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INSTRUCTION SHEET FOR CAMERON MICRO DRILL PRESSES SERIES 214 ULTRA-PRECISION AND SUPER-SENSITIVE SMALL-HOLE DRILLING MACHINE

READ CAREFULLY BEFORE OPERATING MACHINE

This precision drill press is shipped partially disassembled in a compact, well-padded carton to assure delivery in good condition and requires a few minutes for assembly.

STEPS IN ASSEMBLING THE PRECISION DRILL PRESS

INSTALLING MOTOR

Insert the shank of the motor mount bracket into the socket at the rear of the drill press head casting. Place the timing belt over pulleys and slide motor to snug belt. (Note: If the belt is run too tightly, it will reduce power and cause undo vibration.) A properly adjusted belt will fit snug on the pulleys.

INSTALLING SPOKED FEED WHEEL HANDLES

1. Loosen the column lock at the rear of the pinion hub bearing, then raise the drill press head to the top of the travel and re-tighten column lock.
2. Screw the three threaded handles into the spoked feed wheel hub.
3. To remove the spoked feed wheel hub, if necessary, use a 1/8" Allen wrench to loosen the set screw on the hub until it can be removed from the pinion shaft.

INSTALL DEPTH STOP

1. Loosen column lock at rear of pinion hub bearing, then lower the drill press head to approximately one inch from the top of the column and re-tighten the column lock.
2. Remove the hexagon nut and bumper pad from the threaded depth stop assembly and insert the lower threaded end through the hole of the depth stop casting, located at the top of the column. Replace bumper pad with hexagonal socket downward, then screw the nut back onto the threaded shank.
3. Screw the threaded depth stop into the head casting until it contacts the motor mount bracket casting. Back out the threads one turn. Then tighten the lock nut and position the bumper pad onto the lock nut. (On models equipped with a dial indicator, the indicator post should be adjusted radially so that the indicator rod will contact the center of the drill press column)

CAUTION – When using the dial depth gauge, it is important to adjust the knurled stop nuts so as to limit the drill head travel, thus preventing the indicator rod from bumping and causing damage to the delicate stops within the indicator.

ADJUSTING THE HEAD BALANCE SPRING

The head balance spring is adjustable to suit particular requirements by loosening the three screws of the friction lock ring at the left side of the head casting one-half turn and turning the spring tensioner with a screwdriver, inserted into the slot at the center of the ring, counter-clockwise to increase spring tension or clockwise to decrease spring tension.

CARE AND MAINTENANCE

DO NOT OVER LUBRICATE. DO NOT USE "3 IN 1 OIL"

This super-sensitive drill press is a fine piece of equipment and should be treated with care. Sliding members should be wiped clean and lubricated periodically using a good quality, non-gumming, light **mineral oil**. The oil cup above the pinion shaft should be filled every month or when the head begins to exhibit sticking during use.

TO REMOVE SPINDLE END PLAY

1. Hold spindle pulley while loosening the lock screw on the side of the pulley.
2. Gently press up on the spindle while pressing down on the pulley and re-tighten the lock screw.

DC MOTOR AND SPEED CONTROL

The DC motor and variable speed control settings have been set at the factory to insure long trouble free service with proper care, and require no lubrication (Replacement brushes are available). In the event of failure, contact the factory for instructions on where to send the motor or speed control for repairs or replacement. (The speed control requires a 15 Amp fuse (ABC-15) if fuse replacement is needed.)

OPERATION

Anyone familiar with the use of drill presses should be able to drill holes to the most exacting requirements after a brief period of practice to get the feel of the machine.

Although most holes can be drilled by feel, the dial depth gauge may be used to your advantage when drilling extremely small holes. It provides the means for letting the operator know when the drill contacts the work piece to start the cut, and the depth of cut which may safely be taken before withdrawing the drill to clear the flutes of cuttings.

As the weight or shape of the work piece does not affect the sensitivity of the drill feed feel, small holes may be accurately and safely drilled in large or otherwise awkward parts by the use of blocks or other external supports.

Parallel intersecting holes having a considerable degree of overlap may be readily drilled from solid material with a sharp conventionally ground drill.

The drill column and head are also readily mountable on other types of existing equipment and may be advantageously utilized in converting or building numerous types of specialized equipment.

