

**Thread production on machining centers with constant speed tapping**

CNC-Attachments



CST Constant Speed Tapping relies on a compact tapping attachment to provide tap reversal. The machine spindle runs in one direction at the exact programmed speed and reversal occurs within the tapping attachment instantaneously upon machine retraction. This avoids the inevitable RPM fluctuations which occur with reversal of the machine spindle. Benefits include the following...

**Reduced Cycle Time**

By eliminating the machine spindles need to decelerate, stop, reverse and reaccelerate twice for each tapped hole the tapping time is dramatically reduced.

**Longer Tap Life, Improved Thread Quality**

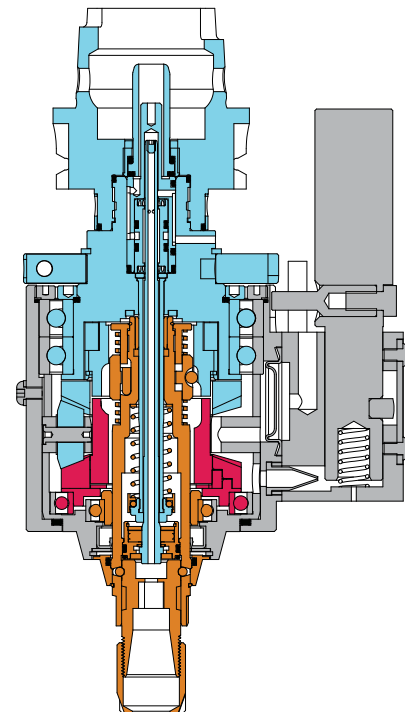
Constant speed tapping means that the tap is allowed to cut at the optimum speed continuously without deceleration at the bottom of the hole. The result is the longest tap life and improved thread quality.

**Reduced Machine Spindle Wear**

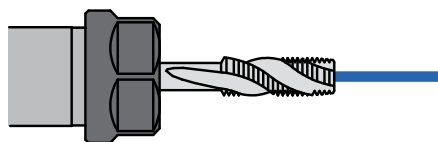
Tapping is the only operation requiring machine reversal. Using a Constant Speed Tapping Head eliminates this strain on the machine.

**Reduced Energy Costs of up to 75 %**

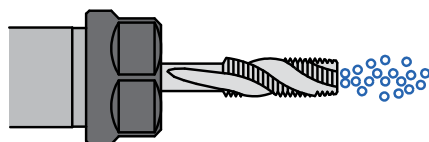
CST attachments reduce the energy costs required by machine spindle reversal by 75%.



**Two Through the Spindle Lubrication Options...**



Standard balanced high pressure coolant through the spindle.



Minimum Quantity Lubrication, available on request.

**Patented Design**

TAPMATIC tapping attachments include a patented reversing ball drive. The ball drive allows for an exact and immediate change over into reverse once the desired thread depth is reached.

## Advantages of tapping attachments with automatic reversal

### General Information

Thread cutting is the only machining operation which requires a change of direction for the retraction of the tool. Reversing the spindle causes wear and is a costly procedure for any machine.

### RCT and RDT tapping attachments

These reversing tapping attachments are specially designed for fast thread production on CNC machining centers. They eliminate reversal related machine wear and tear and reduce energy consumption. The patented ball drive with integrated planet gear for automatic reversal creates an almost constant cutting speed and eliminates the need to stop and reverse the machine spindle twice per tapped hole.

By using the RDT and RCT tapping attachments the cycle time is reduced and the life of the tap is increased. The IC-version allows coolant to flow directly through the tapping head.

### Case history:

#### Original Application

Thread cutting on a horizontal machining center Fritz Werner TC800 with internal coolant.

#### Material

GG20

#### Tap

M6 standard thread HSS with TIN-AL coating

#### Thread

M6 standard thread, 9 mm deep, tapping drill  $\varnothing$  5.05 and 12.5 mm deep

#### Speed with machine reversal

Rigid tapping with spindle reversal, programmed speed 1,200 RPM

#### Original Results

Cycle time of 6 min 34 sec for 68 threads

#### Change with TAPMATIC

Using a TAPMATIC tapping attachment RDT-IC50 with ER16 spindle, programmed speed 1,800 RPM.

