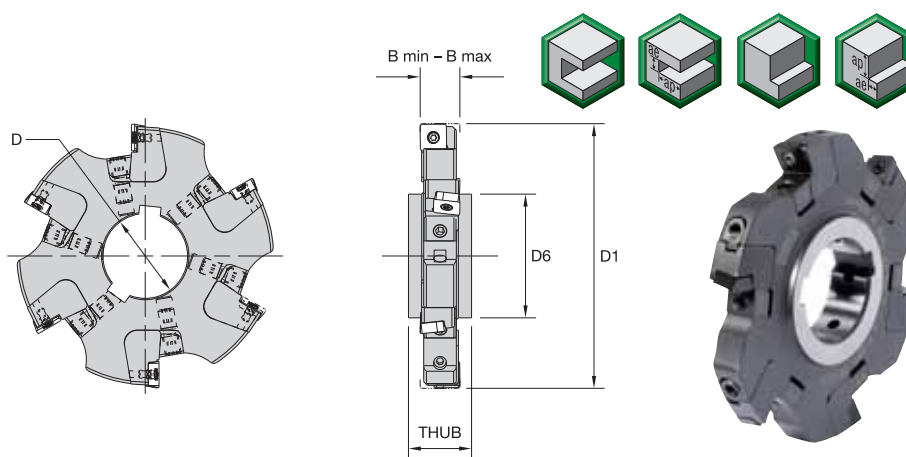


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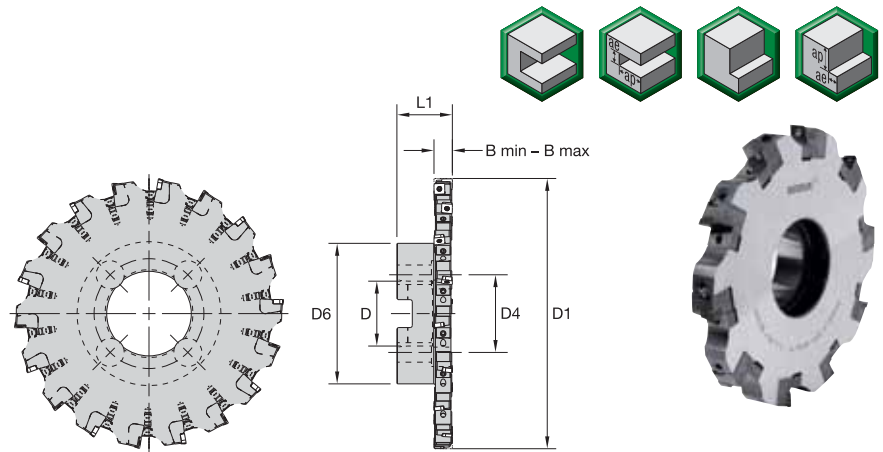
■ M900 • Arbor Mount

order number	catalogue number	D1	D	D6	B min	B max	THUB	Z	max RPM	kg
2003598	12399010200	100	32	48	12,00	14,00	16,0	6	7070	0,50
2067540	12399011400	100	32	48	14,00	16,00	16,0	6	7070	0,80
2003695	12399010400	125	40	58	12,00	14,00	16,0	8	6370	0,80
2003696	12399011600	125	40	58	14,00	16,00	16,0	8	6370	0,90
2003697	12399012800	125	40	58	16,00	17,50	20,0	8	6370	1,10
2003796	12399011800	160	40	58	14,00	16,00	16,0	10	5600	1,60
2003797	12399013000	160	40	58	16,00	17,50	20,0	10	5600	1,90
2065591	12399010800	200	50	72	12,00	14,00	16,0	12	5040	2,10
2003879	12399012000	200	50	72	14,00	16,00	16,0	12	5040	2,60
2003880	12399013200	200	50	72	16,00	17,50	20,0	12	5040	2,90
2003881	12399014400	200	50	72	17,50	20,00	20,0	12	5040	3,20
2003882	12399015600	200	50	72	20,00	22,00	24,0	12	3990	3,70
2067541	12399013400	250	50	72	16,00	17,50	20,0	16	4480	7,00
2003993	12399014600	250	50	72	17,50	20,00	20,0	16	4480	5,10
2003994	12399015800	250	50	72	20,00	22,00	24,0	16	3570	5,90
2116241	12399013600	315	60	84	16,00	17,50	20,0	20	3990	7,60
2004081	12399014800	315	60	84	17,50	20,00	20,0	20	3990	8,10
2004082	12399016000	315	60	84	20,00	22,00	24,0	20	3220	9,40

