



OPERATOR'S MANUAL



METAL LATHE MODEL: PL-1236E-DRO



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Book 1 of 2

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STANDARD TERMS AND CONDITIONS OF SALE

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STANDARD TERMS AND CONDITIONS FOR THE SALE OF GOODS

1 INTERPRETATION

- 1.1 In these Conditions the following words have the following meanings:
- | | |
|---------------------|--|
| Word | Meaning |
| "Buyer" | the person(s), firm or company from whom an order to supply Goods is received by the Company; |
| "Buyer Materials" | any documents or other materials and any data or other information provided by the Buyer relating to the Goods; |
| "Company" | Baileigh Industrial Limited, a company incorporated in England and Wales (Company Number 05672861) whose registered office is at Unit 1 Fullwood Close, Aldermans Green Industrial Estate, Coventry, CV2 2SS |
| "Company Materials" | any documents or other materials, and any data or other information provided by the Company relating to the Goods; |
| "Conditions" | the standard terms and conditions of sale as set out in this document; |
| "Contract" | any contract between the Company and the Buyer for the sale and purchase of the Goods; |
| "Delivery Point" | the place where delivery of the Goods is to take place under Condition 4.1; |
| "Goods" | any goods agreed in the Contract to be supplied to the Buyer by the Company (including any part or parts of them). |
- 1.2 In these Conditions references to any statute or statutory provision shall, unless the context otherwise requires, be construed as a reference to that statute or statutory provision as from time to time amended, consolidated, modified, extended, re-enacted or replaced.
- 1.3 In these Conditions references to the masculine include the feminine and the neuter and to the singular include the plural and vice versa as the context admits or requires.
- 1.4 In these Conditions headings will not affect the construction of these Conditions.

2 APPLICATION OF TERMS

- 2.1 Subject to any variation under Condition 2.3 the Contract will be on these Conditions to the exclusion of all other terms and conditions (including any terms or conditions which the Buyer purports to apply under any purchase order, confirmation of order, specification or other document).
- 2.2 No terms or conditions endorsed upon, delivered with or contained in the Buyer's purchase order, confirmation of order, specification or other document will form part of the Contract simply as a result of such document being referred to in the Contract.
- 2.3 These Conditions apply to all the Company's sales of Goods and any variation to these Conditions and any representations about the Goods shall have no effect unless expressly agreed in writing and signed the designated agent/employee of the Company.
- 2.4 The Buyer must ensure that the terms of its order and any applicable specification are complete and accurate.
- 2.5 Any quotation given by the Company is an offer which is valid for a period of 30 days only, provided that the Company has not previously withdrawn it. The offer is accepted by the Buyer and a contract is formed when the Company receives a purchase order for the Goods, provided that such purchase order does not purport to contract on terms other than these Conditions.
- 2.6 If the Buyer requires an order confirmation providing the date of shipment this should be clearly stated in the Buyer's purchase order.

3 DESCRIPTION

- 3.1 The description of the Goods shall be as set out in the Company's quotation.
- 3.2 All drawings, descriptive matter, specifications and advertising issued by the Company on any packaging of the Goods or elsewhere and any descriptions or illustrations contained in the Company's catalogues or brochures are issued or published for the sole purpose of giving an approximate idea of the Goods described in them. They will not form part of this Contract and no warranty is given that the Goods will comply with or perform in accordance with any such description.

4 DELIVERY

- 4.1 Any dates specified by the Company for delivery of the Goods are intended to be an estimate and time for delivery shall not be made of the essence by notice. If no dates are so specified, delivery will be within a reasonable time.
- 4.2 Subject to the other provisions of these Conditions the Company will not be liable for any loss (including loss of profit), costs, damages, charges or expenses caused directly or indirectly by any delay in the delivery of the Goods (even if caused by the Company's negligence), nor will any delay entitle the Buyer to terminate or rescind the Contract unless such delay exceeds 180 days.
- 4.3 If for any reason the Buyer will not accept delivery of any of the Goods when they are ready for delivery, or the Company is unable to deliver the Goods on time because the Buyer has not provided appropriate instructions, documents, licenses or authorizations:
- 4.3.1 risk in the Goods will pass to the Buyer (including for loss or damage caused by the Company's negligence);
 - 4.3.2 the Goods will be deemed to have been delivered; and
 - 4.3.3 the Company may store the Goods until delivery whereupon the Buyer will be liable for all related costs and expenses (including without limitation storage and insurance).
- 4.4 The Buyer will provide at its expense at the Delivery Point adequate and appropriate equipment and manual labour for loading the Goods.



5 NON-DELIVERY

- 5.1 The quantity of any consignment of Goods as recorded by the Company upon dispatch from the Company's place of business shall be conclusive evidence of the quantity received by the Buyer on delivery unless the Buyer can provide conclusive evidence proving the contrary.
- 5.2 The Company shall not be liable for any non-delivery of Goods (even if caused by the Company's negligence) unless written notice is given to the Company within [7] days of the date when the Goods would in the ordinary course of events have been received.
- 5.3 Any liability of the Company for non-delivery of the Goods shall be limited to replacing the Goods within a reasonable time or issuing a credit note at the pro rata Contract rate against any invoice raised for such Goods.

6 RISK/TITLE

- 6.1 The Goods are at the risk of the Buyer from the time of delivery.
- 6.2 Ownership of the Goods shall not pass to the Buyer until the Company has received in full (in cash or cleared funds) all sums due to it in respect of:
 - 6.2.1 the Goods; and
 - 6.2.2 all other sums which are or which become due to the Company from the Buyer on any account.
- 6.3 Until ownership of the Goods has passed to the Buyer, the Buyer must:
 - 6.3.1 hold the Goods on a fiduciary basis as the Company's bailee;
 - 6.3.2 store the Goods (at no cost to the Company) separately from all other goods of the Buyer or any third party in such a way that they remain readily identifiable as the Company's property;
 - 6.3.3 not destroy, deface or obscure any identifying mark or packaging on or relating to the Goods;
 - 6.3.4 maintain the Goods in satisfactory condition insured on the Company's behalf for their full price against all risks to the reasonable satisfaction of the Company. On request the Buyer shall produce the policy of insurance to the Company; and
 - 6.3.5 hold the proceeds of the insurance referred to in Condition 6.3.4 on trust for the Company and not mix them with any other money, nor pay the proceeds into an overdrawn bank account.
- 6.4 The Buyer may resell the Goods before ownership has passed to it solely on the following conditions:
 - 6.4.1 any sale shall be effected in the ordinary course of the Buyer's business at full market value; and
 - 6.4.2 any such sale shall be a sale of the Company's property on the Buyer's own behalf and the Buyer shall deal as principal when making such a sale.
- 6.5 The Buyer's right to possession of the Goods shall terminate immediately if:
 - 6.5.1 the Buyer has a bankruptcy order made against him or makes an arrangement or composition with his creditors, or otherwise takes the benefit of any Act for the time being in force for the relief of insolvent debtors, or (being a body corporate) convenes a meeting of creditors (whether formal or informal), or enters into liquidation (whether voluntary or compulsory) except a solvent voluntary liquidation for the purpose only of reconstruction or amalgamation, or has a receiver and/or manager, administrator or administrative receiver appointed of its undertaking or any part thereof, or a resolution is passed or a petition presented to any court for the winding up of the Buyer or for the granting of an administration order in respect of the Buyer, or any proceedings are commenced relating to the insolvency or possible insolvency of the Buyer; or
 - 6.5.2 the Buyer suffers or allows any execution, whether legal or equitable, to be levied on his/its property or obtained against him/it, or fails to observe/perform any of his/its obligations under the Contract or any other contract between the Company and the Buyer, or is unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986 or the Buyer ceases to trade; or
 - 6.5.3 the Buyer encumbers or in any way charges any of the Goods.
- 6.6 The Company shall be entitled to recover payment for the Goods notwithstanding that ownership of any of the Goods has not passed from the Company.
- 6.7 The Buyer grants the Company, its agents and employees an irrevocable license at any time to enter any premises where the Goods are or may be stored in order to inspect them, or, where the Buyer's right to possession has terminated, to recover them.

7 PRICE

- 7.1 The price for the Goods shall be the price set out in the Company's estimate/quotation. All estimates/quotes are good for 30 days from the date on the top of the estimate/quote.
- 7.2 The price for the Goods shall be exclusive of any value added tax and all costs or charges in relation to loading, unloading, carriage and insurance all of which amounts the Buyer will pay in addition when it is due to pay for the Goods.

8 PAYMENT

- 8.1 Payment of the price for the Goods is due and payable before shipment of the goods occurs unless otherwise negotiated by the Company and the customer.
- 8.2 Time for payment shall be of the essence.
- 8.3 No payment shall be deemed to have been received until the Company has received cleared funds.
- 8.4 All payments payable to the Company under the Contract shall become due immediately upon termination of this Contract despite any other provision.
- 8.5 The Buyer shall make all payments due under the Contract without any deduction whether by way of set-off, counterclaim, discount, abatement or otherwise unless the Buyer has a valid court order requiring an amount equal to such deduction to be paid by the Company to the Buyer.
- 8.6 If the Buyer fails to pay the Company any sum due pursuant to the Contract the Buyer will be liable to pay interest to the Company on such sum from the due date for payment at the annual rate of 10% above the base lending rate from time to time of LIBOR, accruing on a daily basis until payment is made, whether before or after any judgment.
- 8.7 The Company reserves the right to claim interest and fixed sum compensation under the Late Payment of Commercial Debts (Interest) Act 1998.



9 WARRANTY

- 9.1 The Company warrants that (subject to the other provisions of these Conditions) upon delivery, and for a period of 12 months from the date of delivery, the Goods will be of satisfactory quality within the meaning of the Sale of Goods Act 1994. Warranty provisions are strictly at the determination of the Company on a case by case basis. The Company's determinations regarding a warranty claim are final.
- 9.2 The Company shall not be liable for a breach of the warranty in Condition 9.1 unless:
- 9.2.1 the Buyer gives written notice of the defect to the Company, and (if the defect is as a result of damage in transit) to the carrier, within a reasonable amount of time when the Buyer discovers or ought to have discovered the defect; and
 - 9.2.2 the Company is given a reasonable opportunity after receiving the notice to examine such Goods and the Buyer (if asked to do so by the Company) returns such Goods to the Company's place of business at the Buyer's expense for the examination to take place there.
- 9.3 The Company shall not be liable for a breach of the warranty in Condition 9.1 if:
- 9.3.1 the Buyer makes any further use of such Goods after giving such notice; or
 - 9.3.2 the defect arises because the Buyer failed to follow the Company's oral or written instructions as to the storage, installation, commissioning, use or maintenance of the Goods; or
 - 9.3.3 the defect arises as a result of ordinary wear and tear; or
 - 9.3.4 the Buyer alters or repairs such Goods without the written consent of the Company.
- 9.4 The following are expressly excluded from the warranty in Condition 9.1:
- 9.4.1 die sets, tooling and saw blades; and
 - 9.4.2 machine maintenance, adjustment and set ups.
- 9.5 Subject to Conditions 9.2 and 9.3, if any of the Goods do not conform with the warranty in Condition 9.1 the Company shall at its option repair or replace such Goods (or the defective part) or refund the price of such Goods at the pro rata Contract rate provided that, if the Company so requests, the Buyer shall, at the Buyer's expense, return the Goods or the part of such Goods which is defective to the Company.
- 9.6 If the Company complies with Condition 9.4 it shall have no further liability for a breach of the warranty in Condition 9.1 in respect of such Goods.
- 9.7 Any Goods which have been replaced will belong to the Company and any repaired or replacement Goods will be guaranteed on these terms for the unexpired portion of the 12 month period.
- 9.8 All work carried out under the warranty contained in Condition 9.1 must be approved by the Company.
- 9.9 All electrical components and gearboxes carry a one-year replacement warranty from the manufacturer. This warranty does not include labour or shipping costs.

10 RETURNS

- 10.1 The Buyer shall not be entitled to cancel any order or Contract or return any goods without the prior written approval of the Company.
- 10.2 Special orders cannot be cancelled under any circumstances.
- 10.3 If the Company agrees to accept the return of any Goods it shall be on terms that
- a) They are returned at the Buyer's expense to the Company within 30 days of delivery
 - b) They are received by the Company in "as new" condition without any damage or use
 - c) Any refund will be subject to a 15% "restocking charge"
- and such other terms as the Company may impose.

11 LIMITATION OF LIABILITY

- 11.1 Subject to Condition 9, the following provisions of this Condition 10 set out the entire financial liability of the Company (including any liability for the acts or omissions of its employees, agents and sub-contractors) to the Buyer in respect of:
- 11.1.1 any breach of these Conditions; and
 - 11.1.2 any representation, statement or tortious act or omission including negligence arising under or in connection with the Contract.
- 11.2 All warranties, conditions and other terms implied by statute or common law (save for the conditions implied by section 12 of the Sale of Goods Act 1979) are, to the fullest extent permitted by law, excluded from the Contract.
- 11.3 Nothing in these Conditions excludes or limits the liability of the Company for death or personal injury caused by the Company's negligence or for fraudulent misrepresentation.

(THE BUYER'S ATTENTION IS DRAWN TO THE PROVISIONS OF CONDITION 11.4 BELOW)

- 11.4 Subject to Conditions 11.2 and 11.3:
- 11.4.1 the Company's total liability in contract, tort (including negligence or breach of statutory duty), misrepresentation or otherwise, arising in connection with the performance or contemplated performance of this Contract shall be limited to the invoiced amount per each and every individual transaction; and
 - 11.4.2 the Company shall not be liable to the Buyer for any indirect or consequential loss or damage (whether for loss of profit, loss of business, depletion of goodwill or otherwise), costs, expenses or other claims for consequential compensation whatsoever (howsoever caused) which arise out of or in connection with the Contract.

12 INTELLECTUAL PROPERTY

- 12.1 The property and any copyright or other intellectual property rights in:
- 12.1.1 any Buyer Materials shall belong to the Buyer;
 - 12.1.2 any Company Materials shall, unless otherwise agreed in writing between the Buyer and the Company, belong to the Company, subject only to a license in favor of the Buyer to use the Company Materials for the purposes of receiving the Goods.



13 ASSIGNMENT

- 13.1 The Buyer shall not be entitled to assign the Contract or any part of it without the prior written consent of the Company.
13.2 The Company may assign the Contract or any part of it to any person, firm or company.

14 FORCE MAJEURE

The Company reserves the right to defer the date of delivery or to cancel the Contract or reduce the volume of the Goods ordered by the Buyer (without liability to the Buyer) if it is prevented from or delayed in the carrying on of its business due to circumstances beyond the reasonable control of the Company including, without limitation, acts of God, governmental actions, war or national emergency, riot, civil commotion, fire, explosion, flood, epidemic, lock-outs, strikes or other labour disputes (whether or not relating to either party's workforce), or restraints or delays affecting carriers or inability or delay in obtaining supplies of adequate or suitable materials. Provided that, if the event in question continues for a continuous period in excess of [180] days, the Buyer shall be entitled to give [not less than [3] days] notice in writing to the Company to terminate the Contract.

15 GENERAL

- 15.1 Each right or remedy of the Company under the Contract is without prejudice to any other right or remedy of the Company whether under the Contract or not.
15.2 If any provision of the Contract is found by any court, tribunal or administrative body of competent jurisdiction to be wholly or partly illegal, invalid, void, voidable, unenforceable or unreasonable it shall to the extent of such illegality, invalidity, voidness, voidability, unenforceability or unreasonableness be deemed severable and the remaining provisions of the Contract and the remainder of such provision shall continue in full force and effect.
15.3 Failure or delay by the Company in enforcing or partially enforcing any provision of the Contract will not be construed as a waiver of any of its rights under the Contract.
15.4 Any waiver by the Company of any breach of, or any default under, any provision of the Contract by the Buyer will not be deemed a waiver of any subsequent breach or default and will in no way affect the other terms of the Contract.
15.5 The parties to this Contract do not intend that any term of this Contract will be enforceable by virtue of the Contracts (Rights of Third Parties) Act 1999 by any person that is not a party to it.
15.6 The formation, existence, construction, performance, validity and all aspects of the Contract shall be governed by English law and the parties submit to the exclusive jurisdiction of the English courts.

16 COMMUNICATIONS

- 16.1 All communications between the parties about this Contract must be in writing and delivered by hand or sent by pre-paid first class post or sent by facsimile transmission:
16.1.1 (in case of communications to the Company) to its registered office or such changed address as shall be notified to the Buyer by the Company; or
16.1.2 (in the case of the communications to the Buyer) to the registered office of the addressee (if it is a company) or (in any other case) to any address of the Buyer set out in any document which forms part of this Contract or such other address as shall be notified to the Company by the Buyer.
16.2 Communications shall be deemed to have been received:
16.2.1 if sent by pre-paid first class post, 2 days (excluding Saturdays, Sundays and bank and public holidays within the UK) after posting (exclusive of the day of posting);
16.2.2 if delivered by hand, on the day of delivery;
16.2.3 if sent by facsimile transmission on a working day prior to 4.00 p.m., at the time of transmission and otherwise on the next working day. Communications addressed to the Company shall be marked for the attention of the designated purchasing agent for the buyer.