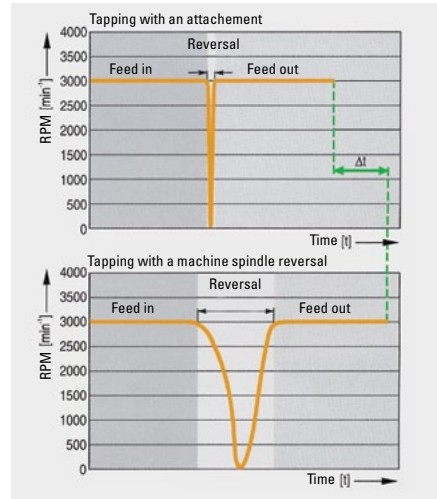
#### Improvement

Cycle time reduced to 3 min 22 sec for 68 threads, tap life tripled.

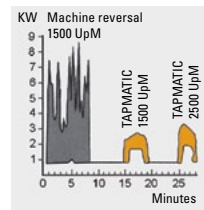
#### Advantage

Besides reducing the cycle time, tap life was considerably increased.

### Constant speed tapping – the secret of longer tap life



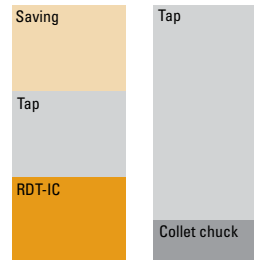
### Power consumption for 144 threads M8



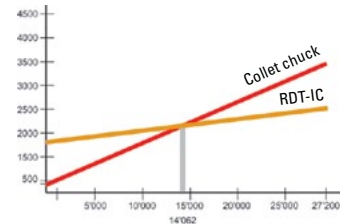
Energy cost saving of 75 %

Not only is the shorter cycle time of importance, but also the constant spindle direction. By changing the direction (decelerating and accelerating) of the spindle, higher spikes of power are needed, which can be prevented by constant spindle rotation.

### Total cost/year



### Break Even Point



### Results

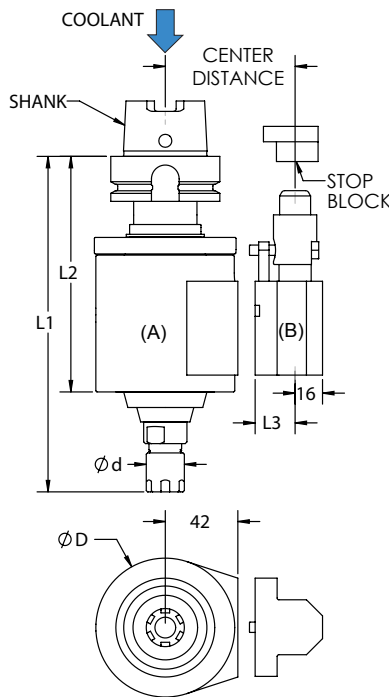
- reduction of cycle time by 50 %
- increase of production capacity
- tap life tripled
- less machine wear (no spindle reversals)
- roughly 75% energy savings by constant speed tapping

### Conclusion

With the use of Tapmatic constant speed tapping, the cycle time is less, which increases productivity. Additionally, machine repair / downtime and energy costs are reduced and tap life is dramatically improved.

# High speed tapping attachments with integral HSK shank and internal coolant system

CNC-Attachments



**Features and Advantages**

- high speed self-reversing tapping for fastest cycle time
- rugged design for years of production, with little maintenance
- high pressure internal coolant system, 50 Bar
- simple installation and programming

**How to Order**

Please select the Tapping attachment (A) and stop arm (B) to fit your machine. Accessories like steel collets, sealing gaskets and stop blocks are not included. Please order these separately.

Tapmatic can provide a complete tool ready to fit your machine. Please simply provide the information shown on installation page 11, fill in the form on the back cover or contact us directly.

