





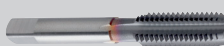



















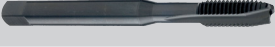



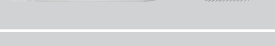















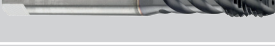

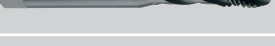

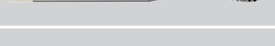



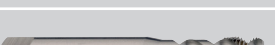














# GEWINDESCHNEIDEN *THREAD CUTTING*

ARTIKEL-BESCHREIBUNG ARTICLE-DESCRIPTION		ARTIKEL-NR. ARTICLE-NO.	SEITE PAGE	STAHL	INOX	NE-METALLE	GUSS	TITAN	HRC	GRAPHIT	
<b>GEWINDEBOHRER/AUSBOHRER <i>DRILLS TO REMOVE JAMMED TAPS</i></b>											
	VHM	E.1619.1	6	✓	✓	✓	✓		✓		
	VHM	SET.1619.1	6	✓	✓	✓	✓		✓		
<b>HANDGEWINDEBOHRER <i>HAND TAPS</i></b>											
	HSS-E	Form A 1 START	E.1652.0-1	7	✓				✓		
	HSS-E	Form D 2 WORK	E.1652.0-2	7	✓				✓		
	HSS-E	Form C F FINISH	TOL. 6 HX E.1652.0-F	7	✓				✓		
SET 1+2+F	HSS-E	Set 1-2-F	TOL. 6 HX E.1652.0-S	7	✓				✓		
	HSSE/ PM	Form A 1 START	E.1605.1-1	8	✓						
	HSSE/ PM	Form D 2 WORK	E.1605.1-2	8	✓						
	HSSE/ PM	Form C F FINISH	TOL. 6 HX E.1605.1-F	8	✓						
SET 1+2+F	HSSE/ PM	Set 1-2-F	TOL. 6 HX E.1605.1-S	8	✓						
<b>GEWINDEBOHRER/FORMER "M" TAPS/FORMING TAPS "M"</b>											
	HSS-E	 TOL. 6 HX	E.1615.1	9	✓				✓		
	HSS		SET.1606.0	9	✓	✓	✓	✓			
	HSS		SET.1607.0	10	✓	✓	✓	✓			
	HSS		SET.1608.0	10	✓	✓	✓	✓			
	HSS		SET.1609.0	10	✓	✓	✓	✓			
	HSS-E	 TOL. 6 H	E.1601.0	11	✓						
	HSS-E	 TOL. 6 H	E.1601.1	11	✓						
	HSSE/ PM	 TOL. 6 G	E.1602.1	11	✓						
	HSSE/ PM	 TOL. 6 H	E.1641.1	12	✓						
	HSSE/ PM	 TOL. 6 H	E.1610.1	12	✓				✓		

Gewindbohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
Lehren	11
Nachschleifen	12
Sonstiges	13

Die angegebenen Einsatzgebiete sind Richtlinien. Die genauen Einsatzdaten finden Sie im jeweiligen Artikel!  
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# GEWINDESCHNEIDEN *THREAD CUTTING*

	ARTIKEL-BESCHREIBUNG ARTICLE-DESCRIPTION	ARTIKEL-NR. ARTICLE-NO.	SEITE PAGE	STAHL	INOX	NE- METALLE	GUSS	TITAN	HRC	GRAPHIT	
	HSSE/ PM  TOL. 6 H	E.1624.0	12		✓			✓			
	HSS-E  TOL. 6 H	E.1640.0	12		✓			✓			
	HSS-E  TOL. 6 H	E.1617.1	12	✓							
	HSS-E  TOL. 6 H	E.1717.0	13			✓					
	HSS-E  TOL. 6 HX	E.1621.1	13			✓					
	HSS-E  TOL. 6 H	E.1669.0	13	✓							
	HSS-E  TOL. 6 H	E.1614.0	14	✓	✓	✓	✓				
	HSSE/ PM  TOL. 6 HX	E.1688.1	15	✓					✓		
	HSS-E  TOL. 6 H	E.1622.0	15			✓					
	HSSE/ PM  TOL. 6 HX	E.1639.1	16				✓				✓
	HSS-E  TOL. 6 HX	E.1646.1	16				✓				
	HSS-E  TOL. 6 H	E.1612.1	17	✓							
	HSS-E  TOL. 6 H	E.1613.1	17	✓							
	HSS-E  TOL. 6 H	E.1678.0	18	✓							
	HSS-E  TOL. 6 H	E.1668.0	18	✓							
	HSS-E  TOL. 6 H	E.1668.1	18	✓							
	HSS-E  TOL. 6 G	E.1604.1	19	✓							
	HSS-E  TOL. 6 G	E.1720.0	19	✓							
	HSS-E  TOL. 6 H	E.1625.0	19	✓	✓	✓	✓				
	HSS-E  TOL. 6 H	E.1626.1	19	✓							
	HSSE/ PM  TOL. 6 H	E.1677.0	20	✓	✓	✓	✓				
	HSS-E  TOL. 6 H	E.1677.1	20	✓	✓	✓	✓				
	HSS-E  TOL. 6 H	E.1627.0	20	✓	✓	✓	✓				

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ARTIKEL-BESCHREIBUNG ARTICLE-DESCRIPTION	ARTIKEL-NR. ARTICLE-NO.	SEITE PAGE	STAHL	INOX	NE-METALLE	GUSS	TITAN	HRC	GRAPHIT	
HSSE/PM TOL. 6 H	E.1603.1	21	✓	✓	✓	✓				
HSSE/PM TOL. 6 HX	E.1645.1	21	✓			✓		✓		
HSS-E TOL. 6 H	E.1642.0	21	✓							
HSSE/PM TOL. 6 HX	E.1628.1	22					✓			
HSSE/PM TOL. 6 H	E.1616.1	22	✓	✓	✓	✓				✓
HSSE/PM TOL. 6 H	E.1643.1	22	✓	✓	✓	✓				
HSS-E TOL. 6 H	E.1644.1	22			✓					
HSS-E TOL. 6 HX	E.1629.1	22			✓					
VHM TOL. 6 H	E.1680.1	23				✓				
VHM TOL. 6 H	E.1681.1	23			✓					
VHM TOL. 6 H	E.1634.1	23						✓		✓
HSSE/PM TOL. 6 HX OIL NUT	E.1631.1	24	✓	✓	✓		✓			
HSSE/PM TOL. 6 HX OIL NUT	E.1653.1	24	✓	✓	✓		✓			
HSSE/PM TOL. 6 HX OIL NUT	E.1636.1	24	✓	✓	✓		✓			
HSSE/PM TOL. 6 HX OIL NUT	E.1637.1	24	✓	✓	✓		✓			
HSSE/PM TOL. 6 H	E.1611.0	25	✓		✓					

## GEWINDEBOHRER/FORMER "MF" TAPS/FORMING TAPS "MF"


























PM TOL. 6 HX	E.1638.1	25	✓					✓		
HSS-E TOL. 6 H	E.1647.1	26	✓	✓	✓	✓				
HSS-E TOL. 6 H	E.1648.0	26	✓	✓	✓	✓				
HSS-E TOL. 6 H	E.1649.1	27	✓	✓	✓	✓				
HSS-E TOL. 6 H	E.1651.0	27		✓						
HSSE/PM TOL. 6 HX OIL NUT	E.1655.1	28	✓	✓	✓					

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Gewindbohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
Lehren	11
Nachschleifen	12
Sonstiges	13








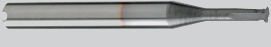
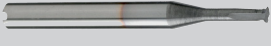














# GEWINDESCHNEIDEN *THREAD CUTTING*

ARTIKEL-BESCHREIBUNG ARTICLE-DESCRIPTION		ARTIKEL-NR. ARTICLE-NO.	SEITE PAGE	STAHL	INOX	NE-METALLE	GUSS	TITAN	HRC	GRAPHIT	
<b>GEWINDEBOHRER "G" TAPS "G"</b>											
	HSSE/PM	TOL. 6HX	E.1657.1	28	✓				✓		
	HSS-E		E.1654.1	29	✓	✓	✓	✓			
	HSS-E		E.1659.1	29			✓				
	HSS-E		E.1661.0	29		✓					
	HSS-E		E.1656.1	29		✓					
	HSSE/PM		E.1663.1	30	✓	✓	✓		✓		
<b>GEWINDEBOHRER "UNC" TAPS "UNC"</b>											
	HSS-E	TOL. 2B	E.1662.0	30	✓	✓	✓	✓			
	HSS-E	TOL. 2B	E.1718.0	30	✓	✓	✓	✓			
	HSS-E	TOL. 2B	E.1664.0	30		✓					
<b>GEWINDEBOHRER "UNF" TAPS "UNF"</b>											
	HSS-E	TOL. 2B	E.1658.0	31	✓	✓	✓	✓			
	HSS-E	TOL. 2B	E.1719.0	31	✓	✓	✓	✓			
	HSS-E	TOL. 2B	E.1660.0	31		✓					
<b>GEWINDEBOHRER "BSW" TAPS "BSW"</b>											
	HSS-E		E.1665.0	31	✓	✓	✓	✓			
<b>GEWINDEBOHRER "BSF" TAPS "BSF"</b>											
	HSS-E		E.1684.0	32	✓	✓	✓	✓			
<b>GEWINDEBOHRER "NPT" TAPS "NPT"</b>											
	HSS-E		E.1685.0	32	✓	✓	✓	✓			
<b>GEWINDEBOHRER "PG" TAPS "PG"</b>											
	HSS-E		E.1687.0	33	✓	✓	✓	✓			

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# GEWINDESCHNEIDEN *THREAD CUTTING*

ARTIKEL-BESCHREIBUNG ARTICLE-DESCRIPTION		ARTIKEL-NR. ARTICLE-NO.	SEITE PAGE	STAHL	INOX	NE-METALLE	GUSS	TITAN	HRC	GRAPHIT	
<b>GEWINDEBOHRER "EG" TAPS "EG"</b>											
	HSS-E		E.1630.0	33	✓	✓	✓	✓			
<b>GEWINDEBOHRER "TR" TAPS "TR"</b>											
	HSS	 TOL. 7 H	E.1632.0	34	✓						
	HSS	 TOL. 7 H	E.1633.0	34	✓						
<b>GEWINDEFRÄSER <i>THREAD MILLING CUTTERS</i></b>											
	VHM	"M"	E.1666.0	35	✓		✓	✓			
	VHM	"M"	E.1689.0	35		✓			✓		
	VHM	"M"	E.1667.1	36	✓		✓	✓			
	VHM	"M"	E.1711.1	36	✓	✓	✓	✓			✓
	VHM	"MF"	E.1690.1	37	✓	✓	✓	✓			
	VHM	"G"	E.1691.1	37	✓	✓	✓	✓			
<b>SCHNEIDEISEN <i>DIES</i></b>											
	HSS	"M" TOL. 6g	E.1618.0	38	✓		✓	✓			
	HSS	"M" TOL. 6E	E.1692.0	38	✓		✓	✓			
	HSS-E	"M" TOL. 6g	E.1693.0	38		✓			✓		
	HSS	"MF" TOL. 6g	E.1694.0	39	✓		✓	✓			
	HSS	"MF" TOL. 6E	E.1695.0	39	✓		✓	✓			
	HSS-E	"MF" TOL. 6g	E.1696.0	39		✓			✓		
	HSS	"G"	E.1697.0	40	✓		✓	✓			
	HSS	"G"	E.1698.0	40	✓		✓	✓			
	HSS-E	"G"	E.1699.0	40		✓			✓		
	HSS		E.1712.0	40	✓		✓	✓			

Gewindebohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
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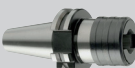


# GEWINDESCHNEIDEN *THREAD CUTTING*

	ARTIKEL-BESCHREIBUNG ARTICLE-DESCRIPTION	ARTIKEL-NR. ARTICLE-NO.	SEITE PAGE	STAHL	INOX	NE- METALLE	GUSS	TITAN	HRC	GRAPHIT	
	HSS „UNC“	E.1701.0	41	✓		✓	✓				
	HSS-E „UNC“	E.1703.0	41		✓			✓			
	HSS „UNF“	E.1704.0	41	✓		✓	✓				
	HSS „UNF“	E.1705.0	41	✓		✓	✓				
	HSS-E „UNF“	E.1706.0	41		✓			✓			
	HSS Tr	E.1707.0	42	✓		✓	✓				
	HSS Tr	E.1708.0	42	✓		✓	✓				

## ZUBEHÖR *ACCESSORIES*

		E.1709.0	43								
		E.1710.0	43								
		E.1713.0	44								
		E.1714.0	44								
		E.1715.0	44								
		E.1716.0	45								

## FUTTER / EINSÄTZE *CHUCKS*

		E.1620.0	45								
		E.1672.0	46								
		E.1673.0	46								
		E.1674.0	47								
		E.1675.0	48								

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**E.1619.1**

6.2

VHM HRC

"M" ≤65 HRC

Blue Cut



**SET.1619.1**

6.2

- Solid carbide drills to remove jammed taps
- Wiertła z węglika spiekanego do usuwania złamanych gwintowników
- Punte MD per rimuovere maschi inceppati
- Broca de metal duro para remover machos rotos

Artikel-Nr. Article-No.					
Ø	d1	l2	l1	d2	
M 3	2,5	10	38	3,0	
M 4	3,3	14	46	4,0	
M 5	4,2	19	50	5,0	
M 6	5,0	23	50	6,0	
M 8	6,8	23	60	7,0	
M 10	8,5	25	80	9,0	
M 12	10,2	35	80	11,0	
<b>Satz Set</b>					<b>SET.1619.1</b>
<b>M 3 - M 12</b>					je 1 Stück pro Abmessung 1 piece per size

**Bedienungsanleitung für VHM-Gewindebohrerausbohrer:**

Der abgebrochene Gewindebohrer darf nicht über das Werkstück herausstehen (muß im Bohrloch stecken!)

1. Zentrieren des Gewindebohrer-Ausbohrers durch mehrmaliges Antippen auf den abgebrochenen Gewindebohrer - auch auf schrägen Flächen
  2. Ausbohrvorgang beginnen
  3. Bei tieferen Gewinden evtl. 2-3 mal entspänen
  4. Späne aus dem Bohrloch entfernen (z. B. Druckluft)
  5. Eventuelle Restspäne mit einer Reissnadel herausnehmen
  6. Mit dem neuen Gewindebohrer das Gewinde schneiden
  7. Prüfung des Gewindes mit einem Gewindegrenzlehndorn
- Die Standzeit des Gewindebohrer-Ausbohrers beträgt ca. 3-5 Gewinde.  
Gewindebohrer-Ausbohrer werden nicht nachgeschliffen.

**Operating instruction for Carbide Drills to remove jammed Taps:**

The broken tap should not rise above the workpiece (it must be inside the drill hole)

1. Centering of the carbide drill by a multiple approaching on the broken tap - also on sloping faces
  2. Starting the drilling process
  3. In case of deep threads the chips has to be removed twice or three times
  4. Chips has to be removed out of the drill hole ( for example by air pressure)
  5. Any remaining chips should be taken out by a scriber point stray
  6. Tapping the thread with a new tap
  7. Checking the thread with a thread plug gauge
- The tool life of the carbide drill to remove jammed taps is about 3 to 5 threads  
Carbide drills to remove jammed taps will not be reground.

