OPERATOR'S MANUAL

TUBE AND PIPE NOTCHER
MODEL: TN-250 (B8500)

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Rev. 06/2015

Table of Contents

INTRODUCTION

The quality and reliability of the components assembled on a Baileigh Industrial machine guarantee near perfect functioning, free from problems, even under the most demanding working conditions. However if a situation arises, refer to the manual first. If a solution cannot be found, contact the distributor where you purchased our product. Make sure you have the serial number and production year of the machine (stamped on the nameplate). For replacement parts refer to the assembly numbers on the parts list drawings.

Our technical staff will do their best to help you get your machine back in working order.

In this manual you will find: (when applicable)

- Safety procedures
- Correct installation guidelines
- Description of the functional parts of the machine
- Capacity charts
- Set-up and start-up instructions
- Machine operation
- Scheduled maintenance
- Parts lists

GENERAL NOTES

After receiving your equipment remove the protective container. Do a complete visual inspection, and if damage is noted, **photograph it for insurance claims** and contact your carrier at once, requesting inspection. Also contact your distributor and inform them of the unexpected occurrence. Temporarily suspend installation.

Take necessary precautions while loading / unloading or moving the machine to avoid any injuries.

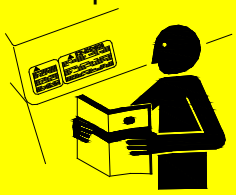
Your machine is designed and manufactured to work smoothly and efficiently. Following proper maintenance instructions will help ensure this. Try and use original spare parts, whenever possible, and most importantly; **DO NOT** overload the machine or make any unauthorized modifications.

Note: *This symbol refers to useful information throughout the manual.*

IMPORTANT

PLEASE READ THIS OPERATORS MANUAL CAREFULLY

It contains important safety information, instructions, and necessary operating procedures. The continual observance of these procedures will help increase your production and extend the life of the equipment.



SAFETY INSTRUCTIONS

LEARN TO RECOGNIZE SAFETY INFORMATION

This is the safety alert symbol. When you see this symbol on your machine or in this manual, **BE ALERT TO THE POTENTIAL FOR PERSONAL INJURY!**

Follow recommended precautions and safe operating practices.

UNDERSTAND SIGNAL WORDS

A signal word – **DANGER**, **WARNING**, or **CAUTION** is used with the safety alert symbol. **DANGER** identifies a hazard or unsafe practice that will result in severe **Injury or Death**.

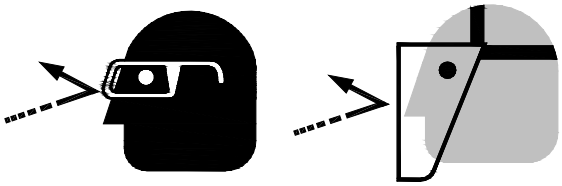
Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.

SAVE THESE INSTRUCTIONS.
Refer to them often and use them to instruct others.

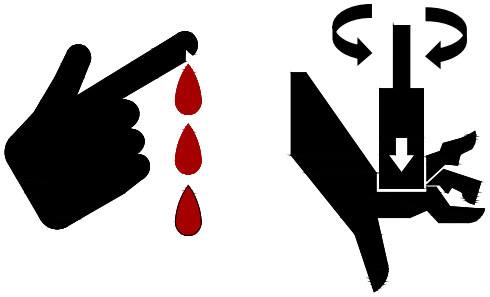
PROTECT EYES

Wear safety glasses or suitable eye protection when working on or around machinery.



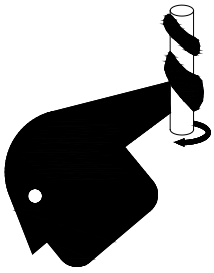
BEWARE OF PIERCING POINTS

NEVER place hands, fingers, or any part of your body near rotating tools. Hole saws are very sharp and can quickly pierce your fingers and hands. Always wear heavy leather gloves when handling these tools.