**(A) Tapping Attachment RCT HSK**



Model	Capacity (steel)	Collets	Shank	Order code	L1	L2	Weight kg	D	d	Max. RPM
RCT50	M4.5–M12 #10–1/2"	ER16	HSK63A	0550H63161	194	136	3.5	80	22	2500
			HSK80A	0550H80161	199	141	3.9			
			HSK100A	0550H100161	201	143	4.8			
		ER20	HSK63A	0550H63201	206	136	3.5	80	28	2300
HSK80A	0550H80201		211	141	3.9					
HSK100A	0550H100201		213	143	4.8					
RCT85HS	M10–M20 7/16"–3/4"	ER25	HSK63A	0585H6325	217	168	4.2	80*	42	1500
			HSK80A	0585H8025	222	173	4.6			
			HSK100A	0585H10025	224	175	5.5			
RCT85HD	M12–M25 1/2"–1"	ER32	HSK63A	0585H6332	223	168	4.4	80*	50	1200
			HSK80A	0585H8032	228	173	4.8			
			HSK100A	0585H10032	230	175	5.7			
RCT100	M18–M27 3/4"–1"	ER40	HSK63A	05100H6340	229	168	4.6	80*	63	800
			HSK80A	05100H8040	234	173	5.0			
			HSK100A	05100H10040	236	175	5.9			

**Notes:** These internal coolant tools come standard with sealing nuts. These models are also available without internal coolant upon request. When using Roll Form Taps the tool's capacity must be reduced 25%. All dimensions are shown in mm. 25.4mm = 1"

\*Please note that size 85 and 100 tools have an 80mm square housing with ø102mm across corners

**(B) Stop Arm Assembly**



Center Distance (42+L3)	Order code RCT50	Order code RCT85, 100	L3
55	0550551	3985551	13
65	0550651	3985651	23
80	0550801	3985801	38



**Stop Block**  
Page 11



Steel Collets

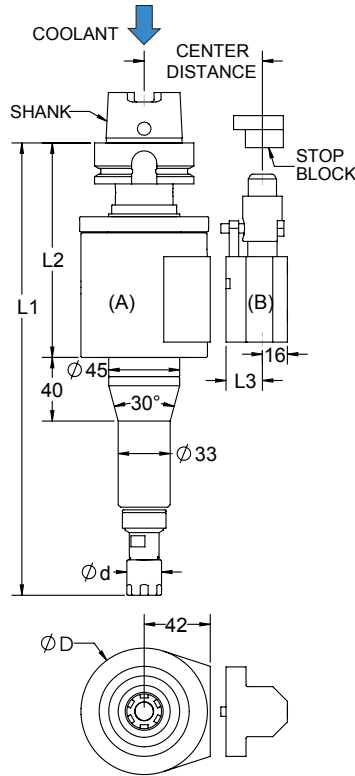


Sealing Gaskets



Installation

**Extended length tapping attachments with integral HSK shank and internal coolant system**



**Features and Advantages**

- high speed self-reversing tapping for fastest cycle time
- extended length for difficult to reach holes
- rugged design for years of production, with little maintenance
- RCTXT50 for high pressure internal coolant, 50 Bar
- simple installation and programming

**How to Order**

Please select the Tapping attachment (A), and stop arm (B) to fit your application. Accessories like steel collets, sealing gaskets and stop blocks are not included. Please order these separately.

Tapmatic can provide a complete tool ready to fit your machine. Please simply provide the information shown on installation page 11, fill in the form on the back cover or contact us directly.

CNC-Attachments

**(A) Tapping Attachment RCTXT50 HSK Shank, Internal Coolant System**



Model	Capacity (steel)	Collets	Shank	Order code	L1	L2	Weight kg	D	d	Max. RPM			
RCTXT50	M4.5–M12 #10–1/2"	ER16	HSK63A	0550H6316L287	287	136	4.0	80	22	1800			
			HSK80A	0550H8016L292	292	141	4.4						
			HSK100A	0550H10016L294	294	143	5.3						
		ER20	HSK63A	0550H6320L297	297	136	4.0				80	28	1600
			HSK80A	0550H8020L302	302	141	4.4						
			HSK100A	0550H10020L304	304	143	5.3						
	ER16	HSK63A	0550H6316L360	360	136	4.2	80	22	1600				
			HSK80A	0550H8016L365	365	141				4.6			
			HSK100A	0550H10016L367	367	143				5.5			
		ER20	HSK63A	0550H6320L370	370	136				4.2	80	28	1400
			HSK80A	0550H8020L375	375	141				4.6			
			HSK100A	0550H10020L377	377	143				5.5			

**Notes:** Special extended length tools are also available on request. These models are also available without internal coolant on request. When using Roll Form Taps the tool's capacity must be reduced 25%. All dimensions are shown in mm. 25.4mm = 1"

