



DOUBLE OCTOMILL™
16 SECURE CUTTING EDGES

SECO 

UNIQUE DESIGN



POCKETS WITH HIGH SPEED STEEL (HSS) LOCATION PINS

The next generation Double Octomill R220.48 face milling cutter is a highly versatile, economical and productive tool that can be used for both roughing and finishing. It's also unique!

Why? Because the innovative Double Octomill inserts are positioned in the pockets by hardened HSS pins. This makes indexing easy and secure. You simply can't go wrong because the insert is correctly located by the HSS pins. What's more, the 65 HRC pins ensure an extremely long life for the pocket.

Whatever your industry or application, the easy-to-handle Double Octomill, with its 16 cutting edges and positive insert geometry, can make a unique contribution to milling performance.

BOOST YOUR PRODUCTIVITY AND CUT YOUR OPERATING COSTS.

SAVING YOU TIME AND MONEY

COATED CUTTER GIVES LONGER BODY LIFE

The Double Octomill's coated, pre-hardened body ensures long tool life. The hard coating (HV 700) protects the tool from wear and prevents chips from welding, providing longer tool life for the cutter body.



Normal pitch

THREE DIFFERENT PITCHES

Tools in the Double Octomill range are divided into three different pitches for metric and two for inch:

Normal, normal+, and close pitch are available in metric and normal and close pitch in inch. Different pitches allow you to fine tune the needs of your application with your machine tool. For example, if the machine has high power capability, choose the close pitch cutter. If the machine has limited power capability, choose normal or normal+.



Normal+ pitch

CLAMPING SYSTEM

On the normal and normal+ versions, the insert is locked in place by a large center lock mounting screw. The close pitch version has wedge mounting using a new, stronger and self-orientating wedge. Both insert locking solutions gives you easy handling and maximum security during the cutting process.



Close pitch



FIVE DIFFERENT GEOMETRIES

M13 - First choice for Stainless applications or where freer cutting or better chip control is needed with a good surface finish

M14 - First choice in general roughing applications for steel and cast iron

M15 - First choice in finishing/roughing applications for steel and iron where a good surface finish is required

MD16 - Basic choice for heavy duty machining of ductile/cast iron

MD17 - Basic choice for heavy duty machining of ductile/cast iron where good surface finish is required.

HIGH PERFORMANCE INSERT

Double Octomill has a thick robust direct-pressed insert that ensures high strength and low risk of edge breakage.

A new feature is the ground location grooves that make the insert easy to index and allows for highly accurate seating. Combine this with sixteen numbered cutting edges and high performance grades to suit many materials and you have a productive and easy to use insert.

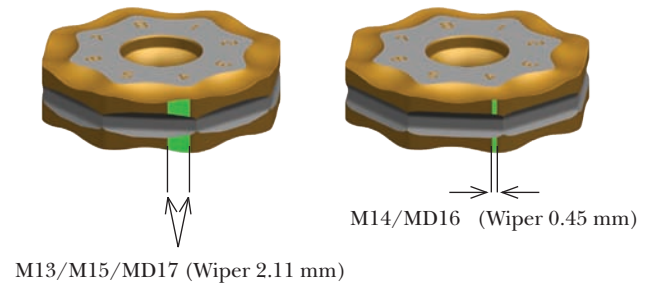


USE THE SAME TOOL FOR ROUGHING AND FINISHING

A new insert design that has a larger built-in wiper flat (2 mm) allows you to rough and finish at increased feed rates while leaving a very good finish. This will help decrease production time and save money.

WIPER INSERTS

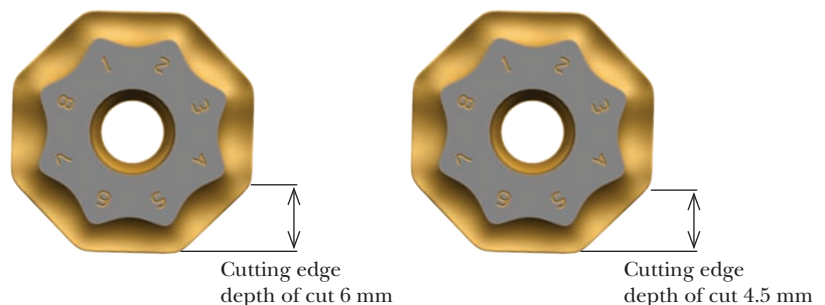
M13/M15/MD17 (Wiper 2.11 mm)
M14/MD16 (Wiper 0.45 mm)

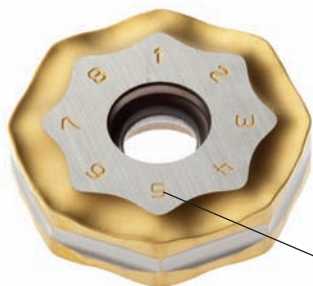


DEPTH OF CUT

M13/M15/MD17
(Wiper 2.11 mm)
Cutting edge depth of cut 4.5 mm

M14/MD16
(Wiper 0.45 mm)
Cutting edge depth of cut 6 mm





INDEXING

For increased accuracy it is important to always use the same cutting edge number in all pockets. This ensures axial and radial run-out are at their lowest.

