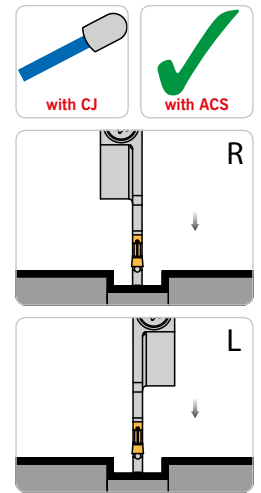
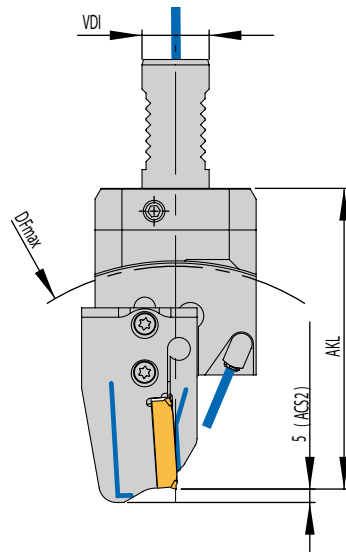
To have design, production and service all under one roof

is the perfect way of providing standard and special products.

95 % of the standard programme is available from stock. Order received before 6.00 pm CET are dispatched the very same day and in most cases supplied next day.

Our competent team of technical sales engineers will be available to support you on site.

VDI – with internal coolant and ACS



Right-hand holder and left module shown
Height adjustable holder

Basic holder

Designation	VDI	F1	F2	Module
HVDI 25L-7-35-MSA-SL	25	–	35	MSA-SL...-ACS.
HVDI 25L-7-15-MSA-SR	25	15	–	MSA-SR...-ACS.
HVDI 25R-7-15-MSA-SL	25	15	–	MSA-SL...-ACS.
HVDI 25R-7-35-MSA-SR	25	–	35	MSA-SR...-ACS.
HVDI 25R-7-15-MSA-SL-122	25	15	–	MSA-SL...-ACS.

Module

DF_{max} = maximum chuck diameter and AKL = Overhang length with MSA-Module

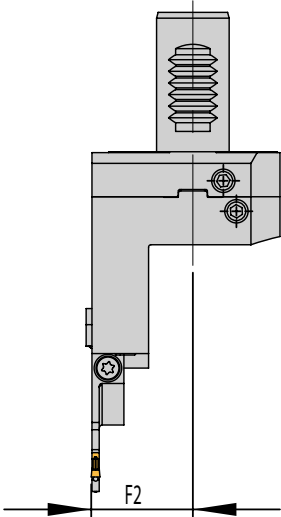
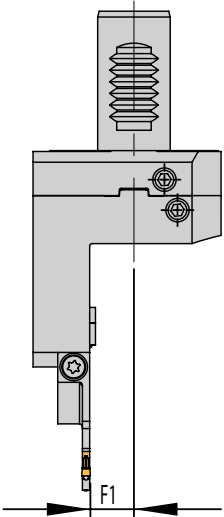
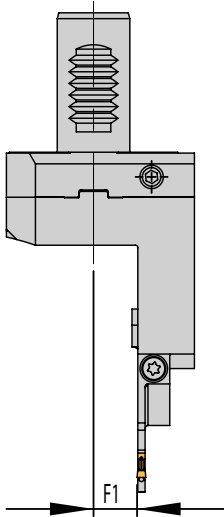
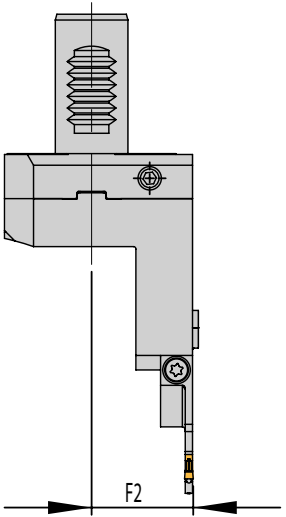








Designation	VDI25		VDI25...-122	
	AKL	DF_{max}	AKL	DF_{max}
MSA-...-32	96.5	135	106.5	155
MSA-...-44	101.5	145	111.5	165
MSA-...-52	112.0	165	122.0	185
MSA-...-65	112.0	165	122.0	185
MSA-...-80	119.5	180	129.5	200
MSA-...-105	132.0	205	142.0	225
MSA-...-125	142.0	225	152.0	240
MSA-...-140	150.0	235	160.0	255

Remark: For modules to suit please see page 35 – 37.

Spare parts and accessories

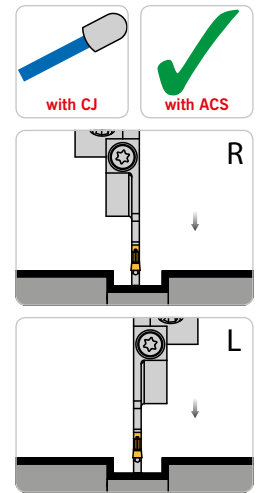
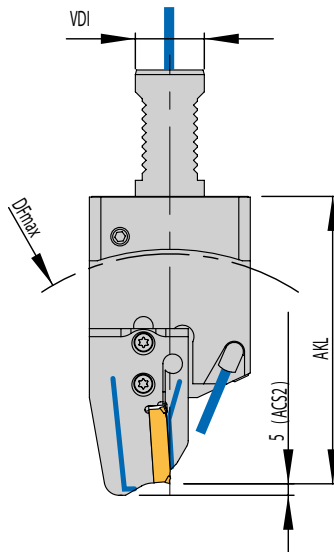
Basic holder	Screw for module	Key	Coolant jet	Locking pin
HVDI 25.	AS0070	T5220-IP	KMD0820-4BJ	ZS0820G
Module	Screw for insert	Key		
MSA-...-	SA5T	T5220-IP		

Assembly options

Left-hand holder		Right-hand holder	
HVDI 25L-7-35-MSA-SL	HVDI 25L-7-15-MSA-SR	HVDI 25R-7-15-MSA-SL	HVDI 25R-7-35-MSA-SR
			