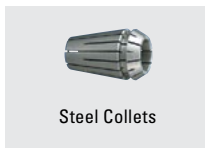
**(B) Stop Arm Assembly**



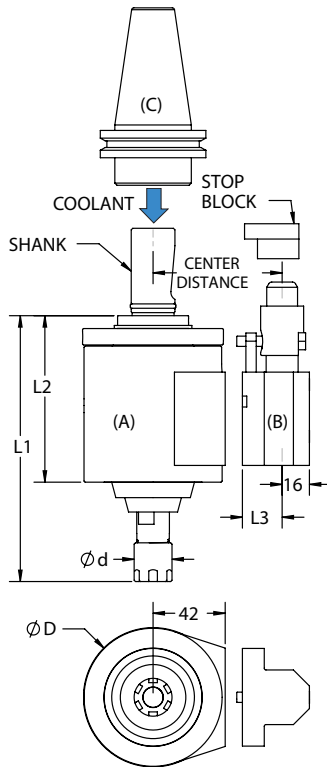
Center Distance (42+L3)	Order code RCT50	L3
55	0550551	13
65	0550651	23
80	0550801	38



**Stop Block**  
Page 11



**High speed tapping attachments with modular straight shank and internal coolant system or without internal coolant, (W/O IC)**



**Features and Advantages**

- high speed self-reversing tapping for fastest cycle time
- rugged design for years of production, with little maintenance
- high pressure internal coolant system, 50 Bar
- simple installation and programming

**How to Order**

Please select the Tapping attachment (A) and stop arm (B) and CAT, SK or BT shank (C) to fit your machine. Accessories like steel collets, sealing gaskets and stop blocks are not included. Please order these separately.

Tapmatic can provide a complete tool ready to fit your machine. Please simply provide the information shown on installation page 11, fill in the form on the back cover or contact us directly.

**(A) Tapping Attachment RCT Cylindrical Shank with or without Internal Coolant (IC)**



Model	Capacity (steel)	Collets	Shank	Order code W IC	Order Code W/O IC	L1 W IC	L1 W/O IC	L2	Weight kg	D	d	Max. RPM
RCT50	M4.5-M12 #10-1/2"	ER16	25 mm	05502516	04502516	155	152	97	3.0	80	22	2500
			1"	0550116	0450116							
RCT85HS	M10-M20 7/16"-3/4"	ER20	25 mm	05502520	04502520	167	162	97		80	28	2300
			1"	0550120	0450120							
RCT85HD	M12-M25 1/2"-1"	ER25	25 mm	05852525	04852525	168	163	119	3.7	80*	42	1500
			1"	0585125	0485125							
RCT85HD	M12-M25 1/2"-1"	ER32	25 mm	05852532	04852532	174	169	119	3.9	80*	50	1200
			1"	0585132	0485132							
RCT100	M18-M27 3/4"-1"	ER40	25 mm	051002540	041002540	180	175	119	4.1	80*	63	800
			1"	05100140	04100140							

**Notes:** These internal coolant tools come standard with sealing nuts. These models are also available without internal coolant upon request. When using Roll Form Taps the tool's capacity must be reduced 25%. All dimensions are shown in mm. 25.4mm = 1".

\* Please note that size 85 and 100 tools have an 80mm square housing with ø102mm across corners.

**(B) Stop Arm Assembly**



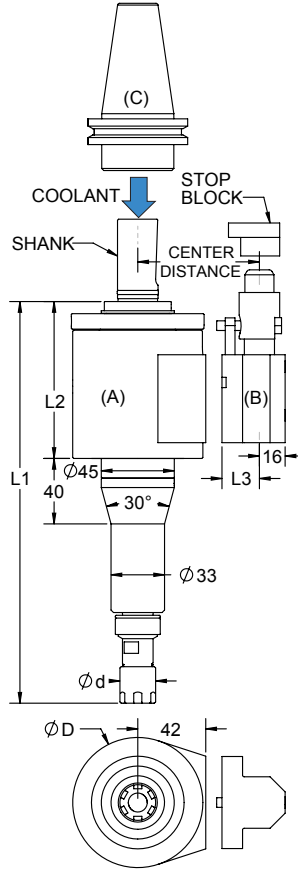
Center Distance (42+L3)	Order code RCT50	Order Code RCT 85, 100	L3
55	0550551	3985551	13
65	0550651	3985651	23
80	0550801	3985801	38



**Stop Block**  
Page 11



Extended length tapping attachments with modular straight shank and internal coolant system or without internal coolant, (W/O IC)



Features and Advantages

- high speed self-reversing tapping for fastest cycle time
- extended length for difficult to reach holes
- rugged design for years of production, with little maintenance
- RCTXT50 for high pressure internal coolant, 50 Bar
- simple installation and programming

How to Order

Please select the Tapping attachment (A), stop arm (B), shank (C) to fit your application. Accessories like steel collets, sealing gaskets and stop blocks are not included. Please order these separately.