**Tisch- oder Ständerbohrmaschine:**

Schmierung: trocken oder nass  
Drehzahl: 1000 - 2000 U/min  
Vorschub: Handvorschub

**NC-Maschine:**

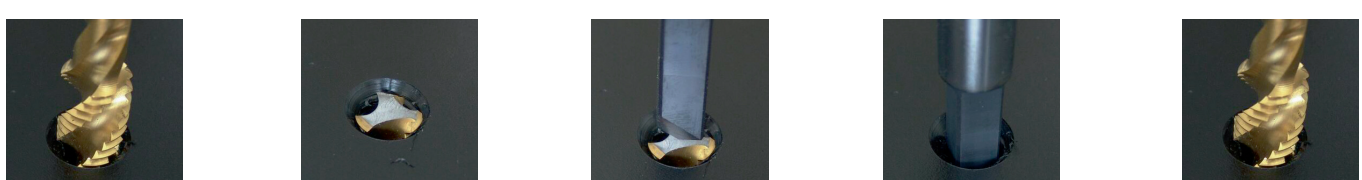
Schmierung: nass  
Drehzahl: 1400 - 2400 U/min  
Vorschub: ca. 0,03-0,06 pro Umdrehung

**Bench type or Column boring machine:**

Lubrication: dry or wet  
Revolution: 1000 - 2000 Rev./min  
Feed: by hand

**NC-machine:**

Lubrication: wet  
Revolution: 1400 - 2400 Rev./min  
Feed: approx. 0,03-0,06 per revolution



Gewindebohrer 1

Bohren HSSE 2

Bohren VHM 3

Reiben HSSE 4

Reiben VHM 5

Frässtifte VHM 6

Fräsen VHM 7

WP-Werkzeuge 8

Fräsen HSSE 9

Sägen 10

Lehren 11

Nachschleifen 12

Sonstiges 13

**E.1652.0-1**

2.1 2.2

HSS-E DIN 352 OX

„M” INOX

Form A 1 START

**E.1652.0-2**

2.1 2.2

HSS-E DIN 352 OX

„M” INOX

Form D 2 WORK

**E.1652.0-F**

2.1 2.2

HSS-E DIN 352 OX

„M” TOL. 6 HX

Form C F FINISH INOX

HSSE-Hand taps

Gwintowniki ręczne HSS-E, gwint metryczny „M”

Maschi a mano HSSE

Machos de mano en HSSE

Artikel-Nr. Article-No.								E.1652.0-Nr.1	E.1652.0-Nr. 2	E.1652.0-F
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
M 3	0,50	40	10	18	3,5	2,7	2,5			
M 4	0,70	45	12	22	4,5	3,4	3,3			
M 5	0,80	50	14	25	6,0	4,9	4,2			
M 6	1,00	56	16	28	6,0	4,9	5,0			
M 8	1,25	63	20		6,0	4,9	6,8			
M 10	1,50	70	22		7,0	5,5	8,5			
M 12	1,75	75	24		9,0	7,0	10,2			
M 14	2,00	80	26		11,0	9,0	12,0			
M 16	2,00	80	27		12,0	9,0	14,0			

**E.1652.0-S**

2.1 2.2

HSS-E DIN 352 OX

„M” TOL. 6 HX

Set 1-2-F INOX

Set of HSSE-Hand taps

Zestaw gwintowników ręcznych HSS-E, gwint metryczny „M”

Serie maschi a mano HSSE

Juegos de machos de mano en HSSE

Artikel-Nr. Article-No.								E.1652.0-S
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece
M 3	0,50	40	10	18	3,5	2,7	2,5	
M 4	0,70	45	12	22	4,5	3,4	3,3	
M 5	0,80	50	14	25	6,0	4,9	4,2	
M 6	1,00	56	16	28	6,0	4,9	5,0	
M 8	1,25	63	20		6,0	4,9	6,8	
M 10	1,50	70	22		7,0	5,5	8,5	
M 12	1,75	75	24		9,0	7,0	10,2	
M 14	2,00	80	26		11,0	9,0	12,0	
M 16	2,00	80	27		12,0	9,0	14,0	



### E.1605.1-1

Universal

HSSE/PM

DIN 352


TICN

"M"

<45 HRC

Form A  
1  
START

UNIVERSAL  
TOOL



### E.1605.1-2

Universal

HSSE/PM

DIN 352


TICN

"M"

<45 HRC

Form D  
2  
WORK

UNIVERSAL  
TOOL



### E.1605.1-F

Universal

HSSE/PM

DIN 352

TICN


"M"

TOL. 6 HX

<45 HRC

Form C  
F  
FINISH

UNIVERSAL  
TOOL



HSSE/PM-Hand taps  
 Gwintowniki ręczne HSS-E/PM, gwint metryczny "M"  
 Maschi a mano HSSE/PM  
 Machos de mano en HSSE/PM

Artikel-Nr. Article-No.								E.1605.1-Nr.1	E.1605.1-Nr. 2	E.1605.1-F
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
M 3	0,50	40	10	18	3,5	2,7	2,5			
M 4	0,70	45	12	22	4,5	3,4	3,3			
M 5	0,80	50	14	25	6,0	4,9	4,2			
M 6	1,00	56	16	28	6,0	4,9	5,0			
M 8	1,25	63	20		6,0	4,9	6,8			
M 10	1,50	70	22		7,0	5,5	8,5			
M 12	1,75	75	24		9,0	7,0	10,2			

### E.1605.1-S

Universal

HSSE/PM

DIN 352

TICN

"M"

TOL. 6 HX

<45 HRC

Set  
1-2-F

UNIVERSAL  
TOOL



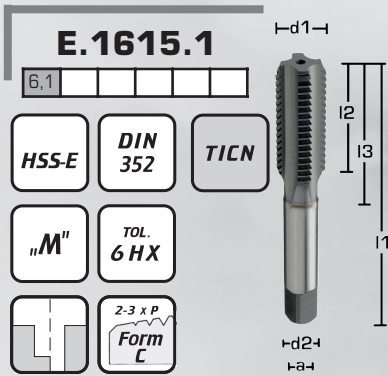


Set of HSSE/PM-Hand taps  
 Zestaw gwintowników ręcznych HSS-E/PM, gwint metryczny "M"  
 Serie maschi a mano HSSE/PM  
 Juegos de machos de mano en HSSE/PM

Artikel-Nr. Article-No.								E.1605.1-S
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece
M 3	0,50	40	10	18	3,5	2,7	2,5	
M 4	0,70	45	12	22	4,5	3,4	3,3	
M 5	0,80	50	14	25	6,0	4,9	4,2	
M 6	1,00	56	16	28	6,0	4,9	5,0	
M 8	1,25	63	20		6,0	4,9	6,8	
M 10	1,50	70	22		7,0	5,5	8,5	
M 12	1,75	75	24		9,0	7,0	10,2	

- Gewindebohrer 1
- Bohren HSSE 2
- Bohren VHM 3
- Reiben HSSE 4
- Reiben VHM 5
- Frässtifte VHM 6
- Fräsen VHM 7
- WP-Werkzeuge 8
- Fräsen HSSE 9
- Sägen 10
- Lehren 11
- Nachschleifen 12
- Sonstiges 13

1.08



HSSE-Taps for retapping narrow threads

Gwintowniki HSS-E o zawężonej tolerancji, gwint metryczny "M"

Maschi HSSE per rigenerare la filettatura esistente

Machos en HSSE para reparar

Artikel-Nr. Article-No.								E.1615.1 € Stück piece
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>M 3</b>	0,50	40	10	18	3,5	2,7	2,5	
<b>M 4</b>	0,70	45	12	22	4,5	3,4	3,3	
<b>M 5</b>	0,80	50	14	25	6,0	4,9	4,2	
<b>M 6</b>	1,00	56	16	28	6,0	4,9	5,0	
<b>M 8</b>	1,25	63	20		6,0	4,9	6,8	
<b>M 10</b>	1,50	70	22		7,0	5,5	8,5	
<b>M 12</b>	1,75	75	24		9,0	7,0	10,2	

HSS-Gewindebohrer im Satz

**SET.1606.0**  
Universal



**Gewindebohrer taps**  
M3, M4, M5, M6, M7, M8, M10, M12, M14, M16, M20

**Schneideisen screwing dies**  
M3, M4, M5, M6, M7, M8, M10, M12, M14, M16, M20

**Gewindeprofil-Lehre screw pitch gauge**  
0,4 ÷ 6 mm

**Verstellbare Windeisen tap wrenches**  
Nr. 2: 2,5 ÷ 9 mm, Nr. 3: 4,9 ÷ 14 mm

**Schneideisenhalter die stocks**  
Ø 25 x 9 mm, Ø 38 x 14 mm

**Schraubenzieher screwdriver**  
4 x 90 mm

Set of HSS-Taps

Zestaw gwintowników HSS

Assortimento di maschi HSS

Juegos de machos de mano en HSS

**SET.1607.0**

Universal

**Gewindebohrer taps**

M3, M4, M5, M6, M8, M10, M12, M14, M16, M18, M20, M22, M24, M8x1, M10x1, M12x1,25, M12x1,5, M14x1,25, M14x1,5, M16x1,5, M18x1,5, M20x1,5, M22x1,5, M24x1,5

**Schneideisen screwing dies**

M3, M4, M5, M6, M8, M10, M12, M14, M16, M18, M20, M22, M24, M8x1, M10x1, M12x1,25, M12x1,5, M14x1,25, M14x1,5, M16x1,5, M18x1,5, M20x1,5, M22x1,5, M24x1,5

**Gewindeprofil-Lehre screw pitch gauge**

0,4 ÷ 6 mm

**Verstellbare Windeisen tap wrenches**

Nr. 2: 2,5 ÷ 9 mm, Nr. 3: 4,9 ÷ 14 mm

**Schneideisenhalter die stocks**

Ø 25 x 9 mm, Ø 38 x 14 mm, Ø 45 x 18 mm, Ø 55 x 22 mm

**Typ Windeisen type wrench**


Nr. 1: M2 ÷ M5 mm


**Schraubenzieher screwdriver**


4 x 90 mm


**Distanzring distance ring**

38 x 2, 45 x 2, 55 x 3

 Set of HSS-Taps

 Zestaw gwintowników HSS

 Assortimento di maschi HSS

 Juegos de machos de mano en HSS



**SET.1608.0**

Universal

**Gewindebohrer taps**

M3, M4, M5, M6, M8, M10, M12

**Schneideisen screwing dies**


M3, M4, M5, M6, M8, M10, M12


**Verstellbare Windeisen tap wrenches**


Nr. 2: 2,5 ÷ 9 mm


**Schneideisenhalter die stocks**

Ø 25 x 9 mm, Ø 38 x 14 mm

 Set of HSS-Taps

 Zestaw gwintowników HSS

 Assortimento di maschi HSS

 Juegos de machos de mano en HSS



**SET.1609.0**

Universal

**Gewindebohrer taps**

M3, M4, M5, M6, M8, M10, M12

**Schneideisen screwing dies**

M3, M4, M5, M6, M8, M10, M12

**Verstellbare Windeisen tap wrenches**


Nr. 1,5: 2,5 ÷ 8 mm


**Schneideisenhalter die stocks**


Ø 25 x 9 mm


**Schraubenzieher screwdriver**

4 x 9 mm

 Set of HSS-Taps

 Zestaw gwintowników HSS

 Assortimento di maschi HSS

 Juegos de machos de mano en HSS



Gewindebohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
Lehren	11
Nachschleifen	12
Sonstiges	13

### E.1601.0


Universal

HSS-E DIN 371/376

„M“ TOL. 6H

N/mm² ≤ 800

4-5 x P Schälanschnitt Form B



### E.1601.1

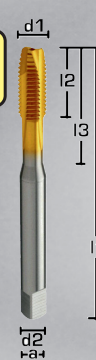
Universal

HSS-E DIN 371/376 TIN

„M“ TOL. 6H

N/mm² ≤ 800

4-5 x P Schälanschnitt Form B



### E.1602.1


Universal


HSSE/PM DIN 371/376 TIN


„M“ TOL. 6G


N/mm² ≤ 800


4-5 x P Schälanschnitt Form B



 HSSE/PM-Machine taps for through holes

 Gwintowniki maszynowe HSS-E/PM do otworów przelot., gwint metryczny „M“

 Maschi a macchina fori passanti HSSE/PM

 Machos de máquina en HSSE/PM para agujeros pasantes

Artikel-Nr. Article-No.								E.1601.0	E.1601.1	E.1602.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
M 1,0	0,25	32	5		2,5	2,1	0,75			
M 1,4	0,30	40	7		2,5	2,1	1,10			
M 1,7	0,35	40	8	11	2,5	2,1	1,30			
M 2,0	0,40	45	8	12	2,8	2,1	1,60			
M 2,5	0,45	50	9	14	2,8	2,1	2,05			
M 3,0	0,50	56	10	18	2,8	2,7	2,50			
M 3,5	0,60	56	12	20	3,5	3,0	2,90			
M 4,0	0,70	63	12	21	4,0	3,4	3,30			
M 5,0	0,80	70	14	25	4,0	4,9	4,20			
M 6,0	1,00	80	18	30	6,0	4,9	5,00			
M 7,0	1,00	80	10	30	7,0	5,5	6,00			
M 8,0	1,25	90	20	35	7,0	6,2	6,80			
M 9,0	1,25	90	13	35	9,0	7,0	7,80			
M 10,0	1,50	100	20	39	9,0	8,0	8,50			
<b>DIN 376</b>										
M 12,0	1,75	110	29		9,0	7,0	10,20			
M 14,0	2,00	110	30		11,0	9,0	12,00			
M 16,0	2,00	110	32		12,0	9,0	14,00			
M 18,0	2,50	125	34		14,0	11,0	15,50			
M 20,0	2,50	140	34		16,0	12,0	17,50			
M 22,0	2,50	140	34		18,0	14,5	19,50			
M 24,0	3,00	160	38		18,0	14,5	21,00			
M 27,0	3,00	160	38		20,0	16,0	24,00			
M 30,0	3,50	180	45		22,0	18,0	26,50			
M 33,0	3,50	180	50		25,0	20,0	29,50			
M 36,0	4,00	200	56		28,0	22,0	32,00			

**E.1641.1**


1.2 3.1

HSSE/PM DIN 371/376 TICN

„M“ TOL. 6H

N/mm' ≤ 1000

4-5 x P Form B Schälanschnitt



**E.1610.1**


1.2 3.1

HSSE/PM DIN 371/376 TICN

„M“ TOL. 6H

N/mm' ≤ 1200

4-5 x P Form B Schälanschnitt




**E.1624.0**

1.2 3.1

HSSE/PM DIN 371/376 OX

„M“ TOL. 6H

4-5 x P Form B Schälanschnitt



- HSSE/PM-Machine taps for through holes
- Gwintowniki maszynowe HSS-E/PM do otworów przelot., gwint metryczny "M"
- Maschi a macchina fori passanti HSSE/PM
- Machos de máquina en HSSE/PM para agujeros pasantes

Artikel-Nr. Article-No.								E.1641.1	E.1610.1	E.1624.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
M 3,0	0,50	56	10	18	2,8	2,7	2,50			
M 4,0	0,70	63	12	21	4,0	3,4	3,30			
M 5,0	0,80	70	14	25	4,0	4,9	4,20			
M 6,0	1,00	80	18	30	6,0	4,9	5,00			
M 8,0	1,25	90	20	35	7,0	6,2	6,80			
M 10,0	1,50	100	20	39	9,0	8,0	8,50			
<b>DIN 376</b>										
M 12,0	1,75	110	29		9,0	7,0	10,20			
M 16,0	2,00	110	32		12,0	9,0	14,00			
M 20,0	2,50	140	34		16,0	12,0	17,50			

**E.1640.0**


2.1 2.2

HSS-E DIN 371/376 OX

„M“ TOL. 6H

INOX

4-5 x P Form B Schälanschnitt




**E.1617.1**

für Hardox

HSS-E DIN 371/376 TICN

„M“ TOL. 6H

4-5 x P Form B Schälanschnitt



- HSSE-Machine taps for through holes
- Gwintowniki maszynowe HSS-E do otworów przelot., gwint metryczny "M"
- Maschi a macchina fori passanti HSSE
- Machos de máquina en HSSE/PM para agujeros pasantes

Artikel-Nr. Article-No.								E.1640.0	E.1617.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>									
M 1,0	0,25	40	5,5		2,5	2,1	0,75		
M 1,4	0,30	40	7,0		2,5	2,1	1,10		
M 1,7	0,35	40	8,0		2,5	2,1	1,30		
M 2,0	0,40	45	8,0		2,8	2,1	1,60		
M 2,5	0,45	50	9,0		2,8	2,1	2,05		
M 3,0	0,50	56	10,0	18	2,8	2,7	2,50		
M 4,0	0,70	63	12,0	21	4,0	3,4	3,30		
M 5,0	0,80	70	14,0	25	4,0	4,9	4,20		
M 6,0	1,00	80	18,0	30	6,0	4,9	5,00		
M 8,0	1,25	90	20,0	35	7,0	6,2	6,80		
M 10,0	1,50	100	20,0	39	9,0	8,0	8,50		
<b>DIN 376</b>									
M 12,0	1,75	110	29,0		9,0	7,0	10,20		
M 16,0	2,00	110	32,0		12,0	9,0	14,00		
M 20,0	2,50	140	34,0		16,0	12,0	17,50		
M 24,0	3,00	160	38,0		18,0	14,5	21,00		

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1717.0**

4.1 4.4 4.7

HSS-E DIN 371/376

„M“ TOL. 6H

Kupfer/Alu lang

4-5 x P Schälanschnitt Form B



**E.1621.1**

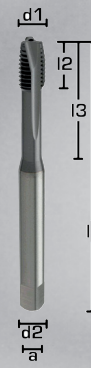
4.3 4.6 4.8

HSS-E DIN 371/376 TiCN

„M“ TOL. 6HX

Kupfer/Alu kurz

4-5 x P Schälanschnitt Form B



- HSSE-Machine taps for through holes
- Gwintowniki maszynowe HSS-E do otworów przelot., gwint metryczny „M”
- Maschi a macchina fori passanti HSSE
- Machos de máquina en HSSE para agujeros pasantes

Artikel-Nr. Article-No.									E.1717.0	E.1621.1
d1	Aufmaß oversize	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
M 3,0	+0,10	0,50	56	10	18	2,8	2,7	2,50		
M 4,0	+0,10	0,70	63	12	21	4,0	3,4	3,30		
M 5,0	+0,10	0,80	70	14	25	4,0	4,9	4,20		
M 6,0	+0,10	1,00	80	18	30	6,0	4,9	5,00		
M 8,0	+0,10	1,25	90	20	35	7,0	6,2	6,80		
M 10,0	+0,10	1,50	100	20	39	9,0	8,0	8,50		
<b>DIN 376</b>										
M 12,0	+0,10	1,75	110	29		9,0	7,0	10,20		
M 14,0	+0,10	2,00	110	30		11,0	9,0	12,00		
M 16,0	+0,10	2,00	110	32		12,0	9,0	14,00		



**E.1669.0**

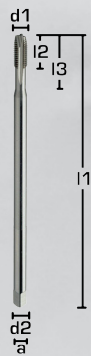
Universal

HSS-E DIN 371/376 UNIVERSAL TOOL

„M“ TOL. 6H

N/mm' ≤ 800

4-5 x P Schälanschnitt Form B



- HSSE-Machine taps for through holes, long
- Gwintowniki maszynowe HSS-E długie do otw. przelot., gwint metryczny „M”
- Maschi a macchina fori passanti HSSE, lunghi
- Machos de máquina en HSSE para agujeros pasantes, serie larga

Artikel-Nr. Article-No.									E.1669.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	
<b>DIN 371</b>									
M 3,0	0,50	100	10	18	3,5	2,7	2,5		
M 4,0	0,70	125	12	20	4,5	3,0	3,3		
M 5,0	0,80	140	14	25	6,0	4,9	4,2		
M 6,0	1,00	160	18	30	6,0	4,9	5,0		
<b>DIN 376</b>									
M 8,0	1,25	90	13		6,0	4,9	6,8		
M 10,0	1,50	100	15		7,0	5,5	8,5		
M 12,0	1,75	220	29		9,0	7,0	10,2		
M 16,0	2,00	220	32		12,0	9,0	14,0		

**E.1614.0**

Universal

**HSS-E** **DIN 371/376**  
**"M"** **TOL. 6H**  
**UNIVERSAL TOOL**  
**2-3 x P**  
**Form C**



- HSSE/PM-Machine taps for through and blind holes
- Gwintowniki maszynowe HSS-E do otworów przelot., gwint metryczny "M"
- Maschi a macchina fori passanti e ciechi HSSE/PM
- Machos de máquina en HSSE/PM para agujeros pasantes y ciegos

Artikel-Nr. Article-No.