Left module shown	Right module shown	Left module shown	Right module shown
			
Normal assembly	Normal assembly	Normal assembly	Normal assembly
			
Upside down assembly	Upside down assembly	Upside down assembly	Upside down assembly

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads

VDI30 – with internal coolant and ACS



Right-hand holder and left module shown
Height adjustable holder

Basic holder

Designation	VDI	F1	F2	Module
HVDI 30L-7-60-MSA-SL	30	–	60.3	MSA-SL...-ACS.
HVDI 30L-7-38-MSA-SR	30	38.5	–	MSA-SR...-ACS.
HVDI 30R-7-38-MSA-SL	30	38.5	–	MSA-SL...-ACS.
HVDI 30R-7-60-MSA-SR	30	–	60.3	MSA-SR...-ACS.
HVDI 30L-7-60-107-MSA-SL	30	–	60.3	MSA-SL...-ACS.
HVDI 30L-7-38-107-MSA-SR	30	38.5	–	MSA-SR...-ACS.
HVDI 30R-7-38-107-MSA-SL	30	38.5	–	MSA-SL...-ACS.
HVDI 30R-7-60-107-MSA-SR	30	–	60.3	MSA-SR...-ACS.

Module

DF_{max} = maximum chuck diameter and AKL = Overhang length with MSA-Module

Designation	VDI30		VDI30...-107	
	AKL	DF_{max}	AKL	DF_{max}
MSA-...-32	109.5	165	91.5	130
MSA-...-44	114.5	175	96.5	140
MSA-...-52	125.0	200	107.0	160
MSA-...-65	125.0	200	107.0	160
MSA-...-80	132.5	210	114.5	175
MSA-...-105	145.5	235	127.5	200
MSA-...-125	155.5	255	137.5	220
MSA-...-140	163.0	270	145.0	235

Remark: For modules to suit please see page 35 – 37.

Spare parts and accessories

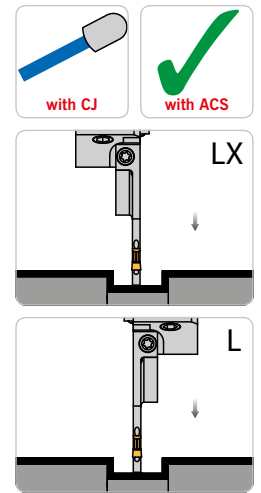
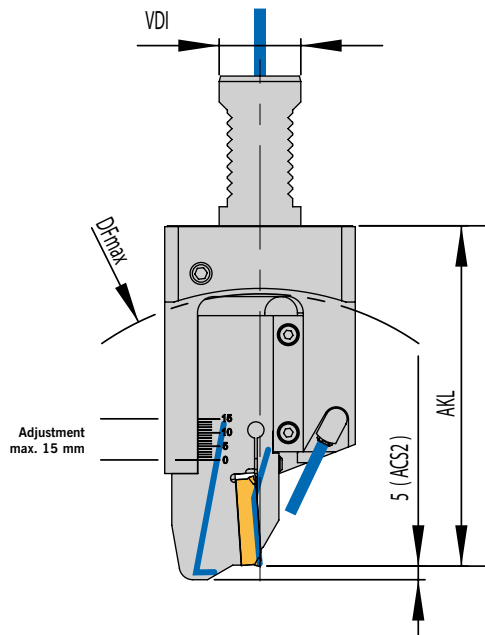
Basic holder	Screw for module	Key	Coolant jet	Locking pin
HVDI 30.	AS0070	T5220-IP	KMD0820-4BJ	ZS0820G
Module	Screw for insert	Key		
MSA-...-	SA5T	T5220-IP		

Assembly options

Left-hand holder		Right-hand holder	
HVDI 30L-7-60-MSA-SL	HVDI 30L-7-38-MSA-SR	HVDI 30R-7-38-MSA-SL	HVDI 30R-7-60-MSA-SR
HVDI 30L-7-60-107-MSA-SL	HVDI 30L-7-38-107-MSA-SR	HVDI 30R-7-38-107-MSA-SL	HVDI 30R-7-60-107-MSA-SR
Left module shown	Right module shown	Left module shown	Right module shown
Normal assembly	Normal assembly	Normal assembly	Normal assembly
Upside down assembly	Upside down assembly	Upside down assembly	Upside down assembly

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads

VDI30 – with internal coolant and ACS



Right-hand holder und Blade L fixed
Height adjustable holder

Basic holder

Designation	VDI	F1	F2	Blade
HVDI 30L-7-60-KSA-32L	30	–	60.3	KSA...L...ACS2
HVDI 30L-7-38-KSA-32LX	30	38.5	–	KSA...LX...ACS2
HVDI 30R-7-38-KSA-32L	30	38.5	–	KSA...L...ACS2
HVDI 30R-7-60-KSA-32LX	30	–	60.3	KSA...LX...ACS2

Remark for blade "LX" and blade "L": For optimum coolant flow the blade should not exceed a 15 mm overhang.

Blade

DF_{max} = maximum chuck diameter and AKL = Overhang length with blade KSA

Designation	VDI30	
	AKL	DF _{max} ¹⁾
KSA ...-44-ACS.	114.5	177
KSA ...-65-ACS.	125.0	198

1) Formula for DF_{max} for variable overhang of blade DF_{max} = (AKL_{min} - 26 + adjustment) x 2
Remark: For modules to suit please see page 34.

