NEW

Member IMC Group
Ingersoll
Cutting Tools

SFEEDUP
HIGH SPEED & FEED

MULTISURFER
QUICK CHANGE SOLID CARBIDE HEAD
FOR MULTIPLE MACHINING

QUICK CHANGE SOLID CARBIDE HEAD FOR MULTIPLE MACHINING

- *More cutting edges for maximized productivity*
- *Simple and robust precision mounting system*
- *Highly efficient face & shoulder mill 90°*
- *Thread milling 55°/60°*
- *Slot milling*

No. 184 E / 9-2020 V2.

Product Overview

Ingersoll has introduced a multi-purpose, exchangeable carbide milling head series for various applications.

MultiSurfer is an optimized milling cutter series for machining various machinery components and other applications in mini-sized workpieces that out perform equivalent milling cutters with indexable inserts.

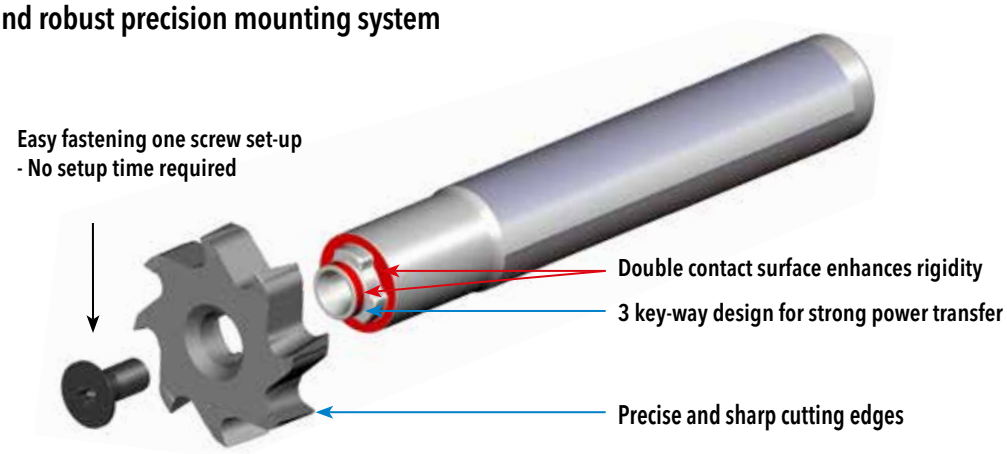
Ingersoll's unique design allows precise and rigid mounting of exchangeable carbide milling head with the use of only one clamping screw, thereby eliminating the need for additional setup time. Furthermore, it is a more productive solution compared to common milling cutters with indexable inserts, due to higher no. of effective teeth being applied to the same diameter.

Application Range

In addition to 90° face/shoulder milling, exchangeable carbide heads are offered for applications such as slot milling and thread milling.

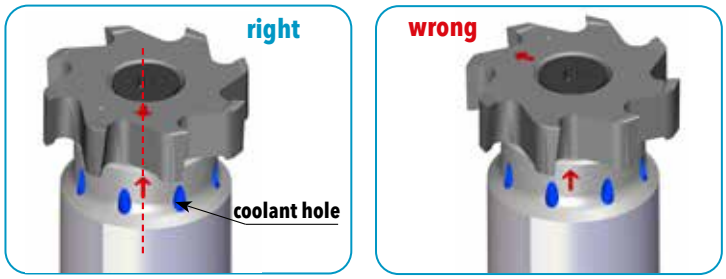
Technical Features & Advantages

- **Simple and robust precision mounting system**



Please note:

When internal coolant is applied by combining the **MultiSurfer** head **18F/19F** with the holder, the arrows shown on the head and holder must be positioned opposite to each other (as shown below) in order to ensure a smooth coolant flow to the cutting edge.



