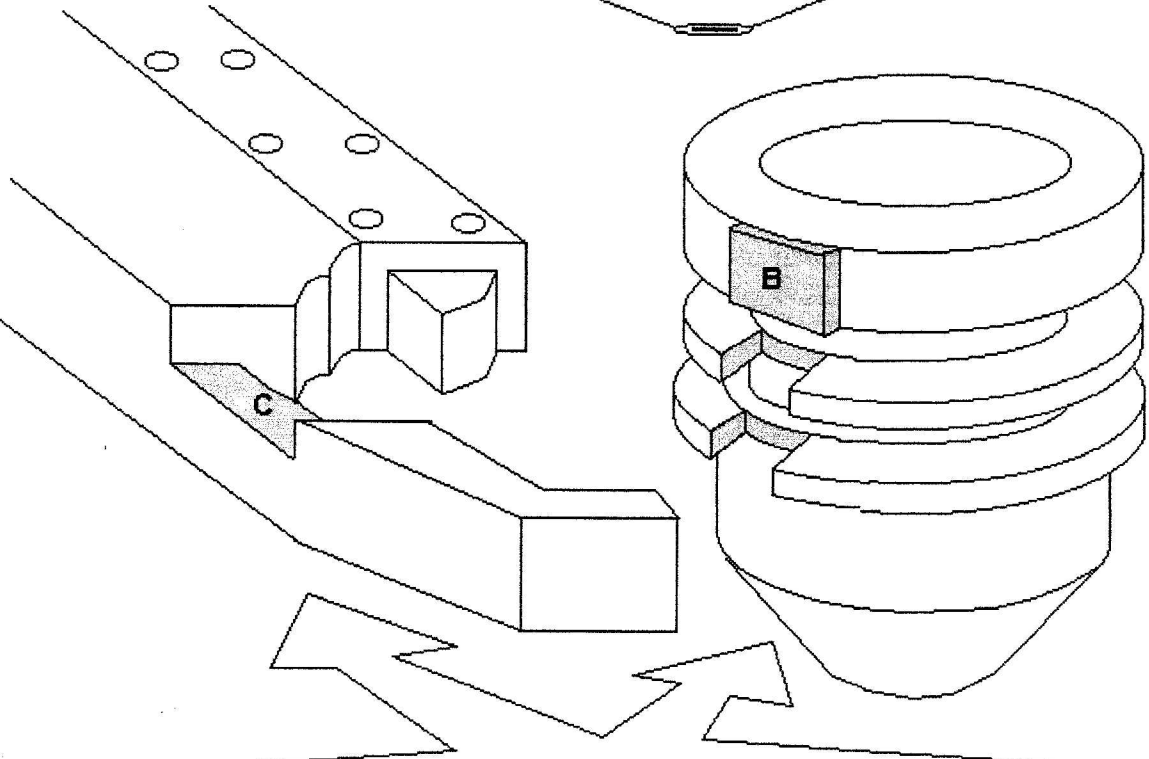



Tool Changer Arm

A: The Two Points Must Match In Perfectly, When In Right Position Spindle Will Move Slightly Back and Forward.

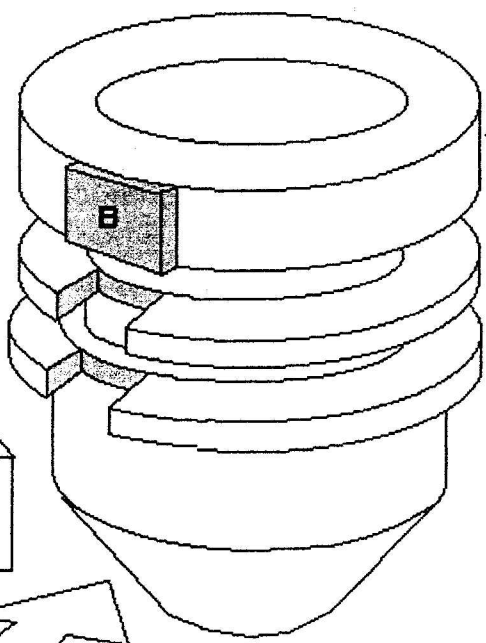
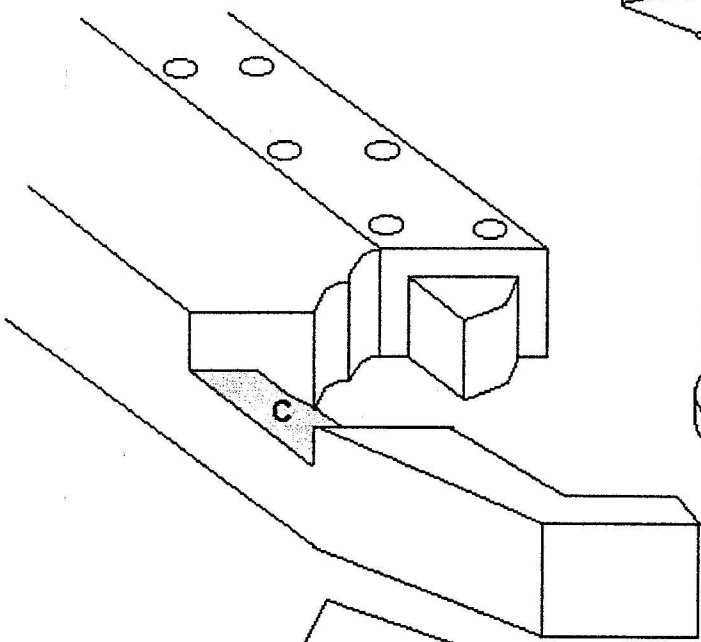
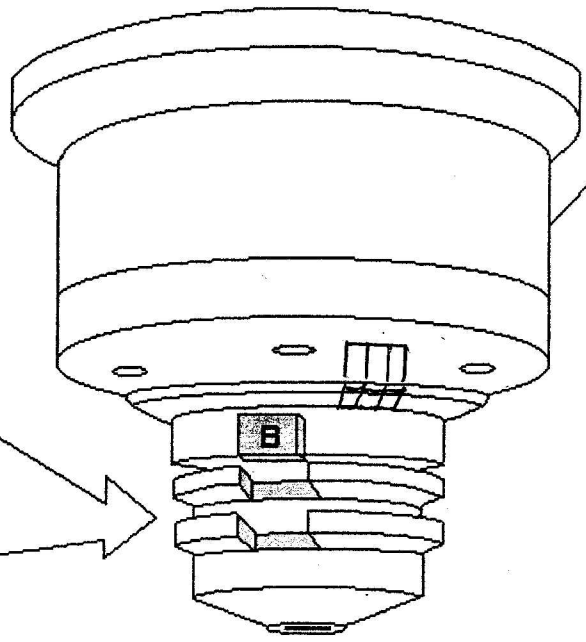