Spare parts and accessories

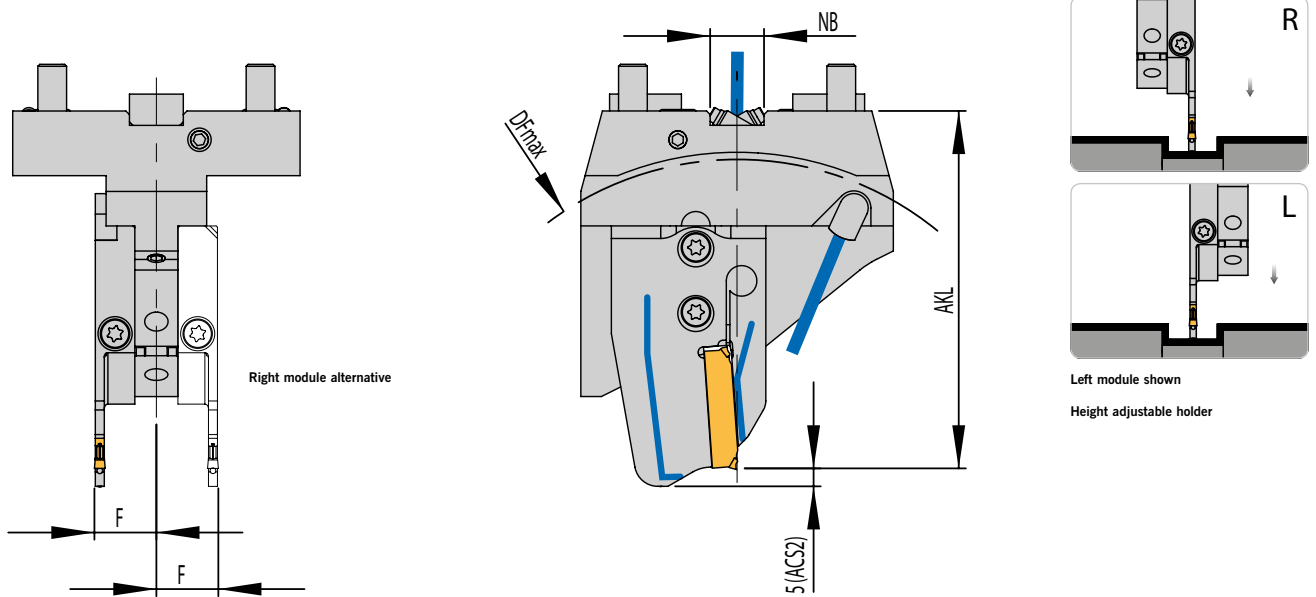
Basic holder	Screw for module	Clamp	Coolant jet	Locking pin
HVDI 30...-KSA-..	DIN912-M4x12-12.9	K-HVDI-10-50	KMD0820-4BJ	ZS0820G
For blade	Screw for insert		Key	
KSA 3208.	AS0022		T5215-IP	

Assembly options

Left-hand holder		Right-hand holder	
HVDI 30L-7-60-KSA-32L	HVDI 30L-7-38-KSA-32LX	HVDI 30R-7-38-KSA-32L	HVDI 30R-7-60-KSA-32LX
Blade L fixed	Blade LX fixed	Blade L fixed	Blade LX fixed
Normal assembly	Normal assembly	Normal assembly	Normal assembly
Upside down assembly	Upside down assembly	Upside down assembly	Upside down assembly

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads

BMT – with internal coolant and ACS



Basic holder

Designation	NB	F	Module
HDD-BMT45-SDS-ACS	15	17.3	MSA-...-ACS.
HDD-BMT55-SDS-ACS	15	17.3	MSA-...-ACS.
HDD-BMT65-SDS-ACS	18	17.3	MSA-...-ACS.

Module

DF_{max} = maximum chuck diameter and AKL = Overhang length with MSA-Module

Designation	BMT45		BMT55		BMT65	
	AKL	DF_{max}	AKL	DF_{max}	AKL	DF_{max}
MSA-...-32-ACS.	84.0	140	114.5	185	131.5	215
MSA-...-44-ACS.	89.0	150	119.5	195	136.5	225
MSA-...-52-ACS.	99.5	170	130.0	215	147.0	245
MSA-...-65-ACS.	99.5	170	130.0	215	147.0	245
MSA-...-80-ACS.	107.0	185	137.5	230	154.5	260
MSA-...-105-ACS.	120.0	210	150.5	255	167.5	285
MSA-...-125-ACS.	130.0	225	160.5	270	177.5	305
MSA-...-140-ACS.	137.5	240	168.0	285	185.0	320

Remark: For modules to suit please see page 35 – 37.

Assembly options



Remark: All shown options are available with only one holder.

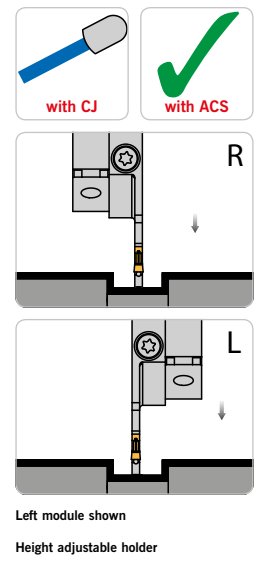
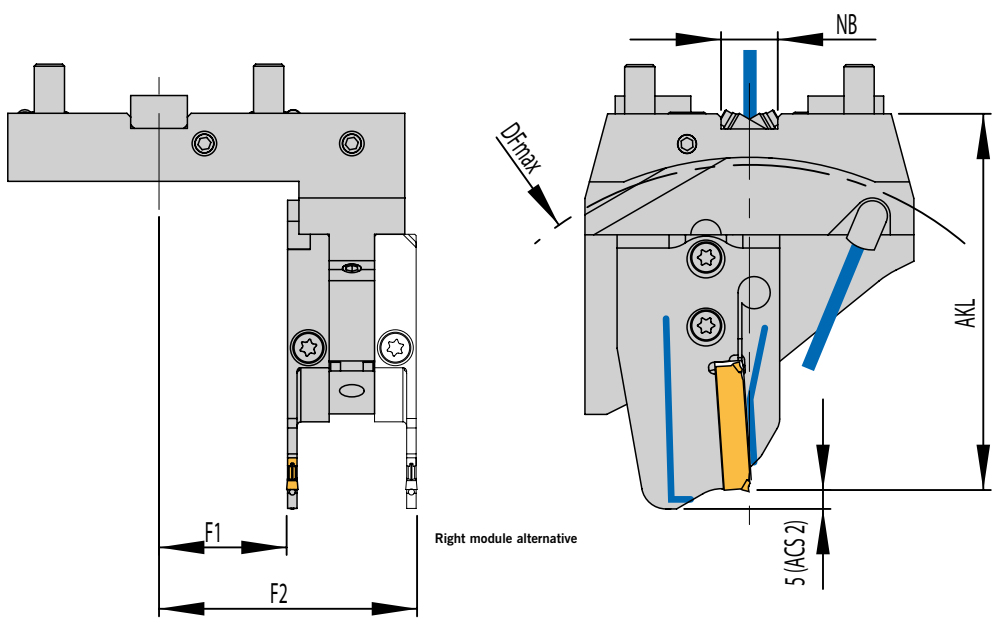
Spare parts and accessories

