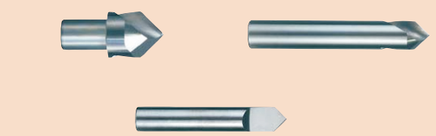
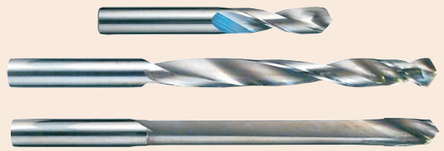
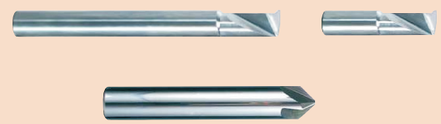
СЕРИЯ TOOLING-LINE

Указатель Tooling-Line

	страница Seite page
	5.02 5.03
	5.04 - 5.07
	5.08 - 5.15
	5.16 - 5.17
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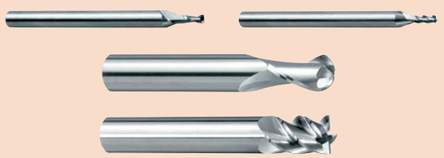
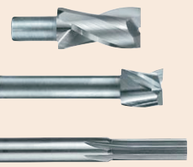
	5.19 - 5.21
	5.22 - 5.23
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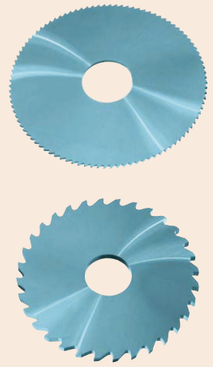	5.24 - 5.27
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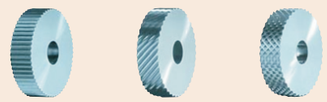
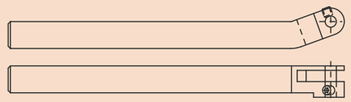
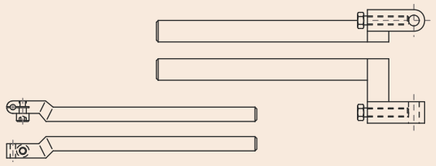
	5.30
	5.31
	5.32 - 5.36
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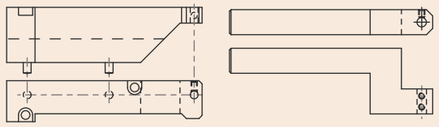
TORNOS DECO 	5.37

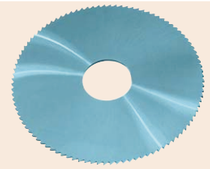
Стандартные режимы обработки
Empfohlene Schnittwerte
Standard machining data

материал Werkstoff material	СОЖ* Kuhlung* coolant*	Сверла из твердого сплава VHM-Bohrer Solid carbide drills				Развертки из твердого сплава VHM-Reibahlen Solid carbide reamers			
		Vc	Подача на оборот Vorschub per Umdrehung Feed per rotation мм/ ↻			Vc	Подача на оборот Vorschub per Umdrehung Feed per rotation мм/ ↻		
		м/мин	Ø1-4	Ø4-8	Ø 8-12	м/мин	Ø 1-4	Ø 4-8	Ø 8-12
Легкообрабатываемая сталь Automatenstahl free-cutting steel	O / E	90 - 120	0.02 - 0.05	0.05 - 0.07	0.07 - 0.10	15 - 22	0.12	0.16	0.25
сталь Stahl steel < 600 N/mm2	O / E	80 - 110	0.01 - 0.04	0.04 - 0.06	0.06 - 0.08	10 - 18	0.10	0.15	0.20
сталь Stahl steel < 800 N/mm2	O / E	70 - 110	0.01 - 0.03	0.03 - 0.05	0.05 - 0.07	8 - 15	0.10	0.13	0.16
сталь Stahl steel < 1000 N/mm2	O / E	60 - 80	0.01 - 0.03	0.03 - 0.05	0.05 - 0.07	6 - 12	0.07	0.10	0.13
сталь Stahl steel > 1000 N/mm2	O / E	30 - 50	0.01 - 0.02	0.02 - 0.04	0.04 - 0.06	5 - 10	0.05	0.08	0.10
нержавеющая сталь rostfreier Stahl stainless steel	O / E	30 - 50	0.01 - 0.03	0.03 - 0.05	0.05 - 0.08	8 - 12	0.04	0.06	0.08
жаропрочная сталь warmfester Stahl heat resistant steel	O / E	20 - 40	0.01 - 0.02	0.02 - 0.03	0.03 - 0.05	5 - 10	0.03	0.05	0.07
чугун Gusseisen cast iron	A / E	70 - 100	0.03 - 0.05	0.05 - 0.07	0.07 - 0.10	8 - 12	0.20	0.25	0.30
Алюминий Si < 12%	O / E	100 - 150	0.04 - 0.06	0.06 - 0.10	0.10 - 0.14	20 - 35	0.20	0.25	0.30
Алюминий Si > 12 %	O / E	50 - 100	0.02 - 0.04	0.04 - 0.06	0.06 - 0.09	10 - 22	0.10	0.15	0.20
титан Titan titanium	O / E	30 - 50	0.01 - 0.02	0.02 - 0.04	0.04 - 0.08	6 - 10	0.08	0.10	0.12
медь, латунь, бронза Kupfer, Messing, Bronze copper, brass, bronze	A / O / E	60 - 100	0.03 - 0.06	0.06 - 0.10	0.10 - 0.15	15 - 40	0.15	0.20	0.30
термопластики Thermoplaste thermoplastics	A	80 - 150	0.03 - 0.04	0.04 - 0.06	0.06 - 0.08	15 - 35	0.10	0.15	0.20
дуропластики Duroplaste duroplastics	A	60 - 120	0.03 - 0.05	0.05 - 0.08	0.08 - 0.12	15 - 35	0.10	0.15	0.20

* O= масло /Schneidol / cutting oil
* E = Эмульсия
* A= Сжатый воздух / Trocken (Pressluft) / Dry (air)

с покрытием TiN / TiCN / TiALN, стандартные режимы обработки увеличиваются на 20%
mit TiN / TiCN / TiALN Beschichtung, Daten um 20% erhohen
with TiN / TiCN / TiALN coating, increase data by 20 %

Стандартные режимы обработки
Empfohlene Schnittwerte
Standard machining data



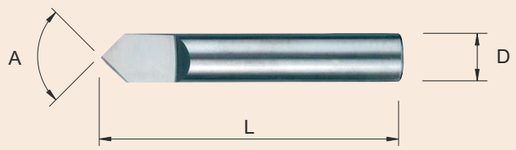
материал Werkstoff material	СОЖ* Kuhlung* coolant*	Концевые фрезы из твердого сплава VHM-Schaftfrдser Solid carbide end mills				Дисковые пилы из твердого сплава VHM-Kreissageblatter Solid carbide slitting saws	
		Vc	Подача на зуб Vorschub pro Zahn Feed per tooth мм/зуб			Vc	выбор геометрии зуба /подача Verzahnungswahl / Vorschub teeth selection / cutting feed
		м/мин	Ø 1-4	Ø 4-8	Ø 8-12	м/мин	
легкообрабатываемая сталь Automatenstahl free-cutting steel	O / E	100 - 150	0.03	0.04	0.05	120 - 240	**Тип 1101** Для небольшой глубины резания или коротких пропилов. Подача на зуб : 0.005 - 0.05** Fьr geringe Bearbeitungstiefen oder kurze Schlitzlдngen. Vorschub pro Zahn : 0.005-0.05** For low machining depth or short slots. Feed per teeth : 0.005 - 0.05**
сталь Stahl steel < 600 N/mm2	O / E	80 - 120	0.03	0.04	0.05	100 - 200	
сталь Stahl steel < 800 N/mm2	O / E	70 - 100	0.02	0.03	0.04	80 - 160	
сталь Stahl steel < 1000 N/mm2	O / E	50 - 80	0.01	0.02	0.03	60 - 120	**Тип 1102** Для большой глубины резания или больших пропилов. Подача на зуб : 0.01 - 0.1** Fur grosse Bearbeitungstiefen oder grosse Schlitzlangen. Vorschub pro Zahn : 0.01-0.1** For deep machining or long slots. Feed per teeth : 0.01 - 0.1**
сталь Stahl steel > 1000 N/mm2	O / E	30 - 60	0.01	0.02	0.03	40 - 80	
нержавеющая сталь rostfreier Stahl stainless steel	O / E	40 - 80	0.01	0.02	0.03	50 - 100	
жаропрочная сталь warmfester Stahl heat resistant steel	O / E	20 - 50	0.01	0.02	0.03	25 - 60	
чугун Gusseisen cast iron	A / E	60 - 100	0.02	0.04	0.06	60 - 120	**Тип 1103** Для обработки хрупких или тонких заготовок Подача на зуб : 0.002 - 0.02** Fur die Bearbeitung von emp- f indlichen oder dunnwandigen Werkstьcken. Vorschub pro Zahn : 0.002 - 0.02** For machining of fragile or thin workpieces. Feed per teeth : 0.002 - 0.02**
Алюминий Si < 12%	O / E	250 - 400	0.03	0.06	0.10	150 - 600	
Алюминий Si > 12 %	O / E	120 - 250	0.02	0.05	0.08	80 - 300	
титан Titan titanium	O / E	25 - 50	0.01	0.02	0.03	30 - 60	
медь, латунь, бронза Kupfer, Messing, Bronze copper, brass, bronze	A /O / E	100- 300	0.02	0.04	0.06	80 - 300	**в зависимости от типа материала, его толщины и общей твердости
термопластики Thermoplaste thermoplastics	A	120- 200	0.03	0.06	0.09	200 - 700	**je nach Werkstoff, Dicke und Gesamtstarrheit
дуропластики Duroplaste duroplastics	A	80- 120	0.03	0.05	0.08	150 - 600	**according to material, thickness and global rigidity

* O= масло /Schneidol / cutting oil
* E = эмульсия
* A= сжатый воздух / Trocken (Pressluft) / Dry (air)

с покрытием TiN / TiCN / TiALN, стандартные режимы обработки увеличиваются на 20%
mit TiN / TiCN / TiALN Beschichtung, Daten um 20% erhohen
with TiN / TiCN / TiALN coating, increase data by 20 %

Центровочные сверла
Zentrier-Flachbohrer
Centering flat drills

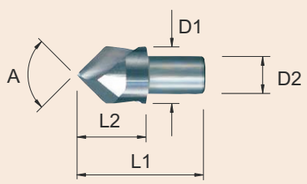
Тип 1200 **L**



A	D	L	твердый сплав Vollhartmetall solid carbide Арт. N°
90°	3	13	**1200-313**
90°	3	17	**1200-317**
90°	3	38	**1200-338**
90°	4	40	**1200-440**
90°	5	50	**1200-550**
90°	6	50	**1200-650**
90°	8	58	**1200-858**
90°	10	66	**1200-1066**
90°	12	73	**1200-1273**

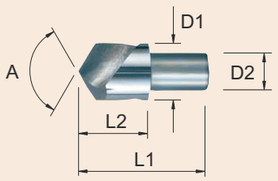
Центровочные сверла
Zentrier-Spiralbohrer
Centering twist drills

Тип 1500 **L**



A	D1	D2	L1	L2	Быстрорежущая сталь Арт. №	твердый сплав Vollhartmetall solid carbide Арт. №
90°	5	4	17	8	**1500-5-HSS**	**1500-5-MD**
90°	7	5	17	8	**1500-7-HSS**	**1500-7-MD**
90°	10	6	22	10	**1500-10-HSS**	**1500-10-MD**
90°	12	8	26	12	**1500-12-HSS**	**1500-12-MD**

Тип 1510 **L**



120°	5	4	17	8	**1510-5-HSS**	**1510-5-MD**
120°	7	5	17	8	**1510-7-HSS**	**1510-7-MD**
120°	10	6	22	10	**1510-10-HSS**	**1510-10-MD**
120°	12	8	26	12	**1510-12-HSS**	**1510-12-MD**

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

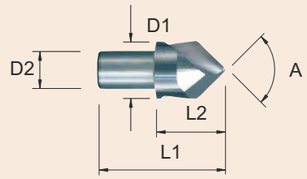
Центровочные сверла
Zentrier-Flachbohrer
Centering f at drills

Тип 2200 **R**

A	D	L	твердый сплав Vollhartmetall solid carbide Арт. N°
90°	3	13	**2200-313**
90°	3	17	**2200-317**
90°	3	38	**2200-338**
90°	4	40	**2200-440**
90°	5	50	**2200-550**
90°	6	50	**2200-650**
90°	8	58	**2200-858**
90°	10	66	**2200-1066**
90°	12	73	**2200-1273**

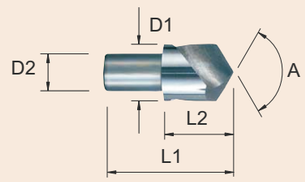
Центровочные сверла
Zentrier-Spiralbohrer
Centering twist drills

Тип 2520 **R**



A	D1	D2	L1	L2	Быстрорежущая сталь Арт. N°	твердый сплав Vollhartmetall solid carbide Арт. N°
90°	5	4	17	8	**2520-5-HSS**	**2520-5-MD**
90°	7	5	17	8	**2520-7-HSS**	**2520-7-MD**
90°	10	6	22	10	**2520-10-HSS**	**2520-10-MD**
90°	12	8	26	12	**2520-12-HSS**	**2520-12-MD**

Тип 2530 **R**

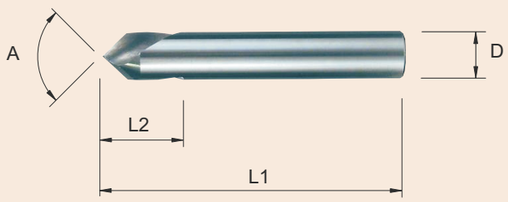


120°	5	4	17	8	**2530-5-HSS**	**2530-5-MD**
120°	7	5	17	8	**2530-7-HSS**	**2530-7-MD**
120°	10	6	22	10	**2530-10-HSS**	**2530-10-MD**
120°	12	8	26	12	**2530-12-HSS**	**2530-12-MD**