17 EXPORT

- 17.1 In these Conditions "Incoterms" means the international rules for the interpretation of trade terms of the International Chamber of Commerce as in force at the date when the Contract is made. Unless the context otherwise requires, any term or expression which is defined in or given a particular meaning by the provisions of Incoterms shall have the same meaning in these Conditions, but if there is any conflict between the provisions of Incoterms and these Conditions, the latter shall prevail.
17.2 Where the Goods are supplied for export from the United Kingdom, the provisions of this Condition 17 shall (subject to any special terms agreed in writing between the Buyer and the Company) apply notwithstanding any other provision of these Conditions.
17.3 The Buyer shall be responsible for complying with any legislation or regulations governing the importation of the Goods into the country of destination and for the payment of any duties on them.
17.4 Unless otherwise agreed in writing between the Buyer and the Company, the Goods shall be delivered fob the air or sea port of shipment and the Company shall be under no obligation to give notice under section 32(3) of the Sale of Goods Act 1979.
17.5 The Buyer shall be responsible for arranging for testing and inspection of the Goods at the Company's premises before shipment. The Company shall have no liability for any claim in respect of any defect in the Goods which would be apparent on inspection and which is made after shipment, or in respect of any damage during transit.



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.

DESCRIPTION

The Baileigh **PL-1236E-DRO** is for anyone looking for an economical lathe that is high in quality with an array of features. Like all Baileigh lathes, this one has an integrated gear system that allows for tapping, turning, and polishing with a wide range of speeds to choose from. All ways are ground and hardened to ensure long life. This lathe has all the features of the more expensive models including: 2 axis digital readout, three and four jaw chucks, steady rest, follow rest, face plate, live center, foot brake, coolant system, and halogen work light.

In this manual you will find:

- 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 crating. 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 Baileigh Industrial and inform them of the unexpected occurrence. Temporarily suspend installation.
- Take necessary precautions while loading / unloading or moving the machine to avoid any injuries. Refer to the related chapter of this Manual for the best way of handling the machine.



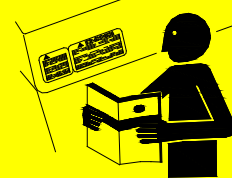
Note: This symbol refers to useful information throughout the manual.



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.



DANGER



WARNING

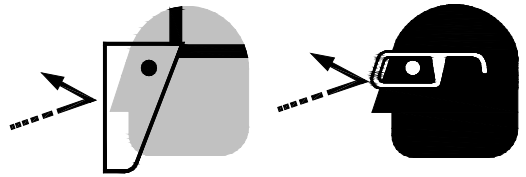


CAUTION



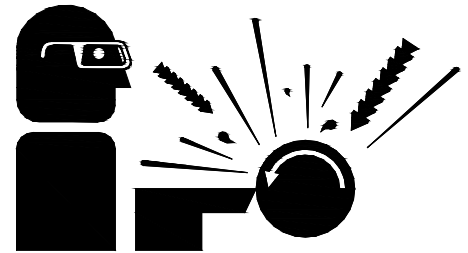
PROTECT EYES

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



ROTATING CHUCK CAN CUT, DISMEMBER, SNAG, and ENTRAP

Keep hands and body clear while operating. Flying chips, sparks, and other particles can cause serious injury or death.



DUST HAZARD

Wear appropriate dust mask when using this machinery.



HIGH VOLTAGE

USE CAUTION IN HIGH VOLTAGE AREAS.
DO NOT assume the power to be off.

(MAKE SURE PROPER LOCKOUT PROCEDURES ARE FOLLOWED)



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.





WARNING - Operator Safety Precautions

1. Read and understand the Operator's manual before using the lathe.
2. These lathes are fast, powerful machines which can cause severe bodily injury or death if not used properly and safety guidelines are not followed.
3. Always disconnect the lathe from the power supply before performing any service work, adjustments, or changing of tooling.
4. Do not wear clothing or jewelry that can become entangled in the moving machinery. Tie back long loose hair when operating the machine.
5. Remember - Safety is a combination of common sense and alertness at all times whether the machine is running or not. Never operate while under the influence of drugs or alcohol, or when tired.
6. Make sure lathe operators are properly trained. Untrained operators can be seriously injured. If the machine is not being used, disconnect and lockout the power to prevent unauthorized use of the machine.
7. Never leave adjustment tools or lathe chuck wrenches in the chuck or near any moving part of the machine. They can become dangerous projectiles causing serious personal injury or death.
8. Follow maintenance instructions and lubrication schedules to ensure the machine is in good working condition at all times.
9. Set up a scheduled machine inspection to look for damaged parts, loose hardware, misaligned components, or other conditions that will affect the safe operation of the machine.
10. Always use correct tooling and inserts for the job at hand, and make sure they are sharp to decrease strain on the machine components.
11. Study and understand the speed and feed charts on the machine and in this manual to avoid overloading the machine and causing possible tool damage.
12. Retro-fitting or purchasing a manual lathe with interlocking guards can help reduce the risk of entanglement or being hit with projectiles while operating the machine.



WARNING - Operator Safety Precautions (cont.)

13. Make sure guarding does not prevent the operator from performing the necessary job tasks in a safe manner.
14. Guards should not obscure the operator's view when extending beyond the depth of the chuck.
15. Always inspect the chuck and piece part in the chuck. Be aware of any potential catch points capable of causing serious personal injury or death.
16. To avoid injuries during start-up, make sure the piece part, tooling, and tool post have adequate clearance. Always set correct RPM for the size part being turned. If the speed is set too high for a large piece part there is a chance it could be ejected from the chuck causing serious personal injury or death.
17. Always support the piece part as necessary when it extends from the chuck using a lathe center in the tail stock or by using either a steady rest or a follow rest.
18. When the chuck and piece part are in motion, NEVER reach over, under, or around the piece part to make an adjustment or to retrieve anything.
19. ALWAYS STOP THE LATHE when removing metallic or plastic shavings from the piece part or the tooling. NEVER use your bare hands.



WARNING

All machinery poses a potential for danger when being operated. Accidents result from lack of machine knowledge and failure to pay attention. Always be cautious and alert to the potential for serious injury. Follow safety rules and precautions to lessen the chances of an accident.



CAUTION

No list of operator safety precautions can be complete as every shop has different surroundings and working conditions. Always put safety first as it applies to your work environment. Failure to do so can result in personal injury or equipment damage,



TECHNICAL SPECIFICATIONS

Swing Over Bed	12" (305mm)
Swing Over Cross Slide	7.625" (194mm)
Swing in Gap	17" (431mm)
Distance Between Centers	36" (914mm)
Length of Gap	6" (152mm)
Width of Bed	7.125" (181mm)
Spindle Nose	D1-4"
Spindle Bore	1.50" (38mm)
Spindle Bore Taper	Morse #5
Spindle Speeds	9 (70-1400 rpm)
Travel of Top Slide	3.250" (83mm)
Travel of Cross Slide	5.312" (135mm)
Max. Tool Selection	.625" x .625" (16mm x 16mm)

Leadscrew Thread Pitch	8 T.P.I.
Longitudinal Feed Range	0.002" - 0.0548"/rev. (0.05 - 1.4 mm/rev)
Cross Feed Range	0.007" - 0.0187"/rev (0.178 - 0.475 mm/rev)
Metric Thread Range	0.4 - 7 mm
Sleeve Diameter	1.250" (32mm)
Sleeve Travel	4" (101mm)
Sleeve Taper	Morse #3
Power Requirements	110V / 220V, 1Ph (Dual)
Horsepower	2 Hp (1.5Kw)
Shipping Dimensions (L x W x H)	67" x 31" x 60" (1701 x 787 x 1524mm)
Shipping Weight	1,232 lbs (560Kg)

Specifications subject to change without notice

Machine Features

- 2-axis digital readout
- 6" (152mm) three jaw chuck
- 8" (203mm) four jaw chuck
- Face plate
- Steady rest
- Follow rest
- Live center
- Quick change tool holder
- Foot brake
- Coolant system with splash guard
- Removable chip tray
- Heavy duty welded stand
- 110V / 220V dual voltage



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





TRANSPORTING THE MACHINE



Caution: Lifting and carrying operations should be carried out by skilled workers, such as truck operator, crane operator, etc. Also, it is necessary to keep in mind that having a large clearance area around the machine is important for efficient and safe working conditions.

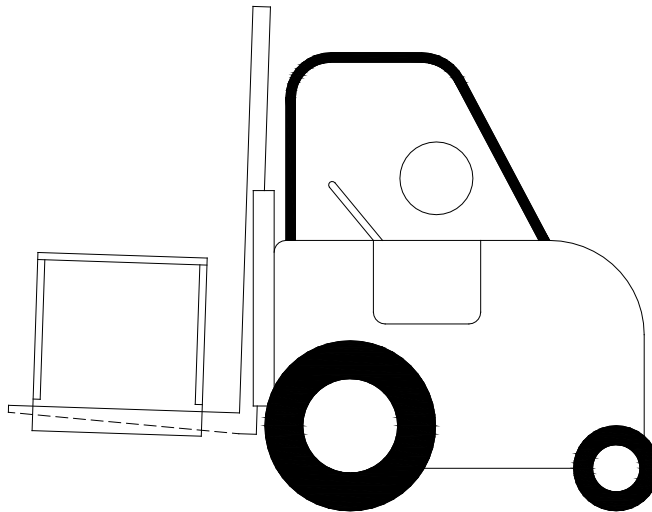


figure 3

When transporting in its own packaging,
use a forklift truck or hand trolley.

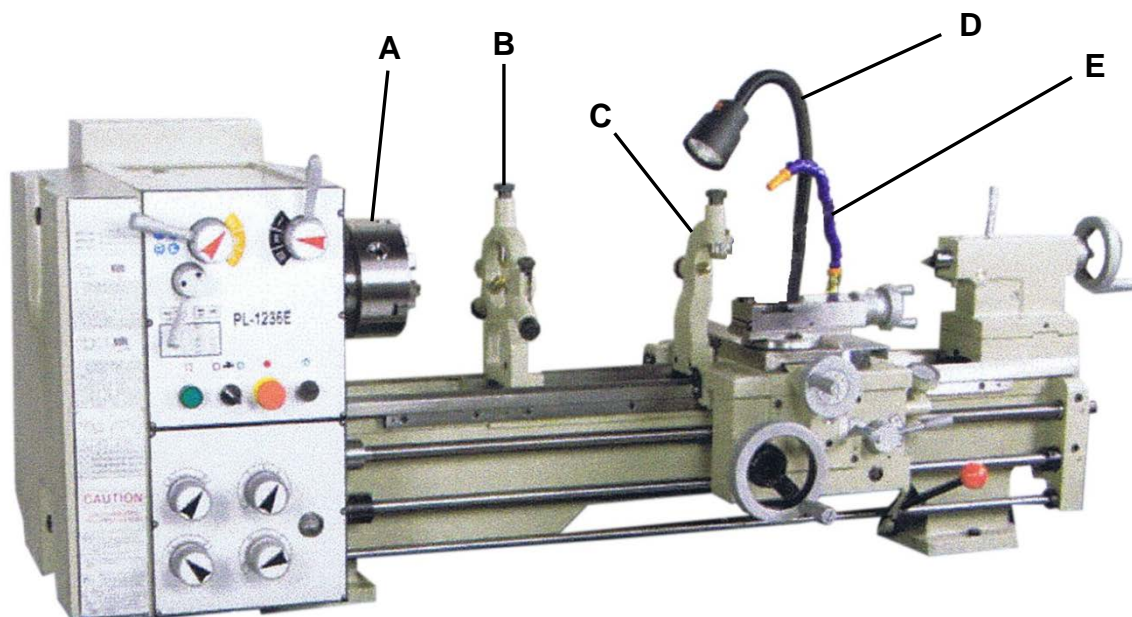
UNPACKING AND CHECKING CONTENTS

Your Baileigh **PL-1236E-DRO** metal lathe is shipped in (1) wooden box and (2) corrugated boxes. Carefully remove the base units from the corrugated boxes and plastic bags.

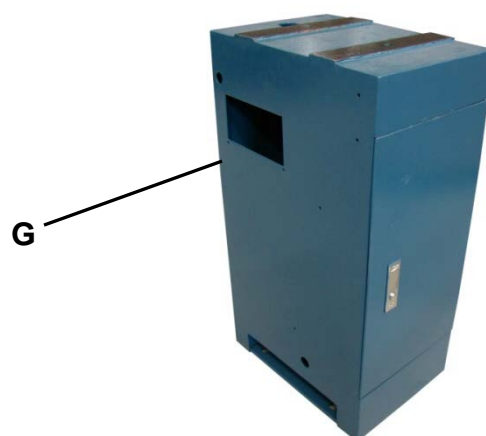
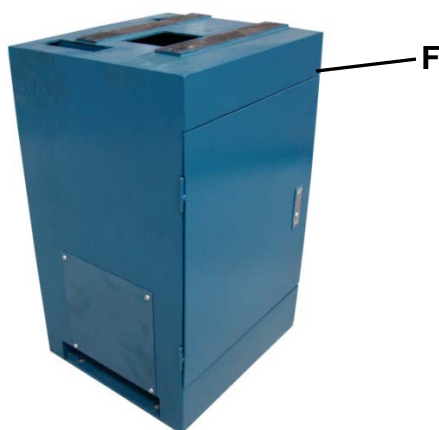


WARNING: SUFFOCATION HAZARD! Immediately discard the plastic bags and packing materials to eliminate choking and suffocation hazards to children and animals.

Stand the base units upright and check for damage. Remove the top and sides from the wooden box. Carefully set out all the items and do a complete inventory.

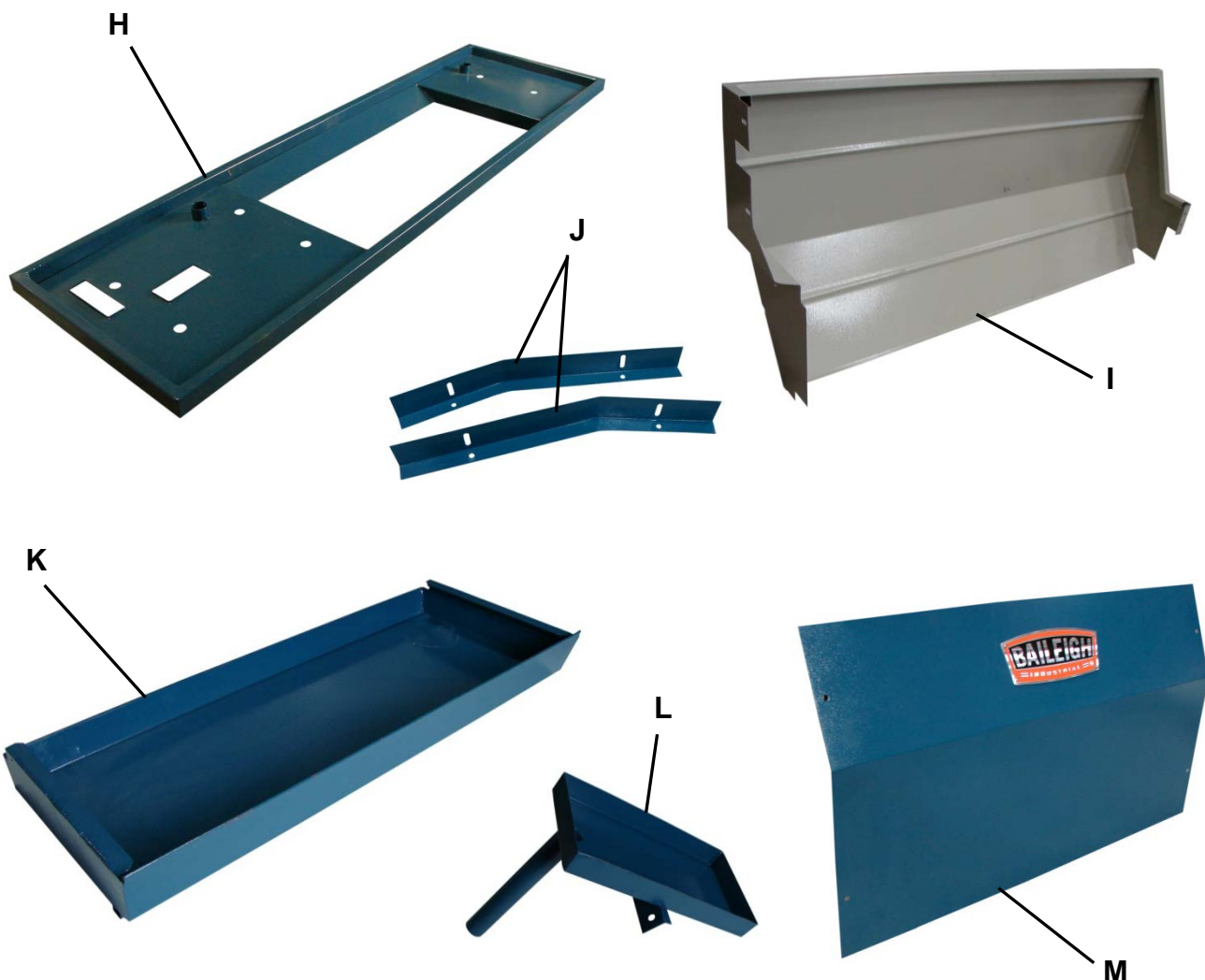


PARTS INVENTORY		QTY.
A	6" Three Jaw Chuck w/Jaws.....	1
B	Steady Rest.....	1
C	Follow Rest.....	1
D	Halogen Work Light.....	1
E	Flexible Lubrication Nozzle.....	1
F	Left Pedestal.....	1
G	Right Pedestal.....	1

