

Safety and Operation Instructions RDT 15, 25 and 50



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.

On machining Centers: Automatic tool changes should only be made on enclosed machines. Always be sure that stop arm installation is stronger than the largest tap.

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 the stop arm of the tapping attachment held rigidly against rotation? Stop Arm installation must be stronger than the largest tap.



Programming Procedure RDT 15, 25 and 50 Self Reversing Tapping Units

Thank you for purchasing a Tapmatic RDT model. Please read this instruction sheet carefully before using the attachment.

This tool may be used on enclosed machining centers with orienting spindles. Prior to a tool change, it is necessary that the machine spindle rotation stops in the same position each time. Installation procedures are shown on page 7.

IMPORTANT APPLICATION NOTES

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.

RDT15 ER8 Spindle	5000 RPM MAX
RDT25 ER11 Spindle	4000 RPM MAX
RDT50 ER16 Spindle	2000 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.

PROGRAMMING PROCEDURES

There are two possible methods for RDT tools.

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

Bore Cycle Programming. It is also possible to use a standard bore cycle such as G85.This does lengthen the cycle time.

REDUCED CYCLE TIME PROGRAMMING

1. Select the proper RPM for your specific tap and workpiece 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.

Inch Taps: Tap Feed Rate= RPM / Pitch Example 1/4"-28 at 2000 RPM Tap Feed Rate= 2000 / 28=71.43 in/min

Metric Taps; Tap Feed Rate= RPM x Pitch Example M6x1 at 2000 RPM Tap Feed Rate= 2000 x 1= 2000 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. On Fadal machines use G8 to cancel "Ramp" for tapping. G9 will turn "Ramp" on again if desired for other operations. Your machine may use different G codes. Please check machine manual.

5. For Blind Holes: Allow for the tap to go deeper than program depth.

RDT15 allow an extra .060 or 1.5mm RDT25 allow an extra .120 or 3mm RDT50 allow an extra .160 or 4mm

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. RDT Reduced Cycle Time Programming Illustration

Write sub program using G01 feed rate and G00 rapid movements as shown in Fig below.

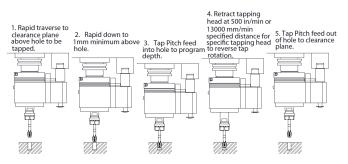
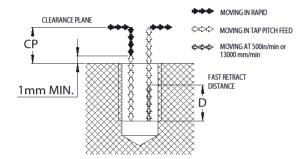


Illustration feeding in and out of hole.



Clearance Plane and Fast Retract Distance

RDT15 and 25CP= D= .250" or 6mmRDT50CP= D= .400" or 10mmPlease note the distances shown are minimum clearanceplane and maximum fast retract distance.



Programming Procedure RDT 15, 25 and 50 Self Reversing Tapping Units

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

EXAMPLE

Tapping Unit: RDT25 Tap Size M6x1 2000 RPM Feed Rate In at 100%= 2000mm/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 500in/min or 13000mm/min. Do not use rapid.)

Feed out to 6mm clearance plane at 100% Feed Rate.

MAIN PROGRAM

M06 T6	Tool change to tool #6
M00	Program stop
M03 S2000	Spindle forward rotation 2000 RPM
G8	Ramp off (or G64 eliminate exact
G00 G43 Z25.H06 M08	stop) Rapid to Z 25mm Height offset #6 coolant on
M49	Cancel feed and speed override capability
G00 G90X25.Y-25.Z6.	Rapid in absolute to hole position
M98 P4 L1	X25, Y-25 and Z6 clearance plane Repeat sub program 04 one time
G00 Y-75.	Rapid to next hole.
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.F2000.	Feed in at 100% feed rate
G01 Z-2.F13000.	Fast retract 6mm
G01 Z6.F2000.	Feed out at 100% feed rate to clearance plane of 6mm
M99	Return to main program

Bore Cycle Programming

For Bore cycle programming steps 1-5 are the same as in Reduced Cycle Time Programming.

6. In the main program use the bore cycle (G85 for example) at each hole location. Be sure to use the proper clearance plane "CP" shown in figure on preceding page for your tapping attachment.

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 <u>not</u> in effect when tapping because they will cause the tapping cycle to be significantly slower and thread depth repeatability will be less accurate.

Fadal Machines: Use G8 to cancel ramp for tapping. G9 will turn ramp on again if desired for other operations.

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.



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.

