



WARNING



Study, understand and follow all instructions provided with this product. Read these instructions carefully before installing, operating, servicing or repairing this tool. Keep these instructions in a safe, accessible place.

INTENDED USE OF THE TOOL

This tap and die tool set is designed for cutting male and female threads of the thread pitches included in the kit only and is only suitable for experienced technicians. Tap only appropriately sized holes (see page 2); undersized holes will cause damage to the tool or work piece. Do not use this tool outside of the designed intent. Never modify the tool for any other purpose or use.



WARNING



Caution: To help prevent personal injury

- Use of this product can expose you to chemicals including ethylene glycol, gasoline vapors and engine exhaust, which are known to the State of California to cause cancer, birth defects, or reproductive harm. For more information, visit www.P65Warnings.ca.gov. Always wear ANSI approved safety equipment, safety glasses and clothing when using this product. Study, understand, and follow all instructions provided with this product. Failure to read and follow all warnings and operating instructions may result in damages and serious injury or death.
- Always wear ANSI approved goggles when using this product. (Users and Bystanders).
- Never use this tool for any application other than for which it was designed.
- Only use accessories designed for this tool.
- Never alter or modify this tool in any way.
- Improper operation and/or maintenance of the tool, modification of the tool, or use of the tool with accessories not designed for it could result in serious injury or death.
- Always select the correct accessories of the correct size and design for the job that you are attempting to perform.
- Always work in a clean, safe, well-lit, organized and adequately equipped area.
- Do not begin repairs without assurance that vehicle is in secure position, and will not move during repair.

BEFORE USE

When unpacking, check the parts diagram and part number listing on page 13 to make sure all parts are included. If any parts are missing or damaged, please call your distributor.



Made in Taiwan
to Matco specifications

LIFETIME WARRANTY

The manufacturer warrants this product to the original user against defective material or workmanship with a lifetime guarantee.

The manufacturer reserves the right to determine whether the part or parts failed because of defective material, workmanship or other causes. Failures caused by accident, alteration, or misuse are not covered by this warranty.

The manufacturer, at its discretion, will repair or replace product covered under this warranty free of charge. Repairs or replacements of products covered under this warranty are warranted for the remainder of the original warranty period.

The manufacturer or its authorized service representatives must perform all warranty repairs. Any repair to the product by unauthorized service representatives voids this warranty. The rights under this warranty are limited to the original user and may not be transferred to subsequent owners.

The warranty is in lieu of all other warranties, expressed or implied, including warranties of merchantability and fitness for a particular purpose. Some states do not allow the exclusion or limitations of incidental or consequential damages, so the above limitations may not apply to you.

PRODUCT INFORMATION:

Large size range. Essential comprehensive set for thread sizes above M12, up to M24.

Extra-Large wrenches. Includes 1.5" O.D. die wrench, 2.0" O.D. die wrench and tap wrench with long arms for the leverage needed to cut large thread sizes.

Lasting design. Forged and machined from durable Japanese tool steel alloy for professional use.

DO NOT DISCARD – GIVE TO USER

DRILL GUIDE

Metric	60%	75%	Closest Fractional	Decimal Inches
M14x2.0	12.5mm	12mm	31/64"	0.4921
M14x1.5	12.75mm	12.5mm	1/2"	0.5020
M14x1.25	13mm	12.75mm	-	0.5118
M16x2.0	14.5mm	14mm	9/16"	0.5709
M16x1.5	15mm	14.5mm	19/32"	0.5906
M18x2.5	16mm	15.75mm	5/8"	0.6299
M18x1.5	16.75mm	16.5mm	21/32"	0.6594
M20x2.5	18mm	17.5mm	45/64"	0.7087
M22x1.5	21mm	20.5mm	13/16"	0.8268
M24x3.0	21.5mm	21mm	27/32"	0.8465
M24x2.0	22.25mm	22mm	7/8"	0.8760

LUBRICATION

Be sure to use the proper lubricant while threading. Lubrication is necessary for accurately formed threads. It also prevents damage to taps and dies, helping to extend tool life. The lubricant should be applied to the cutting edges during the threading operation.

USING TAPS

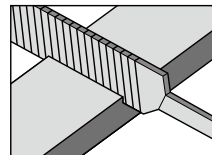
Taps are used to cut threads inside a hole, creating a threaded receiver for a bolt or screw. The taps in this set are called plug taps. They are the most common, general-purpose tap design. They feature a tapered end of 3 to 5 chamfered threads, allowing an easier gradual entry into hole.

To properly cut internal threads you will need:

- Tap of correct size
- Tap wrench
- Drill bit of correct size
- Lubricating (cutting) oil
- Material

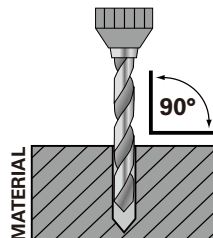
a.) Check **Hardness**

Do not try to thread hardened metals. Use a file to test the hardness of material. If it cannot be cut by a file, the material is too hard for use with the taps or dies.



