

HCG - HORN Catalog Guide

INTERNAL GROOVING

re Ø	r t e									
.625" (15.87 mm)				•						
.709" (18 mm)				•						
.787 - 1.102" (20-28 mm)	•			•						
1.102 - 1.496" (28-38 mm)	•			•	•					
> 1.496" (38 mm)	•			•	•	•	•	•	•	
perat pe										
r	•			•	•	•	•	•	•	
hrea					•	•			•	
Profiling				•	•		•	•	•	
th r e h										
th r e										
Chapter	A	B	C	D	E	F	G	H	J	K

F

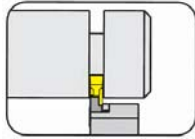
EXTERNAL GROOVING

epth r e p t	r t e									
.157" (4 mm)	•	•	•	•	•	•	•	•	•	•
.236" (6 mm)		•	•	•	•	•	•	•	•	•
.315" (8 mm)		•		•	•	•	•	•		•
.394" (10 mm)		•		•	•	•	•			
.433" (11 mm)		•		•	•	•	•			
.551" (14 mm)		•		•	•		•			
.630" (16 mm)		•		•	•		•			
.709" (18 mm)				•	•		•			
.984" (25 mm)				•			•			
1.000" (25.4 mm)							•			
Operation Type										
Grooving	•	•	•	•	•	•	•	•	•	•
Side Turning		•	•	•	•		•	•		
Parting Off	•	•	•	•	•		•	•		•
Threading		•	•			•	•		•	
Profiling			•		•		•	•	•	•
Axial Grooving						•			•	
th r e h										
Width of groove mm	0.56-5.3	1.5-3.0	0.5-3.0	1.25-3.0	2.0-6.0	2.5-10.0	2.5-10.0	0.5-6.35	0.56-4.29	1.5-3.0
Chapter	A	B	C	D	E	F	G	H	J	K

pe a t p re e t

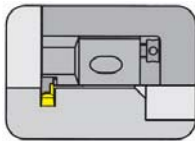
TOOLING SYSTEMS 231 F

Grooving
- external -



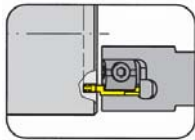
Page F2-F3

Grooving
- internal -

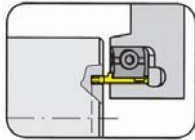


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Face Grooving

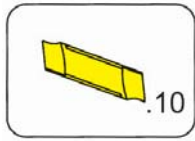


Page F8-F9



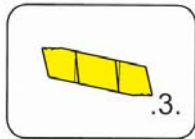
Page F10-F11

**Indexable inserts
Type
231**



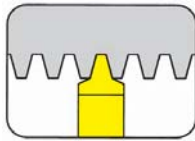
Grooving

Page F6-F7



Face Grooving

Page F12



metric trapezoidal thread

Page F13

For Technical Information please see chapter Q

F

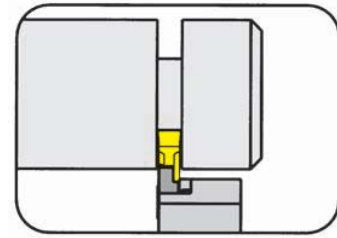
GROOVING (external)



TOOLHOLDER Type

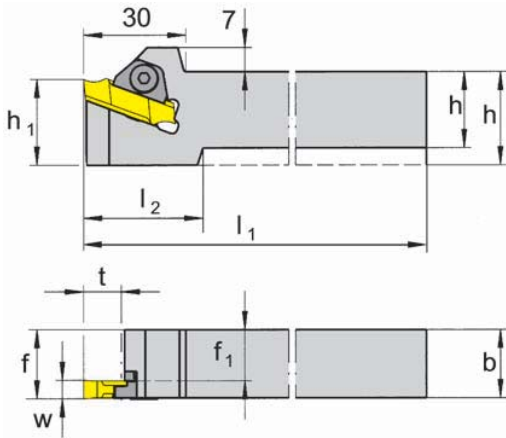
211

Depth of groove up to .433" (11.0 mm)
Clamping range up to .197" (5.0 mm)