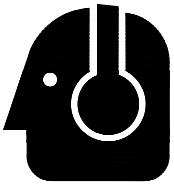
ENTANGLEMENT HAZARD – ROTATING SHAFT

Contain long hair, **DO NOT** wear jewelry or loose fitting clothing.



PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear suitable hearing protective devices such as ear muffs or earplugs to protect against objectionable or uncomfortable loud noises.



SAFETY PRECAUTIONS

Metal working can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result.
Safety equipment such as guards, hold-downs, safety glasses, dust masks and hearing protection can reduce your potential for injury. But even the best guard won't make up for poor judgment, carelessness or inattention. **Always use common sense** and exercise **caution** in the workshop. If a procedure feels dangerous, don't try it.
REMEMBER: Your personal safety is your responsibility.

WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. **Only trained and qualified personnel can operate this machine.**
2. **Make sure any guards are in place and in proper working order before operating machinery.**
3. **Remove any adjusting tools.** Before operating the machine, make sure any adjusting tools have been removed.
4. **Keep work area clean.** Cluttered areas invite injuries.
5. **Overloading machine.** By overloading the machine you may cause injury from flying parts. **DO NOT** exceed the specified machine capacities.
6. **Do not force tool.** Your machine will do a better and safer job if used as intended. **DO NOT** use inappropriate attachments in an attempt to exceed the machines rated capacity.
7. **Use the right tool for the job. DO NOT** attempt to force a small tool or attachment to do the work of a large industrial tool. **DO NOT** use a tool for a purpose for which it was not intended.
8. **Dress appropriate. DO NOT** wear loose fitting clothing or jewelry as they can be caught in moving machine parts. Protective clothing and steel toe shoes are recommended when using machinery. Wear a restrictive hair covering to contain long hair.
9. **Use eye and ear protection**. Always wear ISO approved impact safety goggles. Wear a full-face shield if you are producing metal filings.

10. **Do not overreach**. Maintain proper footing and balance at all times. **DO NOT** reach over or across a running machine.
11. **Stay alert**. Watch what you are doing and use common sense. **DO NOT** operate any tool or machine when you are tired.
12. **Check for damaged parts**. Before using any tool or machine, carefully check any part that appears damaged. Check for alignment and binding of moving parts that may affect proper machine operation.
13. **Observe work area conditions**. **DO NOT** use machines or power tools in damp or wet locations. Do not expose to rain. Keep work area well lighted. **DO NOT** use electrically powered tools in the presence of flammable gases or liquids.
14. **Blade adjustments and maintenance**. Always keep blades sharp and properly adjusted for optimum performance.
15. **Keep children away**. Children must never be allowed in the work area. **DO NOT** let them handle machines, tools, or extension cords.
16. **Store idle equipment**. When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep them out of reach of children.
17. **DO NOT operate machine if under the influence of alcohol or drugs**. Read warning labels on prescriptions. If there is any doubt, **DO NOT** operate the machine.
18. Do not cut where the atmosphere might contain flammable dust, gas, or liquid vapors such as from gasoline.
19. Wear oil-free protective garments such as leather gloves, heavy shirt, high shoes or boots, cuffless trousers, and a cap.
20. **DO NOT** touch live electrical components or parts.
21. Be sure all equipment is properly installed and grounded according to national, state, and local codes.
22. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. **Bare wiring can kill!**
23. **DO NOT** bypass or defeat any safety interlock systems.
24. Keep visitors a safe distance from the work area.

TECHNICAL SPECIFICATIONS

TN-250	Imperial	Metric
Notching Capacity (OD)	0.5” – 2.5”	12.7mm – 63.5mm
Angle Adjustment	Infinite	
Power Requirements	1/2” (12.7mm) Powered Hand Drill	
Shipping Dimensions	24” x 12” x 12”	610mm x 305mm x 305mm
Shipping Weight	50 lbs.	23 kgs.