Basic holder	Screw for module	Key	O-Ring	Coolant jet
HDD-BMT45-SDS-ACS	AS0070	T5220-IP	OR 7 x 1.5 P	KMD 0825-3E
HDD-BMT55-SDS-ACS	AS0070	T5220-IP	OR 8 x 1.5 P	KMD 0825-3E
HDD-BMT65-SDS-ACS	AS0070	T5220-IP	OR 9 x 1.5 P	KMD 0825-3E

Module	Screw for insert	Key
MSA-...-ACS.	SA5T	T5220-IP

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads

BMT – with internal coolant and ACS



Basic holder

Designation	NB	F1	F2	Module
HDD-BMT45-SD-ACS	15	33.8	68.3	MSA-...-ACS.
HDD-BMT55-SD-ACS	15	46.3	80.8	MSA-...-ACS.
HDD-BMT65-SD-ACS	18	48.8	83.3	MSA-...-ACS.

Module

DF_{max} = maximum chuck diameter and AKL = Overhang length with MSA-Module

Designation	BMT45		BMT55		BMT65	
	AKL	DF_{max}	AKL	DF_{max}	AKL	DF_{max}
MSA-...-32-ACS.	84.0	140	114.5	185	131.5	215
MSA-...-44-ACS.	89.0	150	119.5	195	136.5	225
MSA-...-52-ACS.	99.5	170	130.0	215	147.0	245
MSA-...-65-ACS.	99.5	170	130.0	215	147.0	245
MSA-...-80-ACS.	107.0	185	137.5	230	154.5	260
MSA-...-105-ACS.	120.0	210	150.5	255	167.5	285
MSA-...-125-ACS.	130.0	225	160.5	270	177.5	305
MSA-...-140-ACS.	137.5	240	168.0	285	185.0	320

Remark: For modules to suit please see page 35 – 37.

Assembly options



Remark: All shown options are available with only one holder.

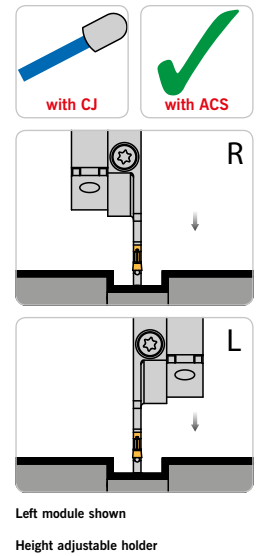
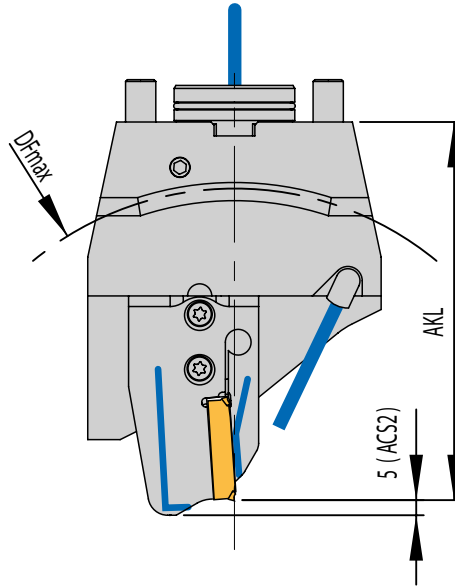
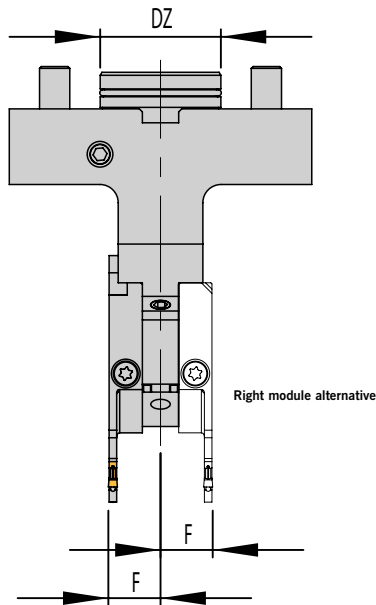
Spare parts and accessories

Basic holder	Screw for module	Key	O-Ring	Coolant jet
HDD-BMT45-SD-ACS	AS0070	T5220-IP	OR 7 x 1.5 P	KMD 0825-3E
HDD-BMT55-SD-ACS	AS0070	T5220-IP	OR 8 x 1.5 P	KMD 0825-3E
HDD-BMT65-SD-ACS	AS0070	T5220-IP	OR 9 x 1.5 P	KMD 0825-3E

Module	Screw for insert	Key
MSA-...-ACS.	SA5T	T5220-IP

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads

NZ, NL – with internal coolant and ACS



Basic holder

Designation	DZ	F	Module
HDM-NZ-BMT-SDS-ACS	40	17.3	MSA-...-ACS.
HDM-NL-BMT-SDS-ACS	60	17.3	MSA-...-ACS.

Module

DF_{max} = maximum chuck diameter and AKL = Overhang length with MSA-Module

Designation	NZ		NL	
	AKL	DF _{max}	AKL	DF _{max}
MSA-...-32-ACS.	109.5	165	140.5	235
MSA-...-44-ACS.	114.5	175	145.5	245
MSA-...-52-ACS.	125.0	200	156.0	265
MSA-...-65-ACS.	125.0	200	156.0	265
MSA-...-80-ACS.	132.5	210	163.5	280
MSA-...-105-ACS.	145.5	235	176.5	305
MSA-...-125-ACS.	155.5	255	186.5	325
MSA-...-140-ACS.	163.0	270	194.0	340

Remark: For modules to suit please see page 35 – 37.