**E.1614.0**

€  
Stück piece

d1	P	l1	l2	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>							
<b>M 1,0</b>	0,25	40	5,5	2,5	2,1	0,75	
<b>M 1,2</b>	0,25	40	5,5	2,5	2,1	0,95	
<b>M 1,4</b>	0,30	40	7,0	2,5	2,1	1,10	
<b>M 1,6</b>	0,35	40	8,0	2,5	2,1	1,25	
<b>M 1,7</b>	0,35	40	8,0	2,5	2,1	1,30	
<b>M 1,8</b>	0,35	40	8,0	2,5	2,1	1,45	
<b>M 2,0</b>	0,40	45	8,0	2,8	2,1	1,60	
<b>M 2,5</b>	0,45	50	9,0	2,8	2,1	2,05	
<b>M 3,0</b>	0,50	56	10,0	3,5	2,7	2,50	
<b>M 3,5</b>	0,60	56	12,0	4,0	3,0	2,90	
<b>M 4,0</b>	0,70	63	12,0	4,5	3,4	3,30	
<b>M 5,0</b>	0,80	70	14,0	6,0	4,9	4,20	
<b>M 6,0</b>	1,00	80	18,0	6,0	4,9	5,00	
<b>M 8,0</b>	1,25	90	20,0	8,0	6,2	6,80	
<b>M 10,0</b>	1,50	100	20,0	10,0	8,0	8,50	
<b>DIN 376</b>							
<b>M 12,0</b>	1,75	110	29,0	9,0	7,0	10,20	
<b>M 14,0</b>	2,00	110	30,0	11,0	9,0	12,00	
<b>M 16,0</b>	2,00	110	32,0	12,0	9,0	14,00	
<b>M 18,0</b>	2,50	125	34,0	14,0	11,0	15,50	
<b>M 20,0</b>	2,50	140	34,0	16,0	12,0	17,50	
<b>M 22,0</b>	2,50	140	34,0	18,0	14,5	19,50	
<b>M 24,0</b>	3,00	160	38,0	18,0	14,5	21,00	
<b>M 27,0</b>	3,00	160	38,0	20,0	16,0	24,00	
<b>M 30,0</b>	3,50	180	45,0	22,0	18,0	26,50	
<b>M 33,0</b>	3,50	180	50,0	25,0	20,0	29,50	
<b>M 36,0</b>	4,00	200	56,0	28,0	22,0	32,00	
<b>M 39,0</b>	4,00	200	60,0	32,0	24,0	35,00	
<b>M 42,0</b>	4,50	200	60,0	32,0	24,0	37,50	
<b>M 45,0</b>	4,50	220	65,0	36,0	29,0	40,50	
<b>M 48,0</b>	5,00	250	70,0	36,0	29,0	43,00	
<b>M 52,0</b>	5,00	250	70,0	40,0	32,0	47,00	

Gewindbohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
Lehren	11
Nachschleifen	12
Sonstiges	13



**E.1688.1**

1.3 6.1

HSSE/PM    DIN 371/376    TiCN

"M"    TOL. 6HX    <45 HRC

N/mm² ≤ 1400

2-3 x P    Form C    STAHL



**E.1622.0**

4.5

HSSE    DIN 371/376

"M"    TOL. 6H

MESSING

4-5 x P    Form E



HSSE/PM-Machine taps for through and blind holes

Gwintowniki maszynowe HSS-E/PM do otworów przelot. i nieprzelot., gwint metryczny "M"

Maschi a macchina fori passanti e ciechi HSSE/PM

Machos de máquina en HSSE/PM para agujeros pasantes y ciegos

Artikel-Nr. Article-No.								E.1688.1	E.1622.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>									
M 3,0	0,50	56	10	18	3,5	2,7	2,50		
M 3,5	0,60	56	12	20	4,0	3,0	2,90		
M 4,0	0,70	63	12	21	4,5	3,4	3,30		
M 4,5	0,75	70	14	25	6,0	4,9	3,80		
M 5,0	0,80	70	14	25	6,0	4,9	4,20		
M 6,0	1,00	80	18	30	6,0	4,9	5,00		
M 8,0	1,25	90	20	35	8,0	6,2	6,80		
M 10,0	1,50	100	20	39	10,0	8,0	8,50		
<b>DIN 376</b>									
M 12,0	1,75	110	29		9,0	7,0	10,20		
M 16,0	2,00	110	32		12,0	9,0	14,00		



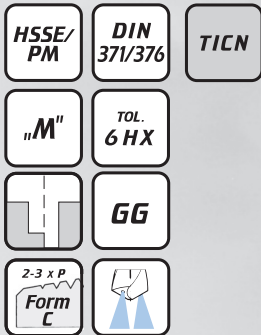


## HSSE/PM-MGB für Durchgangs- und Sacklochgewinde

„M“

### E.1639.1

3.1 3.2 3.3 3.4



HSSE/PM-Machine taps for through blind holes

Gwintowniki masz. HSS-E/PM do otw. przelot. i nieprzelot., gwint metryczny "M"

Maschi a macchina fori passanti e ciechi HSSE/PM

Machos de máquina en HSSE/PM para agujeros pasantes y ciegos

Artikel-Nr. Article-No.

**E.1639.1**  
€  
Stück piece

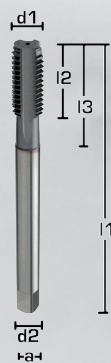
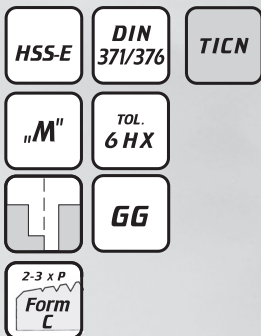
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>								
<b>M 5,0</b>	0,80	70	14	25	4,0	4,9	4,20	
<b>M 6,0</b>	1,00	80	18	30	6,0	4,9	5,00	
<b>DIN 376</b>								
<b>M 8,0</b>	1,25	90	22		6,0	4,9	6,80	
<b>M 10,0</b>	1,50	100	24		7,0	5,5	8,50	
<b>M 12,0</b>	1,75	110	29		9,0	7,0	10,20	

## HSSE/PM-MGB für Durchgangs- und Sacklochgewinde

„M“

### E.1646.1

3.1 3.2 3.3 3.4



HSSE/PM-Machine taps for through and blind holes

Gwintowniki masz. HSS-E/PM do otw. przelot. nieprzelot., gwint metryczny "M"

Maschi a macchina fori passanti e ciechi HSSE/PM

Machos de máquina en HSSE/PM para agujeros pasantes y ciegos

Artikel-Nr. Article-No.

**E.1646.1**  
€  
Stück piece

d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>								
<b>M 3,0</b>	0,50	56	10	18	2,8	2,7	2,50	
<b>M 3,5</b>	0,60	56	12	20	4,0	3,0	2,90	
<b>M 4,0</b>	0,70	63	12	21	4,0	3,4	3,30	
<b>M 5,0</b>	0,80	70	14	25	4,0	4,9	4,20	
<b>M 6,0</b>	1,00	80	18	30	6,0	4,9	5,00	
<b>M 8,0</b>	1,25	90	20	35	7,0	6,2	6,80	
<b>M 10,0</b>	1,50	100	20	39	9,0	8,0	8,50	
<b>DIN 376</b>								
<b>M 12,0</b>	1,75	110	29		9,0	7,0	10,20	
<b>M 16,0</b>	2,00	110	32		12,0	9,0	14,00	

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1612.1**  
Universal

HSS-E DIN 371/376 TICN

„M“ TOL. 6 H 4-5 x P Form B

N/mm' ≤ 1000 Schälanschnitt

- HSSE-Heavy duty machine taps Emuge Speed-A
- Gwintowniki maszynowe HSS-E do obróbki wysokowydajnej, typ Speed A, gwint metryczny "M"
- Maschi a macchina ad alte prestazioni (Speed A) Emuge per lavorazioni pesanti
- Machos de máquina Emuge de alto rendimiento en HSSE, tipo Speed A

Artikel-Nr. Article-No.								E.1612.1 € Stück piece
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>								
M 2,5	0,45	50	9	14	2,8	2,30	2,05	
M 3,0	0,50	56	10	18	3,5	2,80	2,50	
M 4,0	0,70	63	12	21	4,5	3,70	3,30	
M 5,0	0,80	70	14	25	6,0	4,65	4,20	
M 6,0	1,00	80	18	30	6,0	5,55	5,00	
M 8,0	1,25	90	20	35	8,0	7,40	6,80	
M 10,0	1,50	100	20	39	10,0	9,30	8,50	
<b>DIN 376</b>								
M 12,0	1,75	110	29		9,0	7,0	10,20	
M 16,0	2,00	110	32		12,0	9,0	14,00	



**E.1613.1**  
Universal

HSS-E DIN 371/376 TICN

„M“ TOL. 6 H 2-3 x P Form C

N/mm' ≤ 1000 35°

- HSSE-Heavy duty machine taps Emuge Speed-B
- Gwintowniki maszynowe HSS-E do obróbki wysokowydajnej, typ Speed B, gwint metryczny "M"
- Maschi a macchina ad alte prestazioni (Speed B) Emuge per lavorazioni pesanti
- Machos de máquina Emuge de alto rendimiento en HSSE, tipo Speed A

Artikel-Nr. Article-No.								E.1613.1 € Stück piece
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>								
M 2,5	0,45	50	9	14	2,8	2,10	2,05	
M 3,0	0,50	56	10	18	3,5	2,80	2,50	
M 4,0	0,70	63	12	21	4,5	3,70	3,30	
M 5,0	0,80	70	14	25	6,0	4,65	4,20	
M 6,0	1,00	80	18	30	6,0	5,55	5,00	
M 8,0	1,25	90	20	35	8,0	7,40	6,80	
M 10,0	1,50	100	20	39	10,0	9,30	8,50	
<b>DIN 376</b>								
M 12,0	1,75	110	29		9,0	7,0	10,20	
M 16,0	2,00	110	32		12,0	9,0	14,00	

**E.1678.0**

1.1

HSS-E DIN 371/376 OX

"M" TOL. 6H

N/mm² ≤ 500

2-3 x P Form C 45°

**E.1668.0**

1.1

HSS-E DIN 371/376

"M" TOL. 6H

N/mm² ≤ 800

2-3 x P Form C 40°

**E.1668.1**

1.1 4.1

HSS-E DIN 371/376 TIN

"M" TOL. 6H

N/mm² ≤ 800

2-3 x P Form C 40°

- HSSE-Machine taps for blind holes
- Gwintowniki maszynowe HSS-E do otw. nieprzelot., gwint metryczny "M"
- Maschi a macchina fori ciechi HSSE
- Machos de máquina en HSSE para agujeros ciegos

Artikel-Nr. Article-No.								E.1678.0	E.1668.0	E.1668.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece

**DIN 371**

M 2,0	0,40	45	8	12	2,8	2,1	1,60			
M 2,5	0,45	50	9	14	2,8	2,1	2,05			
M 3,0	0,50	56	5	18	3,5	2,7	2,50			
M 3,5	0,60	56	6	20	4,0	3,0	2,90			
M 4,0	0,70	63	7	21	4,5	3,4	3,30			
M 5,0	0,80	70	8	25	6,0	4,9	4,20			
M 6,0	1,00	80	10	30	6,0	4,9	5,00			
M 7,0	1,00	80	18	30	7,0	5,5	6,00			
M 8,0	1,25	90	13	35	8,0	6,2	6,80			
M 9,0	1,25	90	13	35	9,0	7,0	7,80			
M 10,0	1,50	100	15	39	10,0	8,0	8,50			

**DIN 376**

M 12,0	1,75	110	18		9,0	7,0	10,20			
M 14,0	2,00	110	20		11,0	9,0	12,00			
M 16,0	2,00	110	20		12,0	9,0	14,00			
M 18,0	2,50	125	25		14,0	11,0	15,50			
M 20,0	2,50	140	25		16,0	12,0	17,50			
M 22,0	2,50	140	25		18,0	14,5	19,50			
M 24,0	3,00	160	30		18,0	14,5	21,00			
M 27,0	3,00	160	30		20,0	16,0	24,00			
M 30,0	3,50	180	35		22,0	18,0	26,50			
M 33,0	3,50	180	35		25,0	20,0	29,50			
M 36,0	4,00	200	40		28,0	22,0	32,00			
M 39,0	4,00	200	40		32,0	24,0	35,00			
M 42,0	4,50	200	45		32,0	24,0	37,50			

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges

### E.1604.1


1.2

HSS-E DIN 371/376 TIN

„M“ TOL. 6 G

N/mm' ≤ 1000

2-3 x P Form C 40°



### E.1720.0


1.1

HSS-E DIN 371/376

„M“ TOL. 6 G

N/mm' ≤ 800

2-3 x P Form C 40°



### E.1625.0


Universal

HSS-E DIN 371/376 LH

„M“ TOL. 6 H UNIVERSAL TOOL

N/mm' ≤ 800

2-3 x P Form C 40°



HSSE-Machine taps for blind holes

Gwintowniki maszynowe HSS-E do otw. nieprzelot., gwint metryczny "M"

Maschi a macchina fori ciechi HSSE

Machos de máquina en HSSE para agujeros ciegos

Artikel-Nr. Article-No.									E.1604.1	E.1720.0	E.1625.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece	
<b>DIN 371</b>											
M 3,0	0,50	56	5	18	3,5	2,7	2,50				
M 4,0	0,70	63	7	21	4,5	3,4	3,30				
M 5,0	0,80	70	8	25	6,0	4,9	4,20				
M 6,0	1,00	80	10	30	6,0	4,9	5,00				
M 8,0	1,25	90	13	35	8,0	6,2	6,80				
M 10,0	1,50	100	15	39	10,0	8,0	8,50				
<b>DIN 376</b>											
M 12,0	1,75	110	18		9,0	7,0	10,20				
M 16,0	2,00	110	20		12,0	9,0	14,00				

### E.1626.1

Universal

HSS-E DIN 371/376 TIN

„M“ UNIVERSAL TOOL

N/mm' ≤ 800

2-3 x P Form C 40°



HSSE-Machine taps for blind holes, oversize

Gwintowniki maszynowe HSS-E o zawężonej tolerancji do otw. nieprzelot., gwint metryczny "M"