FEATURES

- Solid steel construction
- Grade 8 bolts throughout, ensuring maximum rigidity
- Unique 6 jaw radial vise
- Will notch over 75°
- 1-1/4” hardened Thomson shaft with replaceable tips
- Slotted carriage for offset notches (no shims)
- Patent pending

***Note**: The photos and illustrations used in this manual are representative only and may not depict the actual color, labeling or accessories and may be intended to illustrate technique only.*

***Note:** The specifications and dimensions presented here are subject to change without prior notice due to improvements of our products.*

UNPACKING AND CHECKING CONTENTS

Your Baileigh machine is shipped complete in one crate. Separate all parts from the packing material and check each item carefully. Make certain all items are accounted for before discarding any packing material.

Cleaning

Your machine may be shipped with a rustproof waxy oil coating and grease on the exposed unpainted metal surfaces. To remove this protective coating, use a degreaser or solvent cleaner. For a more thorough cleaning, some parts will occasionally have to be removed. **DO NOT USE** acetone or brake cleaner as they may damage painted surfaces.
Follow manufacturer's label instructions when using any type of cleaning product. After cleaning, wipe unpainted metal surfaces with a light coating of quality oil or grease for protection.

WARNING: DO NOT USE gasoline or other petroleum products to clean the machine. They have low flash points and can explode or cause fire.

CAUTION: When using cleaning solvents work in a well-ventilated area. Many cleaning solvents are toxic if inhaled.

IMPORTANT:

Consider the following when looking for a suitable location to place the machine:

- Overall weight of the machine.
- Weight of material being processed.
- Sizes of material to be processed through the machine.
- Space needed for auxiliary stands, work tables, or other machinery.
- Clearance from walls and other obstacles.
- Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Keep the floor free of oil and make sure it is not slippery.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.

ASSEMBLY AND SET UP

WARNING: For your own safety, DO NOT connect a powered drill until the machine is completely assembled and you have read and understand the entire instruction manual.

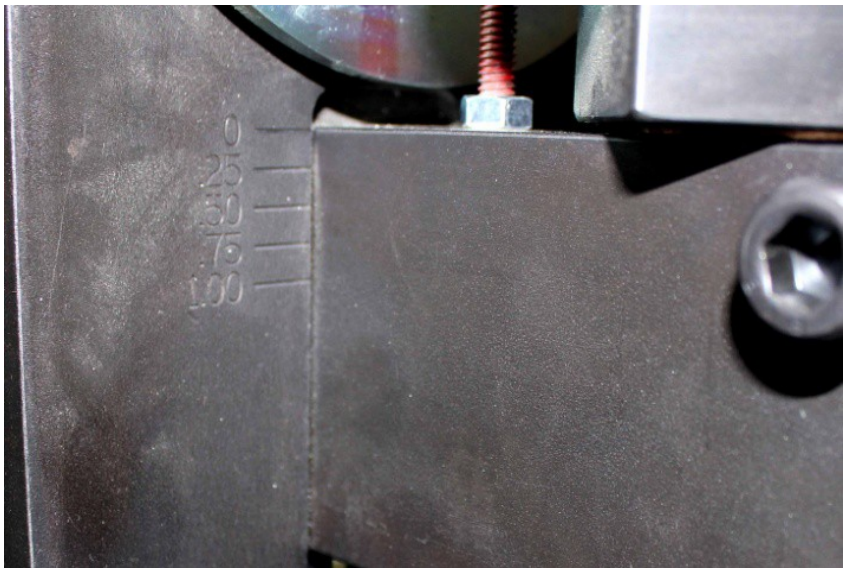
1. Install the hand wheel onto the hub with the supplied 5/16-18 socket head screws.

2. Attach the pivot block and indicator assembly onto the vise assembly using the 1/2-13 bolts and the retaining plate supplied.
3. The pivot block will fit into the machined recess in the vise assembly plate.
4. The retaining plate will go on the opposite side of the vise assembly and is there to act as a support washer so as not to damage the vise plate from frequent tightening.

OPERATION

⚠ CAUTION: Always wear proper eye protection with side shields, safety footwear, and leather gloves to protect from burrs and sharp edges.