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

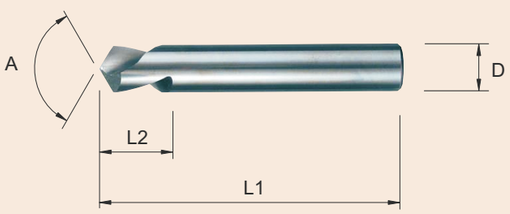
Центровочные сверла для станков с ЧПУ
NC-Zentrierbohrer
Forets a centrer NC

Тип 1680 **L** **90°**



A	D1	L1	L2	Быстрорежущая сталь Арт. N°	твердый сплав Vollhartmetall solid carbide Арт. N°
90°	2	38	8	---	1680-2-90-MD
90°	2.5	38	8	---	1680-2.5-90-MD
90°	3	38	10	1680-3-90-HSS	1680-3-90-MD
90°	4	50	12	1680-4-90-HSS	1680-4-90-MD
90°	5	50	15	1680-5-90-HSS	1680-5-90-MD
90°	6	57	16	1680-6-90-HSS	1680-6-90-MD
90°	8	63	20	1680-8-90-HSS	1680-8-90-MD
90°	10	72	22	1680-10-90-HSS	1680-10-90-MD
90°	12	73	24	1680-12-90-HSS	1680-12-90-MD
90°	16	85	26	---	1680-16-90-MD
90°	20	92	30	---	1680-20-90-MD

Тип 1680 **L** **120°**

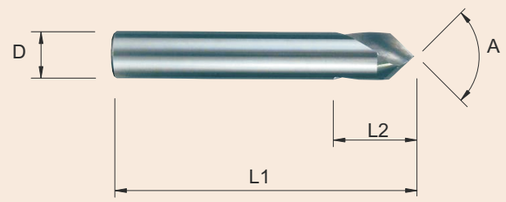


A	D1	L1	L2	Быстрорежущая сталь Арт.№	твердый сплав Vollhartmetall solid carbide Арт. №
120°	2	38	8	---	1680-2-120-MD
120°	2.5	38	8	---	1680-2.5-120-MD
120°	3	38	10	1680-3-120-HSS	1680-3-120-MD
120°	4	50	12	1680-4-120-HSS	1680-4-120-MD
120°	5	50	15	1680-5-120-HSS	1680-5-120-MD
120°	6	57	16	1680-6-120-HSS	1680-6-120-MD
120°	8	63	20	1680-8-120-HSS	1680-8-120-MD
120°	10	72	22	1680-10-120-HSS	1680-10-120-MD
120°	12	73	24	1680-12-120-HSS	1680-12-120-MD
120°	16	82	26	---	1680-16-120-MD
120°	20	92	30	---	1680-20-120-MD

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

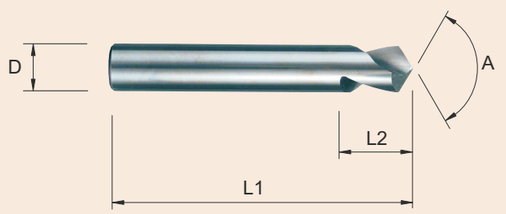
Центровочные сверла для станков с ЧПУ
NC-Zentrierbohrer
Forets a centrer NC

Тип 2680 **R** **90°**



A	D1	L1	L2	Быстрорежущая сталь Арт. N°	твердый сплав Vollhartmetall solid carbide Арт. N°
90°	2	38	8	---	2680-2-90-MD
90°	2.5	38	8	---	2680-2.5-50-MD
90°	3	38	10	2680-3-90-HSS	2680-3-90-MD
90°	4	50	12	2680-4-90-HSS	2680-4-90-MD
90°	5	50	15	2680-5-90-HSS	2680-5-90-MD
90°	6	57	16	2680-6-90-HSS	2680-6-90-MD
90°	8	63	20	2680-8-90-HSS	2680-8-90-MD
90°	10	72	22	2680-10-90-HSS	2680-10-90-MD
90°	16	82	26	2680-12-90-HSS	2680-12-90-MD
90°	16	82	26	---	2680-16-90-MD
90°	20	92	30	---	2680-20-90-MD

Тип 2680 **R** **120°**

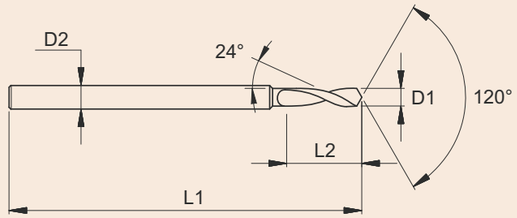


A	D1	L1	L2	Быстрорежущая сталь Арт. №	твердый сплав Vollhartmetall solid carbide Арт. №
120°	2	38	8	---	2680-2-120-MD
120°	2.5	38	8	---	2680-2.5-120-MD
120°	3	38	10	2680-3-120-HSS	2680-3-120-MD
120°	4	50	12	2680-4-120-HSS	2680-4-120-MD
120°	5	50	15	2680-5-120-HSS	2680-5-120-MD
120°	6	57	16	2680-6-120-HSS	2680-6-120-MD
120°	8	63	20	2680-8-120-HSS	2680-8-120-MD
120°	10	72	22	2680-10-120-HSS	2680-10-120-MD
120°	12	73	24	2680-12-120-HSS	2680-12-120-MD
120°	16	82	26	---	2680-16-120-MD
120°	20	92	30	---	2680-20-120-MD

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Центровочные сверла из твердого сплава
Vollhartmetall Anbohrer
Solid carbide spot drills

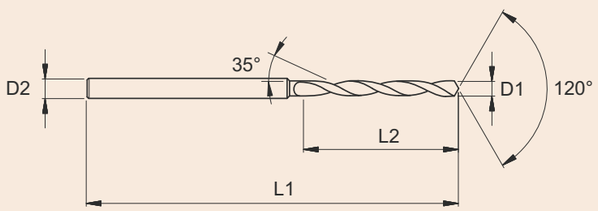
Тип 2012 **R**



D1 h6	D2 h6	L1	L2	D1 h6	D2 h6	L1	L2
0.50	1.5	30	1.7	**1.30**	1.5	30	4.2
0.55	1.5	30	1.9	**1.40**	1.5	30	4.7
0.60	1.5	30	1.9	**1.50**	2.0	38	4.7
0.65	1.5	30	1.9	**1.60**	2.0	38	5.4
0.70	1.5	30	2.4	**1.70**	2.0	38	5.4
0.75	1.5	30	2.4	**1.80**	2.0	38	6.5
0.80	1.5	30	2.6	**1.90**	2.0	38	6.5
0.85	1.5	30	2.6	**2.00**	2.5	38	6.5
0.90	1.5	30	3.0	**2.10**	2.5	38	6.5
0.95	1.5	30	3.0	**2.20**	2.5	38	6.5
1.00	1.5	30	3.4	**2.30**	2.5	38	6.5
1.10	1.5	30	3.8	**2.40**	2.5	38	6.5
1.20	1.5	30	4.2				

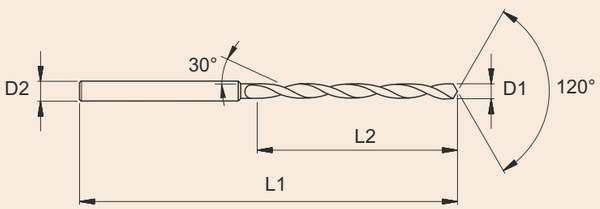
Микро-серия сверел из твердого сплава
Vollhartmetall Mikro-Bohrer
Solid carbide micro drills

Тип 2013 **R**



D1 h6	D2 h6	L1	L2	D1 h6	D2 h6	L1	L2
0.40	1.0	25	3.6	**1.10**	1.5	30	9.0
0.45	1.0	25	3.6	**1.15**	1.5	30	9.0
0.50	1.0	25	4.0	**1.20**	1.5	30	10.0
0.55	1.0	25	4.5	**1.25**	1.5	30	10.0
0.60	1.0	25	4.5	**1.30**	1.5	30	10.0
0.65	1.0	25	5.0	**1.35**	1.5	30	11.2
0.70	1.0	25	5.6	**1.40**	1.5	30	11.2
0.75	1.0	25	5.6	**1.45**	1.5	30	11.2
0.80	1.5	30	6.3	**1.50**	2.0	38	12.0
0.85	1.5	30	6.3	**1.60**	2.0	38	12.0
0.90	1.5	30	7.1	**1.70**	2.0	38	12.0
0.95	1.5	30	7.1	**1.80**	2.0	38	12.0
1.00	1.5	30	8.0	**1.90**	2.0	38	12.0
1.05	1.5	30	8.0				

Тип 2014 **R**

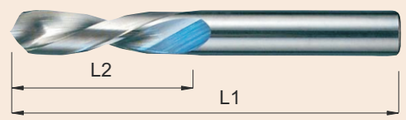


D1 h6	D2 h6	L1	L2	D1 h6	D2 h6	L1	L2
0.50	1.5	30	6.0	**1.25**	1.5	38	15.0
0.55	1.5	30	6.5	**1.30**	1.5	38	17.0
0.60	1.5	30	6.5	**1.35**	1.5	38	17.0
0.65	1.5	30	7.5	**1.40**	1.5	38	17.0
0.70	1.5	30	8.5	**1.45**	1.5	38	17.0
0.75	1.5	30	8.5	**1.50**	2.0	38	18.0
0.80	1.5	30	9.5	**1.55**	2.0	38	18.0
0.85	1.5	30	9.5	**1.60**	2.0	38	18.0
0.90	1.5	30	10.5	**1.65**	2.0	38	18.0
0.95	1.5	30	10.5	**1.70**	2.0	38	18.0
1.00	1.5	38	12.0	**1.75**	2.0	38	18.0
1.05	1.5	38	12.0	**1.80**	2.0	38	18.0
1.10	1.5	38	13.5	**1.85**	2.0	38	18.0
1.15	1.5	38	13.5	**1.90**	2.0	38	18.0
1.20	1.5	38	15.0	**1.95**	2.0	38	18.0

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Сверла из твердого сплава
Vollhartmetall Spiralbohrer
Solid carbide twist drills

Тип CLASSIC **Арт. N° 1010** **L**

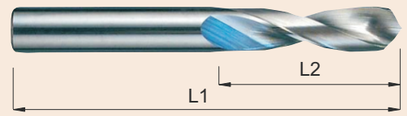


С покрытием по запросу

Beschichtung auf Anfrage

Coating on request

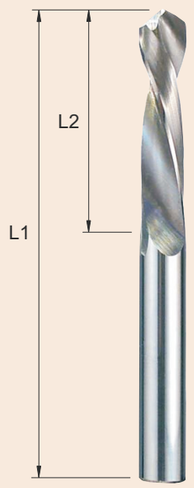
Тип CLASSIC **Арт. N° 2010** **R**



D h6	L1	L2	D h6	L1	L2	D h6	L1	L2	D h6	L1	L2
0.50	30	5	**2.55**	45	18	**0.50**	30	5	**2.55**	45	18
0.55	30	5	**2.60**	45	18	**0.55**	30	5	**2.60**	45	18
0.60	30	5	**2.65**	45	18	**0.60**	30	5	**2.65**	45	18
0.65	30	6	**2.70**	45	18	**0.65**	30	6	**2.70**	45	18
0.70	30	6	**2.75**	45	18	**0.70**	30	6	**2.75**	45	18
0.75	30	8	**2.80**	45	18	**0.75**	30	8	**2.80**	45	18
0.80	30	8	**2.85**	45	18	**0.80**	30	8	**2.85**	45	18
0.85	30	9	**2.90**	45	18	**0.85**	30	9	**2.90**	45	18
0.90	30	9	**2.95**	45	18	**0.90**	30	9	**2.95**	45	18
0.95	30	10	**3.00**	45	18	**0.95**	30	10	**3.00**	45	18
1.00	30	10	**3.10**	50	20	**1.00**	30	10	**3.10**	50	20
1.05	30	10	**3.20**	50	20	**1.05**	30	10	**3.20**	50	20
1.10	30	10	**3.30**	50	20	**1.10**	30	10	**3.30**	50	20
1.15	30	12	**3.40**	50	20	**1.15**	30	12	**3.40**	50	20
1.20	30	12	**3.50**	50	20	**1.20**	30	12	**3.50**	50	20
1.25	30	12	**3.60**	50	20	**1.25**	30	12	**3.60**	50	20
1.30	30	12	**3.70**	50	20	**1.30**	30	12	**3.70**	50	20
1.35	30	12	**3.80**	50	20	**1.35**	30	12	**3.80**	50	20
1.40	30	12	**3.90**	50	20	**1.40**	30	12	**3.90**	50	20
1.45	30	12	**4.00**	50	20	**1.45**	30	12	**4.00**	50	20
1.50	30	12	**4.10**	50	25	**1.50**	30	12	**4.10**	50	25
1.55	40	16	**4.20**	50	25	**1.55**	40	16	**4.20**	50	25
1.60	40	16	**4.30**	50	25	**1.60**	40	16	**4.30**	50	25
1.65	40	16	**4.40**	50	25	**1.65**	40	16	**4.40**	50	25
1.70	40	16	**4.50**	50	25	**1.70**	40	16	**4.50**	50	25
1.75	40	16	**4.60**	50	25	**1.75**	40	16	**4.60**	50	25
1.80	40	16	**4.70**	50	25	**1.80**	40	16	**4.70**	50	25
1.85	40	16	**4.80**	50	25	**1.85**	40	16	**4.80**	50	25
1.90	40	16	**4.90**	50	25	**1.90**	40	16	**4.90**	50	25
1.95	40	16	**5.00**	50	25	**1.95**	40	16	**5.00**	50	25
2.00	40	16	**5.10**	50	25	**2.00**	40	16	**5.10**	50	25
2.05	40	18	**5.20**	50	25	**2.05**	40	18	**5.20**	50	25
2.10	40	18	**5.30**	50	25	**2.10**	40	18	**5.30**	50	25
2.15	40	18	**5.40**	50	25	**2.15**	40	18	**5.40**	50	25
2.20	40	18	**5.50**	50	25	**2.20**	40	18	**5.50**	50	25
2.25	40	18	**5.60**	50	25	**2.25**	40	18	**5.60**	50	25
2.30	40	18	**5.70**	50	25	**2.30**	40	18	**5.70**	50	25
2.35	40	18	**5.80**	50	25	**2.35**	40	18	**5.80**	50	25
2.40	40	18	**5.90**	50	25	**2.40**	40	18	**5.90**	50	25
2.45	40	18	**6.00**	50	25	**2.45**	40	18	**6.00**	50	25
2.50	40	18				**2.50**	40	18			