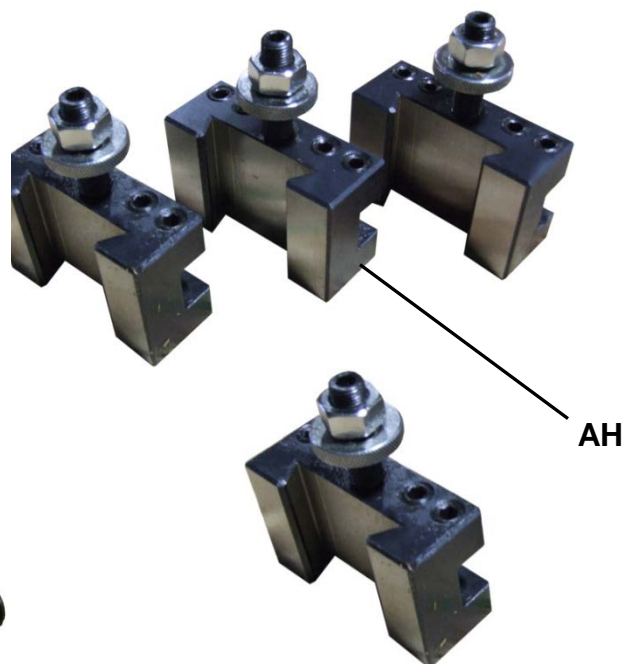




PARTS INVENTORY		QTY.
H	Catch Pan.....	1
I	Back Splash.....	1
J	Panel Brackets.....	2
K	Tray.....	1
L	Drain Pan.....	1
M	Front Panel.....	1









PARTS INVENTORY

QTY.

N	—	Brake Spring.....	1
O	—	Lock Collar.....	1
P	—	Rubber Tube Spacer.....	1
Q	—	Pin.....	1
R	—	Spring Pin - long.....	1
S	—	Spring Pin - short.....	2
T	—	Nylon Clamps.....	3
U	—	Pedal Arm.....	1
V	—	Adjusting Screw.....	1
W	—	Shoulder Pin.....	1
X	—	Bolt - long w/nut.....	2
Y	—	Round Head Screw.....	3
Z	—	Pedal Shaft.....	1
AA	—	Brake Pull Bar.....	1
AB	—	Brake Step.....	1
AC	—	Coolant Pump w/switch.....	1
AD	—	Four Jaw Chuck.....	1
AE	—	Face Plate.....	1
AF	—	Tool Post.....	1
AG	—	Tool Post Handle.....	1
AH	—	Tool Insert Holders.....	4
AI	—	Tool Box.....	1
AJ	—	Tapered Sleeve.....	1
AK	—	Reversing Jaws.....	3
AL	—	Lathe Center.....	2
AM	—	Live Center.....	1
AN	—	Handles	2
AO	—	Chuck Tool w/handle.....	2
AP	—	Open Ended Wrenches.....	2
AQ	—	Allen Wrenches.....	3
AR	—	Gears - 30T, 54T, 56T, 57T, 63T, 66T, 69T, 78T.....	8
AS	—	Screwdrivers.....	2
AT	—	Lubricating Bottle.....	1
AU	—	Cam Lock Studs	3
AV	—	2 Axis Digital Readout	1





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.



LIFTING AND MOVING THE LATHE

1. Secure two lift straps each capable of lifting 1,000 lbs. (456 kg) around the lathe base, staying behind the lead screw, feed rod, and control rod. Be careful not to damage any electrical cables or coolant lines.
2. Check if the load is properly balanced by lifting it an inch or two (25-50mm).
3. Lift the machine, avoiding sudden accelerations or quick changes of direction.

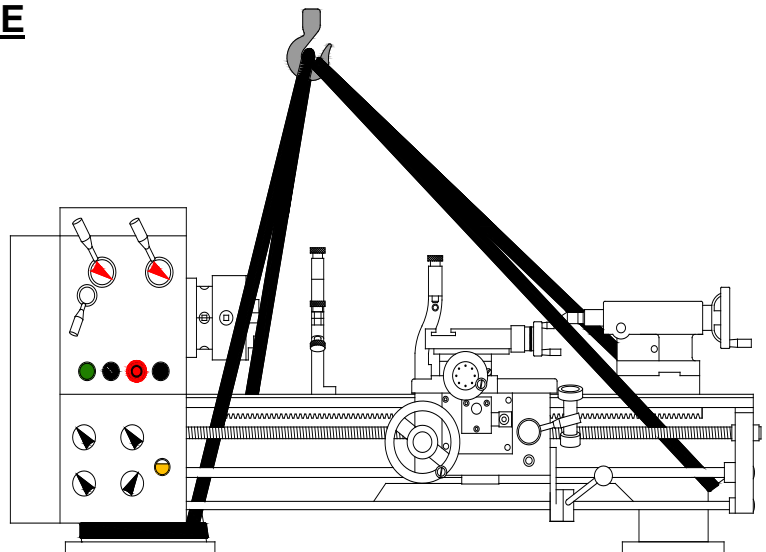


figure 4



SUPPORT CABINETS AND BRAKE ASSEMBLY

When stepped on, the foot pedal activates the brake which stops the chuck from turning. The foot pedal mechanism has an adjustment bolt to control the amount of travel, an extension spring to return the pedal to the up position, and a lever switch to shut off the motor.

1. Locate and familiarize yourself with the necessary components.
2. Place the stands #63 and #64 at the dimension shown in the drawing. This serves as a starting point for the assembly.
3. Attach front plate #84 to the left plate #82 and the right plate #85 which then get bolted to the left and right stands #63 and #64.
4. Insert pin #70 into the hole on pedal arm #69. Place the brake pull rod #62 through the hole at the top of stand #63, attach to pin #70, and secure with a cotter pin.
5. Insert pedal shaft #76 through the hole in the left stand #63, through the hole in the pedal arm #69, and through the hole in the mounting plate. Slip on the nut #74 but do not tighten at this time.
6. Insert the stub shaft on the brake step into the hole on right stand #64.
7. Push pedal shaft #76 through, until almost flush with the inside of the left stand. This will allow you to position the brake step so the pedal shaft can be inserted into it.
8. Line up the two holes in the brake step with the holes in the pedal shaft and secure with (2) roll pins.
9. Insert the jam nut onto the thread of screw #81 and attach to the mounting plate. Attach the jam nut and stop bolt to the screw #81.
10. Rotate the brake pedal to the up position and secure the pedal arm #69 to the pedal shaft #76 when the holes line up.
11. Attach the top of the extension spring #68 to the upper frame member and the bottom to the pin #70.
12. Mount the switch #95 to the mounting plate and run the cable up and out to the electrical enclosure. (**Have all electrical terminations made by a qualified electrician.**) (Adjust and tighten the nut #74 at final assembly to properly actuate the switch.)

Finish the Bed Assembly.

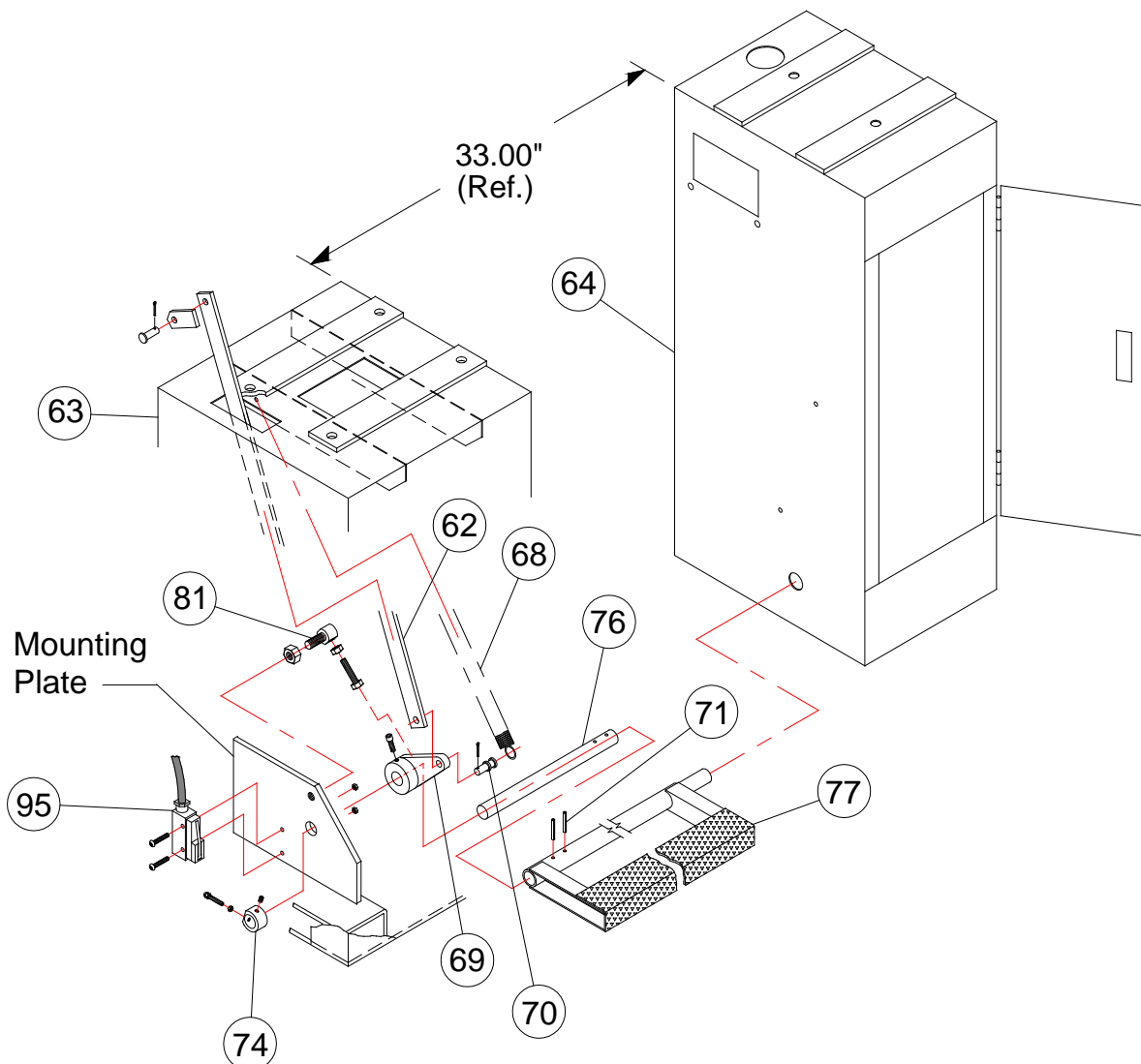
13. Set the oil plate #60 onto the stands #63 and #64 making sure the holes line up.
14. Remove cover #19 so you have access when attaching the brake pull rod #62.
15. **CAREFULLY** place the machine head onto the oil plate, and attach with (6) bolts and flat washers.

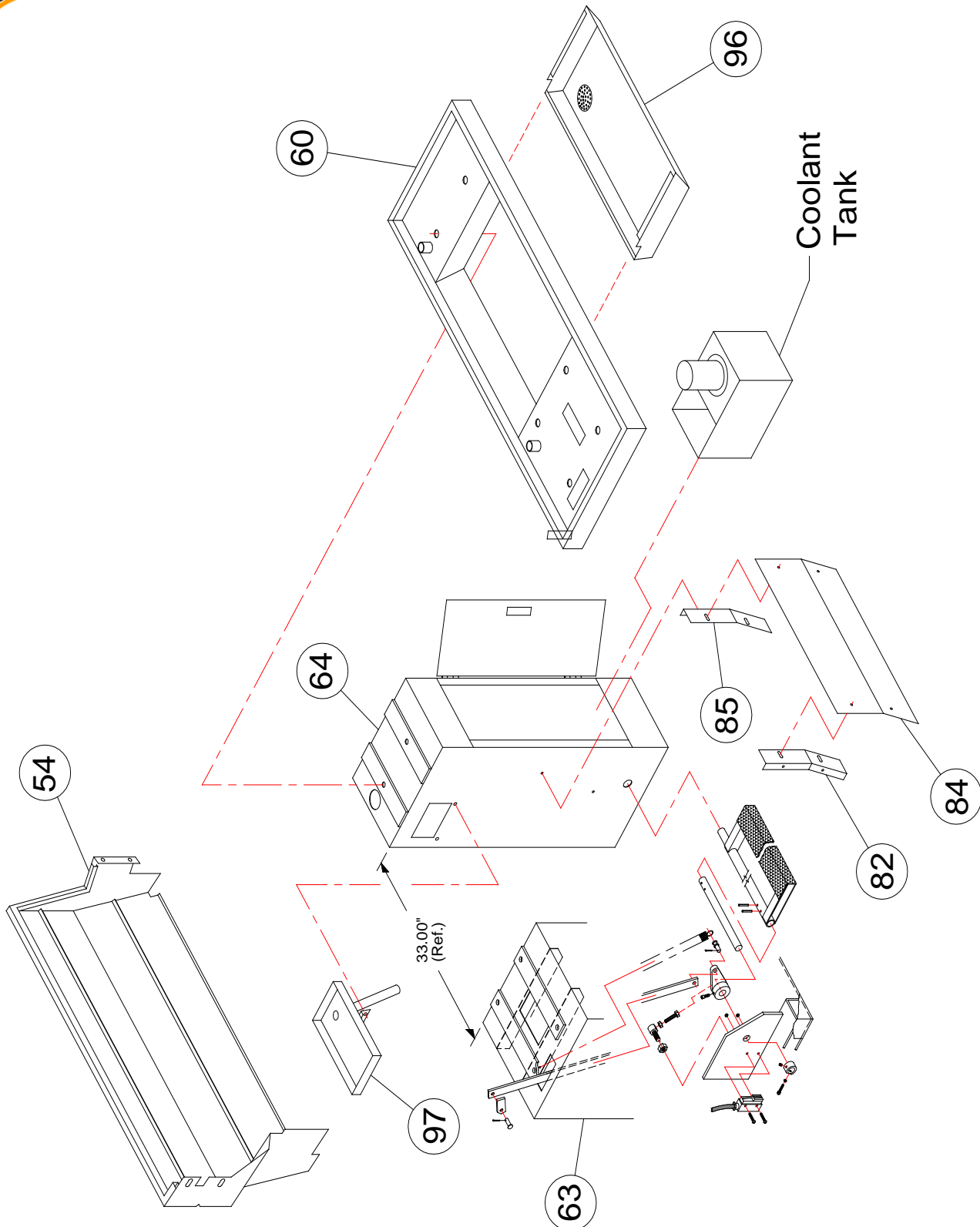


CAUTION: CAUTION: BE AWARE OF POTENTIAL PINCH OR CRUSH POINTS WHICH COULD RESULT IN SEVERE INJURY. If using lift straps make sure they will adequately support the weight of the head. Be careful not to damage any electrical cables or coolant lines.



16. Attach the brake pull rod #62 to the brake bracket which is located behind the headstock pulley.
17. Remove the access cover and place the coolant pump assembly into the right stand #64. Run the coolant pump power cord up through the hole in the oil plate and through the wire conduit to the electrical enclosure. (**Have all electrical terminations made by a qualified electrician.**)
18. Run the coolant hose down through the hole in the oil plate and connect to the coolant pump.
19. Insert the snout of the coolant return pan #97 into the hole on the side of stand #64 and bolt in place.
20. Slide the drain pan #96 under the oil plate so that the drain screen is positioned above the coolant return pan #97.
21. Position the splash guard #54 to the back of the machine and attach with (4) screws.
22. Make final adjustments to the brake pedal and switch before replacing the access covers.







