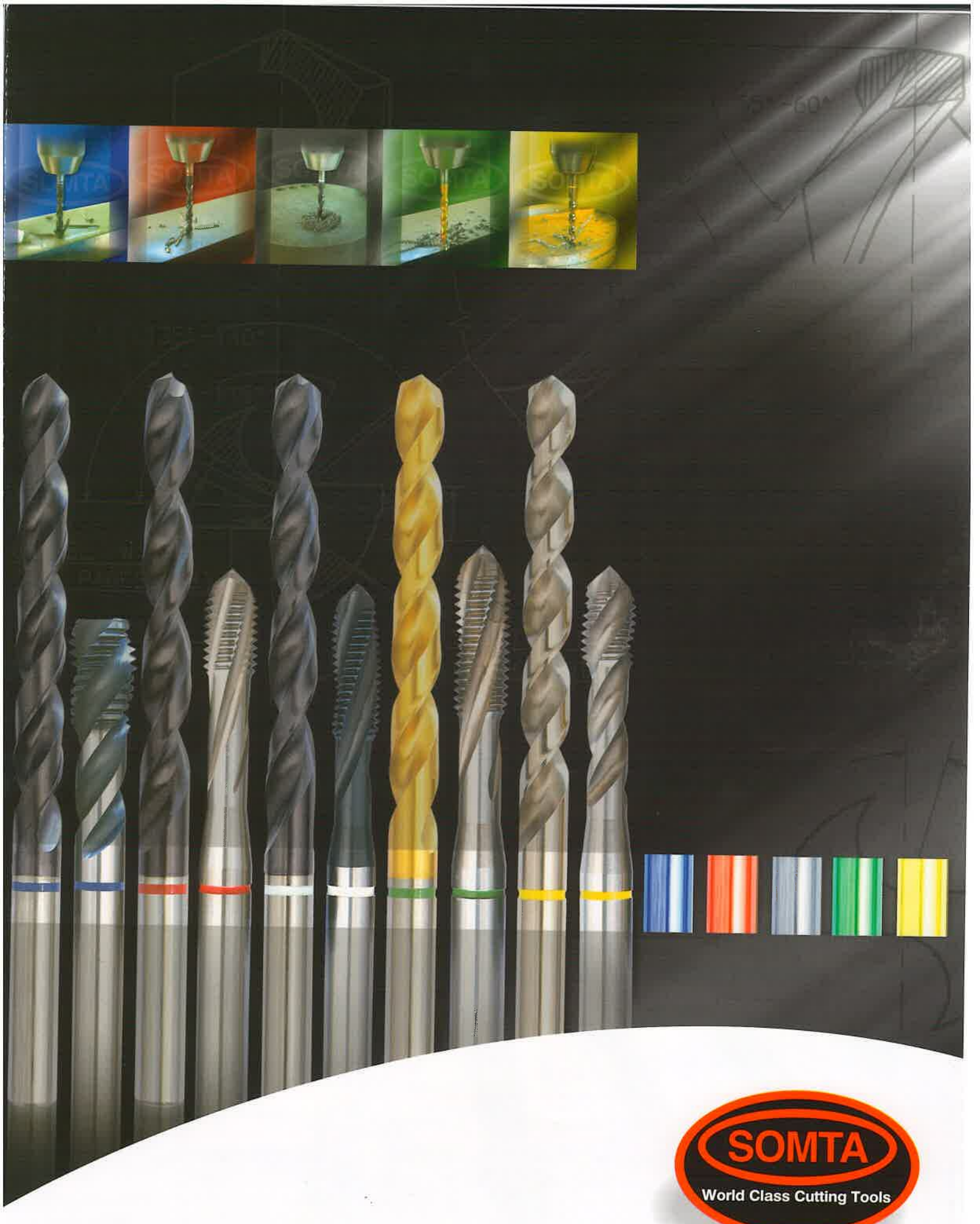


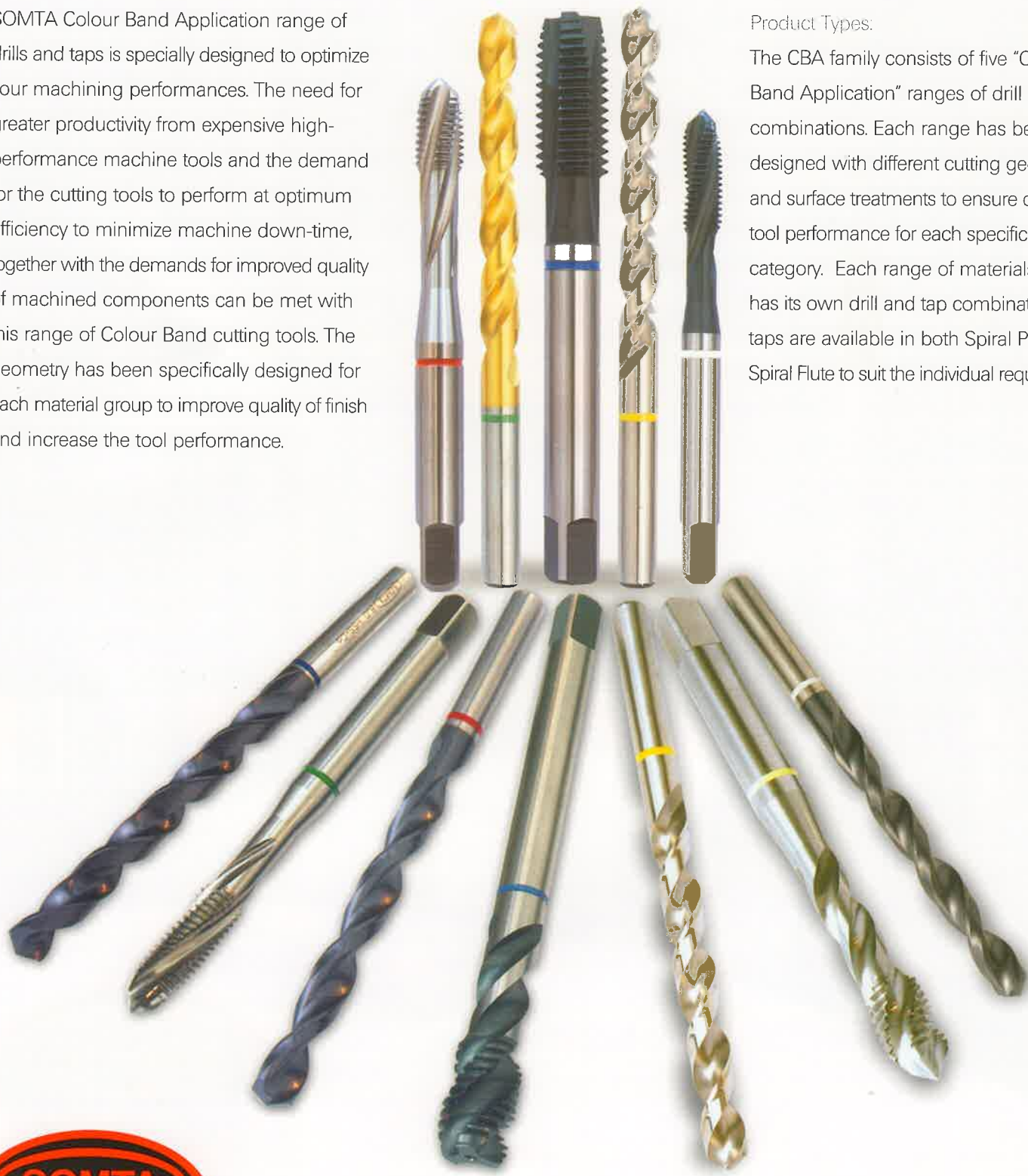
SOMTA

World Class Cutting Tools

COLOUR BAND RANGE

INTRODUCTION

SOMTA Colour Band Application range of drills and taps is specially designed to optimize your machining performances. The need for greater productivity from expensive high-performance machine tools and the demand for the cutting tools to perform at optimum efficiency to minimize machine down-time, together with the demands for improved quality of machined components can be met with this range of Colour Band cutting tools. The geometry has been specifically designed for each material group to improve quality of finish and increase the tool performance.



Product Types:

The CBA family consists of five "Colour Band Application" ranges of drill and tap combinations. Each range has been designed with different cutting geometries and surface treatments to ensure optimum tool performance for each specific material category. Each range of materials group has its own drill and tap combination, and taps are available in both Spiral Point and Spiral Flute to suit the individual requirement