1. Operating your **TN-250** is very easy, but certain steps need to be followed.
2. After your notcher is assembled, it needs to be clamped into a vise or bolted to the side of a workbench. The main vise plate has a machined step that is designed to make insertion into vise jaws very easy.
3. Choose a hole saw that matches your materials outside diameter and screw it onto the threaded stud on the end of the main shaft arbor.
4. If you will be notching on center, check the height scale on the left side of the notcher and make sure the pivot clamp block is in the zero position. If an offset notch is required, loosen the two hex screws using a 3/8 hex key wrench and adjust it to the desired offset.



5. Open your vise assembly using the 3 legged hand wheel and insert the desired tubing that needs to be notched. The amount of tubing protruding past the vise will be determined by the angle of notch, and the hole saw should be slid forward to set that distance.
6. Tighten the material, being careful not to over tighten and crush your tube, as the vise has supreme holding power.
7. If an angle notch is required, loosen the two hex bolts on the side of the clamp block with a 3/8” hex key. Position the pivot arm to the desired angle. And re-tighten. Angles up to 45 degrees work best using the center slot in the pivot arm, the second slot is used for extreme angles and for notching on curved tubes as it aides in offsetting further.
8. When the desired angle is set, the aluminum bearing block should be slid as far forward as possible to the notch, this will make the cutting as rigid as possible. Be sure to tighten the two hex bolts beneath the aluminum block using a 3/8” hex key.
9. A 1/2” drive electric drill will need to be chucked onto the hexed arbor, and tightened securely.

IMPORTANT: It is recommended to use a drill with a keyed chuck to tighten the chuck securely onto the hexed arbor. Recheck the chuck periodically to ensure it remains tight to the hexed arbor. Allowing the chuck to become loose on the hex arbor will accelerate the wear on the hex drive stud.

10. Insure that the hole saw is not in contact with the material and start the drill.
11. Slowly push the arbor forward allowing the hole saw to do the work, and do not push too hard.
    - Keeping the speed around 250 rpm provides the best combination of saw cut and saw life.
    - In some instances, the hole saw will bottom out requiring the slug to be cut out with a zip wheel to continue the notch, this is normal with this type of machine. Sometimes the pivot arm can be swung back 180 degrees to finish a notch, but again probably only up to 45 degrees will this method work.
    - Angle notches over 45 degrees should be sawed to the angle first, to remove the majority of the material.
    - Following these simple steps will give you years of trouble free service from your TN-250 notcher.

Arbor Adapters

When setting up the notcher, use the correct arbor to saw adapter to fit the size and manufacturer of the hole saw being used.
Contact your distributor to order optional or replacement adapters.

<table>
<tr><td colspan="3" rowspan="2">  </td><td>Hole Saw End</td></tr>
<tr><td>Arbor End</td></tr>
<tr><td>Standard Adapter. Used with most hole saws.</td><td>Reducer Adapter. Used with small hole saws.</td><td>Optional Adapter. Larger M18 end to fit certain hole saws manufacturer saws.</td><td></td></tr>
</table>

MATERIAL SELECTION

⚠ CAUTION: It must be determined by the customer that materials being processed through the machine are NOT potentially hazardous to operator or personnel working nearby.

When selecting materials keep these instructions in mind:

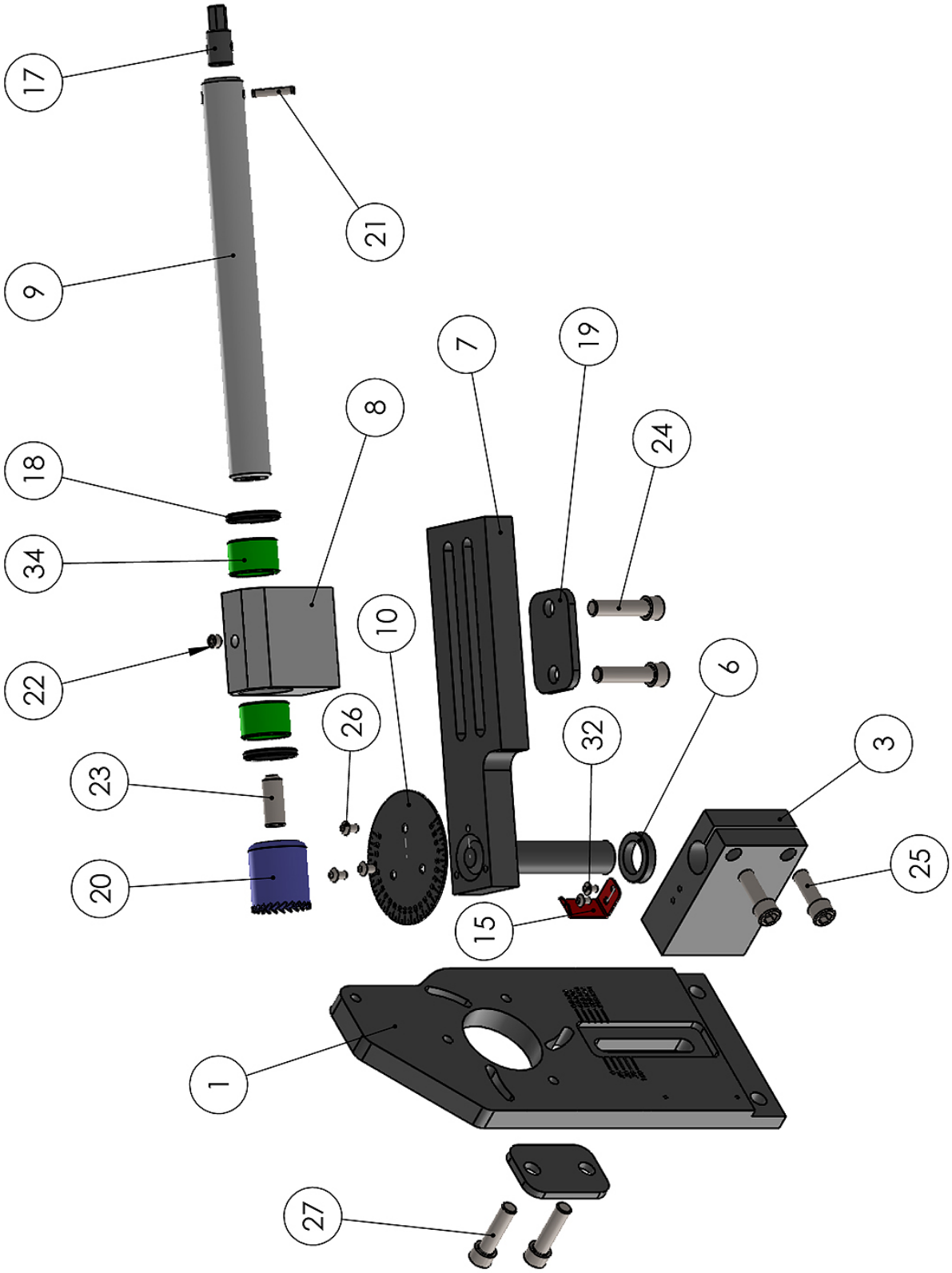
- Material should have a smooth surface so it processes easily.
- Dimensional properties of material must be consistent and not exceed the machine capacity values.
- Chemical structure of material must be consistent.
- Buy certificated steel from the same vendor when possible.

