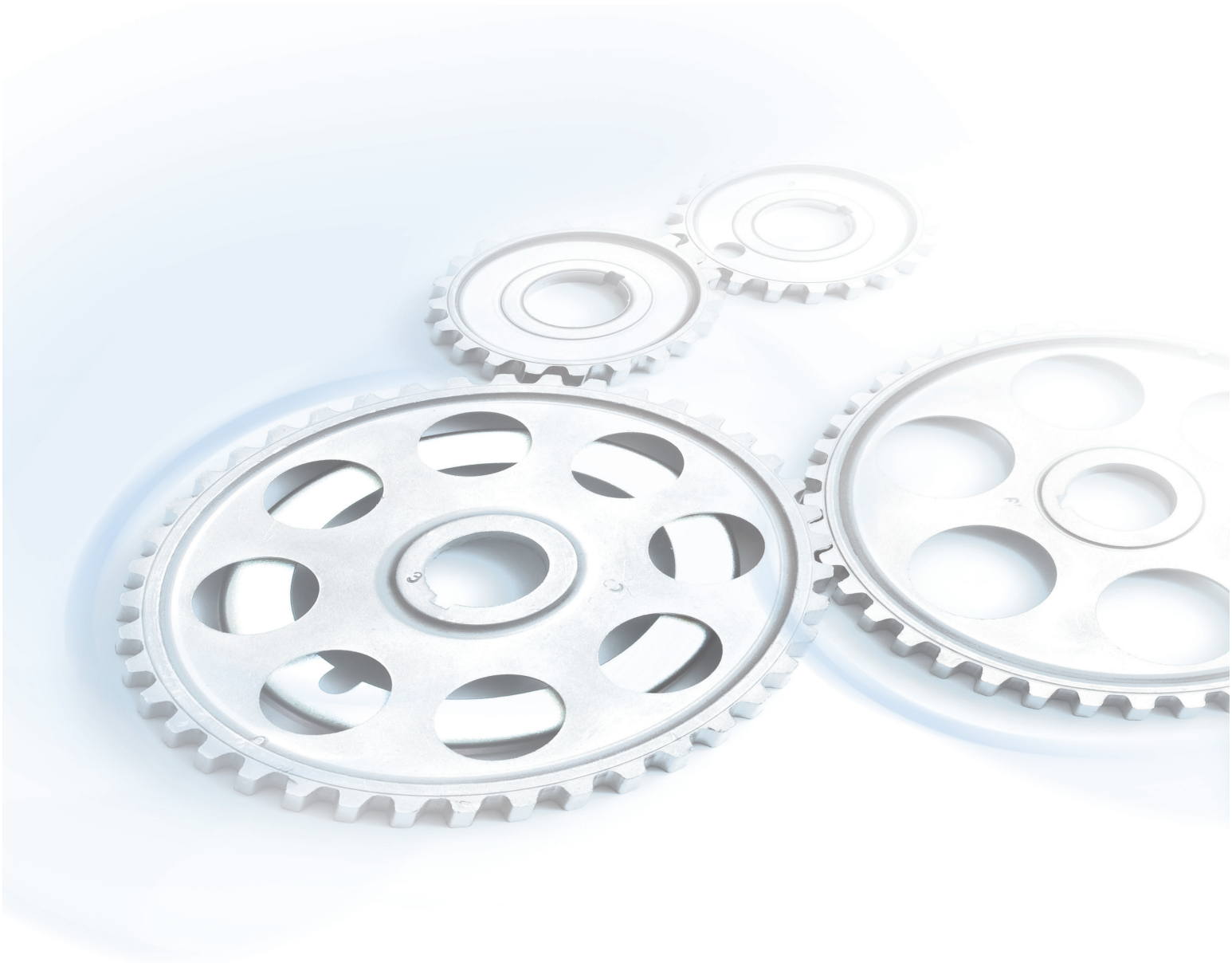
Precision meets Motion

Manual

EWS . TAPMATIC RSR50

Radial Tapping Attachment

EWS Tool Technologies



Safety Precautions and Instructions

	**To avoid serious injury and ensure best results for your application, please read carefully all** operation and safety instructions for your Tapping Attachment, as well as all other safety instructions that are applicable, especially those for your machine tool.
	**Proper Clothing:** The rotating spindle of a machine can snag loose fitting clothing, jewelry, or long hair. Never wear jewelry, long sleeves, neckties, gloves or anything else that could become caught when operating a machine tool. Long hair must be restrained or netted to prevent it from becoming entangled in rotating spindle. Steel-toed boots should also be worn in any machine environment.
	**Proper Eye Protection:** Always wear safety glasses with side shields to protect your eyes from flying particles.
	**Proper Work Piece Fixturing:** Never hold the work piece or the vise it is held in by hand. The work piece must be clamped firmly to the table of the machine so that it cannot move, rotate or lift.
	**Warning:** The tapping attachment can become hot to the touch after operation. Use caution when removing from the machine or handling.
	**Always be aware of the Potential Hazards of a Machining Operation:** Sometimes working with your machine can seem routine. You may find that you are no longer concentrating on the operation. A feeling of false security can lead to serious injury. Always be alert to the dangers of the machines with which you work. Always keep hands, body parts, clothing, jewelry, and hair out of the areas of operation, when the machine spindle is rotating. Areas of operation include the immediate point of machining and all transmission components including the Tapping Attachment. Never bring your hand, other body parts or anything attached to your body into any of these areas until the machine spindle is completely stopped. Be aware of any other applicable safety instructions or requirements.

