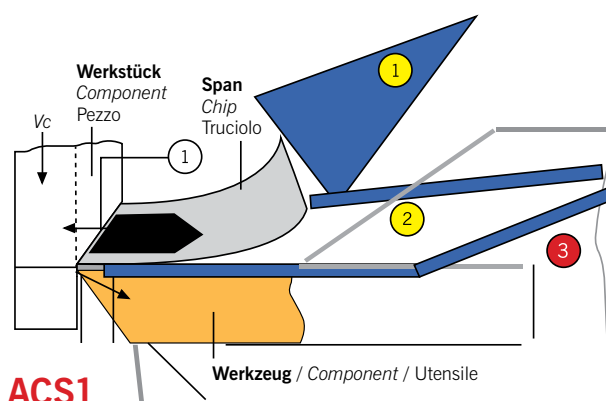


# ARNO®-Stechdrehsystem SE

## ARNO®-SE-Grooving System

## ARNO®-SE-Sistema di Scanalatura

SE-Stechdrehsystem mit ARNO®-Cooling-System (ACS1) zum Einstechen, Abstechen, Längs- und Kopierdrehen für radiales Einstechen von 2–6 mm Einstechbreite und Einstechtiefen von 12 bzw. 21 mm. Durch das Doppelpisma der Schneideinsätze ist eine sichere Spannung garantiert. Der Fixanschlag verspricht dabei eine exakte Wiederholgenauigkeit. Die Schneideinsätze sind in drei Geometrien und fünf Sorten erhältlich. Die Geometrie M2 ist dabei speziell zum Einstechen-, Längs- und Kopierdrehen von Stahl und rostfreien Werkstoffen konzipiert, die Geometrie T1 ist für die Bearbeitung von Stahl und Gusswerkstoffen geeignet. Die Schneideinsätze mit diesen Geometrien sind präzisionsgesintert. Eine geschliffene Geometrie -ALU wird für die Aluminiumbearbeitung angeboten. Alle Klemmhalter verfügen über die ACS1 Innenkühlung.



### ACS1

- 1 „Externe Kühlung“ über Spritzdüse  
External coolant from coolant jet  
Refrigerazione "estesa" dei sistemi tradizionali (su truciolo)
- 2 „Interne Kühlung“ über Halter oder Spannpratze  
Through tool coolant via holder or clamp  
Refrigerazione direzionata tramite adduzioni interne classiche (su truciolo)
- 3 Neue „ACS-Kühlung“ direkt durch den Plattensitz  
New ACS-coolant through the insert seat  
Nuovo ACS ARNO®-Cooling-System direttamente sul filo tagliente



The SE groove turn system with through tool coolant (ACS1 = ARNO®-Cooling-System) for radial grooving applications is available in groove width from 2–6mm and groove depth from 12 or 21 mm. Due to the double prism insert seat secure location is guaranteed. The fixed stop ensures precise insert repeatability. The inserts are available in 3 geometries and 5 grades. The M2 geometry is especially designed for grooving, turning and copy turning in steel and stainless steel materials, the T1 geometry is for machining steel and cast materials. Both these inserts are precision sintered. A ground -ALU geometry will be offered for aluminium machining. All tool holders are available with through tool coolant (ACS1).

Sistema SE di scanalatura di tornitura ARNO®-Cooling-System (ACS1) con passaggio interno refrigerante per scanalatura, troncatura, scanalatura di copiatura con larghezza di taglio da 2 a 6 mm e profondità di gola utile di 12 o 21 mm. Grazie alla sede inserto a doppio prisma, gli inserti da taglio vengono serrati garantendo la massima stabilità. La battuta di appoggio garantisce ripetibilità di posizione tra gli inserti. Gli inserti sono disponibili in tre geometrie e cinque qualità. La geometria M2 è specificatamente progettata per la scanalatura di copiatura dell'acciaio e dell'acciaio inossidabile, la geometria T1 è adatta alla lavorazione di acciaio e fusioni. Queste geometrie di inserti da taglio vengono ottenute tramite sinterizzazione di precisione. Una terza geometria, lappata -ALU è disponibile per la lavorazione di alluminio e materiali non ferrosi. Tutti gli steli sono previsti con adduzione interna del refrigerante ACS1.

## Monoblockhalter „SE“ für zweiseidige Wendeschneidplatten

NEU • NEW • NUOVO

Monoblockholder "SE" for double sided inserts

Steli monoblocco "SE" per inserti bitaglianti



Monoblockhalter „SE“ für zweiseidige Wendeschneidplatten in der Größe SE24 mit den Stechbreiten 2 bis 6 mm.

- Schneideinsätze mit EB = 2 bis 6 mm
- Grundhalter 16 × 16 bis 25 × 25 mm
- Zum Ein- und Abstechen und Kopierdrehen

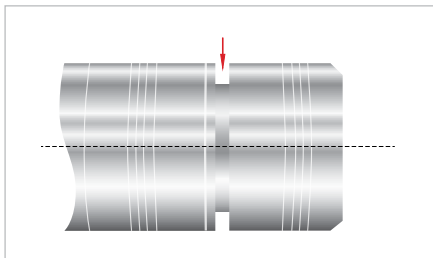
Monoblockholder "SE" for double sided inserts size SE24 with groove width from 2 – 6 mm

- Inserts with width = 2 to 6 mm
- Shank sizes from 16 x 16 to 25 x 25 mm
- For grooving, part-off and copy turning (-M2 geometry)

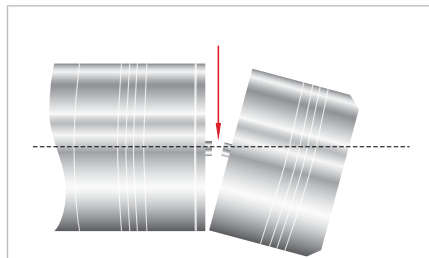
Steli monoblocco "SE" per inserti bitaglianti dimensione SE24 in larghezze da 2 a 6 mm

- Larghezza inserto EB = da 2 a 6 mm
- Steli da 16 x 16 fino a 25 x 25 mm
- Per scanalatura, troncatura e scanalatura di copiatura (Geometria -M2)

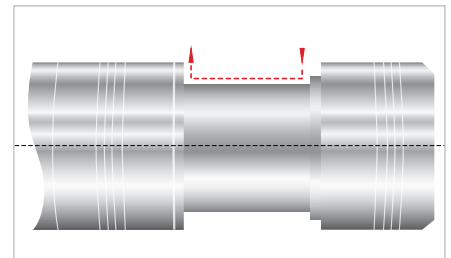
**Einstecken** / Grooving / Scanalatura



**Abstechen** / Parting-off / Troncatura



**Kopierdrehen** / Copy turning / Copiatura



## Fakten / Features / Caratteristiche

### Monoblockausführung

- Anwendungssicher, einfaches Handling – nur ein Ersatzteil

### Aktive Wendeschneidplattenklemmung mit Fixanschlag

- Genaue Schneidenpositionierung – kein Herausziehen der Wendeschneidplatte möglich

### Zweiseidige Wendeschneidplatten

- Hohe Wirtschaftlichkeit

### Direkt gepresste Wendeschneidplatte mit speziellen Geometrien

- Kostengünstige und optimale Lösung für sichere Stechprozesse
- Geschliffene Ausführung

### Monoblock design

- Reliable and user friendly – only one spare part

### Active insert clamping with fixed stop

- Accurate insert positioning – pulling out the insert is not possible

### Double edged inserts

- High productivity

### Directly pressed inserts with dedicated geometries

- Cost efficient and optimum solution for reliable groove production
- Ground version

### Monoblocco

- Sicuro e di semplice utilizzo – senza ricambi

### Bloccaggio assiale con fermo

- Posizionamento preciso e sicuro dell'inserto – impossibile lo spostamento in sede

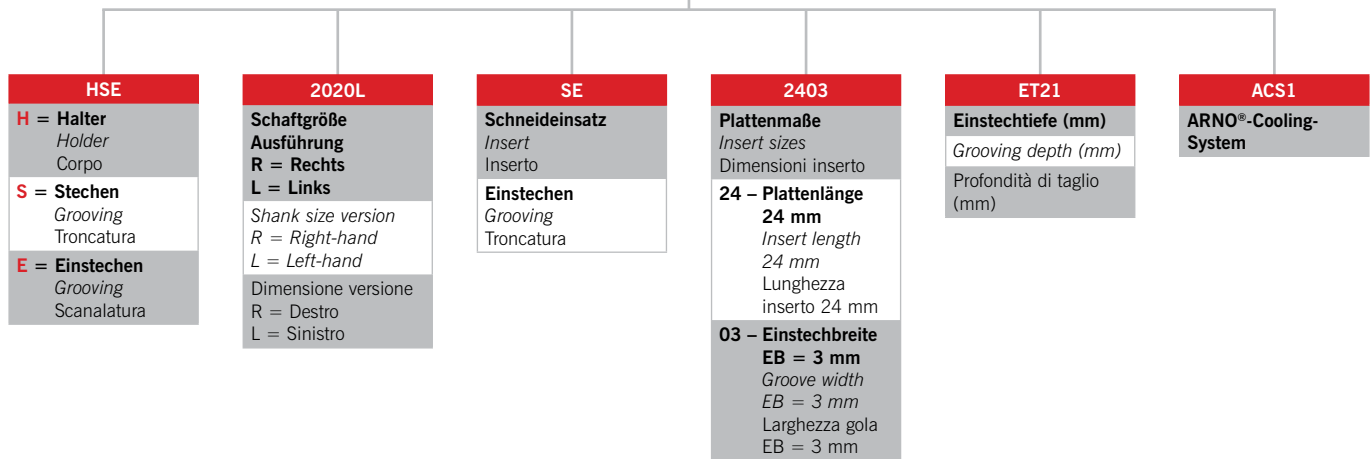
### Bi-tagliante

- Economico

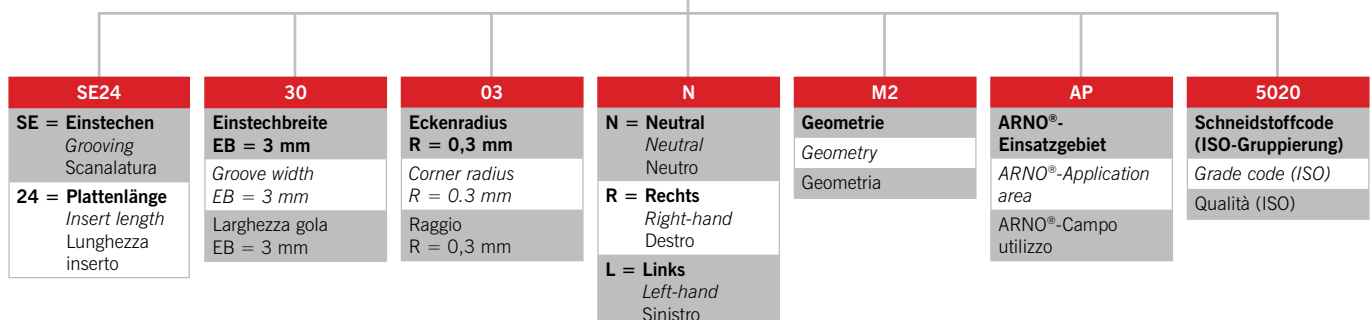
### Inserti con geometrie specifiche

- Forme specifiche per materiali e per una lavorazione affidabile
- Versione rettificata

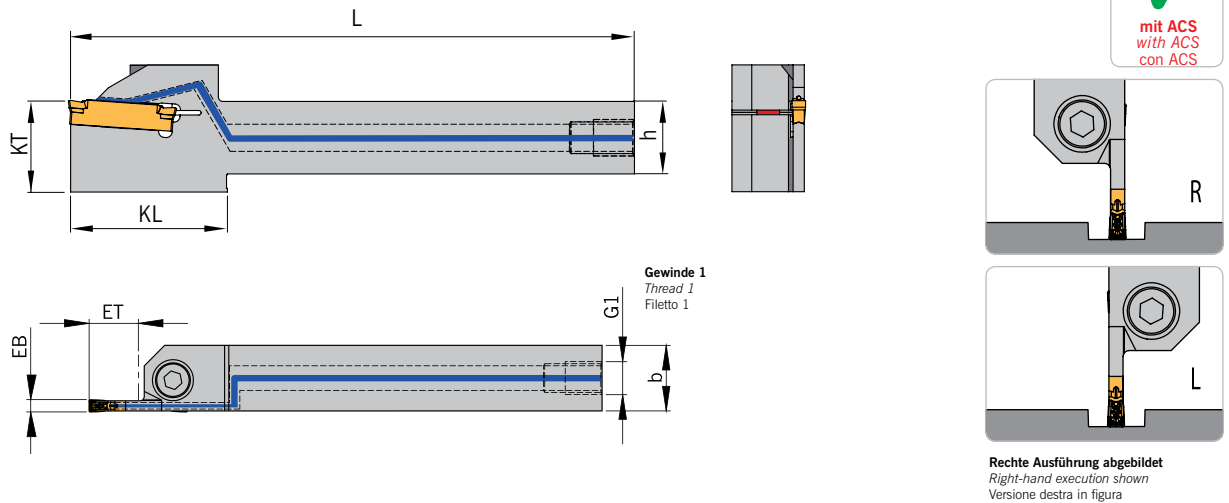
## Monoblockhalter / Monoblock holders / Utensili monoblocco



## Schneideinsätze / Inserts / Inserti



## HSE-ACS1-H..



### Monoblockhalter mit Innenkühlung ACS1 von hinten (ET = 12 mm)

Monoblock holder with through tool coolant access from the back (ET = 12 mm)