	Ten Factors Re- quiring Lower Speeds		Ten Factors Per- mitting Higher Speeds		Ei	ght E Perf
-%				+%	1.	Neve
-20	Poor lubrication	1	Good lubrication	+20		tions men
-15	High tensile strength material	2	Low tensile strength material	+15	2.	man Choo man
-15	Large thread diameter	3	Small thread diameter	+15	3.	spec Calc the a
-10	High alloy Material	4	Low alloy Material	+10	4.	ceed attac Com and
-10	Thread depth more than 1.5 x diameter	5	Thread depth less than 1.5 x diameter	+10	5.	are o Sele For I com
-10	Thread pitch coarse	6	Thread pitch fine	+10	6.	varie cove Follo
-5	Drill size more than 65% thread	7	Drill size less than 65% thread	+5	7. 8.	Follo align instr Perfe
-5	Tap lead less than 3.5 threads	8	Tap lead more than 3.5 threads	+5	0.	Plea
-5	Blind holes	9	Through holes	+5		
-5	Free running spindle, inaccu- rate feed control	10	Synchronized feed, lead screw or CNC control	+5		

These factors apply to everyone's tapping speed charts.

Essential Steps for Trouble Free formance with Self Reversing **Tapping Attachments** ver perform any installation or programg, before reading the operator instrucs accompanying the tapping attachnt and the machine as well as the tap nufacturers recommendations. oose the correct tap: Follow your tap nufacturers recommendations for your cific application. culate the correct tapping speed from adjacent chart and be sure not to exd the maximum speed for the tapping chment. nmon sense rule: Begin conservatively increase speed until optimum results obtained. ect the best tool for your application. high production with one size tap don't promise. For low production with a ety of sizes choose the tool that best ers your range. ow programming instructions. ow installation instructions and be sure nment collar is locked. Please see ructions form regular preventative maintenance. ase 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 3	x Diameter	-10	Small thread diameter	+15				
Drill Size 75	% Thread	-5	Pitch Fine	+10				
Blind Hole Total		-5	Lead 3.5 threads	+5				
		-35	CNC Machine	+5				
			Total	+55				
Apply Factors Against R	PM range of 250)						
+.55 x 250= 137	137+800= 937	New Low	/ Speed for Range					
35 x 250= -88	1050-88= 962 N	lew Hiał	n Speed for Range					
			- F					