SOMTA
World Class Cutting Tools

C O L O U R B A N D R A N G E

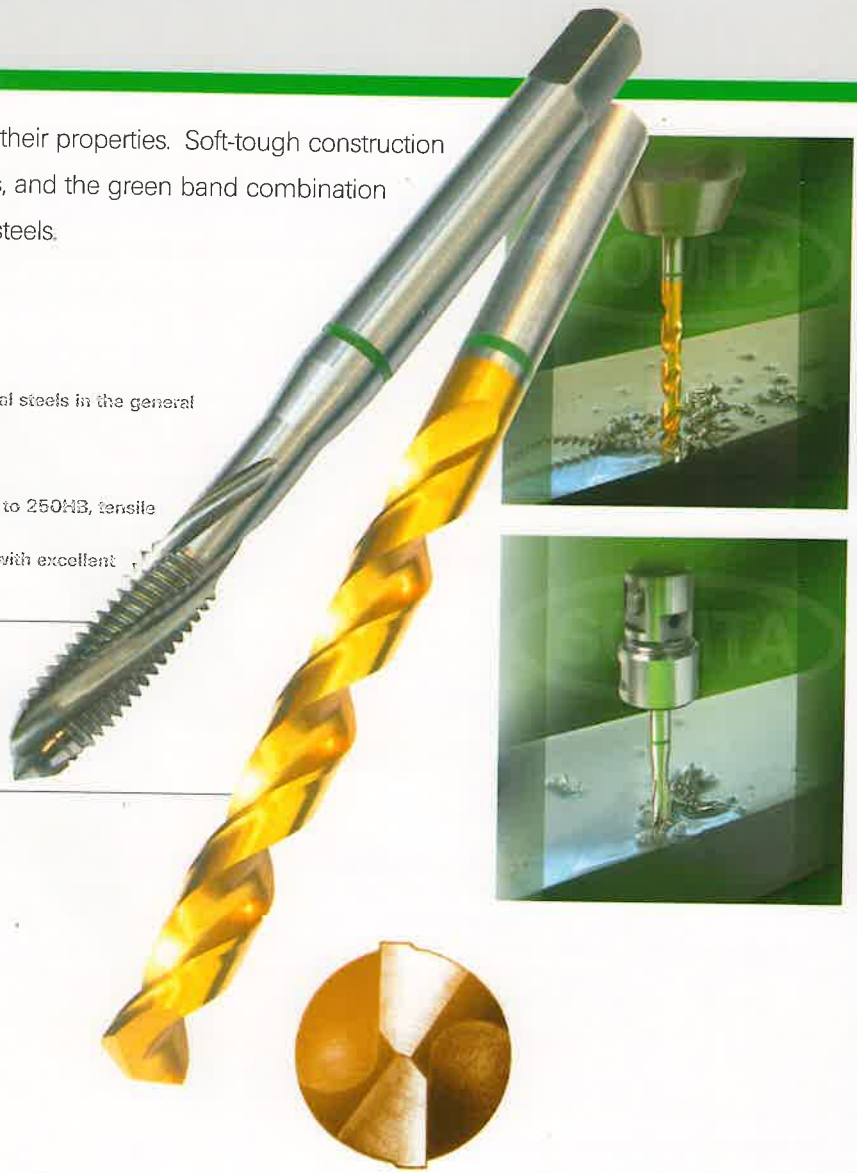
Carbon Steel
Green Band

The machinability of different steels is just as varied as their properties. Soft-tough construction steels place completely different demands on the tools, and the green band combination of taps and drills has been perfected for this range of steels.

GREEN BAND TAP CHARACTERISTICS
- HSSE - Vanadium content for toughness
- Thread and flute configuration design for free cutting and structural steels in the general purpose range of medium tensile strengths.

GREEN BAND CHARACTERISTICS (FOR BOTH TAP AND DRILL)
- Material Properties - Used to machine materials with hardness up to 250HB, tensile strength up to 900N/mm².
- Surface Finish - TiN Coating increases surface hardness to 85Rc, with excellent resistance to abrasion and cold welding.

GREEN BAND DRILL CHARACTERISTICS
- FLUTE - 33° helix, open profile designed with reinforced web for high rigidity under extreme conditions.
- POINT - The 130° SPLIT POINT provides self centering and easier penetration