Tapmatic can provide a complete tool ready to fit your machine. Please simply provide the information shown on installation page 11, fill in the form on the back cover or contact us directly.

CNC-Attachments

(A) Tapping Attachment RCTXT50 Cylindrical Shank, with or without Internal Coolant System (IC)



Model	Capacity (steel)	Collets	Shank	Order code W IC	Order code W/O IC	L1 W IC	L1 W/O IC	L2	Weight kg	D	d	Max. RPM
RCTXT50	M4.5-M12 #10-1/2"	ER16	25 mm	05502516L248	04502516L245	248	245	97	3.5	80	22	1800
			1"	0550116L248	0450116L245							
		ER20	25 mm	05502520L258	04502520L253	258	253	3.7	28	1600		
			1"	0550120L258	0450120L253							
		ER16	25 mm	05502516L321	04502516L318	321	318	22	1600			
			1"	0550116L321	0450116L318							
ER20	25 mm	05502520L331	04502520L326	331	326	28	1400					
		1"	0550120L331	0450120L326								

Notes: These internal coolant tools come standard with sealing nuts. These models are also available without internal coolant upon request. Special extended length tools are also available on request. When using Roll Form Taps the tool's capacity must be reduced 25%. All dimensions are shown in mm. 25.4mm = 1"

(B) Stop Arm Assembly



Center Distance (42+L3)	Order code RCT50	L3
55	0550551	13
65	0550651	23
80	0550801	38

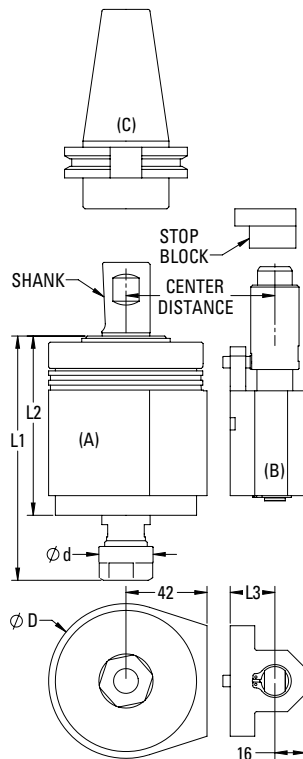


Stop Block Page 11





**High speed tapping attachments with modular straight shank, without internal coolant system**



**Features and Advantages**

- high speed self-reversing tapping for fastest cycle time
- rugged design for years of production, with little maintenance
- simple installation and programming
- large capacity

**How to Order**

Please select the Tapping attachment (A), stop arm (B) and CAT, SK, or BT shank (C), to fit your machine. Accessories like steel collets, sealing gaskets and stop blocks are not included. Please order these separately.

Tapmatic can provide a complete tool ready to fit your machine. Please simply provide the information shown on installation page 11, fill in the form on the back cover or contact us directly.

**(A) Tapping Attachment RDT Cylindrical Shank**



Model	Capacity (steel)	Collets	Shank	Order code	L1	L2	Weight kg	D	d	Max. RPM
RDT15	M1-M3 #0-#6	ER8	25 mm	3915258HD	97	79	1.7	57	12	5000
			1"	391518HD						
RDT25	M2-M6 #4-1/4"	ER11	25 mm	39252511	106	79	1.7	57	19	4000
			1"	3925111						
RDT50	M4.5-M12 #10-1/2"	ER16	25 mm	39502516	126	93	3.7	80	28	2000
			1"	3950116						

**Notes:** When using Roll Form Taps the tool's capacity must be reduced 25%.  
To hold larger taps with RDT50 ER16, use standard collet 20953 and separate square drives packaged with tool.  
All dimensions are shown in mm. 25.4mm = 1"