Standard Taps

Speed Chart

www.tapmatic.com



	rbon	n Steel, gth Steel,	gth Steel, Hardened	33,	4-	7-4	loys	e Alloys	Alloys		E	Jze		
	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	10–20	8–12	4–6	6–12	3–5	6–12	4–8	3–5	15–25	10–15	15–25	15–25	8–12	10–20
B) m/min	20–40	15–25	12–18	8–15	4–10	8–20	8–15	5–10	40–60	30–40	40–60	40–60	15–25	20–30
Tap size		SS-E uncoate SS-E coated t												
M2	1600–3200	1250–1900	640-800	800–1900	480–800	800–1900	640–1250	480-800	2400–4000	1600–2400	2400–4000	2400–4000	1250–1900	1600–3200
(#2)	3200–6350	2400–4000	1900-2850	1250–2400	640–1600	1250–3200	1250–2400	800-1600	6350–9550	4750–6350	6350–9550	6350–9550	2400–4000	3200–4750
M3	1050–2100	850–1250	420–530	530–1250	320–530	530–1250	420–850	320–530	1600–2650	1050–1600	1600–2650	1600–2650	850–1250	1050–2100
(#5)	2100–4250	1600–2650	1250–1900	850–1600	420–1050	850–2100	850–1600	530–1050	4250–6350	3200–4250	4250–6350	4250–6350	1600–2650	2100–3200
M4	800–1600	640–950	320–400	400–950	240–400	400–950	320–640	240–400	1200–2000	800–1200	1200–2000	1200–2000	640–950	800–1600
(#8)	1600–3200	1200–2000	950–1450	640–1200	320–800	640–1600	640–1200	400–800	3200–4750	2400–3200	3200–4750	3200–4750	1200–2000	1600–2400
M5	640–1250	510–760	250–320	320–760	190–320	320–760	250–510	190–320	950–1600	640–950	950–1600	950–1600	510–760	640–1250
(#10)	1250–2550	950–1600	760–1150	510–950	250–640	510–1250	510–950	320–640	2550–3800	1900–2550	2550–3800	2550–3800	950–1600	1250–1900
M6	530–1050	420–640	210–270	270–640	160–270	270–640	210–420	160–270	800–1350	530–800	800–1350	800–1350	420–640	530–1050
(1/4)	1050–2100	800–1350	640–950	420–800	210–530	420–1050	420–800	270–530	2100–3200	1600–2100	2100–3200	2100–3200	800–1350	1050–1600
M7	450–910	360–550	180–230	230–550	140–230	230–550	180–360	140–230	680–1150	450–1150	680–1150	680–680	360–550	450–910
	910–1800	680–1150	550–820	360–680	180–450	360–910	360–680	230–450	1800–2750	1350–1800	1800–2750	1800–2750	680–1150	910–1350
M8	400–800	320–480	160–200	200–480	120–200	200–480	160–320	120–200	600–990	400–600	600–990	600–990	320–480	400-800
(5/16)	800–1600	600–990	480–720	320–600	160–400	320–800	320–600	200–400	1600–2400	1200–1600	1600–2400	1600–2400	600–990	800-1200
M9	350–710	280–420	140–180	180–420	110–180	180–420	140–280	110–180	530–880	350–530	530–880	530–880	280–420	350–710
	710–1400	530–880	420–640	280–530	140–350	280–710	280–530	180–350	1400–2100	1050–1400	1400–2100	1400–2100	530–880	710–1050
M10	320–640	250–380	130–160	160–380	100–160	160–380	130–250	100–160	480–800	320–480	480–800	480–800	250–380	320–640
(3/8)	640–1250	480–800	380–570	250–480	130–320	250–640	250–480	160–320	1250–1900	950–1250	1250–1900	1250–1900	480–800	640–950
M12	270–530	210–320	110–130	130–320	80–130	130–320	110–210	80–130	400-660	270–400	400–660	400–660	210–320	270–530
(1/2)	530–1050	400–660	320–480	210–400	110–270	210–530	210–400	130–270	1050-1600	800–1050	1050–1600	1050–1600	400–660	530–800
M14	230–450	180–270	90–110	110–270	70–110	110–270	90–180	70–110	340–570	230–340	340–570	340–570	180–270	230–450
(9/16)	450–910	340–570	270–410	180–340	90–230	180–450	180–340	110–230	910–1350	680–910	910–1350	910–1350	340–570	450–680
M16	200–400	160–240	80–100	100–240	60–100	100–240	80–160	60–100	300–500	200–300	300–500	300–500	160–240	200–400
(5/8)	400–800	300–500	240–360	160–300	80–200	160–400	160–300	100–200	800–1200	600–800	800–1200	800–1200	300–500	400–600