LEVELLING AND ANCHORING THE MACHINE

After the machine is assembled, the support cabinets should be sited on a level, concrete floor. The accuracy of any machine depends on the precise placement of it to the mounting surface. Use a precision level on the bed ways to make further adjustments, Anchor the machine to the floor, as shown in (fig. 5) using bolts and expansion plugs or sunken tie rods that connect through holes in the base of the support cabinets. Recheck for a level condition.

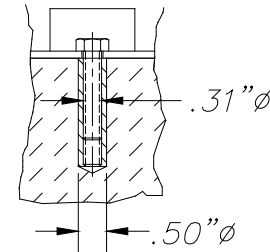


figure 5

IMPORTANT:

- Maintain an adequate working area around the machine for safety.
- Have the work area well illuminated with proper lighting.
- Remove scrap and waste materials regularly, and make sure the work area is free from obstructing objects.
- Keep the floor free of oil and make sure it is not slippery.
- If long lengths of material are to be fed into the machine, make sure that they will not extend into any aisles.

ELECTRICAL CONNECTIONS

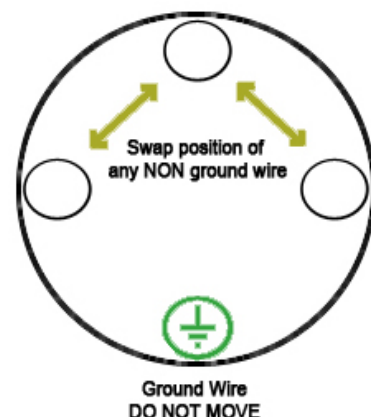
ATTENTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN !

Check if the available power supply is the same as required by the Industrial Lathe (consult nameplate on machine base)



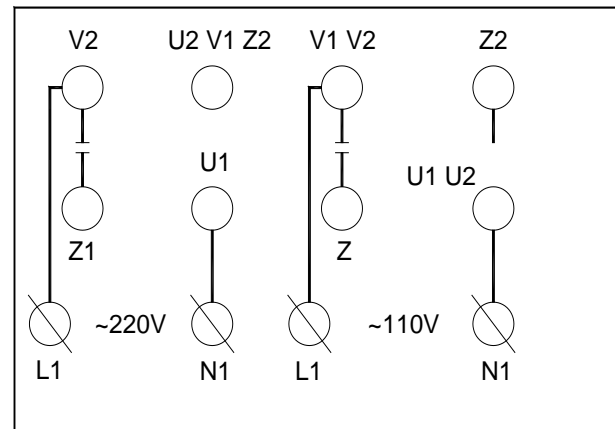
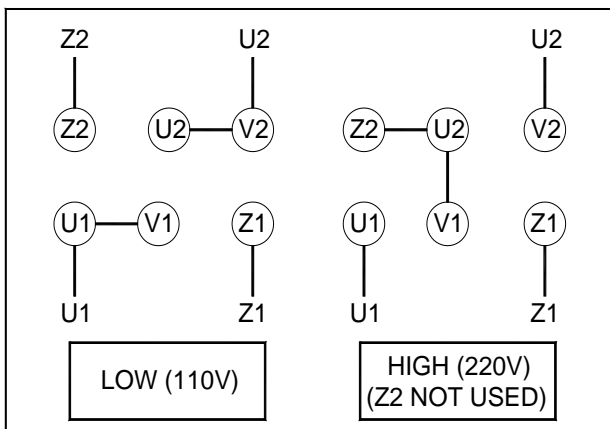
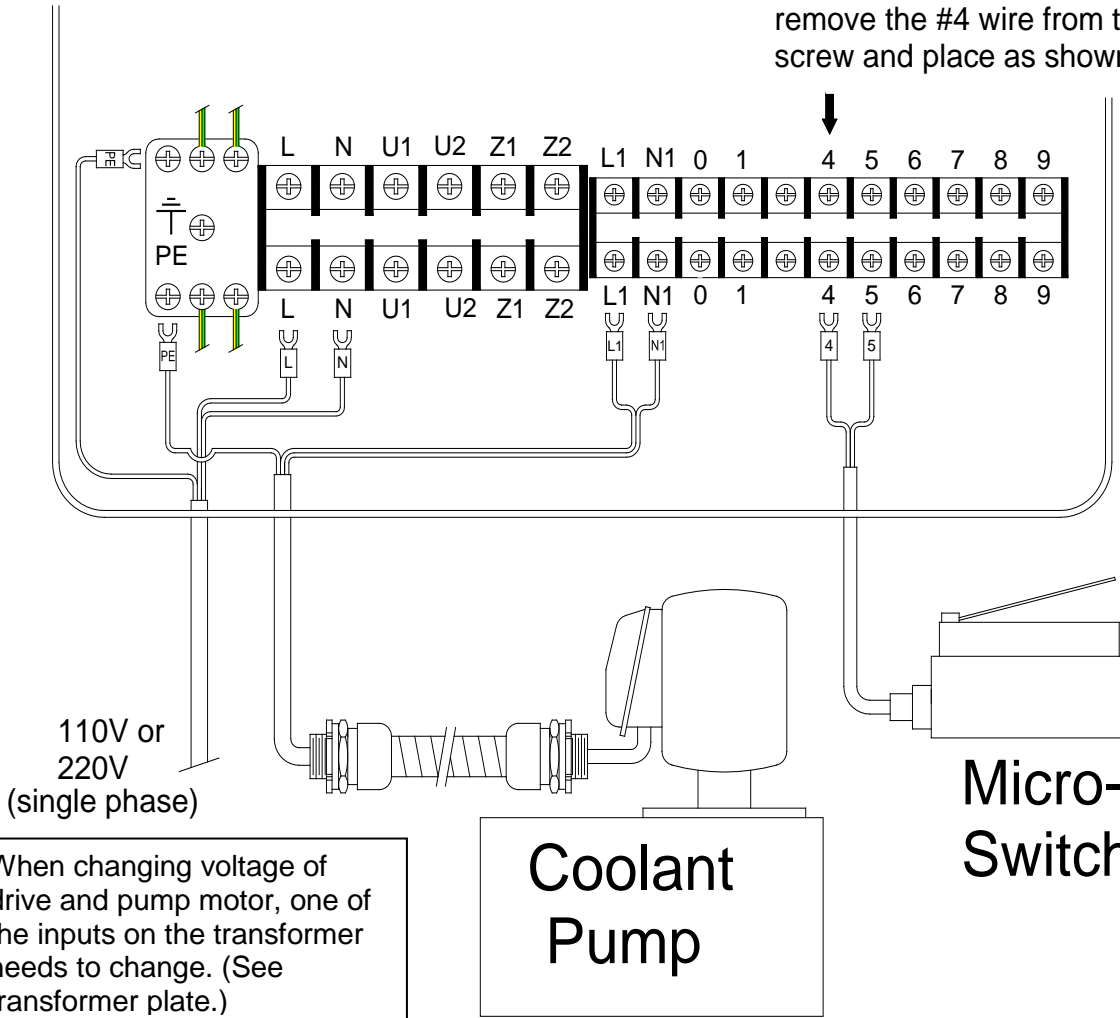
WARNING

Make sure the grounding wire (green) is properly connected to avoid electric shock. **DO NOT** switch the position of the green grounding wire if any electrical plug wires are switched during hookup.





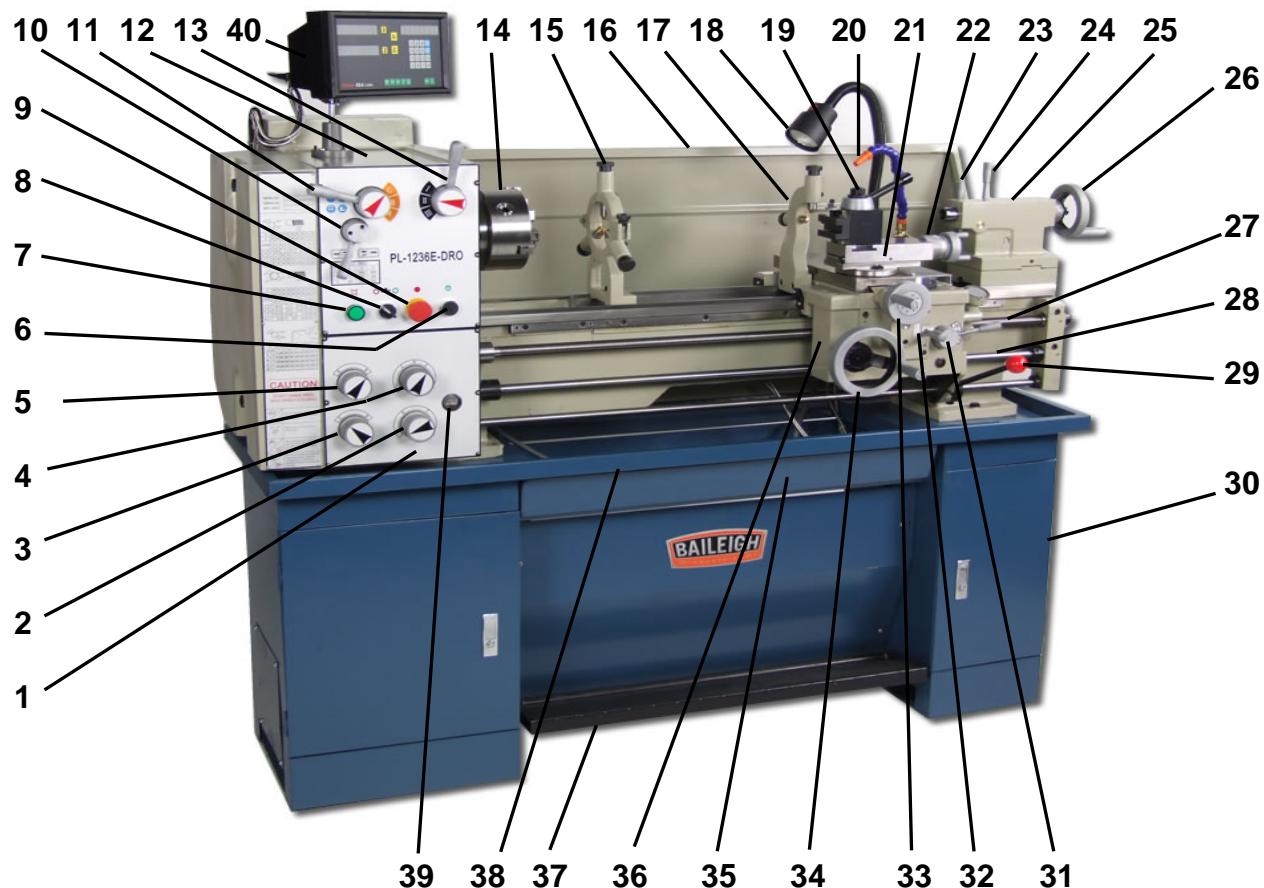
Note: If not already moved, remove the #4 wire from the #5 screw and place as shown.



2 hp, 50 hz single phase induction motor
Reposition the motor jumpers as shown above for the voltage you will be running at.



GETTING TO KNOW YOUR MACHINE



- | | | |
|-----------------------------|-------------------------------|------------------------------|
| 1. Gear Box | 15. Steady Rest | 29. Fwd / Rev. Lever |
| 2. Feed Selector Handle | 16. Splash Guard | 30. Base Cabinet |
| 3. Feed Selector Handle | 17. Follow Rest | 31. Engage Lever |
| 4. Feed Selector Handle | 18. Halogen Work Light | 32. Feed Selector |
| 5. Feed Selector Handle | 19. Tool Post | 33. Cross Traverse Handwheel |
| 6. Jog - Push Button | 20. Coolant Nozzle | 34. Longitudinal Handwheel |
| 7. Green - Indicator Light | 21. Top Slide | 35. Drain Pan |
| 8. Coolant Switch | 22. Compound Handwheel | 36. Apron |
| 9. E-Stop Switch | 23. Quill Clamping Lever | 37. Foot Brake |
| 10. Feed Direction Selector | 24. Tailstock Clamp Lever | 38. Oil Plate |
| 11. Speed Selector Handle | 25. Tailstock | 39. Oil Sight Gauge |
| 12. Headstock | 26. Tailstock Quill Handwheel | 40. 2 axis digital readout |
| 13. Speed Selector Handle | 27. Leadscrew | |
| 14. Spindle and Chuck | 28. Feed Rod | |



Steady Rest

The steady rest on the **PL-1236E-DRO** lathe is used to support long, small diameter stock that otherwise could not be turned. The steady rest can also be used in place of the tailstock when access to the cutting tool is required at the outboard end of the piece part. By loosening the nut in the base, the steady rest can be re-positioned along the slide rails.



figure 6

Live Center

The live center is used when the chuck alone can not support longer length material. Stock that extends beyond the chuck more than three times its diameter should be supported by the live center. The barrel of the tailstock and the end of the live center have a Morse #3 taper. Before inserting the live center, wipe it clean and make sure the barrel entry is also clean. Insert the end of the live center into the barrel until it seats. To remove the live center, crank the barrel "**OUT**" until you see the knockout tool insertion slot as indicated by the arrow in (fig. 8). Insert a knockout tool into the slot and give it a sharp tap to push out the live center. You can also insert the tool and crank the barrel "**IN**" which will push out the live center. Be sure to keep the live center from falling and becoming damaged.

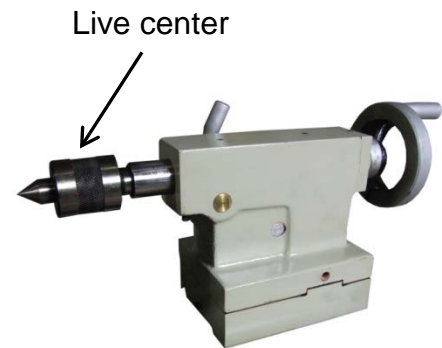


figure 7

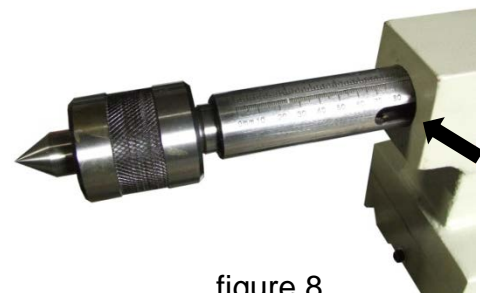


figure 8



Follow Rest

The follow rest is typically used for small diameter stock to prevent the piece part from “springing” under pressure from the tool. The follow rests, which are opposite the tool post, act as supports to counter balance the force exerted on the piece part by the tool. The tool and the supports form a triangle around the part to help minimize vibration. The follow rest has two adjustable brass points to allow rotation of jobs without causing abrasive scratches. The soft points will need replacement when they wear out.



figure 9

Tailstock

The tailstock consists of the base, base lock, barrel, barrel lock, hand wheel, body, and screw.

The tailstock on a lathe has many functions including supporting the piece part opposite the headstock. It also has a barrel imprinted with graduations in millimeters and inches and a #3 Morse taper for securing drill bits, and centers. The tailstock can be easily set or adjusted for alignment or non-alignment with respect to the center of the spindle. By turning the tailstock hand wheel you can advance or retract the barrel in the tailstock.

Both live and dead centers have 60° conical points to fit center holes in the end of the cylindrical piece part.



figure 10



figure 11



Faceplate

The faceplate is used for holding work that cannot be swung between centers because of its shape and dimensions. The T-slots and other openings on its surface provide convenient locations for anchor bolts and clamps to secure the piece part. The faceplate can be mounted to the spindle after removing the chuck.



figure 12

Quick Change Tool Posts

The **PL-1236E-DRO** comes with a quick change tool post Model 250-200 (Phase II style) and four tool holders. These tool holders will all hold up to a 5/8" square tool. Included are (3) Model 250-201 holders and (1) Model 250-202 holder with a V-groove in the bottom of the holder so it can also accommodate a boring bar.

- The 250-200 tool post is the same as a "BXA" style. The 250-201 tool holder is a BXA-1 and the 250-202 tool holder is a BXA-2
- There are other tool holders and tool posts available. In the (Phase II style) there are models 250-100, 250-200 and 250-300. The 100, 200, and 300 designate the size of the tool post and holders. The corresponding numbers for these are AXA, BXA, and CXA. The 100 or AXA being for 1/2" (12mm) square tooling, 200 or BXA for 5/8" (16mm), and 300 or CXA for 3/4" (19mm).

