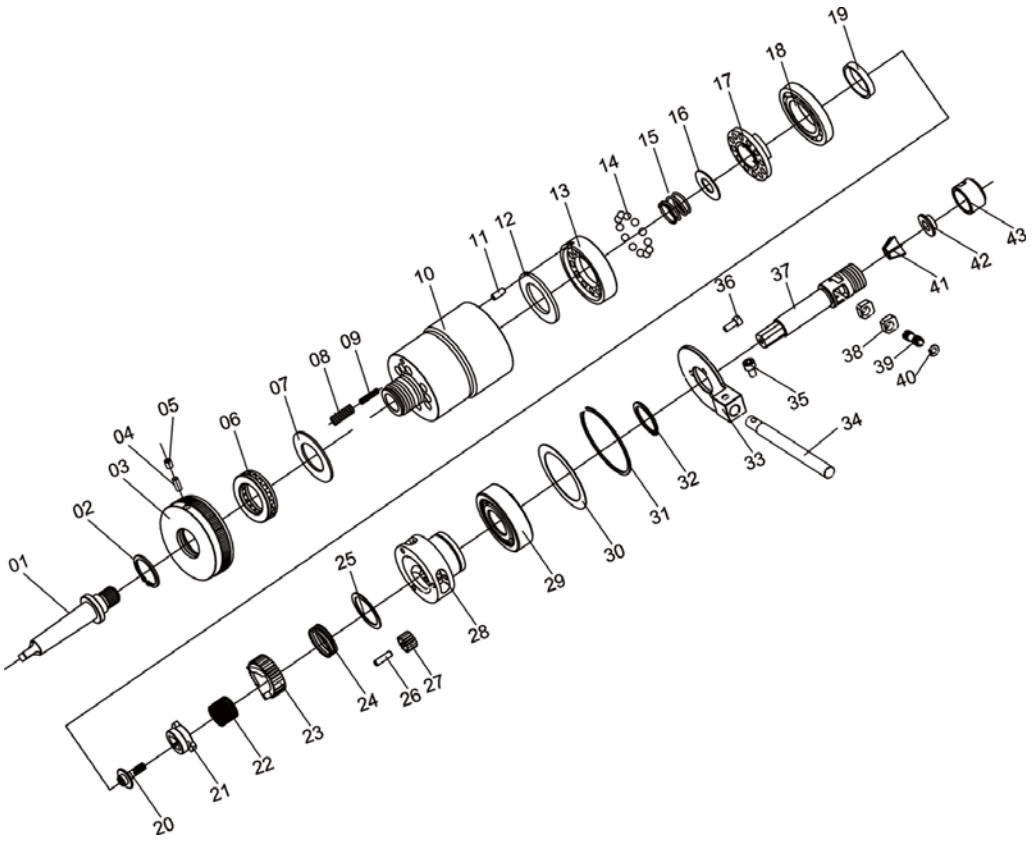
ACCUSIZE
INDUSTRIAL TOOLS

SELF - REVERSING TAPPING HEAD

OPERATION INSTRUCTIONS

• Parts Listing JSN 07, 12, 20



P01 arbor
P02 elastic ring
P03 adjust nut for clutch
P04 pin
P05 hex head socket screw
P06 trust bearing
P07 pad
P08 cluth spring(big)
P09 cluth spring(small)
P10 case
P11 pin
P12 spring washer
P13 cluth ring
P14 ball
P15 buffer spring
P16 pad
P17 driver
P18 bearing
P19 bearing pad
P20 driving spindle screw
P21 driving jaw
P22 return driving spring
P23 return gear
P24 reset spring
P25 pad for return gear
P26 pin
P27 gear
P28 bearing stage
P29 bearing
P30 bearing pad
P31 slit ring
P32 eleatic ring
P33 thrust stop
P34 stop bar
P35 hex head socket screw
P36 hex head socket screw
P37 driving spindle
P38 block
P39 double-thread screw
P40 eleatic ring
P41 flexible collet
P42 pad
P43 nut

• Applications and features

Self-Reversing Tapping Heads feature reversible rotation, overload protection, and adjustability. Their advantages include compact structures, high efficiency, safety and reliability, and simple operations.