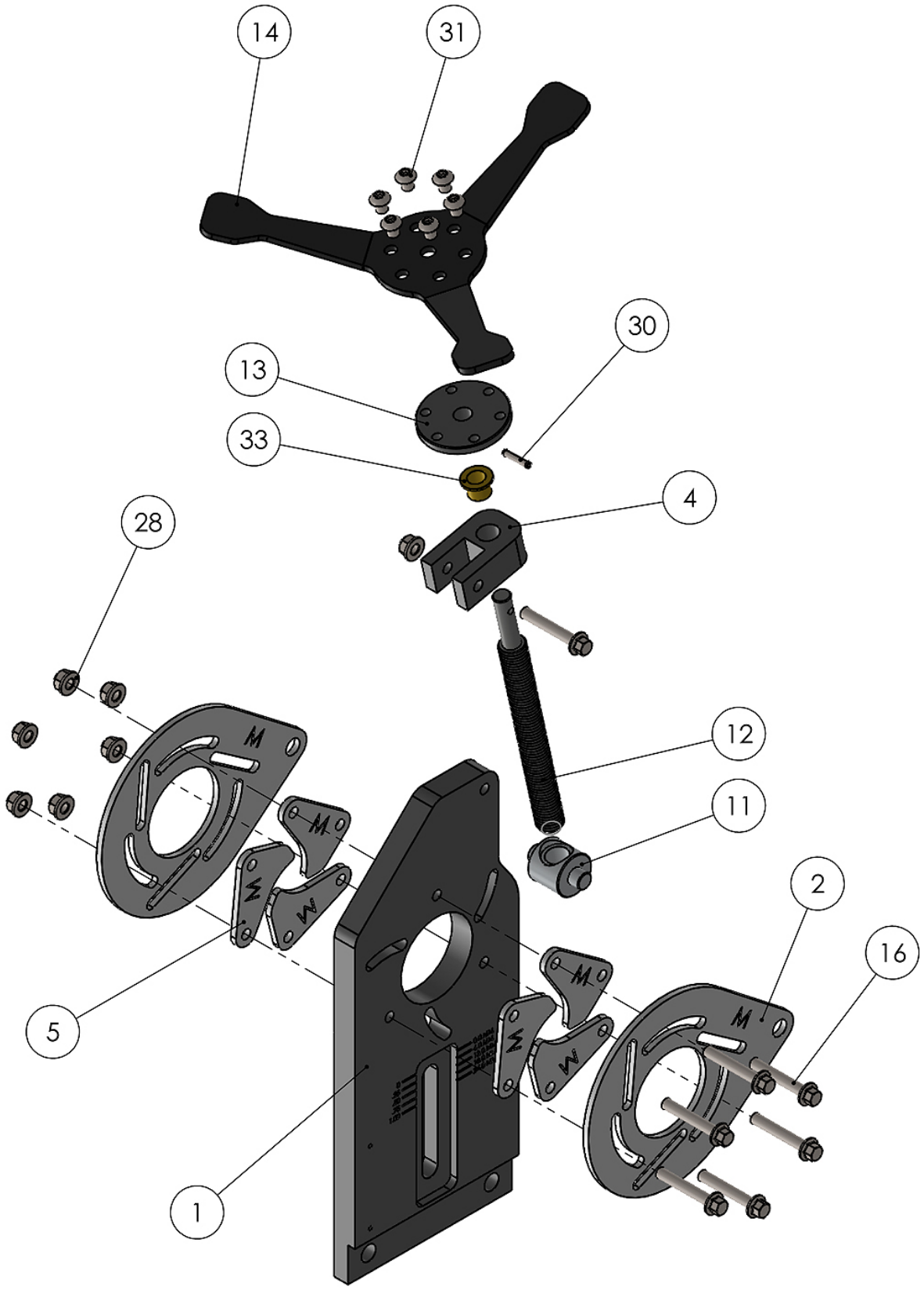
LUBRICATION AND MAINTENANCE

***Note**: Proper maintenance can increase the life expectancy of your machine.*

- Check for any loose or worn parts; contact your dealer for replacement parts.
- Fluid level in aluminum housing should be checked periodically, add 80w gear oil if fluid levels are low. When completely empty, the aluminum block will hold 1 oz. of oil.
- Replacement seals, bearings, threaded hole saw studs, and drive hexes are all available to keep your machine running for years.
- Replace the hexed drive stud when it becomes worn.