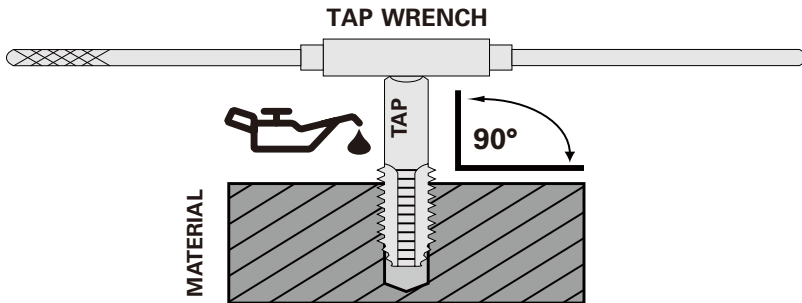
b.) Drill

Starting with the proper hole size (see chart) is very important. An oversized hole will produce poorly formed threads with reduced thread depth. A hole that is too small will make turning the tap very difficult and may break the tap. Refer to the included Drill Guide for the recommended drill size for each tap size. If possible, drill using a drill press (recommended) or similar machine, if not possible take great care to drill straight and true.



c.) Tap

Insert square end of tap into tap wrench and tighten handle to secure in place. Lubricate cutting edges. Great care must be used when starting the tap into hole. Tap must be held square (90°) to work piece. Begin by turning tap slowly clockwise with light downward pressure. As the tap is turned, it will bite into the material, pulling itself forward into hole. Once the tap begins to cut, chips of material are formed between the flutes of tap. These chips must be broken off to relieve pressure against the tap. This is accomplished by momentarily reversing tap direction every 1/4 to 1/2 revolution, depending on the resistance encountered. Continue this alternating pattern of forward and reverse rotation until tap passes through work piece or to desired depth. **Blind hole** (does not pass completely through work piece): The starter threads (first 3 to 5 chamfered threads) on these plug taps do not cut full threads. Therefore, when drilling a blind hole, it is necessary to make hole deep enough to allow extra room for falling chips and the starter thread to fully clear threaded section.



USING DIES

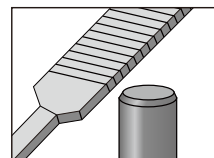
Dies are used to cut threads on the outside of a rod, creating a threaded bolt. The diameter of the rod is of great importance. It cannot be larger diameter than die (thread size) and preferably the rod would be .005 - .010" undersized. Oversized rod may damage the die and will make turning the die very difficult or cause damage. Slightly undersized stock is easier to thread and can make more uniform threads.

To properly cut external threads you will need:

- Die of correct size
- Die stock
- Rod of correct diameter
- Lubricating (cutting) oil

a.) Chamfer

To enable die to start easy and straight, bevel the end of rod. The chamfer can be created by filing or grinding by hand or by power tool.

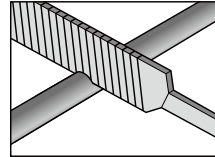


b.) Thread

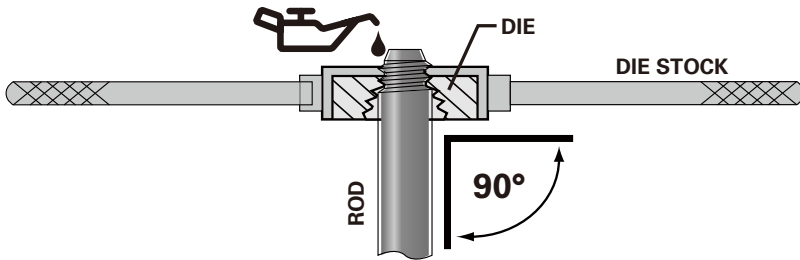
Secure rod in a vise or clamp capable of holding rod and preventing it from spinning. Insert the cutting die into the correct size die stock wrench, blank side down. When positioned correctly, the side of die with size markings should be facing you. This is the chamfered side of the die and is used to start threading. Align two recesses in die with the two screws in die stock. Tighten screws to secure.

Lubricate the die threads. Place the die over end of rod square (90°) to rod. Start slowly turning clockwise to start threading with light downward pressure. As die is turned, it will bite into the material, pulling itself down the rod. Once the die begins to cut well, the only downward pressure needed is naturally generated as a part of turning the die stock. As chips of material are formed between the flutes of die and these must be broken off to relieve pressure against the die. This is accomplished by momentarily reversing die direction every 1/4 to 1/2 revolution, depending on the resistance encountered. Continue this alternating pattern of forward and reverse rotation until desired thread length is completed.