Сверла из твердого сплава с нарастающей длиной витка спирали
Vollhartmetall-Bohrer mit progressiver Spirale
Solid carbide twist drills with progressive spiral

Тип WINNER DIN 1897	Арт. N° 1005	L

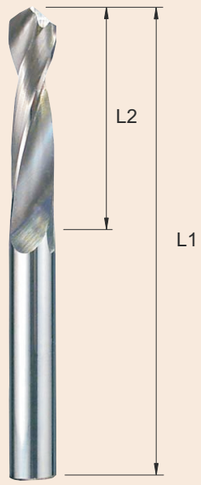


D h6	L1	L2	D h6	L1	L2
1.50	32	9	4.50	58	24
1.55	34	10	4.60	58	24
1.60	34	10	4.70	58	24
1.65	34	10	4.80	62	26
1.70	34	10	4.90	62	26
1.75	36	11	5.00	62	26
1.80	36	11	5.10	62	26
1.85	36	11	5.20	62	26
1.90	36	11	5.30	62	26
1.95	38	12	5.40	66	28
2.00	38	12	5.50	66	28
2.05	38	12	5.60	66	28
2.10	38	12	5.70	66	28
2.15	40	13	5.80	66	28
2.20	40	13	5.90	66	28
2.25	40	13	6.00	66	28
2.30	40	13	6.10	70	31
2.35	40	13	6.20	70	31
2.40	43	14	6.30	70	31
2.45	43	14	6.40	70	31
2.50	43	14	6.50	70	31
2.55	43	14	6.60	70	31
2.60	43	14	6.70	70	31
2.65	43	14	6.80	74	34
2.70	46	16	6.90	74	34
2.75	46	16	7.00	74	34
2.80	46	16	7.10	74	34
2.85	46	16	7.20	74	34
2.90	46	16	7.30	74	34
2.95	46	16	7.40	74	34
3.00	46	16	7.50	79	37
3.10	49	18	7.60	79	37
3.20	49	18	7.70	79	37
3.30	49	18	7.80	79	37
3.40	52	20	7.90	79	37
3.50	52	20	8.00	79	37
3.60	52	20	8.20	79	37
3.70	52	20	8.50	79	37
3.80	55	22	8.80	84	40
3.90	55	22	9.00	84	40
4.00	55	22	9.20	84	40
4.10	55	22	9.50	84	40
4.20	55	22	9.80	89	43
4.30	58	24	10.00	89	43
4.40	58	24			

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Сверла из твердого сплава с нарастающей длиной витка спирали
Vollhartmetall-Bohrer mit progressiver Spirale
Solid carbide twist drills with progressive spiral

Тип WINNER DIN 1897	Арт. N° 2005	R

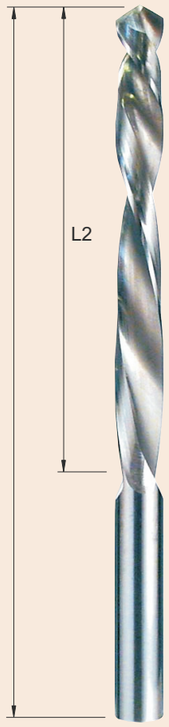


D h6	L1	L2	D h6	L1	L2
1.50	32	9	4.50	58	24
1.55	34	10	4.60	58	24
1.60	34	10	4.70	58	24
1.65	34	10	4.80	62	26
1.70	34	10	4.90	62	26
1.75	36	11	5.00	62	26
1.80	36	11	5.10	62	26
1.85	36	11	5.20	62	26
1.90	36	11	5.30	62	26
1.95	38	12	5.40	66	28
2.00	38	12	5.50	66	28
2.05	38	12	5.60	66	28
2.10	38	12	5.70	66	28
2.15	40	13	5.80	66	28
2.20	40	13	5.90	66	28
2.25	40	13	6.00	66	28
2.30	40	13	6.10	70	31
2.35	40	13	6.20	70	31
2.40	43	14	6.30	70	31
2.45	43	14	6.40	70	31
2.50	43	14	6.50	70	31
2.55	43	14	6.60	70	31
2.60	43	14	6.70	70	31
2.65	43	14	6.80	74	34
2.70	46	16	6.90	74	34
2.75	46	16	7.00	74	34
2.80	46	16	7.10	74	34
2.85	46	16	7.20	74	34
2.90	46	16	7.30	74	34
2.95	46	16	7.40	74	34
3.00	46	16	7.50	79	37
3.10	49	18	7.60	79	37
3.20	49	18	7.70	79	37
3.30	49	18	7.80	79	37
3.40	52	20	7.90	79	37
3.50	52	20	8.00	79	37
3.60	52	20	8.20	79	37
3.70	52	20	8.50	79	37
3.80	55	22	8.80	84	40
3.90	55	22	9.00	84	40
4.00	55	22	9.20	84	40
4.10	55	22	9.50	84	40
4.20	55	22	9.80	89	43
4.30	58	24	10.00	89	43
4.40	58	24			

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Сверла из твердого сплава с нарастающей длиной витка спирали
Vollhartmetall-Bohrer mit progressiver Spirale
Solid carbide twist drills with progressive spiral

Тип WINNER DIN 338	Арт. N° 1006	L



D h6	L1	L2	D h6	L1	L2
1.50	40	18	4.50	80	47
1.55	43	20	4.60	80	47
1.60	43	20	4.70	80	47
1.65	43	20	4.80	86	52
1.70	43	20	4.90	86	52
1.75	46	22	5.00	86	52
1.80	46	22	5.10	86	52
1.85	46	22	5.20	86	52
1.90	46	22	5.30	86	52
1.95	49	24	5.40	93	57
2.00	49	24	5.50	93	57
2.05	49	24	5.60	93	57
2.10	49	24	5.70	93	57
2.15	53	27	5.80	93	57
2.20	53	27	5.90	93	27
2.25	53	27	6.00	93	27
2.30	53	27			
2.35	53	27			
2.40	57	30			
2.45	57	30			
2.50	57	30			
2.55	57	30			
2.60	57	30			
2.65	57	30			
2.70	61	33			
2.75	61	33			
2.80	61	33			
2.85	61	33			
2.90	61	33			
2.95	61	33			
3.00	61	33			
3.10	65	36			
3.20	65	36			
3.30	65	36			
3.40	70	39			
3.50	70	39			
3.60	70	39			
3.70	70	39			
3.80	75	43			
3.90	75	43			
4.00	75	43			
4.10	75	43			
4.20	75	43			
4.30	80	47			
4.40	80	47			

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Сверла из твердого сплава с нарастающей длиной витка спирали
Vollhartmetall-Bohrer mit progressiver Spirale
Solid carbide twist drills with progressive spiral

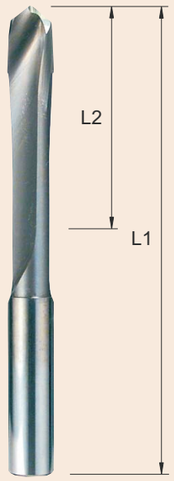
Тип WINNER DIN 338	Арт. N° 2006	R

D h6	L1	L2	D h6	L1	L2
1.50	40	18	4.50	80	47
1.55	43	20	4.60	80	47
1.60	43	20	4.70	80	47
1.65	43	20	4.80	86	52
1.70	43	20	4.90	86	52
1.75	46	22	5.00	86	52
1.80	46	22	5.10	86	52
1.85	46	22	5.20	86	52
1.90	46	22	5.30	86	52
1.95	49	24	5.40	93	57
2.00	49	24	5.50	93	57
2.05	49	24	5.60	93	57
2.10	49	24	5.70	93	57
2.15	53	27	5.80	93	57
2.20	53	27	5.90	93	57
2.25	53	27	6.00	93	57
2.30	53	27			
2.35	53	27			
2.40	57	30			
2.45	57	30			
2.50	57	30			
2.55	57	30			
2.60	57	30			
2.65	57	30			
2.70	61	33			
2.75	61	33			
2.80	61	33			
2.85	61	33			
2.90	61	33			
2.95	61	33			
3.00	61	33			
3.10	65	36			
3.20	65	36			
3.30	65	36			
3.40	70	39			
3.50	70	39			
3.60	70	39			
3.70	70	39			
3.80	75	43			
3.90	75	43			
4.00	75	43			
4.10	75	43			
4.20	75	43			
4.30	80	47			
4.40	80	47			

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Сверла из твердого сплава с неполной спиралью
Vollhartmetall Bohrer mit Spiralspitze
Solid carbide drills with partial spiral

Тип THOR DIN 1897	Арт. N° 2000	R



D h6	L1	L2	D h6	L1	L2
1.50	32	9	4.50	58	24
1.55	34	10	4.60	58	24
1.60	34	10	4.70	58	24
1.65	34	10	4.80	62	26
1.70	34	10	4.90	62	26
1.75	36	11	5.00	62	26
1.80	36	11	5.10	62	26
1.85	36	11	5.20	62	26
1.90	36	11	5.30	62	26
1.95	38	12	5.40	66	28
2.00	38	12	5.50	66	28
2.05	38	12	5.60	66	28
2.10	38	12	5.70	66	28
2.15	40	13	5.80	66	28
2.20	40	13	5.90	66	28
2.25	40	13	6.00	66	28
2.30	40	13	6.10	70	31
2.35	40	13	6.20	70	31
2.40	43	14	6.30	70	31
2.45	43	14	6.40	70	31
2.50	43	14	6.50	70	31
2.55	43	14	6.60	70	31
2.60	43	14	6.70	70	31
2.65	43	14	6.80	74	34
2.70	46	16	6.90	74	34
2.75	46	16	7.00	74	34
2.80	46	16	7.10	74	34
2.85	46	16	7.20	74	34
2.90	46	16	7.30	74	34
2.95	46	16	7.40	74	34
3.00	46	16	7.50	79	37
3.10	49	18	7.60	79	37
3.20	49	18	7.70	79	37
3.30	49	18	7.80	79	37
3.40	52	20	7.90	79	37
3.50	52	20	8.00	79	37
3.60	52	20	8.20	79	37
3.70	52	20	8.50	79	37
3.80	55	22	8.80	84	40
3.90	55	22	9.00	84	40
4.00	55	22	9.20	84	40
4.10	55	22	9.50	84	40
4.20	55	22	9.80	89	43
4.30	58	24	10.00	89	43
4.40	58	24			

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

ТВЕРДЫЙ СПЛАВ R Tooling-Line

Сверла из твердого сплава с неполной спиралью
Vollhartmetall Bohrer mit Spiralspitze
Solid carbide drills with partial spiral

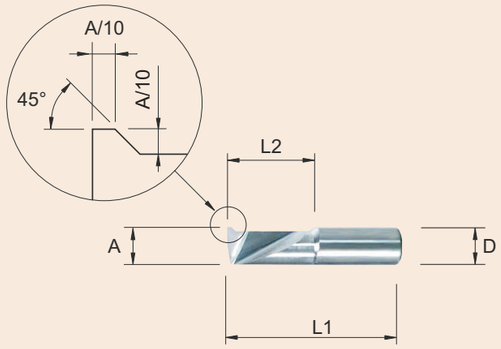
Тип THOR DIN 338	Арт. N° 2001	R

D h6	L1	L2	D h6	L1	L2
2.00	49	24	5.20	86	52
2.05	49	24	5.30	86	52
2.10	49	24	5.40	93	57
2.15	53	27	5.50	93	57
2.20	53	27	5.60	93	57
2.25	53	27	5.70	93	57
2.30	53	27	5.80	93	57
2.35	53	27	5.90	93	57
2.40	57	30	6.00	93	57
2.45	57	30			
2.50	57	30			
2.55	57	30			
2.60	57	30			
2.65	57	30			
2.70	61	33			
2.75	61	33			
2.80	61	33			
2.85	61	33			
2.90	61	33			
2.95	61	33			
3.00	61	33			
3.10	65	36			
3.20	65	36			
3.30	65	36			
3.40	70	39			
3.50	70	39			
3.60	70	39			
3.70	70	39			
3.80	75	43			
3.90	75	43			
4.00	75	43			
4.10	75	43			
4.20	75	43			
4.30	80	47			
4.40	80	47			
4.50	80	47			
4.60	80	47			
4.70	80	47			
4.80	86	52			
4.90	86	52			
5.00	86	52			
5.10	86	52			

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

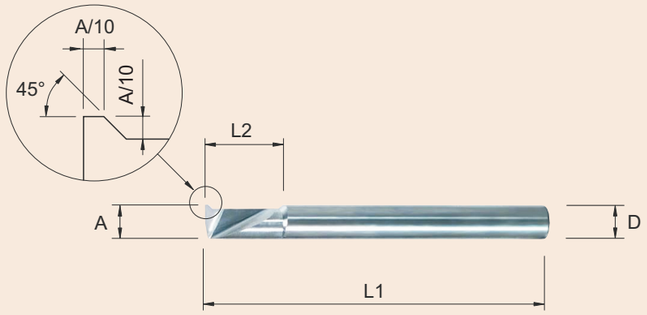
Инструмент из твердого сплава для операций внутреннего точения
Vollhartmetall-Innendrehwerkzeuge
Solid carbide internal turning tools

Тип 1600 L



A -0.05	D	L1	L2	Арт. N°
2	3	13	4	1600-2-4
3	3	15	6	1600-3-6
4	4	17	8	1600-4-8
4	4	21	12	1600-4-12
5	5	21	10	1600-5-10
5	5	26	15	1600-5-15
6	6	25	12	1600-6-12
6	6	31	18	1600-6-18
8	8	32	16	1600-8-16
8	8	40	24	1600-8-24

Тип 1610 L



A -0.05	D	L1	L2	Арт. N°
2	3	38	4	1610-2-4
3	3	38	6	1610-3-6
4	4	40	8	1610-4-8
4	4	40	12	1610-4-12
5	5	50	10	1610-5-10
5	5	54	15	1610-5-15
6	6	50	12	1610-6-12
6	6	57	18	1610-6-18
8	8	58	16	1610-8-16
8	8	63	24	1610-8-24