for use with Indexable insert

Type 231



R = right hand version shown

L = left hand version

Part number	h	b	l ₁	h ₁	f ₁	f	l ₂	t _{max}	Size	Clamping range
R/L211.2020.02	20	20	125	25	17.5	f ₁ +w-a ₁	35	11	02	2.5 - 3.0
R/L211.2525.02	25	25	150	25	22.5	f ₁ +w-a ₁	-	11	03	3.0 - 4.0
R/L211.3232.02	32	32	170	32	29.5	f ₁ +w-a ₁	-	11	04	4.0 - 5.0
R/L211.2020.03	20	20	125	25	17.0	f ₁ +w-a ₁	35	11	02	2.5 - 3.0
R/L211.2525.03	25	25	150	25	22.0	f ₁ +w-a ₁	-	11	03	3.0 - 4.0
R/L211.3232.03	32	32	170	32	29.0	f ₁ +w-a ₁	-	11	04	4.0 - 5.0
R/L211.2020.04	20	20	125	25	16.0	f ₁ +w-a ₁	35	11	02	2.5 - 3.0
R/L211.2525.04	25	25	150	25	21.0	f ₁ +w-a ₁	-	11	03	3.0 - 4.0
R/L211.3232.04	32	32	170	32	28.0	f ₁ +w-a ₁	-	11	04	4.0 - 5.0

State R or L version

w, a₁ see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/L211....02	2.16.2	6.19	SW3DIN911
R/L211....03	2.16.3	6.19	SW3DIN911
R/L211....04	2.16.7	6.19	SW3DIN911

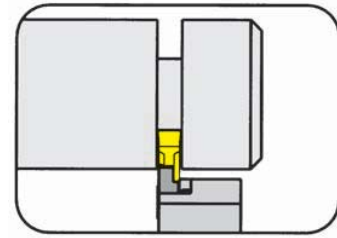
F2

GROOVING (external)

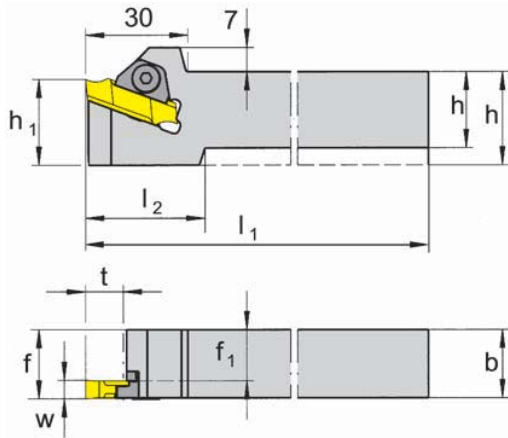


TOOLHOLDER Type

211



Depth of groove up to .433" (11.0 mm)
Clamping range up to .394" (10.0 mm)



for use with Indexable insert

Type 231

F

R = right hand version shown

L = left hand version

Part number	h	b	l_1	h_1	f_1	f	l_2	t_{max}	Size	Clamping range
R/L211.2020.05	20	20	125	25	15	-	35	-	05	5.0 - 6.5
R/L211.2525.05	25	25	150	25	20	f_1+w-a_1	-	11	07	6.5 - 8.5
R/L211.3232.05	32	32	170	32	27	-	-	-	09	8.5 - 10.0
R/L211.2020.07	20	20	125	25	13	-	35	-	07	6.5 - 8.5
R/L211.2525.07	25	25	150	25	18	f_1+w-a_1	-	11	09	8.5 - 10.0
R/L211.3232.07	32	32	170	32	25	-	-	-	-	-
R/L211.2020.09	20	20	125	25	11	-	35	-	09	8.5 - 10.0
R/L211.2525.09	25	25	150	25	16	f_1+w-a_1	-	11	-	-
R/L211.3232.09	32	32	170	32	23	-	-	-	-	-

State R or L version

w, a_1 see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Wrench
R/L211....	2.16.7	6.19	SW3DIN911

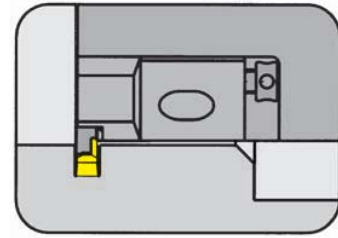
F3

GROOVING (internal)