If after assessing the thread quality on a test piece you wish to modify the cut thread depth (for instance a nut threads on too loose), tightening the center screw on the die stock wrench can apply pressure on the die's cut relief, opening the die slightly. This will change its tolerance and allow for shallower cut threads.

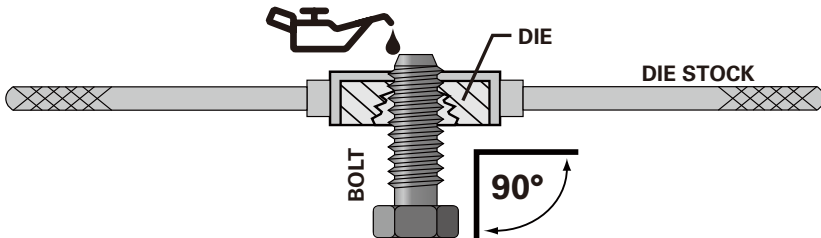


Check
hardness



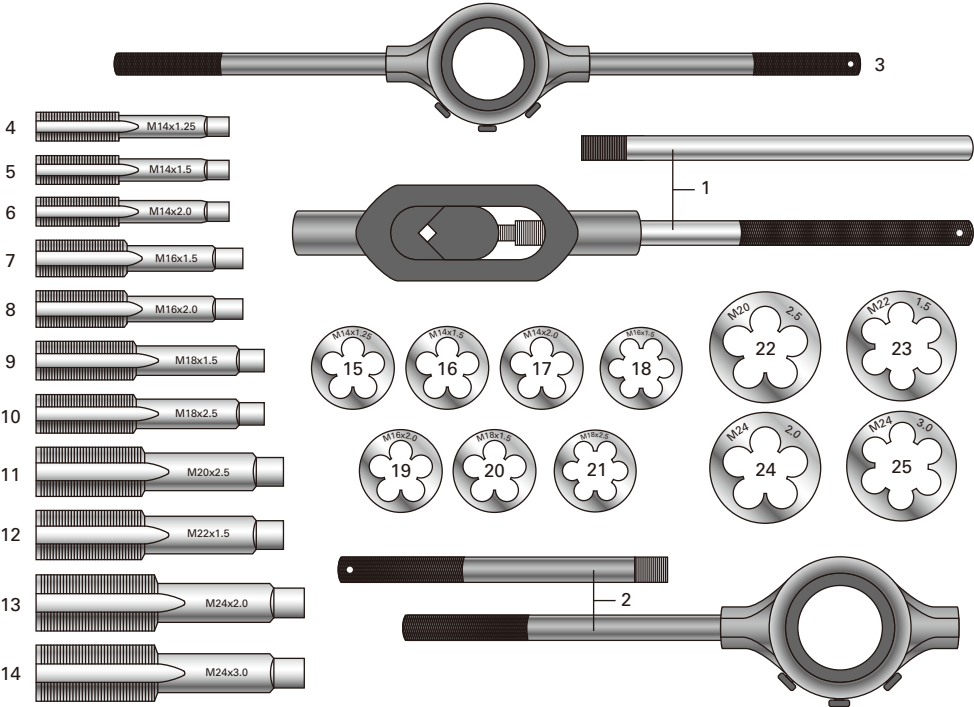
CHASING THREADS

Most threads that have become lightly damaged or rusted can be repaired. Use a thread gauge to measure thread size. Choose correct tap or die size. Lubricate the existing threads. Follow original instructions for threading using either tap or die. Work slowly, make sure that the tap/die is following existing threads, and is not wandering. Threads will be ruined if tap/die begins to cut new material or becomes cross threaded.





PARTS BREAKDOWN



PARTS LIST

Index	Part No.	Description
1	TW25	Large Adjustable Tap Wrench
2	DS35	Large Die Stock Wrench
3	DS25	Die Stock Wrench
4	MT14125T	M14x1.25 Tap
5	MT1415T	M14x1.5 Tap
6	MT142T	M14x2.0 Tap
7	MT1615T	M16x1.5 Tap

Index	Part No.	Description
8	MT162T	M16x2.0 Tap
9	MT1815T	M18x1.5 Tap
10	MT1825T	M18x2.5 Tap
11	MT2025T	M20x2.5 Tap
12	MT2215T	M22x1.5 Tap
13	MT242T	M24x2.0 Tap
14	MT243T	M24x3.0 Tap
15	MT14125D	M14x1.25 Die
16	MT1415D	M14x1.5 Die

Index	Part No.	Description
17	MT142D	M14x2.0 Die
18	MT1615D	M16x1.5 Die
19	MT162D	M16x2.0 Die
20	MT1815D	M18x1.5 Die
21	MT1825D	M18x2.5 Die
22	MT2025D	M20x2.5 Die
23	MT2215D	M22x1.5 Die
24	MT242D	M24x2.0 Die
25	MT243D	M24x3.0 Die