Зенковки из твердого сплава
Vollhartmetall-Kegelsenker
Solid carbide chamfering tools

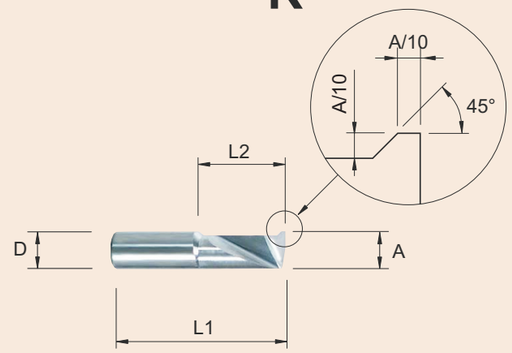
Тип 1901 L
Z=4

A	D	L1	L2	Арт. N°
90°	3.0	0.5	38	1901-3
90°	6.0	1.0	50	1901-6
90°	8.0	1.5	58	1901-8
90°	12.0	2.0	73	1901-12

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

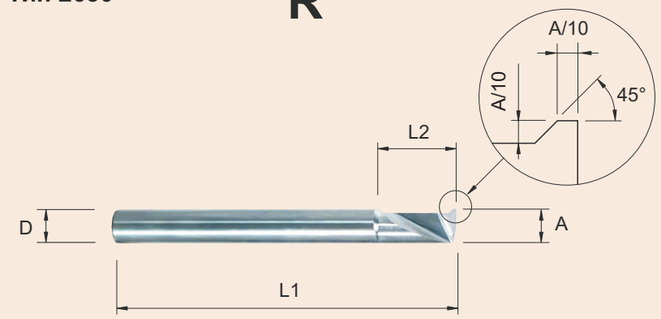
Инструмент из твердого сплава для операций внутреннего точения
Vollhartmetall-Innendrehwerkzeuge
Solid carbide internal turning tools

Тип 2620 R



A -0.05	D	L1	L2	Арт. N°
2	3	13	4	2620-2-4
3	3	15	6	2620-3-6
4	4	17	8	2620-4-8
4	4	21	12	2620-4-12
5	5	21	10	2620-5-10
5	5	26	15	2620-5-15
6	6	25	12	2620-6-12
6	6	31	18	2620-6-18
8	8	32	16	2620-8-16
8	8	40	24	2620-8-24

Тип 2630 R



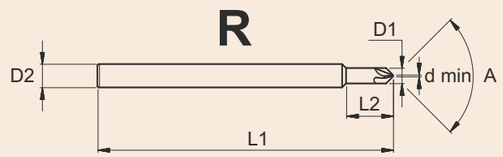
A -0.05	D	L1	L2	Арт. N°
2	3	38	4	2630-2-4
3	3	38	6	2630-3-6
4	4	40	8	2630-4-8
4	4	40	12	2630-4-12
5	5	50	10	2630-5-10
5	5	54	15	2630-5-15
6	6	50	12	2630-6-12
6	6	50	12	2630-6-18
8	8	58	16	2630-8-16
8	8	63	24	2630-8-24
10				2630-10-30
12				2630-12-36

Зенковки из твердого сплава
Vollhartmetall-Kegelsenker
Solid carbide chamfering tools

Тип 3901 R
Z=4

A	D	d мин.	L	Арт. N°
90°	3.0	0.5	38	3901-3
90°	6.0	1.0	50	3901-6
90°	8.0	1.5	58	3901-8
90°	12.0	2.0	73	3901-12

Тип 3911 R
Z=3



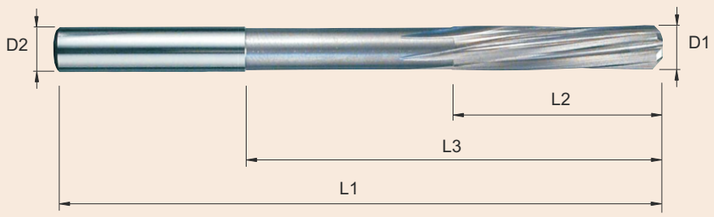
A	D1	d мин	D2 h6	L1	L2	Арт. N°
90°	1.0	0.3	3.0	39	3	3911-1.0
90°	1.5	0.3	3.0	39	4.5	3911-1.5
90°	2.0	0.3	3.0	39	6	3911-2.0
90°	2.5	0.3	3.0	39	7.5	3911-2.5

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Развертки из твердого сплава
VHM-Reibahlen
Solid carbide reamers

Тип 2100

Праворежущий инструмент, левая винтовая канавка 8°
Rechtsschneidend, linksdrall 8°
Right-hand cut, left-hand spiral 8°



число зубьев Zahnezahl number of teeth		
0.97 - 4.50	→	Z = 4
4.60 - 12.0	→	Z = 6

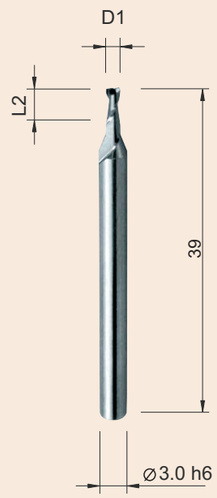
Класс точности D1 D1-Toleranz Tolerance D1		
∅	0.97 - 3.03	→ 0 / +0.003
	3.10 - 10.03	→ 0 / +0.004
∅ H7 = ~ 40% tol. (VSM 34306)	1.0H7 - 3.0H7	→ +0.004 / +0.008
	3.5H7 - 6.0H7	→ +0.005 / +0.010
	6.5H7 - 10.0H7	→ +0.006 / +0.012
	11.0H7 - 12.0H7	→ +0.008 / +0.015

D1	D2	L1	L2	L3	D1	D2	L1	L2	L3	D1	D2	L1	L2	L3	D1	D2	L1	L2	L3
0.97	1.5	50	15	30	2.52	2.5	50	15	30	4.50	4.5	60	20	40	6.99	7.0	100	30	65
0.98	1.5	50	15	30	2.53	2.5	50	15	30	4.5H7	4.5	60	20	40	7.00	7.0	100	30	65
0.99	1.5	50	15	30	2.60	3.0	60	20	40	4.60	5.0	75	25	50	7.0H7	7.0	100	30	65
1.00	1.5	50	15	30	2.70	3.0	60	20	40	4.70	5.0	75	25	50	7.01	7.0	100	30	65
1.0H7	1.5	50	15	30	2.80	3.0	60	20	40	4.80	5.0	75	25	50	7.02	7.0	100	30	65
1.01	1.5	50	15	30	2.90	3.0	60	20	40	4.90	5.0	75	25	50	7.03	7.0	100	30	65
1.02	1.5	50	15	30	2.97	3.0	60	20	40	4.97	5.0	75	25	50	7.97	8.0	100	30	65
1.03	1.5	50	15	30	2.98	3.0	60	20	40	4.98	5.0	75	25	50	7.98	8.0	100	30	65
1.10	1.5	50	15	30	2.99	3.0	60	20	40	4.99	5.0	75	25	50	7.99	8.0	100	30	65
1.20	1.5	50	15	30	3.00	3.0	60	20	40	5.00	5.0	75	25	50	8.00	8.0	100	30	65
1.30	1.5	50	15	30	3.0H7	3.0	60	20	40	5.0H7	5.0	75	25	50	8.0H7	8.0	100	30	65
1.40	1.5	50	15	30	3.01	3.0	60	20	40	5.01	5.0	75	25	50	8.01	8.0	100	30	65
1.50	1.5	50	15	30	3.02	3.0	60	20	40	5.02	5.0	75	25	50	8.02	8.0	100	30	65
1.5H7	1.5	50	15	30	3.03	3.0	60	20	40	5.03	5.0	75	25	50	8.03	8.0	100	30	65
1.60	2.0	50	15	30	3.10	3.5	60	20	40	5.10	6.0	75	25	50	8.97	9.0	100	30	65
1.70	2.0	50	15	30	3.20	3.5	60	20	40	5.20	6.0	75	25	50	8.98	9.0	100	30	65
1.80	2.0	50	15	30	3.30	3.5	60	20	40	5.30	6.0	75	25	50	8.99	9.0	100	30	65
1.90	2.0	50	15	30	3.40	3.5	60	20	40	5.40	6.0	75	25	50	9.00	9.0	100	30	65
1.97	2.0	50	15	30	3.50	3.5	60	20	40	5.50	6.0	75	25	50	9.0H7	9.0	100	30	65
1.98	2.0	50	15	30	3.5H7	3.5	60	20	40	5.5H7	6.0	75	25	50	9.01	9.0	100	30	65
1.99	2.0	50	15	30	3.60	4.0	60	20	40	5.60	6.0	75	25	50	9.02	9.0	100	30	65
2.00	2.0	50	15	30	3.70	4.0	60	20	40	5.70	6.0	75	25	50	9.03	9.0	100	30	65
2.0H7	2.0	50	15	30	3.80	4.0	60	20	40	5.80	6.0	75	25	50	9.97	10.0	100	30	65
2.01	2.0	50	15	30	3.90	4.0	60	20	40	5.90	6.0	75	25	50	9.98	10.0	100	30	65
2.02	2.0	50	15	30	3.97	4.0	60	20	40	5.97	6.0	75	25	50	9.99	10.0	100	30	65
2.03	2.0	50	15	30	3.98	4.0	60	20	40	5.98	6.0	75	25	50	10.00	10.0	100	30	65
2.10	2.5	50	15	30	3.99	4.0	60	20	40	5.99	6.0	75	25	50	10.0H7	10.0	100	30	65
2.20	2.5	50	15	30	4.00	4.0	60	20	40	6.00	6.0	75	25	50	10.01	10.0	100	30	65
2.30	2.5	50	15	30	4.0H7	4.0	60	20	40	6.0H7	6.0	75	25	50	10.02	10.0	100	30	65
2.40	2.5	50	15	30	4.01	4.0	60	20	40	6.01	6.0	75	25	50	10.03	10.0	100	30	65
2.47	2.5	50	15	30	4.02	4.0	60	20	40	6.02	6.0	75	25	50	11.0H7	11.0	100	30	65
2.48	2.5	50	15	30	4.03	4.0	60	20	40	6.03	6.0	75	25	50	12.0H7	12.0	100	30	65
2.49	2.5	50	15	30	4.10	4.5	60	20	40	6.50	7.0	75	25	50					
2.50	2.5	50	15	30	4.20	4.5	60	20	40	6.5H7	7.0	75	25	50					
2.5H7	2.5	50	15	30	4.30	4.5	60	20	40	6.97	7.0	100	30	65					
2.51	2.5	50	15	30	4.40	4.5	60	20	40	6.98	7.0	100	30	65					

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Концевые сверла микро-серии из твердого сплава высокой точности
Vollhartmetall-Microprdzisionsfrdser
Solid carbide precision micro end mills

Тип 3271

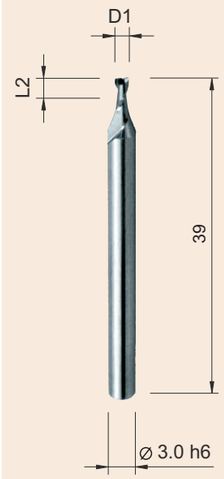


D1 +/- 0.015	L2	D1 +/- 0.015	L2
0.3	1	1.6	4
0.4	1	1.7	5
0.5	1.5	1.8	5
0.6	1.5	1.9	5
0.7	2	2.0	5
0.75	2	2.1	5
0.8	2	2.2	5
0.9	2.5	2.3	7
1.0	3	2.4	7
1.1	3	2.5	7
1.2	4	2.6	7
1.3	4	2.7	7
1.4	4	2.8	7
1.5	4	2.9	7

Z=2 зуб через центр
Zentrumsschnitt
cut over center

30° спираль
Drall
spiral

Тип 3274



D1 +/- 0.015	L2	D1 +/- 0.015	L2
0.2	0.3	1.1	1.65
0.25	0.35	1.2	1.8
0.3	0.45	1.3	1.95
0.4	0.6	1.4	2.1
0.5	0.75	1.5	2.25
0.6	0.9	1.6	2.4
0.7	1.05	1.7	2.55
0.8	1.2	1.8	2.7
0.9	1.35	1.9	2.85
1.0	1.5	2.0	3.0

Z=2 зуб через центр
Zentrumsschnitt
cut over center

30° спираль
Drall
spiral

короткая серия
Extra kurz
extra short

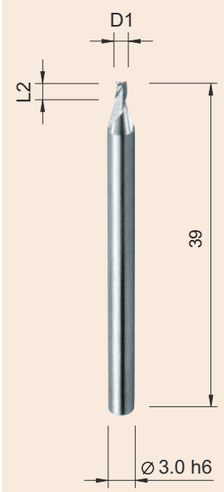
Тип 3371

D1 +/- 0.015	L2	D1 +/- 0.015	L2
0.5	1.5	1.7	5
0.6	1.5	1.8	5
0.7	2	1.9	5
0.75	2	2.0	5
0.8	2	2.1	5
0.9	2.5	2.2	5
1.0	3	2.3	7
1.1	3	2.4	7
1.2	4	2.5	7
1.3	4	2.6	7
1.4	4	2.7	7
1.5	4	2.8	7
1.6	4	2.9	7

Z=3 зуб через центр
Zentrumsschnitt
cut over center

30° спираль
Drall
spiral

Тип 3374



D1 +/- 0.015	L2	D1 +/- 0.015	L2
0.4	0.6	1.4	1.8
0.45	0.7	1.5	1.8
0.5	0.7	1.6	2.0
0.6	0.8	1.7	2.0
0.7	0.9	1.8	2.0
0.8	1.0	1.9	2.4
0.9	1.3	2.0	2.4
1.0	1.3	2.2	2.6
1.1	1.6	2.5	3.0
1.2	1.6	2.8	3.5
1.3	1.8	2.9	3.5