Assembly options



Remark: All shown options are available with only one holder.

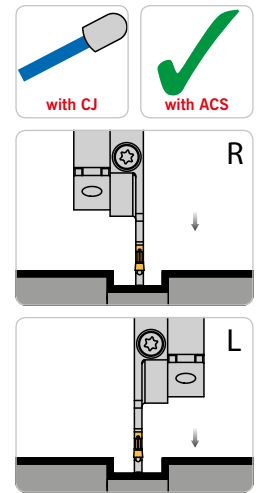
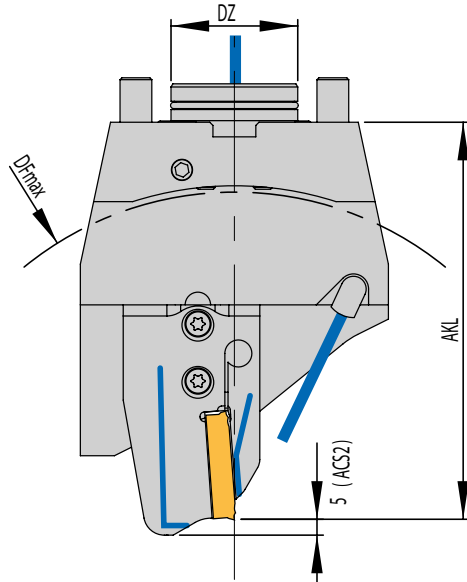
Spare parts and accessories

Basic holder	Screw for module	Key	O-Ring	Coolant jet
HDM-NZ-...-ACS	AS0070	T5220-IP	OR 36 x 2 P	KMD 0825-3E
HDM-NL-...-ACS	AS0070	T5220-IP	OR 54 x 3 P	KMD 0825-3E

Module	Screw for insert	Key
MSA-...-ACS.	SA5T	T5220-IP

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads

NZ, NL – with internal coolant and ACS



Right-hand holder and left module shown
Height adjustable holder

Basic holder

Designation	DZ	F1	F2	Module
HDM-NZ-BMT-SDL-ACS	40	46.8	81.3	MSA-...-ACS.
HDM-NZ-BMT-SDR-ACS	40	46.8	81.3	MSA-...-ACS.
HDM-NL-BMT-SDL-ACS	60	60.8	95.3	MSA-...-ACS.
HDM-NL-BMT-SDR-ACS	60	60.8	95.3	MSA-...-ACS.

Module

DF_{max} = maximum chuck diameter and AKL = Overhang length with MSA-Module

Designation	NZ		NL	
	AKL	DF _{max}	AKL	DF _{max}
MSA-...-32-ACS.	109.5	165	140.5	235
MSA-...-44-ACS.	114.5	175	145.5	245
MSA-...-52-ACS.	125.0	200	156.0	265
MSA-...-65-ACS.	125.0	200	156.0	265
MSA-...-80-ACS.	132.5	210	163.5	280
MSA-...-105-ACS.	145.5	235	176.5	305
MSA-...-125-ACS.	155.5	255	186.5	325

Remark: For modules to suit please see page 35 – 37.

Spare parts and accessories

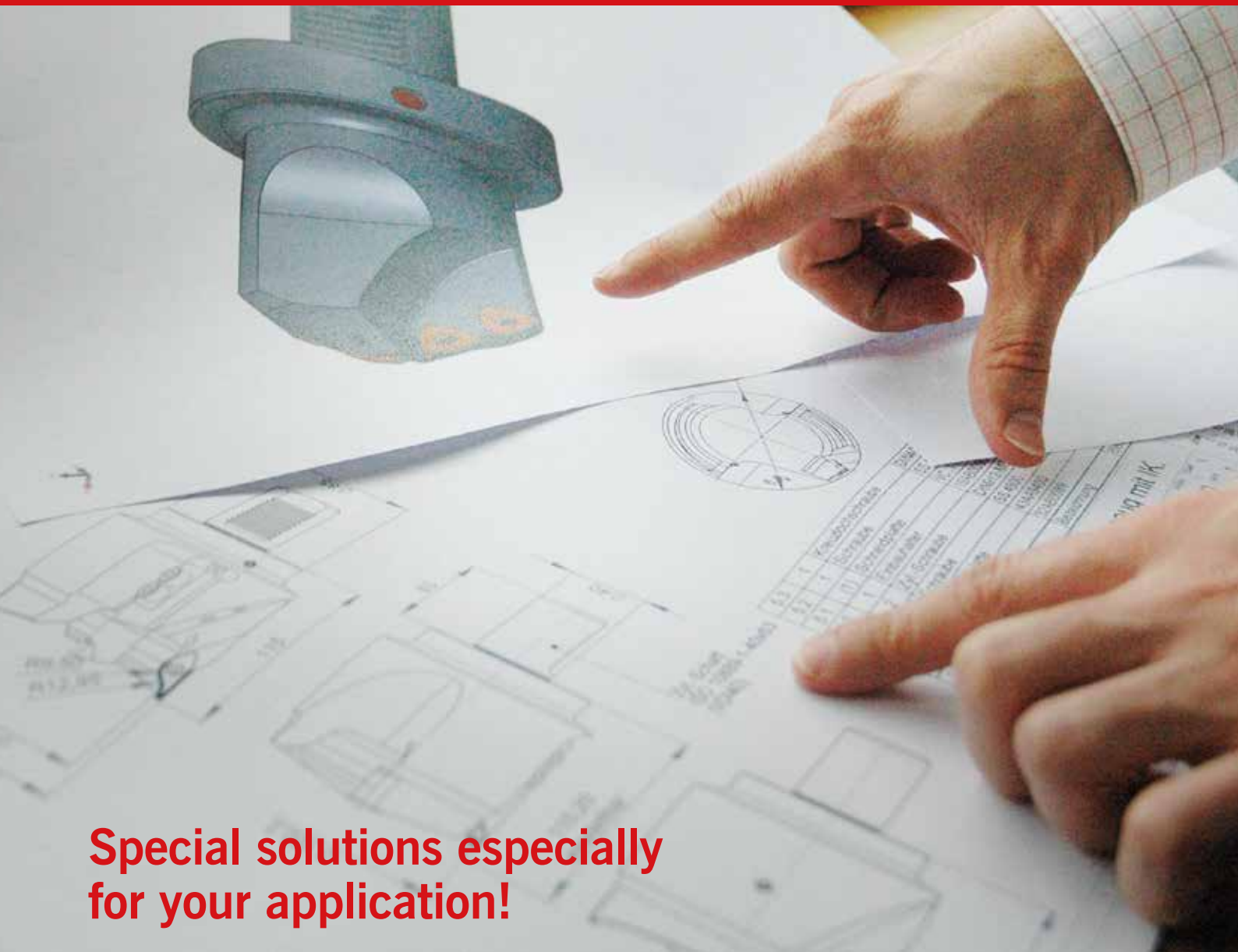
Basic holder	Screw for module	Key	O-Ring	Coolant jet
HDM-NZ-...-ACS	AS0070	T5220-IP	OR 36 x 2 P	KMD 0825-3E
HDM-NL-...-ACS	AS0070	T5220-IP	OR 54 x 3 P	KMD 0825-3E