Numbered cutting edges

UNBEATABLY LOW COST PER EDGE

The next generation Double Octomill face milling cutter is an excellent choice for general applications in cast iron, steel and stainless steel in a wide range of industries. With 16 cutting edges it offers unmatched economy in terms of edge cost per insert.

This, in turn, gives lower component cost.



MACHINING FOR MANY MATERIALS

The new Double Octo cutter is intended for general applications in iron and steel machining applications. It will also be able to handle machining of stainless steels effectively with the addition of the new M13 geometry.

It is a versatile cutter and can be used for both roughing and finishing.

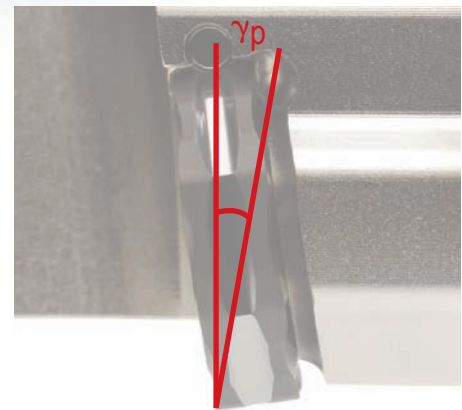


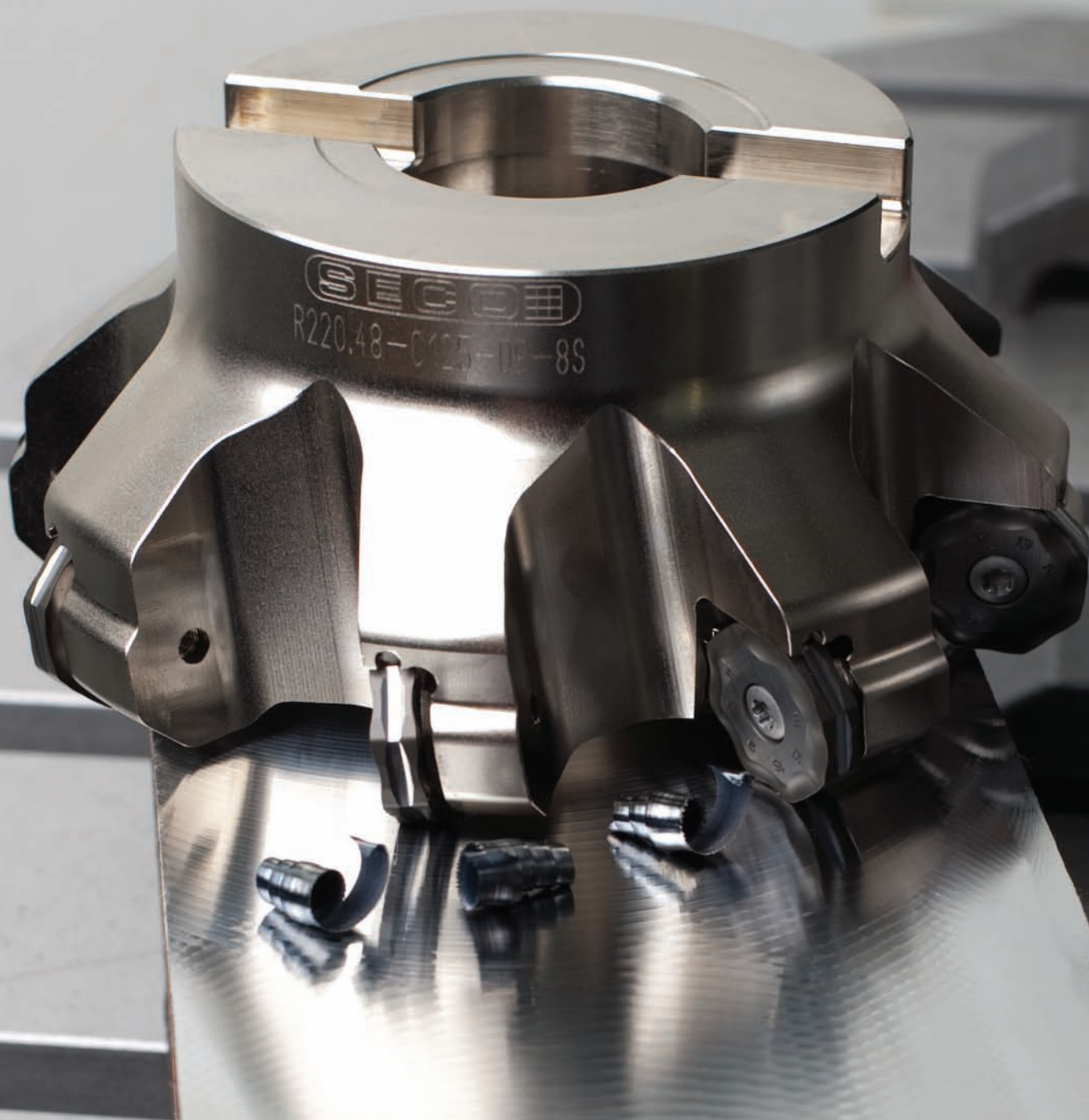
LESS POWER CONSUMPTION

Although the cutting rake geometry is negative in the cutter, the effective cutting rake is positive due to a positive cutting rake on the inserts, including the M14, M15 and the new M13 for steel and other materials. The new M13 geometry is only intended for center lock cutters in normal and normal+.