Z=3 зуб через центр
Zentrumsschnitt
cut over center

30° спираль
Drall
spiral

короткая серия
Extra kurz
extra short

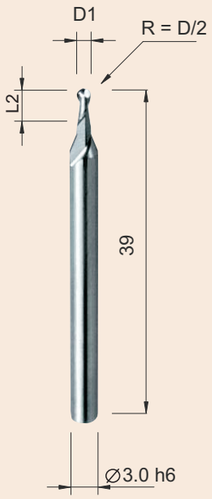
С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Концевые сверла микро-серии из твердого сплава высокой точности
Vollhartmetall-Microprazisionsfraser
Solid carbide precision micro end mills

Тип 3278

сферический профиль торца

Stinradius ball end



D1 +/- 0.015	L2	D1 +/- 0.015	L2
0.3	1	**1.4**	4
0.4	1	**1.5**	4
0.5	1.5	**1.6**	4
0.6	1.5	**1.8**	5
0.7	2	**2.0**	7
0.8	2	**2.2**	7
0.9	2.5	**2.5**	7
1.0	3	**2.8**	7
1.2	4		

Z=2

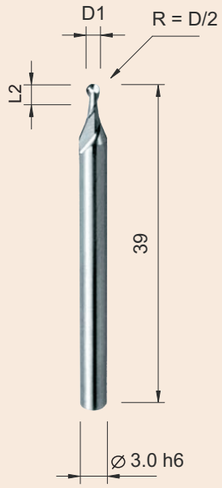
зуб через центр
Zentrumsschnitt
cut over center

30° спираль
Drall
spiral

Тип 3279

сферический профиль торца, короткая серия

Stinradius, Extra kurz ball end, extra short



D1 +/- 0.015	L2	D1 +/- 0.015	L2
0.2	0.3	**1.0**	1.5
0.25	0.35	**1.1**	1.65
0.3	0.45	**1.2**	1.8
0.4	0.6	**1.3**	1.95
0.5	0.75	**1.4**	2.1
0.6	0.9	**1.5**	2.25
0.7	1.05	**1.6**	2.4
0.8	1.2	**1.8**	2.7
0.9	1.35	**2.0**	3.0

Z=2

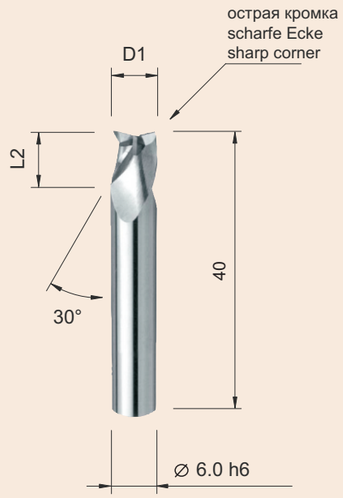
Зуб через центр
Zentrumsschnitt
cut over center

30° спираль
Drall
spiral

Концевые сверла микро-серии из твердого сплава высокой точности
Vollhartmetall-Microprazisionsfraser
Solid carbide precision micro end mills

Тип 3335

короткая серия
Extra kurz
extra short



D1 +/- 0.015	L2	D1 +/- 0.015	L2
1.5	3	**4.0**	5
2.0	3	**4.5**	5
2.5	3	**5.0**	6
3.0	4	**6.0**	7
3.5	4		

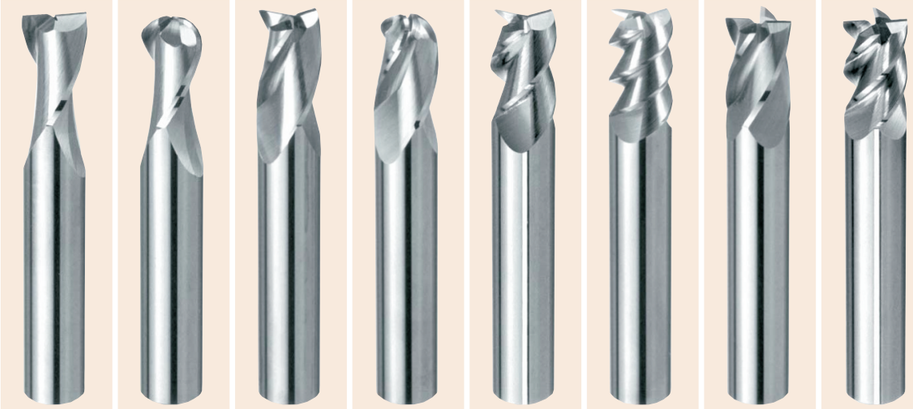
Z=3

зуб через центр
Zentrumsschnitt
cut over center

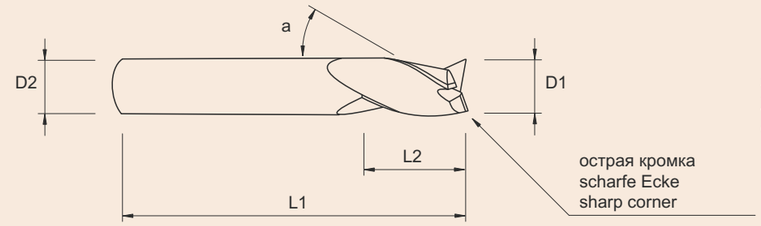
С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Концевые фрезы из твердого сплава
VHM-Schaftfraser
Solid carbide end mills

Тип 3231	Тип 3238	Тип 3331	Тип 3338	Тип 3341	Тип 3361	Тип 3431	Тип 3441
Z = 2	Z = 2/R	Z = 3	Z = 3/R	Z = 3	Z = 3	Z = 4	Z = 4
a = 30°	a = 30°	a = 30°	a = 30°	a = 45°	a = 60°	a = 30°	a = 45°



Размеры Abmessungen dimensions		
D1 h10 D2 h6	L1	L2
2.0	32	8
2.5	32	8
3.0	32	12
3.5	32	12
4.0	40	12
4.5	50	14
5.0	50	14
6.0	50	16
7.0	60	20
8.0	60	20
9.0	60	20
10.0	70	22
12.0	70	22



Цил. хвостовик
Zylinderschaft
straight shank

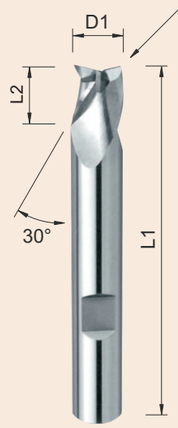
острая кромка
scharfe Ecke
sharp corner

зуб через центр
Zentrumsschnitt
cut over center

Тип 3336 DIN 6527 K

Z = 3 зуб через центр
Zentrumsschnitt
cut over center

острая кромка
scharfe Ecke
sharp corner

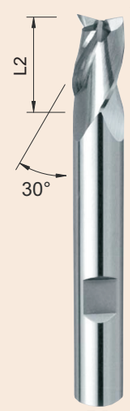


DIN 6535 HB

D1 h10	D2 h6	L1	L2
1.5	6.0	50	3
1.8	6.0	50	3
2.0	6.0	50	3
2.5	6.0	50	3
2.8	6.0	50	4
3.0	6.0	50	4
3.5	6.0	50	4
3.8	6.0	54	5
4.0	6.0	54	5
4.5	6.0	54	5
4.8	6.0	54	6
5.0	6.0	54	6
5.5	6.0	54	7
5.8	6.0	54	7
6.0	6.0	54	7
7.0	8.0	58	8
8.0	8.0	58	9
9.0	10.0	66	10
10.0	10.0	66	11
12.0	12.0	73	12

Тип 3337 DIN 6527 L

Острая кромка
scharfe Ecke
sharp corner



DIN 6535 HB

D1 h10	D2 h6	L1	L2
2.0	6.0	57	6
2.5	6.0	57	6
3.0	6.0	57	7
3.5	6.0	57	7
4.0	6.0	57	8
4.5	6.0	57	8
5.0	6.0	57	10
6.0	6.0	57	10
8.0	8.0	63	16
10.0	10.0	72	19
12.0	12.0	83	22

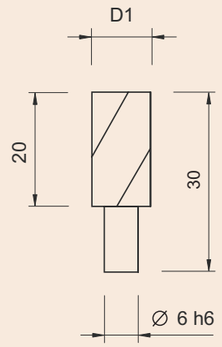
Z = 3

зуб через центр
Zentrumsschnitt
cut over center

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Концевые фрезы из твердого сплава для плоского торцевого фрезерования
VHM-Schaftfraser fur fllache Front-Bearbeitung
Solid carbide end mills for flat front machining

Тип 3281	Тип 3381	размеры Abmessungen dimensions
Z = 2	Z = 3	

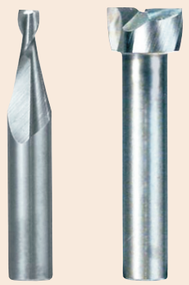


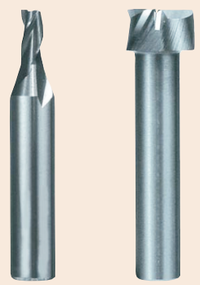
D1 h10
6.0
8.0
10.0
12.0

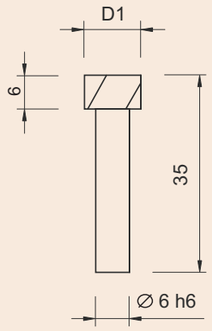
зуб через центр
Zentrumsschnitt
cut over center

30° спираль Drall spiral

Тип 3282	Тип 3382	размеры Abmessungen dimensions
Z = 2	Z = 3	





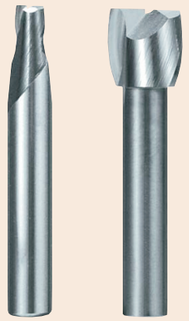


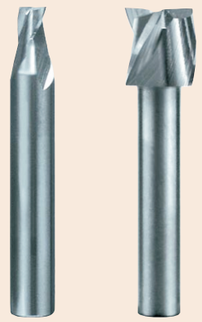
D1 h10	D1 h10
3.0	6.0
3.5	7.0
4.0	8.0
4.5	10.0
5.0	12.0
5.5	

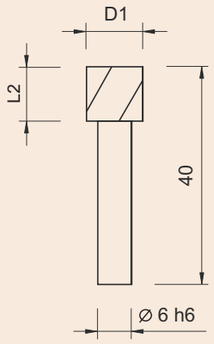
зуб через центр
Zentrumsschnitt
cut over center

30° спираль Drall spiral

Тип 3283	Тип 3383	размеры Abmessungen dimensions
Z = 2	Z = 3	







D1 h10	L2
4.0	4
5.0	5
6.0	6
7.0	7
8.0	8
10.0	10
12.0	12

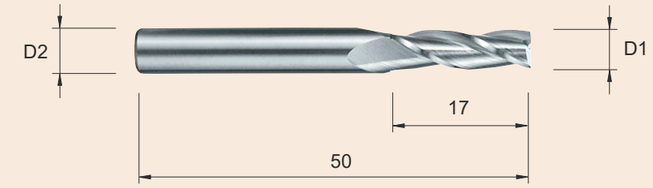
зуб через центр
Zentrumsschnitt
cut over center

30° спираль Drall spiral

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

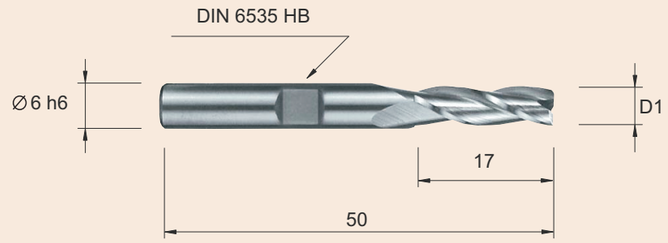
Концевые фрезы из твердого сплава для станков с кулачковым приводом
Vollhartmetall-Schaftfraser fur Kurvenbearbeitung
Solid carbide end mills for came machining

Z = 3



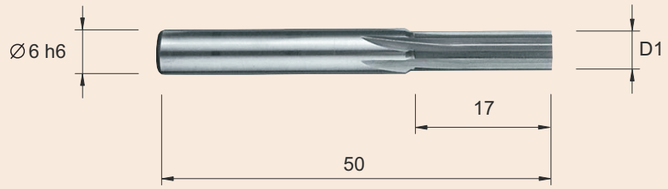
D1	D2 h6	Арт. N°
5.0	5.0	3801
5.2	6.0	3802
6.0	6.0	3803

зуб через центр
Zentrumsschnitt
cut over center



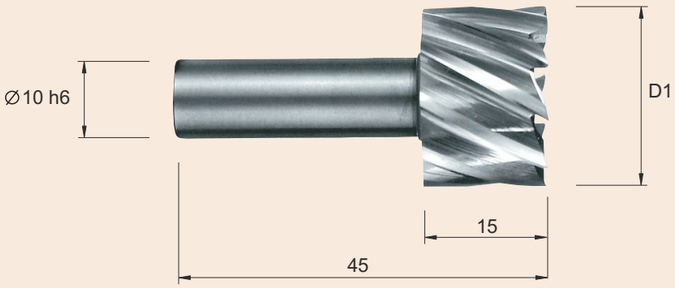
D1	Арт. N°
5.2	3812
6.0	3813

Z = 6



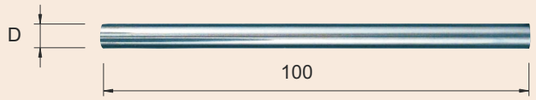
D1	Арт. N°
4.2	3821
5.2	3822

Z = 10



D1	Арт. N°
16.3	3831
18.3	3832
20.3	3833
22.3	3834
24.3	3835

Шлифованные прутки из твердого сплава
Vollhartmetall-Rundstдbe geschliffen
Solid carbide ground rods



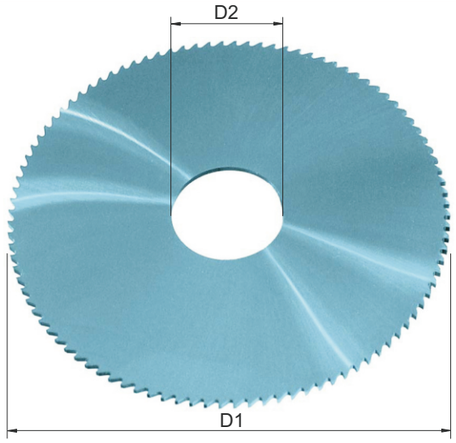
D h6	Арт. N°	D h6	Арт. N°	D h6	Арт. N°
1.00	0010-1.0	4.0	0010-4.0	8.00	0010-8.0
1.50	0010-1.5	4.50	0010-4.5	9.00	0010-9.0
2.00	0010-2.0	5.00	0010-5.0	10.00	0010-10.0
2.50	0010-2.5	5.50	0010-5.5	11.00	0010-11.0
3.00	0010-3.0	6.00	0010-6.0	12.00	0010-12.0
3.50	0010-3.5	7.00	0010-7.0		

