WARNING: Read all instruction and safety information prior to use of T1-8 Machine

T1-8 TAPPING MACHINE

OWNER'S MANUAL
and
OPERATING INSTRUCTIONS

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T1-8 TAPPING MACHINE

OPERATIONS MANUAL

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OWNERS MANUAL

You, the customer, must establish hot tap drilling procedures accompanied by this manual to insure that they will be safe and proper procedures and post them in a conspicuous place within your facility.

Here are some regulations that should be incorporated into your safety and program.

A. **Never allow an untrained operator to use this machine.**
B. **If the machine is not working properly, STOP proceeding and advise supervisor IMMEDIATELY.**
C. **Never alter machine from original design.**
D. **Always use proper fittings, valves and equipment intended for this machine.**
E. **Never use this machine unless all fittings, valves and equipment have been fully tested before each tap is made.**
F. **Always use proper safety clothing and accessories for the environment in which you are to work.**
G. **Always use this machine in accordance with OSHA's regulations.**
H. **Always use ground fault interrupter between outlet and drill.**
I. **Safety goggles are required at all times. Earplugs are suggested. Rubber boots and gloves are required in damp areas.**
J. **DO NOT plug in motor until everything checks out, and you are ready to start drilling.**
K. **Always disconnect power cord when changing cutters, adaptors, and servicing equipment. Keep alert at all times and stand in an area with sure footing. Don't let spectators stand too close.**

I. INTRODUCTION

The T1-8 Machine

The T1-8 Tapping Machine was designed by people who use it in the field for Hot Tapping 3" – 8" outlets and for the preparation of line stop access of IFT's 3" – 8" Linestop equipment.

1.0 SAFETY REQUIREMENTS

The T1-8 Tapping machine is a light weight piece of field equipment that will perform "pressurized" drilling operations on pipelines and tanks within the limitations set forth in this manual.

DANGER – under pressure gas and/or fluids both flammable and non-flammable could result in death and /or possible serious injury if operator personnel of this machine are not properly trained and thoroughly familiar with the use and maintenance of the T1-8 Tapping Machine

2.0 IFT WARRANTEE

IFT products sold to our customers are guaranteed to be of the quality as described by IFT.

Standard warranty for IFT Machinery is provided below

IFT warrants its products to be free of defects in workmanship and material under normal use and service, when used for the purposes and under the conditions for which they are intended. Obligation under this Warranty is limited, at Company's determination.

2.0 MACHINE SPECIFICATIONS

Operating pressure maximum – 300 psi @ 100°
Operating temperature maximum -250° @ 200 psi
Total weight of machine – 55 lbs.

WARNING – Work on pressurized piping systems is potentially hazardous. Proper training on this equipment is necessary.

3.0 TAPPING MACHINE DESCRIPTION

GENERAL DESCRIPTION

The T1-8 Machine consists of a 3 rail frame in which a Gear-box drive and an electrical drive unit slides and operates by 115 VAC. A ground fault interrupt plug, "which is supplied" must be used. Behind the drive assembly, the feed assembly slides and locks into place.

The packing housing, consisting of O-ring seals. The O-rings form a seal around different length boring bars and these boring bar lengths are determined in the field depending on the travel needed to complete a tap. Different size adaptors bolt onto the machine and are sealed by an O-ring for convenient size changes.

4.0 USE OF THE T1-8 TAPPING MACHINE

IMPORTANT – Prior to any attempt to perform "live " tapping operations, the operator must be completely familiar with all aspects of the use of the T1-8 and all personnel must go through a "hands on" training program using this manual, under controlled conditions.

4.1 **Read and understand entire operators manual prior to attempting your first tap. Each operator should practice on a dry line first, because, once you start a live tap you are committed to finishing it, and your line may not be easily shut down to repair the damage.**

4.2 **Inspect all pieces of equipment before each use. DO NOT assume that anything is still tight and in operational condition after the last tap. Insure that you are plugged into the ground fault interrupt protector, which is grounded to a properly wired outlet to protect from electrical shock!**

4.3 **Determine the type of material you are tapping into, what type of vessel or pipe, what pressure and/or temperature. Be sure you are trained in each special aspect prior to proceeding. If you need special assistance determining safety questions, please call IFT at the phone number listed on the front of this manual.**

4.4 This motor is not explosion proof and does emit sparks. Avoid combustible areas. Do not operate in gaseous or dusty atmospheres. If an air-drive or hydraulic-drive is preferred please contact our office.