The positive cutting rake on the inserts is another factor allowing high cutting speeds to be used, thus increasing productivity.

For long term use, the depth of cut is 6 mm but for shorter periods, such as when machining components with irregular surfaces, a larger depth of cut can be chosen ($a_p = 15$ mm).





DURATOMIC® FOR MAXIMUM PRODUCTIVITY

Duratomic is our latest insert coating technology and allows us to design grades for optimal performance in all areas of metal cutting.

Duratomic offers a new level of toughness and wear resistance with more versatile grades and a greater flexibility in cutting data. This gives you higher speeds, longer and more predictable tool life, a wider machining window and dramatically increased productivity.

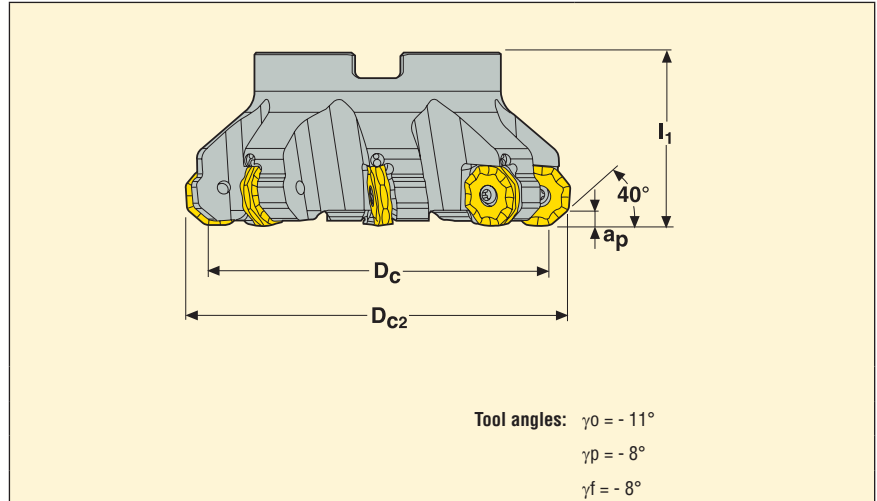
DURATOMIC®

Double Octomill 220.48-09S

Inch



- For insert selection and cutting data recommendations, see page 13.
- For complete insert program, see page 14.



Pitch	Part No.	Dimensions in inch							
		D _c	D _{c2}	L ₁	a _p *				
Normal	R220.48 -02.50-09-05S	2.48	3.07	1.57	0.236	5	1.32	4900	ONMU 09
	-03.00-09-06S	3.15	3.74	1.97	0.236	6	2.43	4400	ONMU 09
	-04.00-09-07S	3.94	4.53	1.97	0.236	7	3.97	3900	ONMU 09
	-05.00-09-08S	4.92	5.51	2.48	0.236	8	6.61	3500	ONMU 09
	-06.00-09-10S	6.3	6.89	2.48	0.236	10	9.7	3100	ONMU 09
	-808.00-09-12S	7.87	8.46	2.48	0.236	12	13.67	2700	ONMU 09
	-810.00-09-16S**	9.84	10.43	2.48	0.236	16	29.76	2500	ONMU 09
	-812.50-09-20S**	12.4	12.99	3.15	0.236	20	61.29	2200	ONMU 09

*Max a_p 0.157–0.236" depending upon insert geometry, see page 13.

Spare parts

	Locking screw	Key
For cutter		
R220.48..	C05013-T20P	T20P-4

Locking screw torque value 53 in/lbs

Mounting dimensions

For cutter	Dimensions in inch				
	dm _m	B _{kw}	c	d _{hc1}	d _{hc2}
R220.48-02.50	0.75	0.32	0.19	—	—
R220.48-03.00	1.00	0.38	0.22	—	—
R220.48-04.00	1.50	0.63	0.38	—	—
R220.48-05.00	1.50	0.63	0.38	—	—
R220.48-06.00	2.00	0.76	0.44	—	—
R220.48-808.00	2.50	1.01	0.56	4.00	—
R220.48-810.00**	2.50	1.01	0.56	4.00	—
R220.48-812.50**	2.50	1.01	0.56	4.00	7.00

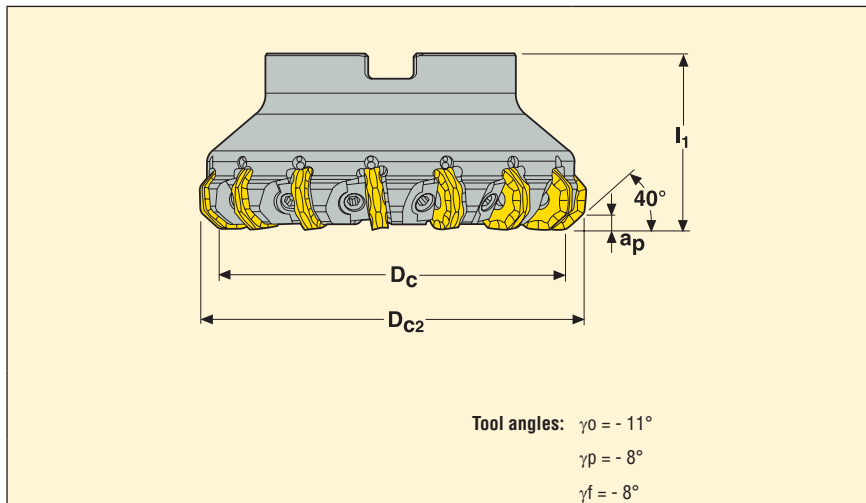
Please check availability in current price and stock-list.
 **Non stock standard.

Double Octomill 220.48-09M

Inch



- For insert selection and cutting data recommendations, see page 13.
- For complete insert program, see page 14.



Pitch	Part No.	Dimensions in inch							
		D _c	D _{c2}	L ₁	a _p *				
Close	R220.48 -03.00-09-09M	3.15	3.74	1.97	0.236	9	2.43	4400	ONMU 09
	-04.00-09-12M	3.94	4.53	1.97	0.236	12	3.97	3900	ONMU 09
	-05.00-09-15M	4.92	5.51	2.48	0.236	15	6.61	3500	ONMU 09
	-06.00-09-20M	6.3	6.89	2.48	0.236	20	9.7	3100	ONMU 09
	-808.00-09-24M**	7.87	8.46	2.48	0.236	24	13.67	2700	ONMU 09
	-810.00-09-30M**	9.84	10.43	2.48	0.236	30	29.76	2500	ONMU 09
	-812.50-09-40M**	12.4	12.99	3.15	0.236	40	61.29	2200	ONMU 09

*Max a_p 0.157-0.236" depending upon insert geometry, see page 13.

Spare parts

	Wedge	Locking screw	Key
For cutter			
R220.48..	CW0816	LD8025-T25P	T25P-4

Wedge screw torque value 53-70 in/lbs.

Mounting dimensions

For cutter	Dimensions in inch				
	dm _m	B _{kw}	c	d _{hc1}	d _{hc2}
R220.48-03.00	1.00	0.38	0.22	—	—
R220.48-04.00	1.50	0.63	0.38	—	—
R220.48-05.00	1.50	0.63	0.38	—	—
R220.48-06.00	2.00	0.76	0.44	—	—
R220.48-808.00**	2.50	1.01	0.56	4.00	—
R220.48-810.00**	2.50	1.01	0.56	4.00	—
R220.48-812.50**	2.50	1.01	0.56	4.00	7.00

Please check availability in current price and stock-list.

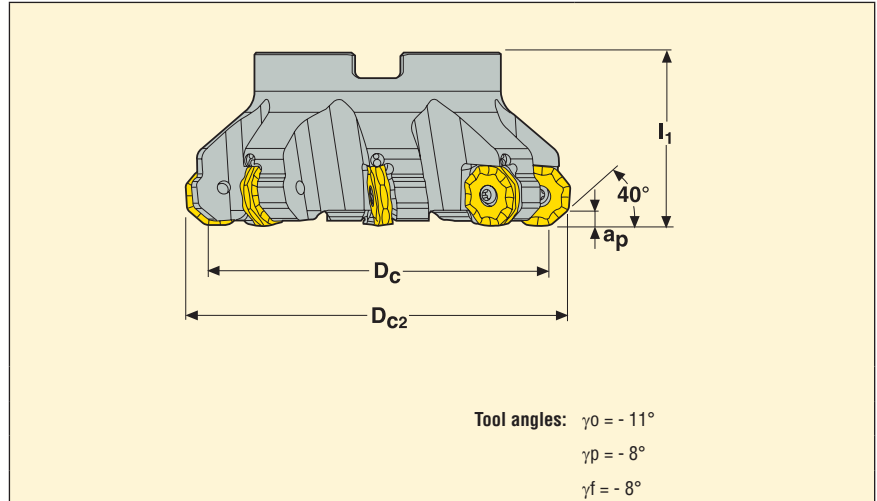
**Non stock standard.

Double Octomill 220.48-09S

Metric



- For insert selection and cutting data recommendations, see page 13.
- For complete insert program, see page 14.



Pitch	Part No.	Dimensions in mm							
		D _c	D _{c2}	L ₁	a _p *				
Normal	R220.48 -0063-09-05S	63	78	40	6	5	0.6	4900	ONMU09
	-0080-09-06S	80	95	50	6	6	1.1	4400	ONMU09
	-0100-09-07S	100	115	50	6	7	1.8	3900	ONMU09
	-0125-09-08S	125	140	63	6	8	3	3500	ONMU09
	-8160-09-10S	160	175	63	6	10	4.4	3100	ONMU09
	-8200-09-12S**	200	215	63	6	12	6.2	2700	ONMU09
	-8250-09-16S**	250	265	63	6	16	13.5	2500	ONMU09
	-8315-09-20S**	315	330	80	6	20	27.8	2200	ONMU09

*Max a_p 4–6 mm depending upon insert geometry, see page 13.

Spare parts

	Locking screw	Key
For cutter		
R220.48..	C05013-T20P	T20P-4

Locking screw torque value 6.0–8.0 Nm.

Mounting dimensions

For cutter	Dimensions in mm						For arbor	For spindle-nose
	dm _m	D _{sm}	B _{kw}	c	d _{hc1}	d _{hc2}		
R220.48-0063	22	47	10.4	7	—	—	22	—
R220.48-0080	27	62	12.4	7	—	—	27	—
R220.48-0100	32	77	14.4	8	—	—	32	—
R220.48-0125	40	90	16.4	9	—	—	40	—
R220.48-8160	40	90	16.4	9	66.7	—	40	ISO40
R220.48-8200**	60	130	25.7	14	101.6	—	—	ISO50
R220.48-8250**	60	130	25.7	14	101.6	177.8	—	ISO50
R220.48-8315**	60	225	25.7	14	101.6	177.8	—	ISO50, ISO60

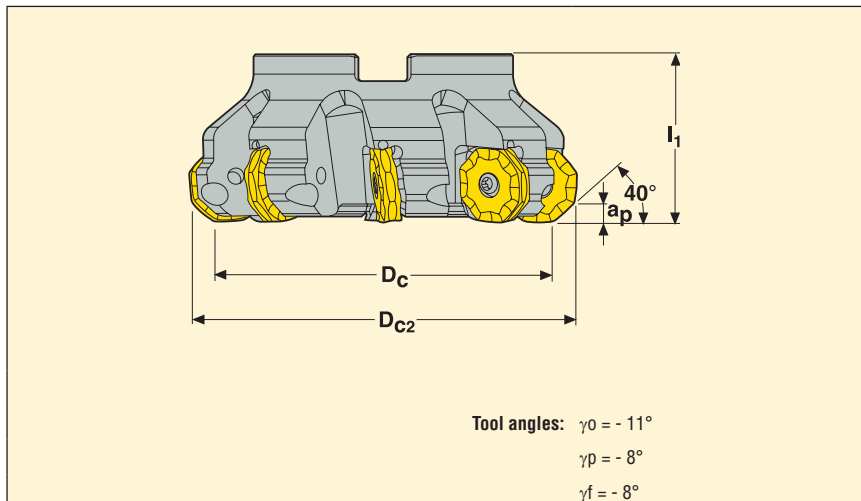
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 **Non stock standard.

Double Octomill 220.48-09S

Metric



- For insert selection and cutting data recommendations, see page 13.
- For complete insert program, see page 14.



Pitch	Part No.	Dimensions in mm							
		D _c	D _{c2}	L ₁	a _p *				
Normal +	R220.48 -0063-09-06S	63	78	40	6	6	0.6	4900	ONMU09
	-0080-09-07S	80	95	50	6	7	1.1	4400	ONMU09
	-0100-09-08S	100	115	50	6	8	1.9	3900	ONMU09
	-0125-09-10S	125	140	63	6	10	3.3	3500	ONMU09
	-8160-09-12S	160	175	63	6	12	4.7	3100	ONMU09
	-8200-09-16S**	200	215	63	6	16	6.2	2700	ONMU09
	-8250-09-20S**	250	265	63	6	20	13.9	2500	ONMU09
	-8315-09-24S**	315	330	80	6	24	28.5	2200	ONMU09

*Max a_p 4–6 mm depending upon insert geometry, see page 13.

Spare parts

	Locking screw	Key
For cutter inch/mm		
R220.48..	C05013-T20P	T20P-4

Locking screw torque value 6.0–8.0 Nm.

Mounting dimensions

For cutter	Dimensions in mm						For arbor	For spindle-nose
	dm _m	D _{5m}	B _{kw}	c	d _{hc1}	d _{hc2}		
R220.48-0063	22	47	10.4	7	—	—	22	—
R220.48-0080	27	62	12.4	7	—	—	27	—
R220.48-0100	32	77	14.4	8	—	—	32	—
R220.48-0125	40	90	16.4	9	—	—	40	—
R220.48-8160	40	90	16.4	9	66.7	—	40	ISO40
R220.48-8200**	60	130	25.7	14	101.6	—	—	ISO50
R220.48-8250**	60	130	25.7	14	101.6	177.8	—	ISO50
R220.48-8315**	60	225	25.7	14	101.6	177.8	—	ISO50, ISO60

Please check availability in current price and stock-list.

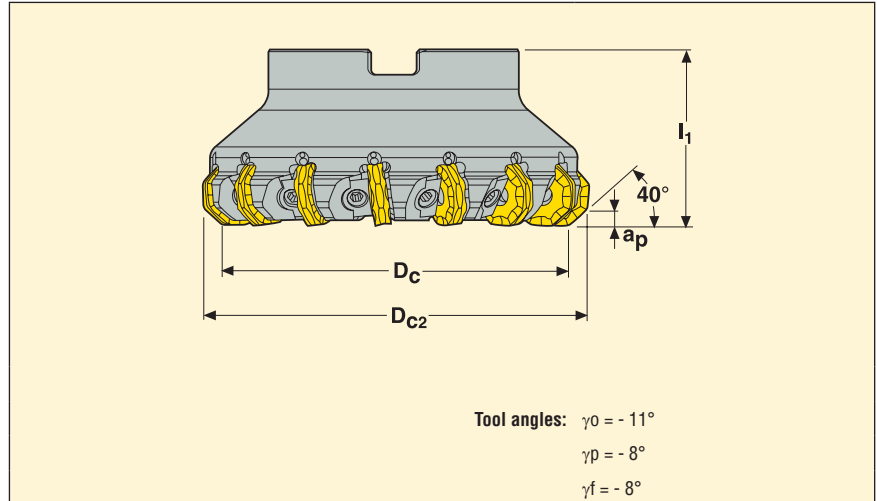
**Non stock standard.

Double Octomill 220.48-09M

Metric



- For insert selection and cutting data recommendations, see page 13.
- For complete insert program, see page 14.



Pitch	Part No.	Dimensions in mm							
		D _c	D _{c2}	L ₁	a _p *				
Close	R220.48 -0080-09-09M	80	95	50	6	9	1.4	4400	ONMU09
	-0100-09-12M	100	115	50	6	12	2.2	3900	ONMU09
	-0125-09-15M	125	140	63	6	15	3.8	3500	ONMU09
	-8160-09-20M	160	175	63	6	20	5.4	3100	ONMU09
	-8200-09-24M**	200	215	63	6	24	7.0	2700	ONMU09
	-8250-09-30M**	250	265	63	6	30	15.1	2500	ONMU09
	-8315-09-40M**	315	330	80	6	40	30.1	2200	ONMU09

*Max a_p 4–6 mm depending upon insert geometry, see page 13.

Spare parts

	Wedge	Locking screw	Key
For cutter inch/mm			
R220.48..	CW0816	LD8025-T25P	T25P-4

Wedge screw torque value 6.0–8.0 Nm.

Mounting dimensions

For cutter	Dimensions in mm						For arbor	For spindle-nose
	dm _m	D _{sm}	B _{kw}	c	d _{hc1}	d _{hc2}		
R220.48-0080	27	62	12.4	7	—	—	27	—
R220.48-0100	32	77	14.4	8	—	—	32	—
R220.48-0125	40	90	16.4	9	—	—	40	—
R220.48-8160	40	90	16.4	9	66.7	—	40	ISO40
R220.48-8200**	60	130	25.7	14	101.6	—	—	ISO50
R220.48-8250**	60	130	25.7	14	101.6	177.8	—	ISO50
R220.48-8315**	60	225	25.7	14	101.6	177.8	—	ISO50, ISO60

Please check availability in current price and stock-list.

**Non stock standard.

Insert selection – Double Octomill 220.48

Universal insert: ONMU090520ANTN-M14 MP2500

Seco Material Group No.	Recommended feed f_z in/tooth	First choice	Difficult operations
1	.006-.014	ONMU 090520ANTN-M13 MP2500	ONMU 090520ANTN-M14 T350M
2	.006-.014	ONMU 090520ANTN-M13 MP2500	ONMU 090520ANTN-M14 T350M
3	.006-.014	ONMU 090520ANTN-M14 MP2500	ONMU 090520ANTN-M14 T350M
4	.006-.014	ONMU 090520ANTN-M14 MP2500	ONMU 090520ANTN-M14 T350M
5	.004-.012	ONMU 090520ANTN-M14 MP2500	ONMU 090520ANTN-M14 T350M
6	.004-.008	ONMU 090520ANTN-M14 MP1500	ONMU 090520ANTN-MD16 MP1500
7	.004-.006	ONMU 090520ANTN-M14 MP1500	ONMU 090520ANTN-MD16 MP3000
8	.006-.012	ONMU 090520ANTN-M13 MP2500	ONMU 090520ANTN-M14 T350M
9	.006-.012	ONMU 090520ANTN-M13 MP2500	ONMU 090520ANTN-M14 T350M
10	.006-.010	ONMU 090520ANTN-M14 T350M	ONMU 090520ANTN-MD16 T350M
11	.006-.008	ONMU 090520ANTN-MD16 T350M	ONMU 090520ANTN-MD16 T350M
12	.006-.014	ONMU 090520ANTN-M14 MK1500	ONMU 090520ANTN-M14 MK3000
13	.006-.014	ONMU 090520ANTN-M14 MK1500	ONMU 090520ANTN-M14 MK3000
14	.004-.012	ONMU 090520ANTN-MD16 MK1500	ONMU 090520ANTN-MD16 MK3000
15	.004-.010	ONMU 090520ANTN-MD16 MP1500	ONMU 090520ANTN-MD16 MK3000
16	.004-.010	ONMU 090520ANTN-M13 F40M	ONMU 090520ANTN-M13 F40M
17	.004-.010	ONMU 090520ANTN-M13 F40M	ONMU 090520ANTN-M13 F40M
20	–	–	–
21	–	–	–
22	–	–	–

Cutting data - Full engagement width ($a_e/D_c = 100\%$)