M18	180–350	140–210	70–90	90–210	50–90	90–210	70–140	50–90	270–440	180–270	270–440	270–440	140–210	180–350
(11/16)	350–710	270–440	210–320	140–270	70–180	140–350	140–270	90–180	710–1050	530–710	710–1050	710–1050	270–440	350–530
M20	160–320	130–190	60–80	80–190	50-80	80–190	60–130	50-80	240–400	160–240	240–400	240–400	130–190	160–320
(3/4)	320–640	240–400	190–290	130–240	60-160	130–320	130–240	80-160	640–950	480–640	640–950	640–950	240–400	320–480
M22	140–290	120–170	60–70	70–170	40–70	70–170	60–120	40–70	220–360	140–220	220–360	220–360	120–170	140–290
(7/8)	290–580	220–360	170–260	120–220	60–140	120–290	120–220	70–140	580–870	430–580	580–870	580–870	220–360	290–430
M24	130–270	110–160	50–70	70–160	40–70	70–160	50–110	40–70	200–330	130–200	200–330	200–330	110–160	130–270
(15/16)	270–530	200–330	160–240	110–200	50–130	110–270	110–200	70–130	530–800	400–530	530–800	530–800	200–330	270–400
M25	130–250	100–150	50–60	60–150	40–60	60–150	50–100	40–60	190–320	130–190	190–320	190–320	100–150	130–250
(1)	250–510	190–320	150–230	100–190	50–130	100–250	100–190	60–130	510–760	380–510	510–760	510–760	190–320	250–380
M26	120–240	100–150	50–60	60–150	40–60	60–150	50–100	40-60	180–310	120–180	180–310	180–310	100–150	120–240
	240–490	180–310	150–220	100–180	50–120	100–240	100–180	60-120	490–730	370–490	490–730	490–730	180–310	240–370
M27	120–240	90–140	50–60	60–140	40–60	60–140	50–90	40-60	180–290	120–180	180–290	180–290	90–140	120–240
(1 1/16)	240–470	180–290	140–210	90–180	50–120	90–240	90–180	60-120	470–710	350–470	470–710	470–710	180–290	240–350
M28	110–230	90–140	50–60	60–140	30–60	60–140	50–90	30–60	170–280	110–170	170–280	170–280	90–140	110–230
(1 1/8)	230–450	170–280	140–200	90–170	50–110	90–230	90–170	60–110	450–680	340–450	450–680	450–680	170–280	230–340
M30	110–210	80–130	40–50	50–130	30–50	50–130	40–80	30–50	160–270	110–160	160–270	160–270	80–130	110–210
(1 3/16)	210–420	160–270	130–190	80–160	40–110	80–210	80–160	50–110	420–640	320–420	420–640	420–640	160–270	210–320
M32	100–200	80–120	40–50	50–120	30–50	50–120	40–80	30–50	150–250	100–150	150–250	150–250	80–120	100–200
(1 1/4)	200–400	150–250	120–180	80–150	40–100	80–200	80–150	50–100	400–600	300–400	400–600	400–600	150–250	200–300
M33	100–190	80–120	40–50	50–120	30–50	50–120	40–80	30–50	140–240	100–140	140–240	140–240	80–120	100–190
(1 5/16)	190–390	140–240	120–170	80–140	40–100	80–190	80–140	50–100	390–580	290–390	390–580	390–580	140–240	190–290
M36	90–180	70–110	40–40	40–110	30–40	40–110	40–70	30–40	130–220	90–130	130–220	130 -220	70–110	90–180
(1 7/16)	180–350	130–220	110–160	70–130	40–90	70–180	70–130	40–90	350–530	270–350	350–530	350–530	130–220	180–270
M39	80–160	70–100	30–40	40–100	20–40	40–100	30–70	20–40	120–200	80–120	120–200	120–200	70–100	80–160
(1 5/8)	160–330	120–200	100–150	70–120	30–80	70–160	70–120	40–80	330–490	240–330	330–490	330–490	120–200	160–240
M40	80–160	60–100	30–40	40–100	20–40	40–100	30–60	20–40	120–200	80–120	120–200	120–200	60–100	80–160
	160–320	120–200	100–140	60–120	30–80	60–160	60–120	40–80	320–480	240–320	320–480	320–480	120–200	160–240
M42	80–150	60—90	30–40	40—90	20–40	40—90	30–60	20–40	110–190	80–110	110–190	110–190	60—90	80–150
(1 3/4)	150–300	110—190	90–140	60—110	30–80	60—150	60–110	40–80	300–450	230–300	300–450	300–450	110—190	150–230
			Calculation	n: Exa	mple: M8 wit	h 25 m/min		peed given a	re guide value	s acc. to gene	ral informatio	n and can var	y depending o	n tap