■ Spare Parts



D1	catalogue number	insert screw	Torx driver	STC screw	T-handle hex wrench	clamp wedge	cartridge left hand	cartridge right hand	adjusting wedge left hand	adjusting wedge right hand
100	12399010200	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
100	12399011400	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
125	12399010400	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
125	12399011600	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
125	12399012800	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
160	12399011800	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
160	12399013000	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
200	12399010800	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
200	12399012000	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
200	12399013200	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
200	12399014400	12748605300	12749723200	12148574100	12148050000	12748307700	12748210700	12748210800	12748551100	12748551200
200	12399015600	12748605300	12749723200	12148574100	12148050000	12748307800	12748210900	12748211000	12748551100	12748551200
250	12399013400	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
250	12399014600	12748605300	12749723200	12148574100	12148050000	12748307700	12748210700	12748210800	12748551100	12748551200
250	12399015800	12748605300	12749723200	12148574100	12148050000	12748307800	12748210900	12748211000	12748551100	12748551200
315	12399013600	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
315	12399014800	12748605300	12749723200	12148574100	12148050000	12748307700	12748210700	12748210800	12748551100	12748551200
315	12399016000	12748605300	12749723200	12148574100	12148050000	12748307800	12748210900	12748211000	12748551100	12748551200



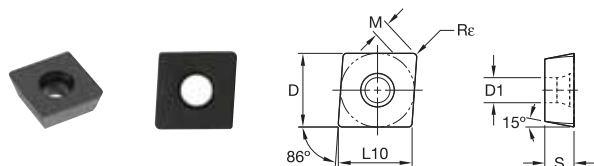
■ M900 • Shell Mount

order number	catalogue number	D1	D	D4	D6	B min	B max	L1	Z	max RPM	kg
2003602	12399111400	100	27	—	48	14,00	16,00	33,0	6	7070	0,80
2003700	12399110400	125	32	—	58	12,00	14,00	37,0	8	6370	1,10
2003701	12399111600	125	32	—	58	14,00	16,00	37,0	8	6370	1,20
2003702	12399112800	125	32	—	58	16,00	17,50	37,0	8	6370	1,40
2003800	12399110600	160	40	—	70	12,00	14,00	42,0	10	5600	1,80
2003801	12399111800	160	40	—	70	14,00	16,00	42,0	10	5600	2,10
2003802	12399113000	160	40	—	70	16,00	17,50	42,0	10	5600	2,30
2003897	12399110800	200	40	67	90	12,00	14,00	44,0	12	5040	3,00
2003898	12399112000	200	40	67	90	14,00	16,00	44,0	12	5040	3,30
2003899	12399113200	200	40	67	90	16,00	17,50	44,0	12	5040	3,70
2003900	12399114400	200	40	67	90	17,50	20,00	44,8	12	5040	3,80
2003901	12399115600	200	40	67	90	20,00	22,00	46,0	12	3990	4,30
2003997	12399113400	250	60	102	130	16,00	17,50	50,0	16	4480	7,00
2003998	12399114600	250	60	102	130	17,50	20,00	51,8	16	4480	7,20
2003999	12399115800	250	60	102	130	20,00	22,00	53,0	16	3570	7,90
2004095	12399113600	315	60	102	130	16,00	17,50	50,0	20	3990	9,70
2004096	12399114800	315	60	102	130	17,50	20,00	51,8	20	3990	10,20
2004097	12399116000	315	60	102	130	20,00	22,00	53,0	20	3220	11,30

■ Spare Parts



D1	catalogue number	insert screw	Torx driver	STC screw	T-handle hex wrench	clamp wedge	cartridge left hand	cartridge right hand	adjusting wedge left hand	adjusting wedge right hand
100	12399111400	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
125	12399110400	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
125	12399111600	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
125	12399112800	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
160	12399110600	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
160	12399111800	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
160	12399113000	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
200	12399110800	12148067200	12749726100	12148574100	12148050000	12748307600	12748210100	12748210200	12748551100	12748551200
200	12399112000	12148067200	12749726100	12148574100	12148050000	12748307600	12748210300	12748210400	12748551100	12748551200
200	12399113200	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
200	12399114400	12748605300	12749723200	12148574100	12148050000	12748307700	12748210700	12748210800	12748551100	12748551200
200	12399115600	12748605300	12749723200	12148574100	12148050000	12748307800	12748210900	12748211000	12748551100	12748551200
250	12399113400	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
250	12399114600	12748605300	12749723200	12148574100	12148050000	12748307700	12748210700	12748210800	12748551100	12748551200
250	12399115800	12748605300	12749723200	12148574100	12148050000	12748307800	12748210900	12748211000	12748551100	12748551200
315	12399113600	12148067200	12749726100	12148574100	12148050000	12748307700	12748210500	12748210600	12748551100	12748551200
315	12399114800	12748605300	12749723200	12148574100	12148050000	12748307700	12748210700	12748210800	12748551100	12748551200
315	12399116000	12748605300	12749723200	12148574100	12148050000	12748307800	12748210900	12748211000	12748551100	12748551200