Note: If you have a 200 series tool post, only 200 or BXA series tool holders will fit it, and in order to use other tool holders, a different tool post will have to be purchased.



figure 13



figure 14



LATHE SETUP



WARNING

DO NOT start the lathe until all machine assembly has been completed and you have been properly trained and understand all control functions. When performing machine assembly make sure to follow proper lockout / tagout procedures. Failure to comply could result in accidental starting of the lathe resulting in **SERIOUS OPERATOR INJURY OR DEATH.**

Lubrication

Caution

Please fill the machine with oil, before operating the machine.

It is recommended to review the lubrication procedure located in the **Maintenance** section of this manual. This will help you to become familiar with the locations of lubrication fittings and areas where lubrication is required.

Chucks

The **PL-1236E-DRO** metal lathe has a 6" (160mm) 3-jaw chuck already installed. This is a scroll- type chuck which means that all three jaws close together and are self centering. Also included is an 8" (200mm) 4-jaw chuck. The four jaws move independently of each other and are used for holding odd shaped pieces or where it is necessary to have zero tolerance.

Both the 3-jaw chuck and the 4-jaw chuck have Cam lock mounting. Note that there are lines stamped on the cam and on the chuck (fig. 15). These indicate whether the cam is in a locked position or an unlocked position where the chuck can be removed. A chuck key is used to turn the locking cams as shown in (fig. 16).

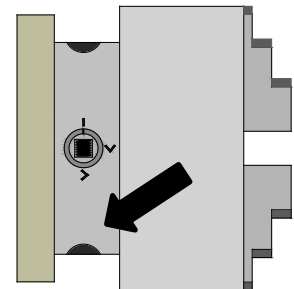


figure 15



WARNING

NEVER leave a chuck key in the chuck if the machine is not in use. If the lathe is accidentally started with the key in place, it can become a projectile and cause serious **INJURY OR DEATH.**



figure 16



To Remove a Chuck

- 1) Lay a piece of plywood on the lathe bed directly beneath the chuck. This will help protect the ways if the chuck should fall.



CAUTION: Use extreme care when installing or removing a chuck so that your hands do not become trapped between the chuck and the plywood.

- 2) Turn the first cam counterclockwise (**ccw**) using the chuck key until the line on the cam is aligned with the line on the spindle housing as shown in (fig. 17).
- 3) Rotate the spindle housing to access the remaining cams and turn each one counterclockwise (**ccw**) until the marks are aligned. Make sure to support the chuck with one hand as you turn the last cam. You should now be able to remove the chuck.
- 4) If the chuck is still tight on the spindle, tap the back of the chuck with a wooden or rubber mallet while supporting the bottom of the chuck with your other hand. If needed, rotate the chuck a bit, and tap again. Make sure all the marks on the cams and spindle are properly aligned.

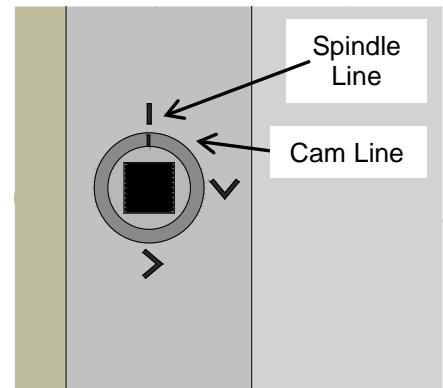


figure 17

To Install a Chuck

- 1) Lay a piece of plywood on the lathe bed directly beneath the spindle housing. This will help protect the ways if the chuck should fall.
- 2) Lift the chuck up to the spindle and insert the camlock pins into the face of the spindle.
- 3) While supporting the weight of the chuck, use the chuck key to turn one of the cams until the cam line is between the two "V" marks on the spindle as shown in (fig. 18).
- 4) Rotate the spindle and repeat step 3 for the rest of the cams.
- 5) Starting with the first cam, snug up the cams.
- 6) Finally go around and tighten all of the cams.

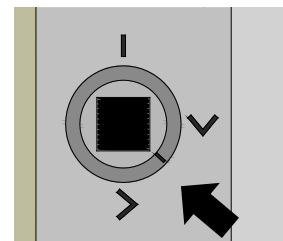


figure 18



Preparing The Four Jaw Chuck For Installation

- 1) With the 3-jaw chuck removed, take note of how far the camlock studs protrude from the back face of the chuck and note the dimensions.
- 2) Thread each of the 4-jaw cam lock studs into the back of the 4-jaw chuck using the dimension obtained from step 1. Screw in the locking cap screws that keep the studs from coming out.
- 3) Lay a piece of plywood on the lathe bed directly beneath the spindle housing. This will help protect the ways if the chuck should fall.
- 4) Lift the chuck up to the spindle and insert the cam lock pins into the face of the spindle.
- 5) While supporting the weight of the chuck, use the chuck key to turn one of the cams until the cam line is between the two "V" marks on the spindle. (fig. 20)
- 6) Rotate the spindle and repeat step 3 for the rest of the cams.
- 7) Starting with the first cam, snug up the cams.
- 8) Finally go around and tighten all of the cams.



figure 19

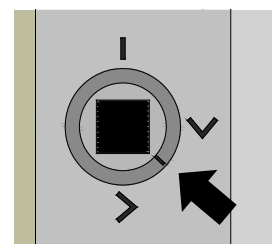


figure 20

Preparing The Faceplate For Installation

- 1) With the 3-jaw chuck removed, take note of how far the cam lock studs protrude from the back face of the chuck and note the dimensions.
- 2) Thread each of the faceplate cam lock studs into the back of the faceplate using the dimension obtained from step 1. Screw in the locking cap screws that keep the studs from coming out.
- 3) Lay a piece of plywood on the lathe bed directly beneath the spindle housing. This will help protect the ways if the faceplate should fall.
- 4) Lift the chuck up to the spindle and insert the cam lock pins into the face of the spindle.



figure 21



5) While supporting the weight of the faceplate, use the chuck key to turn one of the cams until the cam line is between the two “V” marks on the spindle. as in (fig. 22).

6) Rotate the spindle and repeat step 3 for the rest of the cams.

7) Starting with the first cam, snug up the cams.

8) Finally go around and tighten all of the cams.

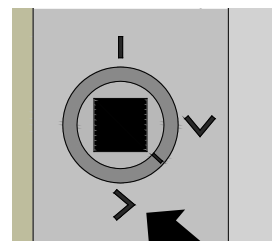


figure 22

OPERATING CONTROLS

- Green indicator light (7) will be lit when machine is powered up.
- Two position switch (8) to start and stop coolant pump.
- Pressing the **E-Stop Button (9)** will immediately stop the machine in the event of incorrect operation or a dangerous situation. Twist the emergency stop button clockwise (**cw**) to reset.
- Pressing button (6) will jog the spindle during setup. (If **Fwd./Rev.** handle is in neutral the jog button will not work.)

Spindle Speeds

CAUTION : Never change spindle speeds while the motor or spindle is in motion.

The speed of the spindle is set by the position of the two speed control handles (fig. 23). Spindle speed is measured in RPM (revolutions per minute) The following spindle speeds are possible: 70, 200, 220, 270, 360, 600, 800, 1000, and 1400 RPM.

Select a speed from the chart (fig. 24).

Example: 360 RPM

Move the left selector handle until the red arrow is pointing to the “B”. Move the right selector handle until the red arrow is pointing to the “II”.



figure 23

SPINDLE SPEED			
	I	II	III
A	270	1400	800
B	70	360	220
C	200	1000	600

figure 24



Feed Direction

CAUTION : Never change spindle speed while the motor or spindle is in motion.

The **PL-1236E-DRO** lathe can cut both left and right while feeding or threading, and across the ways when performing facing operations. The feed direction is controlled with the selection handle and is shown in the neutral position in (fig. 25). When rotated to the left position the apron will move to the right along the bed, as indicated by the arrow, or the cross feed will travel away from the operator.

Rotating the handle to the right will reverse the direction of the feeding or threading.

NOTE: Never force any of the selection handles on the lathe. If a handle will not engage, rotate the chuck carefully by hand, while applying light pressure to the selector handle. As the chuck rotates the gears will align, allowing the selector to engage.

Quick Change Selection Knobs

The four knobs as shown in (fig. 26) are used to change the feed rate or number of threads-per-inch. This part of the lathe is commonly referred to as the Quick Change Gear Box. The two knobs on the left: **A, B, & C, D** and the two knobs on the right: **1, 2, 3, & 4** and **R, S, T, & V** are set to a selected value from the charts on the following page. The charts are also located on the end of the gear shroud which is attached to the left side of the lathe.

Important:

Do not force the selection knobs into position. If they do not engage, carefully rotate the chuck by hand while keeping light pressure on the knob. As the chuck is rotated, it aligns the gears, and the selector will engage.

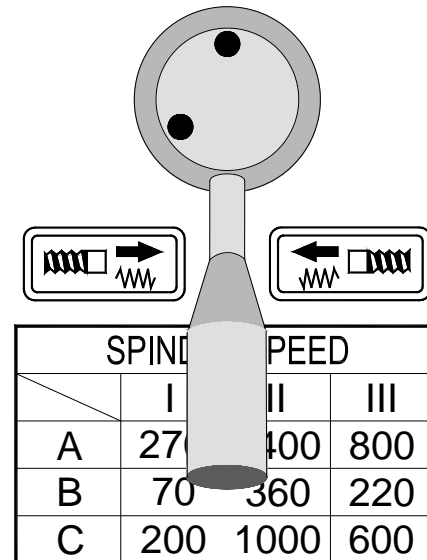


figure 25

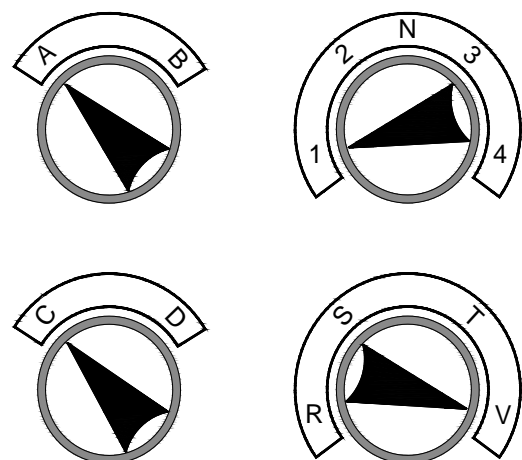


figure 26



The feed rate charts to the right show some of the more typical settings that might be used. The chart in (fig. 27) shows threads per inch while the chart in (fig. 28) shows distance between threads in (mm).

Besides changing the selection knobs, you may also need to change gears, labeled “a” and “b” in the diagram(s). The values in the chart(s) for lines “a” and “b” indicate the number of gear teeth.

Note: Each gear has the number of teeth stamped on it's face for easy identification.

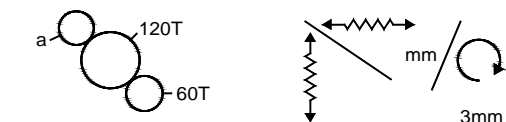
As an example we will pick 11 ½ th'ds/in. from the chart. Projecting up in the chart shows “a” as a **60T** gear and “b” as a **69T** gear. The quick change selection knobs should be set at **1, V, B, & D**.

The chart in (fig. 29) shows the longitudinal and cross feed values in (mm) and (fig. 30) shows the values in (inches). To perform a longitudinal cut in inches, we'll use .0205"/revolution as an example. Gear “a” will need to be changed to **60** Tooth. Change the selection knobs to **B, D, and R**.

If using the metric chart (fig.29) the procedure would be the same.

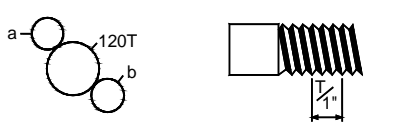
←→ This symbol indicates longitudinal feed.

↑↓ This symbol indicates cross feed rates.



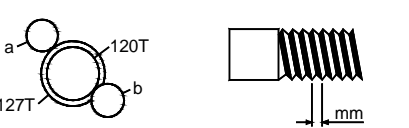
a		60T				30T			
LEVER		T	S	R	V	T	S	R	V
A	D	1.392	1.300	1.044	.835	.696	.650	.522	.418
B	D	.380	.351	.282	.226	.188	.175	.141	.113
A	C	.696	.650	.522	.418	.348	.325	.261	.208
B	C	.188	.176	.141	.113	.094	.088	.070	.056
A	C	.348	.325	.261	.208	.174	.162	.130	.104
B	C	.094	.088	.070	.056	.047	.044	.035	.028
B	C	.174	.162	.130	.104	.087	.081	.065	.052
B	C	.047	.044	.035	.028	.024	.022	.017	.014

figure 29



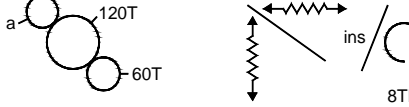
a	60	60	60	60	60	60	56	60	60
b	60	54	57	60	66	69	54	78	63
LEVER		4	1	1	1	1	2	1	3
		V	V	V	V	V	V	V	V
A	D	4	4 ½		5	5 ½	6	6 ½	7
B	D	8	9	9 ½	10	11	11 ½	12	13
A	C	16	18	19	20	22	23	24	26
B	C	32	36	38	40	44	46	48	52

figure 27



a	56	60	60	30	60	60	30	60	56
b	60	60	60	60	60	60	60	60	63
LEVER		4	1	3	4	1	3	1	3
		R	R	S	T	V	R	T	V
A	D	7.0	6.0		5		4.5	4.0	
B	D	3.5	3.0		2.5		2.25	2.0	1.8
A	C	1.75	1.5	1.4	1.25	1.2		1.0	0.9
B	C		0.75	0.7		0.6		0.5	0.45

figure 28



a		60T				30T			
LEVER		T	S	R	V	T	S	R	V
A	D	.0548	.0512	.0411	.0326	.0274	.0256	.0205	.0164
B	D	.0187	.0175	.0146	.0112	.0094	.0087	.0070	.0058
B	D	.0274	.0261	.0205	.0164	.0137	.0128	.0102	.0082
A	C	.0094	.0087	.0070	.0056	.0047	.0044	.0035	.0028
A	C	.0137	.0128	.0102	.0082	.0069	.0064	.0051	.0041
B	C	.0047	.0044	.0035	.0028	.0024	.0022	.0017	.0014
B	C	.0069	.0064	.0051	.0041	.0034	.0031	.0025	.0020
B	C	.0024	.0022	.0017	.0014	.0012	.0011	.0009	.0007

figure 30



Changing Gears for Thread Selection

In order to cut threads as listed in the charts (fig. 27 & 28) and set longitudinal feed and cross feed rates (fig. 29 & 30) you will need to make a few gear changes.

DISCONNECT POWER TO MACHINE

- 1) Take off the gear cover (located on the left side of the lathe) by removing the two thumb nuts.
- 2) Remove the socket bolt and flat washer to replace either gear "a" or gear "b" with another gear. Note: DO NOT place anything hard between the gears to prevent rotation or you could break the teeth.
- 3) Loosening the clamp bolt and pivot nut will allow you to rotate the bracket.
- 4) To move the large gears towards or away from the small gears, loosen the slide nut.
- 5) After the gears are changed out, make sure they mesh properly before tightening the slide nut, pivot nut, and clamp bolt.



figure 31

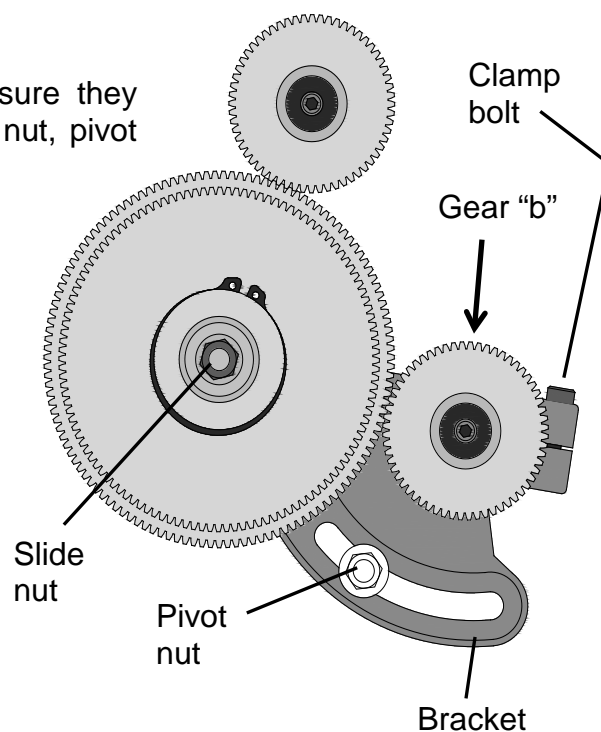


figure 32



Feed Lever

The Feed lever (32) is used to select between the longitudinal and cross slide powered motions. (Fig. 33) shows the handle in the pulled out neutral position. Pull up on the pivot handle to engage the longitudinal motion. To get to the cross slide position from neutral, push in and lower the handle.