Module	Screw for insert	Key
MSA-...-ACS.	SA5T	T5220-IP

Assembly options

Left-hand holder		Right-hand holder	
HDM-NZ-BMT-SDL-ACS	HDM-NZ-BMT-SDL-ACS	HDM-NZ-BMT-SDR-ACS	HDM-NZ-BMT-SDR-ACS
HDM-NL-BMT-SDL-ACS	HDM-NL-BMT-SDL-ACS	HDM-NL-BMT-SDR-ACS	HDM-NL-BMT-SDR-ACS
Left module shown	Right module shown	Left module shown	Right module shown
Normal assembly	Normal assembly	Normal assembly	Normal assembly
Upside down assembly	Upside down assembly	Upside down assembly	Upside down assembly

Remark: Custom made part-off holders for other machine manufactures are available on request, please complete enquire sheet on page 67 or download this from: www.arno.de/service/downloads



Special solutions especially for your application!

You have an application – we have a solution.

Take advantage of our many years' experience in special solutions and in future benefit from more efficient and cost effective ARNO tooling.

Whether it is special inserts or complex combination tools – we are able to offer nearly any solutions.

When enquiring about special holders please state the following dimensions:



Machine

Type

Shank VDI25 VDI30 VDI40 VDI50

Other

Part-off position Main spindle

Sub spindle

Assembly* Normal

Upside down

Chuck diameter mm

Maximum part-off diameter mm

Tool length AKL mm

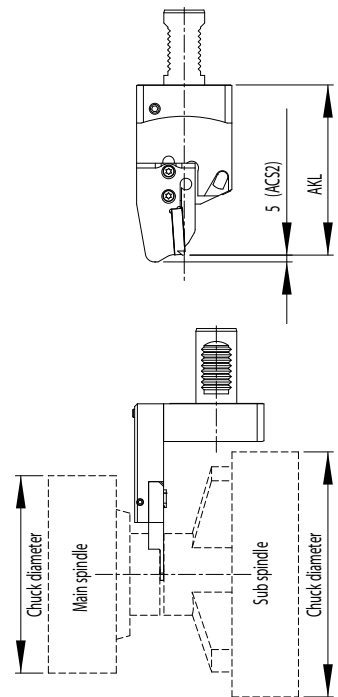
Turret clearance mm

F1 dimension mm

F2 dimension mm

Other comments

.....



Assembly*

Left-hand holder		Right-hand holder	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Left module shown	Right module shown	Left module shown	Right module shown

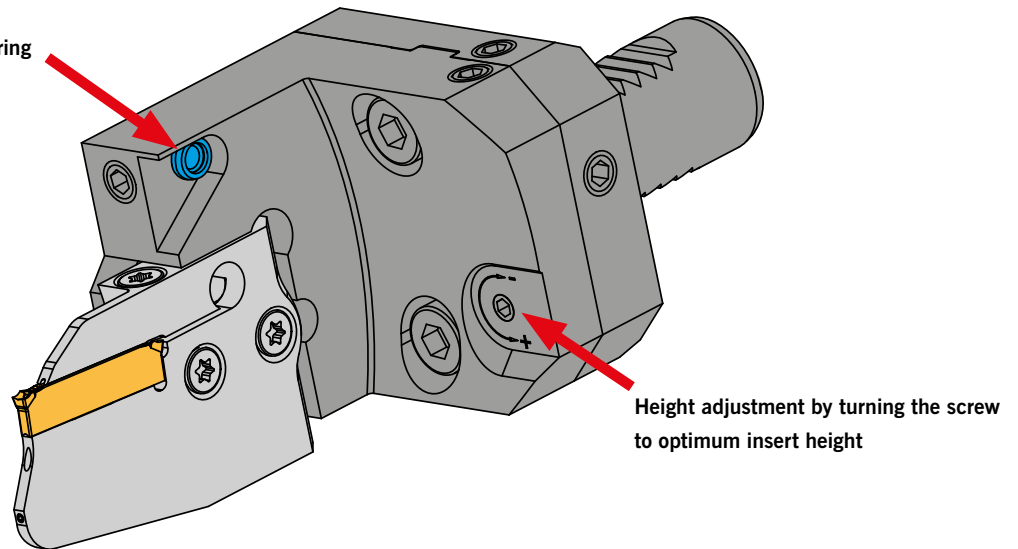
*For modules to suit please see page 35 – 37.