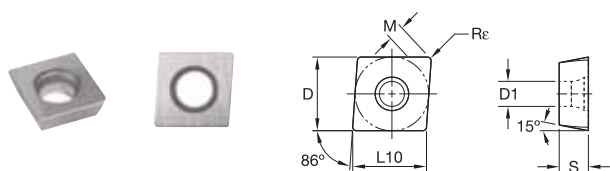
- first choice

- alternate choice

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

MDHX

catalogue number	D	D1	L10	M	S	Rε	TNT	TNT	TNT	TNT	TNT	TNT
MDHX09T308	9,53	3,40	9,55	1,85	3,97	0,8	●	●	●	●	●	●



- first choice

- alternate choice

MDHW

catalogue number	D	D1	S	L10	M	Re	TN7525	TN7535	TN450	TN5515	TTM08	TTM	TTM	TTM
MDHW120408	12,70	5,50	4,76	12,73	2,58	0,8	●	●	●	●		●	●	●

			TN7525			TN7535			TN450			TTM			TTR		
Cutter	Insert Type	VDI 3323	hm* (mm)														
M900	MDHX0 9T308		0,06	0,08	0,10	0,06	0,08	0,10	0,06	0,08	0,10	0,06	0,08	0,10	0,06	0,08	0,10
M900	MDHW1 20408		0,08	0,10	0,12	0,08	0,10	0,12	0,08	0,10	0,12	0,08	0,10	0,12	0,08	0,10	0,12
Material Group			vc (m/min)														
P	1		330	250	210	280	215	185	250	215	200	170	150	140	135	120	110
	2		250	195	170	190	150	130	180	150	140	120	100	90	95	80	70
	3		210	160	145	160	120	110	150	130	120	100	80	70	80	65	55
	4		215	170	145	165	130	110	160	140	130	110	85	80	90	70	65
	5		185	130	115	140	100	85	130	110	100	85	70	60	70	55	50
	6		240	185	150	185	140	115	180	150	140	120	100	90	95	80	70
	7		185	145	120	140	110	90	140	120	110	90	80	70	70	65	55
	8		160	120	105	120	90	80	120	100	90	80	60	55	65	50	45
	9		145	105	90	110	80	70	100	70	60	70	50	40	55	40	30
	10		185	145	130	140	110	100	160	135	120	110	85	80	90	70	65
	11		120	95	80	90	70	60	100	70	55	70	50	40	55	40	30
	12		235	175	150	180	135	115	170	150	140	115	90	85	90	70	70
	13.1		205	145	120	155	110	90	140	120	110	100	80	70	80	65	55
	13.2		100	70	60	80	55	45	70	60	55	50	40	35	40	30	30

			TN7525			TN7535			TN450			TTM			TTR		
Cutter	Insert Type	VDI 3323	hm* (mm)														
M900	MDHX0 9T308		0,06	0,08	0,10	0,06	0,08	0,10	0,06	0,08	0,10	0,06	0,08	0,10	0,06	0,08	0,10
M900	MDHW1 20408		0,08	0,10	0,12	0,08	0,10	0,12	0,08	0,10	0,12	0,08	0,10	0,12	0,08	0,10	0,12
Material Group			vc (m/min)														
M	14.1		240	200	160	220	180	160	150	90	80	120	80	70	100	70	50
	14.2		190	160	135	180	150	135	130	80	70	90	60	55	80	50	40
	14.3		140	120	100	130	110	100	100	65	55	65	50	40	60	40	30
	14.4		120	100	80	110	90	80	75	45	40	60	40	35	50	35	25

			TN5515			THM		
Cutter	Insert Type	VDI 3323	hm* (mm)					
M900	MDHX0 9T308		0,08	0,10	0,12	0,08	0,10	0,12
M900	MDHW1 20408		0,10	0,12	0,14	0,10	0,12	0,14
Material Group			vc (m/min)					
K	15		295	215	185	135	100	85
	16		225	170	145	100	80	70
	17		250	185	150	120	90	75
	18		185	110	80	85	60	40
	19		255	150	120	120	75	50
	20		195	125	90	95	60	40