Check List For Good Tapping

1. Never use this unit before reading all safety instructions for this attachment as well as the machine it is to be used on.
2. Is tap sharp and of correct design for current job?
3. Is tap in proper alignment with the drilled hole?
4. Is machine speed correct?
5. Is machine feed correct?
6. Is machine stop set properly so tap releases in neutral rather than bottoming in work piece or fixture?
7. Is drilled hole the correct size?
8. Is clearance plane when tap exits the hole sufficient to allow the tap to clear the hole before moving to a new position?
9. Is work piece held securely?
10. Is the base adapter firmly secured to tapping attachment and turret?
11. If a bottom hole is being tapped, is there sufficient chip clearance?

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1. Programming Procedure RSR50 Self Reversing Tapping Units

Thank you for purchasing an RSR tapping attachment. Please read this instruction sheet carefully before using the attachment.

This tool may be used on enclosed turning centers with driven tools. It is specifically designed for use with EWS base adapters for installation to the machine's turret.

1.1. Important Application Notes

⚠	**This tool must be driven in the counterclockwise direction.** This will allow right hand tapping with automatic reversal. Tapping left hand threads is not possible with this tool.

The torque requirements for tapping may be very high. Use caution and check the following points carefully.

- Be sure to use the proper speed recommended by the tap manufacturer.
  DO NOT EXCEED MAXIMUM RPM for your specific tool.

  RSR50 ER16 Spindle
  3300 RPM MAX

- Be sure the drilled hole size is correct. Use maximum allowable hole size to reduce torque.
- In blind holes be sure to allow extra clearance beyond the lead of the tap to be sure the tap cannot bottom in the hole.
- Be sure the work piece is clamped securely so that it can not move and that drilled hole is lined up concentrically and parallel to the machine spindle.

1.2. Programming Procedures

There are two possible methods for RSR tools.

Reduced Cycle Time Programming allows you to achieve faster cycle times and requires a sub program with multiple steps. It also improves the life of the tapping attachment's drive components.

Feed in, Feed out Programming. It is also possible to simply feed in and out of the hole from the clearance plane at the calculated feed rate.

1.3. Reduced Cycle Time Programming

1. **Select the proper RPM** for your specific tap and work piece material, but be sure not to exceed the maximum RPM for your tapping attachment.

2. **Calculate the Correct Feed Rate** based on the tap pitch and RPM selected. **Please note we recommend using 64%, based on input speed, going into hole and 68% for the feed rate out of the hole.**

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Inch Taps: Tap Feed Rate = RPM / Pitch
Example: 1/4"-28 at input 2000 RPM
Feed Rate In (64%) = (2000 / 28) x .64 = 45.71 in/min
Feed Rate Out (68%) = (2000 / 28) x .68 = 48.57 in/min

Metric Taps: Tap Feed Rate= RPM x Pitch
Example: M6x1 at input 2000 RPM
Feed Rate In (64%) = 2000 x 1 x .64 = 1280 mm/min
Feed Rate Out (68%) = 2000 x 1 x .68 = 1360 mm/min

3. **Cancel the Operators Ability to adjust Feed Rate and spindle speed** using the machines potentiometer controls. This is normally done by using an M code like M49 for example.

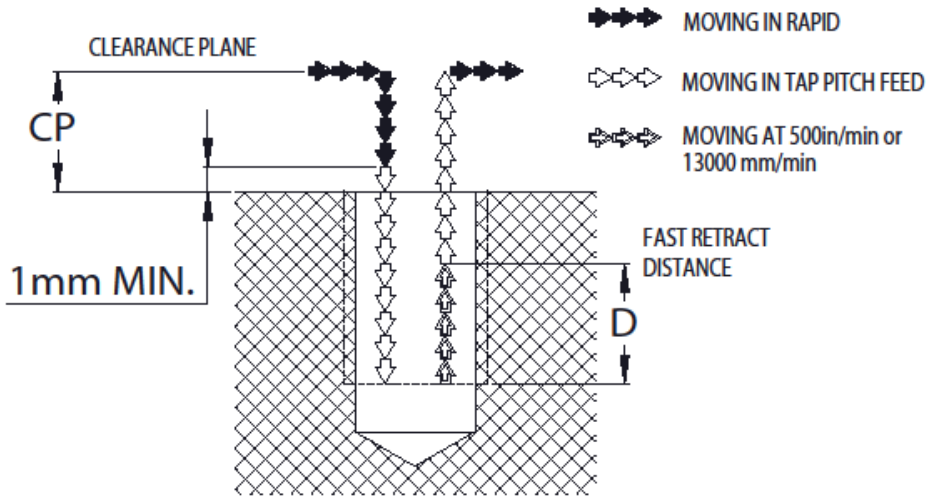
4. **IMPORTANT: Be sure "Ramp" or "Exact Stop" is not used during tapping.** These modes cause the cycle time to be significantly slower and also cause the tapping head to run less smoothly.
   For example on machines with Fanuc control or Haas machines use G64 while tapping to eliminate "Exact Stop". G61 will make exact stop modal again if desired for other operations.

5. **For Blind Holes: Allow for the tap to go deeper than program depth.**
   RSR50 allow an extra .160 or 4mm beyond program depth. For program depth, subtract this distance from the desired tapping depth.

   The actual extra depth will be less than these values, please check the depth on your first hole and then make any necessary adjustment to your program.

6. **RSR Reduced Cycle Time Programming Illustration**
   Write sub program using G01 feed rate and G00 rapid movements as shown in Fig below.

Illustration feeding in and out of hole.



Clearance Plane and Fast Retract Distance
RSR50 CP= .500" or 12mm D= .250" or 6mm

Please note the distances shown are minimum clearance plane and maximum fast retract distance.