Utensile monoblocco con adduzione interna ACS1 posteriore (ET = 12 mm)

Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 1616L-SE2402-ET12 ACS1-H1	2	12	-	-	16	16	125	-	35	20	M8x1	-	●	SE 24-20...
HSE 1616R-SE2402-ET12 ACS1-H1	2	12	-	-	16	16	125	-	35	20	M8x1	-	●	SE 24-20...
HSE 1616L-SE2403-ET12 ACS1-H1	3	12	-	-	16	16	125	-	35	20	M8x1	-	●	SE 24-30...
HSE 1616R-SE2403-ET12 ACS1-H1	3	12	-	-	16	16	125	-	35	20	M8x1	-	●	SE 24-30...
HSE 1616L-SE2404-ET12 ACS1-H1	4	12	-	-	16	16	125	-	35	20	M8x1	-	●	SE 24-40...
HSE 1616R-SE2404-ET12 ACS1-H1	4	12	-	-	16	16	125	-	35	20	M8x1	-	●	SE 24-40...
HSE 2020L-SE2402-ET12 ACS1-H1	2	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-20...
HSE 2020R-SE2402-ET12 ACS1-H1	2	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-20...
HSE 2020L-SE2403-ET12 ACS1-H1	3	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-30...
HSE 2020R-SE2403-ET12 ACS1-H1	3	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-30...
HSE 2020L-SE2404-ET12 ACS1-H1	4	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-40...
HSE 2020R-SE2404-ET12 ACS1-H1	4	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-40...
HSE 2020L-SE2405-ET12 ACS1-H1	5	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-50...
HSE 2020R-SE2405-ET12 ACS1-H1	5	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-50...
HSE 2020L-SE2406-ET12 ACS1-H1	6	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-60...
HSE 2020R-SE2406-ET12 ACS1-H1	6	12	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-60...
HSE 2525L-SE2403-ET12 ACS1-H1	3	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-30...
HSE 2525R-SE2403-ET12 ACS1-H1	3	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-30...
HSE 2525L-SE2404-ET12 ACS1-H1	4	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-40...
HSE 2525R-SE2404-ET12 ACS1-H1	4	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-40...
HSE 2525L-SE2405-ET12 ACS1-H1	5	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-50...
HSE 2525R-SE2405-ET12 ACS1-H1	5	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-50...
HSE 2525L-SE2406-ET12 ACS1-H1	6	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-60...
HSE 2525R-SE2406-ET12 ACS1-H1	6	12	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-60...
HSE 1616L-SE2402-ET12 ACS1-H2	2	12	-	-	16	16	125	-	35	20	G 1/8"	-	●	SE 24-20...
HSE 1616R-SE2402-ET12 ACS1-H2	2	12	-	-	16	16	125	-	35	20	G 1/8"	-	●	SE 24-20...
HSE 1616L-SE2403-ET12 ACS1-H2	3	12	-	-	16	16	125	-	35	20	G 1/8"	-	●	SE 24-30...
HSE 1616R-SE2403-ET12 ACS1-H2	3	12	-	-	16	16	125	-	35	20	G 1/8"	-	●	SE 24-30...
HSE 1616L-SE2404-ET12 ACS1-H2	4	12	-	-	16	16	125	-	35	20	G 1/8"	-	●	SE 24-40...
HSE 1616R-SE2404-ET12 ACS1-H2	4	12	-	-	16	16	125	-	35	20	G 1/8"	-	●	SE 24-40...
HSE 2020L-SE2402-ET12 ACS1-H2	2	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-20...
HSE 2020R-SE2402-ET12 ACS1-H2	2	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-20...
HSE 2020L-SE2403-ET12 ACS1-H2	3	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2020R-SE2403-ET12 ACS1-H2	3	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2020L-SE2404-ET12 ACS1-H2	4	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-40...

## Monoblockhalter mit Innenkühlung ACS1 von hinten (ET = 12 mm)

Monoblock holder with through tool coolant access from the back (ET = 12 mm)

Utensile monoblocco con adduzione interna ACS1 posteriore (ET = 12 mm)

Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 2020R-SE2404-ET12 ACS1-H2	4	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2020L-SE2405-ET12 ACS1-H2	5	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2020R-SE2405-ET12 ACS1-H2	5	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2020L-SE2406-ET12 ACS1-H2	6	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 2020R-SE2406-ET12 ACS1-H2	6	12	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 2525L-SE2403-ET12 ACS1-H2	3	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2525R-SE2403-ET12 ACS1-H2	3	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2525L-SE2404-ET12 ACS1-H2	4	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2525R-SE2404-ET12 ACS1-H2	4	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2525L-SE2405-ET12 ACS1-H2	5	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2525R-SE2405-ET12 ACS1-H2	5	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2525L-SE2406-ET12 ACS1-H2	6	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 2525R-SE2406-ET12 ACS1-H2	6	12	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 1616L-SE2402-ET12 ACS1-H3	2	12	-	-	16	16	125	-	35	20	G 1/4"	-	●	SE 24-20...
HSE 1616R-SE2402-ET12 ACS1-H3	2	12	-	-	16	16	125	-	35	20	G 1/4"	-	●	SE 24-20...
HSE 1616L-SE2403-ET12 ACS1-H3	3	12	-	-	16	16	125	-	35	20	G 1/4"	-	●	SE 24-30...
HSE 1616R-SE2403-ET12 ACS1-H3	3	12	-	-	16	16	125	-	35	20	G 1/4"	-	●	SE 24-30...
HSE 1616L-SE2404-ET12 ACS1-H3	4	12	-	-	16	16	125	-	35	20	G 1/4"	-	●	SE 24-40...
HSE 1616R-SE2404-ET12 ACS1-H3	4	12	-	-	16	16	125	-	35	20	G 1/4"	-	●	SE 24-40...
HSE 2020L-SE2402-ET12 ACS1-H3	2	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-20...
HSE 2020R-SE2402-ET12 ACS1-H3	2	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-20...
HSE 2020L-SE2403-ET12 ACS1-H3	3	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-30...
HSE 2020R-SE2403-ET12 ACS1-H3	3	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-30...
HSE 2020L-SE2404-ET12 ACS1-H3	4	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-40...
HSE 2020R-SE2404-ET12 ACS1-H3	4	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-40...
HSE 2020L-SE2405-ET12 ACS1-H3	5	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-50...
HSE 2020R-SE2405-ET12 ACS1-H3	5	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-50...
HSE 2020L-SE2406-ET12 ACS1-H3	6	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-60...
HSE 2020R-SE2406-ET12 ACS1-H3	6	12	-	-	20	20	125	-	-	-	G 1/4"	-	●	SE 24-60...
HSE 2525L-SE2403-ET12 ACS1-H3	3	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-30...
HSE 2525R-SE2403-ET12 ACS1-H3	3	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-30...
HSE 2525L-SE2404-ET12 ACS1-H3	4	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-40...
HSE 2525R-SE2404-ET12 ACS1-H3	4	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-40...
HSE 2525L-SE2405-ET12 ACS1-H3	5	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-50...
HSE 2525R-SE2405-ET12 ACS1-H3	5	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-50...
HSE 2525L-SE2406-ET12 ACS1-H3	6	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-60...
HSE 2525R-SE2406-ET12 ACS1-H3	6	12	-	-	25	25	150	-	-	-	G 1/4"	-	●	SE 24-60...

Hinweis: Zubehör muss separat bestellt werden.  
Remark: Accessories must be ordered separately.  
Nota: Gli accessori devono essere ordinati separatamente.



Diese Monoblockhalter bekommen Sie mit Ihren spezifischen Kühllanschlüssen.

Ein Anfrageblatt hierzu finden Sie auf Seite 14 oder im Internet unter: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)

**Bitte beachten Sie den Hinweis zur Verwendung des Halters auf KMH-Werkzeugaufnahme (VDI) Form C auf Seite 14!**

*The coolant inlet can be supplied to your specification,  
please complete enquiry sheet on page 14 or download this from: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)  
Please refer to notes for using KMH tool holder (VDI) Form C on page 14!*

Questi corpi utensile sono fornibili con specifiche connessioni del refrigerante.

Per altre richieste compilare modulo a pag. 14 o scaricarlo da: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)

**Vedere i suggerimenti di utilizzo degli adattatori KMH (VDI) forma C a pagina 14!**

## HSE-ACS1-H..

### Monoblockhalter mit Innenkühlung ACS1 von hinten (ET = 21 mm)

Monoblock holder with through tool coolant access from the back (ET = 21 mm)

Utensile monoblocco con adduzione interna ACS1 posteriore (ET = 21 mm)

Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 1616L-SE2402-ET21 ACS1-H1	2	21	-	-	16	16	125	-	44	20	M8x1	-	●	SE 24-20...
HSE 1616R-SE2402-ET21 ACS1-H1	2	21	-	-	16	16	125	-	44	20	M8x1	-	●	SE 24-20...
HSE 1616L-SE2403-ET21 ACS1-H1	3	21	-	-	16	16	125	-	44	20	M8x1	-	●	SE 24-30...
HSE 1616R-SE2403-ET21 ACS1-H1	3	21	-	-	16	16	125	-	44	20	M8x1	-	●	SE 24-30...
HSE 1616L-SE2404-ET21 ACS1-H1	4	21	-	-	16	16	125	-	44	20	M8x1	-	●	SE 24-40...
HSE 1616R-SE2404-ET21 ACS1-H1	4	21	-	-	16	16	125	-	44	20	M8x1	-	●	SE 24-40...
HSE 2020L-SE2402-ET21 ACS1-H1	2	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-20...
HSE 2020R-SE2402-ET21 ACS1-H1	2	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-20...
HSE 2020L-SE2403-ET21 ACS1-H1	3	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-30...
HSE 2020R-SE2403-ET21 ACS1-H1	3	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-30...
HSE 2020L-SE2404-ET21 ACS1-H1	4	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-40...
HSE 2020R-SE2404-ET21 ACS1-H1	4	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-40...
HSE 2020L-SE2405-ET21 ACS1-H1	5	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-50...
HSE 2020R-SE2405-ET21 ACS1-H1	5	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-50...
HSE 2020L-SE2406-ET21 ACS1-H1	6	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-60...
HSE 2020R-SE2406-ET21 ACS1-H1	6	21	-	-	20	20	125	-	-	-	M8x1	-	●	SE 24-60...
HSE 2525L-SE2403-ET21 ACS1-H1	3	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-30...
HSE 2525R-SE2403-ET21 ACS1-H1	3	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-30...
HSE 2525L-SE2404-ET21 ACS1-H1	4	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-40...
HSE 2525R-SE2404-ET21 ACS1-H1	4	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-40...
HSE 2525L-SE2405-ET21 ACS1-H1	5	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-50...
HSE 2525R-SE2405-ET21 ACS1-H1	5	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-50...
HSE 2525L-SE2406-ET21 ACS1-H1	6	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-60...
HSE 2525R-SE2406-ET21 ACS1-H1	6	21	-	-	25	25	150	-	-	-	M8x1	-	●	SE 24-60...
HSE 1616L-SE2402-ET21 ACS1-H2	2	21	-	-	16	16	125	-	44	20	G 1/8"	-	●	SE 24-20...
HSE 1616R-SE2402-ET21 ACS1-H2	2	21	-	-	16	16	125	-	44	20	G 1/8"	-	●	SE 24-20...
HSE 1616L-SE2403-ET21 ACS1-H2	3	21	-	-	16	16	125	-	44	20	G 1/8"	-	●	SE 24-30...
HSE 1616R-SE2403-ET21 ACS1-H2	3	21	-	-	16	16	125	-	44	20	G 1/8"	-	●	SE 24-30...
HSE 1616L-SE2404-ET21 ACS1-H2	4	21	-	-	16	16	125	-	44	20	G 1/8"	-	●	SE 24-40...
HSE 1616R-SE2404-ET21 ACS1-H2	4	21	-	-	16	16	125	-	44	20	G 1/8"	-	●	SE 24-40...
HSE 2020L-SE2402-ET21 ACS1-H2	2	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-20...
HSE 2020R-SE2402-ET21 ACS1-H2	2	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-20...
HSE 2020L-SE2403-ET21 ACS1-H2	3	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2020R-SE2403-ET21 ACS1-H2	3	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2020L-SE2404-ET21 ACS1-H2	4	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2020R-SE2404-ET21 ACS1-H2	4	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2020L-SE2405-ET21 ACS1-H2	5	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2020R-SE2405-ET21 ACS1-H2	5	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2020L-SE2406-ET21 ACS1-H2	6	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 2020R-SE2406-ET21 ACS1-H2	6	21	-	-	20	20	125	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 2525L-SE2403-ET21 ACS1-H2	3	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2525R-SE2403-ET21 ACS1-H2	3	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-30...
HSE 2525L-SE2404-ET21 ACS1-H2	4	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2525R-SE2404-ET21 ACS1-H2	4	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-40...
HSE 2525L-SE2405-ET21 ACS1-H2	5	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2525R-SE2405-ET21 ACS1-H2	5	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-50...
HSE 2525L-SE2406-ET21 ACS1-H2	6	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-60...
HSE 2525R-SE2406-ET21 ACS1-H2	6	21	-	-	25	25	150	-	-	-	G 1/8"	-	●	SE 24-60...