(continued)

(Cutting Data • MDH... continued)

Cutter	Insert Type	VDI 3323	THM		
			hm* (mm)		
M900	MDHX0 9T308		0,08	0,10	0,12
M900	MDHW1 20408		0,10	0,12	0,14
Material Group			vc (m/min)		
N	21		1000	750	600
	22		500	360	300
	23		1000	750	600
	24		800	600	500
	25		500	350	250
	27		400	250	180
	28		300	180	120

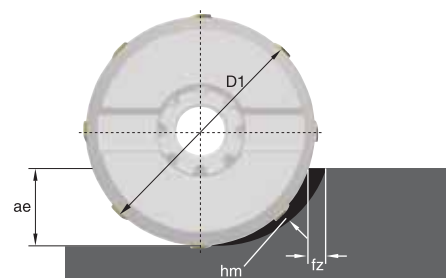
Cutter	Insert Type	VDI 3323	TN5515			THM		
			hm* (mm)					
M900	MDHX0 9T308		0,05	0,08	0,10	0,06	0,08	0,10
M900	MDHW1 20408		0,07	0,10	0,12	0,08	0,10	0,12
Material Group			vc (m/min)					
S	31		48	36	30	36	28	24
	32		40	30	25	30	23	20
	33		32	24	20	24	19	16
	34		26	19	14	20	15	12
	35		26	19	14	20	15	12
	36		—	—	—	80	50	40
	37		—	—	—	70	46	35

NOTE: First choice starting feed (fz) is in **bold** type.

Use corresponding speed (vc).

fz and vc are valid for ae ≥ 0.4 D1.

For smaller ae, fz and vc should be multiplied by the factor given below:



$$fz = \frac{hm}{\sin X_r} \cdot \sqrt{\frac{D1}{ae}}$$

$$hm = fz \cdot \sqrt{\frac{ae}{D1}} \cdot \sin X_r$$

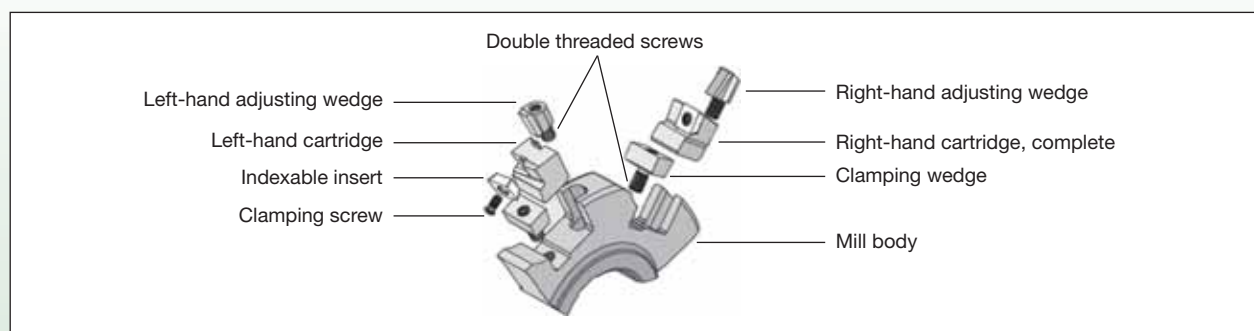
■ Assembly and Operating Instructions



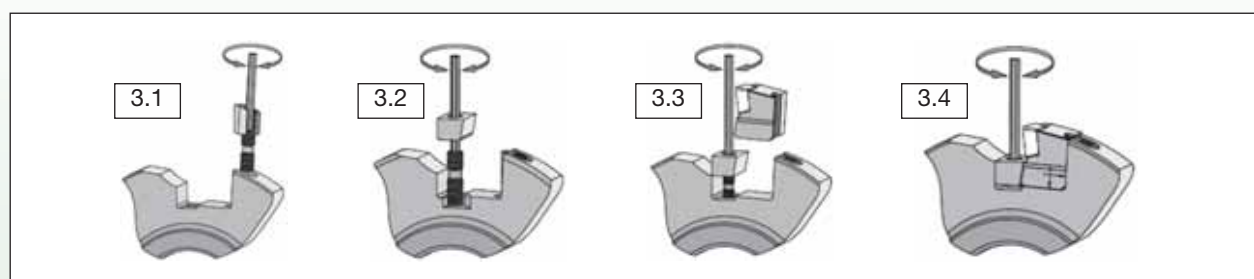
1. General

The runout tolerance of the milling cutter has a decisive effect on the quality of workpieces and the life of tools. Proper tool fitting and the precise axial setting of the milling insert are essential for a successful application and optimum results. One key requirement for assembly and setting work is that all components are clean. Bearing surfaces must be free from grease, and only the threads of indexable insert clamping screws and double threaded screws of clamping and adjusting wedges should be lubricated with copper grease. The indexable inserts should be inserted in the cleaned insert seats so that they are positioned correctly on the bearing surfaces. The indexable insert clamping screws should be tightened with the specified torque.

2. Exploded Diagram of Spare Parts

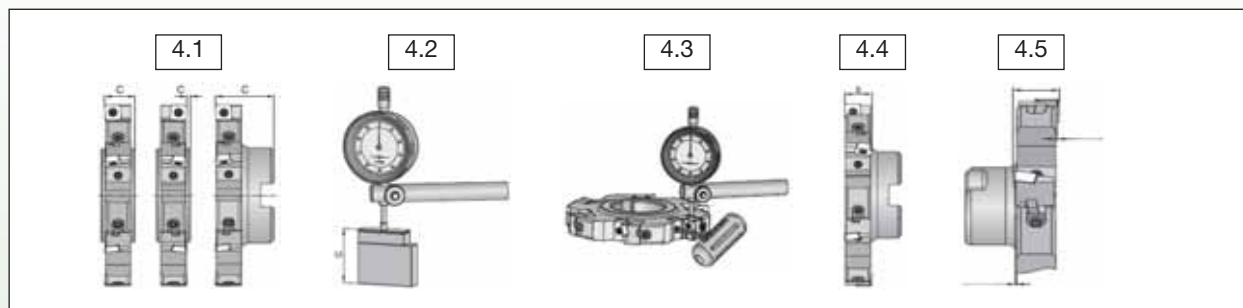


3. Mounting the Cartridges in the Mill Body



- 3.1 Turn double threaded screw 1 turn clockwise in the adjusting wedge. Then insert both parts in the slot in the mill body and turn the double threaded screw clockwise until the adjusting wedge is flush with the milling cutter.
- 3.2 Turn double threaded screw 3 turns clockwise in the mill body. Then mount the clamping wedge on the double threaded screw and screw both parts together until the lower edge of the clamping wedge is at the same height as the chip space runout.
- 3.3 Push the top of the fully assembled cartridge into the mill body using the rear bearing surface of the milling cutter so that the cartridge slot makes contact with the adjusting wedge spring. Ensure a perfect axial/radial surface.
- 3.4 Secure the correctly positioned cartridge by tightening the clamping wedge with a preset torque of $M_{Apre} = 1 \text{ Nm}$ to set the runout or cutting width

4. Setting the Runout for Milling Cutters with 2–3 Cutting Edges



4.1 Possible interpretations of the measuring dimension C.

4.2 Set gage to desired measurement C using gage blocks set to 0.

4.3 Set cartridge to $\sim 0,1\text{mm}$ before final measurement. Clamping wedge is tightened with torque $M_{\text{Apr}} = 1\text{ Nm}$. Then briefly loosen clamping wedge and tighten again.

4.4 Set cartridge to $0,02\text{mm}$ before final measurement. Then briefly loosen clamping wedge so that the contact surfaces can level out. Tighten clamping.

4.4 Wedge again with torque $M_{\text{Apr}} = 1\text{ Nm}$.

4.5 Adjust cartridge to final measurement. Tighten clamping wedge with torque $M_A = 4\text{ Nm}$. Check runout of the fully adjusted milling cutter.

5. Setting the Runout for Milling Cutters with 3 Cutting Edges

The cutting widths for milling cutters with 3 cutting edges are set using purpose-designed optical tool presetting equipment. Note that the projection of the cartridges from the mill body must be almost exactly the same on both sides. The sequence of steps required for setting the cartridge is identical to those for tools with 2 cutting edges.

ATTENTION:

At each tool adjustment, the body, cartridges, indexable inserts, and spare parts must be checked and replaced, if necessary. Before each tool use, the clamping and double threaded screws must be tightened with the specified torque. The tools must only be used in accordance with their function. We accept no liability for their improper use. Changes of any kind and/or printing errors are not valid grounds for claims.

WIDIA M900™

ADVANCES 2015

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