Sound judgment should be exercised in selecting spindle speeds for drilling with this drill press due to the possibility of running small drills at speeds which cause the cutting edges of drills, made of high speed steel, to travel at speeds considerably greater than desirable for proper drilling. This can result in friction-burn dulling of the drill tip. As few machines are capable of running anywhere near fast enough for small drills, it is general practice to run machine spindles at the highest available speed when drilling small holes. However, this is not the case with the precision drill press. For more specific information, refer to machinists handbooks.

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CHUCKS

The spindle, pulleys, and motor are dynamically balanced for smooth running. However, imbalance of drill chucks may cause perceptible vibration at higher spindle speeds. The variable degree of imbalance of a drill chuck is dependent upon the variable relationship of its rotating sleeve with its inner body member. Therefore, a chuck may run more smoothly with one size of drill than another.

When production drilling holes not over 1/16", it is advisable to use the 0 to 1/16" drill chuck, as the 0 to 1/16" capacity chuck has been found to have considerably better balance than larger capacity chucks.

TO REMOVE CHUCK

Note: Always remove spindle sleeve from the press before installing or removing the chuck or damage to the bearing may result.

We recommend using a pair of chuck wedges for removal of the chuck from the taper. Loosen the lock screw on the spindle pulley and remove the pulley from the spindle. Loosen the set screw on the side of the head and remove the spindle sleeve. The chuck can then be removed by inserting the chuck wedges between the chuck and the spindle and gently tapping the wedges together until the chuck comes off of the taper.

INSTALLING A CHUCK

Note: Always remove spindle sleeve from the press before installing or removing the chuck or damage to the bearing may result.

With the spindle sleeve removed, install a dowel pin or other hard round object into the chuck jaws and tighten chuck. Thoroughly clean spindle and chuck tapers. Wring the chuck taper onto the spindle until it stops rotating. Tap the end of the spindle (with the chuck up in the air) on a wood or hard plastic surface to seat the chuck. Then, holding the spindle on the hard surface in the same position and using a wood/plastic block or a mallet, strike the end of the dowel pin to seat the chuck further. (Never tap directly on the jaws or tightening body of the chuck as damage could occur)

Re-install the spindle sleeve into the press and re-attach the spindle pulley by pressing lightly up on the spindle and down on the pulley while tightening the spindle lock screw.

DISCLAIMER

This product complies with the North American electrical standard of 120/240V. When installing outside of North America, adapters and/or transformers may be required in order to safely operate this product. Please consult your local electric company or electrical professional for proper usage requirements.

OUR WARRANTY

Treat Manufacturing warrants that items of its own manufacture will be free from defects in material and/or workmanship at the time of delivery and will be so for a period of 6 months (180 days) after leaving the Treat Manufacturing facility. If any such item proves to be defective (assuming the item has been used and maintained as intended during the warranty period, which will be determined by Treat Manufacturing), as a first step, Treat Manufacturing personnel will attempt to troubleshoot the issue per phone and other communication with the customer and evaluate the need for action. Typically, any parts that fail prematurely are able to be replaced by the customer with the guidance of Treat Manufacturing personnel. Treat Manufacturing reserves the right to attempt to solve the issue in this manner prior to any other warranty activities.

If it is determined that the system or machine, or any part thereof, needs to be returned to the Treat Manufacturing factory for further investigation, a Return Authorization will be issued. After contacting Treat Manufacturing's Service Department and receiving Return Authorization, the machine's owner is required to ship the item, freight prepaid, to the Treat Manufacturing facility. Final responsibility for shipping costs back to the customer will be determined by Treat Manufacturing after inspection of the part(s) or machine has been completed. Treat Manufacturing retains the option to repair or replace the item(s) in question at its own expense.

Warranties on components not manufactured by the Treat Manufacturing, but included and sold as part of the system, are limited to those provided by their original manufacturers. However, Treat Enterprises will handle returns of those components as well. The Owner must still ship the component(s) prepaid back to Treat Manufacturing.

This warranty is expressly limited to the repair or replacement of defective items as described above. In no event shall Treat Manufacturing be held liable or accountable for incidental or consequential damages due to any breach of warranty, defect in material, workmanship or omissions/misstatements in this or any documentation. Treat Manufacturing shall not be responsible for repair or replacement of items which have been subjected to neglect, accident or misuse, or which have been altered by anyone other than Treat Manufacturing personnel. Treat Manufacturing retains all protected, proprietary rights, including patent rights, rights to devices originated by Treat Manufacturing, which are part of the equipment, and rights to designs or data furnished to the Owner.

An extended Warranty Period of up to One Year is available. Ask our Customer Service Department or Sales Representatives for details.