Прямоугольные шлифованные прутки из твердого сплава
Vollhartmetall-Quadratstabe geschliffen
Solid carbide ground square bar blanks

⌀ мм	L	Арт. N°
6 x 6	130	0001
7 x 7	140	0002
8 x 8	140	0003
10 x 10	140	0004
12 x 12	140	0005

Дисковые пилы из твердого сплава
VHM-Kreissageblatter
Solid carbide slitting saws

Тип 1101 | **мелкий зуб / feine Verzahnung / fine teeth** | **DIN 1837**



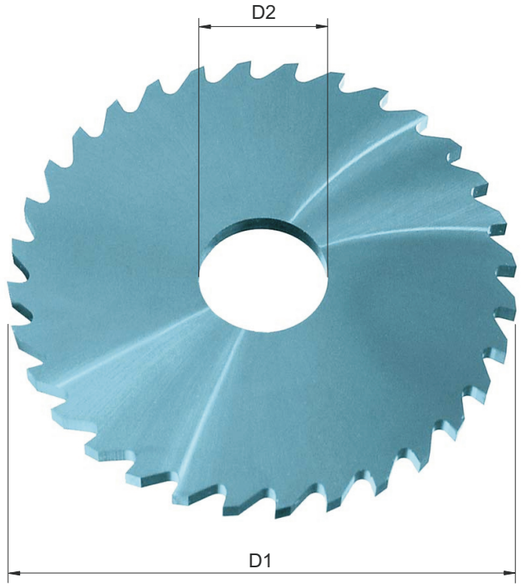
С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

D1	15	20	25	30	40	50	63	80	100	125
D2 H7	5	5	8	8	10	13	16	22	22	22
толщина Dicke thickness +/-0.01	число зубьев Zahnezahl number of teeth									
0.10	64	80	80	100	128					
0.15	64	80	80	100	128					
0.20	64	80	80	100	128	128	160			
0.25	64	64	80	100	100	128	128	160		
0.30	64	64	80	80	100	128	128	160		
0.35	64	64	64	80	100	100	128	160		
0.40	64	64	64	80	100	100	128	160		
0.45	48	48	64	80	80	100	128	128		
0.50	48	48	64	80	80	100	128	128	160	
0.60	48	48	64	64	80	100	100	128	160	160
0.70	48	48	48	64	80	80	100	128	128	160
0.80	40	40	48	64	80	80	100	128	128	160
0.90	40	40	48	64	64	80	100	100	128	160
1.00	40	40	48	64	64	80	100	100	128	160
1.10	40	40	48	48	64	80	80	100	128	128
1.20	40	40	48	48	64	80	80	100	128	128
1.30	40	40	40	48	64	64	80	100	100	
1.40	40	40	40	48	64	64	80	100	100	128
1.50	40	40	40	48	64	64	80	100	100	128
1.60	40	40	40	48	64	64	80	100	100	128
1.70	40	32	40	48	48	64	80	80	100	
1.80	40	32	40	48	48	64	80	80	100	128
1.90	40	32	40	48	48	64	80	80	100	
2.00	40	32	40	48	48	64	80	80	100	128
2.50	40	32	40	40	48	64	64	80	100	100
3.00	40	32	32	40	48	48	64	80	80	100
3.50	24	24	32	40	40	48	64	64	80	100
4.00	24	24	32	40	40	48	64	64	80	100
5.00	24	24	32	32	40	48	48	64	80	100
6.00	24	24	24	32	40	40	48	64	64	100

ТВЕРДЫЙ СПЛАВ Tooling-Line

Дисковые пилы из твердого сплава
VHM-Kreissdgebldtter
Solid carbide slitting saws

Тип 1102 | **крупный зуб / grobe Verzahnung / large teeth** | **DIN 1838**



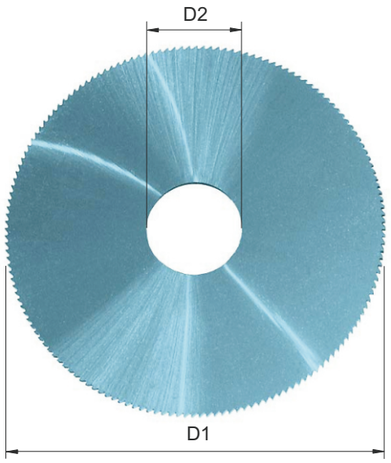
D1	15	20	25	30	40	50	63	80	100	125
D2 H7	5	5	8	8	10	13	16	22	22	22
толщина Dicke thickness +/-0.01	число зубьев Zahnezahl number of teeth									
0.20	20	20	20	30	40					
0.25	20	20	20	30	40					
0.30	20	20	20	30	40					
0.40	20	20	20	30	40	48	64			
0.50	20	20	20	30	40	48	64			
0.60	20	20	20	30	40	48	48	64	80	
0.70	20	20	20	30	40	40	48	64	64	
0.80	20	20	20	24	32	40	48	64	64	80
0.90	20	20	20	24	32	40	48	48	64	80
1.00	20	20	20	24	32	40	48	48	64	80
1.20	20	20	20	24	32	40	40	48	64	64
1.50	20	20	20	24	32	32	40	48	48	64
1.60	20	20	20	24	32	32	40	48	48	64
1.80	20	20	20	24	24	32	40	40	48	64
2.00	20	20	20	24	24	32	40	40	48	64
2.50	20	20	20	24	24	32	32	40	48	48
3.00	20	20	20	24	24	24	32	40	40	48
4.00	20	20	20	24	20	24	32	32	40	48
5.00	20	20	20	24	20	24	24	32	40	40
6.00	20	20	20	24	20	20	24	32	32	40

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Дисковые пилы из твердого сплава
VHM-Kreissdgeblдtter
Solid carbide slitting saws

Тип 1103

ультрамелкий зуб
extra feine Verzahnung
extra fine teeth



для обработки хрупких или тонких заготовок	рекомендуются к применению на автоматических станках
fur die Bearbeitung von empfindlichen oder dunnwandigen Werkstrcken	fur Landrehautomaten besonders empfehlenswert
for machining of fragile or thin workpieces	recommended on automatic lathes

D1	8	10	12	15	20	20	20	25	25	25	30	32
D2 H7	3	3	5	5	5	5	6	5	6	8	8	8
толщина Dicke thickness +/-0.01	число зубьев Zahnezahl number of teeth											
0.10	48	64	64	80	*	100	80	80				
0.15	48	64	64	80	*	100	80	80	100	100	*	80
0.20	48	64	64	80	*	100	80	80	100	100	*	80
0.25	48	64	64	80	80	100	80	80	100	100	*	80
0.30	48	64	64	80	80	100	80	80	100	100	100	80
0.35	48	64	64	80	80		80	80	100	100	100	80
0.40	48	64	64	80	80	100	80	80	100	100	100	80
0.50	48	64	64	80	80	100	80	80	100	100	100	80
0.60	48	64	64	80	80		80	80	100	100	100	80
0.70	48	64	64	80	80		80	80	100	100	100	80
0.80	48	64	64	80	80		80	80	100	100	100	80
0.90	48	64	64	80	80		80	80	100	100	100	80
1.00	48	64	64	80	80		80	80	100	100	100	80
1.20				80	80		80	80	100	100	100	80
1.50				80	80		80	80	100	100	100	80
2.00				80	80		80	80	100	100	100	80
2.50				80	80		80	80	100	100	100	80
3.00				80	80		80	80	100	100	100	80

*=см. тип 1101
*=siehe Typ 1101
*=see type 1101

С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

ТВЕРДЫЙ СПЛАВ Tooling-Line

Дисковые пилы из твердого сплава
VHM-Kreissdgeblatter
Solid carbide slitting saws

Тип 1103

ультрамелкий зуб
extra feine Verzahnung
extra fine teeth

D1	35	40	40	40	40	45	45	50	50	63	80
D2 H7	8	8	8	10	10	8	8	10	13	16	16
толщина Dicke thickness +/-0.01	число зубьев Zahnezahl number of teeth										
0.15	96	100	160	100	160	100	160				
0.20	96	100	160	100	160	100	160	100			
0.25	96	100	160	*	160	100	160	100	120	120	
0.30	96	100	160	*	160	100	160	100	120	120	
0.35	96	100	160	*	160	100	160	100	120	120	
0.40	96	100	160	*	160	100	160	100	120	120	
0.50	96	100	160	100	160	100	160	100	120	120	128
0.60	96	100	160	100	160	100	160	100	120	120	128
0.70	96	100	160	100	160	100	160	100	120	120	128
0.80	96	100	160	100	160	100	160	100	120	120	128
0.90	96	100	160	100	160	100	160	100	120	120	128
1.00	96	100	160	100	160	100	160	100	120	120	128
1.20	96	100	160	100	160	100	160	100	120	120	128
1.50	96	100	160	100	160	100	160	100	120	120	128
2.00	96	100	160	100	160	100	160	100	120	120	128
2.50	96	100	160	100	160	100	160	100	120	120	128
3.00	96	100	160	100	160	100	160	100	120	120	128

*=см. тип 1101
*=siehe Typ 1101
*=see type 1101

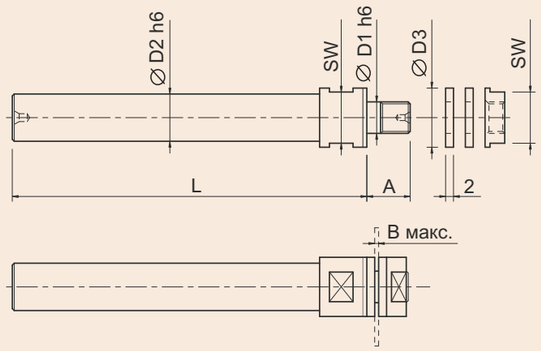
С покрытием по запросу
Beschichtung auf Anfrage
Coating on request

Фрезерные оправки для праворежущего инструмента с фронтальным креплением
Frasdorne (Spannung von vorne)
Milling arbors with front clamping

Тип 2810

Фрезерные оправки праворежущие (с фронтальным креплением под правую резьбу)
Frasdorne fur Drehrichtung rechts (Spannung von vorne mit Rechtsgewinde)
Arbors for right hand rotation (front clamping with right hand thread)

R

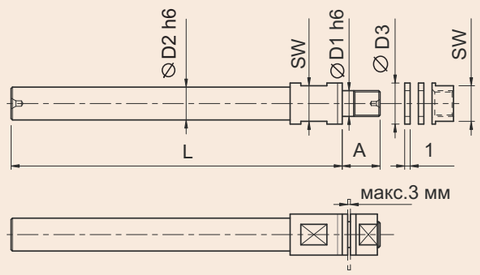


D1	D2	D3	L	A	SW	B	Арт. N°
5.0	6	10	70	9	8	6	**2810-5-6**
5.0	10	10	80	9	8	6	**2810-5-10**
6.0	10	12	80	9.5	10	6	**2810-6-10**
8.0	10	15	80	10	13	6	**2810-8-10**
8.0	12	15	90	10	13	6	**2810-8-12**
10.0	6	18	80	10.5	15	6	**2810-10-6**
10.0	10	18	80	10.5	15	6	**2810-10-10**
10.0	16	18	100	10.5	15	6	**2810-10-16**
13.0	16	22	110	11	19	3	**2810-13-16**
16.0	10	22	80	8	19	3	**2810-16-10**
16.0	20	26	120	12	22	6	**2810-16-20**

Тип 2815

Оправки для дисковых пил небольшого диаметра
Frasdorne fur sehr kleine Kreissдgeblatter
Arbors for very small slitting saws

R



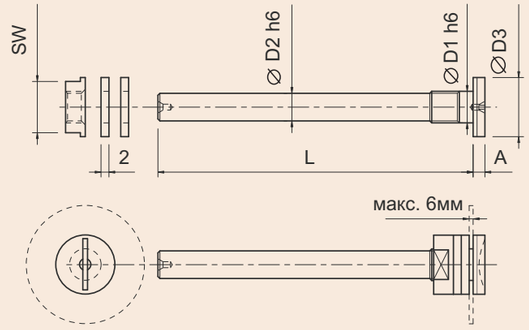
D1	D2	D3	L	A	SW	Арт.N°
3.0	5	5	60	7	4	**2815-3-5**
5.0	6	7.5	70	7	6	**2815-5-6**

Фрезерные оправки с креплением со стороны хвостовика
Frasdorne (Spannung von hinten)
Milling arbors with rear clamping

Тип 2820

Оправки для праворежущего инструмента (крепление со стороны хвостовика под левую резьбу)
Frasdorne fur Drehrichtung rechts (Spannung von hinten mit Linksgewinde)
Arbors for right hand rotation (rear clamping with left hand thread)

R

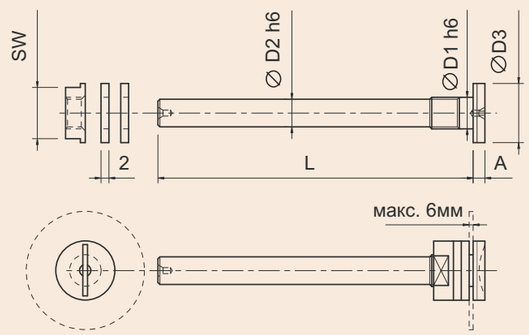


D1	D2	D3	L	A	SW	Арт. N°
5.0	4	10	50	3	8	**2820-5-4**
5.0	5	12	60	3	10	**2820-6-5**
5.0	4	10	50	3	8	**2820-8-6**
5.0	4	10	50	3	8	**2820-8-7**
10.0	6	18	70	3.5	15	**2820-10-6**
10.0	8	18	90	3.5	15	**2820-10-8**
13.0	10	22	110	3.5	19	**2820-13-10**
16.0	12	26	120	3.5	22	**2820-16-12**

