



Operating Instructions and Parts Manual Tube and Pipe Notcher

Model TN-250



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Edition 3 06/2025
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1.0 Table of Contents

Section	Page
1.0 Table of Contents	2
2.0 Safety Instructions	3
3.0 About This Manual	4
4.0 Specifications	5
5.0 Setup and Assembly	6
5.1 Unpacking and Checking Contents	6
5.2 Cleaning	6
5.3 Installation	6
5.4 Assembly	6
6.0 Operation	7
6.1 Arbor Adapters	8
7.0 Material Selection	8
8.0 Maintenance	8
9.0 Replacement Parts	9
9.1.1 Pivot Arm Assembly – Exploded View	9
9.1.2 Vise Assembly – Exploded View	10
9.2.1 TN-250 Assembly – Parts List	11
10.0 Warranty and Service	12



2.0 Safety Instructions

⚠ WARNING

Failure to follow these rules may result in serious personal injury

1. FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE. Learn the machine's application and limitations as well as the specific hazards.
2. Only trained and qualified personnel can operate this machine.
3. Make sure guards are in place and in proper working order before operating machinery.
4. Remove any adjusting tools. Before operating the machine, make sure any adjusting tools have been removed.
5. Keep work area clean. Cluttered areas invite injuries.
6. Overloading machine. By overloading the machine, you may cause injury from flying parts. DO NOT exceed the specified machine capacities.
7. Dressing material edges. Always chamfer and deburr all sharp edges.
8. 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 machine's rated capacity.
9. 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.
10. Dress appropriately. 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.
11. Use eye protection. Always wear ISO approved protective eye wear when operating machinery. Wear a full-face shield if you are producing metal filings. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specification. Use of eye wear which does not comply with ANSI Z87.1 specification could result in severe injury from breakage of eye protection.
12. Do not overreach. Maintain proper footing and balance at all times. DO NOT reach over or across a running machine.
13. Stay alert. Watch what you are doing and use common sense. DO NOT operate any tool or machine when you are tired.
14. 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.
15. 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.
16. Blade adjustments and maintenance. Always keep blades sharp and properly adjusted for optimum performance.
17. Keep children away. Children must never be allowed in the work area. DO NOT let them handle machines, tools, or extension cords.
18. Keep visitors a safe distance from the work area.
19. 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.
20. 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.
21. Turn off power before checking, cleaning, or replacing any parts.
22. Be sure all equipment is properly installed and grounded according to national, state, and local codes.
23. Inspect power and control cables periodically. Replace if damaged or bare wires are exposed. Bare wiring can kill! DO NOT touch live electrical components or parts.

Familiarize yourself with the following safety notices used in this manual:

⚠ CAUTION

This means that if precautions are not heeded, it may result in minor injury and/or machine damage.

⚠ WARNING

This means that if precautions are not heeded, it may result in serious injury or death.

⚠ DANGER

This means that if precautions are not heeded, it will result in serious or fatal, injury.

Save the Instructions

3.0 About This Manual

This manual is provided by Baileigh Industrial, covering the safe operation and maintenance procedures for a Baileigh Model TN-250 Tube and Pipe Notcher. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide consistent, long-term operation if used in accordance with the instructions as set forth in this document.

Technical Support handles questions on setup, operation, schematics, warranty issues, and individual parts needed. Our Technical Support department can be reached at 920-684-4990.

If there are questions or comments, please contact your local supplier or Baileigh Industrial. We can also be reached at our web site: www.baileigh.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

⚠ WARNING

Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

Register your product online -

<https://baileigh.com/product-registration>



4.0 Specifications

Table 4-1

Model No.	TN-250
General Specifications	
Notching Capacity (OD)	0.5" – 2.5" (12.7mm – 63.5mm)
Angle Adjustment	Infinite
Power Requirements	1/2" (12.7mm) Powered Hand Drill
Weights and Dimensions	
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.

WARNING

Read and understand the entire contents of this manual before attempting assembly or operation. Failure to comply may cause serious injury.

5.0 Setup and Assembly

5.1 Unpacking and Checking Contents

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

WARNING

SUFFOCATION HAZARD! Immediately discard any plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.