Maschi a macchina fori ciechi HSSE

Machos de máquina en HSSE para agujeros ciegos con sobremedida

Artikel-Nr. Article-No.										E.1626.1
d1	Aufmaß oversize	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	
<b>DIN 371</b>										
M 3,0	+0,05	0,50	56	5	18	3,5	2,7	2,50		
M 4,0	+0,05	0,70	63	7	21	4,5	3,4	3,30		
M 5,0	+0,05	0,80	70	8	25	6,0	4,9	4,20		
M 6,0	+0,05	1,00	80	10	30	6,0	4,9	5,00		
M 8,0	+0,10	1,25	90	13	35	8,0	6,2	6,80		
M 10,0	+0,10	1,50	100	15	39	10,0	8,0	8,50		
<b>DIN 376</b>										
M 12,0	+0,10	1,75	110	18		9,0	7,0	10,20		
M 14,0	+0,10	2,00	110	20		11,0	9,0	12,00		
M 16,0	+0,10	2,00	110	20		12,0	9,0	14,00		
M 18,0	+0,10	2,50	125	25		14,0	11,0	15,50		
M 20,0	+0,10	2,50	140	25		16,0	12,0	17,50		
M 24,0	+0,16	3,00	160	30		18,0	14,5	21,00		

# HSSE/PM-MGB für Sacklochgewinde

„M“

**E.1677.0**  
Universal

HSSE/PM  
DIN 371/376  
OX

„M“  
TOL. 6H  
UNIVERSAL TOOL

N/mm' ≤ 800

4-5 x P  
Form E  
45°

**E.1677.1**  
Universal

HSS-E  
DIN 371/376  
TIN

„M“  
TOL. 6H  
UNIVERSAL TOOL

N/mm' ≤ 800

4-5 x P  
Form E  
45°

- HSSE-Machine taps for blind holes
- Gwintowniki maszynowe HSS-E do otw. nieprzelot., gwint metryczny "M"
- Maschi a macchina fori ciechi HSSE/PM
- Machos de máquina en HSSE/PM para agujeros ciegos

Artikel-Nr. Article-No.								E.1677.0 € Stück piece	E.1677.1 € Stück piece
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø		
<b>DIN 371</b>									
M 3,0	0,50	56	5	18	3,5	2,7	2,50		
M 4,0	0,70	63	7	21	4,5	3,4	3,30		
M 5,0	0,80	70	8	25	6,0	4,9	4,20		
M 6,0	1,00	80	10	30	6,0	4,9	5,00		
M 8,0	1,25	90	13	35	8,0	6,2	6,80		
M 10,0	1,50	100	15	39	10,0	8,0	8,50		
<b>DIN 376</b>									
M 12,0	1,75	110	18		9,0	7,0	10,20		
M 16,0	2,00	110	20		12,0	9,0	14,00		

# HSSE-MGB für Sacklochgewinde

„M“

**E.1627.0**  
Universal

HSS-E  
DIN 371/376  
UNIVERSAL TOOL

„M“  
TOL. 6H

N/mm' ≤ 800

2-3 x P  
Form L  
15°

- HSSE-Machine taps for blind holes
- Gwintowniki maszynowe HSS-E do otw. nieprzelot., gwint metryczny "M"
- Maschi a macchina fori ciechi HSSE
- Machos de máquina en HSSE para agujeros ciegos


Artikel-Nr. Article-No.								E.1627.0 € Stück piece
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>								
M 3,0	0,50	56	11	18	3,5	2,7	2,50	
M 4,0	0,70	63	13	21	4,5	3,4	3,30	
M 5,0	0,80	70	15	25	6,0	4,9	4,20	
M 6,0	1,00	80	17	30	6,0	4,9	5,00	
M 8,0	1,25	90	20	35	8,0	6,2	6,80	
M 10,0	1,50	100	20	39	10,0	8,0	8,50	
<b>DIN 376</b>								
M 12,0	1,75	110	29		9,0	7,0	10,20	
M 16,0	2,00	110	32		12,0	9,0	14,00	

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges

### E.1603.1

Universal


HSSE/PM, DIN 371/376, TIN, „M“, TOL. 6H, UNIVERSAL TOOL, N/mm² ≤ 1200, 2-3 x P Form C, 40°



### E.1645.1

1.2 1.3 3.4 6.1


HSSE/PM, DIN 371/376, TiCN, „M“, TOL. 6HX, N/mm² ≤ 1400, 2-3 x P Form C, 15°





### E.1642.0


2.1 2.2


HSSE/PM, DIN 371/376, OX, „M“, TOL. 6H, INOX, 2-3 x P Form C, 40°



 HSSE/PM-Machine taps for blind holes

 Gwintowniki maszynowe HSS-E/PM do otw. nieprzelot., gwint metryczny "M"

 Maschi a macchina fori ciechi HSSE/PM





 Machos de máquina en HSSE/PM para agujeros ciegos

Artikel-Nr. Article-No.								E.1603.1	E.1645.1*	E.1642.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
M 2,0	0,40	45	8	12	2,8	2,1	1,60			
M 2,5	0,45	50	9	14	2,8	2,1	2,05			
M 3,0	0,50	56	5 / 11*	18	3,5	2,7	2,50			
M 3,5	0,60	56	6 / 12*	20	4,0	3,0	2,90			
M 4,0	0,70	63	7 / 13*	21	4,5	3,4	3,30			
M 5,0	0,80	70	8 / 15*	25	6,0	4,9	4,20			
M 6,0	1,00	80	10 / 17*	30	6,0	4,9	5,00			
M 8,0	1,25	90	13 / 20*	35	8,0	6,2	6,80			
M 10,0	1,50	100	15 / 20*	39	10,0	8,0	8,50			
<b>DIN 376</b>										
M 12,0	1,75	110	18 / 29*		9,0	7,0	10,20			
M 14,0	2,00	110	20 / 30*		11,0	9,0	12,00			
M 16,0	2,00	110	20 / 32*		12,0	9,0	14,00			
M 18,0	2,50	125	25 / 34*		14,0	11,0	15,50			
M 20,0	2,50	140	25 / 34*		16,0	12,0	17,50			
M 22,0	2,50	140	25 / 34*		18,0	14,5	19,50			
M 24,0	3,00	160	30 / 38*		18,0	14,5	21,00			
M 27,0	3,00	160	30 / 38*		20,0	16,0	24,00			
M 30,0	3,50	180	35 / 45*		22,0	18,0	26,50			
M 33,0	3,50	180	35 / 50*		25,0	20,0	29,50			
M 36,0	4,00	200	40 / 56*		28,0	22,0	32,00			

## HSSE/PM-MGB für Sacklochgewinde

„M“





Artikel-Nr. Article-No.								E.1628.1*	E.1616.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>									
<b>M 3,0</b>	0,50	56	5 / 11*	18	3,5	2,7	2,50		
<b>M 4,0</b>	0,70	63	7 / 13*	21	4,5	3,4	3,30		
<b>M 5,0</b>	0,80	70	8 / 15*	25	6,0	4,9	4,20		
<b>M 6,0</b>	1,00	80	10 / 17*	30	6,0	4,9	5,00		
<b>M 8,0</b>	1,25	90	13 / 20*	35	8,0	6,2	6,80		
<b>M 10,0</b>	1,50	100	15 / 20*	39	10,0	8,0	8,50		
<b>DIN 376</b>									
<b>M 12,0</b>	1,75	110	18 / 29*		9,0	7,0	10,20		
<b>M 14,0</b>	2,00	110	20 / 30*		11,0	9,0	12,00		
<b>M 16,0</b>	2,00	110	20 / 32*		12,0	9,0	14,00		
<b>M 20,0</b>	2,50	140	25 / 34*		16,0	12,0	17,50		
<b>M 24,0</b>	3,00	160	30 / 38*		18,0	14,5	21,00		

-  HSSE/PM-Machine taps for blind holes
-  Gwintowniki maszynowe HSS-E/PM do otw. nieprzelot., gwint metryczny "M"
-  Maschi a macchina fori ciechi HSSE/PM
-  Machos de máquina en HSSE/PM para agujeros ciegos

## HSSE/PM-MGB für Sacklochgewinde

„M“

Artikel-Nr. Article-No.								E.1643.1	E.1644.1	E.1629.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
<b>M 3,0</b>	0,50	56	5	18	3,5	2,7	2,50			
<b>M 4,0</b>	0,70	63	7	21	4,5	3,4	3,30			
<b>M 5,0</b>	0,80	70	8	25	6,0	4,9	4,20			
<b>M 6,0</b>	1,00	80	10	30	6,0	4,9	5,00			
<b>M 8,0</b>	1,25	90	13	35	8,0	6,2	6,80			
<b>M 10,0</b>	1,50	100	15	39	10,0	8,0	8,50			
<b>DIN 376</b>										
<b>M 12,0</b>	1,75	110	18		9,0	7,0	10,20			
<b>M 16,0</b>	2,00	110	20		12,0	9,0	14,00			

-  HSSE/PM-Machine taps for blind holes
-  Gwintowniki maszynowe HSS-E/PM do otw. nieprzelot., gwint metryczny "M"
-  Maschi a macchina fori ciechi HSSE/PM
-  Machos de máquina en HSSE/PM para agujeros ciegos

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1680.1**

3.1 3.2 3.3 3.4

VHM DIN 371/376 TICN

„M“ TOL. 6H

GG

2-3 x P Form C



**E.1681.1**

4.2 4.3

VHM DIN 371/376 TICN

„M“ TOL. 6H

Kupfer/Alu kurz

2-3 x P Form C 15°



- Solid carbide machine taps for blind holes
- Gwintowniki maszynowe z węgla spiekanego do otworów przelot. i nieprzelot., gwint metryczny "M"
- Maschi a macchina in MD fori ciechi
- Machos de máquina en metal duro integral para agujeros ciegos

Artikel-Nr. Article-No.								E.1680.1	E.1681.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>									
M 4,0	0,70	63	7	21	4,5	3,4	3,30		
M 5,0	0,80	70	8	25	6,0	4,9	4,20		
M 6,0	1,00	80	10	30	6,0	4,9	5,00		
M 8,0	1,25	90	13	35	8,0	6,2	6,80		
M 10,0	1,50	100	15	39	10,0	8,0	8,50		

VHM-MGB mit Innenkühlung für die Hartbearbeitung



**E.1634.1**

6.1 6.2 6.3

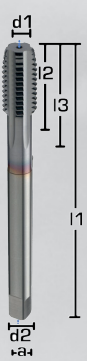
VHM DIN 371/376 TICN

„M“ TOL. 6H

<60 HRC

2-3 x P Form C

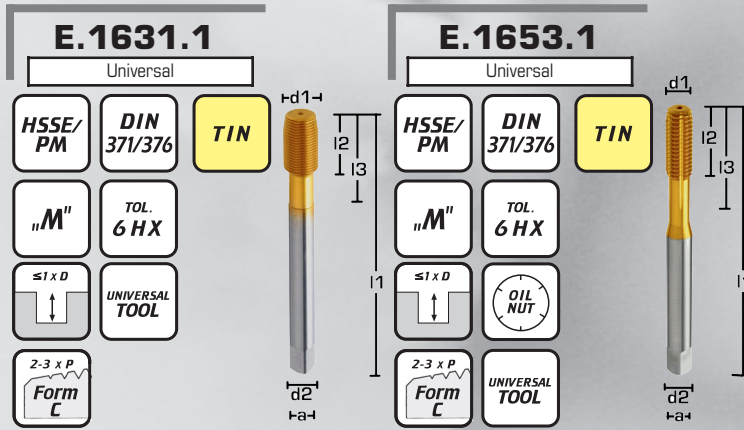
ab M6



- Solid carbide machine taps with internal coolant for hard working
- Gwintowniki maszynowe z węgl. spiekanego z chłodz. wew. do materiałów do 60 HRC, gwint metryczny "M"
- Maschi a macchina in MD con lubrificazione interna lavorazioni mat duri
- Machos de máquina en metal duro integral con refrigeración interior para trabajos duros

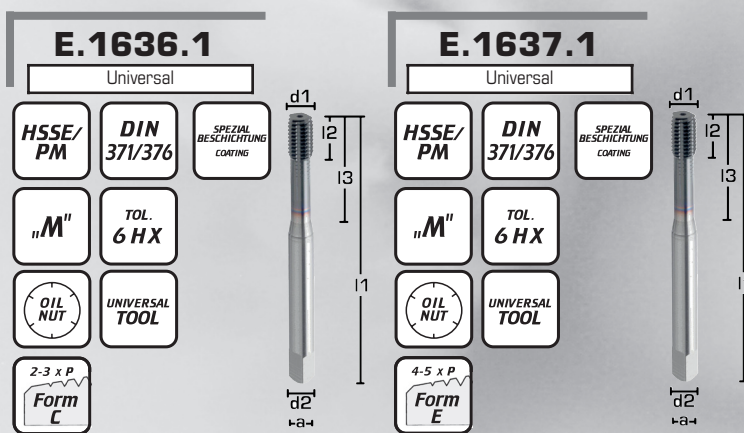
Artikel-Nr. Article-No.								E.1634.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece
<b>DIN 371</b>								
M 3,0	0,50	56	5	18	3,5	2,7	2,50	
M 4,0	0,70	63	7	21	4,5	3,4	3,30	
M 5,0	0,80	70	8	25	6,0	4,9	4,20	
M 6,0	1,00	80	10	30	6,0	4,9	5,00	
M 8,0	1,25	90	13	35	8,0	6,2	6,80	
M 10,0	1,50	100	15	39	10,0	8,0	8,50	
<b>DIN 376</b>								
M 12,0	1,75	110	18		9,0	7,0	10,20	
M 16,0	2,00	110	20		12,0	9,0	14,00	





- HSSE/PM-Forming taps
- Wygniatki HSS-E/PM, gwint metryczny "M"
- Maschi a macchina a rullare HSSE/PM
- Machos de laminación en HSSE/PM

Artikel-Nr. Article-No.								E.1631.1	E.1653.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>									
<b>M 2,0</b>	0,40	45	7	12	2,8	2,1	1,83		
<b>M 2,2</b>	0,45	45	7	12	2,8	2,1	2,00		
<b>M 2,5</b>	0,45	50	9	14	2,8	2,1	2,30		
<b>M 3,0</b>	0,50	56	11	18	3,5	2,7	2,80		
<b>M 4,0</b>	0,70	63	13	21	4,5	3,4	3,70		
<b>M 5,0</b>	0,80	70	15	25	6,0	4,9	4,65		
<b>M 6,0</b>	1,00	80	17	30	6,0	4,9	5,55		
<b>M 8,0</b>	1,25	90	20	35	8,0	6,2	7,40		
<b>M 10,0</b>	1,50	100	22	39	10,0	8,0	9,30		
<b>DIN 376</b>									
<b>M 12,0</b>	1,75	110	18		9,0	7,0	11,20		
<b>M 14,0</b>	2,00	110	20		11,0	9,0	13,00		
<b>M 16,0</b>	2,00	110	22		12,0	9,0	15,00		
<b>M 18,0</b>	2,50	125	25		14,0	11,0	16,80		
<b>M 20,0</b>	2,50	140	25		16,0	12,0	18,80		



- HSSE/PM-Forming taps
- Wygniatki HSS-E/PM, gwint metryczny "M"
- Maschi a macchina a rullare HSSE/PM
- Machos de laminación en HSSE/PM

Artikel-Nr. Article-No.								E.1636.1	E.1637.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
<b>DIN 371</b>									
<b>M 4,0</b>	0,70	63	13	21	4,5	3,4	3,70		
<b>M 5,0</b>	0,80	70	15	25	6,0	4,9	4,65		
<b>M 6,0</b>	1,00	80	17	30	6,0	4,9	5,55		
<b>M 8,0</b>	1,25	90	20	35	8,0	6,2	7,40		
<b>M 10,0</b>	1,50	100	22	39	10,0	8,0	9,30		
<b>DIN 376</b>									
<b>M 12,0</b>	1,75	110	18		9,0	7,0	11,20		

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1611.0**

Universal

**HSSE/PM**  
**WERKS-**  
**(COMPANY)**  
**NORM**  
**TOL.**  
**6 H**  
**UNIVERSAL**  
**TOOL**  
**2-3 x P**  
**Form C**



HSSE/PM-Drill taps

Wiertło-gwintowniki HSSE/PM, gwint metryczny "M"

Punta maschio a HSSE/PM

Macho-Broca en HSSE/PM

Artikel-Nr. Article-No.

für Gewinde for thread	P	l1	l2	l3	d2	a	d1	<b>E.1611.0</b> € Stück piece
<b>M 3,0</b>	0,50	62	12,5	9,0	3,5	2,7	2,55	
<b>M 4,0</b>	0,70	66	16,0	10,0	4,5	3,4	3,36	
<b>M 5,0</b>	0,80	75	18,0	12,5	6,0	4,9	4,26	
<b>M 6,0</b>	1,00	81	20,0	14,0	6,0	4,9	5,05	
<b>M 8,0</b>	1,25	91	14,0	20,0	6,0	4,9	6,80	
<b>M 10,0</b>	1,50	105	18,0	25,0	7,0	5,5	8,55	
<b>M 12,0</b>	1,75	118	20,0	28,0	9,0	7,0	10,30	