PARTS IDENTIFICATION DRAWING





Parts

Item	Part Number	Description	Qty.
1	ME-TN250-6A016	MAIN FRAME	1
2	ME-TN250-6A009	ACTUATOR PLATE	2
3	ME-TN250-6A011	PIVOT CLAMP BLOCK	1
4	ME-TN250-6A015	ROCKER BLOCK	1
5	ME-TN250-6A021	GRIPPER JAW	6
6	TN250-7A014	SPACER	1
7	ME-TN250-5A001	PIVOT ARM ASSY	1
8	ME-TN250-6A013	BRG BLOCK	1
9	TN250-7A001	SAW ARBOR	1
10	TN250-6A017	DEGREE DISC	1
11	TN250-7A007	TRUNION	1
12	TN250-7A006	VISE SCREW	1
13	ME-TN250-7A008	WHEEL HUB	1
14	M300-6A066	HAND WHEEL	1
15	ME-TN250-6A022	POINTER	1
16	STD.	M8 X 1.25 X 50 HEX FLANGE	7
17	ME-TN250-7A010	DRIVE STUD	1
18	PP-1142	SEAL	2
19	TN250-6A014	BOLT CAP	2
20	NOT INCLUDED	HOLE SAW	1
21	STD.	.25 X 1.25 SLOTTED SPLIT PIN	1
22	STD.	3/8-24 X 5/16 SET SCREW	1
23	Imperial	Adapter, Standard 5/8-18 X 1.25 Set Screw	1
23-A	M600-7A006	Adapter, Reducer 5/8-18 x .5 to 1/2-20 x 1/2	1
23-B	M600-7A009	Adapter, Enlarger 5/8-18 x .5 to M18-1.5 x 10	Optional
24	M12 X 1.75 X 50	SHCS	2
25	M12 X 1.75 X 35	SHCS	2
26	M6 X 1.0 X 10	BUTTON HEAD	3
27	M12 X 1.75 X 45	SHCS	2
28	M8 X 1.25	FLANGED NYLOCK NUT	7
30	STD.	3/16 X 7/8 SLOTTED SPLIT PIN	1
31	M8 X 1.25 X 10	BUTTON HEAD	6
32	M5 X 0.8 X 8	BUTTON HEAD	2

Item	Part Number	Description	Qty.
33	PP-0196	0.5 ID X 0.625 OD X 0.562 LG	1
34	PP-1141	NEEDLE BEARING	2

NOTES

NOTES

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⚠WARNING

General Machinery Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Read the entire Manual before starting machinery.** Machinery may cause serious injury if not correctly used.
2. **Always use correct hearing protection when operating machinery.** Machinery noise may cause permanent hearing damage.
3. **Machinery must never be used when tired, or under the influence of drugs or alcohol.** When running machinery you must be alert at all times.
4. **Wear correct Clothing.** At all times remove all loose clothing, necklaces, rings, jewelry, etc. Long hair must be contained in a hair net. Non-slip protective footwear must be worn.
5. **Always wear correct respirators around fumes or dust when operating machinery.** Machinery fumes & dust can cause serious respiratory illness. Dust extractors must be used where applicable.
6. **Always wear correct safety glasses.** When machining you must use the correct eye protection to prevent injuring your eyes.
7. **Keep work clean and make sure you have good lighting.** Cluttered and dark shadows may cause accidents.
8. **Personnel must be properly trained or well supervised when operating machinery.** Make sure you have clear and safe understanding of the machine you are operating.
9. **Keep children and visitors away.** Make sure children and visitors are at a safe distance for you work area.
10. **Keep your workshop childproof.** Use padlocks, Turn off master power switches and remove start switch keys.
11. **Never leave machine unattended.** Turn power off and wait till machine has come to a complete stop before leaving the machine unattended.
12. **Make a safe working environment.** Do not use machine in a damp, wet area, or where flammable or noxious fumes may exist.
13. **Disconnect main power before service machine.** Make sure power switch is in the off position before re-connecting.
14. **Use correct amperage extension cords.** Undersized extension cords overheat and lose power. Replace extension cords if they become damaged.
15. **Keep machine well maintained.** Keep blades sharp and clean for best and safest performance. Follow instructions when lubricating and changing accessories.
16. **Keep machine well guarded.** Make sure guards on machine are in place and are all working correctly.
17. **Do not overreach.** Keep proper footing and balance at all times.
18. **Secure workpiece.** Use clamps or a vice to hold the workpiece where practical. Keeping the workpiece secure will free up your hand to operate the machine and will protect hand from injury.
19. **Check machine over before operating.** Check machine for damaged parts, loose bolts, Keys and wrenches left on machine and any other conditions that may effect the machines operation. Repair and replace damaged parts.
20. **Use recommended accessories.** Refer to instruction manual or ask correct service officer when using accessories. The use of improper accessories may cause the risk of injury.
21. **Do not force machinery.** Work at the speed and capacity at which the machine or accessory was designed.
22. **Use correct lifting practice.** Always use the correct lifting methods when using machinery. Incorrect lifting methods can cause serious injury.
23. **Lock mobile bases.** Make sure any mobile bases are locked before using machine.
24. **Allergic reactions.** Certain metal shavings and cutting fluids may cause an ellergic reaction in people and animals, especially when cutting as the fumes can be inhaled. Make sure you know what type of metal and cutting fluid you will be exposed to and how to avoid contamination.
25. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