Note: Make sure the half nut engagement lever (31) is disengaged (at neutral position) before operating the feed lever (32). There is an interlock mechanism between the auto feeding and the thread cutting engagement.

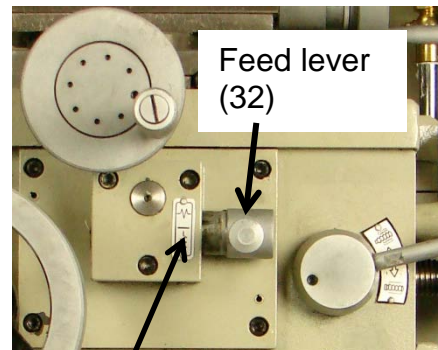


figure 33



Longitudinal



Cross slide

Half Nut Engage Lever

The half nut engagement lever (31) should be in the down (**Engaged**) position when cutting threads. When in this position the half nut will tighten onto the lead screw and provide longitudinal travel to the carriage.

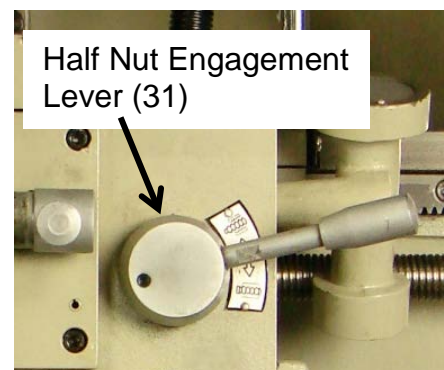
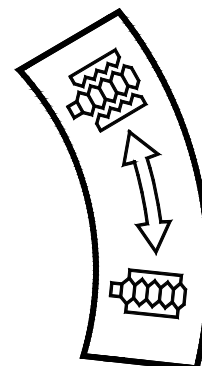


figure 34



Disengaged

Engaged



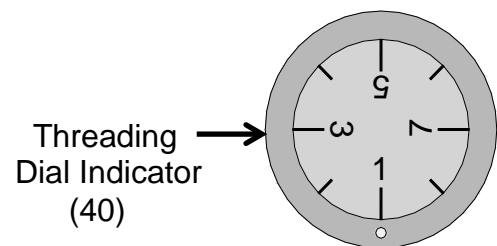
Threading Dial Indicator

The threading dial indicator (40) is located on the right hand side of the apron. It is used when cutting imperial threads and tells you when to engage the half nut to begin the threading process. The indicator face has eight lines and four numbers printed on the dial. An indicator pin is located at the bottom of the rim. The dial is mounted to a shaft that has a small gear mounted at the opposite end. By loosening a socket cap screw you can pivot the housing to either engage or disengage from the lead screw. When engaged the dial will turn as the spindle rotates. If the dial does not turn re-adjust the housing position.



figure 35

When the half nut is engaged the dial stops turning. By carefully engaging the half nut as the correct number or line passes by the indicator mark, a thread can be established and the lead maintained through multiple passes, until the required depth is reached.



Using the chart in (fig. 36), to cut 20 threads per inch, engage the half nut when the 1,2,3, or 4 is at the indicator mark. You must determine how long you want the thread to be. When you reach that length, disengage the half nut. Return the carriage to the beginning of the cut. Watch the dial and when the 1,2,3, or 4 comes around to the indicator mark, engage the half nut. Repeat the procedure until you have reached the desired depth of thread required.

The other scale values are as follows:

- 1 = Engage only on one.
- 1 • 3 = Engage on 1 or 3
- 1 – 4 = Engage on 1,2,3, or 4
- 1 – 8 = Engage on any number or line

INDICATOR TABLE					
T.P.I	SCALE	T.P.I	SCALE	T.P.I	SCALE
4	1-4	13	1	44	1-4
4 1/2	1	14	1•3	46	1•3
4		16	1-8	48	1-8
5	1	18	1•3	52	1-4
5 1/2	1	19	1	56	1-8
6	1•3	20	1-4	64	1-8
6 1/2	1	22	1•3	72	1-8
7	1	23	1	76	1-4
8	1-8	24	1-8	80	1-8
9	1	26	1•3	88	1-8
9 1/2	1	28	1-4	92	1-4
10	1•3	32	1-8	96	1-8
11	1	36	1-4	104	1-8
11 1/2	1	38	1•3	112	1-8
12	1-4	40	1-8		

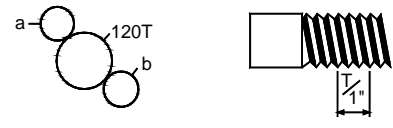
figure 36



Thread Cutting Operation

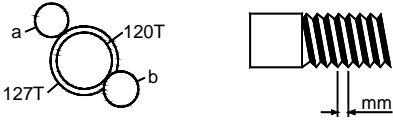
In order to obtain the desired thread, change gears must be installed correctly, using the values in the charts. Failure to do so will result in incorrect threads.

First rotate the lead screw by moving the feed/thread selector (4) to any position and making sure the feed selector knobs (2), (3), (4), & (5) are engaged. Operate downward, the thread cutting engagement lever (31) and it will engage with the lead screw to obtain the longitudinal travel of the carriage; namely the thread cutting feed. Make sure the feed axis selector is disengaged (at neutral position) before operating the thread cutting engagement lever (31) because there is an interlock mechanism between the auto feeding and thread cutting engagement. Direction of the thread cutting can be chosen by turning the feed direction selector (10) at the headstock. There are 31 thread pitches each in Imperial and Diametric as well as 26 metric thread pitches which can be obtained by turning the feed selector handles (2), (3), (4), & (5).



a	60	60	60	60	60	60	56	60	60
b	60	54	57	60	66	69	54	78	63
LEVER	4	1	1	1	1	1	2	1	3
	V	V	V	V	V	V	V	V	V
A D	4	4 1/2		5	5 1/2		6	6 1/2	7
B D	8	9	9 1/2	10	11	11 1/2	12	13	14
A C	16	18	19	20	22	23	24	26	28
B C	32	36	38	40	44	46	48	52	56

figure 37



a	56	60	60	30	60	60	30	60	56
b	60	60	60	60	60	60	60	60	63
LEVER	4	1	3	4	1	3	1	3	3
	R	R	S	T	V	R	T	V	V
A D	7.0	6.0		5		4.5	4.0		
B D	3.5	3.0		2.5		2.25	2.0	1.8	1.6
A C	1.75	1.5	1.4	1.25	1.2		1.0	0.9	0.8
B C		0.75	0.7		0.6		0.5	0.45	0.4

figure 38

t



Carriage Controls

The carriage hand wheel when rotated, allows the cutting tool to travel along the length of the lathe bed. The cross slide hand wheel when turned moves the cross slide in and out perpendicular to the lathe bed. At the top of the carriage is the compound slide which allows linear movement of the cutting tool at any preset angle.



Compound Slide
Hand wheel

Cross Slide
Hand wheel

Carriage
Hand wheel

figure 39

Carriage Hand wheel

Rotating the hand wheel clockwise (**cw**) will move the carriage towards the tailstock. Rotating the hand wheel counterclockwise (**ccw**) will move the carriage towards the headstock. This is helpful when setting up the lathe for turning or when manual movement is required during turning operations.

Compound Slide Hand wheel

The hand wheel on the top slide controls the position of the cutting tool in relation to the piece part. The top slide is adjustable for any angle. The graduated dial can be adjusted by holding the hand wheel with one hand and turning the dial with the other. Angle adjustments are made by loosening the hex nuts on the base of the top slide.

Cross slide Hand wheel

The cross slide hand wheel moves the top slide towards and away from the piece part. Turning the hand wheel clockwise (**cw**) moves the slide towards the piece part and counterclockwise (**ccw**) moves the slide away from the part. The graduated dial can be adjusted by holding the hand wheel with one hand and turning the dial with the other.



Spindle Rotation Control

Spindle rotation is controlled from the handle on the right hand side of the carriage as indicated in (fig. 40). Move the handle down and the spindle will rotate in a counterclockwise (**ccw**) direction. Move the handle up and the spindle will rotate in a clockwise (**cw**) direction. The middle (**neutral**) position stops the motor.

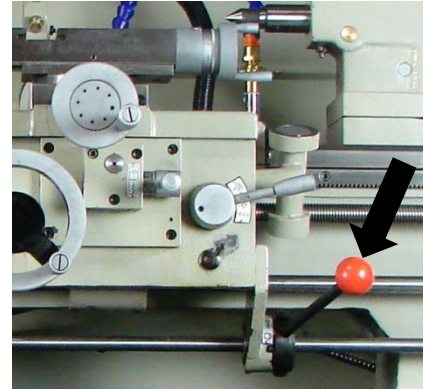


figure 40

Tool Post and Holder

The Baileigh **PL-1236E-DRO** comes with a quick change tool post and (four) tool holders. Cutting tools can be secured and removed by tightening or loosening the clamping screws on top of the holder. Located at the top of the tool post is a knurled thumb wheel, which when rotated, centers the cutting tool in the holder. The handle on the tool post can be rotated to lock and unlock the tool holder in the tool post dovetail ways. To rotate the tool post, loosen the nut at the top of the tool post.



figure 41

Tailstock Controls

(Fig. 42) shows the tailstock whose primary use is for holding centers and drill chucks. Turning the hand wheel advances or retracts the barrel in the tailstock. The graduated dial on the hand wheel is adjustable. The top lock lever locks the tailstock barrel in place. The side lock lever locks the tailstock in place on the lathe bed.

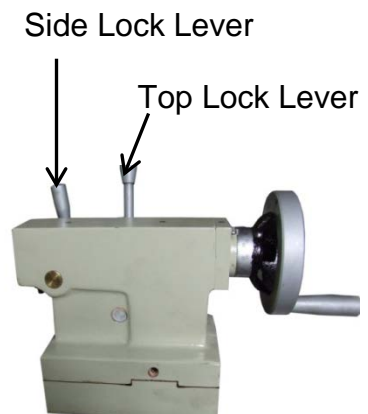


figure 42



WARNING

Before powering up machine, make sure Fwd/Rev. handle is in the center (neutral) position. (See fig. 43)

All machinery poses a potential for danger when being operated. Accidents result from lack of machine knowledge and failure to pay attention. Always be cautious and alert to the potential for serious injury. Follow safety rules and precautions to lessen the chances of an accident.

Pin will engage hole when
In neutral position.

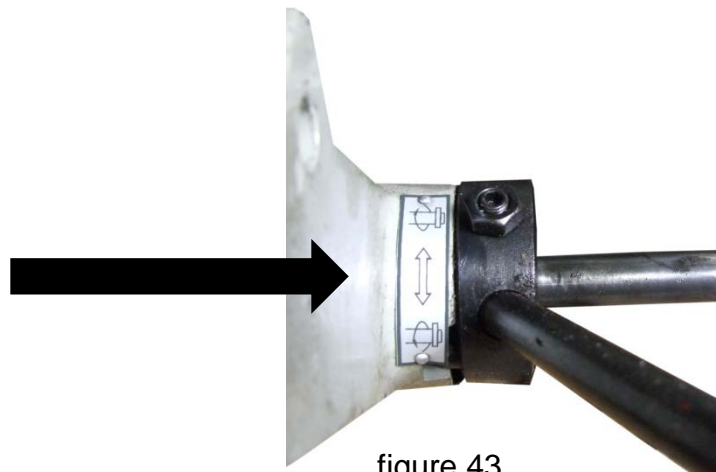


figure 43

TEST RUN

- 1) Before proceeding with a test run, check that the machine is securely mounted in place and that you have read and understand the Operator Safety Instructions at the beginning of this manual.
- 2) Make sure the machine is properly grounded and the fwd/rev handle is in neutral.
- 3) Inspect the lathe bed and rest of the machine for any tools and loose parts. Check that all guarding is in place, and that nothing is obstructing the movement of the chuck.
- 4) Check that the gearbox and carriage sight glasses show adequate oil levels.
- 5) Check the tension of the two V-belts located under the gear cover. You should be able to depress the belts about 1/2" (12.7mm) with normal finger pressure. If they are too tight you could damage the shaft bearing.



- 6) Select the slowest spindle speed (70 RPM) and let the machine run at that speed for 20 minutes. If everything seems to be functioning normally, increase the spindle speed a step at a time until you reach the maximum speed of 1400 RPM. The chart in (fig. 24) shows the positions of the handles for the various speeds. Run each speed change for approximately 5 minutes. Make sure motor has completely stopped before changing speeds.



WARNING: BEFORE PERFORMING THE FOLLOWING ADJUSTMENTS, LOCKOUT POWER TO THE MACHINE.

MACHINE ADJUSTMENTS

Saddle Gib

Before making adjustments to the saddle gib, loosen the setscrew counterclockwise (**ccw**) as indicated by the arrow in (fig. 44).

It is important that the saddle gib be properly adjusted. A loose gib can cause finish issues on a piece part, and a gib that is adjusted too tight can cause premature wear.

The gib adjustment for the saddle is located on the bottom of the back edge of the slide. The tension on the gib is set with four setscrews and jam nuts (2 at each end) as shown in (fig. 45). The gib can be tightened by loosening the jam nuts and tightening the setscrews. Loosening the setscrews will loosen the gib. A 45° turn of the setscrew will give about 0.005" (0.125mm) take up in the gib. When properly adjusted, the gib strip will drag slightly while moving the apron. **DO NOT over tighten.**

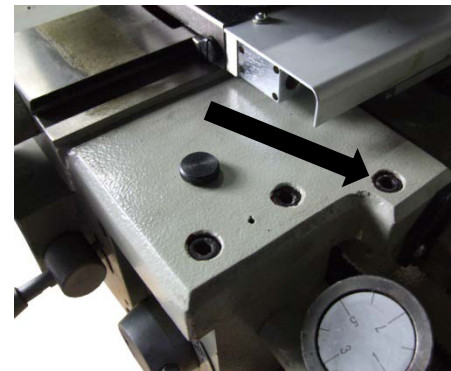


figure 44

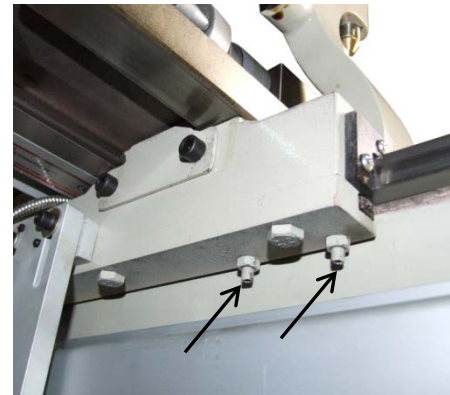


figure 45



Cross-Slide Gib

The gib on the cross-slide (fig. 46) can be adjusted with the screws located at each end. The gib is wedge shaped and by loosening the screw closest to the operator and then tightening the opposite screw, the slide will become looser. Loosening the screw furthest away from the operator and tightening the closer screw will tighten the gib. **DO NOT** over tighten. Adjust the gib so that it creates a slight drag when the slide is in motion. This will indicate that the gib is properly adjusted.



figure 46

Compound Gib

Follow the same procedure as the Cross-slide gib. The gib on the Compound rest (fig. 47) can be adjusted with the screw located at the tool post end. The gib is wedge shaped and by loosening the screw closest to the operator and then tightening the opposite screw, the slide will become looser. Loosening the screw furthest away from the operator and tightening the closer screw will tighten the gib. **DO NOT** over tighten. Adjust the gib so that it creates a slight drag when the slide is in motion. This will indicate that the gib is properly adjusted.



figure 47

Tail Stock Bed Clamp

The angular lock position of the side lock lever can be adjusted by means of a self locking hex head cap screw. It is located on the underside of the tail stock and between the ways of the bed.

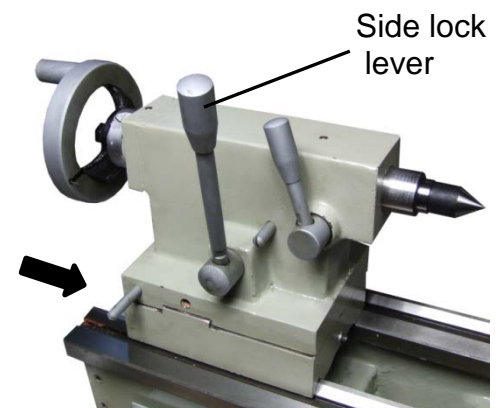


figure 48



Steady Rest

- 1) To adjust the steady rest, first loosen the three lock nuts .
- 2) To open the fingers, turn the knurled screws clockwise (**cw**). If a knurled screw turns hard, back out the setscrew a little.
- 3) Once the piece part is in the chuck and going through the steady rest, tighten the knurled screws counterclockwise (**ccw**) so that the fingers are snug, but not tight against the piece part.
- 4) Tighten the setscrews and then the lock nuts.
- 5) Lubricate the brass points with machine oil.