**PM-Gewindebohrer zum Nachschneiden**



**E.1638.1**

1.3 6.1

**PM**  
**WERKS-**  
**(COMPANY)**  
**NORM**  
**TICN**  
**"MF"**  
**TOL.**  
**6 HX**  
**Form C**  
**F**  
**FINISH**  
**<45**  
**HRC**



PM-Taps for retapping narrow threads

Gwintowniki PM o zawężonej tolerancji, gwint metryczny drobnozwojowy "MF"

Maschi a PM per rigenerare la filettatura esistente

Machos en PM para reparar

Artikel-Nr. Article-No.

d1	P	l1	l2	d2	a	Bohr-Ø drill-Ø	<b>E.1638.1</b> € Stück piece
<b>M 8 x 1,0</b>	1,0	63	17	6,0	4,9	7,0	
<b>M 10 x 1,0</b>	1,0	63	18	7,0	5,5	9,0	
<b>M 12 x 1,5</b>	1,5	70	20	9,0	7,0	10,5	
<b>M 16 x 1,5</b>	1,5	70	20	12,0	9,0	14,5	

**E.1647.1**  
Universal

HSS-E DIN 374 TIN

„MF“ TOL. 6H UNIVERSAL TOOL

N/mm² ≤ 800

4-5 x P Schälanschnitt Form B

**E.1648.0**  
Universal

HSS-E DIN 374

„MF“ TOL. 6H UNIVERSAL TOOL

2-3 x P Form C

- HSSE-Machine taps for through and blind holes
- Gwintowniki maszynowe HSS-E do otworów przelot, i nieprzelot., gwint metryczny drobnozwojowy „MF“
- Maschi a macchina per fori passanti e fori ciechi HSSE
- Machos de máquina en HSSE para agujeros pasantes y ciegos

Artikel-Nr. Article-No.									E.1647.1	E.1648.0
d1	P	l1	l2	d2	a	Zähne flutes	Bohr-Ø drill-Ø	€	€	
M 4 x 0,50	0,50	63	12	2,8	2,1	3	3,50			
M 5 x 0,50	0,50	70	13	3,5	2,7	3	4,50			
M 6 x 0,50	0,50	80	15	4,5	3,4	3	5,50			
M 6 x 0,75	0,75	80	15	4,5	3,4	3	5,20			
M 7 x 0,75	0,75	80	15	5,5	4,3	3	6,20			
M 8 x 0,75	0,75	80	15	6,0	4,9	3	7,20			
M 10 x 0,75	0,75	90	20	7,0	5,5	3	9,20			
M 8 x 1,00	1,00	90	18	6,0	4,9	3	7,00			
M 10 x 1,00	1,00	90	20	7,0	5,5	3	9,00			
M 12 x 1,00	1,00	100	21	9,0	7,0	3	11,00			
M 14 x 1,00	1,00	100	21	11,0	9,0	3	13,00			
M 15 x 1,00	1,00	100	21	12,0	9,0	3	14,00			
M 16 x 1,00	1,00	100	21	12,0	9,0	3	15,00			
M 18 x 1,00	1,00	110	24	14,0	11,0	3	17,00			
M 20 x 1,00	1,00	125	24	16,0	12,0	3	19,00			
M 22 x 1,00	1,00	125	24	18,0	14,5	3	21,00			
M 24 x 1,00	1,00	140	26	18,0	14,5	4	23,00			
M 27 x 1,00	1,00	140	26	20,0	16,0	4	26,00			
M 30 x 1,00	1,00	150	28	22,0	18,0	4	29,00			
M 10 x 1,25	1,25	100	20	7,0	5,5	3	8,00			
M 12 x 1,25	1,25	100	21	9,0	7,0	3	10,80			
M 14 x 1,25	1,25	100	21	11,0	9,0	3	12,80			
M 12 x 1,50	1,50	100	21	9,0	7,0	3	10,50			
M 14 x 1,50	1,50	100	21	11,0	9,0	3	12,50			
M 15 x 1,50	1,50	100	21	12,0	9,0	3	13,50			
M 16 x 1,50	1,50	100	21	12,0	9,0	3	14,50			
M 18 x 1,50	1,50	110	24	14,0	11,0	3	16,50			
M 20 x 1,50	1,50	125	24	16,0	12,0	3	18,50			
M 22 x 1,50	1,50	125	24	18,0	14,5	3	20,00			
M 24 x 1,50	1,50	140	26	18,0	14,5	4	22,50			
M 25 x 1,50	1,50	140	26	18,0	14,5	4	23,50			
M 26 x 1,50	1,50	140	26	18,0	14,5	4	24,50			
M 27 x 1,50	1,50	140	26	20,0	16,0	4	25,50			
M 28 x 1,50	1,50	140	26	20,0	16,0	4	26,50			
M 30 x 1,50	1,50	150	28	22,0	18,0	4	28,50			
M 32 x 1,50	1,50	150	28	22,0	18,0	4	30,50			
M 33 x 1,50	1,50	160	30	25,0	20,0	4	31,50			
M 35 x 1,50	1,50	170	30	28,0	22,0	4	33,50			
M 36 x 1,50	1,50	170	30	28,0	22,0	4	34,50			
M 18 x 2,00	2,00	125	24	14,0	11,0	3	16,00			
M 20 x 2,00	2,00	140	30	16,0	12,0	3	18,00			
M 22 x 2,00	2,00	140	30	18,0	14,5	3	20,00			
M 24 x 2,00	2,00	140	26	18,0	14,5	4	22,00			
M 27 x 2,00	2,00	140	26	20,0	16,0	4	25,00			
M 28 x 2,00	2,00	140	26	20,0	16,0	4	26,00			
M 30 x 2,00	2,00	150	28	22,0	18,0	4	28,00			
M 33 x 2,00	2,00	160	30	25,0	20,0	4	31,00			
M 36 x 2,00	2,00	170	30	28,0	22,0	4	34,00			
M 36 x 3,00	3,00	200	42	28,0	22,0	4	33,00			

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1649.1**

Universal

HSS-E DIN 374 TIN

MF TOL. 6H UNIVERSAL TOOL

N/mm² ≤ 800

2-3 x P Form C 35°

**E.1651.0**

2.1 2.2

HSS-E DIN 374 OX

MF TOL. 6H

INOX

2-3 x P Form C 40°

- HSSE-Machine taps for blind holes
- Gwintowniki maszynowe HSS-E do otw. nieprzelot., gwint metryczny drobnozwojowy "MF"
- Maschi a macchina per fori ciechi HSSE
- Machos de máquina en HSSE para agujeros ciegos

Artikel-Nr. Article-No.								E.1649.1	E.1651.0
d1	P	l1	l2	d2	a	Zähne flutes	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
M 4 x 0,50	0,50	63	12	2,8	2,1	3	3,50		
M 5 x 0,50	0,50	70	13	3,5	2,7	3	4,50		
M 6 x 0,50	0,50	80	15	4,5	3,4	3	5,50		
M 6 x 0,75	0,75	80	15	4,5	3,4	3	5,20		
M 7 x 0,75	0,75	80	15	5,5	4,3	3	6,20		
M 8 x 0,75	0,75	80	15	6,0	4,9	3	7,20		
M 10 x 0,75	0,75	90	20	7,0	5,5	3	9,20		
M 8 x 1,00	1,00	90	20	6,0	4,9	3	7,00		
M 10 x 1,00	1,00	90	20	7,0	5,5	3	9,00		
M 12 x 1,00	1,00	100	21	9,0	7,0	3	11,00		
M 14 x 1,00	1,00	100	21	11,0	9,0	3	13,00		
M 15 x 1,00	1,00	100	21	12,0	9,0	3	14,00		
M 16 x 1,00	1,00	100	21	12,0	9,0	3	15,00		
M 18 x 1,00	1,00	110	24	14,0	11,0	3	17,00		
M 20 x 1,00	1,00	125	24	16,0	12,0	3	19,00		
M 22 x 1,00	1,00	125	24	18,0	14,5	3	21,00		
M 24 x 1,00	1,00	140	26	18,0	14,5	4	23,00		
M 27 x 1,00	1,00	140	26	20,0	16,0	4	26,00		
M 30 x 1,00	1,00	150	28	22,0	18,0	4	29,00		
M 10 x 1,25	1,25	100	20	7,0	5,5	3	8,00		
M 12 x 1,25	1,25	100	21	9,0	7,0	3	10,80		
M 14 x 1,25	1,25	100	21	11,0	9,0	3	12,80		
M 12 x 1,50	1,50	100	21	9,0	7,0	3	10,50		
M 14 x 1,50	1,50	100	21	11,0	9,0	3	12,50		
M 15 x 1,50	1,50	100	21	12,0	9,0	3	13,50		
M 16 x 1,50	1,50	100	21	12,0	9,0	3	14,50		
M 18 x 1,50	1,50	110	24	14,0	11,0	3	16,50		
M 20 x 1,50	1,50	125	24	16,0	12,0	3	18,50		
M 22 x 1,50	1,50	125	24	18,0	14,5	3	20,00		
M 24 x 1,50	1,50	140	26	18,0	14,5	4	22,50		
M 25 x 1,50	1,50	140	26	18,0	14,5	4	23,50		
M 26 x 1,50	1,50	140	26	18,0	14,5	4	24,50		
M 27 x 1,50	1,50	140	26	20,0	16,0	4	25,50		
M 28 x 1,50	1,50	140	26	20,0	16,0	4	26,50		
M 30 x 1,50	1,50	150	28	22,0	18,0	4	28,50		
M 32 x 1,50	1,50	150	28	22,0	18,0	4	30,50		
M 33 x 1,50	1,50	160	30	25,0	20,0	4	31,50		
M 35 x 1,50	1,50	170	30	28,0	22,0	4	33,50		
M 36 x 1,50	1,50	170	30	28,0	22,0	4	34,50		
M 18 x 2,00	2,00	125	24	14,0	11,0	3	16,00		
M 20 x 2,00	2,00	140	30	16,0	12,0	3	18,00		
M 22 x 2,00	2,00	140	30	18,0	14,5	3	20,00		
M 24 x 2,00	2,00	140	26	18,0	14,5	4	22,00		
M 27 x 2,00	2,00	140	26	20,0	16,0	4	25,00		
M 28 x 2,00	2,00	140	26	20,0	16,0	4	26,00		
M 30 x 2,00	2,00	150	28	22,0	18,0	4	28,00		
M 33 x 2,00	2,00	160	30	25,0	20,0	4	31,00		
M 36 x 2,00	2,00	170	30	28,0	22,0	4	34,00		
M 36 x 3,00	3,00	200	42	28,0	22,0	4	33,00		

**E.1655.1**

Universal

HSSE-E
DIN 374
TIN

„MF“
TOL. 6 HX

OIL NUT
UNIVERSAL TOOL

2-3 x P
Form C



- HSSE-Forming taps
- Gwintowniki - wygniataki HSS-E, gwint metryczny drobnozwojowy "MF"
- Maschi a macchina a rullare HSSE
- Machos de laminación en HSSE

Artikel-Nr. Article-No.							E.1655.1 € Stück piece	
d1	P	l1	l2	d2	a	Bohr-Ø drill-Ø		
M 8 x 1,00	1,00	90	16	6	4,9	7,55		
M 10 x 1,00	1,00	90	16	7	5,5	9,50		
M 12 x 1,00	1,00	100	22	9	7,0	11,50		
M 10 x 1,25	1,25	100	20	7	5,5	9,40		
M 12 x 1,25	1,25	100	22	9	7,0	11,40		
M 12 x 1,50	1,50	100	22	9	7,0	11,30		
M 16 x 1,50	1,50	100	22	12	9,0	15,30		
M 18 x 1,50	1,50	110	25	14	11,0	17,30		
M 20 x 1,50	1,50	125	22	16	12,0	19,30		

HSSE/PM-MGB kurze Ausführung zum Nachschneiden

**E.1657.1**

Universal

HSSE/PM
WERKS. (COMPANY) NORM
TICN

„G“
TOL. 6 HX

<45 HRC

Form C
F FINISH



- HSSE/PM-Machine taps short version for retapping narrow threads
- Gwintowniki maszynowe HSS-E/PM o zawężonej tolerancji, krótkie, gwint calowy rurowy, walcowy "G"
- Maschi per rigenerare la filettatura esistente, serie corta
- Machos de máquina en HSSE/PM, serie corta, para reparar

Artikel-Nr. Article-No.							E.1657.1 € Stück piece	
d1	P	l1	l2	d2	a	Bohr-Ø drill-Ø		
G 1/8"	28	63	18	7,0	5,5	8,80		
G 1/4"	19	70	22	11,0	9,0	11,80		
G 3/8"	19	70	22	12,0	9,0	15,25		
G 1/2"	14	80	22	16,0	12,0	19,00		

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1654.1**  
Universal

HSS-E **TIN**

„G” DIN 5156

UNIVERSAL TOOL

2-3 x P Form C

**E.1659.1**

3.1 3.2

HSS-E TICN

„G” DIN 5156

GG

2-3 x P Form C

**E.1661.0**

4.5

HSS-E

„G” DIN 5156

MESSING

2-3 x P Form C

- HSSE-Machine taps for through and blind holes
- Gwintowniki maszynowe HSS-E do otworów przelot. i nieprzelot., gwint calowy rurowy, walcowy „G”
- Maschi a macchina per fori passanti e fori ciechi HSSE
- Machos de máquina en HSSE para agujeros pasantes y ciegos

Artikel-Nr. Article-No.								E.1654.1	E.1659.1	E.1661.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
<b>G 1/8"</b>	28	90	18	38	7	5,5	8,80			
<b>G 1/4"</b>	19	100	22	44	11	9,0	11,80			
<b>DIN 5156</b>										
<b>G 3/8"</b>	19	100	22		12	9,0	15,25			
<b>G 1/2"</b>	14	125	25		16	12,0	19,00			
<b>G 3/4"</b>	14	140	28		20	16,0	24,50			
<b>G 1"</b>	11	160	30		25	20,0	30,75			

HSSE-MGB für Sacklochgewinde



**E.1656.1**

2.1 2.2

HSS-E DIN 5156 **TIN**

„G” 40°

INOX

2-3 x P Form C

- HSSE-Machine taps for blind holes
- Gwintowniki masz. HSS-E do otw. nieprzelot., gwint calowy rurowy, walcowy „G”
- Maschi a macchina per fori ciechi HSSE
- Machos de máquina en HSSE para agujeros ciegos

Artikel-Nr. Article-No.									E.1656.1
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	
<b>DIN 371</b>									
<b>G 1/8"</b>	28	90	18	38	7	5,5	8,80		
<b>G 1/4"</b>	19	100	22	44	11	9,0	11,80		
<b>DIN 5156</b>									
<b>G 3/8"</b>	19	100	22		12	9,0	15,25		
<b>G 1/2"</b>	14	125	25		16	12,0	19,00		
<b>G 3/4"</b>	14	140	28		20	16,0	24,50		
<b>G 1"</b>	11	160	30		25	20,0	30,75		

**E.1663.1**

Universal

**HSSE/PM** **DIN 5156** **TIN**  
**"G"** **TOL. AX**  
**OIL NUT**  
**2-3 x P Form C**



HSSE/PM-Forming taps

Wyginiatki HSS-E/PM, gwint calowy rurowy, walcowy "G"

Maschi a macchina a rullare HSSE/PM

Machos de laminación en HSSE/PM

Artikel-Nr. Article-No.

d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	E.1663.1 € Stück piece
<b>DIN 371</b>								
<b>G 1/8"</b>	28	90	18	38	7	5,5	8,80	
<b>G 1/4"</b>	19	100	22	44	11	9,0	11,80	
<b>DIN 5156</b>								
<b>G 3/8"</b>	19	100	22		12	9,0	15,25	
<b>G 1/2"</b>	14	125	25		16	12,0	19,00	
<b>G 3/4"</b>	14	140	28		20	16,0	24,50	

HSSE-MGB für Durchgangs- und Sacklochgewinde

**E.1662.0**

Universal

**HSS-E** **DIN 371/376**  
**"UNC"** **TOL. 2 B**  
**N/mm' ≤ 800**  
**4-5 x P Form B** **TIN**



**E.1718.0**

Universal

**HSS-E** **DIN 371/376**  
**"UNC"** **TOL. 2 B**  
**N/mm' ≤ 800**  
**2-3 x P Form C** **40°**



**E.1664.0**

2.1 2.2

**HSS-E** **DIN 371/376** **OX**  
**"UNC"** **TOL. 2 B**  
**INOX**  
**2-3 x P Form C** **40°**



HSSE-Machine taps for through and blind holes

Gwintowniki maszynowe HSS-E do otworów przelot. i nieprzelot., gwint amerykański zunifikowany UNC

Maschi a macchina per fori passanti e fori ciechi HSSE

Machos de máquina en HSSE para agujeros pasantes y ciegos

Artikel-Nr. Article-No.