Download this form from: www.arno.de/service/downloads

HVDI25 – Assembly instructions

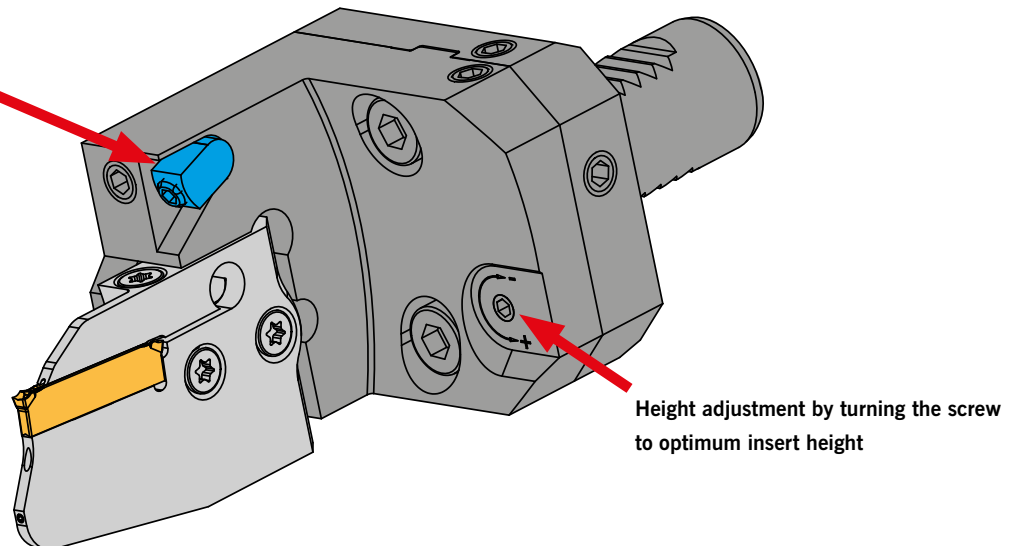
Option 1: Coolant with ACS2

Assembly of locking pin with sealing ring



Option 2: Coolant with ACS2 and additional coolant jet

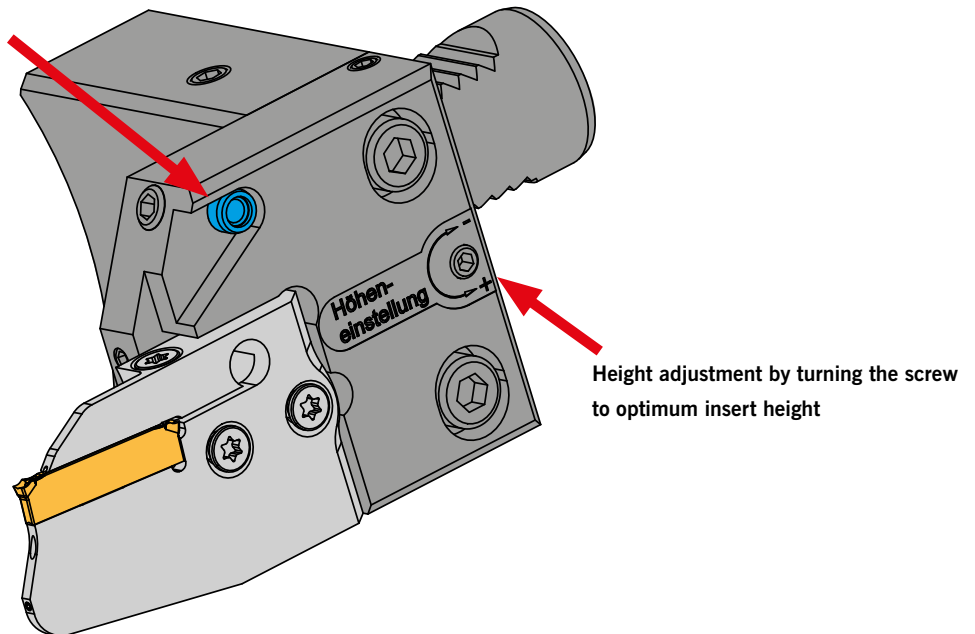
Assembly of coolant jet



HVDI30 – Assembly instructions

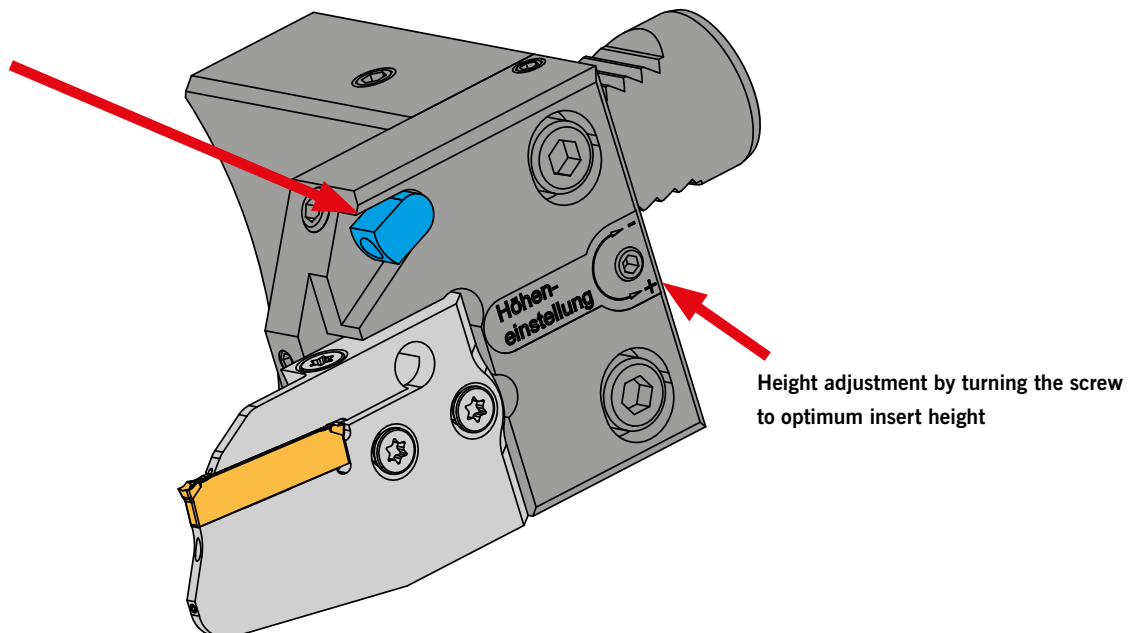
Option 1: Coolant with ACS2

Assembly of locking pin with sealing ring



Option 2: Coolant with ACS2 and additional coolant jet

Assembly of coolant jet



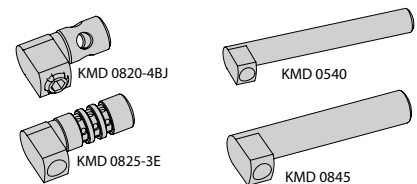
SA-Monoblock holders, -Blades and -Modules page 12