GENERAL MACHINING GUIDE

Drilling based on Jobber drill lengths

For deep hole drilling reduce speeds by

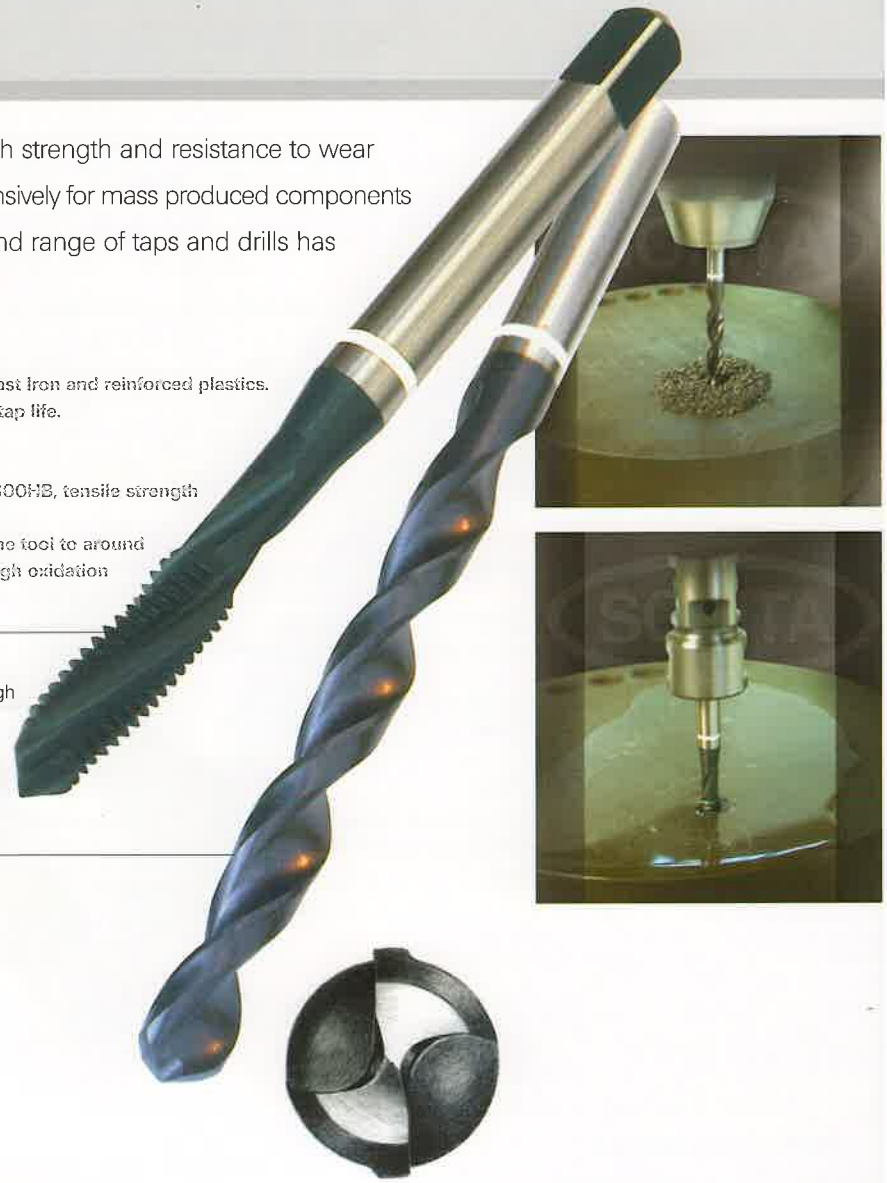
3 x Drill diameter	10%
4 x Drill diameter	20%
5 x Drill diameter	30%
More than 6 x Drill diameter	40%

Tool Material			TAPPING	DRILLING							
MACHINED MATERIALS	HARDNESS Brinell	HARDNESS N/mm²	Cutting speed Metres/min	Cutting speed Metres/min	Feed Rate for Diameters 3mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
CARBON ALLOY STEELS												
Free Cutting Mild Steel	<120	420N/mm²	20-45	40-50	0.120	0.150	0.170	0.220	0.260	0.280	0.320	0.360
Low Carbon Steel	<200	758N/mm²	18-40	30-40	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280
Medium Carbon Steel	<250	861N/mm²	14-25	25-35	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210

SOMTA PRODUCT CODES: **TAPS:** 561, 562, 563, 566, 567, 568 **DRILLS:** IG7

Cast Iron
White Band

Having damping and thermal conductivity, with high strength and resistance to wear characteristics, Cast Iron is a material that is used extensively for mass produced components which all require machining. The SOMTA white band range of taps and drills has been designed to suit this demand.



WHITE BAND TAP CHARACTERISTICS

- Material Types - Designed for highly abrasive materials such as Cast Iron and reinforced plastics.
- Flutes - Increased number of flutes reduces torque and increases tap life.

WHITE BAND CHARACTERISTICS (FOR BOTH TAP AND DRILL)

- Material Parameters - Used to tap materials with hardness up to 300HB, tensile strength up to 1000N/mm^2.
- Surface Finish - TiAlN coating increases the surface hardness of the tool to around 87Rc with an excellent hot hardness working temperature and high oxidation temperature making it suitable for dry machining.

WHITE BAND DRILL CHARACTERISTICS

- FLUTE - Slow helix, parabolic flute designed with reinforced web for high rigidity under extreme conditions.
- POINT - The double angled "DX" point, 118° / 70° minimizes wear on the outer corners of the drill point in highly abrasive materials such as Cast Iron and Reinforced Plastics. The point is web thinned for easier penetration

Drilling based on Jobber drill lengths

For deep hole drilling reduce speeds by

3 x Drill diameter	10%
4 x Drill diameter	20%
5 x Drill diameter	30%
More than 6 x Drill diameter	40%