WARNING

If any parts are missing, **DO NOT** place the machine into service until the missing parts are obtained and installed correctly.

5.2 Cleaning

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.

Your machine may be shipped with a rustproof waxy coating and/or grease on the exposed unpainted metal surfaces. Fully and completely remove this protective coating using a degreaser or solvent cleaner. Moving items will need to be moved along their travel path to allow for cleaning the entire surface. 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.

IMPORTANT: This waxy coating is NOT a lubricant and will cause the machine to stick and lose performance as the coating continues to dry.

5.3 Installation

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, worktables, 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.
- **LEVELING:** The machine should be sited on a level, concrete floor. Provisions for securing it should be in position prior to placing the machine. The accuracy of any machine depends on the precise placement of it to the mounting surface.
- **FLOOR:** This machine distributes a large amount of weight over a small area. Make certain that the floor is capable of supporting the weight of the machine, work stock, and the operator. The floor should also be a level surface. If the unit wobbles or rocks once in place, be sure to eliminate by using shims.
- **WORKING CLEARANCES:** Take into consideration the size of the material to be processed. Make sure that you allow enough space for you to operate the machine freely.
- **POWER SUPPLY PLACEMENT:** The power supply should be located close enough to the machine so that the power cord is not in an area where it would cause a tripping hazard. Be sure to observe all electrical codes if installing new circuits and/or outlets.

5.4 Assembly

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.



Figure 5-1

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.



Figure 5-2

6.0 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.



Figure 6-1

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. Ensure 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.

6.1 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 the Baileigh Industrial to order optional or replacement adapters.

Table 6-1

			Hole Saw End
			Arbor End
Standard Adapter. Used with most hole saws.	Reducer Adapter. Used with small hole saws.	Optional Adapter. Larger M18 end to fit certain hole saws.	

7.0 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 must be clean and dry. (without oil)
- 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.