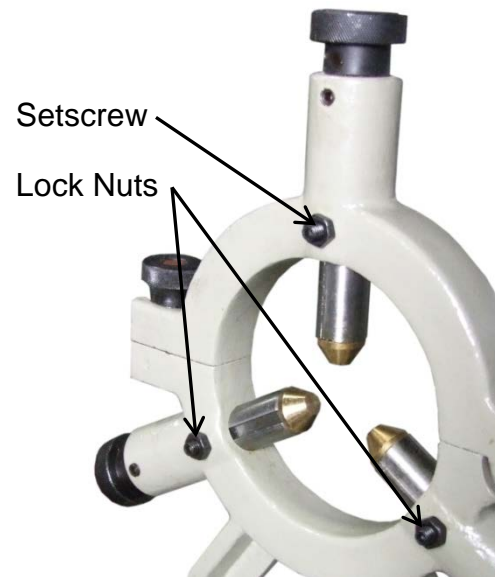


figure 49

Follow Rest

The follow rest is similar to the steady rest except that the third finger is taken up by the tool bit. The follow rest keeps long, small diameter pieces from flexing under the cutting pressure from the tool bit.

- 1) To adjust the follow rest, first loosen the two lock nuts.
- 2) To open the fingers, turn the knurled screws clockwise (**cw**). If a knurled screw turns hard, back out the setscrew a little.
- 3) Once the piece part is in the chuck and going through the follow rest, tighten the knurled screws counterclockwise (**ccw**) so that the fingers are snug, but not tight against the piece part.
- 4) Tighten the setscrews and then the lock nuts.
- 5) Lubricate the brass points with machine oil.

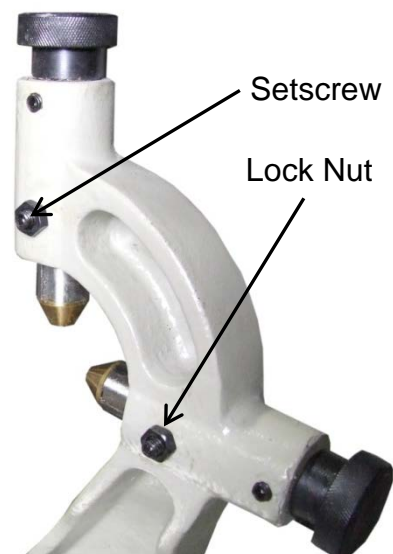


figure 50



Lathe Alignment

When the lathe is installed and ready for use, it is recommended to check the machine alignment before beginning work. Alignment and leveling should be checked regularly to insure continued accuracy.

- 1) Start with a straight steel bar with a diameter of 2.00" (approx. 50mm) x 10" (254mm long).
- 2) Span it in the chuck without using the tailstock.
- 3) Cut off a chip over a length of 6" (152mm).
- 4) Measure and compare the diameters at Point **A** and Point **B**. They should be the same.
- 5) To correct a difference in readings, loosen the four headstock hold-down bolts shown in (fig. 52) that hold the headstock to the bed. Adjust the headstock by backing off the jam nuts and re-positioning the adjusting bolts. Repeat steps 4 and 5 until the **A** and **B** dimensions are the same.

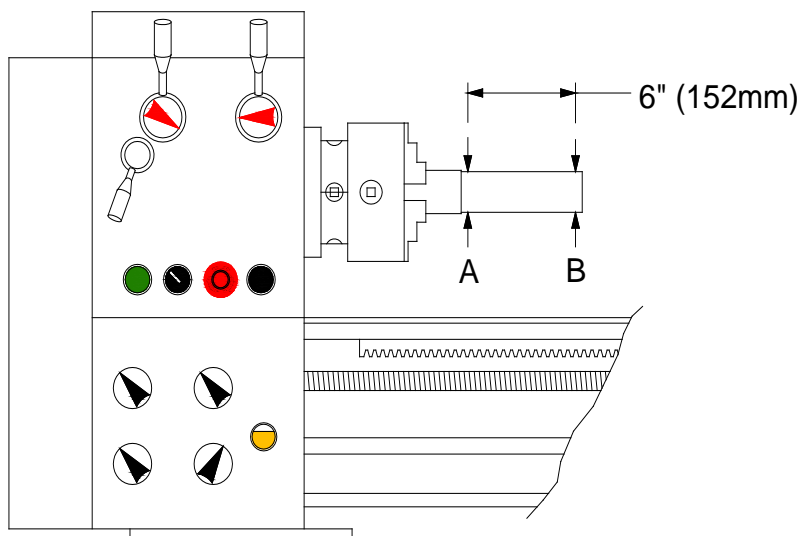


figure 51

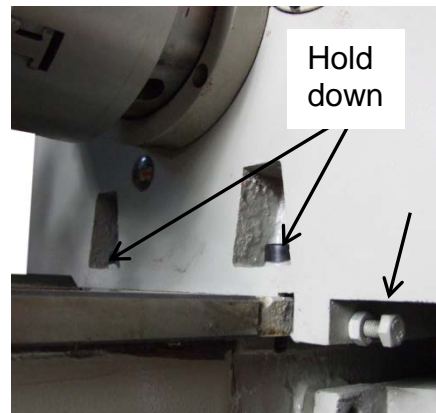


figure 52



To perform a tailstock check, use a 12" (305mm) long ground steel bar fitted between the headstock and the tailstock. Check the alignment by fitting a dial test indicator to the top slide and traversing the centerline of the bar.

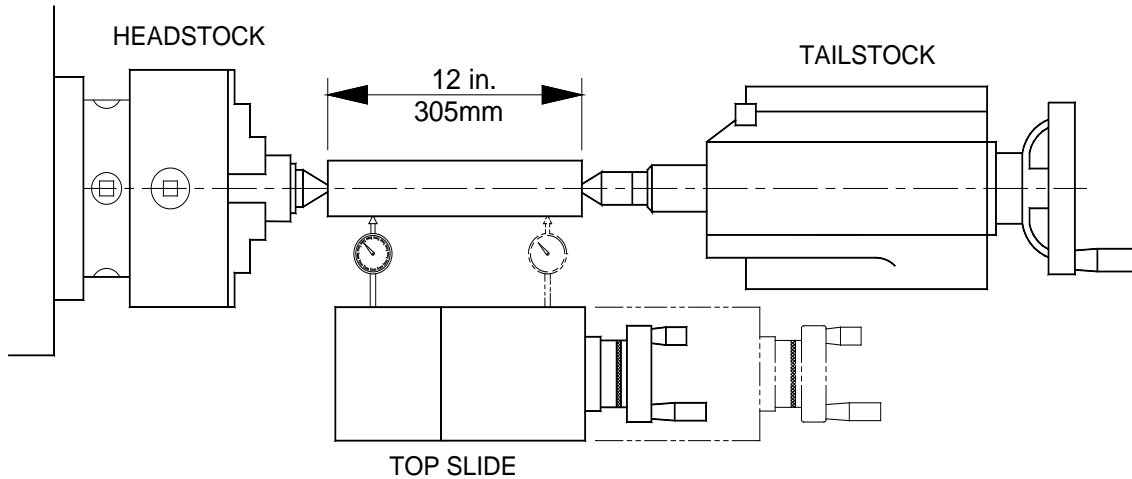


figure 53

To correct any side to side error release the tailstock clamp lever. Using the two adjustment screws on either side of the tailstock base and the scale, lineup the tailstock to the headstock. Tighten the clamp lever and re-check the alignment until perfect.

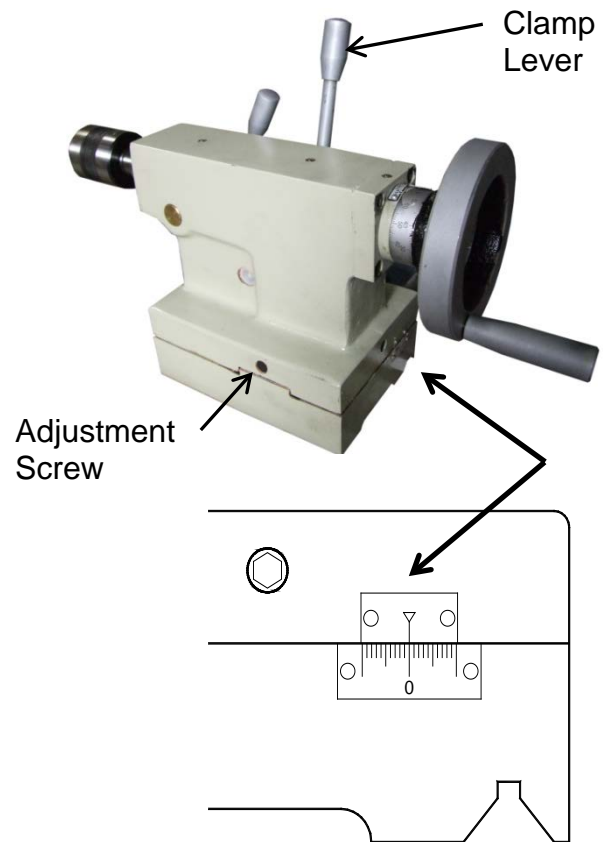


figure 54



V-BELT REMOVAL AND ADJUSTMENT



WARNING: Always disconnect and lockout electric power to the lathe before servicing.

NOTE: Always replace belts as a matched set of two.

V-belts will stretch through usage. Check the tension of the belts every three months. More often if the lathe is used daily.

- 1) Remove the gear cover at the headstock end of the machine to have access to the V-belts.
- 2) Loosen the two bolts as indicated by the arrow in (fig. 55).
- 3) Slide the motor up to release tension on the belts so they can be removed.
- 4) Place the new belts onto the pulleys and let the motor down gently.
- 5) Push on the center of each belt as shown in (fig. 56). When properly tensioned the amount of deflection should be approximately 0.75" (19mm).
- 6) Retighten the motor base cap screws after adjusting or replacing the belts.
- 7) Replace and secure the gear cover.

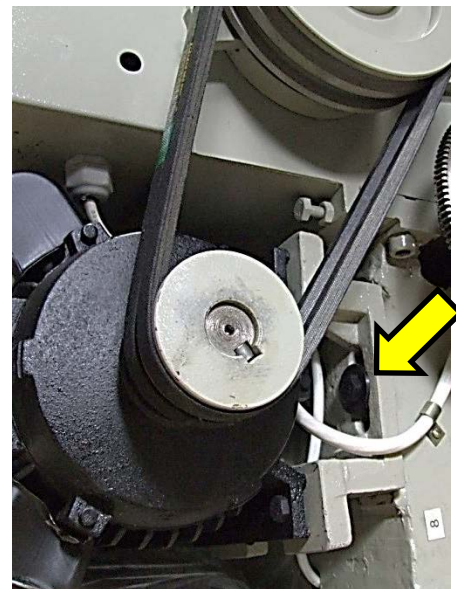


figure 55

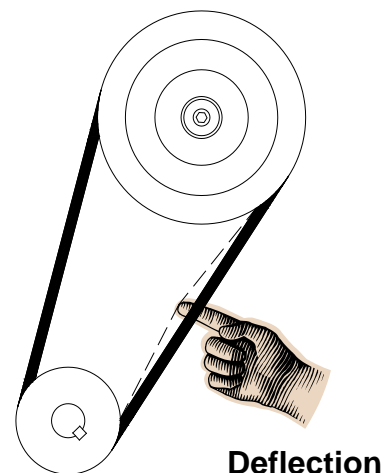


figure 56



LUBRICATION AND MAINTENANCE



WARNING:

Always disconnect and lockout electric power to the lathe before servicing. NEVER lubricate the lathe while it is running.

**MAINTENANCE SHOULD BE PERFORMED ON A REGULAR BASIS
BY QUALIFIED PERSONNEL**

Headstock

The headstock is splash lubricated from an internal reservoir of oil. Ensure that the oil level shows 3/4 full in the oil sight gauge (fig. 57.)

To drain the oil from the headstock, remove the pipe plug as indicated in (fig. 58). Fill the headstock reservoir by removing the plug as shown in (fig. 59) The first oil change should be made after 3 months, and thereafter once a year with a (Shell Tellus #68 viscosity gear oil or equivalent)

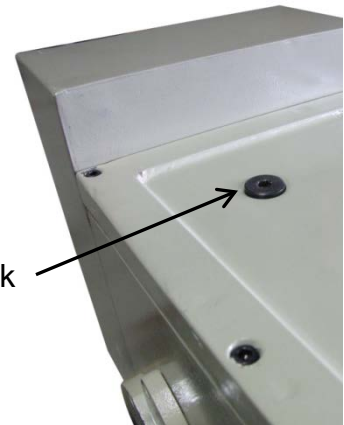


figure 57



Headstock
Oil Drain

figure 58



Headstock
Oil Fill

figure 59



Gearbox

The gearbox is splash lubricated from an internal reservoir of oil. Ensure that the oil level shows 3/4 full in the oil sight gauge (fig. 60.)

To drain the oil from the gearbox, remove the pipe plug as indicated in (fig. 61). Fill the headstock reservoir by removing the plug as shown in (fig. 62) The first oil change should be made after 3 months, and thereafter once a year with a (Shell Tellus #68 viscosity gear oil or equivalent)

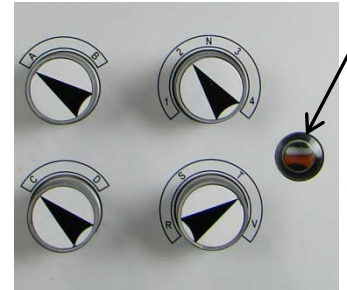


figure 60



figure 61

Gearbox
Oil Drain

Gearbox
Oil Fill



figure 62

Apron

The apron is lubricated from an internal reservoir of oil. Ensure that the oil level shows 3/4 full in the oil sight gauge (fig. 64.)

To drain the oil from the apron, remove the pipe plug as indicated in (fig. 64). Fill the apron reservoir by removing the plug as shown in (fig. 63) The first oil change should be made after 3 months, and thereafter once a year with a (Mobil Vactra #2 or equivalent)



figure 63

Drain →

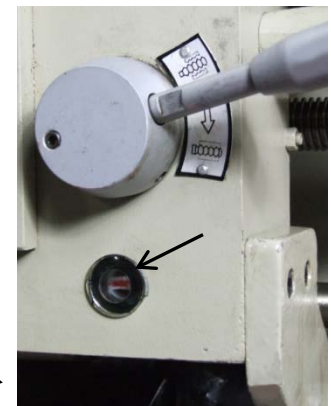


figure 64



Apply lubricant to the oiler points as indicated in (fig. 65) daily. Also oil the cross slide nut , lead screw, and slide ways with a light machine oil or way lubricant on a daily basis. Note: Use a bristle paint brush to first clean the slide ways, lead screw, and feed shaft.

Remove the gear cover on the left end of the lathe and lubricate the change gears with a thick machine oil or grease once a month or as needed.