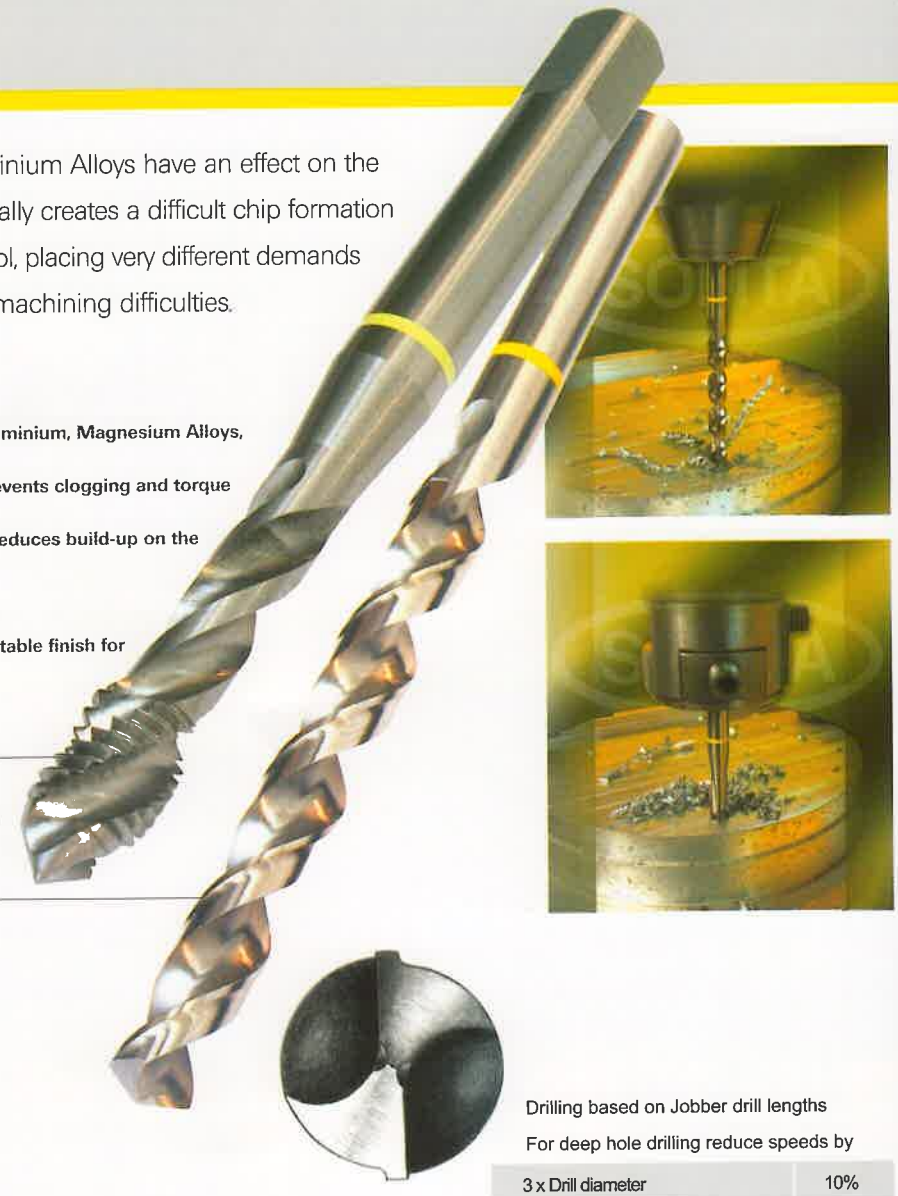
GENERAL MACHINING GUIDE

Tool Material			TAPPING	DRILLING							
MACHINED MATERIALS	HARDNESS Brinell	HARDNESS N/mm^2	Cutting speed Metres/min	Cutting speed Metres/min	Feed Rate for Diameters 3mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
CAST IRONS												
Plain Grey Irons	<150	541N/mm^2	16-30	35-45	0.120	0.150	0.170	0.220	0.260	0.280	0.320	0.360
Plan 'SG' Iron	<250	861N/mm^2	12-20	23-35	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
Alloy 'SG' Iron Nickel Hard	>250	861N/mm^2	07-14	15-28	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210

SOMTA PRODUCT CODES: **TAPS:** 578, 579 **DRILLS:** IW6

Aluminium
Yellow Band

The alloying elements which achieve varying Aluminium Alloys have an effect on the machining properties of these materials. This generally creates a difficult chip formation and material which has tendencies to stick to the tool, placing very different demands on the tool. The yellow band contends with these machining difficulties.