d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	E.1662.0 € Stück piece	E.1718.0* € Stück piece	E.1664.0* € Stück piece
<b>DIN 371</b>										
<b>5-40</b>	40	56	10 / 5*	18	3,5	2,7	2,60			
<b>6-32</b>	32	56	12 / 6*	20	4,0	3,0	2,70			
<b>8-32</b>	32	63	12 / 7*	21	4,5	3,4	3,50			
<b>10-24</b>	24	70	14 / 8*	25	6,0	4,9	3,80			
<b>1/4-20</b>	20	80	18 / 12*	30	7,0	5,5	5,10			
<b>5/16-18</b>	18	90	20 / 15*	35	8,0	6,2	6,50			
<b>3/8-16</b>	16	100	21 / 18*	39	10,0	8,0	8,00			
<b>DIN 376</b>										
<b>7/16-14</b>	14	100	20 / 15*		8,0	6,2	9,30			
<b>1/2-13</b>	13	110	24 / 18*		9,0	7,0	10,70			
<b>9/16-12</b>	12	110	28 / 20*		11,0	9,0	12,30			
<b>5/8-11</b>	11	110	30 / 20*		12,0	9,0	13,50			
<b>3/4-10</b>	10	125	32 / 25*		14,0	11,0	16,50			
<b>7/8-9</b>	9	140	32 / 25*		18,0	14,5	19,50			
<b>1-8</b>	8	160	36 / 30*		18,0	14,5	22,25			

1 Gewindbohrer  
 2 Bohren HSSE  
 3 Bohren VHM  
 4 Reiben HSSE  
 5 Reiben VHM  
 6 Frässtifte VHM  
 7 Fräsen VHM  
 8 WP-Werkzeuge  
 9 Fräsen HSSE  
 10 Sägen  
 11 Lehren  
 12 Nachschleifen  
 13 Sonstiges

### E. 1658.0

Universal

HSS-E DIN 371/374

„UNF“ TOL. 2 B

UNIVERSAL TOOL

4-5 x P Form B Schälanschnitt

### E. 1719.0

Universal

HSS-E DIN 371/374 UNIVERSAL TOOL

„UNF“ TOL. 2 B

N/mm² ≤ 800

2-3 x P Form C 40°

### E. 1660.0

2.1 2.2

HSS-E DIN 371/374 OX

„UNF“ TOL. 2 B

INOX

2-3 x P Form C 40°

HSSE-Machine taps for through and blind holes

Gwintowniki maszynowe HSS-E do otw. przelot. i nieprzelot., gwint amerykański drobnozwojny UNF

Maschi a macchina per fori passanti e fori ciechi HSSE

Machos de máquina en HSSE para agujeros pasantes y ciegos

Artikel-Nr. Article-No.								E. 1658.0	E. 1719.0*	E. 1660.0*
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece	€ Stück piece
<b>DIN 371</b>										
5-44	44	56	10 / 5*	18	3,5	2,7	2,70			
6-40	40	56	12 / 6*	20	4,0	3,0	3,00			
8-36	36	63	12 / 7*	21	4,5	3,4	3,50			
10-32	32	70	14 / 8*	25	6,0	4,9	4,10			
12-28	28	80	18 / 10*	30	6,0	4,9	4,65			
1/4-28	28	80	18 / 12*	30	7,0	5,5	5,50			
5/16-24	24	90	20 / 15*	35	8,0	6,2	6,90			
3/8-24	24	100	21 / 18*	39	10,0	8,0	8,50			
<b>DIN 374</b>										
7/16-20	20	100	20 / 15*		8,0	6,2	9,90			
1/2-20	20	100	20 / 15*		9,0	7,0	11,50			
9/16-18	18	100	20 / 15*		11,0	9,0	13,00			
5/8-18	18	100	20 / 15*		12,0	9,0	14,50			
3/4-16	16	110	24 / 17*		14,0	11,0	17,50			
7/8-14	14	125	24 / 17*		18,0	14,5	20,50			
1-12	12	140	27 / 20*		18,0	14,5	23,30			

### E. 1665.0

Universal

HSS-E DIN 371/376

BSW UNIVERSAL TOOL

N/mm² ≤ 800

2-3 x P Form C 40°

HSSE-Machine taps for blind holes

Gwintowniki masz HSS-E do otw. nieprzelot., gwint calowy whitwortha BSW

Maschi a macchina fori ciechi HSSE







Machos de máquina en HSSE para agujeros ciegos

Artikel-Nr. Article-No.									E. 1665.0
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	
<b>DIN 371</b>									
1/4-20	20	80	12	30	7,0	5,5	5,10		
5/16-18	18	90	15	35	8,0	6,2	6,50		
3/8-16	16	100	18	39	10,0	8,2	7,90		
<b>DIN 376</b>									
7/16-14	14	100	15		8,0	6,2	9,25		
1/2-12	12	110	18		9,0	7,0	10,50		
3/4-10	10	125	25		14,0	11,0	16,50		
1-8	8	160	30		18,0	14,5	22,00		







**E.1684.0**

Universal









-  HSSE-Machine taps for blind holes
-  Gwintowniki maszynowe HSS-E do otw. nieprzelot., gwint drobnozwojny BSF
-  Maschi a macchina fori ciechi HSSE
-  Machos de máquina en HSSE para agujeros ciegos

Artikel-Nr. Article-No.								E.1684.0 € Stück piece
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	
<b>DIN 371</b>								
<b>1/4-26</b>	26	80	12	30	7,0	5,5	5,30	
<b>5/16-22</b>	22	90	15	35	8,0	6,2	6,80	
<b>3/8-20</b>	20	100	18	39	10,0	8,0	8,30	
<b>DIN 374</b>								
<b>7/16-18</b>	18	100	15		8,0	6,2	9,70	
<b>1/2-16</b>	16	100	15		9,0	7,0	11,10	
<b>3/4-12</b>	12	110	17		14,0	11,0	16,75	
<b>1-10</b>	10	140	20		18,0	14,5	22,75	





HSSE-MGB für Durchgangs- und Sacklochgewinde

**E.1685.0**

Universal



-  HSSE-Machine taps for through and blind holes
-  Gwintowniki maszynowe HSS-E do otworów przelot. i nieprzelot., gwint amerykański rurowy stożkowy NPT
-  Maschi per fori passanti e fori ciechi HSSE
-  Machos de máquina en HSSE/PM para agujeros pasantes y ciegos

Artikel-Nr. Article-No.								E.1685.0 € Stück piece
d1	P	l1	l2	d2	a	Bohr-Ø drill-Ø		
<b>DIN 371</b>								
<b>1/8"</b>	27	90	12	10,0	8,0	8,50		
<b>1/4"</b>	18	100	18	14,0	11,0	11,10		
<b>DIN 374</b>								
<b>3/8"</b>	18	110	18	14,0	11,0	14,70		
<b>1/2"</b>	14	140	23	16,0	12,0	18,00		
<b>3/4"</b>	14	150	24	20,0	16,0	23,25		
<b>1"</b>	11 1/2	170	30	25,0	20,0	29,25		

- Gewindbohrer **1**
- Bohren HSSE **2**
- Bohren VHM **3**
- Reiben HSSE **4**
- Reiben VHM **5**
- Frässtifte VHM **6**
- Fräsen VHM **7**
- WP-Werkzeuge **8**
- Fräsen HSSE **9**
- Sägen **10**
- Lehren **11**
- Nachschleifen **12**
- Sonstiges **13**

**E.1687.0**

Universal

HSS-E



Pg

UNIVERSAL TOOL

2-3 x P  
Form C



- HSSE-Machine taps long DIN 40430
- Gwintowniki maszynowe HSS-E, długie DIN 40430, gwint do rurek instalacyjnych stalowych pancernych Pg
- Maschi a macchina HSSE, serie lunga, DIN 40430
- Machos de máquina en HSSE, serie larga DIN 40430

Artikel-Nr. Article-No.							<b>E.1687.0</b>	
d1	P	l1	l2	d2	a	Bohr-Ø drill-Ø	€ Stück piece	
<b>Pg 7,0</b>	20	100	22	9,0	7,0	11,35		
<b>Pg 9,0</b>	18	100	22	12,0	9,0	13,95		
<b>Pg 11,0</b>	18	110	25	14,0	11,0	17,35		
<b>Pg 13,5</b>	18	125	25	16,0	12,0	19,15		
<b>Pg 16,0</b>	18	125	25	18,0	14,5	21,25		
<b>Pg 21,0</b>	16	150	28	22,0	18,0	26,95		
<b>Pg 29,0</b>	16	170	30	28,0	22,0	35,60		

HSSE-MGB für Helicoil-Einsätze

**E.1630.0**

Universal

HSS-E

DIN 371/376

EG

35°

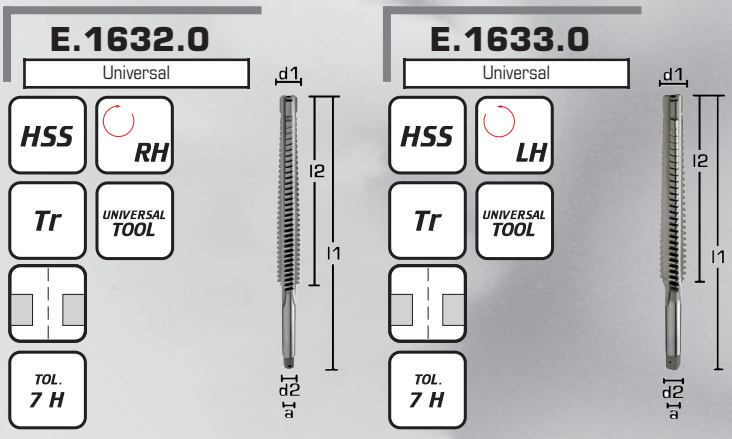
UNIVERSAL TOOL





2-3 x P  
Form C



- HSSE-Machine taps for helicoil
- Gwintowniki maszynowe HSS-E do wkładek Heli-Coil
- Maschi a macchina HSSE per utilizzo helicoil
- Machos de máquina en HSSE para insertos Helicoil

Artikel-Nr. Article-No.								<b>E.1630.0</b>	
d1	P	l1	l2	l3	d2	a	Bohr-Ø drill-Ø	€ Stück piece	
<b>DIN 371</b>									
<b>EG-M 2,0</b>	0,40	50	5	12	2,8	2,1	2,15		
<b>EG-M 2,5</b>	0,45	56	12	14	3,5	2,7	2,65		
<b>EG-M 2,6</b>	0,45	56	12	14	3,5	2,7	2,75		
<b>EG-M 3,0</b>	0,50	63	14	18	4,5	3,4	3,15		
<b>EG-M 4,0</b>	0,70	70	17	21	6,0	4,9	4,20		
<b>EG-M 5,0</b>	0,80	80	21	25	6,0	4,9	5,25		
<b>EG-M 6,0</b>	1,00	90	24	30	8,0	6,2	6,30		
<b>EG-M 8,0</b>	1,25	100	27	35	10,0	8,0	8,40		
<b>DIN 376</b>									
<b>EG-M 10,0</b>	1,50	110	14		9,0	7,0	10,40		
<b>EG-M 12,0</b>	1,75	110	18		11,0	9,0	12,50		
<b>EG-M 14,0</b>	2,00	110	18		12,0	9,0	14,50		
<b>EG-M 16,0</b>	2,00	125	22		14,0	11,0	16,50		
<b>EG-M 18,0</b>	2,00	140	22		18,0	14,5	18,75		
<b>EG-M 20,0</b>	2,50	160	28		18,0	14,5	20,75		



-  HSS-Machine taps for through holes
-  Gwintowniki maszynowe HSS do otworów przelotowych, gwint trapezowy Tr
-  Maschi a macchina fori passanti HSS
-  machos de máquina en HSS para agujeros pasantes

Artikel-Nr. Article-No.								E.1632.0	E.1633.0
d1	P	l1	l2	d2	a	Zähne flutes	Bohr-Ø drill-Ø	€ Stück piece	€ Stück piece
Tr 10 x 3	3	140	84	6,3	5,0	5,0	7,50		
Tr 12 x 3	3	140	84	8,0	6,3	6,3	9,25		
Tr 14 x 3	3	140	84	10,0	8,0	8,0	11,25		
Tr 16 x 4	4	220	142	11,2	9,0	9,0	12,25		
Tr 18 x 4	4	220	142	12,5	10,0	10,0	14,25		
Tr 20 x 4	4	220	142	14,0	11,2	11,2	16,25		
Tr 22 x 5	5	260	163	16,0	12,5	12,5	17,25		
Tr 28 x 5	5	260	163	22,4	18,0	18,0	23,25		
Tr 32 x 6	6	310	195	25,0	20,0	20,0	26,25		

Sondermaße auf Anfrage *Special sizes on demand*



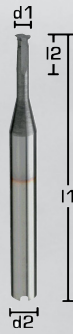
- Gewindbohrer 1
- Bohren HSSE 2
- Bohren VHM 3
- Reiben HSSE 4
- Reiben VHM 5
- Frässtifte VHM 6
- Fräsen VHM 7
- WP-Werkzeuge 8
- Fräsen HSSE 9
- Sägen 10
- Lehren 11
- Nachschleifen 12
- Sonstiges 13



**E.1666.0**

Universal

VHM UNIVERSAL TOOL  
 „M”  
 HRC



- Solid carbide micro internal thread milling cutters
- Frezy miniaturowe z węgl spiekane do gwint. wew., gwint metryczny "M"
- Microfresa MD, filettature interne
- Microfresa en metal duro integral para roscas interiores

Artikel-Nr. Article-No.							E.1666.0
d1	P	ab Bohrung min. core hole	l1	l2	d2 h5	Zähne flutes	€ Stück piece
M 0,8	0,20	0,60	2,4	32	3,0	1	
M 1,0	0,25	0,75	3,0	32	3,0	2	
M 1,2	0,25	0,95	3,5	32	3,0	2	
M 1,4	0,30	1,10	3,5	32	3,0	2	
M 1,6	0,35	1,25	4,0	32	3,0	3	
M 2,0	0,40	1,60	5,0	32	3,0	4	
M 2,5	0,45	2,05	6,0	32	3,0	4	
M 3,0	0,50	2,50	6,0	32	3,0	4	
M 4,0	0,70	3,20	8,0	40	5,0	4	
M 5,0	0,80	4,20	9,0	40	5,0	4	
M 6,0	1,00	5,00	9,0	40	5,0	4	



**E.1689.0**

2.1 2.2 5.1

VHM TITAN  
 „M” INOX  
 HSC TOOL

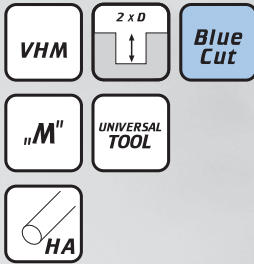


- Solid carbide thread milling cutters
- Frezy z węglika spiekane do gwintowania, gwint metryczny "M"
- Fresa MD per filettature
- Fresas de roscar en metal duro integral

Artikel-Nr. Article-No.							E.1689.0
d1	P	l3	l2	l1	d2	Zähne flutes	€ Stück piece
M 0,8	0,200	2,4	0,16	32	3,0	1	
M 0,9	0,225	2,7	0,18	32	3,0	1	
M 1,0	0,250	5,0	0,20	32	3,0	3	
M 1,2	0,250	3,0	0,20	32	3,0	3	
M 1,2	0,250	5,0	0,20	32	3,0	3	
M 1,4	0,300	5,5	0,24	32	3,0	4	
M 1,6	0,350	6,0	0,28	32	3,0	4	
M 1,8	0,350	6,0	0,28	32	3,0	4	
M 2,0	0,400	6,0	0,32	32	3,0	4	
M 2,5	0,450	9,0	0,36	32	3,0	4	
M 3,0	0,500	11,0	0,40	32	3,0	4	

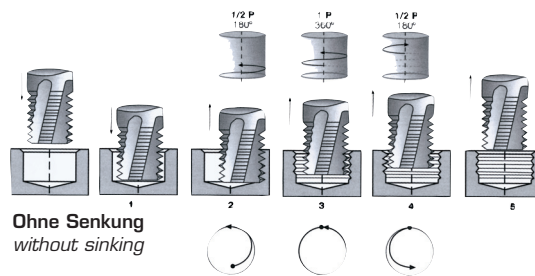
**E.1667.1**

Universal



- Solid carbide internal thread milling cutters
- Frezy z węglika spiekanego do gwintowania wew., gwint metryczny "M"
- Frese MD per filettature interne
- Fresas de roscar en metal duro integral

Artikel-Nr. Article-No.						E.1667.1 € Stück piece
d1	P	l1	l2	d2	Zähne flutes	
M 6,0	1,00	57	13,00	6,0	3	
M 8,0	1,25	65	17,50	6,0	3	
M 10,0	1,50	72	21,00	8,0	4	
M 12,0	1,75	80	26,25	10,0	4	
M 14,0	2,00	83	30,00	10,0	4	
M 16,0	2,00	92	34,00	12,0	4	