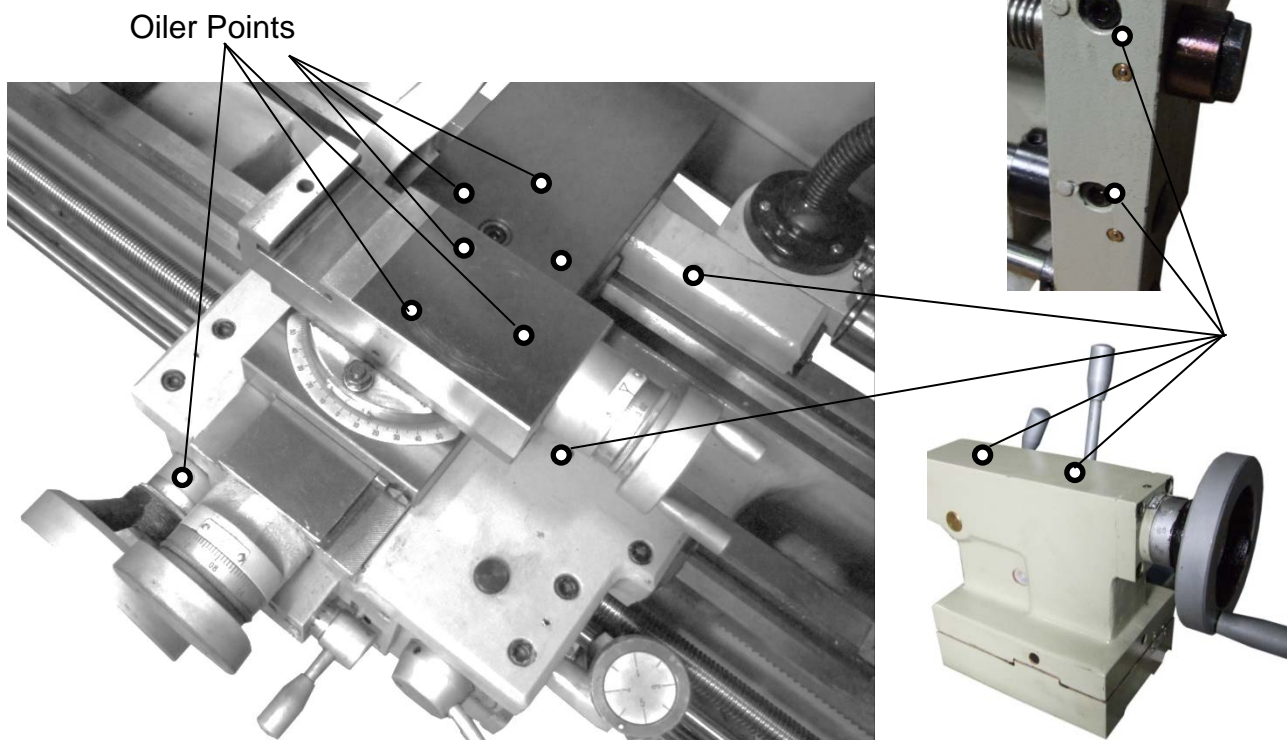
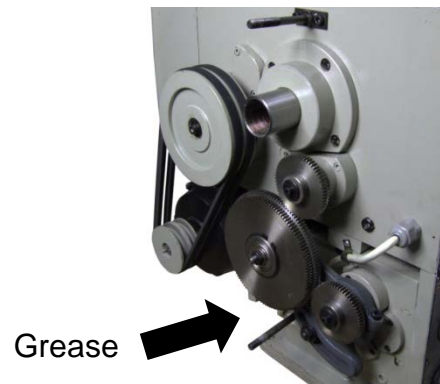


figure 65



Daily Maintenance

- Do a general cleaning by removing dust and metal chips from the machine.
- Top off the coolant tank. (80% of full tank capacity)
- Clean drain screen.
- Check that any guarding, shields, and emergency stop are in good working order.
- Wipe down and re-oil slide ways.
- Check operation of foot brake.

Weekly Maintenance

- Thoroughly clean the machine including the coolant tank.
- Check sight glasses for gear oil levels (add oil as needed)

3 Month Maintenance

- After initial 3 months replace the headstock, gearbox, and apron oil and then yearly after that.

Oil Disposal

Used oil products must be disposed of in a proper manner following your local regulations.

Accessing and Cleaning the Coolant System

- Open the door on the right column to get access to the coolant tank and carefully remove it. (fig. 66)
- Drain the coolant from the tank and wash out any dirt and debris. (Check for anything that might be obstructing the pump inlet.)
- Refill tank with coolant solution.
- Place tank back into the right column and close the door.

Oils for Lubricating Coolant

Any 10:1 (water to coolant) solution will work, however we recommend **Baileigh B-Cool** 20:1 (water to coolant) biodegradable metal cutting fluid. It has excellent cooling and heat transfer characteristics, is non-flammable, and extends tool and machine life. Each gallon of concentrate makes 21 gallons of coolant .



figure 66



Storing Machine for Extended Period of Time

If the Lathe is to be inactive for a long period of time, prepare the machine as follows:

- Detach the plug from the electrical supply panel.
- Remove the chuck, steady rest, follow rest, tool post, and tail stock. Cover with a rust protectant.
- Empty and clean the coolant tank.
- Clean and grease the machine so no bare metal is left unprotected.
- Use desiccant bags (if available) to absorb moisture.
- Cover the machine

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.

TECHNICAL SUPPORT

Our Technical Support department can be reached at **+44 (0)24 7661 9267**. Tech Support handles questions on machine setup, schematics, warranty issues, and individual parts needs.

For specific application needs or future machine purchases contact the Sales Department at: **+44 (0)24 7661 9267** or sales@baileighindustrial.co.uk.

ELECTRICAL PANEL PARTS IDENTIFICATION

ITEM	PART NAME	TAG
1	Transformer 110V	TC
2	Circuit Breaker	QM3
3	Overload Relay	QM1
4	Overload Relay	QM2
5	Contactor	KM1
6	Contactor	KM2
7	Contactor	KA1
8	Contactor	KA0
9	Copper Ground Block	PE
10	Terminal Strip – 6	
11	Terminal Strip - 11	

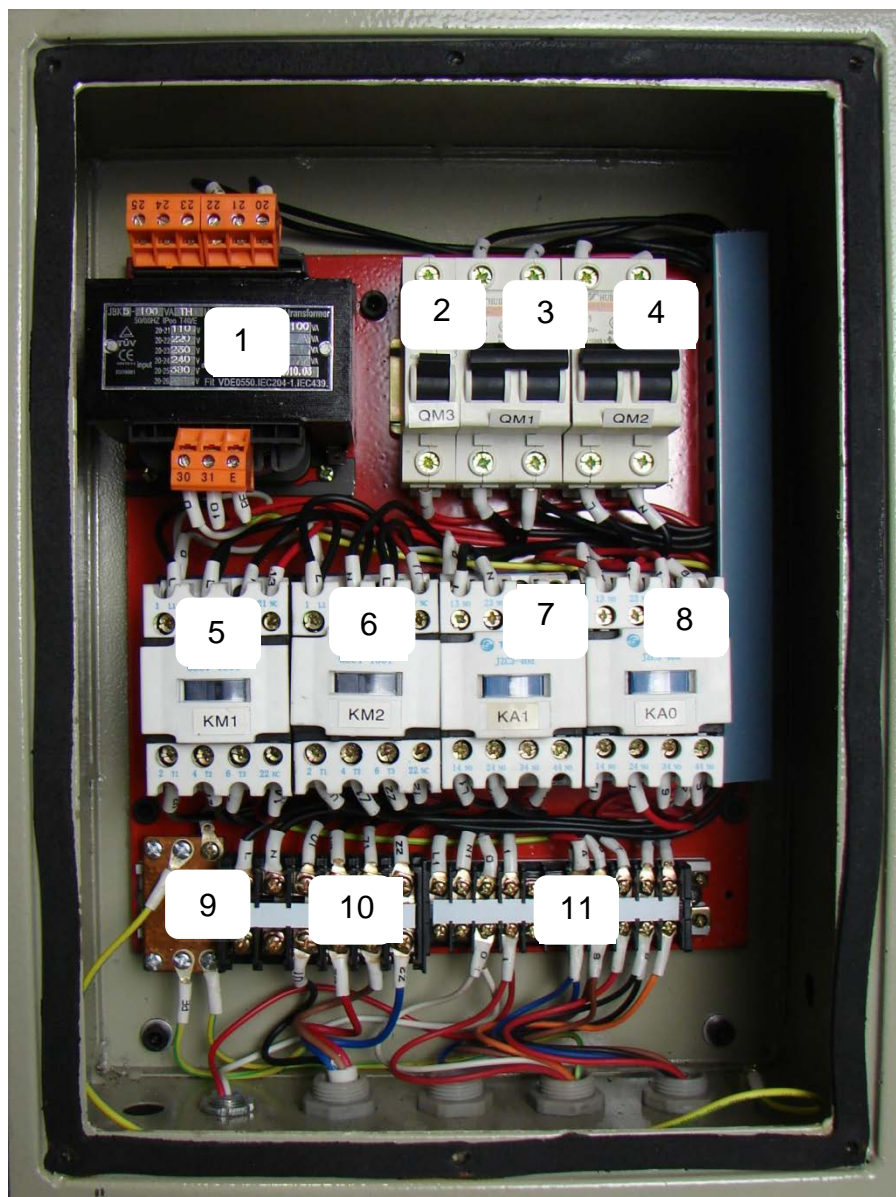


ATTENTION: HAVE ELECTRICAL UTILITIES CONNECTED TO MACHINE BY A CERTIFIED ELECTRICIAN!

Your Baileigh Machine is  Certified

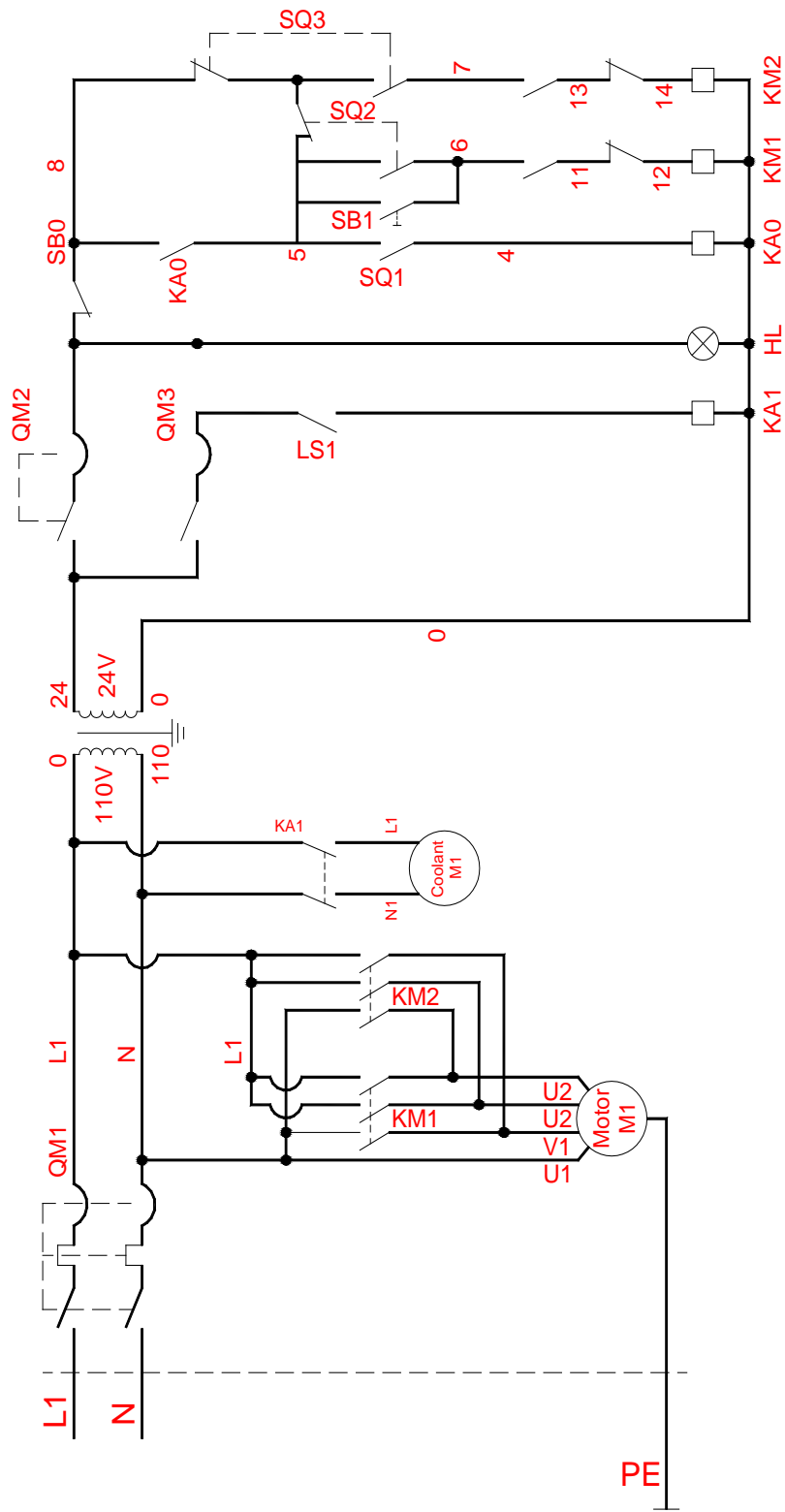
Check if the available power supply is the same as required by the machine (consult nameplate on machine)

ELECTRICAL PANEL COMPONENTS





ELECTRICAL SCHEMATIC





TROUBLESHOOTING



WARNING

Disconnect the machine from power source before troubleshooting.

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Motor Does Not Start	<ol style="list-style-type: none">1. No power.2. Emergency stop button not reset.3. Motor damaged.4. Motor power cable not connected properly.5. Motor circuit breaker tripped.6. Magnetic switch damaged or burned out.7. Transformer damaged.8. Forward/Reverse lever on the carriage is in neutral.9. Foot brake limit switch is faulty.	<p>Check the power source.</p> <p>Release the emergency button by turning the knob to the right.</p> <p>Replace motor.</p> <p>Check the cable connection and reconnect cable. Change cable if worn out.</p> <p>Reset the breaker to ON position.</p> <p>Replace switch.</p> <p>Replace transformer.</p> <p>Make sure lever is either in Forward or Reverse position.</p> <p>Replace limit switch.</p>
Circuit Breaker Trips	<ol style="list-style-type: none">1. Short circuit in power cord or plug.2. Loose connections or short circuit in motor.3. Incorrect circuit breaker installed.	<p>Inspect cord or plug for damaged insulation or shorted wires.</p> <p>Inspect all motor connections.</p> <p>Install correct circuit breaker.</p>
Excessive Machine Noise and Overheating	<ol style="list-style-type: none">1. Excessive material removal from piece part.2. Wrong feed rate or spindle speed.3. V-Belts are slipping.	<p>Decrease depth of cut.</p> <p>Use correct feed rates and spindle feed values.</p> <p>Inspect, tension, and replace belts.</p>



WARNING

Disconnect the machine from power source before troubleshooting.

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Gear Change Levers Will Not Shift	1. Gears not aligned in headstock.	Maintain pressure on the lever while rotating the spindle by hand until the gear falls into place.
Poor Surface Finish	1. Incorrect spindle speed or feed rate. 2. Dull tool or improper tool selection. 3. Depth of cut too much. 4. Too much play in gibs.	Adjust for proper feed rate and spindle speed. Use sharp tools and select proper tool for the application. Use more passes to remove less material. Follow gib adjustment procedure.
Machine Vibrates Excessively at Startup and While Running	1. Piece part is not properly balanced. 2. Check for broken or worn gear. 3. Unbalanced chuck or faceplate.	Re-position piece part so it is centered with the spindle bore. Inspect gears and replace when necessary. Have chuck or faceplate either re-balanced or replaced.
Excessive Vibration of Tool or Machine While Cutting	1. Tool holder is loose. 2. Tool not properly supported in tool holder. 3. Removing too much material from piece part in one pass. 4. Gibs are not properly adjusted. 5. Cutting tool dull or broken.	Clean slide and re-tighten tool holder. No more than 1/3 of tool should extend from holder. Secure tool properly. Take more passes and reduce depth of cut. Check gibs and re-adjust if needed. Re-sharpen or replace cutting tool.



WARNING

Disconnect the machine from power source before troubleshooting.

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Cannot Remove Tool From Tailstock Barrel	<ol style="list-style-type: none">1. Barrel is not retracted completely into tailstock.2. Taper not properly cleaned before inserting tool.	<p>Turn the tailstock hand wheel until it pushes the tool out from the barrel.</p> <p>Always clean barrel taper before inserting tool.</p>
Cross Slide, Compound Rest, or Carriage Feed is Loose	<ol style="list-style-type: none">1. Gibs need adjustment.2. Hand wheel is loose.3. Mechanism for lead screw worn out or in need of adjustment.	<p>Follow procedure to re-adjust gibs.</p> <p>Re-tighten fasteners on hand wheel.</p> <p>Tighten fasteners on lead screw mechanism. Adjust cross slide for backlash.</p>
Hand wheels are Hard to Turn	<ol style="list-style-type: none">1. Gibs are dirty.2. Gibs may be too tight.3. Cross slide backlash setting too tight.	<p>Remove gibs, clean ways, lubricate, replace and re-adjust gibs.</p> <p>Loosen gibs slightly until wheel turns freely.</p> <p>Loosen slightly until free.</p>
Inconsistent Turning Results on Piece Part	<ol style="list-style-type: none">1. Headstock and tailstock not aligned to each other.2. Bed ways are not level front-to-back or side-to-side.	<p>Follow procedure to re-align.</p> <p>Re-level machine as necessary.</p>



WARNING

Disconnect the machine from power source before troubleshooting.

SYMPTOM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Jaws of Chuck Will Not Move	1. Jaws filled with chips and debris.	Remove and clean the jaws, clean and lubricate chuck threads, replace jaws into chuck.
Carriage Will Not Feed or is Hard to Move	1. Lock lever on carriage is over tightened. 2. Gears broken or not engaged. 3. Gibs may be over tightened.	Loosen lock lever so carriage is free to move. Adjust or replace gears. Loosen gibs slightly.
Tailstock Barrel Will Not Move	1. Barrel lock lever is tight	Loosen lever
Tool Has Short Edge Life	1. Cutting speed too high for application. 2. Cross feed set too high. 3. Insufficient cooling	Reduce cutting speed. Lower cross feed. Increase amount of coolant to tool area.



NOTES



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