YELLOW BAND TAP CHARACTERISTICS

- **Flute and Thread designed for more ductile materials such as Aluminium, Magnesium Alloys, Soft Brass (MS58), Plastic, Zinc Alloys and Copper.**
- **Flutes - Wide flutes allow more efficient swarf removal which prevents clogging and torque build-up.**
- **Rake Angle - High rake angle improves shear characteristic and reduces build-up on the cutting edge, allowing tap to cut more freely for longer periods.**

YELLOW BAND CHARACTERISTICS (FOR BOTH TAP AND DRILL)

- **Surface Finish - Bright as ground condition which is the most suitable finish for this ductile range of products.**
- **Material Properties - Used to tap materials with hardness up to 200HB, tensile strength up to 700N/mm².**

YELLOW BAND DRILL CHARACTERISTICS

- FLUTE - 35° helix, open profile designed for efficient swarf evacuation.
- POINT - The notched point reduces end thrust and optimizes centre cutting efficiency with chisel strength

Drilling based on Jobber drill lengths

For deep hole drilling reduce speeds by

3 x Drill diameter	10%
4 x Drill diameter	20%
5 x Drill diameter	30%
More than 6 x Drill diameter	40%

G E N E R A L M A C H I N I N G G U I D E

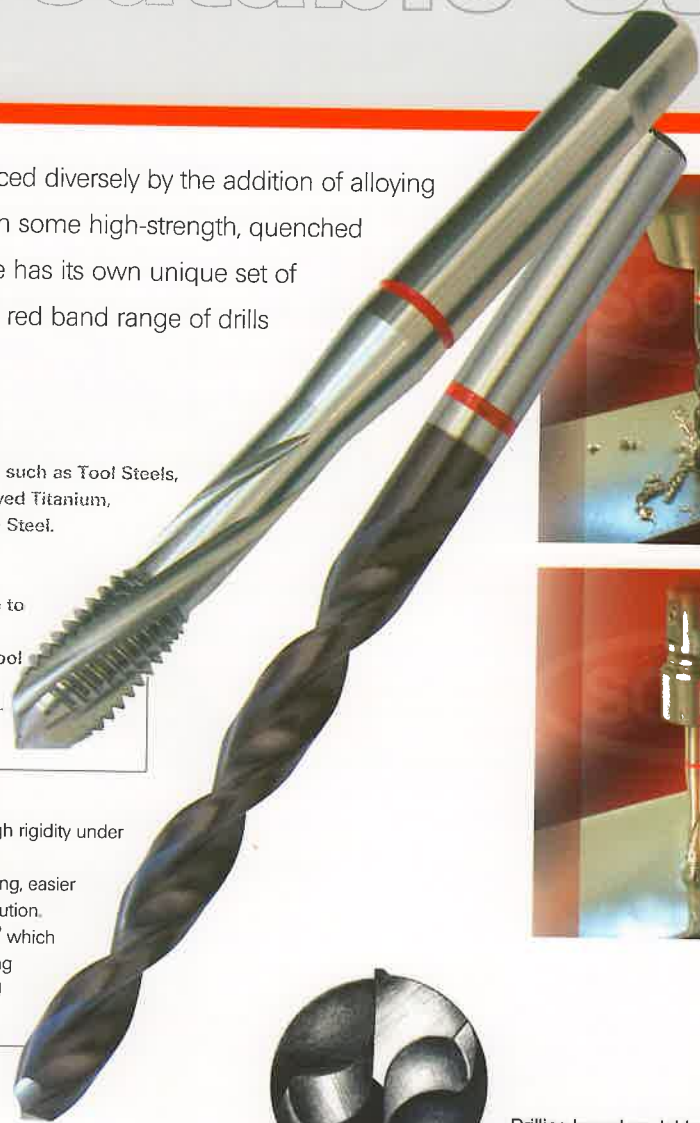
Tool Material			TAPPING	DRILLING							
MACHINED MATERIALS	HARDNESS Brinell	HARDNESS N/mm²	Cutting speed Metres/min	Cutting speed Metres/min	Feed Rate for Diameters 3mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
ALUMINIUM ALLOYS												
Wrought & Extruded	< 150	541N/mm²	30-55	50-60	0.120	0.150	0.170	0.220	0.260	0.280	0.320	0.360
Wrought & Treated	> 150	541N/mm²	27-50	35-50	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280
"Cast, Low Silicon <5%"	< 150	541N/mm²	20-35	30-40	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280
"Cast, High Silicon >10%"	> 150	541N/mm²	15-30	23-35	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280
COPPER												
Pure Copper	<100	-	15-30	35-55	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
"Brass, Soft"	<200	717N/mm²	40-50	40-50	0.150	0.190	0.210	0.280	0.330	0.350	0.400	0.450
"Brass, Bronze"	>200	717N/mm²	30-50	35-45	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280

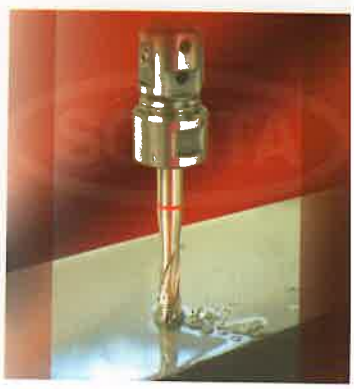
SOMTA PRODUCT CODES: **TAPS:** 512, 538, 548, 558, 569 **DRILLS:** IAQ

Tough Treatable Steel

Red Band

The mechanical properties of materials are influenced diversely by the addition of alloying elements and heat treatment processes, resulting in some high-strength, quenched and tempered steels or hardened steels. This range has its own unique set of machining requirements which are satisfied by the red band range of drills and taps.