Note: Position Point B in perfect conjunction with Point C. When Point B and Point C in properly engaged tightly, you can slightly shift the tool left to right by applying a little force. Make certain that Point A (in the above diagram) is fitted perfectly. Point A must be perfectly fitted in order to prevent any tool changer damage. If you have any question please contact ACER.

Tool Changer Arm

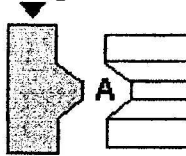


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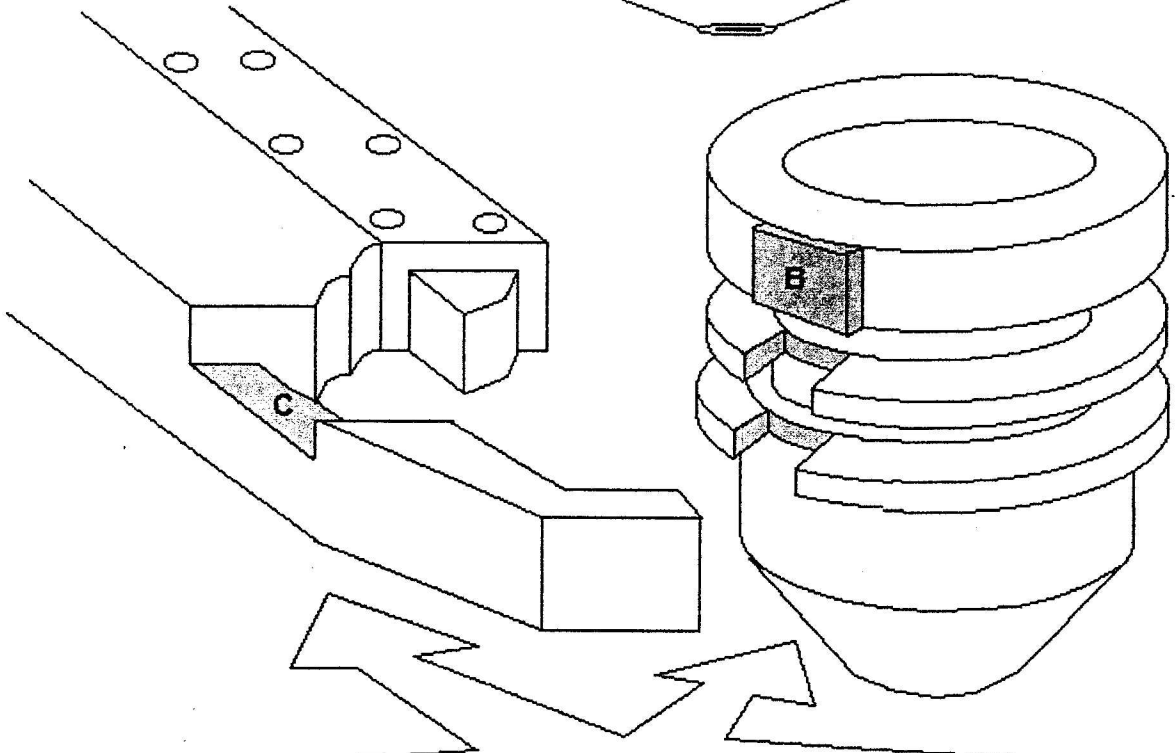
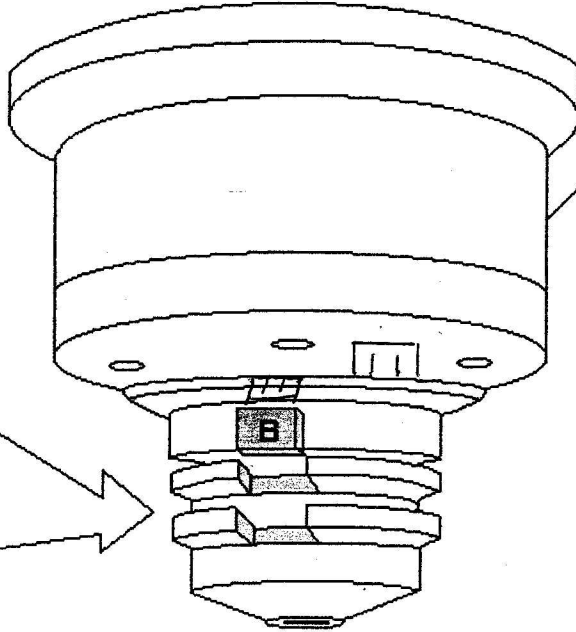