VHM-Bohrungwindefräser für Innengewinde

**E.1711.1**

Universal



- Solid carbide internal thread thrillers
- Frezy z węglika spiekanego do gwintowania wew., gwint metryczny "M"
- Frese MD per filettature interne
- Fresas de taladrar y roscar para roscas interiores en metal duro integral





Artikel-Nr. Article-No.						E.1711.1 € Stück piece
d1	P	l2	l3	l1	d2	
M 4,0	0,70	8,9	9,5	48	6,0	
M 5,0	0,80	11,0	11,8	54	6,0	
M 6,0	1,00	13,7	14,6	62	8,0	
M 7,0	1,00	18,6	19,7	74	10,0	
M 8,0	1,25	18,4	19,6	74	10,0	
M 10,0	1,50	22,2	23,7	80	12,0	
M 12,0	1,75	22,5	27,4	90	14,0	

- Gewindbohrer 1
- Bohren HSSE 2
- Bohren VHM 3
- Reiben HSSE 4
- Reiben VHM 5
- Frässtifte VHM 6
- Fräsen VHM 7
- WP-Werkzeuge 8
- Fräsen HSSE 9
- Sägen 10
- Lehren 11
- Nachschleifen 12
- Sonstiges 13

**E.1690.1**

Universal







-  Solid carbide internal thread milling cutters
-  Frezy z węg. spiekane do gwint. wew. gwint metryczny drobnozwojowy "MF"
-  Frese MD per filettature interne
-  Fresas de roscar en metal duro integral

Artikel-Nr. Article-No.							E.1690.1 € Stück piece
d1	P	l2	l3	l1	d2	Zähne flutes	
M 4 x 0,50	0,50	8,75	9,2	48	6,0	3	
M 5 x 0,50	0,50	10,75	11,3	54	6,0	3	
M 6 x 0,50	0,50	12,75	13,4	62	8,0	3	
M 8 x 0,50	0,50	17,75	18,5	74	10,0	3	
M 6 x 0,75	0,75	13,10	13,8	62	8,0	3	
M 8 x 0,75	0,75	16,85	17,7	74	10,0	3	
M 8 x 1,00	1,00	17,45	18,4	74	10,0	3	
M 10 x 1,00	1,00	21,45	22,5	80	12,0	4	
M 12 x 1,00	1,00	25,45	26,6	90	14,0	4	
M 10 x 1,25	1,25	21,85	22,9	80	12,0	4	
M 12 x 1,50	1,50	26,20	27,5	90	14,0	4	
M 14 x 1,50	1,50	30,70	32,1	102	16,0	4	
M 16 x 1,50	1,50	33,70	35,2	102	18,0	4	

**E.1691.1**

Universal



-  Solid carbide internal and external thread milling cutters
-  Frezy z węg. spiekane do gwintowania wew. i zew., gwint calowy rurowy walcowy "G"
-  Frese MD per filettature interne/esterne
-  Fresas de roscar en metal duro integral para roscas interiores y exteriores

Artikel-Nr. Article-No.						E.1691.1 € Stück piece
d1	P	l2	l1	d2	Zähne flutes	
G 1/8"	28	24,9	64	8,0	4	
G 1/4"	19	35,4	74	10,0	4	
G 3/8"	19	43,5	90	14,0	4	



**E.1618.0**  
Universal

HSS TOL. 6g

„M“

UNIVERSAL TOOL

**E.1692.0**  
Universal

HSS TOL. 6e

„M“

UNIVERSAL TOOL

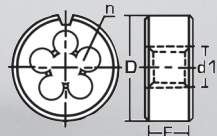
**E.1693.0**  
2.1 2.2

HSS-E TOL. 6g

„M“

INOX

- HSS/HSSE-Dies DIN 13
- Narzynki HSS/HSS-E, gwint metryczny "M" DIN 13
- Filiere HSS/HSSE DIN 13
- Cojinetes en HSS/HSSE DIN 13



Artikel-Nr. Article-No.				E.1618.0	E.1692.0*	E.1693.0*
d1	P	D x E	n	€ Stück piece	€ Stück piece	€ Stück piece
M 1,0	0,25	16 x 5	3			
M 1,4	0,30	16 x 5	3			
M 1,7	0,35	16 x 5	3			
M 2,0	0,40	16 x 5	3 / 4*			
M 2,5	0,45	16 x 5	3 / 4*			
M 3,0	0,50	20 x 5	3 / 4*			
M 3,5	0,60	20 x 5	3			
M 4,0	0,70	20 x 5	3 / 4*			
M 5,0	0,80	20 x 7	4			
M 6,0	1,00	20 x 7	4			
M 7,0	1,00	25 x 9	4			
M 8,0	1,25	25 x 9	4			
M 9,0	1,25	25 x 9	4			
M 10,0	1,50	30 x 11	4			
M 12,0	1,75	38 x 14	4			
M 14,0	2,00	38 x 14	4			
M 16,0	2,00	45 x 18	4			
M 18,0	2,50	45 x 18	5			
M 20,0	2,50	45 x 18	5			
M 22,0	2,50	55 x 22	5			
M 24,0	3,00	55 x 22	5			
M 27,0	3,00	65 x 25	5			
M 30,0	3,50	65 x 25	5			
M 33,0	3,50	65 x 25	6			
M 36,0	4,00	65 x 25	7			

- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1694.0**  
Universal

HSS TOL. 6g

„MF”

UNIVERSAL TOOL

**E.1695.0**  
Universal

HSS TOL. 6e

„MF”

UNIVERSAL TOOL

**E.1696.0**

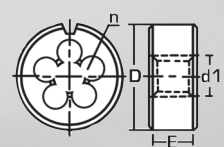
2.1 2.2

HSS-E TOL. 6g

„MF”

INOX

- HSS/HSSE-Dies DIN 13
- Narzynki HSS/HSS-E, gwint metryczny drobnozwojny "MF" DIN13
- Filiere HSS/HSSE DIN 13
- Cojinetes en HSS/HSSE DIN 13



Artikel-Nr. Article-No.				E.1694.0	E.1695.0	E.1696.0*
d1	P	D x E	n	€ Stück piece	€ Stück piece	€ Stück piece
M 2,0 x 0,25	0,25	16 x 5	4			
M 2,5 x 0,35	0,35	16 x 5	4			
M 3,0 x 0,35	0,35	20 x 5	4			
M 3,5 x 0,35	0,35	20 x 5	4			
M 4,0 x 0,35	0,35	20 x 5	4			
M 5,0 x 0,35	0,35	20 x 5	4			
M 4,0 x 0,50	0,50	20 x 5	4			
M 5,0 x 0,50	0,50	20 x 5	4			
M 6,0 x 0,50	0,50	20 x 5	4			
M 7,0 x 0,50	0,50	25 x 9	4			
M 8,0 x 0,50	0,50	25 x 9	5			
M 10,0 x 0,50	0,50	30 x 11	5			
M 12,0 x 0,50	0,50	38 x 10	5			
M 6,0 x 0,75	0,75	20 x 7	4			
M 7,0 x 0,75	0,75	25 x 9	4			
M 8,0 x 0,75	0,75	25 x 9	4			
M 10,0 x 0,75	0,75	30 x 11	5			
M 11,0 x 0,75	0,75	30 x 11	5			
M 8,0 x 1,00	1,00	25 x 9	4			
M 9,0 x 1,00	1,00	25 x 9	5			
M 10,0 x 1,00	1,00	30 x 11	5			
M 11,0 x 1,00	1,00	30 x 11	5			
M 12,0 x 1,00	1,00	38 x 10	5			
M 14,0 x 1,00	1,00	38 x 10	5			
M 16,0 x 1,00	1,00	45 x 14	5			
M 18,0 x 1,00	1,00	45 x 14	5			
M 20,0 x 1,00	1,00	45 x 14	6			
M 24,0 x 1,00	1,00	55 x 16	6			
M 27,0 x 1,00	1,00	65 x 18	6			
M 10,0 x 1,25	1,25	30 x 11	4			
M 12,0 x 1,25	1,25	38 x 10	4			
M 14,0 x 1,25	1,25	38 x 10	5			
M 12,0 x 1,50	1,50	38 x 10	4 / 5*			
M 14,0 x 1,50	1,50	38 x 10	5			
M 16,0 x 1,50	1,50	45 x 14	5			
M 18,0 x 1,50	1,50	45 x 14	5			
M 20,0 x 1,50	1,50	45 x 14	6			
M 22,0 x 1,50	1,50	55 x 16	5 / 6*			
M 24,0 x 1,50	1,50	55 x 16	6			
M 26,0 x 1,50	1,50	55 x 16	6			
M 27,0 x 1,50	1,50	65 x 18	6			
M 30,0 x 1,50	1,50	65 x 18	6			
M 33,0 x 1,50	1,50	65 x 18	7			
M 36,0 x 1,50	1,50	65 x 18	8			
M 18,0 x 2,00	2,00	45 x 14	5			
M 20,0 x 2,00	2,00	45 x 14	6			
M 22,0 x 2,00	2,00	55 x 16	5			
M 24,0 x 2,00	2,00	55 x 16	6			
M 27,0 x 2,00	2,00	65 x 18	6			
M 30,0 x 2,00	2,00	65 x 18	6			
M 33,0 x 2,00	2,00	65 x 18	7			




**E.1697.0**  
Universal

HSS TOL. A

"G"

UNIVERSAL TOOL




**E.1698.0**  
Universal

HSS TOL. A

"G" LH

UNIVERSAL TOOL




**E.1699.0**  
2.1 2.2

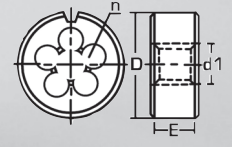
HSS-E TOL. A

"G"

INOX



- HSS/HSSE-Dies DIN 228
- Narzynki HSS/HSS-E, gwint calowy rurowy, walcowy "G" DIN 228
- Filiere HSS/HSSE DIN 228
- Cojinetes en HSS/HSSE DIN 228



Artikel-Nr. Article-No.				E.1697.0	E.1698.0	E.1699.0
d1	P	D x E	n	€ Stück piece	€ Stück piece	€ Stück piece
G 1/8"	28	30 x 11	5			
G 1/4"	19	38 x 10	5			
G 3/8"	19	45 x 14	5			
G 1/2"	14	45 x 14	6			
G 5/8"	14	55 x 16	5			
G 3/4"	14	55 x 16	6			
G 7/8"	14	65 x 18	6			
G 1"	11	65 x 18	7			
G 1 1/8"	11	75 x 20	7			
G 1 1/4"	11	75 x 20	8			
G 1 3/8"	11	90 x 22	7			
G 1 1/2"	11	90 x 22	8			
G 1 3/4"	11	90 x 22	9			
G 2"	11	105 x 22	9			


HSS-Schneideisen UN-Gewinde ANSI B1.1 mit Schälanschnitt

**E.1712.0**  
Universal

HSS

UNIVERSAL TOOL

TOL. 2 A



- HSS-Dies ANSI B1.1
- Narzynki HSS ANSI B1.1
- Filiere HSS ANSI B1.1
- Cojinetes en HSS ANSI B1.1

Artikel-Nr. Article-No.				E.1712.0
d1	P	D x E	n	€ Stück piece
UN 1 1/16"	12	65 x 18	5	
UN 1 5/16"	12	65 x 18	7	
UN 1 5/8"	12	75 x 20	8	
UN 1 3/4"	12	90 x 22	7	
UN 1 1/8"	8	65 x 25	5	
UN 1 1/4"	8	65 x 25	6	
UN 1 3/8"	8	65 x 25	7	
UN 1 1/2"	8	75 x 20	7	

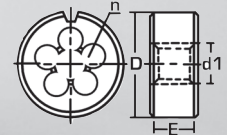
- 1 Gewindbohrer
- 2 Bohren HSSE
- 3 Bohren VHM
- 4 Reiben HSSE
- 5 Reiben VHM
- 6 Frässtifte VHM
- 7 Fräsen VHM
- 8 WP-Werkzeuge
- 9 Fräsen HSSE
- 10 Sägen
- 11 Lehren
- 12 Nachschleifen
- 13 Sonstiges



**E.1701.0**  
 Universal  
 HSS  
 TOL. 2 A  
 „UNC”  
 UNIVERSAL TOOL

**E.1703.0**  
 2.1 2.2  
 HSS-E  
 TOL. 2 A  
 „UNC”  
 INOX

- HSS/HSSE-Dies ANSI B1.1
- Narzynki HSS/HSS-E, gwint amerykański zunifikowany UNC ANSI B1.1
- Filiere HSS/HSSE ANSI B1.1
- Cojinetes en HSS/HSSE ANSI B1.1



Artikel-Nr. Article-No.				E.1701.0 € Stück piece	E.1703.0 € Stück piece
d1	P	D x E	n		
UNC Nr. 4	40	16 x 5	4		
UNC Nr. 5	40	20 x 5	4		
UNC Nr. 6	32	20 x 7	4		
UNC Nr. 8	32	20 x 7	4		
UNC Nr. 10	24	20 x 7	4		
UNC Nr. 12	24	20 x 7	4		
UNC 1/4"	20	20 x 7	4		
UNC 5/16"	18	25 x 9	4		
UNC 3/8"	16	30 x 11	4		
UNC 7/16"	14	30 x 11	4		
UNC 1/2"	13	38 x 14	4		
UNC 5/8"	11	45 x 18	4		
UNC 3/4"	10	45 x 18	5		
UNC 1"	8	55 x 22	5		

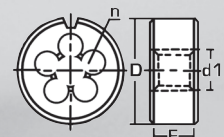


**E.1704.0**  
 Universal  
 HSS  
 TOL. 2 A  
 „UNF”  
 UNIVERSAL TOOL

**E.1705.0**  
 Universal  
 HSS  
 TOL. 2 A  
 „UNF”  
 LH  
 UNIVERSAL TOOL


**E.1706.0**  
 2.1 2.2  
 HSS-E  
 TOL. 2 A  
 „UNF”  
 INOX

- HSS/HSSE-Dies ANSI B1.1
- Narzynki HSS/HSS-E, gwint amerykański zunifikowany drobnozwojny UNF ANSI B1.1
- Filiere HSS/HSSE ANSI B1.1
- Cojinetes en HSS/HSSE ANSI B1.1








Artikel-Nr. Article-No.				E.1704.0 € Stück piece	E.1705.0 € Stück piece	E.1706.0 € Stück piece
d1	P	D x E	n			
UNF Nr. 5	44	20 x 5	4			
UNF Nr. 6	40	20 x 5	4			
UNF Nr. 8	36	20 x 7	4			
UNF Nr. 10	32	20 x 7	4			
UNF Nr. 12	28	20 x 7	4			
UNF 1/4"	28	20 x 7	4			
UNF 5/16"	24	25 x 9	4			
UNF 3/8"	24	30 x 11	4			
UNF 7/16"	20	30 x 11	5			
UNF 1/2"	20	38 x 10	5			
UNF 5/8"	18	45 x 14	5			
UNF 3/4"	16	45 x 14	6			
UNF 7/8"	14	55 x 16	5			
UNF 1"	12	55 x 16	6			

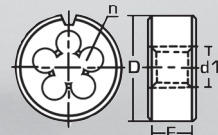
**E.1707.0**  
 Universal  
 HSS  
 TOL. 7e  
 Tr  
 UNIVERSAL TOOL



**E.1708.0**  
 Universal  
 HSS  
 TOL. 7e  
 Tr  
 LH  
 UNIVERSAL TOOL



-  HSS-Dies
-  Narzynki HSS, gwint trapezowy Tr
-  Filiere HSS
-  Cojinetes en HSS

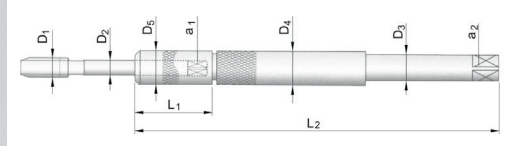


Artikel-Nr. Article-No.				E.1707.0 € Stück piece	E.1708.0 € Stück piece
d1	P	D x E	n		
Tr 10	2,00	38 x 14	4		
Tr 10	3,00	38 x 14	4		
Tr 12	2,00	38 x 14	4		
Tr 12	3,00	38 x 14	4		
Tr 14	2,00	38 x 14	4		
Tr 14	3,00	45 x 18	4		
Tr 14	4,00	45 x 18	4		
Tr 16	2,00	45 x 18	4		
Tr 16	4,00	45 x 18	4		
Tr 18	2,00	45 x 18	5		
Tr 18	4,00	45 x 18	5		
Tr 20	2,00	45 x 18	6		
Tr 20	4,00	55 x 22	5		
Tr 22	5,00	55 x 22	5		
Tr 24	5,00	65 x 25	5		
Tr 26	5,00	65 x 25	5		
Tr 28	5,00	65 x 25	5		
Tr 30	6,00	65 x 25	5		
Tr 32	6,00	65 x 25	6		
Tr 36	6,00	65 x 25	6		