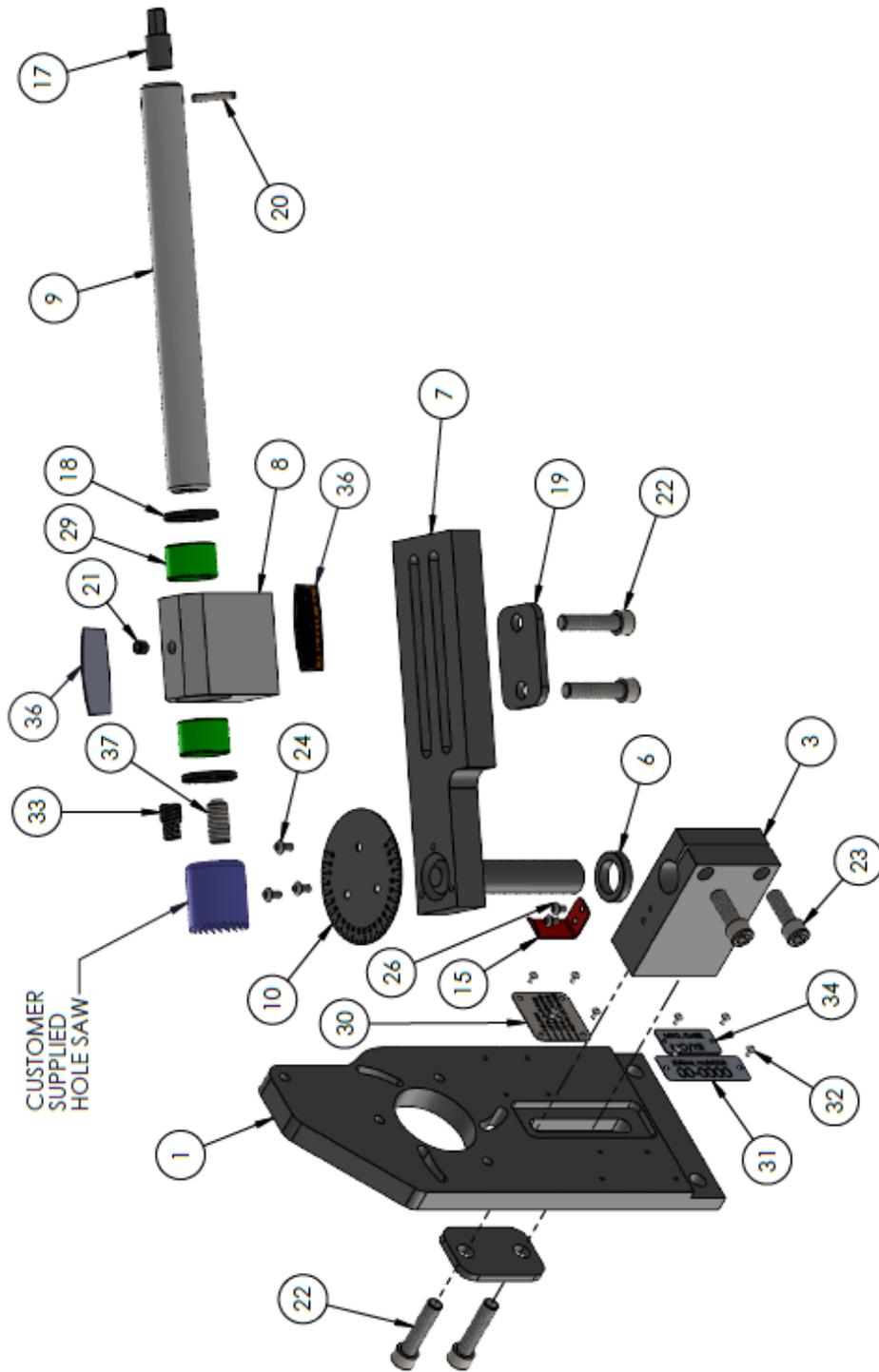
8.0 Maintenance

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

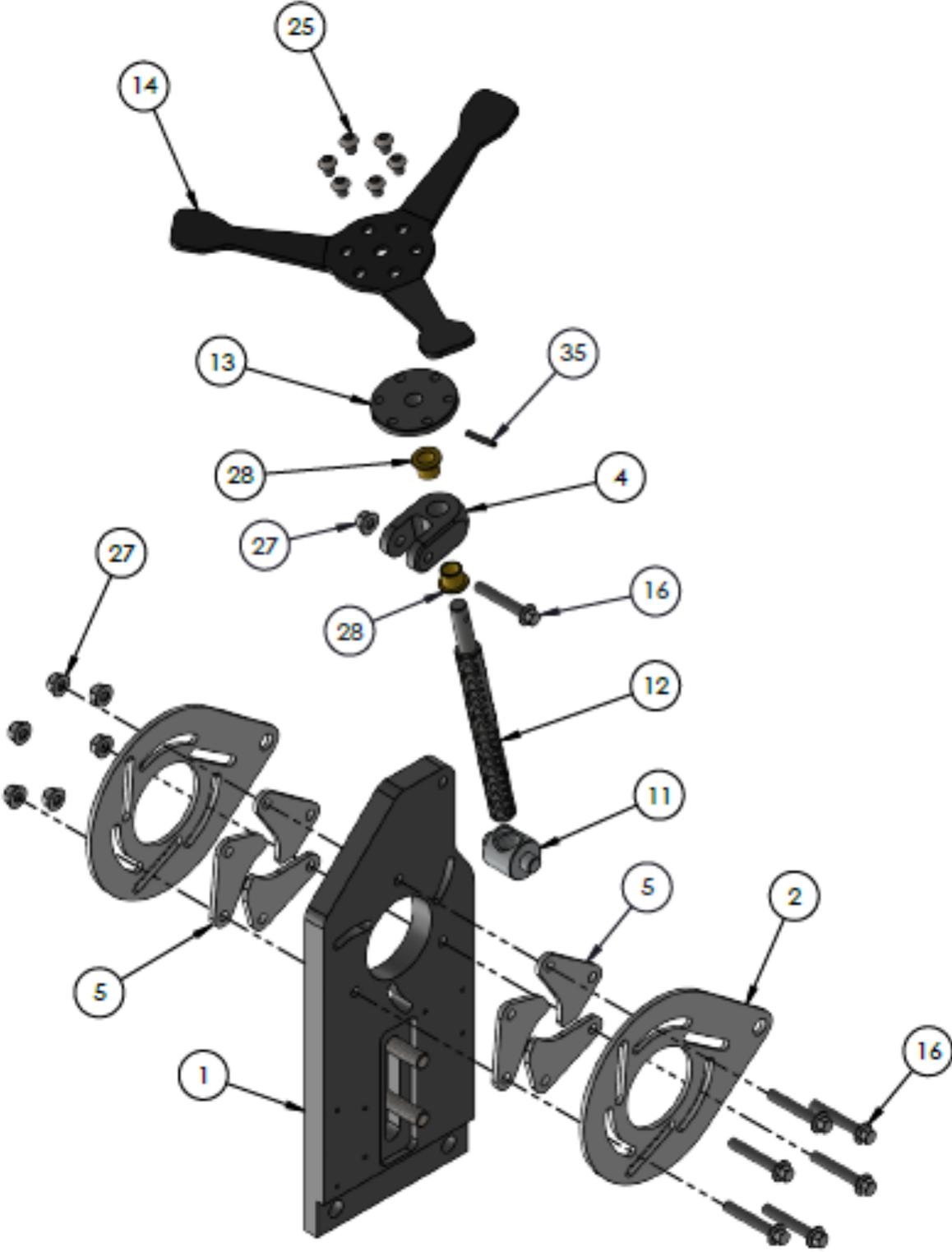
- Check daily for any unsafe conditions and fix immediately.
- Check that all nuts and bolts are properly tightened.
- On a weekly basis clean the machine and the area around it.
- Lubricate threaded components and sliding devices.
- Apply rust inhibitive lubricant to all non-painted surfaces.
- Check for any loose or worn parts; contact your dealer for replacement parts.
- 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.