## HSE-ACS1-H..

### Monoblockhalter mit Innenkühlung ACS1 von hinten (ET = 21 mm)

Monoblock holder with through tool coolant access from the back (ET = 21 mm)

Utensile monoblocco con adduzione interna ACS1 posteriore (ET = 21 mm)

Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 1616L-SE2402-ET21 ACS1-H3	2	21	–	–	16	16	125	–	44	20	G 1/4"	–	●	SE 24-20...
HSE 1616R-SE2402-ET21 ACS1-H3	2	21	–	–	16	16	125	–	44	20	G 1/4"	–	●	SE 24-20...
HSE 1616L-SE2403-ET21 ACS1-H3	3	21	–	–	16	16	125	–	44	20	G 1/4"	–	●	SE 24-30...
HSE 1616R-SE2403-ET21 ACS1-H3	3	21	–	–	16	16	125	–	44	20	G 1/4"	–	●	SE 24-30...
HSE 1616L-SE2404-ET21 ACS1-H3	4	21	–	–	16	16	125	–	44	20	G 1/4"	–	●	SE 24-40...
HSE 1616R-SE2404-ET21 ACS1-H3	4	21	–	–	16	16	125	–	44	20	G 1/4"	–	●	SE 24-40...
HSE 2020L-SE2402-ET21 ACS1-H3	2	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-20...
HSE 2020R-SE2402-ET21 ACS1-H3	2	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-20...
HSE 2020L-SE2403-ET21 ACS1-H3	3	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-30...
HSE 2020R-SE2403-ET21 ACS1-H3	3	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-30...
HSE 2020L-SE2404-ET21 ACS1-H3	4	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-40...
HSE 2020R-SE2404-ET21 ACS1-H3	4	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-40...
HSE 2020L-SE2405-ET21 ACS1-H3	5	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-50...
HSE 2020R-SE2405-ET21 ACS1-H3	5	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-50...
HSE 2020L-SE2406-ET21 ACS1-H3	6	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-60...
HSE 2020R-SE2406-ET21 ACS1-H3	6	21	–	–	20	20	125	–	–	–	G 1/4"	–	●	SE 24-60...
HSE 2525L-SE2403-ET21 ACS1-H3	3	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-30...
HSE 2525R-SE2403-ET21 ACS1-H3	3	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-30...
HSE 2525L-SE2404-ET21 ACS1-H3	4	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-40...
HSE 2525R-SE2404-ET21 ACS1-H3	4	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-40...
HSE 2525L-SE2405-ET21 ACS1-H3	5	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-50...
HSE 2525R-SE2405-ET21 ACS1-H3	5	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-50...
HSE 2525L-SE2406-ET21 ACS1-H3	6	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-60...
HSE 2525R-SE2406-ET21 ACS1-H3	6	21	–	–	25	25	150	–	–	–	G 1/4"	–	●	SE 24-60...

Hinweis: Zubehör muss separat bestellt werden.  
Remark: Accessories must be ordered separately.  
Nota: Gli accessori devono essere ordinati separatamente.

## ARNO® SpecialDesign

Diese Monoblockhalter bekommen Sie mit Ihren spezifischen Kühlan schlüssen.

Ein Anfrageblatt hierzu finden Sie auf Seite 14 oder im Internet unter: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)

**Bitte beachten Sie den Hinweis zur Verwendung des Halters auf KMH-Werkzeugaufnahme (VDI) Form C auf Seite 14!**

*The coolant inlet can be supplied to your specification,*

*please complete enquiry sheet on page 14 or download this from: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)*

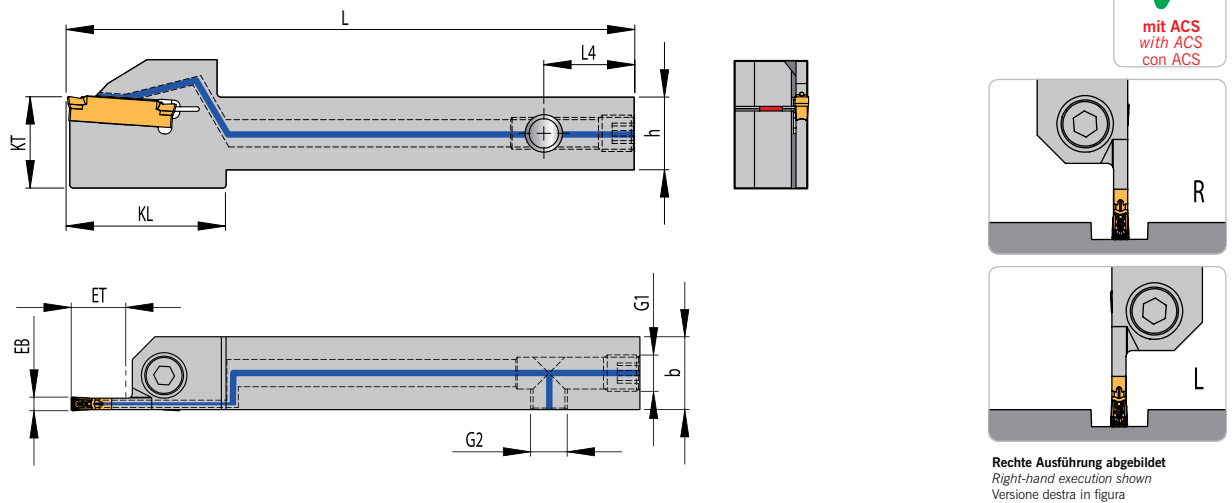
*Please refer to notes for using KMH tool holder (VDI) Form C on page 14!*

Questi corpi utensile sono fornibili con specifiche connessioni del refrigerante.

Per altre richieste compilare modulo a pag.14 o scaricarlo da: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)

**Vedere i suggerimenti di utilizzo degli adattatori KMH (VDI) forma C a pagina 14!**

## HSE-ACS1-S..



**Monoblockhalter mit Innenkühlung ACS1 von der Seite (ET = 12 mm)**  
*Monoblock holder with through tool coolant access from the side (ET = 12 mm)*  
 Utensile monoblocco con adduzione interna ACS1 laterale (ET = 12 mm)

Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 1616L-SE2402-ET12 ACS1-S1	2	12	-	-	16	16	125	20	35	20	M8x1	M8x1	●	SE 24-20...
HSE 1616R-SE2402-ET12 ACS1-S1	2	12	-	-	16	16	125	20	35	20	M8x1	M8x1	●	SE 24-20...
HSE 1616L-SE2403-ET12 ACS1-S1	3	12	-	-	16	16	125	20	35	20	M8x1	M8x1	●	SE 24-30...
HSE 1616R-SE2403-ET12 ACS1-S1	3	12	-	-	16	16	125	20	35	20	M8x1	M8x1	●	SE 24-30...
HSE 1616L-SE2404-ET12 ACS1-S1	4	12	-	-	16	16	125	20	35	20	M8x1	M8x1	●	SE 24-40...
HSE 1616R-SE2404-ET12 ACS1-S1	4	12	-	-	16	16	125	20	35	20	M8x1	M8x1	●	SE 24-40...
HSE 2020L-SE2402-ET12 ACS1-S1	2	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-20...
HSE 2020R-SE2402-ET12 ACS1-S1	2	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-20...
HSE 2020L-SE2403-ET12 ACS1-S1	3	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2020R-SE2403-ET12 ACS1-S1	3	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2020L-SE2404-ET12 ACS1-S1	4	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2020R-SE2404-ET12 ACS1-S1	4	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2020L-SE2405-ET12 ACS1-S1	5	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2020R-SE2405-ET12 ACS1-S1	5	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2020L-SE2406-ET12 ACS1-S1	6	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 2020R-SE2406-ET12 ACS1-S1	6	12	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 2525L-SE2403-ET12 ACS1-S1	3	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2525R-SE2403-ET12 ACS1-S1	3	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2525L-SE2404-ET12 ACS1-S1	4	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2525R-SE2404-ET12 ACS1-S1	4	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2525L-SE2405-ET12 ACS1-S1	5	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2525R-SE2405-ET12 ACS1-S1	5	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2525L-SE2406-ET12 ACS1-S1	6	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 2525R-SE2406-ET12 ACS1-S1	6	12	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-60...



HSE-ACS1-S..

Monoblockhalter mit Innenkühlung ACS1 von der Seite (ET = 12 mm)

Monoblock holder with through tool coolant access from the side (ET = 12 mm)

Utensile monoblocco con adduzione interna ACS1 laterale (ET = 12 mm)

Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 1616L-SE2402-ET12 ACS1-S2	2	12	-	-	16	16	125	20	35	20	M8x1	G 1/8"	●	SE 24-20...
HSE 1616R-SE2402-ET12 ACS1-S2	2	12	-	-	16	16	125	20	35	20	M8x1	G 1/8"	●	SE 24-20...
HSE 1616L-SE2403-ET12 ACS1-S2	3	12	-	-	16	16	125	20	35	20	M8x1	G 1/8"	●	SE 24-30...
HSE 1616R-SE2403-ET12 ACS1-S2	3	12	-	-	16	16	125	20	35	20	M8x1	G 1/8"	●	SE 24-30...
HSE 1616L-SE2404-ET12 ACS1-S2	4	12	-	-	16	16	125	20	35	20	M8x1	G 1/8"	●	SE 24-40...
HSE 1616R-SE2404-ET12 ACS1-S2	4	12	-	-	16	16	125	20	35	20	M8x1	G 1/8"	●	SE 24-40...
HSE 2020L-SE2402-ET12 ACS1-S2	2	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-20...
HSE 2020R-SE2402-ET12 ACS1-S2	2	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-20...
HSE 2020L-SE2403-ET12 ACS1-S2	3	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2020R-SE2403-ET12 ACS1-S2	3	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2020L-SE2404-ET12 ACS1-S2	4	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2020R-SE2404-ET12 ACS1-S2	4	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2020L-SE2405-ET12 ACS1-S2	5	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2020R-SE2405-ET12 ACS1-S2	5	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2020L-SE2406-ET12 ACS1-S2	6	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-60...
HSE 2020R-SE2406-ET12 ACS1-S2	6	12	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-60...
HSE 2525L-SE2403-ET12 ACS1-S2	3	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2525R-SE2403-ET12 ACS1-S2	3	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2525L-SE2404-ET12 ACS1-S2	4	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2525R-SE2404-ET12 ACS1-S2	4	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2525L-SE2405-ET12 ACS1-S2	5	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2525R-SE2405-ET12 ACS1-S2	5	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2525L-SE2406-ET12 ACS1-S2	6	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-60...
HSE 2525R-SE2406-ET12 ACS1-S2	6	12	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-60...



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**Bitte beachten Sie den Hinweis zur Verwendung des Halters auf KMH-Werkzeugaufnahme (VDI) Form C auf Seite 14!**

*The coolant inlet can be supplied to your specification,*

*please complete enquiry sheet on page 14 or download this from: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)*

*Please refer to notes for using KMH tool holder (VDI) Form C on page 14!*

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**Vedere i suggerimenti di utilizzo degli adattatori KMH (VDI) forma C a pagina 14!**

HSE-ACS1-S..

Monoblockhalter mit Innenkühlung ACS1 von der Seite (ET = 21 mm)

Monoblock holder with through tool coolant access from the side (ET = 21 mm)

Utensile monoblocco con adduzione interna ACS1 laterale (ET = 21 mm)