 $\begin{array}{ll} \text{Tapping speed} & v_c = m/\text{min} \\ \text{RPM} & n = U/\text{min} \\ \text{Diameter} & d = mm \end{array} \quad n = \begin{array}{l} v_c \times 1000 \\ \frac{1}{d \times \pi} \end{array}$

 $\frac{1000}{1000} n = \frac{25 \times 1000}{8 \times 3.14}$

 $n = \frac{1}{8 \times 3.14} = 995 \text{ m/min}$

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 RDT50 RDT85HS RDT85HD **RDT100 RDT150** sintered gears cut gears RDTIC25 RDTIC50 RDTIC50 RDTIC85HS RDTIC85HD RDTIC100 RDTICXT50 RDTICXT50 RDTXT50 RDTXT50 RCT50 RCT50



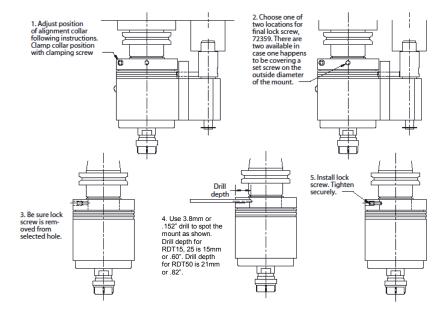
Installation Instructions

In order for the RDT model to reverse, a stop arm is used to prevent the housing from rotating. To allow the tool to travel through an automatic tool change and the stop arm to find the stop location next to your machine spindle, an alignment collar locks the stop arm in a specific orientation. The alignment collar can be adjusted so that it's slot is in any position in relationship to the NC shank. When the tool is out of the machine spindle, the Alignment pin is engaged in the slot in the alignment collar. When the tapping attachment is placed in the machine spindle during the automatic tool change, the stop block next to the machine spindle engages the stop arm bar pushing it down against a spring, preventing it from rotating and unlocking it from the alignment collar. This is the position for operation. When the tapping operation is complete the machine spindle will orient for a tool change and this will bring the slot in the alignment collar back in to position to lock with the stop arm when the tapping attachment is removed from the spindle. The tapping attachments may use standard stop arm assemblies that have a 55mm, 65mm or 80mm distance from the machine center line to the stop arm center, or we can produce special stop arm assemblies for different offset distances.

The following steps involve loading and unloading by hand. Do not attempt an automatic tool change until all steps are completed and clearance has been confirmed. The installation must be stronger than the largest tap. Never attempt to install the tool without first reading all safety instructions for this tool and your machine. Only make automatic tool changes on enclosed machines.

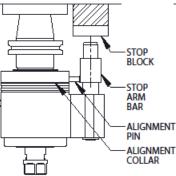
Step 1. Modifying the stop arm: With stop block installed on your machine, measure the dimensions shown at right, E, G and B. The stop arm bar should be removed from the tapping attachment. Use the formula shown at right to calculate length L and diameter D. When machining the end of the stop arm be sure to include a lead in chamfer with length of at least 2.5mm and 30° angle, (60° included).

If your machine does not already have a stop block, Tapmatic offers several standard blocks, or we can make a custom block to fit your specific machine. Please contact a Tapmatic sales engineer. Please check clearances when mounting stop block. It must be positioned on the opposite side of the spindle from the tool changer.

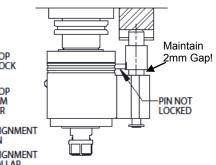


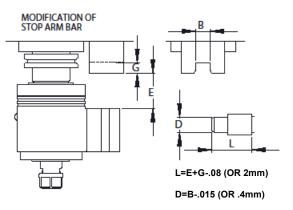
GOING IN TO SPINDLE ALIGNMENT PIN IS

LOCKED IN COLLAR.

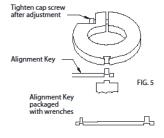


WHEN IN MACHINE SPINDLE, PIN IS NOT LOCKED TO COLLAR





Step 3. Adjusting Alignment collar: With tapping attachment in machine spindle and with spindle oriented for an automatic tool change, bring the slot in the collar in to position where it is directly over the alignment pin. There is a key packaged with the wrenches to help line this up. Then tighten the collar securely. After checking clearance with tool changer and in tool magazine area make several automatic tool changes.



Step 4. Final locking of alignment collar: Follow the instructions at left to fix the alignment collars position so that it cannot slip and lose orientation.



Installation Check List

- 1. Pick proper location on spindle face for mounting the stop block. It must be on the opposite side from where the tool changer moves in.
- 2. Make sure stop arm does not interfere with anything in tool magazine, guarding, doors or adjacent tools.
- 3. Machine stop arm bar to correct length so that when tapping attachment is in machine spindle the bar is pressed down and alignment pin is unlocked from collar.
- 4. Set alignment collar so that its slot is directly over alignment pin. Be sure machine spindle is in tool change orientation position when doing this step.
- 5. Test automatic tool change to be sure alignment is correct and there is no interference.
- 6. Install and check program. Please see programming instructions.

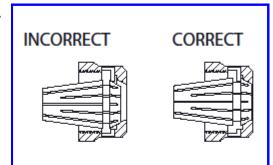
Installing the Tap

Please use square drive, ERGB collets whenever possible.

Be sure to put collet into nut as shown at right, <u>before</u> installing nut on to threads.

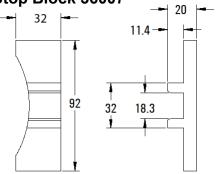
Insert the tap and tighten securely using the two wrenches.

Reduce capacity by 25% if using roll form taps.



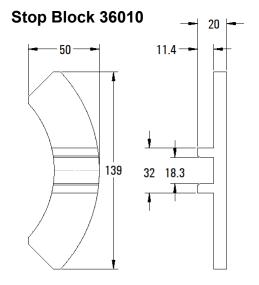
Installation Accessories

Stop Block 36007



Stop Arm Assemblies for Center Distances...