9.0 Replacement Parts

9.1.1 Pivot Arm Assembly – Exploded View



9.1.2 Vise Assembly – Exploded View



9.2.1 TN-250 Assembly – Parts List

Index No.	Part No.	Description	Size	Qty
1	BA9-METN2506A016	MAIN FRAME		1
2	BA9-METN2506A009	ACTUATOR PLATE		2
3	BA9-METN2506A011	PIVOT CLAMP BLOCK		1
4	BA9-METN2006A015	ROCKER BLOCK		1
5	BA9-METN2506A021	GRIPPER JAW		6
6	BA9-TN2007A014	SPACER		1
7	BA9-METN2505A001	PIVOT ARM ASSEMBLY		1
8	BA9-METN2506A013	BEARING BLOCK		1
9	BA9-TN2007A001	SAW ARBOR		1
10	BA9-TN2006A017	DEGREE RING		1
11	BA9-TN2007A007	TRUNION		1
12	BA9-TN2007A006	VICE SCREW		1
13	BA9-METN2507A008	WHEEL HUB		1
14	BA9-M3006A066	HANDWHEEL		1
15	BA9-METN2506A022	POINTER		1
16	CM9-BSM0056	HEX FLG, SILV ZINC, GR. 10.9	M8 X 1.25 X 50	7
17	BA9-TN2507A010	DRIVE STUD		1
18	BA9-PP1142	SEAL		2
19	BA9-TN2006A014	BOLT CAP		2
20	CM9-BS0297	SPLIT PIN	25 X 1.25	1
21	CM9-BS0249	NPT PIPE PLUG	1/8-27	1
22	CM9-BSM0026	BLK OXIDE, GR. 12.9	M12 X 1.75 X 50 SHCS	4
23	CM9-BSM0110	BLK OXIDE, GR. 12.9	M12 X 1.75 X 35 SHCS	2
24	CM9-BSM0103	BLK OXIDE, GR. 12.9	M6 X 1.0 X 10 BSHCS	3
25	CM9-BSM0102	BLK OXIDE, GR. 12.9	M8 X 1.25 X 10 BSHCS	6
26	CM9-BSM0119	BLK OXIDE, GR.10.9	M5 X 0.8 X 8 BHCS	2
27	CM9-BSM0100	HEX FLG NYLOCK NUT, SILV ZINC GR. 8.8	M8 X 1.25	7
28	BA9-PP2222	LG FLG BRZ. BUSHING	1/2" ID X 5/8 OD X 1/2	2
29	BA9-PP1141	NEEDLE BEARING		2
30	BA9-TN2006A018	HEIGHT INDICATOR TAG		1
31	BA9-PP1493	SERIAL NUMBER TAG		1
32	BA9-PP1534	RIVET		8
33	BA9-TN2007A013	HOLE SAW ADAPTER		1
34	BA9-PP2100	MFG. DATE TAG		1
35	CM9-BS0296	SPLIT PIN	3/16 X 1	1
36	BA9-PP1909	SM BAILEIGH LOGO STICKER		2
37	CM9-BS0261	CUP PT. SS, BLK OXIDE, GR. 8	5/8-18 X 1-1/4	1