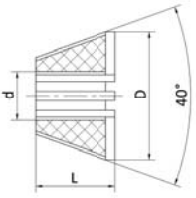
Capacity range: Accusize Industrial Tools supplies three models of Self-Reversing Tapping Heads. The tapping capacity ranges from M2 to M20. The working range refers to the following table. Various adapters are available for the machines with different tapered spindles. Adapters with a taper of MS-JT/B or MS-M20 x2.5 are attached.

• Main technical specification

Model	Tapping Capacity in Steel	Jacobs Taper#	REC.Max Speed (RPM)	Taper Size	Expansion	Uses Collets
2600-4002	#0 - 1/4" (M2 - M7)	6JT	1500RPM	2 & 3 MT	0.140"	#0 - #10 (2600-4032) #10 - 1/4" (2600-4034)
2600-4012	#4 - 1/2" (M5 - M12)	6JT	1000RPM	3 & 4 MT	0.160"	#4 - 1/4" (2600-4036) 1/4" - 1/2" (2600-4038)
2600-4022	5-16" - 3/4" (M8 - M20)	M20	600RPM	3 & 4 MT	0.240"	5/16" - 5/8" (2600-4042) 9/16" - 3/4" (2600-4044)

COLLET FOR TAPPING HEAD

Model	Tapping Capacity	Length (L)	Outsite Diameter (D)
2600-4032	#0 - #10	0.433"	0.618"
2600-4034	#10 - 1/4"		
2600-4036	#4 - 1/4"	0.512"	0.858"
2600-4038	1/4" - 1/2"		
2600-4042	5/16" - 5/8"	0.591"	1.060"
2600-4044	9/16" - 3/4"	0.433"	



SHANK FOR TAPPING HEAD

Model	Taper Size	Jacobs Taper
0222-0750	2MT	6JT
0222-0757	3MT	6JT
0222-0763	4MT	6JT
0222-0775	R8	6JT
2600-4062	3MT	20mm Thread
2600-4064	4MT	20mm Thread
2600-4066	R8	20mm Thread

NUT SPARE PART FOR TAPPING HEAD

Model	Description
2632-4002	Nut spare part of 2600-4002
2632-4012	Nut spare part of 2600-4012
2632-4022	Nut spare part of 2600-4022

LOCKING SPARE PART FOR TAPPING HEAD

Model	Description
2612-4002	Locking spare parts of 2600-4002
2612-4012	Locking nut spare parts of 2600-4012
2612-4022	Locking nut spare parts of 2600-4022

• Warning:

To prevent serious damage and ensure optimal tapping performance, please read the operator and safety instructions provided for this device carefully. Also, follow all other relevant safety instructions, especially those related to your machine.

1. **Suitable clothing:** The rotating spindle of the machine tool can entangle loose clothing, jewelry, or long hair. Do not wear anything that may get caught, such as jewelry, long sleeves, ties, or gloves. Tie up long hair or use a hair net to avoid getting it wrapped around the rotating spindle.

2. **Correct eye protection:** Wear safety glasses with side shields to protect your eyes from flying debris.

3. **Mounting the brake rod:**
Refer to Figure 1 and mount the brake rod, which should be rigid enough to withstand the torque of a reversing tap (a steel rod is recommended, 45#, Ø20-30mm, HRC45), on the nonrotating part of the spindle end or on the worktable.

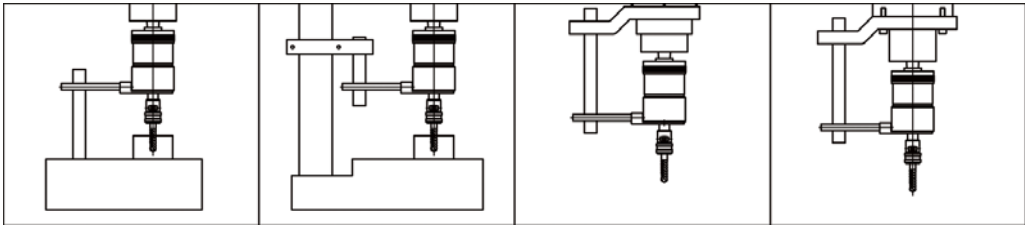


Figure 1

- Do not modify the length of the standard stop arm in the attachment. A longer stop arm may pose a risk of hitting the operator and causing serious injury.