Тип 1820

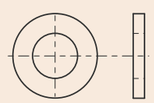
Оправки для леворежущего инструмента (крепление в хвостовике под правую резьбу)
Frasdorne fur Drehrichtung links (Spannung von hinten mit Rechtsgewinde)
Arobre for left hand rotation (rear clamping with right hand thread)

L

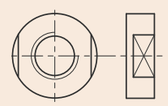


D1	D2	D3	L	A	SW	Арт. N°
5.0	4	10	50	3	8	**1820-5-4**
6.0	5	12	60	3	10	**1820-6-5**
8.0	6	15	70	3.5	13	**1820-8-6**
10.0	6	18	70	3.5	15	**1820-10-6**

Запасные части
Ersatzteile
Spare parts



Арт. N°
1820-D1*-a
2810-D1*-a
2815-D1*-a
2820-D1*-a



Арт. N°
1820-D1*-b
2810-D1*-b
2815-D1*-b
2820-D1*-b

*Диаметр D1 подлежит уточнению
*Durchmesser D1 angeben
*Diameter D1 to be specified

2 проставочных кольца и 1 гайка поставляются в комплекте с каждой оправкой
Jeder Frasdorn wird mit 2 Abstandsringen und 1 Mutter geliefert
2 distance rings and 1 nut are included with each arbor

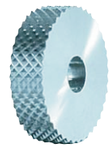
Накатные ролики из твердого сплава
Vollhartmetall-Rдndelradchen
Solid carbide knurling wheels

Тип 1107

AA

BL

BR



GE

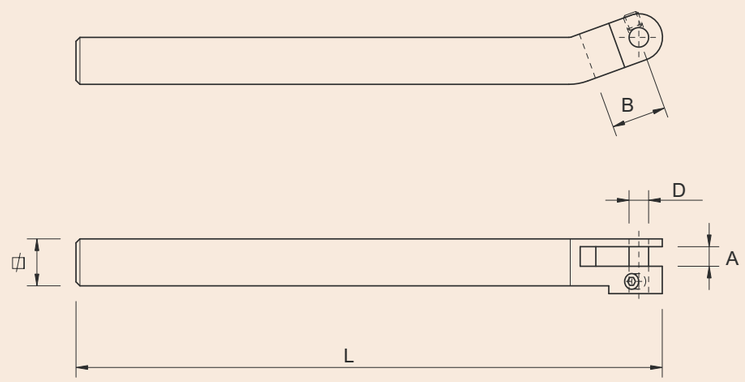
Стандартные ролики Standard-Rдndelrдdchen standard knurls	⌀	Ширина ролика Dicke thickness	отверстие Bohrung bore	Шаг(через каждые 0.1 mm) Teilung (alle 0.1 mm) pitch (every 0.1 mm)
AA (0°) BL 15° / BR 15° BL 30° / BR 30° BL 45° / BR 45° GE 30° GE 45°	8	2	3	0.2 - 0.6
	8	2	4	0.2 - 0.6
	8	3	3	0.2 - 0.6
	8	3	4	0.2 - 0.6
	8	4	3	0.2 - 0.6
	8	4	4	0.2 - 0.6
	10	2	3	0.2 - 0.8
	10	2	4	0.2 - 0.8
	10	3	3	0.2 - 0.8
	10	3	4	0.2 - 0.8
	10	4	3	0.2 - 0.8
	10	4	4	0.2 - 0.8
	12	4	4	0.3 - 1.0
	15	4	4	0.4 - 1.0
	15	4	5	0.4 - 1.0
	15	5	4	0.4 - 1.0
	15	5	5	0.4 - 1.0
	20	4	5	0.5 - 1.2
	20	5	5	0.5 - 1.2
	20	6	6	0.5 - 1.2
	20	8	6	0.5 - 1.2

“Быстрые” накатные ролики "Quick"-Randelradchen "Quick" knurling wheels	⌀	Ширина ролика Dicke thickness	отверстие Bohrung bore	Шаг(через каждые 0.1мм) Teilung (alle 0.1 mm) pitch (every 0.1 mm)
AA (0°)	8.9	2.5	4	0.2 - 0.8
BL 15° / BR 15°	14.5	3	5	0.4 - 1.0
BL 30° / BR 30°	21.5	5	8	0.5 - 1.2

Специальные исполнения роликов по запросу
Sonderausfuhrungen auf Anfrage
Specials execution on request

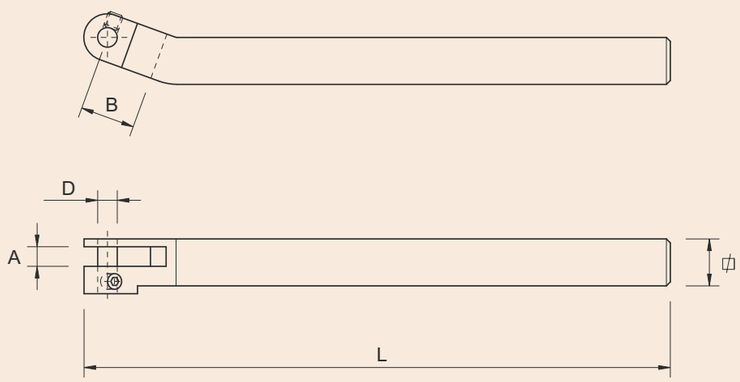
Державки для накатных роликов
Randelhalter
Knurl holders

Тип 2402 R



⌀	L	A	D	B	Арт. N°
6 x 6	132	2	3	10	**2402-623**
6 x 6	132	3	3	10	**2402-633**
7 x 7	140	2	3	10	**2402-723**
7 x 7	140	3	3	10	**2402-733**
7 x 7	140	4	3	10	**2402-743**
7 x 7	140	2	4	10	**2402-724**
7 x 7	140	3	4	10	**2402-734**
7 x 7	140	4	4	10	**2402-744**
8 x 8	140	2	3	10	**2402-823**
8 x 8	140	3	3	10	**2402-833**
8 x 8	140	4	3	10	**2402-843**
8 x 8	140	2	4	10	**2402-824**
8 x 8	140	3	4	10	**2402-834**
8 x 8	140	4	4	10	**2402-844**
10 x 10	150	3	3	10	**2402-1033**
10 x 10	150	4	3	10	**2402-1043**
10 x 10	150	3	4	10	**2402-1034**
10 x 10	150	4	4	10	**2402-1044**
12 x 12	150	4	4	12	**2402-1244**
12 x 12	150	5	4	12	**2402-1254**
12 x 12	150	4	5	12	**2402-1245**
12 x 12	150	5	5	12	**2402-1255**
16 x 16	150	4	4	12	**2402-1644**
16 x 16	150	4	5	12	**2402-1645**
16 x 16	150	5	5	12	**2402-1655**
16 x 16	150	6	4	12	**2402-1664**
16 x 16	150	6	6	12	**2402-1666**
16 x 16	150	8	6	12	**2402-1686**

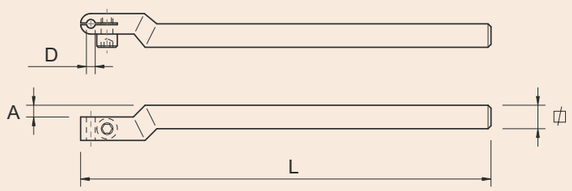
Тип 1402 L



⌀	L	A	D	B	Арт. N°
6 x 6	132	2	3	10	**1402-623**
6 x 6	132	3	3	10	**1402-633**
7 x 7	140	2	3	10	**1402-723**
7 x 7	140	3	3	10	**1402-733**
7 x 7	140	4	3	10	**1402-743**
7 x 7	140	2	4	10	**1402-724**
7 x 7	140	3	4	10	**1402-734**
7 x 7	140	4	4	10	**1402-744**
8 x 8	140	2	3	10	**1402-823**
8 x 8	140	3	3	10	**1402-833**
8 x 8	140	4	3	10	**1402-843**
8 x 8	140	2	4	10	**1402-824**
8 x 8	140	3	4	10	**1402-834**
8 x 8	140	4	4	10	**1402-844**
10 x 10	150	3	3	10	**1402-1033**
10 x 10	150	4	3	10	**1402-1043**
10 x 10	150	3	4	10	**1402-1034**
10 x 10	150	4	4	10	**1402-1044**
10 x 10	150	5	4	10	**1402-1054**
12 x 12	150	4	4	12	**1402-1244**
12 x 12	150	5	4	12	**1402-1254**
12 x 12	150	4	5	12	**1402-1245**
12 x 12	150	5	5	12	**1402-1255**
16 x 16	150	4	4	12	**1402-1644**

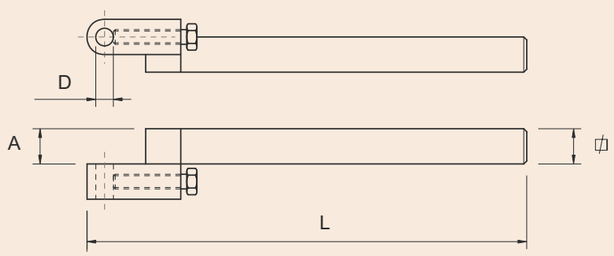
Державки инструмента
Werkzeughalter
Tool holders

Тип 1400-J L



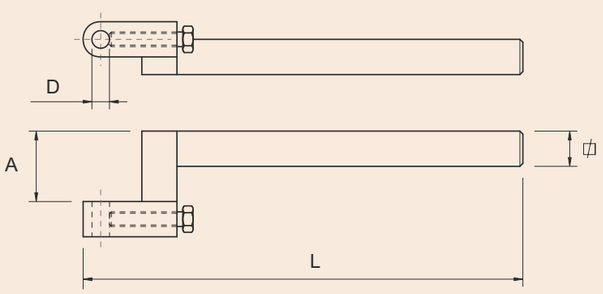
⌀	L	A	D	Арт. N°
6 x 6	132	3	1.5	1400-J-615
6 x 6	132	3	2.0	1400-J-620
6 x 6	132	3	3.0	1400-J-630
7 x 7	140	3	1.5	1400-J-715
7 x 7	140	3	2.0	1400-J-720
7 x 7	140	3	3.0	1400-J-730
8 x 8	140	4	1.5	1400-J-815
8 x 8	140	4	2.0	1400-J-820
8 x 8	140	4	3.0	1400-J-830

Тип 1401-K L



⌀	L	A	D	Арт. N°
7 x 7	146	7	2.0	1401-K-720
7 x 7	146	7	3.0	1401-K-730
7 x 7	146	7	4.0	1401-K-740
8 x 8	146	8	2.0	1401-K-820
8 x 8	146	8	3.0	1401-K-830
8 x 8	146	8	4.0	1401-K-840
8 x 8	146	8	5.0	1401-K-850
8 x 8	146	8	6.0	1401-K-860
10 x 10	150	10	4.0	1401-K-1040
10 x 10	150	10	5.0	1401-K-1050
10 x 10	150	10	6.0	1401-K-1060
10 x 10	150	10	7.0	1401-K-1070
12 x 12	150	12	4.0	1401-K-1240
12 x 12	150	12	5.0	1401-K-1250
12 x 12	150	12	6.0	1401-K-1260
12 x 12	150	12	8.0	1401-K-1280
14 x 14	150	14	4.0	1401-K-1440
14 x 14	150	14	6.0	1401-K-1460
14 x 14	150	14	8.0	1401-K-1480

Тип 1420 L

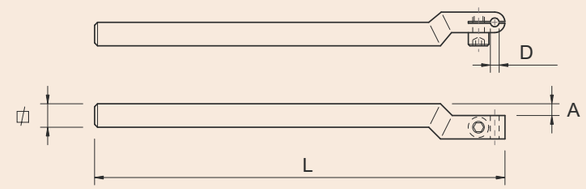


⌀	L	A	D	Арт. N°
7 x 7	146	12	4.0	1420-7124
8 x 8	146	12	4.0	1420-8124
8 x 8	146	14	3.0	1420-8143
8 x 8	146	15	5.0	1420-8155
8 x 8	146	20	5.0	1420-8205
10 x 10	150	20	6.0	1420-10206
12 x 12	150	18	6.0	1420-12186
12 x 12	150	18	8.0	1420-12188
12 x 12	150	24	8.0	1420-12248
14 x 14	150	20	8.0	1420-14208
14 x 14	150	24	8.0	1420-14248

ДЕРЖАВКИ ИНСТРУМЕНТА Tooling-Line

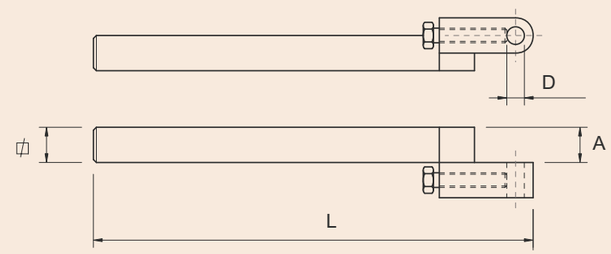
Державки инструмента
Werkzeughalter
Tool holders

Тип 2400-J R



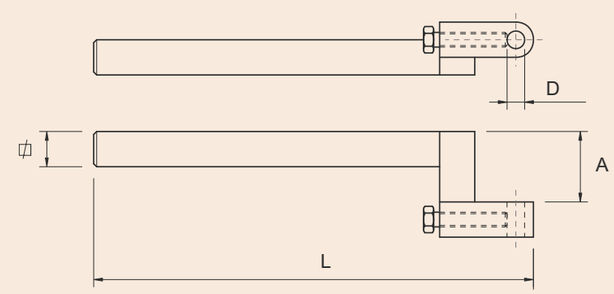
⌀	L	A	D	Арт. N°
6 x 6	132	3	1.5	2400-J-615
6 x 6	132	3	2.0	2400-J-620
6 x 6	132	3	3.0	2400-J-630
7 x 7	140	3	1.5	2400-J-715
7 x 7	140	3	2.0	2400-J-720
7 x 7	140	3	3.0	2400-J-730
8 x 8	140	4	1.5	2400-J-815
8 x 8	140	4	2.0	2400-J-820
8 x 8	140	4	3.0	2400-J-830