4.5 Choose the proper adaptor to mate up with the valve to be tapped and tighten it to the machine. Determine the size and type of hole saw to be used. Make sure cutter is sharp! and bolt the cutter onto the boring bar. Make sure it passes through valve without dragging at any point.

4.6 Check pilot drill wires before use. When wires are properly placed, they should be rotate loose when pilot is rotated.

4.7 Attach tapping machine to connection, open valve, push boring bar forward, making sure the cutter and pilot have completely passed through and the pilot touches the outside of pipe. Spin boring bar by hand. Make sure it has no drag. Pull boring bar back fully to retracted position.

4.8 Pressure check assembly, packing, and valve, through outlet provided. Use a pressure gauge, and /or spray solution of soapy water on service to ensure there will be no leaks. After the check is successful, release pressure.

4.9 Push boring bar forward again, make sure pilot contacts outside surface of pipe. Slide gear-box onto boring bar and install push-pin lock, slide drive-motor in place and install push-pin lock.

4.10 Make sure you have enough travel on boring bar and feed screw to complete tap and slide feed mechanism in place and set locking Allan bolts on feed mechanism to secure to rails and turn retainer screw to join feed mechanism to drive-motor.

4.10. Spray boring -bar with the light oil such WD-40 at packing area to lubricate it.

4.11. NOW! That you are wearing safety equipment, you have sure footing, enough light to see what you are doing, everything has been tested and double checked, and you are plugged into a properly wired outlet with the

ground fault interrupter in place, and have studied and familiarized yourself with procedures. YOU ARE READY TO BEGIN.
Remember!, you are not in a race to make this hot tap. You are here to make a successful tap which takes time and knowledge. Take it from an experienced tapper, "There is No Rush!" "EVER!!, or this job is not for you.

4.12. With the pressure check/bleed off valve slightly open, pull the trigger, and gently feed the pilot bit into the pipe by rotating feed knob clockwise. Make sure the motor is also rotating clockwise until fluid purges out through the bleed of the valve. Now close it and continue drilling pilot. There is usually some free distance between the pilot and the hole-saw. Don't confuse this with a completed tap, this has been done in the past!

Once the cutter has touched the pipe STOP mark the boring bar with a felt pen 1/2 of the pipe diameter to avoid making the mistake of drilling through the back.

Continue feeding cutter smoothly, listening to the sound of the motor, feeding slower if the motor slows.

As you reach the end of the tap the cut may seem a little rougher, so slow down your feed. This is the final part of the cut and there is no need for problems here. If you feed too fast, the cutter may grab, and throw you off balance. Remember, safety first.
When tap is complete, cutting and drag ceases.
The hot tap should be complete so gently feed cutter slightly into pipe while motor is running, approximately 2-4 full turns to clear any stringy shavings that may pull coupon from retained position.

Stop motor.

<u>On the front of the tapping machine is a Boring Bar Brake! Tighten the Allen Head Bolt.</u>
<u>Tightening the brake mechanism to secure the boring bar allows control of the boring bar during retracting. Use of the Boring Bar Brake is a required step of using this Tapping machine.</u>
<u>Do not remove the gear box or the drive motor!</u>

4.11 Back off retainer screw to disengage feed mechanism from drive-motor.

While someone is securely holding the drive motor in place, and standing out of direct line if the boring bar drive motor in case comes back quickly. Have another operator very gently releasing the brake counter clock-wise to allow the boring bar to slowly slide backwards to retract the boring bar all the way to the beginning position.
The feed mechanism and gear-box may retract beyond the rails depending on the length of boring bar so stand clear.
Let motor and gear-box retract slowly.
Note: Water pressure can force boring bar back in a sudden and forceful manner. Stand clear!

Make sure boring bar has retracted to the same length as when you first began and cleared the valve.

4.13 Close tapped valve, and bleed off pressure through bleed-off valve. Be sure you know where the bled-off liquid is going to go. Use a bucket or whatever is necessary to safety bleed off product.

4.14 At this time the valve that has been tapped may leak due to a chip from this procedure, and can usually be cleared by running product through the bleed-off port. Shavings can be usually washed out after pipeline is in use.

4.15 Disconnect the tapping machine.

4.16 Remove the coupon from the hole saw by removing the pilot pin and pulling out the pilot bit. Sliding the coupon through the back of the pilot will keep from damaging the retaining wires.

4.17 When tapping is completed, clean machine and spray lightly with WD-40 or equal to protect it. Replace any damaged parts NOW before your next job.

We at IFT want to Thank-You for acquiring your T1-8 machine.

Please call IFT. We are here to help.

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