- Do not grab the stop arm with your hand. When the machine reverses, the stop arm receives the full power and may hurt the operator severely.

4. **Do not exceed the maximum speed of the tapping head.** Speed is an important factor in tapping. Always follow the recommended speed table. Accusize Industrial Tools torque control reversing tapping attachment uses planetary gears to increase the reversing speed. The reverse rotation speed per minute out of the hole is 1.75 times the spindle speed of the machine. We strongly suggest that you use the average tapping speed rather than the machine speed to calculate the cycle time. For example, if the machine speed is 1500 rpm, reverse speed is 2625 rpm, then your average tapping speed is 2062 rpm. You must not go beyond the maximum allowed speed marked on the tapping attachment.

5. **Internal damage to the tapping head can occur if it is not adhered to.**
- Do not allow the plunger shaft of the tapping head to make contact with any part of the work surface or parts while in operation. If contact is made, the tap head can continue to rotate and will likely cause the tap to pull itself out of the retaining toe clamp blocks and overtime cause damage to them.

6. **Do not lift the tapping head upward while the tap is threading inward.** Doing so can cause the tap to be pulled from the tapping head and overtime cause damage to the tapping head. When the tap stops turning the head can be lifted to remove the tap.

7. It is recommended to use slower RPM speeds until you have mastered the above steps. Adjust accordingly once mastered.

8. **Always be aware of the potential hazards of machining operation.** When working with your machine, you may lose your attention and become complacent. This can lead to serious harm. Always pay attention to the dangers of the machine that you are using. As the machine spindle rotates, always keep your hands, body, clothing, jewelry and hair away from the operating area. The operating area includes the direct machining point and all transmission components including tapping attachment. Remember not to approach your hands, other parts of your body, or anything attached to you until the machine spindle completely stops.

9. Follow other relevant safety instructions and requirements, especially for your machine.

• Essential Steps for Operation

1. Before using this tapping attachment, read the safety instructions for the product and machine carefully.
2. For optimal performance, ensure that the tap is sharp and aligned correctly.
3. The tap must be concentric with the hole.
4. Adjust the machine speed to the appropriate level.
5. Select the right feed speed based on the screw pitch and the revolutions per minute.
6. The drill size must be accurate.
7. To prevent the tap from hitting the bottom of the blind hole, set the machine stop correctly. Refer to controlled depth.
8. When tapping a blind hole, leave enough space for clearance.
9. Secure the work piece firmly so that it does not move, rotate, or lift.
10. Ensure that there is enough distance between the start and retract positions to keep the tapping head away from the hole as it retracts. Remember that the spindle extends when the tapping device reverses out of the hole.
11. Install a sturdy torque rod on the machine table or on the non-rotating spindle frame to prevent the stop arm from rotating. The torque rod strength must be greater than the maximum tapping force of the cone. It must also have a smooth surface so that the stop arm can slide freely up and down in and out of the hole.
12. Use the proper cutting fluid / lubricant for your application.

Self-reversing tapping heads are versatile tools that can be used on various machines with a rotating spindle, as well as for many automated tasks.

• Procedure and Steps

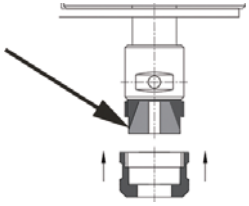
1. **Install the Arbor:** Make sure the thread or taper of the arbor and the tapping attachment are clean. Then secure the arbor firmly on the tapping attachment.

If the arbor has a taper, push and twist it into the tapping head, and then hit the end of the arbor with a mallet to fix it on the taper part of the tapping head.

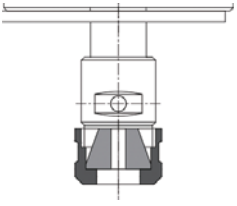
To remove the taper mount arbor, strike the side of the arbor several times with a mallet.