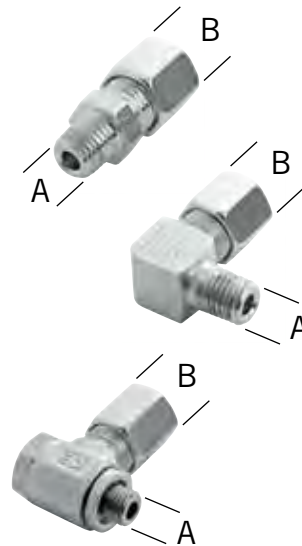
Bezeichnung Designation Articolo	EB	ET	D <sub>max</sub>	D <sub>R</sub>	h	b	L	L <sub>4</sub>	KL	KT	Gewinde 1 Thread 1 Filetto 1	Gewinde 2 Thread 2 Filetto 2	PG 25	Schneideinsatz Insert Inserto
HSE 1616L-SE2402-ET21 ACS1-S1	2	21	-	-	16	16	125	20	44	20	M8x1	M8x1	●	SE 24-20...
HSE 1616R-SE2402-ET21 ACS1-S1	2	21	-	-	16	16	125	20	44	20	M8x1	M8x1	●	SE 24-20...
HSE 1616L-SE2403-ET21 ACS1-S1	3	21	-	-	16	16	125	20	44	20	M8x1	M8x1	●	SE 24-30...
HSE 1616R-SE2403-ET21 ACS1-S1	3	21	-	-	16	16	125	20	44	20	M8x1	M8x1	●	SE 24-30...
HSE 1616L-SE2404-ET21 ACS1-S1	4	21	-	-	16	16	125	20	44	20	M8x1	M8x1	●	SE 24-40...
HSE 1616R-SE2404-ET21 ACS1-S1	4	21	-	-	16	16	125	20	44	20	M8x1	M8x1	●	SE 24-40...
HSE 2020L-SE2402-ET21 ACS1-S1	2	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-20...
HSE 2020R-SE2402-ET21 ACS1-S1	2	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-20...
HSE 2020L-SE2403-ET21 ACS1-S1	3	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2020R-SE2403-ET21 ACS1-S1	3	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2020L-SE2404-ET21 ACS1-S1	4	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2020R-SE2404-ET21 ACS1-S1	4	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2020L-SE2405-ET21 ACS1-S1	5	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2020R-SE2405-ET21 ACS1-S1	5	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2020L-SE2406-ET21 ACS1-S1	6	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 2020R-SE2406-ET21 ACS1-S1	6	21	-	-	20	20	125	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 2525L-SE2403-ET21 ACS1-S1	3	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2525R-SE2403-ET21 ACS1-S1	3	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-30...
HSE 2525L-SE2404-ET21 ACS1-S1	4	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2525R-SE2404-ET21 ACS1-S1	4	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-40...
HSE 2525L-SE2405-ET21 ACS1-S1	5	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2525R-SE2405-ET21 ACS1-S1	5	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-50...
HSE 2525L-SE2406-ET21 ACS1-S1	6	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 2525R-SE2406-ET21 ACS1-S1	6	21	-	-	25	25	150	20	-	-	M8x1	M8x1	●	SE 24-60...
HSE 1616L-SE2402-ET21 ACS1-S2	2	21	-	-	16	16	125	20	44	20	M8x1	G 1/8"	●	SE 24-20...
HSE 1616R-SE2402-ET21 ACS1-S2	2	21	-	-	16	16	125	20	44	20	M8x1	G 1/8"	●	SE 24-20...
HSE 1616L-SE2403-ET21 ACS1-S2	3	21	-	-	16	16	125	20	44	20	M8x1	G 1/8"	●	SE 24-30...
HSE 1616R-SE2403-ET21 ACS1-S2	3	21	-	-	16	16	125	20	44	20	M8x1	G 1/8"	●	SE 24-30...
HSE 1616L-SE2404-ET21 ACS1-S2	4	21	-	-	16	16	125	20	44	20	M8x1	G 1/8"	●	SE 24-40...
HSE 1616R-SE2404-ET21 ACS1-S2	4	21	-	-	16	16	125	20	44	20	M8x1	G 1/8"	●	SE 24-40...
HSE 2020L-SE2402-ET21 ACS1-S2	2	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-20...
HSE 2020R-SE2402-ET21 ACS1-S2	2	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-20...
HSE 2020L-SE2403-ET21 ACS1-S2	3	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2020R-SE2403-ET21 ACS1-S2	3	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2020L-SE2404-ET21 ACS1-S2	4	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2020R-SE2404-ET21 ACS1-S2	4	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2020L-SE2405-ET21 ACS1-S2	5	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2020R-SE2405-ET21 ACS1-S2	5	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2020L-SE2406-ET21 ACS1-S2	6	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-60...
HSE 2020R-SE2406-ET21 ACS1-S2	6	21	-	-	20	20	125	20	-	-	M8x1	G 1/8"	●	SE 24-60...
HSE 2525L-SE2403-ET21 ACS1-S2	3	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2525R-SE2403-ET21 ACS1-S2	3	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-30...
HSE 2525L-SE2404-ET21 ACS1-S2	4	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2525R-SE2404-ET21 ACS1-S2	4	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-40...
HSE 2525L-SE2405-ET21 ACS1-S2	5	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2525R-SE2405-ET21 ACS1-S2	5	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-50...
HSE 2525L-SE2406-ET21 ACS1-S2	6	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-60...
HSE 2525R-SE2406-ET21 ACS1-S2	6	21	-	-	25	25	150	20	-	-	M8x1	G 1/8"	●	SE 24-60...

## Ersatzteile / Spare parts / Ricambi

Halter Holder Stelo	Schraube Screw Vite	Schlüssel Inbus Allen key Chiave Esagono
HSE 1616.....HSE 2525.....-SE24...ET....ACS1...	DIN912 M5x16-12.9	KP 1321 (4 mm)

## Zubehör / Accessories / Accessori

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



**ARNO® SpecialDesign**

Diese Monoblockhalter bekommen Sie mit Ihren spezifischen Kühllanschlüssen.

Ein Anfrageblatt hierzu finden Sie auf Seite 14 oder im Internet unter: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)

**Bitte beachten Sie den Hinweis zur Verwendung des Halters auf KMH-Werkzeugaufnahme (VDI) Form C auf Seite 14!**

*The coolant inlet can be supplied to your specification,*

*please complete enquiry sheet on page 14 or download this from: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)*

*Please refer to notes for using KMH tool holder (VDI) Form C on page 14!*

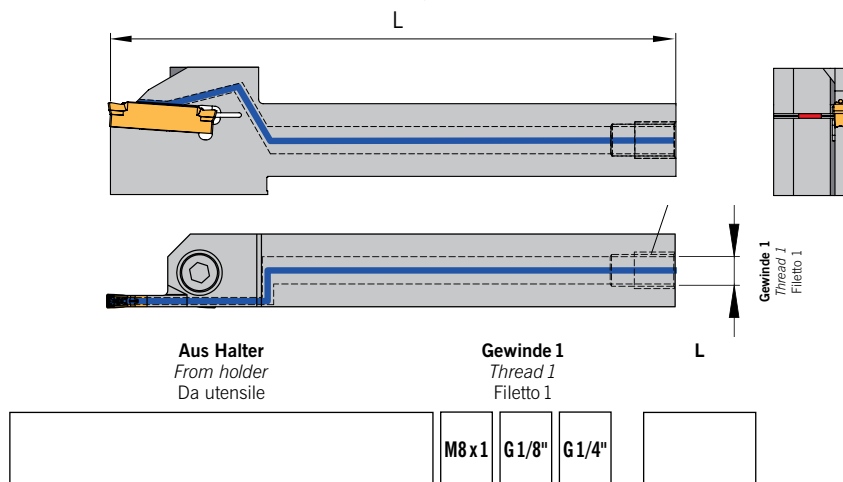
Questi corpi utensile sono fornibili con specifiche connessioni del refrigerante.

Per altre richieste compilare modulo a pag. 14 o scaricarlo da: [www.arno.de/service/downloads](http://www.arno.de/service/downloads)

**Vedere i suggerimenti di utilizzo degli adattatori KMH (VDI) forma C a pagina 14!**

Enquiry holder HSE-ACS1 with special dimensions  
 Richiesta utensili HSE-ACS1 con dimensioni speciali

**Monoblockhalter mit Innenkühlung ACS1 von hinten**  
 Monoblock holder with through tool coolant access from the back  
 Utensile monoblocco con adduzione interna ACS1 posteriore



**Diese Halter fertigen wir Ihnen zum Preis des Standardwerkzeuges.**  
 This tool we produce to the price of the standard tool.  
 Questi utensili vengono realizzati al prezzo dello standard.

**Hinweis bei Verwendung auf KMH-Werkzeugaufnahme (VDI) Form C**  
 Remark by using the KMH holders (VDI) Form C

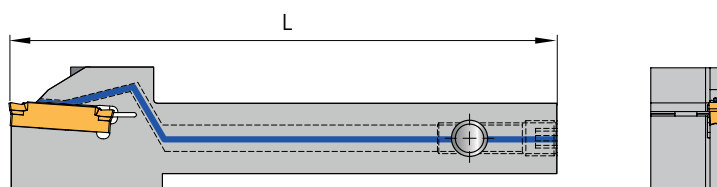
Nota sull'utilizzo adattatori KMH (VDI) Forma C

Beim Einsatz der Halter in VDI-Aufnahmen Form C bitte die Gesamtlänge (L) nach folgender Maximallänge festlegen:

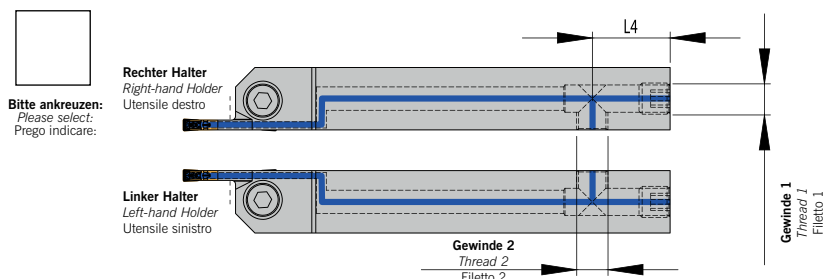
When using VDI holders Form C, please set overall length (L) by following maximum lengths:

Con l'utilizzo di adattatori VDI forma C impostare la lunghezza totale (L) secondo la seguente tabella:

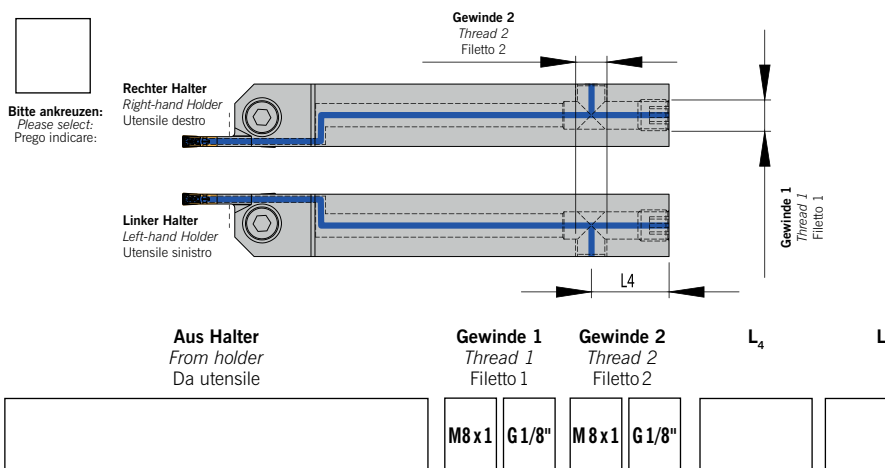
**Monoblockhalter mit Innenkühlung ACS1 von der Seite**  
 Monoblock holder with through tool coolant access from the side  
 Utensile monoblocco con adduzione interna ACS1 laterale



**Ausführung S. – Das Gewinde 2 ist auf der gleichen Seite wie die Schneide**  
 Design S. – Thread 2 is on the same side as the cutting edge  
 Versione S. – Filetto 2 sul medesimo lato dell'inserto



**Ausführung SG. – Das Gewinde 2 ist gegenüber der Schneide**  
 Design SG. – Thread 2 is on the opposite side of the cutting edge  
 Versione SG. – Filetto 2 sul lato opposto l'inserto



ET12	L
HSE 1616L-SE2402-ET.... ACS1...	90
HSE 1616R-SE2402-ET.... ACS1...	
HSE 1616L-SE2403-ET.... ACS1...	
HSE 1616R-SE2403-ET.... ACS1...	
HSE 1616L-SE2404-ET.... ACS1...	
HSE 1616R-SE2404-ET.... ACS1...	
HSE 2020L-SE2402-ET.... ACS1...	94
HSE 2020R-SE2402-ET.... ACS1...	
HSE 2020L-SE2403-ET.... ACS1...	
HSE 2020R-SE2403-ET.... ACS1...	
HSE 2020L-SE2404-ET.... ACS1...	
HSE 2020R-SE2404-ET.... ACS1...	
HSE 2020L-SE2405-ET.... ACS1...	107
HSE 2020R-SE2405-ET.... ACS1...	
HSE 2020L-SE2406-ET.... ACS1...	
HSE 2020R-SE2406-ET.... ACS1...	
HSE 2525L-SE2403-ET.... ACS1...	
HSE 2525R-SE2403-ET.... ACS1...	
HSE 2525L-SE2404-ET.... ACS1...	
HSE 2525R-SE2404-ET.... ACS1...	
HSE 2525L-SE2405-ET.... ACS1...	
HSE 2525R-SE2405-ET.... ACS1...	
HSE 2525L-SE2406-ET.... ACS1...	
HSE 2525R-SE2406-ET.... ACS1...	

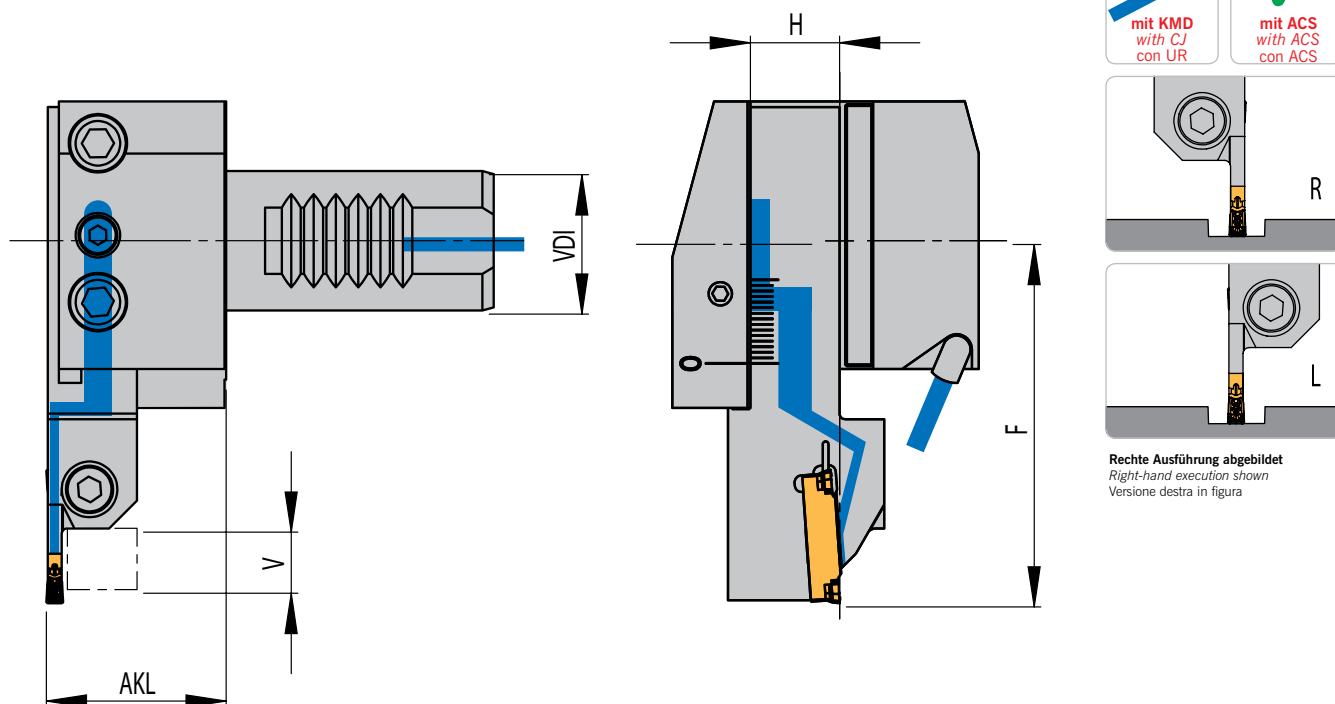
ET21	L
HSE 1616L-SE2402-ET.... ACS1...	99
HSE 1616R-SE2402-ET.... ACS1...	
HSE 1616L-SE2403-ET.... ACS1...	
HSE 1616R-SE2403-ET.... ACS1...	
HSE 1616L-SE2404-ET.... ACS1...	
HSE 1616R-SE2404-ET.... ACS1...	
HSE 2020L-SE2402-ET.... ACS1...	103
HSE 2020R-SE2402-ET.... ACS1...	
HSE 2020L-SE2403-ET.... ACS1...	
HSE 2020R-SE2403-ET.... ACS1...	
HSE 2020L-SE2404-ET.... ACS1...	
HSE 2020R-SE2404-ET.... ACS1...	
HSE 2020L-SE2405-ET.... ACS1...	116
HSE 2020R-SE2405-ET.... ACS1...	
HSE 2020L-SE2406-ET.... ACS1...	
HSE 2020R-SE2406-ET.... ACS1...	
HSE 2525L-SE2403-ET.... ACS1...	
HSE 2525R-SE2403-ET.... ACS1...	
HSE 2525L-SE2404-ET.... ACS1...	
HSE 2525R-SE2404-ET.... ACS1...	
HSE 2525L-SE2405-ET.... ACS1...	
HSE 2525R-SE2405-ET.... ACS1...	
HSE 2525L-SE2406-ET.... ACS1...	
HSE 2525R-SE2406-ET.... ACS1...	

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System – Monoblock holders with KMH holder (VDI)

Sistema – Utensili monoblocco con adattatore KMH (VDI)

HSE-ACS1-UN.. auf / with / con KMH01 – Form B



**HANDLING / HANDLING / GUIDA ALLA LETTURA:**

In Tabelle 1 die benötigte KMH-Werkzeugaufnahme (VDI) und den Halter-Typ auswählen.  
Entsprechend dem Halter-Typ den benötigten Monoblockhalter und die Schneidplatte mit Tabelle 2 bestimmen.

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.

Scegliere l'adattatore KMH (VDI) e tipologia di utensile dalla tabella 1.

Dalla tabella 2 scegliere il relativo utensile ed inserto.

**KMH-Werkzeugaufnahme – Form B für HSE..-ACS1-UN**

KMH holder – Form B for HSE..-ACS1-UN

Adattatore KMH – Forma B per HSE..-ACS1-UN

	Form	VDI	H <sub>Schaft/Shank/Stelo</sub>	AKL	V*	KMH-Werkzeugaufnahme (VDI) KMH holder (VDI) Adattatore KMH (VDI)	PG 47	Monoblockhalter Monoblock holder Utensile monoblocco
Tabelle 1 / Table 1 / Tabella 1	B1	25	16	32,3	15	KMH01-B1-25x16x30-IK	●	HSE 1616 L ...
		30	20	42,3	17	KMH01-B1-30x20x40-IK	●	HSE 2020 L ...
		40	25	47,3	22	KMH01-B1-40x25x44-IK	●	HSE 2525 L ...
	B2	25	16	32,3	15	KMH01-B2-25x16x30-IK	●	HSE 1616 R ...
		30	20	42,3	17	KMH01-B2-30x20x40-IK	●	HSE 2020 R ...
		40	25	47,3	22	KMH01-B2-40x25x44-IK	●	HSE 2525 R ...
	B3	25	16	32,3	15	KMH01-B3-25x16x30-IK	●	HSE 1616 R ...
		30	20	42,3	17	KMH01-B3-30x20x40-IK	●	HSE 2020 R ...
		40	25	47,3	22	KMH01-B3-40x25x44-IK	●	HSE 2525 R ...
	B4	25	16	32,3	15	KMH01-B4-25x16x30-IK	●	HSE 1616 L ...
		30	20	42,3	17	KMH01-B4-30x20x40-IK	●	HSE 2020 L ...
		40	25	47,3	22	KMH01-B4-40x25x44-IK	●	HSE 2525 L ...

\* Der Halter kann um den Wert „V“ in der VDI-Aufnahme nach vorne geschoben werden.  
Die Kühlmittelversorgung ist innerhalb des Verstellwegs sichergestellt. Das „F“-Maß ändert sich entsprechend.

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.

L'utensile può essere estratto fino alla dimensione "V".  
L'adduzione del refrigerante è garantita tramite un fermo. Dimensione "F" cambia in relazione.

System – Monoblock holders with KMH holder (VDI)  
 Sistema – Utensili monoblocco con adattatore KMH (VDI)

**HSE... -ACS1-UN.. für KMH-Werkzeugaufnahmen / for KMH holder / con adattatore KMH (VDI)**

**Monoblockhalter mit Innenkühlung ACS1 von unten (Nut) (ET = 12 mm)**

Monoblock holder with coolant supply from the bottom (Notch) (ET = 12 mm)

Utensile monoblocco con adduzione interna ACS1 da sotto (Asola) (ET = 12 mm)

Tabelle 2 / Table 2 / Tabella 2

Monoblockhalter Monoblock holder Utensile monoblocco	D <sub>max</sub>	EB	ET	Bezeichnung Designation Articolo	F	D <sub>R</sub>	PG 25	H	Schneideinsatz Insert Inserto
HSE 1616 L ...	-	2	12	HSE 1616L-SE2402-ET12-ACS1-UN	65	-	●	16	SE 24-20....
	-	3	12	HSE 1616L-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 1616L-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
HSE 1616 R ...	-	2	12	HSE 1616R-SE2402-ET12-ACS1-UN	65	-	●	16	SE 24-20....
	-	3	12	HSE 1616R-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 1616R-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
HSE 2020 L ...	-	2	12	HSE 2020L-SE2402-ET12-ACS1-UN	59	-	●	20	SE 24-20....
	-	3	12	HSE 2020L-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 2020L-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
	-	5	12	HSE 2020L-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2020 R ...	-	2	12	HSE 2020R-SE2402-ET12-ACS1-UN	59	-	●	20	SE 24-20....
	-	3	12	HSE 2020R-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 2020R-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
	-	5	12	HSE 2020R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 L ...	-	2	12	HSE 2020R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525L-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525L-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525L-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525L-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 R ...	-	2	12	HSE 2525R-SE2406-ET12-ACS1-UN	59	-	●	20	SE 24-60....
	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN		-	●		SE 24-20....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-30....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....

**Einbaumöglichkeiten / Assembly options / Combinazioni di montaggio**

Halter KMH01-B ... mit linkem Monoblockhalter Holder KMH01-B ... with left-hand monoblock holder Adattatore KMH-B ... con utensile monoblocco sinistro		Halter KMH01-B ... mit rechtem Monoblockhalter Holder KMH01-B ... with right-hand monoblock holder Adattatore KMH-B ... con utensile monoblocco destro	
KMH01-B1 ...	KMH01-B4 ...	KMH01-B2 ...	KMH01-B3 ...
Einbaulage normal Normal assembly Montaggio normale	Einbaulage Überkopf Upside down assembly Montaggio invertito	Einbaulage normal Normal assembly Montaggio normale	Einbaulage Überkopf Upside down assembly Montaggio invertito



System – Monoblock holders with KMH holder (VDI)

Sistema – Utensili monoblocco con adattatore KMH (VDI)

**HSE... -ACS1-UN.. für KMH-Werkzeugaufnahmen / for KMH holder / con adattatore KMH (VDI)**

**Monoblockhalter mit Innenkühlung ACS1 von unten (Nut) (ET = 21 mm)**

Monoblock holder with coolant supply from the bottom (Notch) (ET = 21 mm)

Utensile monoblocco con adduzione interna ACS1 da sotto (Asola) (ET = 21 mm)

Monoblockhalter Monoblock holder Utensile monoblocco		D <sub>max</sub>	EB	ET	Bezeichnung Designation Articolo	F	D <sub>R</sub>	PG 25	H	Schneideinsatz Insert Inserto
Tabelle 2 / Table 2 / Tabella 2	HSE 1616 L ...	-	2	21	HSE 1616L-SE2402-ET21-ACS1-UN	74	-	●	16	SE 24-20....
		-	3	21	HSE 1616L-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 1616L-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
	HSE 1616 R ...	-	2	21	HSE 1616R-SE2402-ET21-ACS1-UN	74	-	●	16	SE 24-20....
		-	3	21	HSE 1616R-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 1616R-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
	HSE 2020 L ...	-	2	21	HSE 2020L-SE2402-ET21-ACS1-UN	68	-	●	20	SE 24-20....
		-	3	21	HSE 2020L-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 2020L-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
		-	5	21	HSE 2020L-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
	HSE 2020 R ...	-	2	21	HSE 2020R-SE2402-ET21-ACS1-UN	68	-	●	20	SE 24-20....
		-	3	21	HSE 2020R-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 2020R-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
		-	5	21	HSE 2020R-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
	HSE 2525 L ...	-	2	21	HSE 2020R-SE2406-ET21-ACS1-UN	68	-	●	20	SE 24-60....
		-	3	21	HSE 2525L-SE2403-ET21-ACS1-UN		-	●		SE 24-20....
		-	4	21	HSE 2525L-SE2404-ET21-ACS1-UN		-	●		SE 24-30....
		-	5	21	HSE 2525L-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
	HSE 2525 R ...	-	2	21	HSE 2525L-SE2406-ET21-ACS1-UN	68	-	●	20	SE 24-60....
		-	3	21	HSE 2525R-SE2403-ET21-ACS1-UN		-	●		SE 24-20....
		-	4	21	HSE 2525R-SE2404-ET21-ACS1-UN		-	●		SE 24-30....
		-	5	21	HSE 2525R-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
	HSE 2525 R ...	-	2	21	HSE 2525R-SE2406-ET21-ACS1-UN	73	-	●	25	SE 24-60....
		-	3	21	HSE 2525R-SE2403-ET21-ACS1-UN		-	●		SE 24-20....
-		4	21	HSE 2525R-SE2404-ET21-ACS1-UN	-		●	SE 24-30....		
-		5	21	HSE 2525R-SE2405-ET21-ACS1-UN	-		●	SE 24-50....		
		-	2	21	HSE 2525R-SE2406-ET21-ACS1-UN		-		25	SE 24-60....

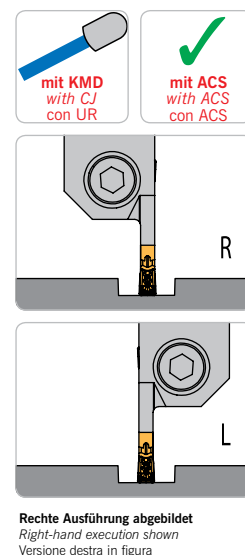
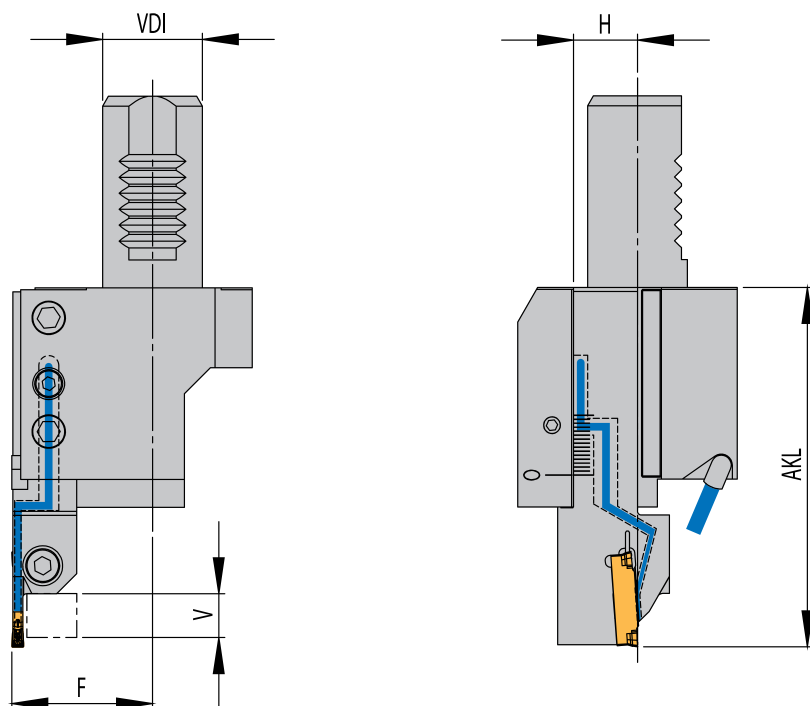
**Ersatzteile / Spare parts / Ricambi**

Halter Holder Stelo	Schraube Screw Vite	Schlüssel Inbus Allen key Chiave Esagono
HSE 1616.....HSE 2525..... -SE24...ET...ACS1...	DIN912 M5x16-12.9	KP 1321 (4 mm)

System – Monoblock holders with KMH holder (VDI)

Sistema – Utensili monoblocco con adattatore KMH (VDI)

HSE-ACS1-UN.. auf / with / con KMH01 – Form C



**HANDLING / HANDLING / GUIDA ALLA LETTURA:**

In Tabelle 1 die benötigte KMH-Werkzeugaufnahme (VDI) und den Halter-Typ auswählen. Entsprechend dem Halter-Typ den benötigten Monoblockhalter und die Schneidplatte mit Tabelle 2 bestimmen.

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.

Scegliere l'adattatore KMH (VDI) e tipologia di utensile dalla tabella 1.

Dalla tabella 2 scegliere il relativo utensile ed inserto.

**KMH-Werkzeugaufnahme – Form C für HSE..-ACS1-UN**

KMH holder – Form C for HSE..-ACS1-UN

Adattatore KMH – Forma C per HSE..-ACS1-UN

	Form	VDI	H <sub>Schaft/Shank/Stelo</sub>	F	V*	KMH-Werkzeugaufnahme (VDI) KMH holder (VDI) Adattatore KMH (VDI)	PG 47	Monoblockhalter Monoblock holder Utensile monoblocco
Tabelle 1 / Table 1 / Tabella 1	C1	25	16	35,3	15	KMH01-C1-25x16x30-IK	●	HSE 1616 R ...
		30	20	37,3	17	KMH01-C1-30x20x40-IK	●	HSE 2020 R ...
		40	25	46,3	22	KMH01-C1-40x25x44-IK	●	HSE 2525 R ...
	C2	25	16	35,3	15	KMH01-C2-25x16x30-IK	●	HSE 1616 L ...
		30	20	37,3	17	KMH01-C2-30x20x40-IK	●	HSE 2020 L ...
		40	25	46,3	22	KMH01-C2-40x25x44-IK	●	HSE 2525 L ...
	C3	25	16	35,3	15	KMH01-C3-25x16x30-IK	●	HSE 1616 L ...
		30	20	37,3	17	KMH01-C3-30x20x40-IK	●	HSE 2020 L ...
		40	25	46,3	22	KMH01-C3-40x25x44-IK	●	HSE 2525 L ...
	C4	25	16	35,3	15	KMH01-C4-25x16x30-IK	●	HSE 1616 R ...
		30	20	37,3	17	KMH01-C4-30x20x40-IK	●	HSE 2020 R ...
		40	25	46,3	22	KMH01-C4-40x25x44-IK	●	HSE 2525 R ...

\* Der Halter kann um den Wert „V“ in der VDI-Aufnahme nach vorne geschoben werden. Die Kühlmittelversorgung ist innerhalb des Verstellwegs sichergestellt. Das „F“-Maß ändert sich entsprechend.

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.

L'utensile può essere estratto fino alla dimensione "V". L'adduzione del refrigerante è garantita tramite un fermo. Dimensione "F" cambia in relazione.

System – Monoblock holders with KMH holder (VDI)  
 Sistema – Utensili monoblocco con adattatore KMH (VDI)

**HSE... -ACS1-UN.. für KMH-Werkzeugaufnahmen / for KMH holder / con adattatore KMH (VDI)**

**Monoblockhalter mit Innenkühlung ACS1 von unten (Nut) (ET = 12 mm)**

Monoblock holder with coolant supply from the bottom (Notch) (ET = 12 mm)

Utensile monoblocco con adduzione interna ACS1 da sotto (Asola) (ET = 12 mm)

Tabelle 2 / Table 2 / Tabella 2

Monoblockhalter Monoblock holder Utensile monoblocco	D <sub>max</sub>	EB	ET	Bezeichnung Designation Articolo	AKL	D <sub>R</sub>	PG 25	H	Schneideinsatz Insert Inserto
HSE 1616 L ...	-	2	12	HSE 1616L-SE2402-ET12-ACS1-UN	90	-	●	16	SE 24-20....
	-	3	12	HSE 1616L-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 1616L-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
HSE 1616 R ...	-	2	12	HSE 1616R-SE2402-ET12-ACS1-UN	90	-	●	16	SE 24-20....
	-	3	12	HSE 1616R-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 1616R-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
HSE 2020 L ...	-	2	12	HSE 2020L-SE2402-ET12-ACS1-UN	94	-	●	20	SE 24-20....
	-	3	12	HSE 2020L-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 2020L-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
	-	5	12	HSE 2020L-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2020 R ...	-	2	12	HSE 2020R-SE2402-ET12-ACS1-UN	94	-	●	20	SE 24-20....
	-	3	12	HSE 2020R-SE2403-ET12-ACS1-UN		-	●		SE 24-30....
	-	4	12	HSE 2020R-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
	-	5	12	HSE 2020R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
HSE 2525 L ...	-	3	12	HSE 2525L-SE2403-ET12-ACS1-UN	107	-	●	25	SE 24-30....
	-	4	12	HSE 2525L-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
	-	5	12	HSE 2525L-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
	-	6	12	HSE 2525L-SE2406-ET12-ACS1-UN		-	●		SE 24-60....
HSE 2525 R ...	-	3	12	HSE 2525R-SE2403-ET12-ACS1-UN	107	-	●	25	SE 24-30....
	-	4	12	HSE 2525R-SE2404-ET12-ACS1-UN		-	●		SE 24-40....
	-	5	12	HSE 2525R-SE2405-ET12-ACS1-UN		-	●		SE 24-50....
	-	6	12	HSE 2525R-SE2406-ET12-ACS1-UN		-	●		SE 24-60....

**Einbaumöglichkeiten / Assembly options / Combinazioni di montaggio**

Halter KMH01-C ... mit linkem Monoblockhalter Holder KMH01-C ... with left-hand monoblock holder Adattatore KMH01-C ... con utensile monoblocco sinistro		Halter KMH01-C ... mit rechtem Monoblockhalter Holder KMH01-C ... with right-hand monoblock holder Adattatore KMH01-C ... con utensile monoblocco destro	
KMH01-C2 ...	KMH01-C3 ...	KMH01-C1 ...	KMH01-C4 ...
Einbaulage normal Normal assembly Montaggio normale	Einbaulage Überkopf Upside down assembly Montaggio invertito	Einbaulage normal Normal assembly Montaggio normale	Einbaulage Überkopf Upside down assembly Montaggio invertito

System – Monoblock holders with KMH holder (VDI)

Sistema – Utensili monoblocco con adattatore KMH (VDI)

**HSE... -ACS1-UN.. für KMH-Werkzeugaufnahmen / for KMH holder / con adattatore KMH (VDI)**

**Monoblockhalter mit Innenkühlung ACS1 von unten (Nut) (ET = 21 mm)**

Monoblock holder with coolant supply from the bottom (Notch) (ET = 21 mm)

Utensile monoblocco con adduzione interna ACS1 da sotto (Asola) (ET = 21 mm)

Monoblockhalter Monoblock holder Utensile monoblocco		D <sub>max</sub>	EB	ET	Bezeichnung Designation Articolo	AKL	D <sub>R</sub>	PG 25	H	Schneideinsatz Insert Inserto
Tabelle 2 / Table 2 / Tabella 2	HSE 1616 L ...	-	2	21	HSE 1616L-SE2402-ET21-ACS1-UN	99	-	●	16	SE 24-20....
		-	3	21	HSE 1616L-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 1616L-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
	HSE 1616 R ...	-	2	21	HSE 1616R-SE2402-ET21-ACS1-UN	99	-	●	16	SE 24-20....
		-	3	21	HSE 1616R-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 1616R-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
	HSE 2020 L ...	-	2	21	HSE 2020L-SE2402-ET21-ACS1-UN	103	-	●	20	SE 24-20....
		-	3	21	HSE 2020L-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 2020L-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
		-	5	21	HSE 2020L-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
	HSE 2020 R ...	-	2	21	HSE 2020R-SE2402-ET21-ACS1-UN	103	-	●	20	SE 24-20....
		-	3	21	HSE 2020R-SE2403-ET21-ACS1-UN		-	●		SE 24-30....
		-	4	21	HSE 2020R-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
		-	5	21	HSE 2020R-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
	HSE 2525 L ...	-	3	21	HSE 2525L-SE2403-ET21-ACS1-UN	116	-	●	25	SE 24-30....
		-	4	21	HSE 2525L-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
		-	5	21	HSE 2525L-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
		-	6	21	HSE 2525L-SE2406-ET21-ACS1-UN		-	●		SE 24-60....
	HSE 2525 R ...	-	3	21	HSE 2525R-SE2403-ET21-ACS1-UN	116	-	●	25	SE 24-30....
		-	4	21	HSE 2525R-SE2404-ET21-ACS1-UN		-	●		SE 24-40....
		-	5	21	HSE 2525R-SE2405-ET21-ACS1-UN		-	●		SE 24-50....
		-	6	21	HSE 2525R-SE2406-ET21-ACS1-UN		-	●		SE 24-60....

**Ersatzteile / Spare parts / Ricambi**

Halter Holder Stelo	Schraube Screw Vite	Schlüssel Inbus Allen key Chiave Esagono
HSE 1616.....HSE 2525..... -SE24...ET....ACS1...	DIN912 M5x16-12.9	KP 1321 (4 mm)

**Beschichtet / Coated / Rivestito****AM5040**

**PVD-beschichtete Hartmetallsorte.**  
Eine zähe, universell einsetzbare Sorte für niedrige und mittlere Schnittgeschwindigkeiten. Hauptanwendungsbereich für rostfreie Stähle sowie für die Stahlbearbeitung. Gute Prozesssicherheit sowie beständig gegen Schneidkanten-ausbrüche.

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

Metallo duro rivestito PVD.  
Qualità universale per velocità medio basse. Campo di applicazione principale acciai inossidabili, superleghe, acciai legati. Notevole robustezza e resistenza alla scheggiatura.

**AP2240**

**CVD-beschichtete Hartmetallsorte.**  
Die AP2240 überzeugt mit großer Zähigkeit und hoher Wärmebeständigkeit und erreicht dadurch außerordentliche Standzeiten. Durch die stabilen Schneidkanten wird die Prozesssicherheit deutlich höher. Hauptanwendung dieser Sorte liegt in der Stahl- und Gussbearbeitung. In der Nebenanwendung ist sie auch für rostfreie Stähle zu empfehlen.

*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.*

Grado rivestito CVD.  
La qualità AP2240 offre maggiore tenacità e resistenza alle temperature incrementando la vita inserto. Il robusto tagliente incrementa l'affidabilità di lavorazione. Campo principale di impiego su acciaio e ghise acciaiuse. Idoneo anche per alcuni acciai inox.

**AP5020**

**PVD-beschichtete Hartmetallsorte.**  
Eine sehr universell einsetzbare Sorte für niedrige und mittlere Schnittgeschwindigkeiten. Hauptanwendungsbereich für Stahl. Als Nebenanwendung geeignet für die Bearbeitung rostfreier Stähle und für das Ein- und Abstechen hochwarmfester Werkstoffe und NE-Metalle.

*PVD coated carbide grade.  
A versatile grade for low to medium cutting speeds. Main application area is steel but can also be used on stainless steel and both high temperature and none ferrous materials.*

Metallo duro rivestito PVD.  
Qualità universale per velocità di taglio medie. Adatto principalmente per acciaio e secondariamente per acciaio inossidabile. Utilizzo secondario anche per metalli non ferrosi e refrattari.

**AP5030**

**PVD-beschichtete Hartmetallsorte.**  
Eine universell einsetzbare Sorte im Bereich P30-P35 für die Einstech- und Abstechbearbeitungen. Hauptanwendungsbereich für die Stahlbearbeitung, Nebenanwendung für rostfreie Stähle.

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

Metallo duro rivestito PVD.  
Qualità molto versatile su campo ISO P30-P35 per lavorazioni in sicurezza. Ottima per la lavorazione di acciai in condizioni non perfette di lavoro. Secondaria scelta per acciai inossidabili.

**Unbeschichtet / Uncoated / Non rivestito****AN1015**

**Unbeschichtete Hartmetallsorte zum Schlichten und Schruppen von Aluminiumlegierungen und bei NE-Metallen in Verbindung mit geschliffenen Schneidkanten. Zur Reduzierung der Aufbauschneidenbildung ist die Spanfläche hochglanzpoliert.**

*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.*

Grado di metallo duro micrograna per tutte le lavorazioni di materiali non ferrosi e Alluminio. Tagliente rettificato super positivo e spoglia lappata per ridurre tagliente di riporto.



### M2

**Erste Wahl für das Stechen und Längsdrehen**

- **Hauptanwendung für Stahl- und rostfreie Werkstoffe**
- **Stabile Schneidkanten für max. Vorschübe und Spantiefen**

*First choice for grooving and turning*

- *Main application for steel and stainless steel*
- *Strong cutting edge for maximum feed rates and cutting depths*

Prima scelta per la scanalatura e tornitura longitudinale

- Principale applicazione su acciaio e acciai inossidabili
- Geometria robusta per massima velocità di avanzamento e profondità di taglio



### T1

**Sehr gute Spankontrolle und Einschnürung**

- **Für Stahl und Rostfreibearbeitung**
- **Universell einsetzbar – auch bei dünnwandigen Bauteilen**

*Very good swarf control and formation*

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

La geometria dall'ottimo controllo truciolo

- Per acciaio e materiali inossidabili
- Utilizzo universale, anche per pezzi sottili



### ALU

**Geometrie mit scharfer Schneide**

- **Erste Wahl für Aluminium und NE-Metalle**
- **Umseitig geschliffener Schneideinsatz**
- **Hochpositive Geometrie**
- **Polierte Spanflächen**

*Geometry with a sharp edge*

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

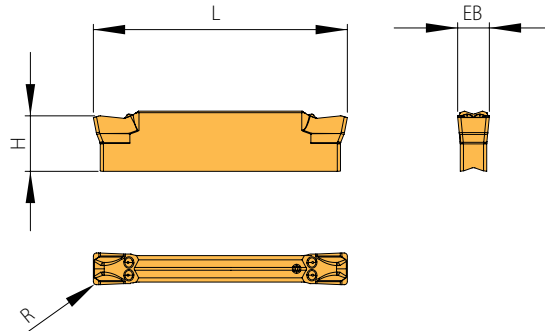
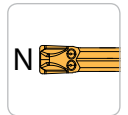
Geometria super positiva rettificata

- Prima scelta per Alluminio e materiali non ferrosi
- Inserto rettificato
- Spoglia di taglio molto positiva
- Vano truciolo lappato



Inserts  
Inserti

SE24..



Bezeichnung Designation Articolo	EB	H	L	R	χ	PG 26				AN1015
						beschichtet coated rivestito			unbeschichtet uncoated non rivestito	
						AM5040	AP2240	AP5020	AP5030	
SE24-2002N-M2	2,0	5,5	24,00	0,2	0°	●		●		
SE24-2002N-T1	2,0	5,5	24,00	0,2	0°		●	●		
SE24-3002N-M2	3,0	5,5	24,00	0,2	0°	●		●		
SE24-3003N-M2	3,0	5,5	24,00	0,3	0°	●		●		
SE24-3003N-T1	3,0	5,5	24,00	0,3	0°		●	●	●	
SE24-4004N-M2	4,0	5,5	24,00	0,4	0°	●		●		
SE24-4004N-T1	4,0	5,5	24,00	0,4	0°			●		
SE24-5004N-M2	5,0	7,5	24,00	0,4	0°	●		●		
SE24-5005N-T1	5,0	7,5	24,00	0,5	0°			●		
SE24-6008N-M2	6,0	7,5	24,00	0,8	0°	●		●		
SE24-2002N-ALU *	2,0	5,5	24,00	0,2	0°					●
SE24-3003N-ALU *	3,0	5,5	24,00	0,3	0°					●

\* geschliffene Ausführung  
Ground version  
Versione rettificata

- Hauptanwendung  
Main application  
Applicazione principale
- Nebenanwendung  
Secondary application  
Applicazione secondaria

	P	M	K	N	S	H
AM5040	○	●	●	●		
AP2240	●	○	○	○		
AP5020		●				
AP5030				○		
AN1015				●	○	

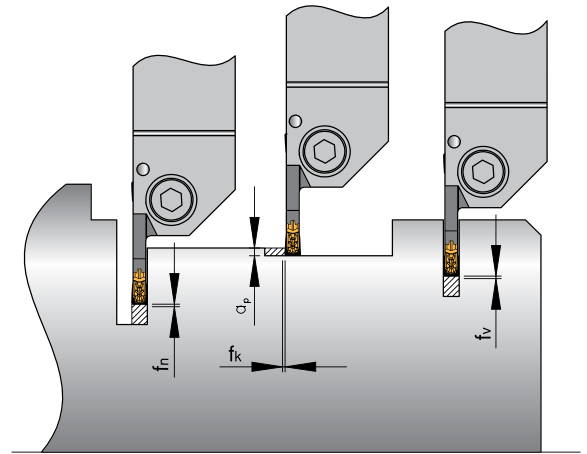
Recommended cutting data  
Parametri di taglio suggeriti

## Maximale Vorschübe und Spantiefen

Max. feed rate and depth of cut

Avanzamenti e profondità di taglio massimi

- $f_v$  (mm/U) = **Vorschub ins Volle** / Feed rate into solid / Avanzamento nel pieno
- $f_n$  (mm/U) = **Vorschub beim Einstechen** / Feed rate for re-grooving / Avanzamento di ripresa
- $f_k$  (mm/U) = **Vorschub beim Kopieren** / Feed rate for copying / Avanzamento per copiatura
- $a_p$  (mm) = **Spantiefe** / Depth of cut / Profondità di taglio



## Geometrie / Geometry / Geometria M2

	Schneideinsatz / Insert / Inserto				
	SE24-20....	SE24-30....	SE24-40....	SE24-50....	SE24-60....
$f_v$ mm/U	0,04 – 0,12	0,08 – 0,18	0,12 – 0,24	0,12 – 0,30	0,15 – 0,35
$f_n$ mm/U	0,04 – 0,20	0,08 – 0,30	0,12 – 0,35	0,16 – 0,40	0,20 – 0,45
$f_k$ mm/U	0,06 – 0,16	0,08 – 0,24	0,12 – 0,30	0,16 – 0,40	0,20 – 0,45
$a_{p \max}$	0,20 – 0,70	0,25 – 1,25	0,40 – 1,80	0,60 – 2,50	0,80 – 3,00

## Geometrie / Geometry / Geometria T1

	Schneideinsatz / Insert / Inserto			
	SE24-20....	SE24-30....	SE24-40....	SE24-50....
$f_v$ mm/U	0,03 – 0,12	0,05 – 0,20	0,10 – 0,24	0,12 – 0,30
$f_n$ mm/U	0,03 – 0,20	0,05 – 0,25	0,10 – 0,30	0,16 – 0,40
$f_k$ mm/U	0,06 – 0,20	0,08 – 0,30	0,12 – 0,40	0,16 – 0,50
$a_{p \max}$	0,20 – 0,70	0,25 – 1,25	0,40 – 1,80	0,60 – 2,50

## Geometrie / Geometry / Geometria ALU

	Schneideinsatz / Insert / Inserto	
	SE24-20....	SE24-30....
$f_v$ mm/U	0,02 – 0,15	0,03 – 0,20
$f_n$ mm/U	0,02 – 0,2	0,02 – 0,25
$f_k$ mm/U	0,06 – 0,20	0,08 – 0,30
$a_{p \max}$	0,20 – 1,00	0,25 – 1,50

Die Tabellenwerte sind Richtwerte. Es kann notwendig sein, die Werte den jeweiligen Bearbeitungsumständen anzupassen.  
The recommended cutting data are only approximate values. It may be necessary to adjust them to each individual machining application.  
I dati indicati in tabella sono valori approssimati. Può essere necessario adattarli alle singole applicazioni di lavorazione.

ISO	Werkstoff	Zugfestigkeit (N/mm <sup>2</sup> )	Schnittgeschwindigkeit V <sub>c</sub> (m/min)					
			beschichtet				unbeschichtet	
			AM5040	AP2240	AP5020	AP5030		
P	Unlegierter Stahl und Stahlguss	< 0,15 % C/vergütet	350	120–200	130–250	120–220	120–200	–
		0,15 – 0,45 % C/vergütet	650	80–150	110–180	80–150	80–150	–
		> 0,45 % C/vergütet	1000	60–140	70–150	60–140	60–140	–
	Niedrig legierter Stahl und Stahlguss	geglüht	600	80–160	120–190	80–170	80–170	–
		vergütet	900	60–130	110–150	60–130	60–130	–
			1200	60–120	70–130	60–120	60–120	–
	Hochlegierter Stahl	geglüht	700	80–140	90–140	80–140	80–140	–
Hochlegierter Werkzeugstahl und Stahlguss	gehärtet und angelassen	1100	50–120	70–130	50–120	50–120	–	
Nichtrostender Stahl	ferritisch, geglüht	700	60–160	110–200	60–170	60–170	–	
Stahlguss	martensitisch, vergütet	1000	50–100	60–130	50–100	50–100	–	
M	Nichtrostender Stahl	austenitisch und austenitisch/ ferritisch, abgeschreckt	450–600	60–160	100–200	60–180	60–170	–
		600–900	50–90	120–150	50–90	50–90	–	
K	Grauguss	perlitisch/ferritisch	500–700	–	100–160	–	–	120–160
		perlitisch/martensitisch	700–850	–	110–180	–	–	100–150
			800–1100	–	130–200	–	–	90–140
	Gusseisen mit Kugelgraphit	ferritisch	550	–	100–160	–	–	130–170
		perlitisch	800	–	120–220	–	–	90–130
Temperguss	ferritisch	450	–	90–180	–	–	140–200	
perlitisch	750	–	80–150	–	–	120–160		
N	Aluminium-Knetlegierungen	nicht aushärtbar	200	–	–	100–500	–	300–500
		aushärtbar, ausgehärtet	350	–	–	100–300	–	200–300
	Aluminium-Gusslegierungen	≤ 12 % Si, ausgehärtet	250	–	–	100–500	–	100–500
		≤ 12 % Si, aushärtbar, ausgehärtet	300	–	–	100–300	–	100–300
		≤ 12 % Si, nicht aushärtbar	450	–	–	100–200	–	100–200
	Kupfer und Kupferlegierungen (Bronze/Messing)	Automatenlegierung, Pb > 1 %	400	–	–	100–500	–	250–500
		Messing, Rotguss	300	–	–	100–500	–	200–500
		Aluminiumbronze	500	–	–	100–300	–	150–300
Kupfer und Elektrolytkupfer		200	–	–	100–300	–	150–300	
Nichtmetallische Werkstoffe	Duroplaste	–	–	–	80–180	–	80–180	
	Faserverstärkte Kunststoffe	–	–	–	60–150	–	60–150	
	Hartgummi	–	–	–	100–220	–	100–200	
S	Warmfeste Legierungen	Fe-Basis, geglüht	700	–	–	20–50	–	30–45
		Fe-Basis, ausgehärtet	950	–	–	20–40	–	20–35
		Ni- oder Co-Basis, geglüht	800	–	–	15–25	–	15–25
		Ni- oder Co-Basis, gegossen	1100	–	–	10–20	–	10–20
		Ni- oder Co-Basis, ausgehärtet	1200	–	–	10–20	–	10–20
	Titanlegierungen	Rein-Titan	500–700	–	–	50–120	–	60–120
Alpha + Beta-Legierungen	ausgehärtet	700–1000	–	–	30–50	–	30–50	
H	Gehärteter Stahl	gehärtet und angelassen	55 HRC	–	–	–	–	–
			60 HRC	–	–	–	–	–
	Hartguss	gegossen	41 HRC	–	–	–	–	–
Gehärtetes Gusseisen	gehärtet und angelassen	55 HRC	–	–	–	–	–	

Die Tabellenwerte sind Richtwerte.  
Es kann notwendig sein, die Werte den jeweiligen Bearbeitungsbedingungen anzupassen.

ISO	Material	Tensile strength (N/mm <sup>2</sup> )	Cutting speed V <sub>c</sub> (m/min)					
			coated				uncoated	
			AM5040	AP2240	AP5020	AP5030	AN1015	
P	Unalloyed steel and cast steel	< 0.15 % C/hardened and tempered	350	120–200	130–250	120–220	120–200	–
		0.15 - 0.45 % C/hardened and tempered	650	80–150	110–180	80–150	80–150	–
		> 0.45 % C/hardened and tempered	1000	60–140	70–150	60–140	60–140	–
	Low alloyed steel and cast steel	annealed	600	80–160	120–190	80–170	80–170	–
		hardened and tempered	900	60–130	110–150	60–130	60–130	–
			1200	60–120	70–130	60–120	60–120	–
	High alloyed steel	annealed	700	80–140	90–140	80–140	80–140	–
High alloyed tool steel and cast steel	hardened	1100	50–120	70–130	50–120	50–120	–	
Stainless steel	ferritic, annealed	700	60–160	110–200	60–170	60–170	–	
Cast steel	martensitic, hardened and tempered	1000	50–100	60–130	50–100	50–100	–	
M	Stainless steel	austenitic and austenitic/ ferritic, chilled	450–600	60–160	100–200	60–180	60–170	–
			600–900	50–90	120–150	50–90	50–90	–
K	Cast iron	pearlitic/ferritic	500–700	–	100–160	–	–	120–160
		pearlitic/martensitic	700–850	–	110–180	–	–	100–150
			800–1100	–	130–200	–	–	90–140
	Cast iron with nodular graphite	ferritic	550	–	100–160	–	–	130–170
		pearlitic	800	–	120–220	–	–	90–130
	Malleable cast iron	ferritic	450	–	90–180	–	–	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
		Lead alloys, Pb > 1 %	400	–	–	100–500	–	250–500
	Copper and copper alloys (Brass/Bronze)	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.