Technical Features & Advantages

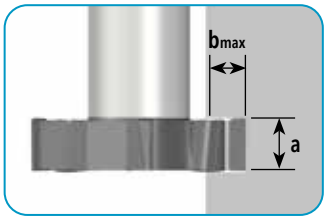
- More cutting edges maximize productivity

- Suited for a wide variety of applications:
  Face milling, shoulder milling and chamfering

- Wider usage due to several diameters and cutting widths:

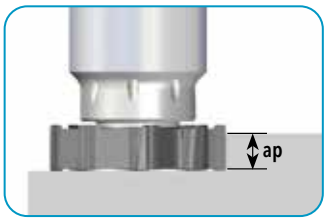
Slot milling (18T / 19T)

tool-Ø (mm)	slot width a (mm)	b_{max} (mm)
24,7	3 - 8	5,5
31,7	3 - 8	8
39,7	4 - 10	11



face milling (18F / 19F)

tool-Ø (mm)	max. ap (mm)	no. of teeth
24,25	8	6
31,25	8	8
39,25	10	10



thread milling (18Y / 19Y)

tool-Ø (mm)	thread profile	no. of teeth
24,7	M60/W55	6
31,7	M60/W55	8
39,7	M60/W55	10

MultiSurfer Thread Mill 18Y/19Y - Parameters

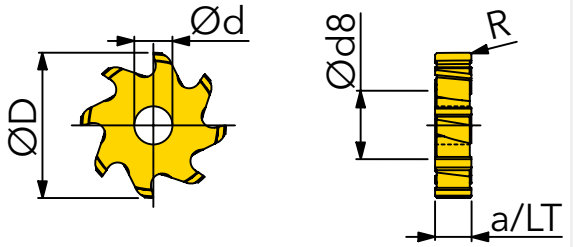
MultiSurfer Thread Mill 18Y / 19Y										
tool	tool-Ø	Z	κ	P	TPI	D-min (internal thread)	thread-Ø ISO (internal thread)	thread-Ø ISO (external thread)	UNC	BSP
18Y24730LPRP60	24,7	6	60°	3-5	5-3	36	≥M36	M24-M48	G ≥ 1 3/4	-
19Y31740LQRP60	31,7	8	60°	4-6	6-4	46	≥M48	M36-M64	G ≥ 2 1/4	-
19Y39760LRRP60	39,7	10	60°	6-8	4-3	57	≥M64	≥M64	G ≥ 2 1/2	-
18Y24750LPRP55	24,7	6	55°	-	5-3	36	-	-	-	G ≥ 1 3/4
19Y31760LQRP55	31,7	8	55°	-	6-4	46	-	-	-	G ≥ 2 1/4
19Y39740LRRP55	39,7	10	55°	-	4-3	57	-	-	-	G ≥ 2 1/2

Recommended Cutting Data

material				Vc (m/min)	f (mm/tooth)		
ISO		AISI/SAE/ASTM	HB		TR13	TR15	TR17
P	unalloyed steel	1020	130-180	120 - 200	0,04 - 0,12	0,05 - 0,15	0,06 - 0,15
	low alloyed steel	4030	260-300	200 - 300	0,04 - 0,12	0,05 - 0,15	0,06 - 0,15
	low alloyed steel	3135	HRC 35-40	80 - 120	0,02 - 0,06	0,03 - 0,12	0,04 - 0,12
	high alloyed steel	H13	200-220	100 - 150	0,03 - 0,07	0,04 - 0,12	0,04 - 0,12
M	martensitic stainless steel	420	200	100 - 150	0,02 - 0,06	0,04 - 0,12	0,04 - 0,12
	austenitic stainless steel	304L	200	80 - 120	0,02 - 0,06	0,03 - 0,10	0,03 - 0,12
K	gray cast iron	Class 40	250	150 - 200	0,04 - 0,12	0,05 - 0,20	0,05 - 0,20
	ductile iron	Class 65 45 12	200	130 - 180	0,04 - 0,10	0,05 - 0,18	0,05 - 0,18
S	super alloys	Inconel 718	HRC 36-40	20 - 30	0,015 - 0,10	0,02 - 0,12	0,02 - 0,12
		AMS R56400	HRC40-45	30 - 40	0,015 - 0,06	0,02 - 0,12	0,02 - 0,12