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Feed in, Feed out Programming

Steps 1-5 are the same as in Reduced Cycle Time Programming, but in the program the rapid approach to 1mm and Fast Retract lines are eliminated.

Reduced Cycle Time Programming Example Self Reversing Tapping Unit Using G01 Movements

EXAMPLE

Tapping Unit: RSR50 Tap Size M6x1
Input Speed 2000 RPM (Output Speed 1332 RPM)
Feed Rate In at 64%= 1280 mm/min
Sub Program: Rapid approach to 1mm or .040 above part.
Feed in to depth .315 or 8mm (Note actual depth slightly deeper than program depth)
Retract 6mm at 13000 mm/min to prepare head for reverse.
(Use maximum feed rate up to 500 in/min or 13000 mm/min. Do not use rapid.)
Feed out to 12 mm clearance plane at 68% Feed Rate = 1360 mm/min.

MAIN PROGRAM

M06 T6	Tool change to tool #6
M00	Program stop
M04 S2000	**Spindlecounterclockwise rotation 2000 RPM**
G64	G64 eliminate exact stop
G00 G43 Z25.H06 M08	Rapid to Z 25mm Height offset #6 coolant on
M49	Cancel feed and speed override Capability if applicable
G00 G90X25.Y-25.Z12.	Rapid in absolute to hole position X25, Y-25 and Z12 clearance plane
M98 P4 L1	Repeat sub program 04 one time

Sub Program 0004

G90	Absolute movement
G00 Z1.	Rapid to 1mm above hole
G01 Z-8.F1280.	Feed in at 64% feed rate
G01 Z-2.F13000.	Fast retract 6 mm
G01 Z12.F1360.	Feed out at 68% feed rate to clearance plane of 12 mm
M99	Return to main program

VERY IMPORTANT NOTICE
Please note that the G code for “exact stop” or “ramp” should not be used with a Tapmatic self reversing tapping attachment.
Please be sure that these are not in effect when tapping because they will cause the tapping cycle to be significantly slower and thread depth repeatability will be less accurate.
Fanuc Controls and Haas: Use G64 while tapping to eliminate the exact stop.
G61 will make exact stop modal again if desired for other operations.

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Tapping Speeds:

The following speed recommendations are for reference only. Please consult tap manufacturer for your specific tap.
Do not exceed the maximum speed of tapping attachment.

Material	Low Carbon Steel	High Carbon Steel	Tool Steel Hard	SS 303, 304, 316	SS 410, 430, 17-4 Hard	SS 17-4 Anneal	Titan Alloys	Ni Alloys	Alum Alloys	Alum Die cast	Magn.	Brass, Bronze	Copper	Cast Iron
M/min (ft/min)	10-20 (33-66)	8-12 (26-39)	4-6 (13-20)	6-12 (20-39)	3-5 (10-16)	6-12 (20-39)	4-8 (13-26)	3-5 (10-16)	15-25 (49-82)	10-15 (33-49)	15-25 (49-82)	15-25 (49-82)	8-12 (26-39)	10-20 (33-66)

$$RPM = \frac{(M/min) \times 318,5}{\text{Tap Diameter in mm}} \qquad RPM = \frac{(ft/min) \times 3,82}{\text{Tap Diameter inch}}$$

Determining Correct Speed Within Specified Range

Cutting Speed for Tapping:

Several factors, singly or in combination can cause very great differences in the permissible tapping speed.
The principle factors affecting the tapping speed are the pitch of the thread, the chamfer length on the tap, the percentage of full thread to be cut, the length of the hole to be tapped, the cutting fluid used, whether the threads are straight or tapered, the machine tool used to perform the operation, and the material to be tapped. From Machinery's Handbook 23rd edition. If your coolant does not have good lubrication quality, start at lower speeds in the recommended range. Roll form taps in particular require good lubrication because of the high friction forces involved. As the lubrication quality of a coolant is often unknown, we recommend starting from the lower speeds in the range.

These factors apply to everyone's tapping speed charts

- %	Ten Factors Requiring Lower Speeds		Ten Factors Permitting Higher Speeds	+ %
-20	Poor lubrication	1	Good Lubrication	+20
-15	High tensile strengh material	2	Low tensile strength material	+15
-15	Large thread diameter	3	Small thread diameter	+15
-10	High alloy material	4	Low alloy material	+10
-10	Thread depth more than 1,5 x diameter	5	Thread depth less than 1,5 x diameter	+10
-10	Thread pitch coarse	6	Thread pitch fine	+10
-5	Drill size more than 65% thread	7	Drill size less than 65% thread	+5
-5	Tap lead less than 3,5 threads	8	Tap lead more than 3,5 threads	+5
-5	Blind holes	9	Through holes	+5
-5	Free running spindle, inaccurate feed control	10	Synchronized feed, lead screw or CNC control	+5

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Eight Essential Steps for Trouble Free Performance with Self Reversing Tapping Attachments

1. Never perform any installation or programming, before reading the operator instructions accompanying the tapping attachment and the machine as well as the tap manufacturers recommendations.
2. Choose the correct tap: Follow your tap manufacturers recommendations for your specific application.
3. Calculate the correct tapping speed from the adjacent chart and be sure not to exceed the maximum speed for the tapping attachment.
4. Common sense rule: Begin conservatively and increase speed until optimum results are obtained.
5. Select the best tool for your application. For high production with one size tap don't compromise. For low production with a variety of sizes choose the tool that best covers your range.
6. Follow programming instructions.
7. Follow installation instructions and be sure alignment collar is locked. Please see instructions.
8. Perform regular preventative maintenance. Please see maintenance instructions.

Example:

Tap size M6, Material Tool Steel, Rotational Speed Range recommended by tap manufacturer 800-1050

Minus factors:	High Tensile Strength	-15	Plus Factors:	Coolant lubricity good	+20
	Tap depth 3x Diameter	-10		Small thread diameter	+15
	Drill Size 75% Thread	-5		Pitch Fine	+10
	Blind Hole	-5		Lead 3.5 threads	+5
	Total	-35		CNC Machine	+5
				Total	+55

Apply Factors Against RPM range of 250

+.55 x 250= 137 137+800= 937 New Low Speed for Range

-.35 x 250= -88 1050-88= 962 New High Speed for Range

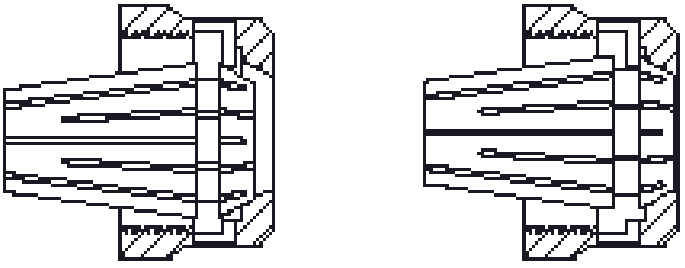
2. Installing the Tap

⚠	**Please use square drive, ERGB collets whenever possible.**
⚠	**Be sure to put collet into nut as shown below, before installing nut on to threads.**

Insert the tap and tighten securely using the two wrenches.

Reduce capacity by 25%, if using roll from taps.

INCORRECT **CORRECT**



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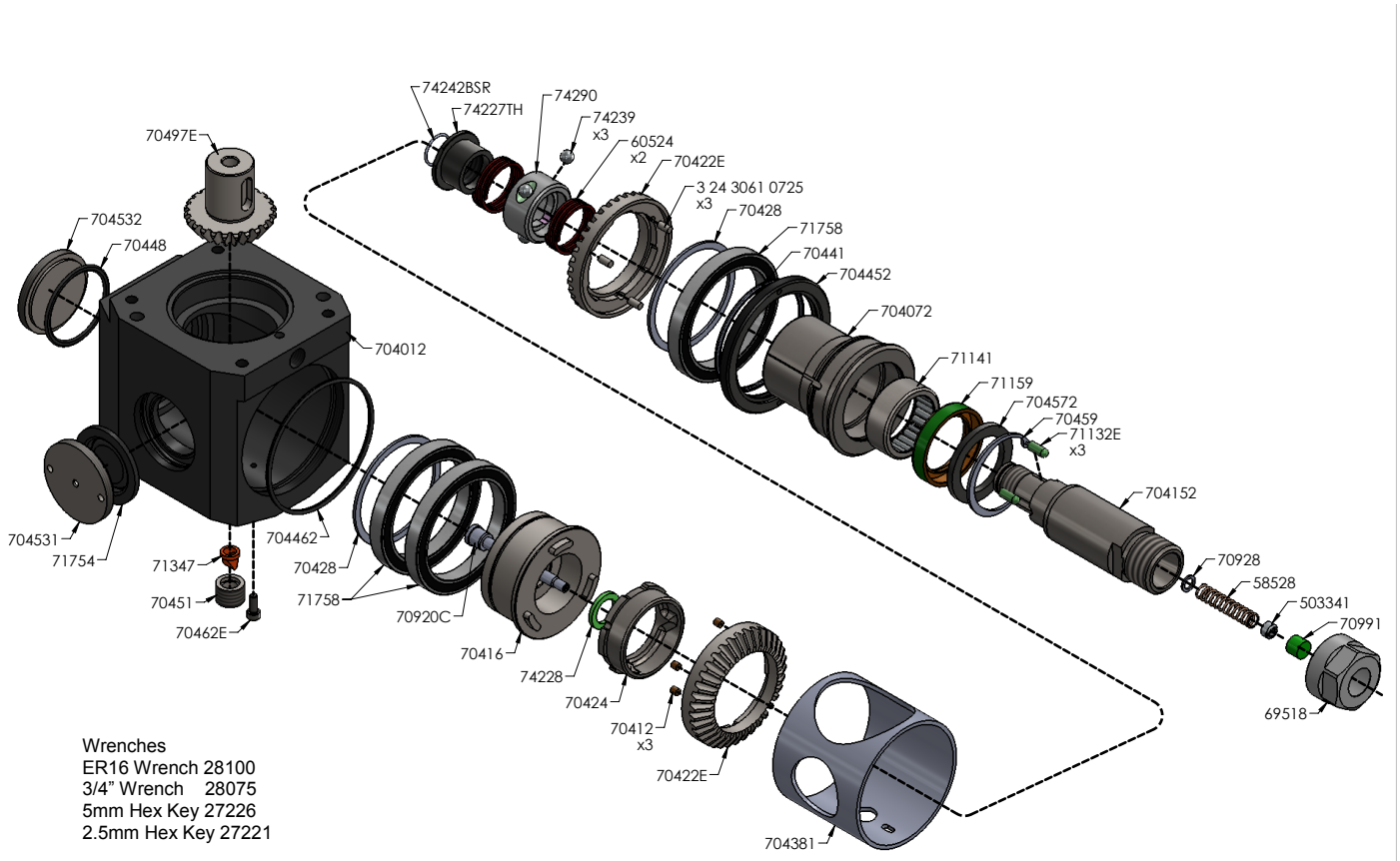
3. RSR50 Parts List

We recommend turning this unit to EWS for repair or service.



Wrenches
ER16 Wrench 28100
3/4" Wrench 28075
5mm Hex Key 27226
2.5mm Hex Key 27221

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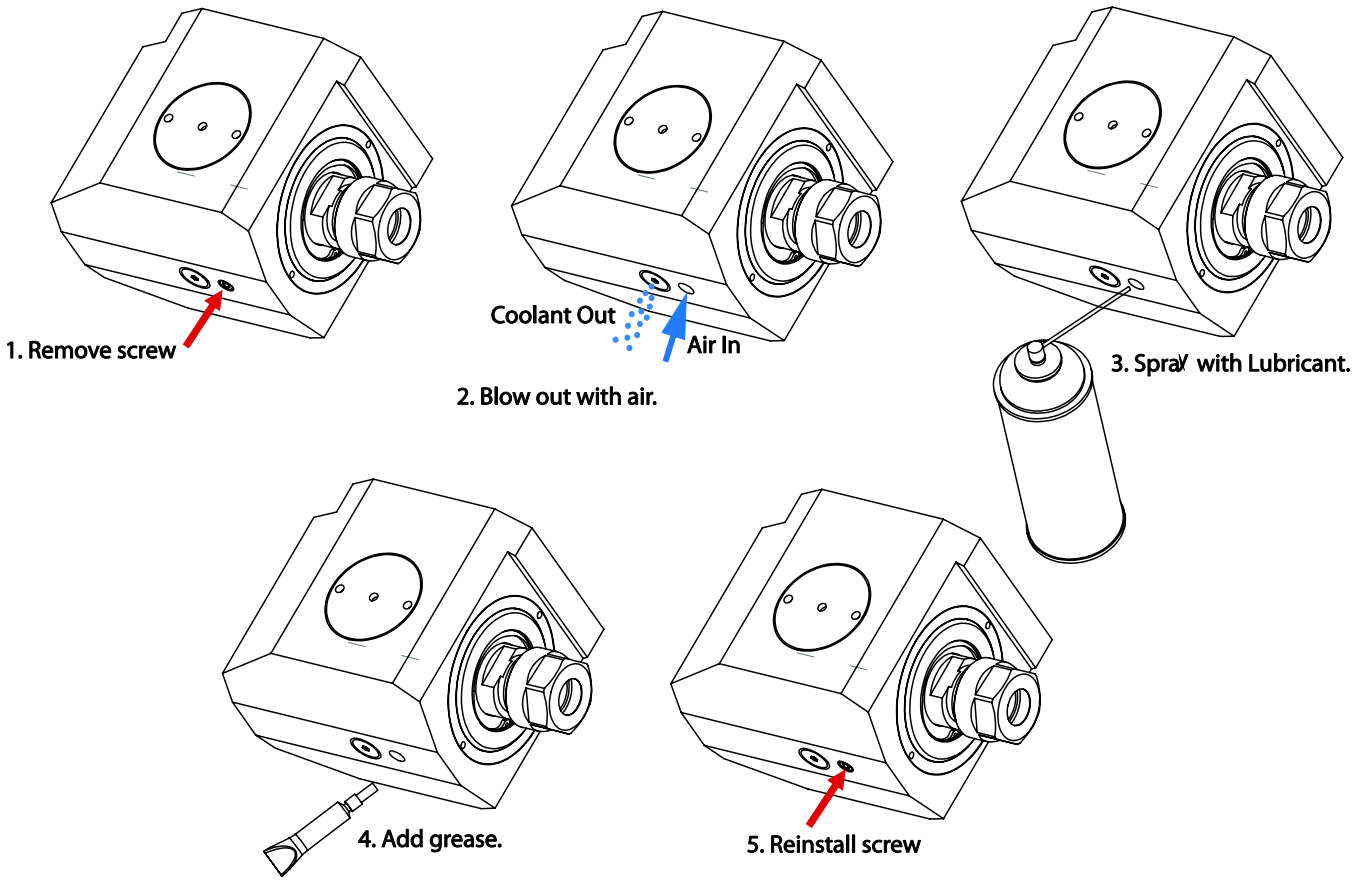
4. Maintenance

Lubrication:

We recommend lubrication every 100,000 cycles. To lubricate remove grease hole plug and add grease from the tubes provided. Use two tubes. For additional tubes order part number 29000 for a box of 12.
We recommend Prolong EP2 grease. The tapping attachments come from the factory already lubricated and ready for operation. In addition to grease we also recommend the use of a penetrating spray lubricant such as Prolong SPL100 or LPS No 2.

Removing Coolant:

If coolant enters inside the tool please follow the procedure shown below to remove coolant and re-lubricate the tapping attachment. We also recommend following this procedure if you plan to store the unit.



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5. Speed Charts

Standard Taps

	Low Carbon Steel, Medium Carbon Steel	High Carbon Steel, High Strength Steel, Tool Steel	High Strength Steel, Tool Steel Hardened	Stainless 303, 304, 316	Stainless 410, 430, 17-4 Hardened	Stainless 17-4 Annealed	Titanium Alloys	Nickel Base Alloys	Aluminium Alloys	Aluminium Die Cast	Magnesium	Brass, Bronze	Copper	Cast Iron
A) m/min **B) m/min**	10–20 20–40	8–12 15–25	4–6 12–18	6–12 8–15	3–5 4–10	6–12 8–20	4–8 8–15	3–5 5–10	15–25 40–60	10–15 30–40	15–25 40–60	15–25 40–60	8–12 15–25	10–20 20–30
Tap size	**A)** rpm for HSS-E uncoated taps **B)** rpm for HSS-E coated taps													
M2 **(#2)**	1600–3200 3200–6350	1250–1900 2400–4000	640–800 1900–2850	800–1900 1250–2400	480–800 640–1600	800–1900 1250–3200	640–1250 1250–2400	480–800 800–1600	2400–4000 6350–9550	1600–2400 4750–6350	2400–4000 6350–9550	2400–4000 6350–9550	1250–1900 2400–4000	1600–3200 3200–4750
M3 **(#5)**	1050–2100 2100–4250	850–1250 1600–2650	420–530 1250–1900	530–1250 850–1600	320–530 420–1050	530–1250 850–2100	420–850 850–1600	320–530 530–1050	1600–2650 4250–6350	1050–1600 3200–4250	1600–2650 4250–6350	1600–2650 4250–6350	850–1250 1600–2650	1050–2100 2100–3200
M4 **(#8)**	800–1600 1600–3200	640–950 1200–2000	320–400 950–1450	400–950 640–1200	240–400 320–800	400–950 640–1600	320–640 640–1200	240–400 400–800	1200–2000 3200–4750	800–1200 2400–3200	1200–2000 3200–4750	1200–2000 3200–4750	640–950 1200–2000	800–1600 1600–2400
M5 **(#10)**	640–1250 1250–2550	510–760 950–1600	250–320 760–1150	320–760 510–950	190–320 250–640	320–760 510–1250	250–510 510–950	190–320 320–640	950–1600 2550–3800	640–950 1900–2550	950–1600 2550–3800	950–1600 2550–3800	510–760 950–1600	640–1250 1250–1900
M6 **(1/4)**	530–1050 1050–2100	420–640 800–1350	210–270 640–950	270–640 420–800	160–270 210–530	270–640 420–1050	210–420 420–800	160–270 270–530	800–1350 2100–3200	530–800 1600–2100	800–1350 2100–3200	800–1350 2100–3200	420–640 800–1350	530–1050 1050–1600
M7	450–910 910–1800	360–550 680–1150	180–230 550–820	230–550 360–680	140–230 180–450	230–550 360–910	180–360 360–680	140–230 230–450	680–1150 1800–2750	450–1150 1350–1800	680–1150 1800–2750	680–680 1800–2750	360–550 680–1150	450–910 910–1350
M8 **(5/16)**	400–800 800–1600	320–480 600–990	160–200 480–720	200–480 320–600	120–200 160–400	200–480 320–800	160–320 320–600	120–200 200–400	600–990 1600–2400	400–600 1200–1600	600–990 1600–2400	600–990 1600–2400	320–480 600–990	400–800 800–1200
M9	350–710 710–1400	280–420 530–880	140–180 420–640	180–420 280–530	110–180 140–350	180–420 280–710	140–280 280–530	110–180 180–350	530–880 1400–2100	350–530 1050–1400	530–880 1400–2100	530–880 1400–2100	280–420 530–880	350–710 710–1050
M10 **(3/8)**	320–640 640–1250	250–380 480–800	130–160 380–570	160–380 250–480	100–160 130–320	160–380 250–640	130–250 250–480	100–160 160–320	480–800 1250–1900	320–480 950–1250	480–800 1250–1900	480–800 1250–1900	250–380 480–800	320–640 640–950
M12 **(1/2)**	270–530 530–1050	210–320 400–660	110–130 320–480	130–320 210–400	80–130 110–270	130–320 210–530	110–210 210–400	80–130 130–270	400–660 1050–1600	270–400 800–1050	400–660 1050–1600	400–660 1050–1600	210–320 400–660	270–530 530–800

Tapping speed v_c = m/min
RPM n = U/min
Diameter d = mm

Calculation:

$$n = \frac{v_c \times 1000}{d \times \pi}$$

Example: M8 with 25 m/min

$$n = \frac{25 \times 1000}{8 \times \pi} = 995 \text{ U/min (RPM)}$$

- The speed given are guide values acc. to general information and can vary depending on tap manufacturer
- For optimal production and correct speed, we suggest following the specifications of the tap manufacturer
- Furthermore, the maximum speed of the tapping attachment must not be exceeded.

RDT15	RDT25	RDT50 RCT50 RCTXT50 sintered gears	RDT50 RCT50 RCTXT50 cut gears

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High Speed / Top Speed Taps

	Low Carbon Steel, Medium Carbon Steel	High Carbon Steel, High Strength Steel, Tool Steel	High Strength Steel, Tool Steel Hardened	Stainless 303, 304, 316	Stainless 410, 430, 17-4 Hardened	Stainless 17-4 Annealed	Titanium Alloys	Nickel Base Alloys	Aluminium Alloys	Aluminium Die Cast	Magnesium	Brass, Bronze	Copper	Cast Iron
A) m/min	50–70	20–30	15–20	10–15	6–10	10–15	12–15	6–12	50–70	40–50	50–70	30–70	20–30	25–40
B) m/min	—	40–60	30–50	—	—	—	—	—	60–80	50–70	40–80	60–80	30–50	30–50
Tap size	**A)** rpm for HSS-E uncoated taps **B)** rpm for HSS-E coated taps													
M2	7950–11150	3200–4750	2400–3200	1600–2400	800–1600	1600–2400	1900–2400	800–1900	7950–11150	6350–7950	7950–11150	4750–11150	3200–4750	4000–6350
(#2)	640–800	6350–9550	4750–7950	640–800	640–800	640–800	–	–	9550–12750	7950–11150	6350–12750	9550–12750	4750–7950	4750–7950
M3	5300–7450	2100–3200	1600–2100	1050–1600	530–1050	1050–1600	1250–1600	530–1250	5300–7450	4250–5300	5300–7450	3200–7450	2100–3200	2650–4250
(#5)	420–530	4250–6350	3200–5300	420–530	420–530	420–530	–	–	6350–8500	5300–7450	4250–8500	6350–8500	3200–5300	3200–5300
M4	4000–5550	1600–2400	1200–1600	800–1200	400–800	800–1200	950–1200	400–950	4000–5550	3200–4000	4000–5550	2400–5550	1600–2400	2000–3200
(#8)	320–600	3200–4750	2400–4000	320–400	320–400	320–400	–	–	4750–6350	4000–5550	3200–6350	4750–6350	2400–4000	2400–4000
M5	3200–4450	1250–1900	950–1250	640–950	320–640	640–950	760–950	320–760	3200–4450	2550–3200	3200–4450	1900–4450	1250–1900	1600–2550
(#10)	250–320	2550–3800	1900–3200	250–320	250–320	250–320	–	–	3800–5100	3200–4450	2550–5100	3800–5100	1900–3200	1900–3200
M6	2650–3700	1050–1600	800–1050	530–800	270–530	530–800	640–800	270–640	2650–3700	2100–2650	2650–3700	1600–3700	1050–1600	1350–2100
(1/4)	210–270	2100–3200	1600–2650	210–270	210–270	210–270	–	–	3200–4250	2650–3700	2100–4250	3200–4250	1600–2650	1600–2650
M7	2250–3200	910–1350	680–910	450–680	230–450	450–680	550–680	230–550	2250–3200	1800–2250	2250–3200	1350–3200	910–1350	1150–1800
	180–230	1800–2750	1350–2250	180–230	180–230	180–230	–	–	2750–3650	2250–3200	1800–3650	2750–3650	1350–2250	1350–2250
M8	2000–2800	800–1200	600–800	400–600	200–400	400–600	480–600	200–480	2000–2800	1600–2000	2000–2800	1200–2800	800–1200	990–1600
(5/16)	160–200	1600–2400	1200–2000	160–200	160–200	160–200	–	–	2400–3200	2000–2800	1600–3200	2400–3200	1200–2000	1200–2000
M9	1750–2500	710–1050	530–710	350–530	180–350	350–530	420–530	180–420	1750–2500	1400–1750	1750–2500	1050–2500	710–1050	880–1400
	140–180	1400–2100	1050–1750	140–180	140–180	140–180	–	–	2100–2850	1750–2500	1400–2850	2100–2850	1050–1750	1050–1750
M10	1600–2250	640–950	480–640	320–480	160–320	320–480	380–480	160–380	1600–2250	1250–1600	1600–2250	950–2250	640–950	800–1250
(3/8)	130–160	1250–1900	950–1600	130–160	130–160	130–160	–	–	1900–2550	1600–2250	1250–2550	1900–2550	950–1600	950–1600
M12	1350–1850	530–800	400–530	270–400	130–270	270–400	320–400	130–320	1350–1850	1050–1350	1350–1850	800–1850	530–800	660–1050
(1/2)	110–130	1050–1600	800–1350	110–130	110–130	110–130	–	–	1600–2100	1350–1850	1050–2100	1600–2100	800–1350	800–1350

Tapping speed v_c = m/min
RPM n = U/min
Diameter d = mm

Calculation:

$$n = \frac{v_c \times 1000}{d \times \pi}$$

Example: M8 with 40 m/min

$$n = \frac{40 \times 1000}{8 \times \pi} = 1592 \text{ U/min (RPM)}$$

- The speed given are guide values acc. to general information and can vary depending on tap manufacturer
- For optimal production and correct speed, we suggest following the specifications of the tap manufacturer
- Furthermore, the maximum speed of the tapping attachment must not be exceeded.

RDT15

RDT25

RDT50
RCT50
RCTXT50
sintered gears

RDT50
RCT50
RCTXT50
cut gears

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Roll From Taps

	Low Carbon Steel, Medium Carbon Steel	High Carbon Steel, High Strength Steel, Tool Steel	High Strength Steel, Tool Steel Hardened	Stainless 303, 304, 316	Stainless 17-4 Annealed	Titanium Alloys	Nickel Base Alloys	Aluminium Alloys	Aluminium Die Cast	Copper
A) m/min	30–40	20–30	15–25	10–15	10–15	5–15	3–5	30–60	20–40	15–25
B) m/min	40–60	30–50	25–40	12–20	—	—	8–12	50–70	30–50	25–50
Tap size	**A)** rpm for HSS-E uncoated taps **B)** rpm for HSS-E coated taps									
M2	4750–6350	3200–4750	2400–4000	1600–2400	1600–2400	800–2400	480–800	4750–9550	3200–6350	2400–4000
(#2)	6350–9550	4750–7950	4000–6350	1900–3200	–	320–1600	1250–1900	7950–11150	4750–7950	4000–7950
M3	3200–4250	2100–3200	1600–2650	1050–1600	1050–1600	530–1600	320–530	3200–6350	2100–4250	1600–2650
(#5)	4250–6350	3200–5300	2650–4250	1250–2100	–	210–1050	850–1250	5300–7450	3200–5300	2650–5300
M4	2400–3200	1600–2400	1200–2000	800–1200	800–1200	400–1200	240–400	2400–4750	1600–3200	1200–2000
(#8)	3200–4750	2400–4000	2000–3200	950–1600	–	160–800	640–950	4000–5550	2400–4000	2000–4000
M5	1900–2550	1250–1900	950–1600	640–950	640–950	320–950	190–320	1900–3800	1250–2550	950–1600
(#10)	2550–3800	1900–3200	1600–2550	760–1250	–	130–640	510–760	3200–4450	1900–3200	1600–3200
M6	1600–2100	1050–1600	800–1350	530–800	530–800	270–800	160–270	1600–3200	1050–2100	800–1350
(1/4)	2100–3200	1600–2650	1350–2100	640–1050	–	110–530	420–640	2650–3700	1600–2650	1350–2650
M7	1350–1800	910–1350	680–1150	450–680	450–680	230–680	140–230	1350–2750	910–1800	650–1150
	1800–2750	1350–2250	1150–1800	550–910	–	90–450	360–550	2250–3200	1350–2250	1150–2250
M8	1200–1600	800–1200	600–990	400–600	400–600	200–600	120–200	1200–2400	800–1600	600–990
(5/16)	1600–2400	1200–2000	990–1600	480–800	–	80–400	320–480	2000–2800	1200–2000	990–2000
M9	1050–1400	710–1050	530–880	350–530	350–530	180–530	110–180	1050–2100	710–1400	530–880
	1400–2100	1050–1750	880–1400	420–710	–	70–350	280–420	1750–2500	1050–1750	880–1750
M10	950–1250	640–950	480–800	320–480	320–480	160–480	100–160	950–1900	640–1250	480–800
(3/8)	1250–1900	950–1600	800–1250	380–640	–	60–320	250–380	1600–2250	950–1600	800–1600
M12	800–1050	530–800	400–660	270–400	270–400	130–400	80–130	800–1600	530–1050	400–660
(1/2)	1050–1600	800–1350	660–1050	320–530	–	50–270	210–320	1350–1850	800–1350	660–1350