Seco Material Group No.	Grades																				
	MP1500			MP2500			MP3000/MK2000			T350M			F40M			MK1500			MK3000		
	Feed f_z in/tooth																				
	.006	.010	.014	.006	.010	.014	.006	.010	.014	.006	.010	.014	.006	.010	.014	.006	.010	.014	.006	.010	.014
	Cutting speed, v_c (sfm)																				
1	1280	1100	970	1130	970	855	1085	920	820	985	835	755	855	740	655	—	—	—	1050	885	785
2	1115	950	855	1000	855	755	935	805	705	870	740	655	755	640	575	—	—	—	920	770	690
3	935	805	705	835	705	625	785	675	590	720	605	540	625	540	475	—	—	—	755	640	575
4	855	720	640	755	640	575	720	605	540	655	560	490	575	490	425	—	—	—	690	590	525
5	690	590	525	625	525	460	590	490	445	540	460	410	460	395	360	—	—	—	560	475	425
6	510	425	375	445	375	345	425	360	330	395	330	295	345	295	260	—	—	—	410	345	310
7	165	130	—	130	115	—	130	115	—	130	100	—	115	100	—	—	—	—	130	115	—
8	835	705	625	655	560	490	640	560	490	605	525	460	560	475	425	—	—	—	640	560	490
9	720	605	540	575	490	425	560	475	425	525	460	410	490	410	360	—	—	—	560	475	425
10	605	525	460	490	410	360	475	410	360	460	395	345	410	345	310	—	—	—	475	410	360
11	475	410	—	375	330	—	375	310	—	360	295	—	330	280	—	—	—	—	375	310	—
12	755	640	575	655	560	510	625	540	475	575	490	445	510	425	375	935	805	705	605	525	460
13	675	575	510	590	510	445	560	475	425	510	445	395	445	375	345	835	720	640	540	460	410
14	605	525	460	540	460	410	510	445	395	475	410	360	410	345	310	770	655	590	490	425	375
15	490	425	—	445	375	—	410	360	—	375	330	—	330	280	—	625	525	—	410	345	—
16	3480	2955	2625	3085	2625	2330	2920	2475	2215	2675	2280	2035	2330	1985	1770	—	—	—	2820	2410	2135
17	2805	2395	2135	2495	2115	1885	2360	2000	1790	2165	1835	1640	1885	1610	1425	—	—	—	2280	1935	1720
20	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Surface finish

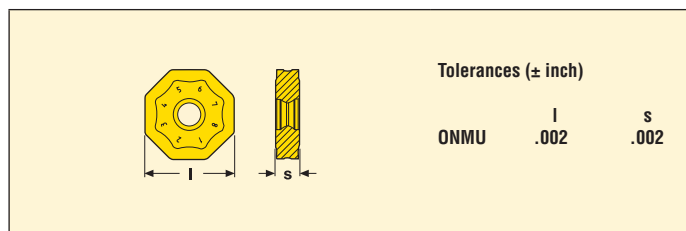
Type of insert	Feed/rev $\leq$	R_a μ in
M13	.082	31
M14	.018	40
M15	.082	31
MD16	.018	40
MD17	.082	31

Finish of the milled surface is determined by feed/rev used.

Dimensions in inch

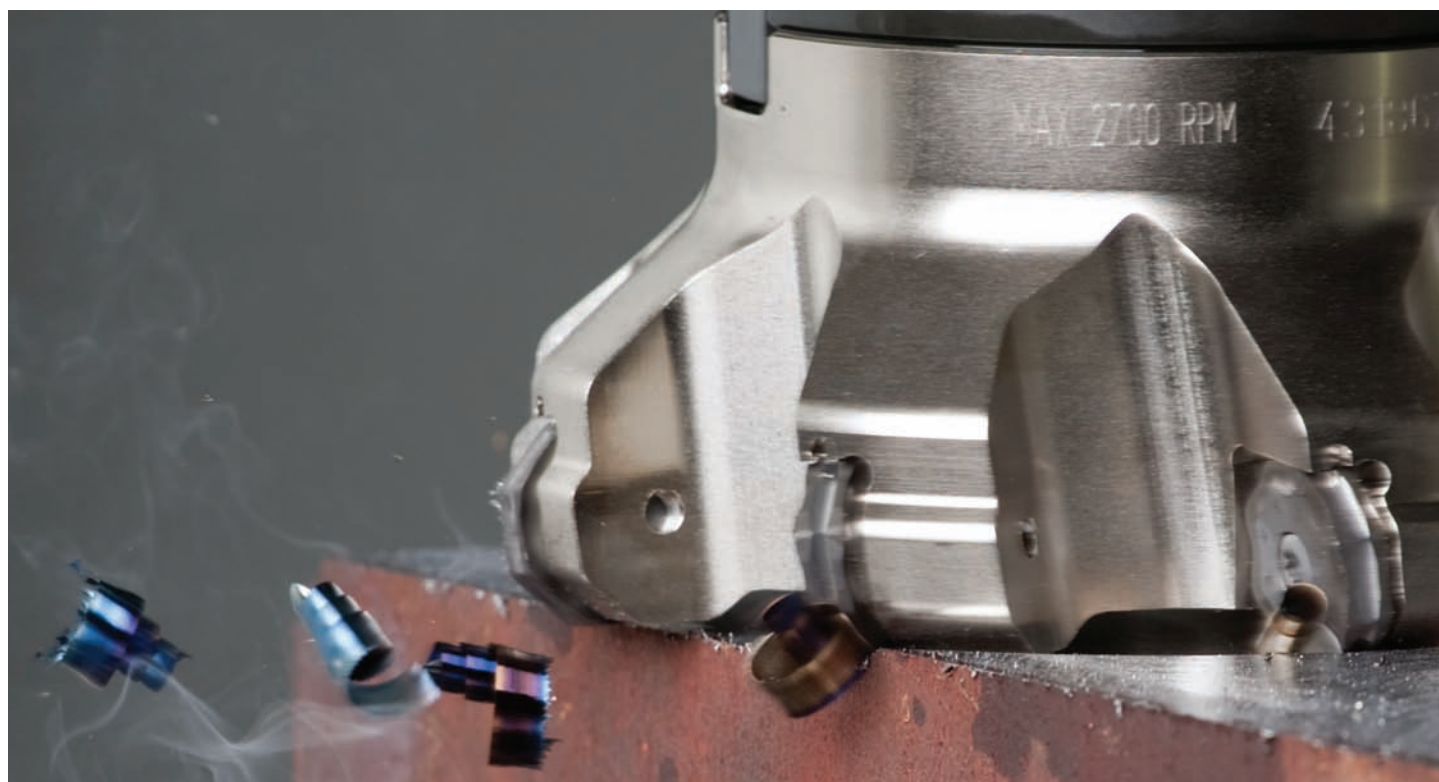
	Insert size	Max D.O.C. a_p	Wiper flat width B
	M13	.157	.082
	M14	.236	.018
	M15	.157	.082
	MD16	.236	.018
	MD17	.157	.082