2. **Mount the Rubber Flex Collet into the tapping head nut:**

Put the rubber flex collet into the spindle hole



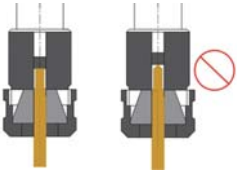
Screw the lock nut over the collet



3. **If the tap has a convex tip, grind it flat:**

Eliminate any bumps on the tap

The square on the tap will be more fully gripped and stable



4. **Mounting the tap:**

a. Loosen the lock bolt with a wrench

c. Tighten the lock bolt with a wrench

b. Insert the square end of the tap handle into the square hole of the clamping device

d. Tighten the lock nut with a wrench

5. **How to mount the stop arm:**

The stop arm needs to be rotated to reverse the direction of the tapping head.

• Recommended Tapping Speeds

The following table provides some general guidelines for tapping speeds. However, you should always follow the specific instructions from the tap manufacturer. Do not go beyond the maximum speed limit for the tapping attachment indicated on the sheet.

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 Brone	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)

$$RPM = \frac{(M/min) \times 318.5}{\text{Tap Diameter in mm}} \qquad RPM = \frac{(ft/min) \times 3.82}{\text{Tap Diameter in mm}}$$

• How to adjust the torque

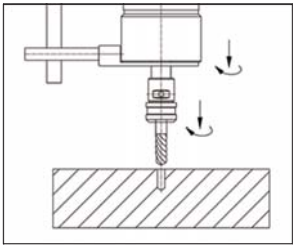
Set the clutch so that it would prevent the tap from breaking and ensure the tap can cut as needed into the work piece.

You can choose a suitable torque level from numbers 1, 2, 3, 4 on the main body circumference based on the diameter and material of the work piece. The chuck can withstand different torque levels from low to high and can be adjusted by the operator himself. For materials that are hard to tap, it is advisable to do two passes.

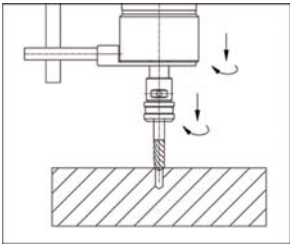
• Tapping

The operator should align the tap on the machine tool with the hole on the work piece that has been drilled for screwing and follow Figures 2.

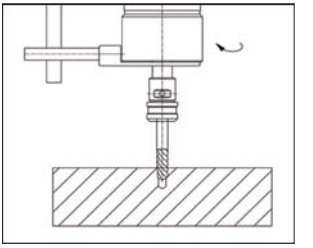
Figures 2



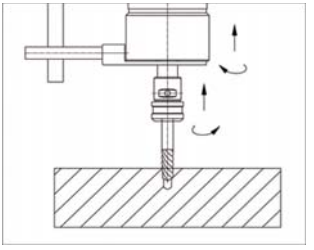
1. Lower the spindle until the tap touches the workpiece.



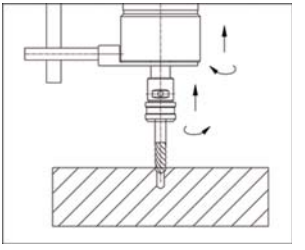
2. Start tapping by moving the machine spindle down with the chuck



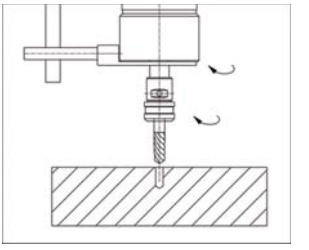
3. Stop the vertical movement of the machine spindle when it reaches the desired depth. The chuck spindle will keep tapping until it reaches the end of its extension, then it will automatically stop rotating.



4. Lift the machine tool spindle. Then the chuck spindle and the tap will automatically rotate in reverse and quickly retract.



5. The raising speed of the machine spindle should match the retreating speed of the tap. Otherwise, the tap will stop and start intermittently.



6. The tap will start rotating as soon as it has fully withdrawn from the workpiece.

• Lubrication

Our products are pre-lubricated in the factory and are ready for use anytime. We recommend that you partially disassemble, clean and apply new grease to the product after 600 hours of use. We suggest using a high-quality lubricating grease.

• Cutting Tool Lubrication

With cutting fluid, lower the tapping head to the workpiece to begin threading. The tap will automatically stop when it reaches the depth you had extended or allowed it. If more is needed, drop ever so slightly. Once the tap stops to the point where you feel the chip break is required to slightly lift (which will reverse the tap) to break thread chips and immediately lower the tap head to continue threading inward. The tapping head does not require any force to operate into or out of the part, be gentle and it will do the work for you and smoothly.