RED BAND TAP CHARACTERISTICS

- HSSE - Vanadium content for toughness
- Thread and flute configuration designed for high tensile materials such as Tool Steels, Heat Treatable Steels, Spring Steel, Case Hardening Steel, Unalloyed Titanium, Nitriding Steel, Cold Drawn Constructional Steel and High Tensile Steel.

RED BAND CHARACTERISTICS (FOR BOTH TAP AND DRILL)

- Material Properties - Used to machine materials with hardness up to 470HB, tensile strength up to 1500N/mm².
- Surface Finish - TiAlN coating increases surface hardness of the tool to around 87Rc with an excellent hot hardness working temperature and high oxidation temperature making it suitable for dry machining.

RED BAND DRILL CHARACTERISTICS

- FLUTE - Slow helix, parabolic flute designed with reinforced web for high rigidity under extreme conditions.
- POINT– The 130° special notched "UX" point style provides self centering, easier penetration, improved hole accuracy and improved load distribution. This special notch geometry gives a corrected rake angle of 15° which provides a strong point for harder materials, as well as preventing snatching with materials such as Aluminium, Brass, Bronze and Plastics

Drilling based on Jobber drill lengths

For deep hole drilling reduce speeds by

3 x Drill diameter	10%
4 x Drill diameter	20%
5 x Drill diameter	30%
More than 6 x Drill diameter	40%

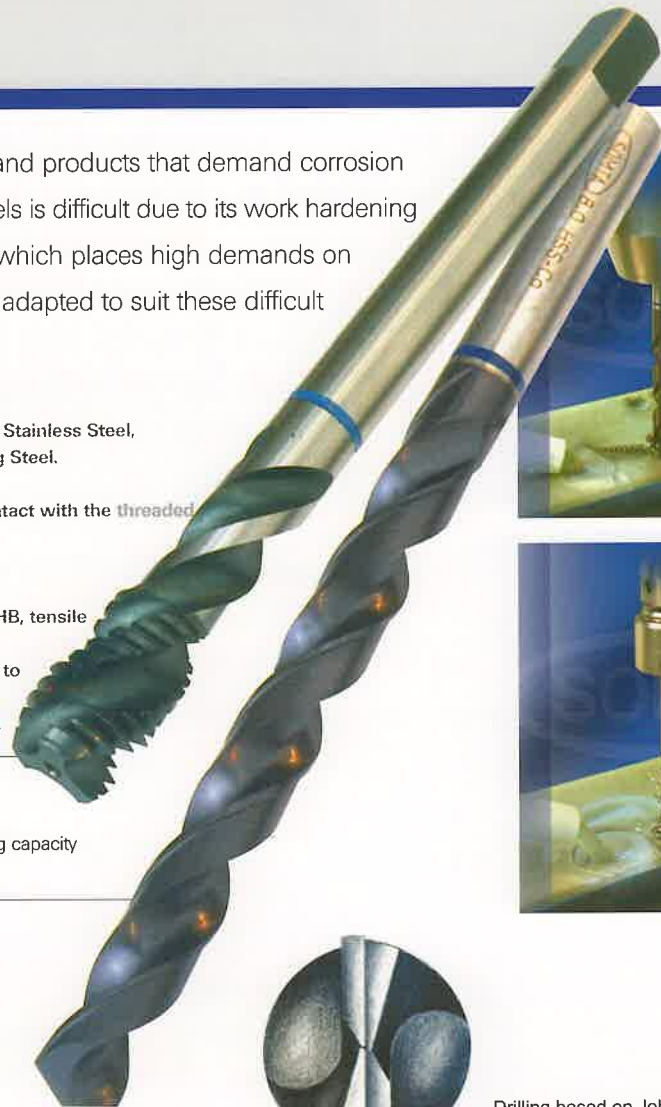
GENERAL MACHINING GUIDE

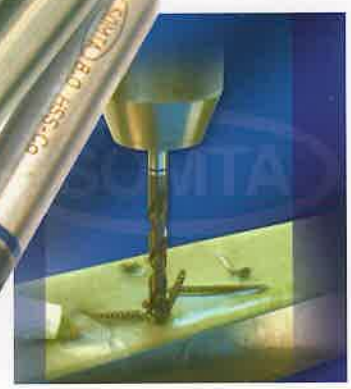
Tool Material			TAPPING	DRILLING							
MACHINED MATERIALS	HARDNESS Brinell	HARDNESS N/mm²	Cutting speed Metres/min	Cutting speed Metres/min	Feed Rate for Diameters 3mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
COPPER												
High Tensile Bronze	<350	1144N/mm²	12-28	15-28	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
CARBON ALLOY STEELS												
Low Alloy Steel	>250	861N/mm²	12-20	25-30	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
"Alloyed, Heat Treated"	>300	971N/mm²	07-15	15-20	0.045	0.060	0.065	0.070	0.100	0.110	0.130	0.160
"Alloyed, Heat Treated"	>350	1144N/mm²	05-09	10-15	0.045	0.060	0.065	0.070	0.100	0.110	0.130	0.160
NICKEL												
"Nickel, Nimonic 75"	>300	971N/mm²	04-12	06-10	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
"Nickel, Inconel 718 Alloy"	<350	1144N/mm²	03-07	04-08	0.045	0.060	0.065	0.070	0.100	0.110	0.130	0.160

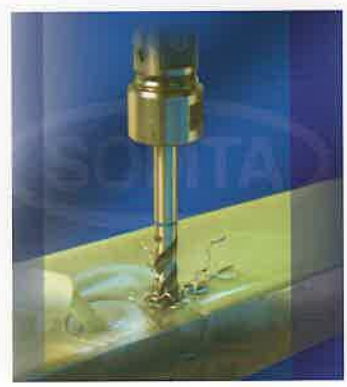
SOMTA PRODUCT CODES: **TAPS:** 540, 550, 564, 576 **DRILLS:** IR5

Stainless Steel
Blue band

Stainless steels are used extensively for components and products that demand corrosion resistance and long life. The machining of stainless steels is difficult due to its work hardening properties, toughness and poor thermal conductivity, which places high demands on the cutting tools. The Blue band has been specifically adapted to suit these difficult machining requirements.







BLUE BAND TAP CHARACTERISTICS

- Thread and flute configuration designed for tough materials, such as Stainless Steel, Titanium Alloys, Cast Steel, Heat Resisting Steel and Work Hardening Steel.
- HSSE - Vanadium content for toughness
- Truncated Thread - Truncated thread after lead reduces frictional contact with the threaded hole and allows easier penetration of coolant.

BLUE BAND CHARACTERISTICS (FOR BOTH TAP AND DRILL)

- Material Properties - Used to tap materials with hardness up to 350HB, tensile strength up to 1250N/mm^2.
- Surface Finish - TiAlN coating increases surface hardness of the tool to around 87Rc with an excellent hot hardness working temperature and high oxidation temperature making it suitable for dry machining.

BLUE BAND DRILL CHARACTERISTICS

- FLUTE - Refined flute profile with high helix for enhanced chip removal
- POINT - Specifically developed MULTIFACET POINT for higher load carrying capacity and enhancing feed rates in the machining of difficult materials.

Drilling based on Jobber drill lengths

For deep hole drilling reduce speeds by

3 x Drill diameter	10%
4 x Drill diameter	20%
5 x Drill diameter	30%
More than 6 x Drill diameter	40%

G E N E R A L M A C H I N I N G G U I D E

			TAPPING	DRILLING							
MACHINED MATERIALS	HARDNESS Brinell	HARDNESS N/mm^2	Cutting speed Metres/min	Cutting speed Metres/min	Feed Rate for Diameters 3mm	5mm	6mm	8mm	10mm	12mm	16mm	20mm
STAINLESS STEELS												
Free Cutting	<250	861N/mm^2	12-20	12-22	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280
Austenitic	<250	861N/mm^2	08-16	10-15	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280
"Martensitic, Ferritic"	>300	971N/mm^2	07-10	12-18	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
TITANIUM												
"Pure Titanium, unalloyed"	<200	758N/mm^2	10-16	20-32	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
Titanium Alloys	>300	971N/mm^2	05-10	06-12	0.062	0.080	0.095	0.120	0.140	0.150	0.160	0.210
NICKEL												
"Pure Nickel, Unalloyed"	<300	971N/mm^2	09-15	10-15	0.085	0.110	0.120	0.160	0.190	0.200	0.240	0.280

SOMTA PRODUCT CODES: **TAPS:** 539, 549, 559, 570 **DRILLS:** IBB, IBS

DISTRIBUTORS - INDIA

NOBLE ENTERPRISES
NOBLE FASTOTECH PVT. LTD
307 RAJA HOUSE , 30-31 NEHRU PLACE
NEW DELHI – 110019 INDIA

PHONES : +91-11-41617246 , +91-11-41617274
FAX : + 91-11-41617271

E-MAIL : business@noblefix.com

MANUFACTURERS :

SOMTA TOOLS (Pty.) Ltd.
SOMTA HOUSE, EDENDALE ROAD,
PIETERMARITZBURG 3200
SOUTH AFRICA