	PART NUMBER			
DESCRIPTION	RDT15,25	RDT50		
Complete Assembly for 55mm	3925551	3950551		
Complete Assembly for 65mm	3925651	3950651		
Complete Assembly for 80mm	3925801	3950801		



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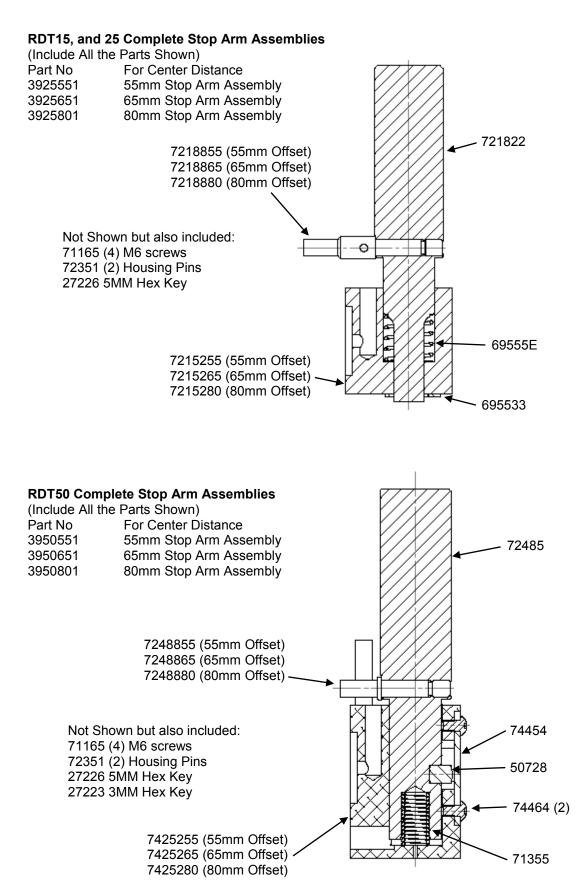


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IDENT	PART NAME	RDT15	RDT25	RDT50	IDENT	DENT PART NAME		RDT25	RDT50
1	Alignment Collar Washer			72362	34	Drive Spindle ER11		72114R	
2	Alignment Collar Screw	70263	70263	72364	34	Drive Spindle ER16			72314R
3	Alignment Collar Truarc	71218E	71218E	507091	35	Drive Pin	70232 (2)	70232 (3)	71132E(3)
4	Alignment Collar Gasket	72161	72161	72361	36	Spacer	71238	71238	71138
5	Alignment Collar	72160	72160	723601	37	Кеу	71423	71423	71143
5*	Alignment Collar Assembly	72160A	72160A	723601A	38	Pinion Gear	51306 (3)	51306 (3)	72337 (3)
6	Internal Truarc			70566	39	Gear Washer	513061(3)	513061(3)	515061(3)
7	Mount Plug	72319S	72319S	72372	40	Gear Axle	69306(3)	69306(3)	700061X1(3)
8	Grease Hole Washer	712651	712651	69565	41	Gear Carrier	72124	72124	72324
9	Grease Hole Screw	71262	71262	71162	42	Reverse Spline	72012	72112	723121
10	Housing	72101	72101	72301	43	Reverse Driver	72106	72106	72306
11	Housing O-Ring	712501	712501	711501	44	Reverse Bearing	70805	70805	71758
12	Diaphragm	71754	71754	71754	45	Drive Spindle Bearing	71441	70641	71141
13	25mm Mount	7121931	7121931	7112031	46	Bearing Holder	72013	72113	72313
13	1" Mount	712191	712191	711201	46*	Bearing Holder Assembly	72013A	72113A	72313A
14	Retaining Screw	712581 (3)	712581 (3)	711581	47	Spindle Seal	71459	71259	71159
	-			(3)	48				72356
15	Pin	712631	712631	711631	49	Lock Nut O-Ring	71244	71244	71144
16	Housing Bearing	60308	60308	50708	50	Lock Nut	72145	72145	72345
17	Spacer Ring			72339	51	ER8 Nut	71418		
18	Threaded Driver	71405	71405	72305	51	ER11 Nut		69318	
19	Dampener	71211 (2)	71211S(2)	71121 (2)	51	ER16 Nut			69518
20	Forward Drive Spline	72010	72110	723101		des 1, 2, 4, and 5) 25* (Includ	des 25. 26. 2	7. and 28)	00010
21	Bevel Gear	71422 (2)	71422 (2)	72322 (2)		udes 45, 46, and 47)		,	
22	Retaining Ring	72066 (2)	71266 (2)	700561 (2)		Wrench Kit RDT15			
23	Return Spring Retainer	71442	71242	70543					
24	Return Spring	714301	71230	72330	28002 27223	Wrench 7/16 x 9/3 3MM Hex Key	32		
25	Upper Bushing Holder	70636	70636	71035	27222 69341	2MM Hex Key Align Key			
25*	Upper Bushing Holder Assy	71437A	71237A	71039A	29002 72359	Grease Collar Pin			
26	Upper Bushing Sleeve	71437	71237	71039	72359				
27	Upper Bushing Ball	70638 (22)	70638 (22)	71735 (22)		Wrench Kit RDT25	Wr	ench Kit Rl	0T50
28	Upper Bushing Plug	70635	70635	71135					
29	Bias Spring Retainer	72027	72127	700271E	28068 28062	ER11 Wrench Wrench 5/8	28100 28075		016 Wrench rench 3/4
29	Bias Spring Retainer Plate	72028	72128		27223 27222	3MM Hex Key 2MM Hex Key	27224 27221		IM Hex Key MM Hex Key
30	Spring Retainer Dampener			72329	69341 29002	Align Key Grease	69341 29002	Ali	gn Key ease
30	Retainer O-Ring	70625	70625	—-	72359	Collar Pin	72359	Co	llar Pin
31	Bias Spring	71424 (2)	70224 (2)	60524 (2)			72365276 72365287		'6 Driver 37 Driver
32	Driver	71491	70210	74290					
33	Drive Ball	68439 (2)	70239 (3)	74239 (3)					
34	Drive Spindle ER8	72014							