CARTRIDGE Type

208



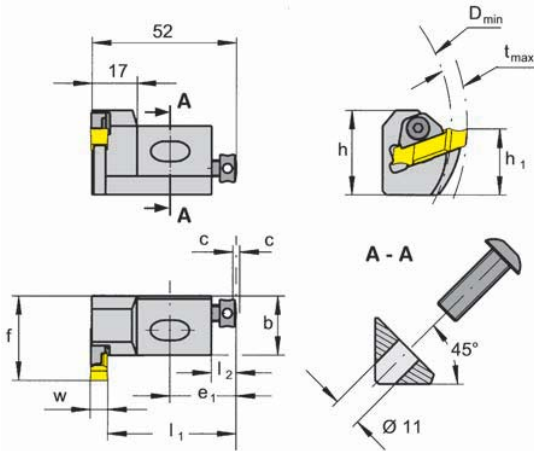
Bore Ø from 2.953" (75.0 mm)
Clamping range up to .394" (10.0 mm)

for use with Indexable insert

Type 231

Depth of groove in relation to bore Ø

D _{min}	t _{max}
75	5,0
85	6,0
95	6,5
110	7,0
140	8,0
200	9,0



R = right hand version shown

L = left hand version

Part number	h ₁	f	h	b	l ₁	e ₁	l ₂	c	Size	Clamping range
R/L208.2520.04	25	32	32	20	47.8	25	9	2	04	4.0 - 5.0
R/L208.2520.05	25	32	32	20	46.8	25	9	2	05	5.0 - 6.5
R/L208.2520.07	25	32	32	20	44.8	25	9	2	07	6.5 - 8.5
R/L208.2520.09	25	32	32	20	42.8	25	9	2	09	8.5 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

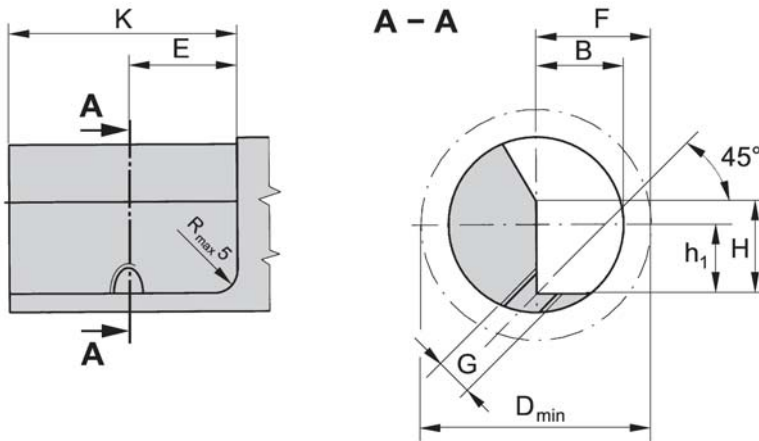
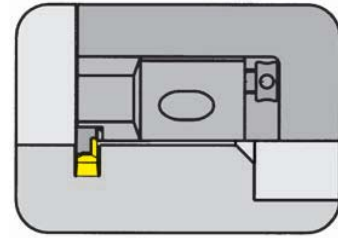
Cartridge	Clamp	Screw	Screw	Axial Setscrew	Radial Setscrew	Wrench
R/L208.2520.0...	2.16.7-K	0.30.208	6.16	6.12.020	4.08.913	SW3DIN911

F4

GROOVING (internal)



SEATING DIMENSIONS CARTRIDGE Type 208



R = right hand version shown

L = left hand version

Cartridge	F	G	H	K	E	B	h ₁	D _{min}	Fastening screw
R/L208.2520...	32	M10	32	25	50	20	25	75	0.30.208

State R or L version

Dimensions in mm

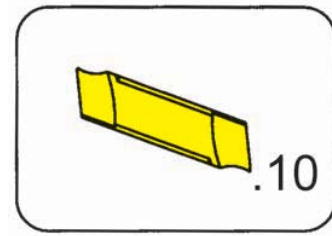
GROOVING (external)



INDEXABLE INSERT Type

231

with round chip breaker

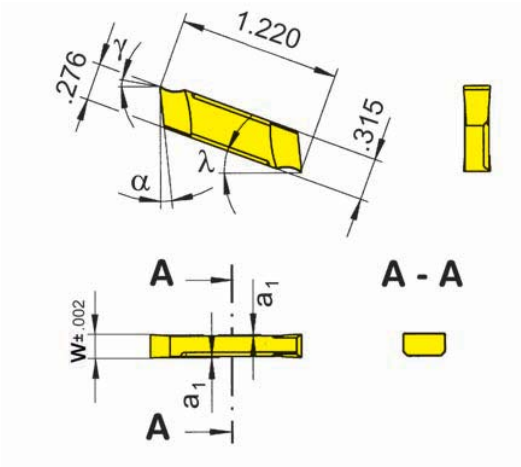


Depth of groove up to .433"
Width of groove .098 - .118"

for use with Toolholder

Type 211

F



R = right hand version shown

L = left hand version

Part number	w	a ₁	α	γ	λ	Size	Carbide grades				
							K10	P20	TN32	TF45	TC92
R/L231.0250.10	.098	.008	6°	20°	20°	02		▲▲	▲/▲		
R/L231.0300.10	.118	.008	6°	20°	20°	03		▲▲			
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet							P	●	●		
							M				
							K				
							S				
							N				
							H				

Dimensions in inch

State R or L version

Use right hand inserts in right hand toolholders and left hand inserts in left hand toolholders

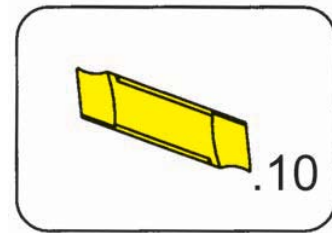
GROOVING (external and internal)



INDEXABLE INSERT Type

231

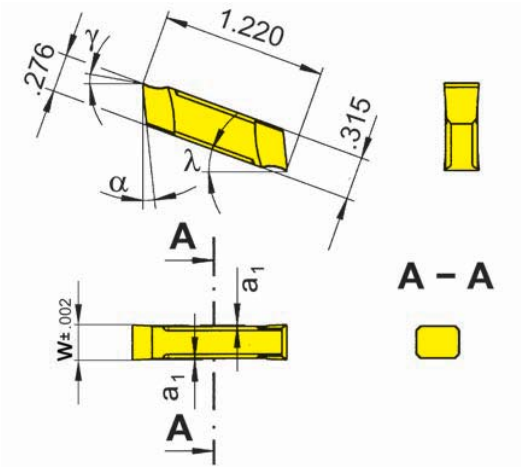
with round chip breaker



Depth of groove up to .433"
Width of groove .157 - .394"

for use with Toolholder

Type 211
208



F

Part number	w	a ₁	α	γ	λ	Toolholder	Size	Carbide grades				
								K10	P20	TN32	TF45	TC92
231.0400.10	.157	.008	6°/11°	20°/15°	20°/15°	211/208	04	▲	▲	▲		▲
231.0500.10	.197	.008	6°/11°	20°/15°	20°/15°	211/208	05	▲	▲			▲
231.0600.10	.236	.008	6°/11°	20°/15°	20°/15°	211/208	07	▲	▲			▲
231.0700.10	.276	.008	6°/11°	20°/15°	20°/15°	211/208	09	▲	▲	▲		▲
231.0800.10	.315	.008	6°/11°	20°/15°	20°/15°	211/208	09	▲	▲	▲		▲
231.1000.10	.394	.008	6°/11°	20°/15°	20°/15°	211/208	09	▲	▲	▲		▲
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation ■ uncoated grades ■ coated grades ■ brazed/Cermet								P	●	●	●	●
								M	○			
								K	●			
								S	○			
								N	●			
								H				

Dimensions in inch

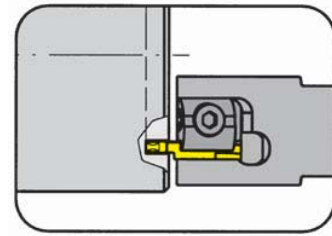
Carbide grades

Indexable inserts can be used in right and left hand toolholders.

TOOLHOLDER Type

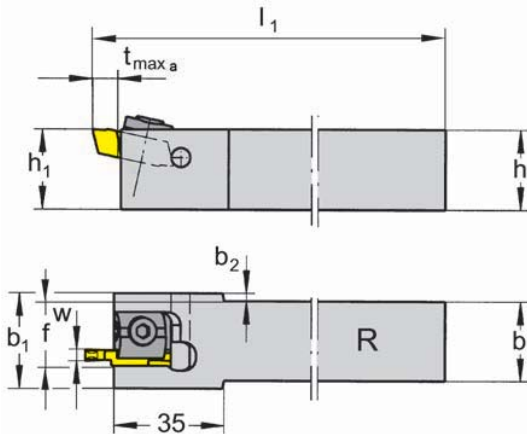
U221

from outer groove \varnothing 1.575"
 Depth of groove up to .315"
 Clamping range up to .394"



for use with Indexable insert

Type 231
 N231



R = right hand version shown

L = left hand version

Part number	h	h ₁	l ₁	b	b ₁	b ₂	f	t _{max a}	Size	Clamping range
R/LU221.0750.04	.750	.750	5.000	.750	1.102	.157	.705	.315	04	.118 - .157
R/LU221.1000.04	1.000	1.000	6.000	1.000	1.102	.059	.803	.315	04	.118 - .157
R/LU221.0750.05	.750	.750	5.000	.750	1.181	.197	.744	.315	05	.161 - .236
R/LU221.1000.05	1.000	1.000	6.000	1.000	1.181	.098	.843	.315	05	.161 - .236
R/LU221.0750.07	.750	.750	5.000	.750	1.260	.236	.783	.315	07	.240 - .315
R/LU221.1000.07	1.000	1.000	6.000	1.000	1.260	.138	.882	.315	07	.240 - .315
R/LU221.0750.09	.750	.750	5.000	.750	1.339	.275	.823	.315	09	.319 - .394
R/LU221.1000.09	1.000	1.000	6.000	1.000	1.339	.177	.921	.315	09	.319 - .394

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Position Pin
R/LU221....	01.60.12	6.20.70	3.6.28

F8

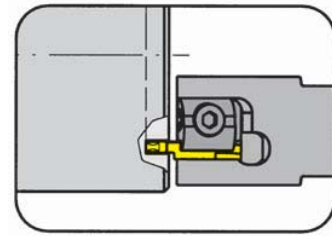
FACE GROOVING



TOOLHOLDER Type

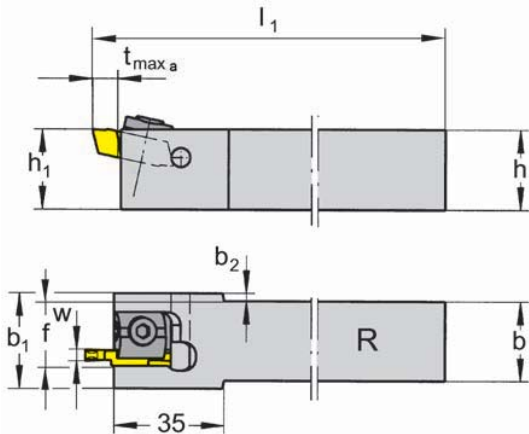
221

from outer groove \varnothing 1.575" (40.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range .118 - .394" (3.0 - 10.0 mm)



for use with Indexable insert

Type 231
 N231



R = right hand version shown

L = left hand version

Part number	h	h ₁	l ₁	b	b ₁	b ₂	f	t _{max a}	Size	Clamping range
R/L221.2020.04	20	20	125	20	28	4.0	17.9	8	04	3.0 - 4.0
R/L221.2525.04	25	25	150	25	28	1.5	20.4	8	04	3.0 - 4.0
R/L221.2020.05	20	20	125	20	30	5.0	18.9	8	05	4.1 - 6.0
R/L221.2525.05	25	25	150	25	30	2.5	21.4	8	05	4.1 - 6.0
R/L221.2020.07	20	20	125	20	32	6.0	19.9	8	07	6.1 - 8.0
R/L221.2525.07	25	25	150	25	32	3.5	22.4	8	07	6.1 - 8.0
R/L221.2020.09	20	20	125	20	34	7.0	20.9	8	09	8.1 - 10.0
R/L221.2525.09	25	25	150	25	34	4.5	23.4	8	09	8.1 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Position Pin
R/L221.2...	01.60.12	6.20.70	3.6.28

F

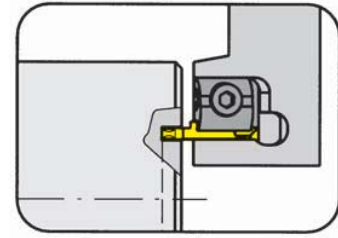
FACE GROOVING



TOOLHOLDER Type

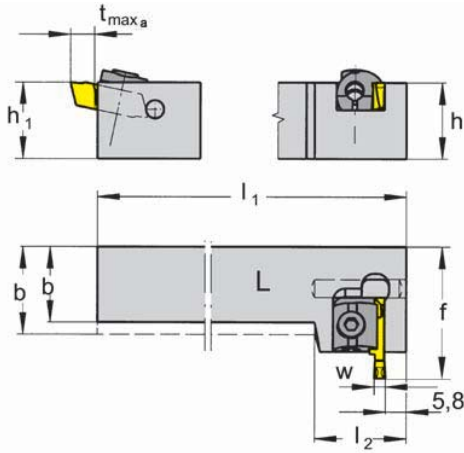
U228

from outer groove \varnothing 1.575"
 Depth of groove up to .315"
 Clamping range up to .394"



for use with Cassette

Type 231
 N231



L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	b	f	$t_{max a}$	Size	Clamping range
R/LU228.0750.04 R/LU228.1000.04	5.000 6.000	1.398	.750 1.000	.750 1.000	.750 1.000	1.516	.315	04	.118 - .157
R/LU228.0750.05 R/LU228.1000.05	5.000 6.000	1.398	.750 1.000	.750 1.000	.750 1.000	1.516	.315	05	.161 - .236
R/LU228.0750.07 R/LU228.1000.07	5.000 6.000	1.398	.750 1.000	.750 1.000	.750 1.000	1.516	.315	07	.240 - .315
R/LU228.0750.09 R/LU228.1000.09	5.000 6.000	1.398	.750 1.000	.750 1.000	.750 1.000	1.516	.315	09	.319 - .394

State R or L version

w see indexable inserts

Dimensions in inch

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Position Pin
R/LU228....	01.60.12	6.20.70	3.6.28

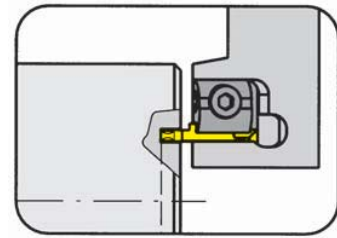
F10

FACE GROOVING

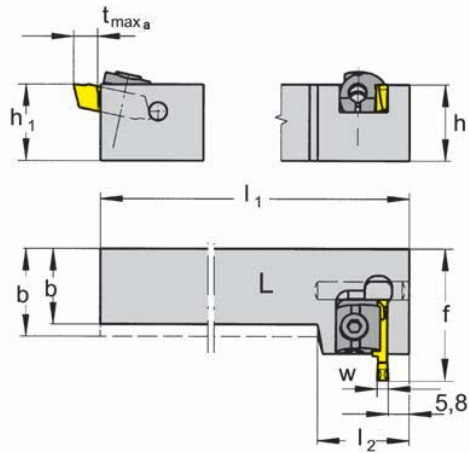


TOOLHOLDER Type

228



from outer groove \varnothing 1.575" (40.0 mm)
 Depth of groove up to .315" (8.0 mm)
 Clamping range up to .394" (10.0 mm)



for use with Indexable insert

Type 231
 N231

F

L = left hand version shown

R = right hand version

Part number	l_1	l_2	h	h_1	b	f	$t_{max a}$	Size	Clamping range
R/L228.2020.04	125		20	20	20				
R/L228.2525.04	150	35.5	25	25	25	38.5	8	04	3.0 - 4.0
R/L228.2020.05	125		20	20	20				
R/L228.2525.05	150	35.5	25	25	25	38.5	8	05	4.1 - 6.0
R/L228.2020.07	125		20	20	20				
R/L228.2525.07	150	35.5	25	25	25	38.5	8	07	6.1 - 8.0
R/L228.2020.09	125		20	20	20				
R/L228.2525.09	150	35.5	25	25	25	38.5	8	09	8.1 - 10.0

State R or L version

w see indexable inserts

Dimensions in mm

Further sizes upon request

Spare parts

Toolholder	Clamp	Screw	Position Pin
R/L228.2...	01.60.12	6.20.70	3.6.28

FACE GROOVING

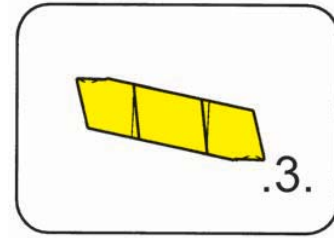


INDEXABLE INSERT Type

231/N231

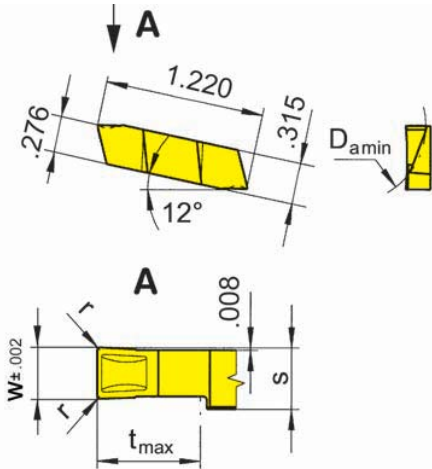
with chip former

from outer groove \varnothing 1.575"
 Depth of groove up to .315"
 Width of groove .118 - .394"



for use with Toolholder

Type 221
 228
 U221
 U228



Indexability length
 $\pm .001"$

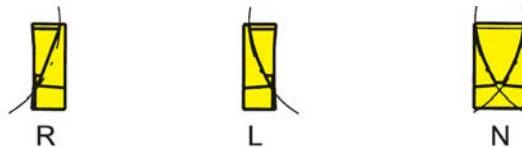
Part number	w	s	r	t _{max}	D _{a min}	Size	Carbide grades		
							TN32	TN35	TA45
R/L231.4030.32	.118	.150	.008	.315	1.575	04		▲▲	
R/L231.4040.32	.157	.150	.008	.315	1.575	04		▲▲	
R/L231.4050.34	.197	.228	.016	.315	1.575	05		▲▲	
N231.4060.34	.236	.228	.016	.315	1.575	05		▲	
N231.4070.36	.276	.307	.024	.315	1.575	07		▲	
N231.4080.36	.315	.307	.024	.315	1.575	07		▲	
N231.4090.38	.354	.386	.031	.315	1.575	09		▲	
N231.4100.38	.394	.386	.031	.315	1.575	09		▲	
							P	•	
							M	•	
							K	•	
							S	•	
							N	•	
							H		

- ▲ on stock Δ 4 weeks
- main recommendation
- o alternative recommendation
- uncoated grades
- coated grades
- brazed/Cermet

Dimensions in inch

State R, L or N version

Outer- \varnothing of groove < 40 mm upon request.



R = right hand version L = left hand version N = right and left hand version

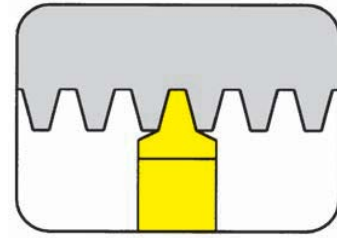
THREADING (external) Full profile



INDEXABLE INSERT Type

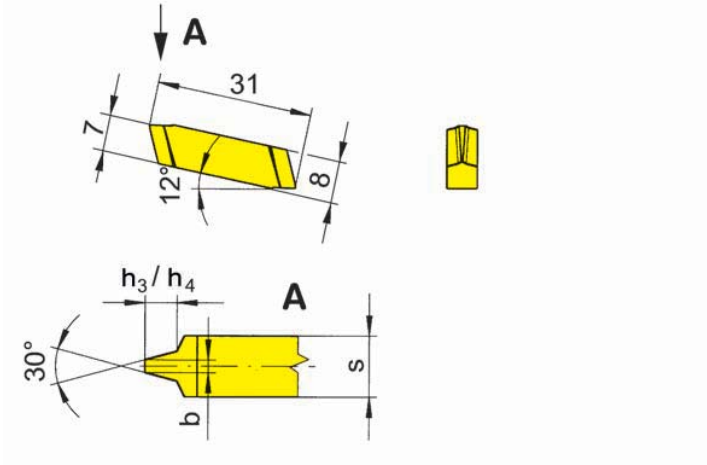
231

Pitch 7.0 - 12.0 mm



for use with Toolholder

Type 221
228
U221
U228



Metric ISO trapezoidal thread DIN 103

F

Part number	P	b	s	h_3 / h_4	Size	MG12	TN35	TI25	TA45
231.4070.02	7	2.29	5.8	4.0	05		▲		
231.4580.02	8	2.66	5.8	4.5	05		▲		
231.5090.02	9	3.02	7.8	5.0	07		▲		
231.5500.02	10	3.39	7.8	5.5	07		▲		
231.6020.02	12	4.12	9.8	6.5	09		▲		
▲ on stock Δ 4 weeks ● main recommendation ○ alternative recommendation □ uncoated grades ■ coated grades ■ brazed/Cermet						P	●	●	●
						M	●	●	●
						K	●	●	●
						S	●	●	●
						N	●	●	●
						H			

Carbide grades

Dimensions in mm

No shims necessary. All HORN thread profiles are manufactured with full ground radial clearance.