ISO	Materiale	Resistenza (N/mm <sup>2</sup> )	Velocità di taglio V <sub>c</sub> (m/min)					
			rivestito				non rivestito	
			AM5040	AP2240	AP5020	AP5030	AN1015	
P	Acciai non legati	< 0,15 % C/bonificato	350	120-200	130-250	120-220	120-200	-
		0,15 - 0,45 % C/bonificato	650	80-150	110-180	80-150	80-150	-
		> 0,45 % C/bonificato	1000	60-140	70-150	60-140	60-140	-
	Acciai debolmente legati e Ghise acciaiose	ricotto	600	80-160	120-190	80-170	80-170	-
		bonificato	900	60-130	110-150	60-130	60-130	-
			1200	60-120	70-130	60-120	60-120	-
	Acciai fortemente legati	ricotto	700	80-140	90-140	80-140	80-140	-
	Acciai da utensili e fusioni	temprato e rinvenuto	1100	50-120	70-130	50-120	50-120	-
Acciai inossidabili	ferritico, ricotto	700	60-160	110-200	60-170	60-170	-	
Ghisa acciaiosa	martensitico, bonificato	1000	50-100	60-130	50-100	50-100	-	
M	Acciai inossidabili	austenitico e autenitico/	450-600	60-160	100-200	60-180	60-170	-
		ferritico, trattato o temperato	600-900	50-90	120-150	50-90	50-90	-
K	Ghisa grigia	perlitica/ferritico	500-700	-	100-160	-	-	120-160
		perlitica/martensitico	700-850	-	110-180	-	-	100-150
			800-1100	-	130-200	-	-	90-140
	Ghisa sferoidale	ferritico	550	-	100-160	-	-	130-170
		perlitica	800	-	120-220	-	-	90-130
	Ghisa temprata	ferritico	450	-	90-180	-	-	140-200
perlitica		750	-	80-150	-	-	120-160	
N	Leghe di Alluminio stampato	non invecchiato	200	-	-	100-500	-	300-500
		invecchiato	350	-	-	100-300	-	200-300
	Leghe di Alluminio da fusione	≤ 12 % Si, invecchiato	250	-	-	100-500	-	100-500
		≤ 12 % Si, rinvenuto, invecchiato	300	-	-	100-300	-	100-300
		≤ 12 % Si, non invecchiato	450	-	-	100-200	-	100-200
	Rame e Leghe di Rame (Bronzo/Ottone)	Automatici, Pb > 1 %	400	-	-	100-500	-	250-500
		Ottone, Bronzo	300	-	-	100-500	-	200-500
		Bronzoalluminio	500	-	-	100-300	-	150-300
Rame e Rame Elettrolitico		200	-	-	100-300	-	150-300	
Materiali non metallici	Duroplastiche	-	-	-	80-180	-	80-180	
	Plastiche rinforzate	-	-	-	60-150	-	60-150	
	Gomme dure	-	-	-	100-220	-	100-200	
S	Leghe resistenti al calore	Base-Fe, ricotto	700	-	-	20-50	-	30-45
		Base-Fe, invecchiato	950	-	-	20-40	-	20-35
		Base Ni o Co, ricotto	800	-	-	15-25	-	15-25
		Base Ni o Co, da fusione	1100	-	-	10-20	-	10-20
		Base Ni o Co, invecchiato	1200	-	-	10-20	-	10-20
	Leghe di Titanio	Titanio puro	500-700	-	-	50-120	-	60-120
Leghe Alpha+Beta	invecchiato	700-1000	-	-	30-50	-	30-50	
H	Acciaio Temprato	temprato e rinvenuto	55 HRC	-	-	-	-	-
			60 HRC	-	-	-	-	-
	Getti Temprati	da fusione	41 HRC	-	-	-	-	-
Ghisa Temprata	temprato e rinvenuto	55 HRC	-	-	-	-	-	

I dati indicati in tabella sono valori approssimati. Può essere necessario adattarli alle singole applicazioni di lavorazione.

## Allgemein / General / Generici

Grundsätzlich sollte darauf geachtet werden, dass das Stechwerkzeug so stabil wie möglich ausgewählt wird. Dadurch können Vibrationen verhindert und die Standzeit gesteigert werden.

Bei der Auswahl der Stechplatten ist zu beachten:

- Die Abstechbreite EB in mm
- Die Spanleitstufe für die Bearbeitung
- Den Einstellwinkel und den Eckenradius

Die Stechbreite sollte so schmal wie möglich und so breit wie nötig ausgewählt werden. Durch die Reduzierung der Stechbreite wird auch die Schnittkraft reduziert und kann in der Massenfertigung zudem auch zu enormen Einsparungen an Materialkosten führen. Nach Möglichkeit sind neutrale Schneiden einzusetzen, die eine bessere Spanbildung, geringere Abdrängkräfte und höhere Standzeiten erreichen.

Pay attention to selection of the correct tools. Tools should have minimum overhang to reduce vibrations and increase of tool life.

When selecting inserts, consider:

- Parting-off width in mm
- Chip breaker for the material
- Approach angle and corner radius

Select insert width as narrow as possible and as wide a necessary. By reducing the insert width, the cutting forces are reduced and especially important when mass producing less material is wasted. Whenever possible it is always recommended to use neutral inserts that offer better swarf control and tool life.

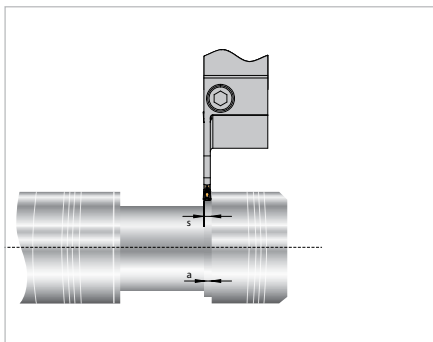
Scegliere sempre l'utensile più corto possibile per una maggiore stabilità. Grazie a questo le vibrazioni vengono ridotte, la lavorazione è più stabile e la durata inserto aumentata.

Nella scelta dell'inserto di scanalatura è bene valutare:

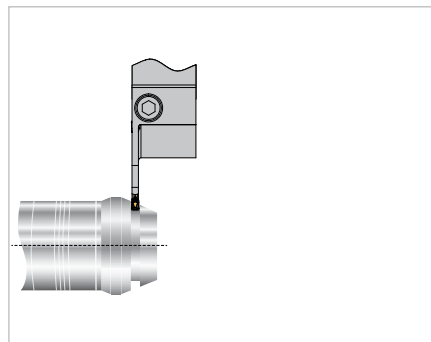
- La larghezza di taglio in mm
- La forma di rompitruciolo
- L'angolo di taglio ed il raggio di punta

La larghezza della troncatura deve essere il più stretta possibile – scegliere inserti proporzionati alla misura da realizzare. Riducendo la larghezza di taglio, si riduce la forza di taglio e può risultare in un enorme risparmio dei costi delle materie prime su grossi lotti produttivi.

## Hinweise zum Einstechen / Recommendations for grooving / Suggerimenti per la troncatura



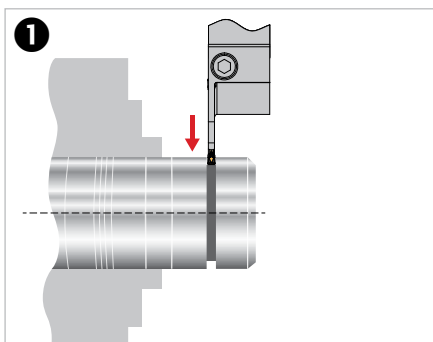
- Beim seitlich versetzten Einstechen sollte die Breite „a“ mindestens 70% der Stechbreite „s“ betragen.
- Beim Einstechen an schrägen Flächen muss der Vorschub beim Anschnitt um ca. 20% bis 50% reduziert werden.



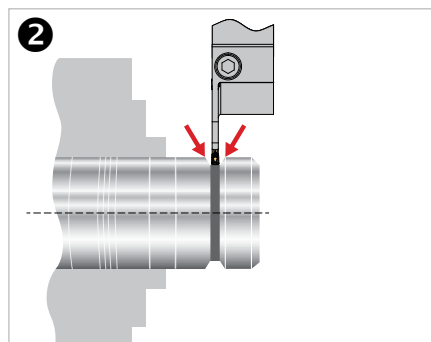
- When grooving with an axial displacement the width "a" should be a minimum of 70% of the groove width "s".
- When grooving into an angled surface reduce feed rate by 20 – 50% until in full cut.

- Per lavorazioni senza appoggio laterale assicurarsi che la larghezza di lavoro "a" sia almeno il 70% della larghezza inserto "s".
- La scanalatura su superfici inclinate deve prevedere una riduzione dell'avanzamento tra il 20% ed il 50%.

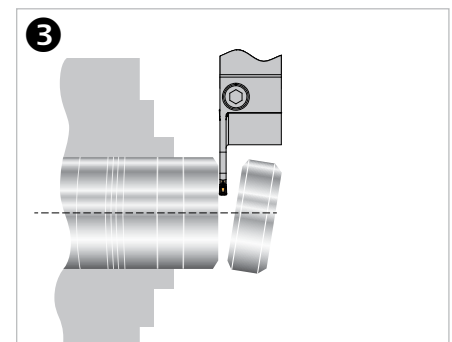
## Fasen und Abstechen / Chamfering and parting-off / Smussatura e troncatura



1. Vorstechen
2. Fasen
3. Abstechen



1. Pre-crooving
2. Chamfering
3. Parting-off



1. Pre-scanalatura
2. Smusso
3. Troncatura

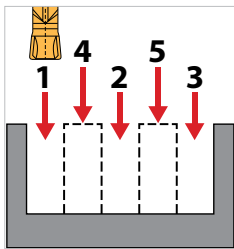


**Stechen von Außennuten** / Machining of external grooves / Scanalatura radiale

Die häufigste Methode zur Herstellung von breiten Nuten zwischen 2 Schultern erfolgt durch Mehrfacheinsteichen, Stechdrehen, Schrägeintauchen und durch Auskammern.

The most popular way of producing wide grooves in between two shoulders are by multiple grooving, groove turning, ramping, and pocketing.

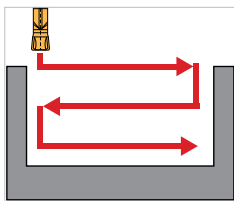
Il metodo più comune per produrre ampie gole fra due spalle è con la tornitura a tuffo, con scanalature affiancate, seguendo corrette sequenze.

**Mehrfacheinsteichen** / Multiple grooving / Scanalatura a tuffo

Zuerst sind die vollen Nuten zu bearbeiten. Einstiche 1, 2 und 3. Danach werden die Stege 4 und 5 bearbeitet. Dadurch werden die Eckenradien geschützt und die Späne in die Mitte des Spanbrechers abgeführt. Stegbreite 0,6 bis 0,8 x Schneidplattenbreite EB.

First the full grooves are machined. Grooves 1, 2 and 3, thereafter 4 and 5. This protects the corner radius and the swarf comes of the centre of the chip breaker. Widths of 4 and 5 should be 0.6 – 0.8 x insert width (EB).

Prima di procedere, valutare il tipo di gola e scegliere la dimensione inserto adatta per larghezza e profondità. Eseguire scanalature 1, 2 e 3; successivamente 4 e 5. In tal modo l'inserto lavora con appoggio sui fianchi, in quelle successive senza appoggio ma solo sul rompitruciolo centrale. Prevedere profondità di gola ridotte e ripetere l'operazione fino alla massima profondità.

**Stechdrehen** / Groove turning / Scanalatura di copiatura

Die Schnitttiefe  $a_p$  richtet sich nach der Breite der Schneidplatte, dem zu zerspanenden Werkstoff und der Schneidkantenlänge bzw. Ausspannsituation.

Faustformel:

$$a_p \text{ max.} = EB \times 0,7$$

$$a_p \text{ min.} = \text{Eckenradius „r“}$$

The groove depth ( $a_p$ ) depends on the width of the insert, material and the edge length of the inserts.

General rule:

$$a_p \text{ max.} = EB \times 0,7$$

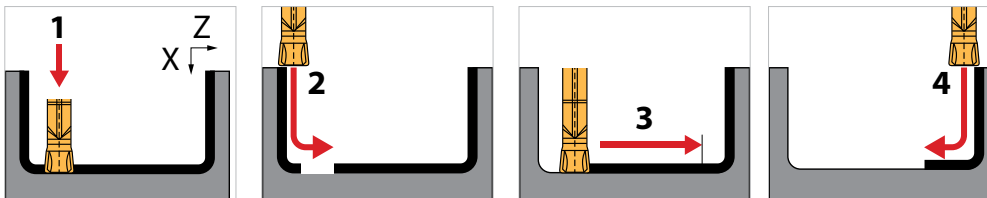
$$a_p \text{ min.} = \text{corner radius „r“}$$

La profondità di passata è determinata dalla larghezza dell'inserto, dalla tipologia di materiale e dalla lunghezza (stabilità) del portainserito.

Regola generale:

$$a_p \text{ max.} = EB \times 0,7$$

$$a_p \text{ min.} = \text{Raggio „r“}$$

**Nut-Fertigbearbeitung** / Groove finishing machining / Finitura di gola

Vorsicht ist geboten bei der Fertigbearbeitung, da die Schneidplatte um den Radiusbereich am Grund fährt und die meisten Bewegungen in der Z-Richtung erfolgen.

Dies führt zur Bildung dünner Späne und kann aufgrund von Vibrationen zur Behinderung des Prozesses führen.

Durch Einhaltung des dargestellten Bearbeitungsablaufes lässt sich dies verhindern, wobei die axiale und radiale Schnitttiefe zwischen 0,5 und 1,0 mm liegen muss.

Take care when finishing, the radius of the insert moves mainly in the z-axis and this can produce very thin swarf which can lead to vibrations and poor surface finish.

If using the machine path shown, this can be avoided, axial and radial cutting depth should be between 0.5 – 1.0 mm.

Il ciclo di finitura gola prevede una sequenza che eviti la formazione di anelli di bave. Scegliere forme di rompitruciolo con controllo truciolo anche per avanzamenti composti e non solo in Z come per tutti gli inserti da troncatura. Evitare la formazione di trucioli sottili e lunghi e di vibrazioni.

La sequenza rappresentata indica il metodo suggerito di lavoro per una situazione tipo, prevedendo profondità di passata tra 0,5 e 1,0 mm.