Tapping speed v_c = m/min
RPM n = U/min
Diameter d = mm

Calculation:

$$n = \frac{v_c \times 1000}{d \times \pi}$$

Example: M8 with 30 m/min

$$n = \frac{30 \times 1000}{8 \times \pi} = 1194 \text{ U/min (RPM)}$$

- The speed given are guide values acc. to general information and can vary depending on tap manufacturer
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- Furthermore, the maximum speed of the tapping attachment must not be exceeded.

RDT15

RDT25

RDT50
RCT50
RCTXT50
sintered gears

RDT50
RCT50
RCTXT50
cut gears

RCT85

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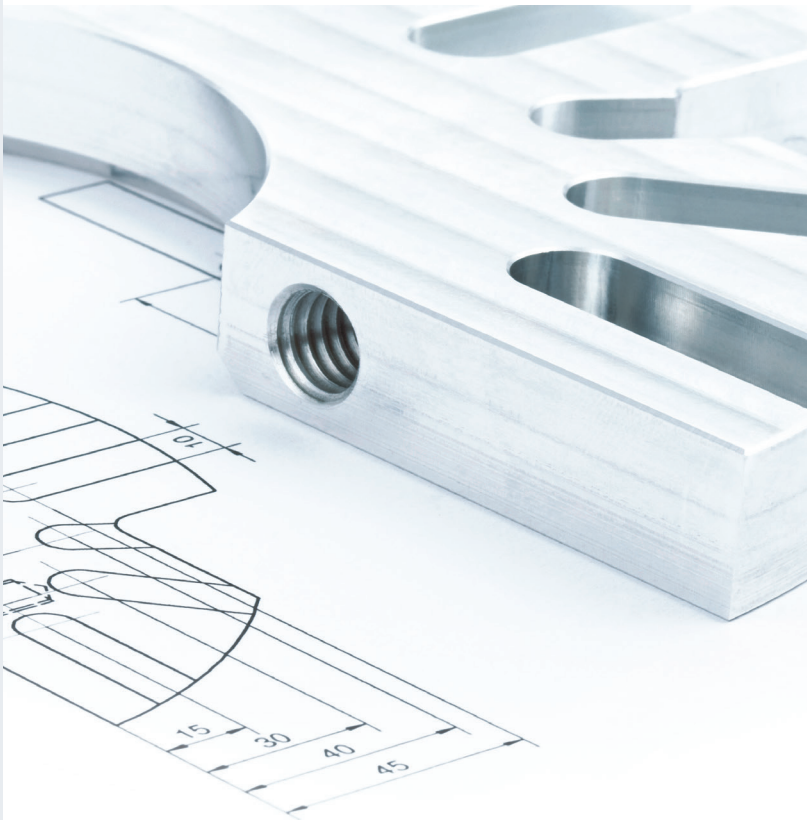

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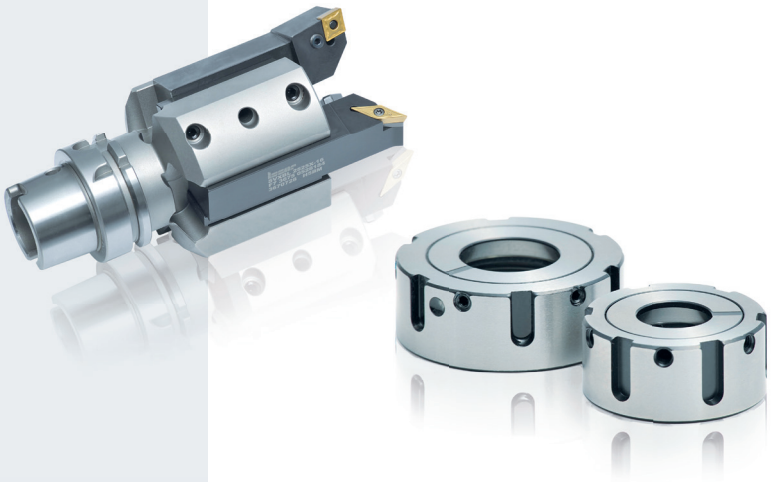

Stand: 05/2017