10.0 Warranty and Service

Thank you for your purchase of a machine from Baileigh Industrial. We hope that you find it productive and useful to you for a long time to come.

Inspection & Acceptance. Buyer shall inspect all Goods within ten (10) days after receipt thereof. Buyer's payment shall constitute final acceptance of the Goods and shall act as a waiver of the Buyer's rights to inspect or reject the Goods unless otherwise agreed. If Buyer rejects any merchandise, Buyer must first obtain a Returned Goods Authorization ("RGA") number before returning any Goods to Seller. Goods returned without an RGA will be refused. Seller will not be responsible for any freight costs, damages to Goods, or any other costs or liabilities pertaining to Goods returned without an RGA. Seller shall have the right to substitute a conforming tender. Buyer will be responsible for all freight costs to and from Buyer and repackaging costs, if any, if Buyer refuses to accept shipment. If Goods are returned in unsalable condition, Buyer shall be responsible for full value of the Goods. Buyer may not return any special-order Goods. Any Goods returned hereunder shall be subject to a restocking fee equal to 30% of the invoice price.

Specifications. Seller may, at its option, make changes in the designs, **specifications**, or components of the Goods to improve the safety of such Goods, or if in Seller's judgment, such changes will be beneficial to their operation or use. Buyer may not make any changes in the specifications for the Goods unless Seller approves of such changes in writing, in which event Seller may impose additional charges to implement such changes.

Limited Warranty. Seller warrants to the original end-user that the Goods manufactured or provided by Seller under this Agreement shall be free of defects in material or workmanship for a period of twelve (12) months from the date of purchase, provided that the Goods are installed, used, and maintained in accordance with any instruction manual or technical guidelines provided by the Seller or supplied with the Goods, if applicable. The original end-user must give written notice to Seller of any suspected defect in the Goods prior to the expiration of the warranty period. The original end-user must also obtain an RGA from Seller prior to returning any Goods to Seller for warranty service under this paragraph. Seller will not accept any responsibility for Goods returned without an RGA. The original end-user shall be responsible for all costs and expenses associated with returning the Goods to Seller for warranty service. In the event of a defect, Seller, at its sole option, shall repair or replace the defective Goods or refund to the original end-user the purchase price for such defective Goods. Goods are not eligible for replacement or return after a period of 10 days from date of receipt. The foregoing warranty is Seller's sole obligation, and the original end-user's exclusive remedy, with regard to any defective Goods. This limited warranty does not apply to: (a) die sets, tooling, and saw blades; (b) periodic or routine maintenance and setup, (c) repair or replacement of the Goods due to normal wear and tear, (d) defects or damage to the Goods resulting from misuse, abuse, neglect, or accidents, (f) defects or damage to the Goods resulting from improper or unauthorized alterations, modifications, or changes; and (f) any Goods that has not been installed and/or maintained in accordance with the instruction manual or technical guidelines provided by Seller.

EXCLUSION OF OTHER WARRANTIES. THE FOREGOING LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ANY AND ALL OTHER EXPRESS, STATUTORY, OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. NO WARRANTY IS MADE WHICH EXTENDS BEYOND THAT WHICH IS EXPRESSLY CONTAINED HEREIN.