- Gewindbohrer 1
- Bohren HSSE 2
- Bohren VHM 3
- Reiben HSSE 4
- Reiben VHM 5
- Frässtifte VHM 6
- Fräsen VHM 7
- WP-Werkzeuge 8
- Fräsen HSSE 9
- Sägen 10
- Lehren 11
- Nachschleifen 12
- Sonstiges 13

## Schaftverlängerungen für Gewindebohrer

### E.1709.0



Shank extensions for taps

Przedłużki chwytu gwintowników

Prolungamenti gambo maschi

Mangos extensibles para machos

Artikel-Nr. Article-No.									E.1709.0 € Stück piece
D1 DIN 371	D1 DIN 376	D2	D3	D4=D5	L1	L2	a1	a2	
M 2 - M 2,6	M 4	2,8	6	6,1	22	130	2,1	4,9	
M 3	M 4,5 - M 5	3,5	6	7,5	23	130	2,7	4,9	
M 4	M 6	4,5	6	8,4	23	130	3,4	4,9	
M 4,5 - M 6	M 8	6,0	7	12,1	26	130	4,9	5,5	
M 7	M 9 - M 10	7,0	7	12,1	26	130	5,5	5,5	
M 8	M 11	8,0	8	13,0	30	130	6,2	6,2	
M 9	M 12	9,0	9	15,0	31	130	7,0	7,0	
M 10		10,0	10	15,0	33	130	8,0	8,0	
	M 14	11,0	11	18,0	36	130	9,0	9,0	
	M 16	12,0	12	18,0	36	130	9,0	9,0	
<b>lang</b>									<b>E.1709.0L</b>
M 2 - M 2,6	M 4	2,8	6	6,1	22	230	2,1	4,9	
M 3	M 4,5 - M 5	3,5	6	7,5	23	230	2,7	4,9	
M 4	M 6	4,5	6	8,4	23	230	3,4	4,9	
M 4,5 - M 6	M 8	6,0	7	12,1	26	230	4,9	5,5	
M 7	M 9 - M 10	7,0	7	12,1	26	230	5,5	5,5	
M 8	M 11	8,0	8	13,0	30	230	6,2	6,2	
M 9	M 12	9,0	9	15,0	31	230	7,0	7,0	
M 10		10,0	10	15,0	33	230	8,0	8,0	
	M 14	11,0	11	18,0	36	230	9,0	9,0	
	M 16	12,0	12	18,0	36	230	9,0	9,0	

## Schaftverlängerungen für Gewindebohrer

### E.1710.0



Shank extensions for taps

Przedłużki chwytu gwintowników

Prolungamenti gambo maschi

Mangos extensibles para machos

Artikel-Nr. Article-No.				E.1710.0 € Stück piece
Vierkant (a) square (a)	D1 ISO 529	D1 DIN 352	l1	
5,0	M 6		110	
6,3	M 8 / M 11		120	
7,1	M 9 / M 12		125	
8,0	M 10		130	
9,0	M 14	M 14 / M 16	130	
10,0	M 16		140	

## Verstellbare Windeisen

**E.1713.0**



Adjustable tap wrenches

Pokręta nastawne do gwintowników

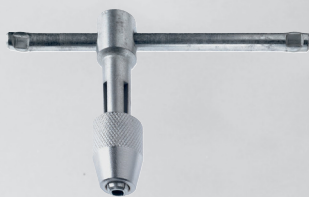
Giramaschi regolabili

Giramachos ajustables

Artikel-Nr. Article-No.				E.1713.0 € Stück piece
Vierkant square	D1 ISO 529	D1 DIN 352	l1	
2,00 ÷ 4,5	M 1 ÷ M 8	M 1,0 ÷ M 10	125	
3,15 ÷ 6,3	M 3 ÷ M 12	M 3,0 ÷ M 12	205	
2,50 ÷ 7,1	M 5 ÷ M 14	M 4,5 ÷ M 16	205	
3,55 ÷ 9,0	M 6 ÷ M 24	M 4,5 ÷ M 20	305	
5,60 ÷ 16,0	M 7 ÷ M 30	M 9,0 ÷ M 27	395	

## Verstellbare Windeisen Typ "T"

**E.1714.0**



Adjustable tap wrenches type "T"

Pokręta nastawne typu T do gwintowników

Giramaschi regolabili tipo "T"

Giramachos ajustables tipo "T"

Artikel-Nr. Article-No.				E.1714.0 € Stück piece
Vierkant square	D1 ISO 529	D1 DIN 352	l1	
2,00 ÷ 4,0	M 2 ÷ M 5	M 2 ÷ M 4	55	
2,00 ÷ 4,0	M 2 ÷ M 5	M 2 ÷ M 4	200	
4,00 ÷ 7,1	M 6 ÷ M 12	M 5 ÷ M 12	90	
4,00 ÷ 7,1	M 6 ÷ M 12	M 5 ÷ M 12	250	
9,00 ÷ 11,2	M 14 ÷ M 20	M 14 ÷ M 18	110	

## Windeisen mit Ratsche

**E.1715.0**



Tap wrenches with ratchet system

Pokręta z systemem zapadkowym

Giramaschi a cricco

Giramachos con raqueta

Artikel-Nr. Article-No.		E.1715.0 € Stück piece
D	l1	
M 3 ÷ M 6	85	
M 3 ÷ M 6	250	
M 6 ÷ M 12	110	
M 6 ÷ M 12	300	


Gewindebohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
Lehren	11
Nachschleifen	12
Sonstiges	13

## Schneideisenhalter

**E.1716.0**



 Dieholder

 Oprawki do narzynek

 Girafalliere


 Portacojinetes


Artikel-Nr. Article-No.		E.1716.0 € Stück piece
D	l1	
M 1 ÷ M 2,5	160	
M 3 ÷ M 4,0	185	
M 7 ÷ M 9,0	220	
M 10 ÷ M 11,0	260	
M 12 ÷ M 14,0	310	
M 16 ÷ M 20,0	400	
M 22 ÷ M 24,0	500	
M 27 ÷ M 36,0	560	


## Softsynchro-Spannzangenfutter


**E.1620.0**



 Softsynchro-Collet holder

 Uchwyt oprawkowy Soft-synchro

 Mandrini softsynchro

 Portamachos softsynchro

mit Minimallängenausgleich auf Zug und Druck, innere Kühlmittelzufuhr, Kühlmitteldruck am Futtereintritt, Werkzeugadaptierung über Spannzangen, Dichtscheibenmutter Hi-Q/ERC und Mutternschlüssel sind inklusive





*with minimum length compensation on traction and pressure and internal coolant supply through tool holder. Tool adjusting bay collets, tightening screw Hi-Q/ERC and adjusting key are inclusive.*

Artikel-Nr. Article-No.							E.1620.0 € Stück piece
Schaft shank	Schneidbereich cutting range	Zangengröße size of use	L1	L2	C	T	
<b>HSK 63</b>	M 3 - M 20	ER 32	110,0	40	0,5	0,5	
<b>25 DIN 1835 B+E</b>	M 4 - M 12	ER 20	65,0	57	0,5		

## Schnellwechsel-Aufnahmen mit Morsekegelschaft

**E.1672.0**



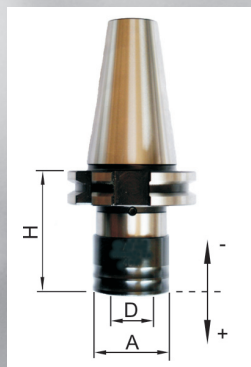
-  Quick-change tap holder with morse taper shank
-  Oprawka szybkozmienna do gwintowników z chwytem stożkowym Morse'a
-  Maschiatore cambio rapido MK
-  Cambios rápidos con cono Morse





Artikel-Nr. Article-No.

Schaft shank	Schneidbereich cutting range	Einsatzgröße size of use	D	A	H	Längenausgleich length compensation	E.1672.0 € Stück piece
<b>MK 2</b>	M 2 - M 12	SE 19	19	38	46	9	
<b>MK 3</b>	M 2 - M 12	SE 19	19	38	46	9	
<b>MK 3</b>	M 6 - M 20	SE 31	31	55	69	15	
<b>MK 4</b>	M 14 - M 33	SE 48	48	79	108	24	
<b>MK 5</b>	M 22 - M 48	SE 60	60	98	116	26	

## Schnellwechsel-Aufnahmen mit Steilkegelschaft

**E.1673.0**



-  Quick-change tap holder with steep taper shank
-  Oprawka szybkozmienna do gwintowników z chwytem stożkowym wg ISO 7:24
-  Maschiatore cambio rapido iso
-  Cambios rápidos con mango cónico

Artikel-Nr. Article-No.





Schaft shank	Schneidbereich cutting range	Einsatzgröße size of use	D	A	H	Längenausgleich length compensation	E.1673.0 € Stück piece
<b>ISO 30</b>	M 2 - M 12	SE 19	19	38	60	9	
<b>ISO 30</b>	M 6 - M 20	SE 31	31	55	101	15	
<b>ISO 40</b>	M 2 - M 12	SE 19	19	38	60	9	
<b>ISO 40</b>	M 6 - M 20	SE 31	31	55	100	15	
<b>ISO 40</b>	M 14 - M 33	SE 48	48	79	138	24	
<b>ISO 40</b>	M 22 - M 48	SE 60	60	98	154	26	
<b>ISO 50</b>	M 2 - M 12	SE 19	19	38	62	9	
<b>ISO 50</b>	M 6 - M 20	SE 31	31	55	83	15	
<b>ISO 50</b>	M 14 - M 33	SE 48	48	79	133	24	
<b>ISO 50</b>	M 22 - M 48	SE 60	60	98	147	26	

Gewindbohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
Lehren	11
Nachschleifen	12
Sonstiges	13

# Schnellwechsel-Einsätze mit Überlastkupplung

**E.1674.0**



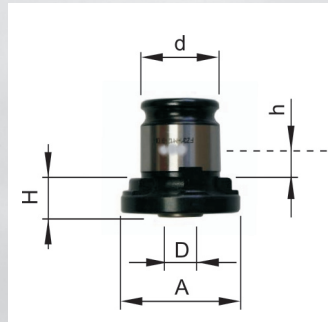
-  Quick-change adapters with overload clutch
-  Zabieraki szybkozmiennie ze sprzęgłem przeciążeniowym do mocowania gwintowników
-  Bussola con frizione
-  Manguitos de cambio rápido con embrague

Artikel-Nr. Article-No.									E.1674.0
Gewinde thread	Einsatzgröße size of use	Vierkant square	Schaft shank	d	A	H	h	DIN	€ Stück piece
M 2	SEU 13	2,1	2,8	13	23	21	6	371	
M 2	SEU 19	2,1	2,8	19	32	25	8	371	
M 3	SEU 13	2,7	3,5	13	23	21	6	371	
M 3	SEU 19	2,7	3,5	19	32	25	8	371	
M 4	SEU 13	3,4	4,5	13	23	21	6	371	
M 4	SEU 19	3,4	4,5	19	32	25	8	371	
M 5	SEU 13	4,9	6,0	13	23	21	6	371	
M 5	SEU 19	4,9	6,0	19	32	25	8	371	
M 6	SEU 13	4,9	6,0	13	23	21	6	371	
M 6	SEU 19	4,9	6,0	19	32	25	8	371	
M 6	SEU 31	4,9	6,0	31	50	34	4	371	
M 8	SEU 19	6,2	8,0	19	32	25	8	371	
M 8	SEU 31	6,2	8,0	31	50	34	4	371	
M 10	SEU 19	8,0	10,0	19	32	25	8	371	
M 10	SEU 31	8,0	10,0	31	50	34	4	371	
M 12	SEU 19	7,0	9,0	19	32	25	8	376	
M 12	SEU 31	7,0	9,0	31	50	34	4	376	
M 14	SEU 31	9,0	11,0	31	50	34	4	376	
M 14	SEU 48	9,0	11,0	48	72	45	1	376	
M 16	SEU 31	9,0	12,0	31	50	34	4	376	
M 16	SEU 48	9,0	12,0	48	72	45	1	376	
M 18	SEU 31	11,0	14,0	31	50	34	4	376	
M 18	SEU 48	11,0	14,0	48	72	45	1	376	
M 20	SEU 31	12,0	16,0	31	50	34	4	376	
M 20	SEU 48	12,0	16,0	48	72	45	1	376	
M 22	SEU 48	14,5	18,0	48	72	45	1	376	
M 22	SEU 60	14,5	18,0	60	95	68	3	376	
M 24	SEU 48	14,5	18,0	48	72	45	1	376	
M 24	SEU 60	14,5	18,0	60	95	68	3	376	
M 27	SEU 48	16,0	20,0	48	72	45	1	376	
M 27	SEU 60	16,0	20,0	60	95	68	3	376	
M 30	SEU 48	18,0	22,0	48	72	45	1	376	
M 30	SEU 60	18,0	22,0	60	95	68	3	376	
M 33	SEU 48	20,0	25,0	48	72	45	1	376	
M 33	SEU 60	20,0	25,0	60	95	68	3	376	
M 36	SEU 60	22,0	28,0	60	95	68	3	376	
M 39	SEU 60	24,0	32,0	60	95	68	3	376	
M 42	SEU 60	24,0	32,0	60	95	68	3	376	
M 45	SEU 60	29,0	36,0	60	95	68	3	376	
M 48	SEU 60	29,0	36,0	60	95	68	3	376	



# Schnellwechsel-Einsätze ohne Überlastkupplung

**E.1675.0**



Quick-change adapters without overload clutch

Zabieraki szybkozmienne bez sprzęgła przeciążeniowego do mocowania gwintowników

Bussola senza frizione

Manguitos de cambio rápido sin embrague

Artikel-Nr. Article-No.									E.1675.0 € Stück piece
Gewinde thread	Einsatzgröße size of use	Vierkant square	Schaft shank	d	A	H	h	DIN	
M 2	SE 13	2,1	2,8	13	22	7	8	371	
M 3	SE 13	2,7	3,5	13	22	7	8	371	
M 3	SE 19	2,7	3,5	19	30	7	10	371	
M 4	SE 13	3,4	4,5	13	22	7	8	371	
M 4	SE 19	3,4	4,5	19	30	7	10	371	
M 5	SE 13	4,9	6,0	13	22	7	8	371	
M 5	SE 19	4,9	6,0	19	30	7	10	371	
M 5	SE 31	4,9	6,0	31	46	11	19	371	
M 6	SE 13	4,9	6,0	13	22	7	8	371	
M 6	SE 19	4,9	6,0	19	30	7	10	371	
M 6	SE 31	4,9	6,0	31	46	11	19	371	
M 8	SE 19	6,2	8,0	19	30	7	10	371	
M 8	SE 31	6,2	8,0	31	46	11	19	371	
M 10	SE 19	8,0	10,0	19	30	7	10	371	
M 10	SE 31	8,0	10,0	31	46	11	19	371	
M 12	SE 19	7,0	9,0	19	30	7	10	376	
M 12	SE 31	7,0	9,0	31	46	11	19	376	
M 14	SE 31	9,0	11,0	31	46	11	19	376	
M 14	SE 48	9,0	11,0	48	68	14	25	376	
M 16	SE 31	9,0	12,0	31	46	11	19	376	
M 16	SE 48	9,0	12,0	48	68	14	25	376	
M 18	SE 31	11,0	14,0	31	46	11	19	376	
M 18	SE 48	11,0	14,0	48	68	14	25	376	
M 20	SE 31	12,0	16,0	31	46	11	19	376	
M 20	SE 48	12,0	16,0	48	68	14	25	376	
M 22	SE 48	14,5	18,0	48	68	14	25	376	
M 22	SE 60	14,5	18,0	60	83	42	29	376	
M 24	SE 48	14,5	18,0	48	68	14	25	376	
M 24	SE 60	14,5	18,0	60	83	42	29	376	
M 27	SE 48	16,0	20,0	48	68	14	25	376	
M 27	SE 60	16,0	20,0	60	83	42	29	376	
M 30	SE 48	18,0	22,0	48	68	14	25	376	
M 30	SE 60	18,0	22,0	60	83	42	29	376	
M 33	SE 48	20,0	25,0	48	68	14	25	376	
M 33	SE 60	20,0	25,0	60	83	42	29	376	
M 36	SE 60	22,0	28,0	60	83	42	29	376	
M 39	SE 60	24,0	32,0	60	83	42	29	376	
M 42	SE 60	24,0	32,0	60	83	42	29	376	
M 45	SE 60	29,0	36,0	60	83	42	29	376	
M 48	SE 60	29,0	36,0	60	83	42	29	376	

Gewindbohrer	1
Bohren HSSE	2
Bohren VHM	3
Reiben HSSE	4
Reiben VHM	5
Frässtifte VHM	6
Fräsen VHM	7
WP-Werkzeuge	8
Fräsen HSSE	9
Sägen	10
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