⚠WARNING

Manual Pipe Notcher Safety Instructions

Machinery House
requires you to read this entire Manual before using this machine.

1. **Maintenance.** Make all moving parts have come to a complete stop before any inspection, adjustment or maintenance is carried out.

2. **Pipe Notcher Condition.** Pipe Notcher must be maintained for a proper working condition. Never operate a Pipe Notcher that has damaged or worn parts. Grease and oil maintenance should performed on a scheduled basis.

3. **Hand Hazard.** Keep hands and fingers clear from moving parts. Serious injury will occur if hand or finger tips come between notcher cutting area.

4. **Glasses.** Always wear approved safety glasses when using this machine.

5. **Authorized and trained personnel.** The machine must be operated by authorized and trained personnel.

6. **Avoiding Entanglement.** Remove loose clothing, belts, or jewelry items. Never wear gloves while machine is in operation. Tie up long hair and use the correct hair nets to avoid any entanglement with the shearing blades or moving parts.

7. **Work area hazards.** Keep the area around the Pipe Notcher clean from oil, tools, objects & chips. Pay attention to other persons in the area and know what is going on around the area to ensure unintended accidents.

8. **Secure Material.** During the notching process, the workpiece must be supported 90º to the Notcher.

9. **Do not force tool.** It will so the job better and more safety at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool capacity.

10. **Keep Children Away.** Children must never be allowed in the work area.

11. **Secure machine.** Secure the Pipe Notcher by bolting to a solid working surface.

12. **Call for help.** If at any time you experience difficulties, stop the machine and call you nearest branch service department for help.

PLANT SAFETY PROGRAM

NEW MACHINERY HAZARD IDENTIFICATION, ASSESSMENT & CONTROL

Manual Pipe Notcher

Developed in Co-operation Between A.W.I.S.A and Australia Chamber of Manufactures
This program is based upon the Safe Work Australia, Code of Practice - Managing Risks of Plant in the Workplace (WHSA 2011 No10)

Item No.	Hazard Identification	Hazard Assessment	Risk Control Strategies (Recommended for Purchase / Buyer / User)
A	ENTANGLEMENT	LOW	Eliminate, avoid loose clothing / Long hair etc.
B	CRUSHING	LOW	Secure & support work material on Notcher. Secure notcher by bolting to a solid working surface
C	CUTTING, STABBING, PUNCTURING	MEDIUM	Remove handle prior to any checks or maintenance being carried out. Do not adjust or clean machine until the machine has fully stopped and remove handle Do not place hands or fingers inside moving parts of notcher
D	SHEARING	MEDIUM	Remove handle prior to any checks or maintenance being carried out. Do not place hands or fingers inside moving parts of notcher
F	STRIKING	LOW	Ensure work material is secure when in operation Wear safety glasses. Stand clear of moving parts on machine. Remove all loose objects around moving parts.
O	OTHER HAZARDS, NOISE.	LOW	
Plant Safety Program to be read in conjunction with manufactures instructions			

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Authorised and signed by:
Safety officer:.....
Manager:.....

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