**(B) Stop Arm Assembly**

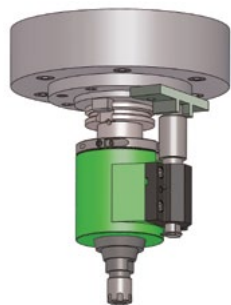


Center Distance (42+L3)	Order code RDT15	Order code RDT50	L3
55	3925551	3950551	13
65	3925651	3950651	23
80	3925801	3950801	38



**Stop Block**  
Page 11





**Tapmatic can supply a tapping attachment ready to fit your machining center**

RDT and RCT tapping attachments eliminate the need for the machine spindle to reverse by automatically reversing the taps rotation when the machine retracts. For the automatic reversal to function a stop arm is needed to prevent the housing of the tapping attachment from rotating. Our stop arm locking mechanism allows the tool to easily make automatic tool changes.

**Tapmatic maintains a large data base of machining center installations**

Please simply let us know the machine manufacturer, make and model and we may already have the installation information available to provide a tool ready to run on your machine.

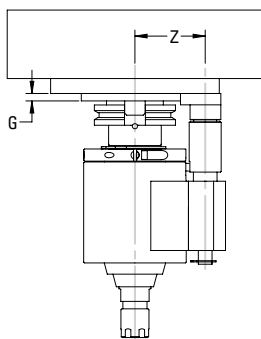
**My machine already has a stop block**

If your machine already has an anti-rotation stop block installed, please let us know the dimensions shown in the drawing below. We can prepare a tool to go with your existing stop block.

**My machine does not have a stop block**

If your machine does not have a stop block already installed, we would be pleased to prepare one for you. Please simply fill in the form on the inside back cover or download it from our website under "Customer Service", and forward us the information. We will be pleased to submit an offer to you.

**Preferred Installation**



Gage Line to Mounting Surface

G = \_\_\_\_\_

Center Distance  
(commonly 55, 65, or 80)

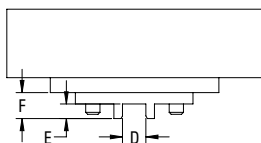
Z = \_\_\_\_\_

Diameter of Bore or  
Width of Slot in Stop Block

D = \_\_\_\_\_

Depth of Bore or Slot in Stop Block

E = \_\_\_\_\_



Total Height of Stop Block

F = \_\_\_\_\_

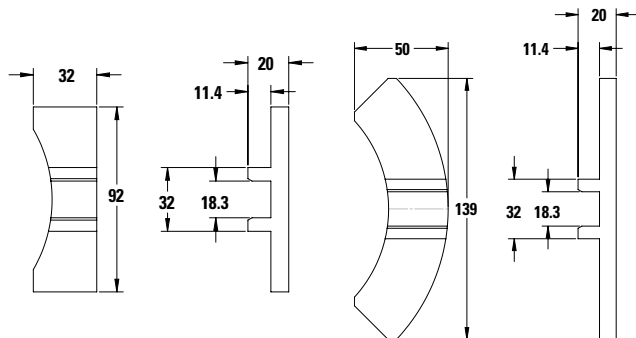
Machine Spindle Taper  
(SK, BT, CAT, HSK... )

Shank = \_\_\_\_\_

Machine Manufacturer and  
Model = \_\_\_\_\_



**Standard stop blocks are available if you would like to design your own installation.** These blank stop blocks can be modified to fit the bolt pattern of your machine.



Order code.  
36007 Standard Block

Order code  
36010 Standard Block



## Tapping attachments with VDI shank for CNC lathes



Model RSR



Model ASR

### Features and Advantages

- high speed self reversing tapping for fastest cycle time
- lower energy cost
- improves tap life
- steel collets ER-GB (ER)
- modular base adaptors VDI and BMT, to fit all turrets, provided by EWS

Developed in cooperation with EWS, a world leader in driven tooling for CNC lathes

### Radial Tapping Attachment RSR

Model	Order code	Capacity (steel)	Collets ER	Max. RPM (I - O = 1 - .666)
RSR50	37014E1	M4.5-M12	ER16	2500 In-1665 Out

### Axial Tapping Attachment ASR

Model	Order code	Capacity (steel)	Collets ER	Max. RPM
ASR50	32161E	M4.5-M12	ER16	2500

**Note:** Steel collets and VDI shank have to be ordered separately. The VDI shank is manufactured specifically for your lathe. When using Roll Form Taps the tools capacity must be reduced by 25%. Dimensions for the attachments available on request.



Steel Collets