Limitation of Liability. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER OR ANY OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOST PROFITS OR DOWN TIME) ARISING FROM OR IN MANNER CONNECTED WITH THE GOODS, ANY BREACH BY SELLER OR ITS AGENTS OF THIS AGREEMENT, OR ANY OTHER CAUSE WHATSOEVER, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY OF LIABILITY. BUYER'S REMEDY WITH RESPECT TO ANY CLAIM ARISING UNDER THIS AGREEMENT IS STRICTLY LIMITED TO NO MORE THAN THE AMOUNT PAID BY THE BUYER FOR THE GOODS.

Force Majeure. Seller shall not be responsible for any delay in the delivery of, or failure to deliver, Goods due to causes beyond Seller's reasonable control including, without limitation, acts of God, acts of war or terrorism, enemy actions, hostilities, strikes, labor difficulties, embargoes, non-delivery or late delivery of materials, parts and equipment or transportation delays not caused by the fault of Seller, delays caused by civil authorities, governmental regulations or orders, fire, lightning, natural disasters or any other cause beyond Seller's reasonable control. In the event of any such delay, performance will be postponed by such length of time as may be reasonably necessary to compensate for the delay.

Installation. If Buyer purchases any Goods that require installation, Buyer shall, at its expense, make all arrangements and connections necessary to install and operate the Goods. Buyer shall install the Goods in accordance with any Seller instructions and shall indemnify Seller against any and all damages, demands, suits, causes of action, claims and expenses (including actual attorneys' fees and costs) arising directly or indirectly out of Buyer's failure to properly install the Goods.

Work By Others; Safety Devices. Unless agreed to in writing by Seller, Seller has no responsibility for labor or work performed by Buyer or others, of any nature, relating to design, manufacture, fabrication, use, installation, or provision of Goods. Buyer is solely responsible for furnishing and requiring its employees and customers to use all safety devices, guards and safe operating procedures required by law and/or as set forth in manuals and instruction sheets furnished by Seller. Buyer is responsible for consulting all operator manuals, ANSI or comparable safety standards, OSHA regulations and other sources of safety standards and regulations applicable to the use and operation of the Goods.

Remedies. Each of the rights and remedies of Seller under this Agreement is cumulative and in addition to any other or further remedies provided under this Agreement or at law or equity.

Attorney's Fees. In the event legal action is necessary to recover monies due from Buyer or to enforce any provision of this Agreement, Buyer shall be liable to Seller for all costs and expenses associated therewith, including Seller's actual attorney fees and costs.

Governing Law/Venue. This Agreement shall be construed and governed under the laws of the State of Wisconsin, without application of conflict of law principles. Each party agrees that all actions or proceedings arising out of or in connection with this Agreement shall be commenced, tried, and litigated only in the state courts sitting in Manitowoc County, Wisconsin or the U.S. Federal Court for the Eastern District of Wisconsin. Each party waives any right it may have to assert the doctrine of "forum non conveniens" or to object to venue to the extent that any proceeding is brought in accordance with this section. Each party consents to and waives any objection to the exercise of personal jurisdiction over it by courts described in this section. Each party waives to the fullest extent permitted by applicable law the right to a trial by jury.

Summary of Return Policy:

- 10 Day acceptance period from date of delivery. Damage claims and order discrepancies will not be accepted after this time.
- You must obtain a Baileigh Industrial issued RGA number PRIOR to returning any materials.
- Returned materials must be received at Baileigh Industrial in new condition and in original packaging.
- Altered items are not eligible for return.
- Buyer is responsible for all shipping charges.
- A 30% re-stocking fee applies to all returns.

Baileigh Industrial makes every effort to ensure that our posted specifications, images, pricing, and product availability are as correct and timely as possible. We apologize for any discrepancies that may occur. Baileigh Industrial reserves the right to make any and all changes deemed necessary in the course of business including but not limited to pricing, product specifications, quantities, and product availability.

For Customer Service & Technical Support:

Please contact one of our knowledgeable Sales and Service team members at:
(920) 684-4990 or e-mail us at Baileigh-Service@jpwindustries.com



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