ON..09



Insert size	Dimensions in inch (mm)	
	L	S
ONMU 09	.866 (22)	.228 (5.8)

Inserts	Part No.	Cutting rake	Grades															
			Coated												Uncoated			
			MK1500	MK2000	MK3000	MP1500	MP2500	MP3000	MH1000	MS2500	T25M	T350M	F15M	F20M	F25M	F40M	S60M	HX
M13	ONMU 090520ANTN-M13	20°	■	■	■	■	■	■				■				■		
	ONMU 090520ANTN-M14	15°	■	■	■	■	■	■				■				■		
	ONMU 090520ANTN-M15	15°	■	■	■	■	■	■				■				■		
M14/M15	ONMU 090520ANTN-MD16	0°	■		■	■	■	■				■						
	ONMU 090520ANTN-MD17	0°	■		■	■	■	■				■						
MD16/MD17																		



■ Stock standard
Subject to change, refer to current price and stock-list.

Steel

SMG No.		BHN	k _c 1.1	m _c
1	Very soft low-carbon steels. Low carbon and purely ferritic mild steels.	<135	196	.21
2	Free cutting steels, excluding stainless steels.	120 <210	218	.22
3	Machine steels and carbon steels. Plain carbon steels with low to medium carbon content (< 0.5%C).	135 <165	218	.25
4	High-carbon and ordinary low-alloy steels. Medium-hard quenching and tempering steels. High-carbon steels (>0.5%C). Ferritic and martensitic stainless steels.	165 <210	247	.24
5	Normal tool steels. Harder quenching and tempering steels. Martensitic stainless steels.	210 <270	276	.24
6	Difficult tool steels. High-alloy, high-hardness steels. Martensitic stainless steels.	270 <360	290	.24
7	Difficult high-strength, high-hardness steels. Hardened steels from material groups 3–6. Martensitic stainless steels.	>360	421	.22

Stainless steel

8	Easy-cutting stainless steels. Free-cutting stainless steels. Calcium-treated stainless steels.		254	.22
9	Moderately difficult stainless steels. Austenitic and duplex stainless steels.		276	.20
10	Difficult stainless steels. Austenitic and duplex stainless steels.		297	.20
11	Very difficult stainless steels. Austenitic and duplex stainless steels.		312	.20

Cast iron

12	Moderately hard cast iron. Grey iron.		167	.22
13	Low-alloy cast iron. Malleable cast iron. SG iron.		178	.25
14	Moderately difficult alloy cast iron. Moderately difficult malleable iron. SG iron.		196	.28
15	Difficult high-alloy cast iron. Difficult malleable iron. SG iron.		213	.30

Other materials

16	Non-ferrous alloys. Aluminum with <16% Si. Brass, zinc and magnesium.		101	.25
17	Non-ferrous alloys. Aluminum with >16% Si. Aluminum, bronze and copper-nickel.		101	.27
20	Nickel-, cobalt- and ferrous superalloys with hardness of <30 HRc. Incoloy 800 and Inconel 601, 617 and 625. Monel 400.		377	.24
21	Nickel-, cobalt- and ferrous superalloys with hardness of >30 HRc. Inconel 718 and 750-X and Incoloy 925, Monel K-500.		479	.24
22	Titanium-based alloys. Ti-6Al-4V.		210	.23

k_c1.1-values with 0 degree effective cutting rake angle. For other rake angles, reduce the k_c1.1-value by 1% for every degree increase in the cutting rake angle and vice versa. Bear in mind that the BHN-value is only an aid in the selection of the material group when the material has been worked by rolling, drawing, heat treatment or other methods that increase the strength of the material.

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