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Procedure for Setup of Tool-Change Angle

(After changing spindle motor/pulley/belt)

Step 1. Find old default spindle orientation angle

(1) Software Option

a. Machine Constants (MC) press “ENTER” 

Find MC_5003 press “ENTER” 

MC_5003 default spindle orientation angle will appear


Write down the number (for example 100)

EXIT

EXIT

Control Software:

Step 2. Setup tool-change contact angle manually

(1) Control Software press “ENTER” 

Reset servo

HOME

M88 (Free Spindle) press “ENTER”  / or push emergency

Push button to free spindle



(2) Have one person climb up to ATC’s motor position. Look for a motor with a sign “brake releasing point” on it. On the lower right hand side of the sign, there is a handle. Move it to the left. Then take and put a ratchet wrench with a rocket 12 mm on top of the motor shaft! Next, turn the motor shaft clockwise until the “tool arm” is rotated towards spindle. The second person should be watching the position of the spindle while the first person is carefully cranking the arm closer to the spindle.







(3) When the tool arm is close to the spindle, please check whether one spindle key (“B” on Drawing 1) is aligned with the alignment bracket (“C”) on the center of the tool arm arc where is right angle for tool change.

(4) Tape a piece of paper on the outer ring of the spindle (non-moving part) and another piece of paper on spindle (moving part) right under it. Draw two lines on both pieces of paper for spindle alignment. (see Drawing 2)





(5) Return tool arm to the original position manually, i.e., parallel to the Y-axis travel. When the tool arm is at the correct position, there is a LED light which lights up inside the brown acrylic cover (only the center LED lights up) Please make sure this happens.



Step 3. Use the drawn reference lines to compare the old default angle. Use trial and error to get new tool-change angle.

- 1) Reset servo and M89 (Spindle lock) press 
 - (2) M19 press 

Spindle will orientate to old default angle (100°)
 - (3) Compare upper and lower pieces of paper (for example, 30° apart)
 - (4) Repeat Step 1
 - Find MC_5003, press “ENTER” 
 - Password: Z48
 - Enter 130 (100° + 30°)
 - Exit out to control software
 - (5) Repeat M19, press  to see how close the error is (for example 5° apart)
 - (6) Push “SPDL OFF”  to cancel M19
 - (7) M19 C5, press  to see if the drawn reference lines are right on target.
 - (8) Repeat (4) and enter “135” instead of “130”
 - (9) Exit out to control software
 - Reset servo 
 - M19, press  to see 2 Line right on target
- Note: customer can instead manually move-in arm as many times as he wants to use trial and error to find the default angle or confirm the correct angle.

Step 4. Using control to test ATC function

- (1) Please make sure power phase is correct, i.e., the rotation of the tool magazine is clockwise when pushing CW button (on control panel).
- (2) When testing the ATC for the first time, please do not install a tool holder onto the spindle. This is a precaution for tool crashing!!!
- (3) Step by step motion testing (you are at a control software mode).
 - a. Enter Z-axis value to move spindle into tool change position. This value is the same as MC_1130. (Never change this number!!)
 - b. Enter M61, then press  (tool pot down)
 - c. Enter M19, then press  (spindle orientation is set)
 - d. Press ARM S.D. button on the control panel. (tool arm will rotate 60°)
 - e. Enter M63, press  (tool and unclamp)
 - f. Press ARM S.D. (tool arm will rotate another 180°)
 - g. Enter M64, press  (tool clamp)

- h. Press ARM S.D. (tool arm will rotate reversing 60° back the home position)
- i. Enter M62, press  (tool pot up)
Note: To repeat the manual sequence, please reset servo motor again, i.e., press servo off then on again.
- j. To test ATC function in automatic sequence, enter M6T1, and then press . Before testing the automatic sequence so you must do the step-by-step testing first. This is to make sure spindle is in correct position when changing tools.