Item
Screw
AS0022
AS0045
DIN912 M5X16-12.9
DIN912 M6X20-12.9
SA5T
Key
Inbus* 4 mm
Inbus* 5 mm
KS8000
S-KSA
T5215-IP
T5220-IP
Coolant supply – straight
KA001
KA002
KA003
Coolant supply – angled and fixed
KA004
KA005
Coolant jet
KMD 0519
KMD 0830
KMD 0818
Swivelling srew fitting
KA006
KA007
KA008

*Allen key

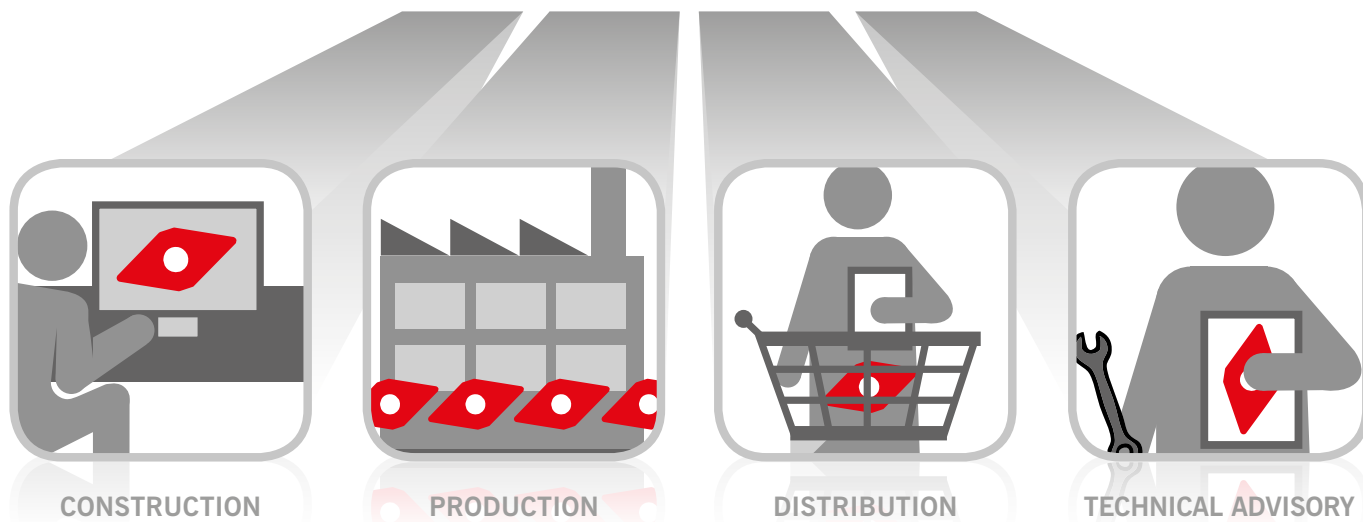
Part-off holders and flange mounted holder page 52

Item
Screw
AS0022
AS0070
DIN912-M4x12-12.9
SA5T
Key
T5215-IP
T5220-IP
O-ring
OR 7x1,5 P
OR 8x1,5 P
OR 9x1,5 P
OR 36x2 P
OR 54x3 P
Coolant jet
KMD 0820-4BJ
KMD 0825-3E
KMD 0540
KMD 0845
Clamb
K-HVDI-10-50
Locking pin
ZS0820G



ARNO[®]

WERKZEUGE



Quick, flexible and individual.

To have design, production and service all under one roof

is the perfect way of providing standard and special products.

95 % of the standard programme is available from stock. Order received before 6.00 pm CET are dispatched the very same day and in most cases supplied next day.

Our competent team of technical sales engineers will be available to support you on site.



Tools and inserts
for parting and grooving



Tooling and indexable inserts
for turning and threading



Milling cutters and indexable inserts
for milling and thread milling



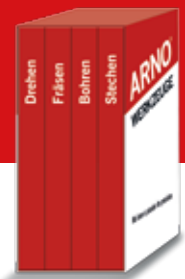
Drilling tools and indexable inserts
for drilling

We have a passion for precision.

With passion and enthusiasm we face the challenges of our customers, to modify, develop and precisely manufacture – this is the way of ARNO®-Werkzeuge. Every single tool contains the knowledge and experience of over 70 years traditional tool manufacturing. That is proven quality and precision at the highest level.

ARNO®
WERKZEUGE

For further information please ask for our complete catalogue.



Karl-Heinz Arnold GmbH
Karlsbader Str. 4
D-73760 Ostfildern

Tel.: +49 (0)711 34 802 0
Fax: +49 (0)711 34 802 130
anfrage@arno.de
bestellung@arno.de

ARNO (UK) Limited | Unit 9, 10 & 11, Sugnall Business Centre | Sugnall, Eccleshall | Staffordshire | ST21 6NF
☎ +44 01785 850 072 | ☎ +44 01785 850 076 | sales@arno.de | www.arno-tools.co.uk

ARNO Italia S.r.l | Via J. F. Kennedy 19 | 20871 Vimercate (MB)
☎ +39 039 68 52 101 | ☎ +39 039 60 83 724 | info@arno-italia.it | www.arno-italia.it

ARNO-Werkzeuge USA LLC | 1101 W. Diggins St. | US-60033 Harvard, Illinois
☎ +1 815 943 4426 | ☎ +1 815 943 7156 | info@arnousa.com | www.arnousa.com

ARNO RU Ltd. | Krassnaja Ul. 38 | RU-600015 Vladimir
☎ / ☎ +7 4922 541125 | COT +7 4922 541135 | info@arnoru.ru | www.arnoru.ru