Тип 2401-K R



⌀	L	A	D	Арт. N°
7 x 7	146	7	3.0	2401-K-730
7 x 7	146	7	4.0	2401-K-740
8 x 8	146	8	3.0	2401-K-830
8 x 8	146	8	4.0	2401-K-840
8 x 8	146	8	5.0	2401-K-850
8 x 8	146	8	6.0	2401-K-860
10 x 10	150	10	3.0	2401-K-1030
10 x 10	150	10	4.0	2401-K-1040
10 x 10	150	10	5.0	2401-K-1050
10 x 10	150	10	6.0	2401-K-1060
10 x 10	150	10	7.0	2401-K-1070
12 x 12	150	12	3.0	2401-K-1230
12 x 12	150	12	4.0	2401-K-1240
12 x 12	150	12	5.0	2401-K-1250
12 x 12	150	12	6.0	2401-K-1260
12 x 12	150	12	8.0	2401-K-1280
14 x 14	150	14	4.0	2401-K-1440
14 x 14	150	14	6.0	2401-K-1460
14 x 14	150	14	8.0	2401-K-1480

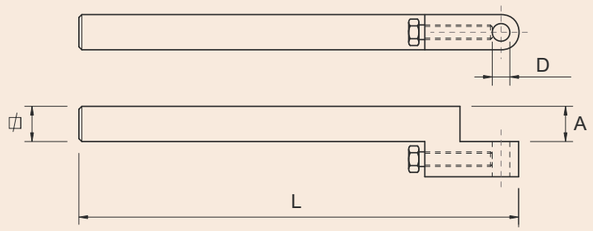
Тип 2420 R



⌀	L	A	D	Арт. N°
7 x 7	146	12	4.0	2420-7124
8 x 8	146	12	4.0	2420-8124
8 x 8	146	14	3.0	2420-8143
8 x 8	146	15	5.0	2420-8155
8 x 8	146	20	5.0	2420-8205
10 x 10	150	20	6.0	2420-10206
12 x 12	150	18	6.0	2420-12186
12 x 12	150	24	8.0	2420-12248
14 x 14	150	20	8.0	2420-14208
14 x 14	150	24	8.0	2420-14248

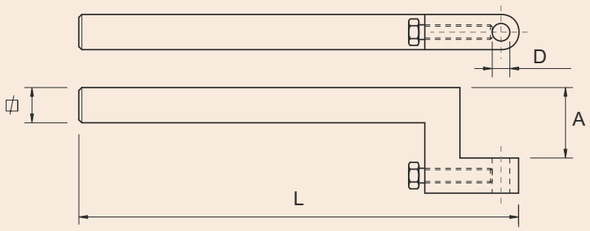
Державки инструмента
Werkzeughalter
Tool holders

Тип 2405



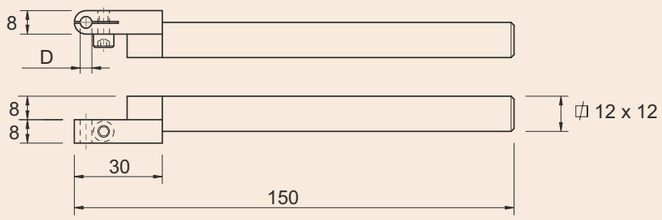
⌀	L	A	D	Арт.N°
8 x 8	120	8	3.0	2405-K-830
8 x 8	120	8	4.0	2405-K-840
8 x 8	120	8	5.0	2405-K-850
8 x 8	120	8	6.0	2405-K-860
10 x 10	100	10	4.0	2405-K-1040
10 x 10	100	10	5.0	2405-K-1050
10 x 10	100	10	6.0	2405-K-1060
12 x 12	150	12	4.0	2405-K-1240
12 x 12	150	12	6.0	2405-K-1260
12 x 12	150	12	8.0	2405-K-1280

Тип 2425



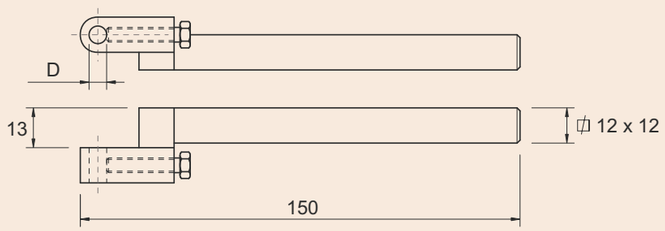
⌀	L	A	D	Арт. N°
8 x 8	120	12	4.0	2425-8124
8 x 8	120	15	5.0	2425-8155
8 x 8	120	20	5.0	2425-8205
10 x 10	100	15	6.0	2425-10156
10 x 10	100	20	6.0	2425-10206
12 x 12	150	18	6.0	2425-12186
12 x 12	150	24	8.0	2425-12248

Тип 1450 специальные ENC 16/164 L ⌀ 12 x 12



D	Арт. N°
4.0	1450-4
5.0	1450-5

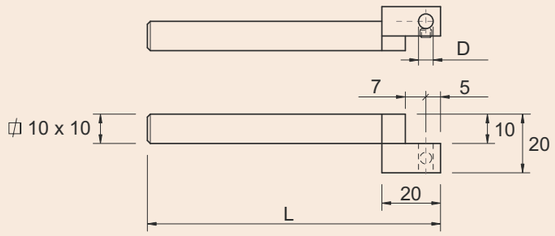
Тип 1460 специальные ENC 16/164L ⌀ 12 x 12



D	Арт N°
4.0	1460-4
5.0	1460-5
6.0	1460-6
8.0	1460-8

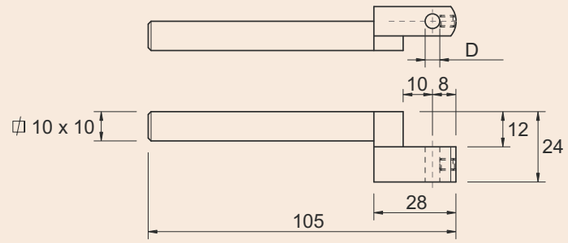
Державки инструмента
Werkzeughalter
Tool holders

Тип 2450-SP R ⌀ 10 x 10



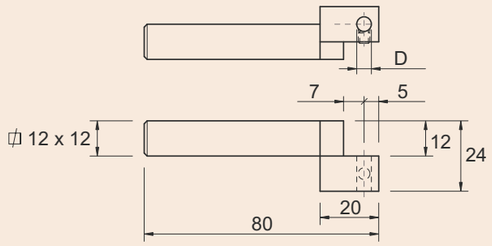
D	L	Арт. N°
3.0	100	2450-SP-3
4.0	100	2450-SP-4
5.0	100	2450-SP-5
6.0	100	2450-SP-6
3.0	120	2450-SP-3-120
4.0	120	2450-SP-4-120
5.0	120	2450-SP-5-120
6.0	120	2450-SP-6-120

Тип 2470 R ⌀ 10 x 10



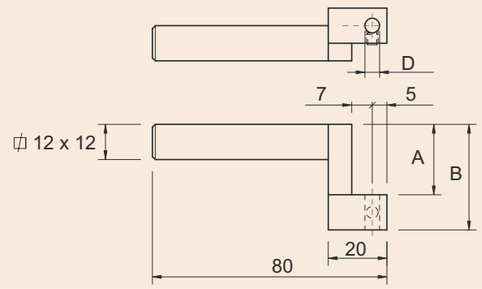
D	Арт. N°
3.0	2470-3
4.0	2470-4
5.0	2470-5
6.0	2470-6
7.0	2470-7

Тип 2450 R ⌀ 12 x 12



D	Арт. N°
3.0	2450-3
4.0	2450-4
5.0	2450-5
6.0	2450-6
8.0	2450-8

Тип 2460 R ⌀ 12 x 12



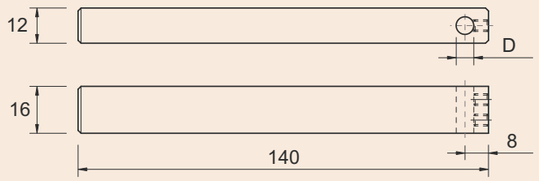
A	B	D	Арт. N°
16	28	4.0	2460-284
16	28	6.0	2460-286
16	28	8.0	2460-288
20	32	4.0	2460-324
20	32	6.0	2460-326
20	32	8.0	2460-328
24	36	4.0	2460-364
24	36	6.0	2460-366
24	36	8.0	2460-388

Державки инструмента
Werkzeughalter
Tool holders

Тип 2441

Для обработки на стороне противошпинделя
Fur die Bearbeitung auf der Gegenspindel-Seite
For machining on subspindle side

⌀ 12 x 16

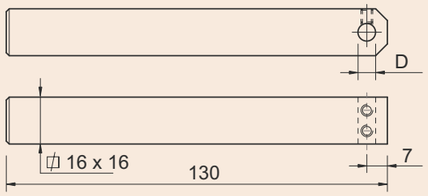


D	Арт. N°
3.0	2441-0-3
4.0	2441-0-4
5.0	2441-0-5
6.0	2441-0-6

Тип 2440-0

Для обработки на стороне противошпинделя
Fur die Bearbeitung auf der Gegenspindel-Seite
For machining on subspindle side

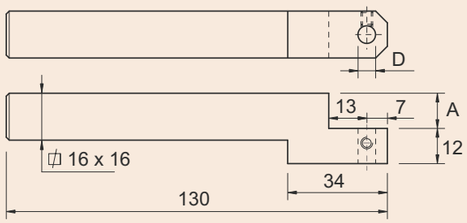
⌀ 16 x 16



D	Арт. N°
3.0	2440-0-3
4.0	2440-0-4
5.0	2440-0-5
6.0	2440-0-6
8.0	2440-0-8

Типы 2440-8 2440-12

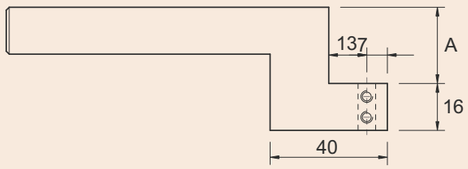
⌀ 16 x 16



A	D	Арт. N°
8	3.0	2440-8-3
8	4.0	2440-8-4
8	5.0	2440-8-5
8	6.0	2440-8-6
8	8.0	2440-8-8
12	3.0	2440-12-3
12	4.0	2440-12-4
12	5.0	2440-12-5
12	6.0	2440-12-6
12	8.0	2440-12-8

Типы 2440-18 2240-26

⌀ 16 x 16



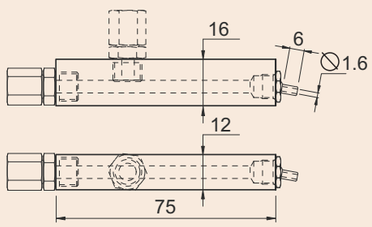
18	4.0	2440-18-4
18	5.0	2440-18-5
18	6.0	2440-18-6
18	8.0	2440-18-8
26	4.0	2440-26-4
26	5.0	2440-26-5
26	6.0	2440-26-6
26	8.0	2440-26-8

Инструмент для подвода СОЖ
Werkzeug fur Kuhlmittel-Zufuhr
Tool for coolant supply

Тип 2490

⌀ 12 x 16

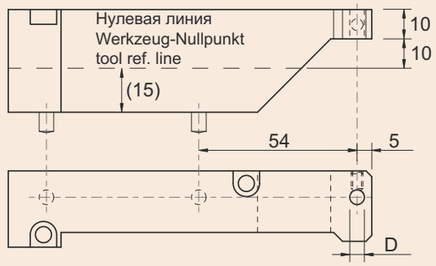
Соединение
Anschluss
connection
⌀6 - G1/8



Арт. N°
2490

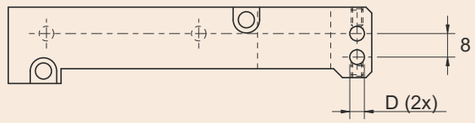
Моноблочные державки инструмента для станков TORNOS DECO 7/10
Monoblock-werkzeughalter fur TORNOS DECO 7/10 Maschine
Monobloc tool holders for machine TORNOS DECO 7/10

Тип 2435



D	Арт. N°
3.0	2435-3
4.0	2435-4
5.0	2435-5
6.0	2435-6

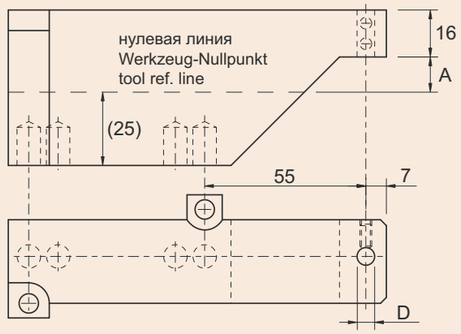
Тип 2435-T



D (2x)	Арт. N°
3.0	2435-3-T
4.0	2435-4-T
5.0	2435-5-T
6.0	2435-6-T

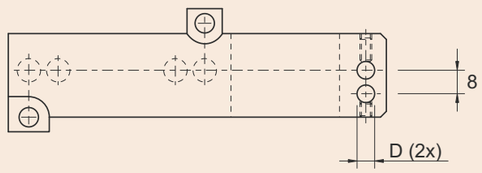
Моноблочные державки инструмента для станков TORNOS DECO 13
Monoblock-Werkzeughaler fur TORNOS DECO13 Maschine
Monobloc tool holders for machine TORNOS DECO13

Тип 2436



A	D	Арт. N°
12	3.0	2436-12-3
12	4.0	2436-12-4
12	5.0	2436-12-5
12	6.0	2436-12-6
12	8.0	2436-12-8
18	3.0	2436-18-3
18	4.0	2436-18-4
18	5.0	2436-18-5
18	6.0	2436-18-6
18	8.0	2436-18-8

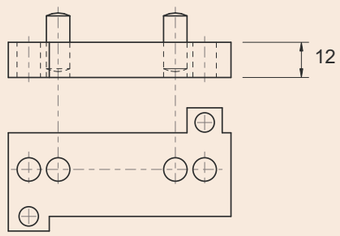
Тип 2436-T



A	D (2x)	Арт. N°
12	3.0	2436T-12-3
12	4.0	2436T-12-4
12	5.0	2436T-12-5
12	6.0	2436T-12-6
18	3.0	2436T-18-3
18	4.0	2436T-18-4
18	5.0	2436T-18-5
18	6.0	2436T-18-6

Проставка
Erhohungsplatte
Spacer

Тип 2436-S12



Арт. N°
2436-S12