MULTISURFER MILLING CUTTER Z=6/8/10

ADAPTION FOR MULTISURFER



Grade	P	M	K	N (K)	S (M)	H (P/K)
IN2005	+	+	+		+	

+ first choice ○ second choice

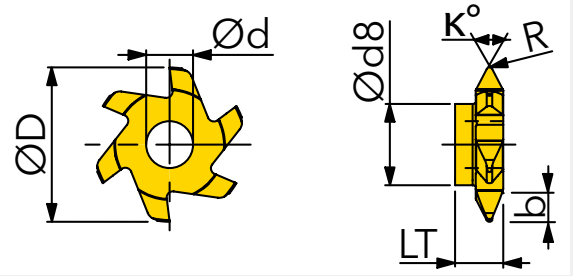
D ± 0,05

≤44 HRC

Designation	D	d	d8	LT	a	R	Z	XT	kg
18F24280LPRA04	24,25	7,4	13	8	8	0,4	6	13	0,045
19F31280LQRA04	31,25	8,4	15	8	8	0,4	8	15	0,053
19F39210LRRA04	39,25	9,8	17	10	10	0,4	10	17	0,099

MULTISURFER THREAD MILL 55°/60°

ADAPTION FOR MULTISURFER



Grade	P	M	K	N (K)	S (M)	H (P/K)
IN2005	+	+	+		+	o

▼ ▼▼ ▼▼▼

D ± 0,05

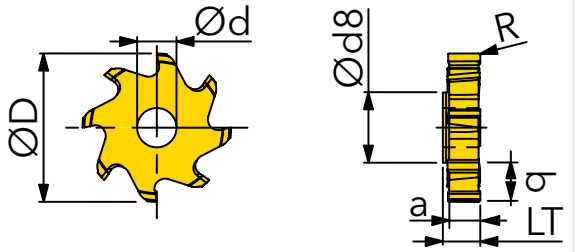
≤44 HRC

+ first choice ○ second choice ▼ roughing ▼▼ semi-finishing ▼▼▼ finishing

Designation	D	D min.	d	d8	LT	κ	b	R	P	TPI	Z	XT	kg
18Y24730LPRP60	24,7	36	7,5	13	7,7	60	3,5	0,2	3-5	5-3	6	13	0,015
19Y31740LQRP60	31,7	46	8,4	15	7,7	60	4,7	0,3	4-6	6-4	8	15	0,034
19Y39760LRRP60	39,7	57	9,8	17	9,5	60	6,2	0,4	6-8	4-3	10	17	0,075
18Y24750LPRP55	24,7	36	7,5	13	7,7	55	3,5	0,5	-	5-3	6	13	0,015
19Y31760LQRP55	31,7	46	8,4	15	7,7	55	4,7	0,5	-	6-4	8	15	0,034
19Y39740LRRP55	39,7	57	9,8	17	9,5	55	6,2	0,8	-	4-3	10	17	0,075

MULTISURFER SLOT MILL

ADAPTION FOR MULTISURFER



Grade	P	M	K	N (K)	S (M)	H (P/K)
IN2005	+	+	+		+	○

▼ ▼▼ ▼▼▼

D ± 0,05

d (a) ± 0,03

44 HRC

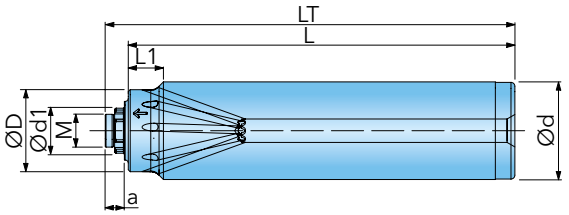
+ first choice ○ second choice ▼ roughing ▼▼ semi-finishing ▼▼▼ finishing

Artikel-Nr.	D	d	d8	LT	a	b	R	Z	XT	kg
18T24730LPRN04	24,7	7,5	13	8	3	5,5	0,4	6	13	0,015
18T24740LPRN04	24,7	7,5	13	8	4	5,5	0,4	6	13	0,017
18T24750LPRN04	24,7	7,5	13	8	5	5,5	0,4	6	13	0,020
18T24760LPRN04	24,7	7,5	13	8	6	5,5	0,4	6	13	0,021
18T24770LPRN04	24,7	7,5	13	8	7	5,5	0,4	6	13	0,024
18T24780LPRN04	24,7	7,5	13	8	8	5,5	0,4	6	13	0,025
19T31730LQRN04	31,7	8,4	15	8	3	8	0,4	8	15	0,027
19T31740LQRN04	31,7	8,4	15	8	4	8	0,4	8	15	0,030
19T31750LQRN04	31,7	8,4	15	8	5	8	0,4	8	15	0,036
19T31760LQRN04	31,7	8,4	15	8	6	8	0,4	8	15	0,041
19T31770LQRN04	31,7	8,4	15	8	7	8	0,4	8	15	0,046
19T31780LQRN04	31,7	8,4	15	8	8	8	0,4	8	15	0,051
19T39740LRRN04	39,7	9,8	17	10	4	11	0,4	10	17	0,046
19T39750LRRN04	39,7	9,8	17	10	5	11	0,4	10	17	0,055
19T39760LRRN04	39,7	9,8	17	10	6	11	0,4	10	17	0,064
19T39770LRRN04	39,7	9,8	17	10	7	11	0,4	10	17	0,073
19T39780LRRN04	39,7	9,8	17	10	8	11	0,4	10	17	0,081
19T39790LRRN04	39,7	9,8	17	10	9	11	0,4	10	17	0,091
19T39799LRRN04	39,7	9,8	17	10	10	11	0,4	10	17	0,112

MULTISURFER STEEL HOLDER CYLINDRICAL

cylinder shaft

MultiSurfer



Designation	D	d	d1	LT	L	L1	a	M	XT	IK	kg
S020LPSA-10	16	20	13	104,35	100	10	4,35	M4x0,5	13	✓	0,22
S025LQSA-10	21	25	15	104,90	100	10	4,90	M5x0,5	15	✓	0,35
S032LRSA-10	28	32	17	146,00	140	10	6,00	M6x0,5	17	✓	0,81

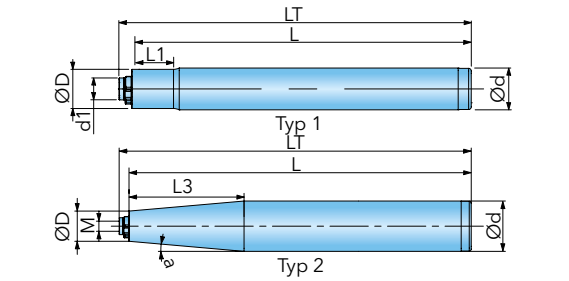
Spare Parts	①	②
13	TS40T098/HG-P	TX15x90-B
15	TS50T110/HG-P	TX20x90-B
17	TS60T130/HG-P	TX20x90-B

① = insert screw ② = Torx-bit

MULTISURFER SHAFT HOLDER THREAD / SLOT MILL

cylinder shaft

MultiSurfer



Designation	D	d	d1	LT	L	L1	L3	α	M	Type	XT	DCONWS	kg
S016LPSA-16	13	16	13	104,4	100	13	-	-	M4x0,5	Type 1	13	13	0,150
S016LQSA-18	15	16	15	104,9	100	16	-	-	M5x0,5	Type 1	15	15	0,155
S016LQSA-19	15	16	15	134,9	130	16	-	-	M5x0,5	Type 1	15	15	0,205
S020LRSA-23	17	20	17	146,0	140	20,2	-	-	M6x0,5	Type 1	17	17	0,330
S025LQSA-57	15	25	15	174,9	170	-	57,2	5°	M5x0,5	Type 2	15	15	0,575

Spare Parts	①	②
13	TS40T098/HG-P	TX15x90-B
15	TS50T110/HG-P	TX15x90-B
17	TS60T130/HG-P	TX15x90-B

① = insert screw ② = Torx-bit

Member IMC Group
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Order-no.: digital • version 2/22

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