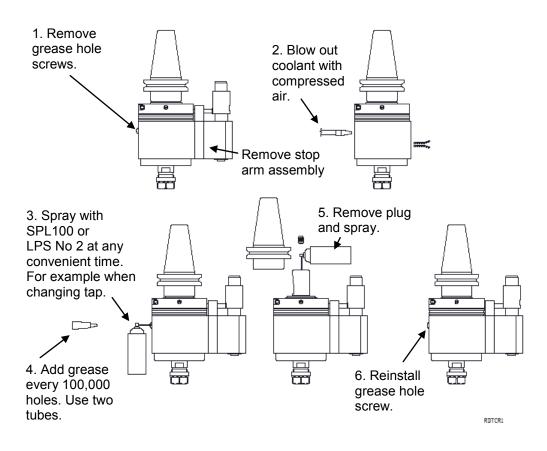




Maintenance

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.





Repair Service is available at....

Attention:

a: Repair Department Tapmatic Corporation 802 Clearwater Loop Post Falls, ID 83854

To Expedite Repair: Return tool direct to Tapmatic Corporation by United Parcel Service and enclose the following statement with your purchase order: "Authorization given to repair and return tool if total cost does not exceed 40% of the cost of a new tool." Tapmatic will still send you cost notification for the actual charges prior to repairing the tool, and we will call to request credit card information for invoicing.

Cost Notification: Tapmatic will FAX a cost notification to you, soliciting your approval before repairs are completed. If it is determined that a tool cannot be repaired, at the customer's request, Tapmatic will return the disassembled parts. We are not able to reassemble a tool using damaged or worn out parts.

Optional Return Procedure: Tools may also be returned for repair through your local Tapmatic Distributor. They will ship the tool to us and include instructions for the repair and return. You may already have an open account with them which facilitates the handling of invoicing.

Priority Service: Tapmatic services tools returned for repair in the order in which they are received. All tools will be evaluated and repaired within three weeks from the date they arrive subject to receiving the customer's approval to proceed with the repair.

Priority is given to tools shipped to us by overnight or second day.

If a repair is sent to us by UPS ground or similar service it can also be given priority. Just call and let us know you need priority service and advise if you would like the tool returned to you by overnight or second day. In the interest of fairness, to all our customers, we ask that you approve shipment by overnight or second day before we agree to upgrade your repair order to priority service. Typical turn around, not including shipping time, for priority repairs is 5 to 7 days subject to receiving the customer's approval to proceed with the repair.

If we can answer any questions please call our toll free number: