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10-010 MAINTENANCE

No preventive maintenance is needed for the 62PC disk drive. However, it may be necessary to adjust or exchange field-replaceable units. To find a failing unit, use diagnostic programs and MAPs. Verify repairs by running diagnostic programs.

CAUTION

Do not turn the disk spindle counterclockwise; head and disk damage can occur.

10-020 SUBFRAME

Removing the Subframe

CAUTION

Do not turn the disk spindle counterclockwise; head and disk damage can occur.

1. Set Power to O (operator panel).
2. Remove the card gate (see paragraph 10-180).
3. Remove the drive motor assembly (see paragraph 10-100).
4. Turn the actuator lock knob **J** clockwise (through 120 degrees until the actuator lock reaches its stop) to lock the actuator.
5. Remove the DC power cable **C** from the cable ties on the subframe.

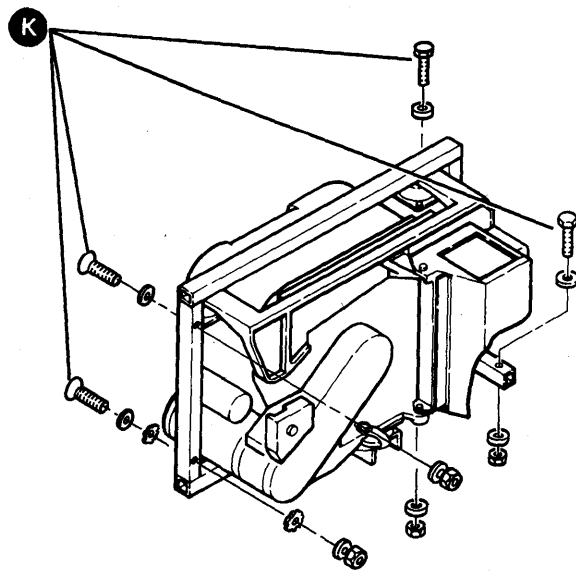
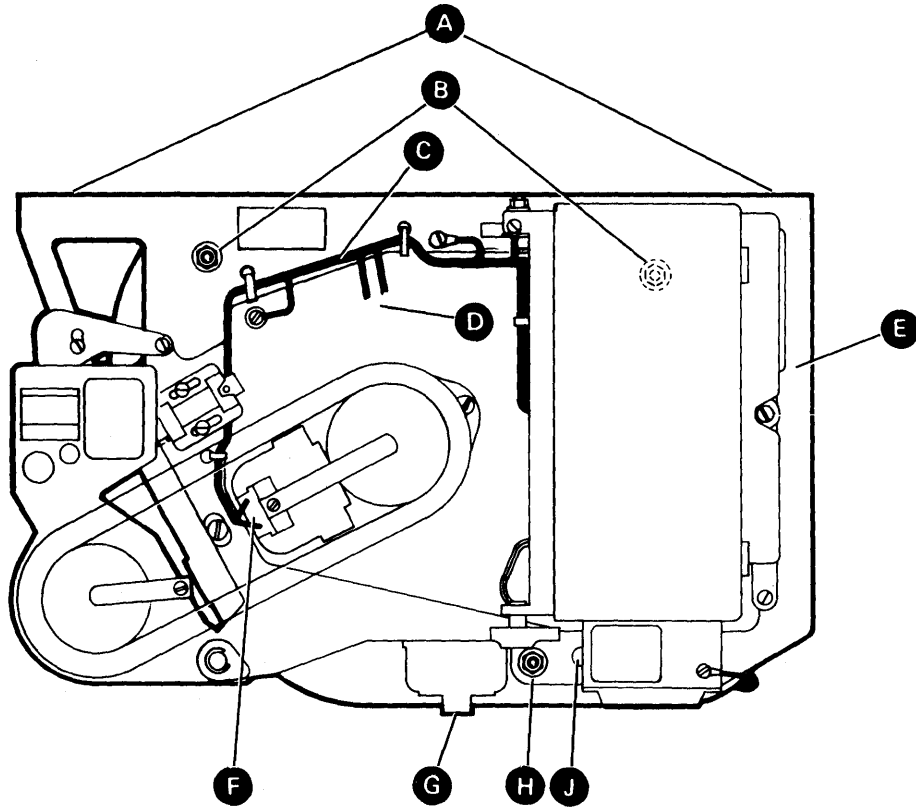
DANGER

The subframe/disk enclosure weight is 16 kg (35 pounds). Clear a space for the subframe/disk enclosure before removing the subframe/disk enclosure from the machine.

6. For drives C and D only, remove screws, washers, star washers, and nuts **K**. Remove drive assembly from rear of machine and set in clear area.
7. Loosen the three single screws (two on the upper shock mounts **A** and one on the lower shock mount **G**) that attach the subframe **E** to the shock mounts. Slide the subframe off the screws. Set the subframe on the transparent disk enclosure cover.
8. Disconnect the wires from the brake assembly **F** and the trimmer board **D**.
9. Remove the lower (long) disk enclosure mounting nut **H** and the two upper nuts **B**.
10. Lift the subframe **E** from the disk enclosure.

Reinstalling the Subframe

1. Set the disk enclosure on its transparent cover.
2. Place the subframe **E** on the disk enclosure. Be careful not to damage the bushings.
3. Fasten the disk enclosure with the lower (long) nut **H** and the two upper nuts **B**.
4. Connect the wires to the brake assembly **F** and the trimmer board **D**.
5. Slide the subframe **E** on the three single screws (two on the upper shock mounts **A** and one on the lower shock mount **G**) that attach the subframe to the shock mounts and tighten the three screws **A** and **G**.
6. For drives C and D only, lift and insert drive assembly into system from rear of machine. Install four screws, eight washers, two star washers, and four nuts **K**.
7. Attach the DC power cable **C** to the subframe.
8. Turn the actuator lock knob **J** counterclockwise (through 120 degrees) until the actuator lock reaches its stop.
9. Reinstall the drive motor assembly (see paragraph 10-100).
10. Reinstall the card gate (see paragraph 10-180).



Drives C and D
only.

10-030 DISK ENCLOSURE

Removing the Disk Enclosure

If possible, before removing the disk enclosure, have the customer remove the customer data, then initialize the disk to destroy customer data.

CAUTION

Do not turn the disk spindle counterclockwise; head and disk damage can occur.

1. Set Power to O (operator panel).
2. Turn the screw **H** counterclockwise and open the card gate.
3. Turn the actuator lock knob **M** clockwise (through 120 degrees until the actuator lock reaches its stop) to lock the actuator.
4. Remove the two cable clamp screws **E** and remove the cable clamp and the attached card gate cover **J**. Keep the clamp, cover, and screws.
5. For drives C and D only, remove disk drive assemblies (see paragraph 10-220) and then return to step 6 of this procedure. For drives A and B, continue with step 6.
6. Disconnect the A2 cable **F**.
7. Loosen the two screws (one for each board retainer) in the board retainers **P** and slide the board retainers up to release the actuator cable **N** from the card gate.
8. Disconnect voltage connector VC9 **Q**.
9. Loosen the two screws **T** and **V** and remove the belt guard **W**.
10. Lift the motor **U** against the force of the belt tensioner **R**, remove the belt **S**; then lower the motor until it is on its stop.

11. Disconnect the brake coil **K**, trimmer board **D**, and ground **A** connectors.

DANGER

The disk enclosure weight is 9 kg (20 pounds). Clear a space for the disk enclosure before removing the disk enclosure from the machine.

12. Remove the lower (long) **L** and two upper disk enclosure mounting nuts **C** and **G**.
13. Remove the disk enclosure **B** by sliding it away from the subframe. Place the disk enclosure on its transparent cover.

Reinstalling the Disk Enclosure

1. Check the disk enclosure locating bushings. If they are damaged, install new bushings.
2. Locate the disk enclosure **B** on the system frame, pass the cables through the subframe and tighten the three mounting nuts **C**, **G**, and **L** (long nut on the lower bolt).

CAUTION

Brake coil wires 1 and 2 must be connected to terminals 1 and 2 or the driver card may be damaged.

3. Connect the brake coil **K**, trimmer board **D**, and ground **A** connectors.
4. Lift the motor **U** against the force of the belt tensioner **R**, reinstall the belt **S** on the pulleys; then lower the motor until the belt is tight.

Note: Reinstall the smooth side of the belt against the pulleys and center the belt.
5. Reinstall the belt guard **W** and tighten the two screws **T** and **V**.
6. Connect voltage connector VC9 **Q**.

7. Place the cable **N** under the two board retainers **P** to attach the actuator cable **N** to the card gate; then tighten the screws.
8. Plug in the A2 cable **F**.
9. For drives C and D only, reinstall disk drive assemblies (see paragraph 10-220), and then return to step 10 of this procedure. For drives A and B, continue with step 10.

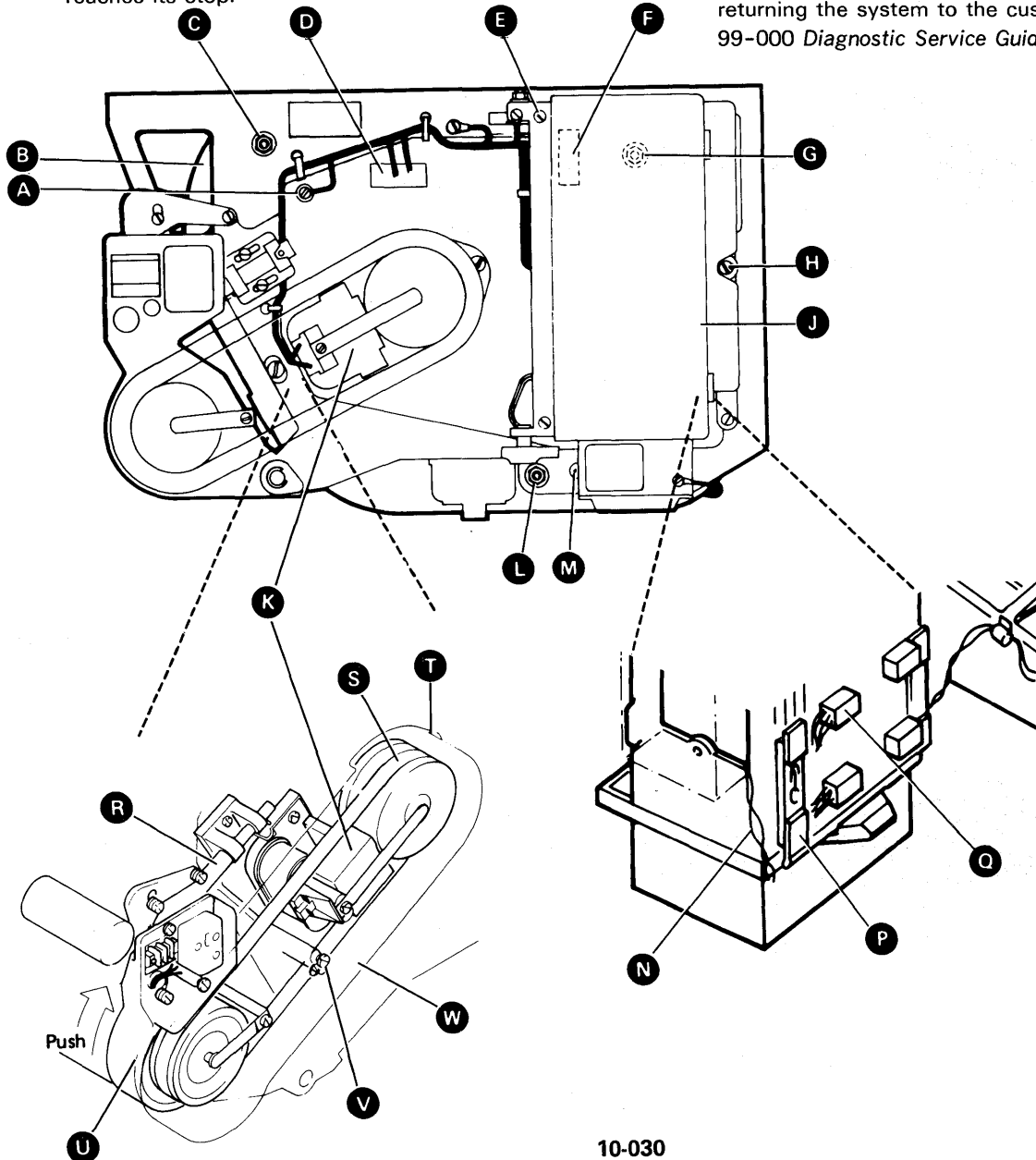
Note: Steps 10, 11, and 12 may already be done.

10. With the cable in position, use the two screws **E** to reinstall the cable clamp and the attached card gate cover **J**.
11. Turn the actuator lock knob **M** counterclockwise (through 120 degrees) until the actuator lock reaches its stop.

12. Close the card gate and tighten the screw **H**.
13. Adjust the drive belt tension and brake assembly (see paragraph 10-190).
14. Run the disk MDI MAPs to verify correct operation of the 62PC disk drive.
15. Do not initialize disk enclosures that are being used for diagnostic purposes only.

If this replacement disk enclosure is to remain installed, or if this disk enclosure has not been initialized in this system, run the disk initialize program.

Select the Organize option to build the A0 diskette and initialize the disk. (Identification and control data must be written on the new disk before returning the system to the customer. See section 99-000 *Diagnostic Service Guide*.)



10-040 DRIVE BELT

CAUTION

Do not turn the disk spindle counterclockwise; head and disk damage can occur.

Removing the Drive Belt

1. Set Power to O (operator panel).
2. Loosen the two screws **C** and **F** and remove the belt guard **E**.
3. Lift the motor **D** against the force of the belt tensioner **A**, and remove the belt **B**; then lower the motor until it is on its stop.

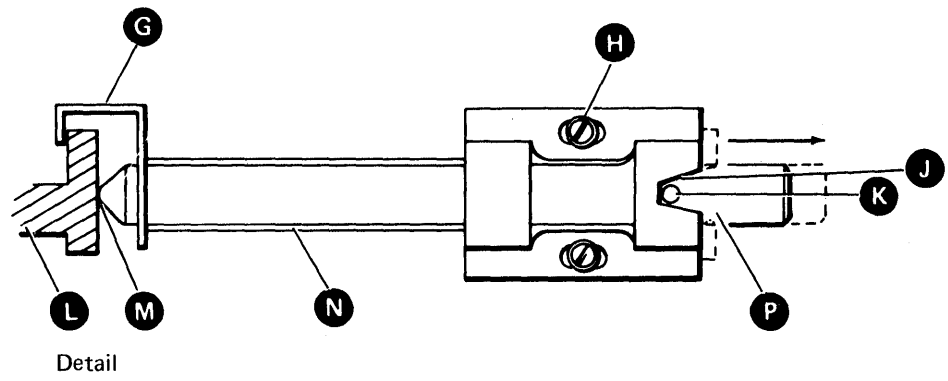
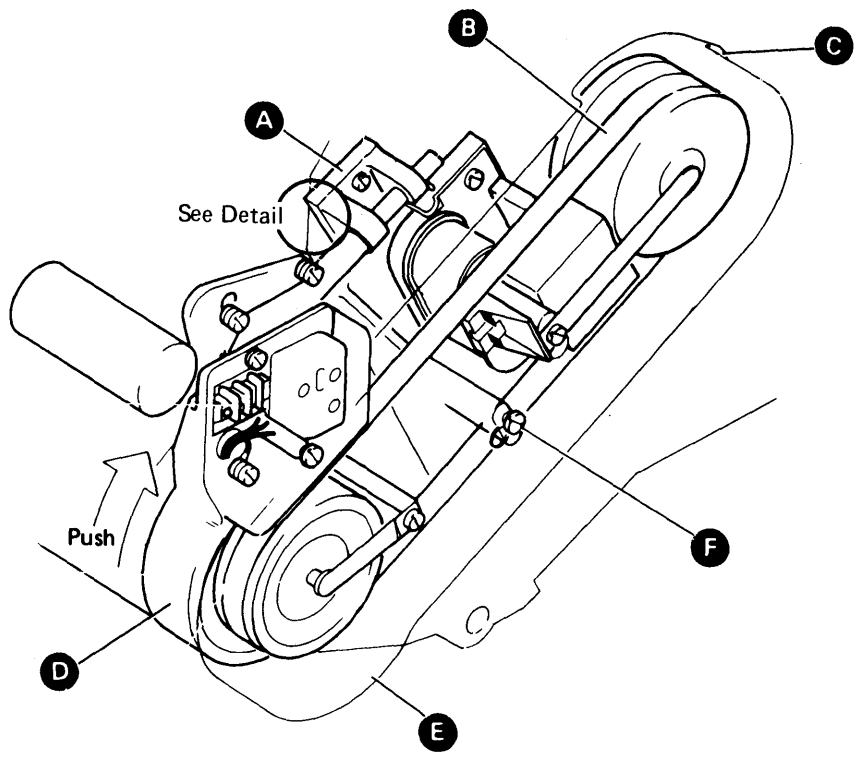
Reinstalling the Drive Belt

1. Ensure that the belt is clean, dry, and not damaged.
2. Lift the motor **D** against the force of the belt tensioner **A**, reinstall the belt **B** on the pulleys; then lower the motor until the belt is tight.

Note: Reinstall the smooth side of the belt against the pulleys and center the belt.

3. Reinstall the drive belt guard **E** and tighten the two screws **C** and **F**.
4. Adjust the belt tensioner.
 - a. Lift the motor against the belt tensioner spring **N**. When the pin **K** in the shaft **P** is free of the opening **J**, turn the shaft 90 degrees to hold the spring. Lower the motor.
 - b. Loosen the two screws **H** and locate the belt tensioner with no gap at **M** and tighten the screws **H**.
 - c. Lift the motor against the belt tensioner spring and turn the shaft 90 degrees to place the pin in the opening. Lower the motor.

Note: The belt tensioner bracket **G** must overlap the motor bracket **L**.



10-050 DRIVE BELT TENSIONER

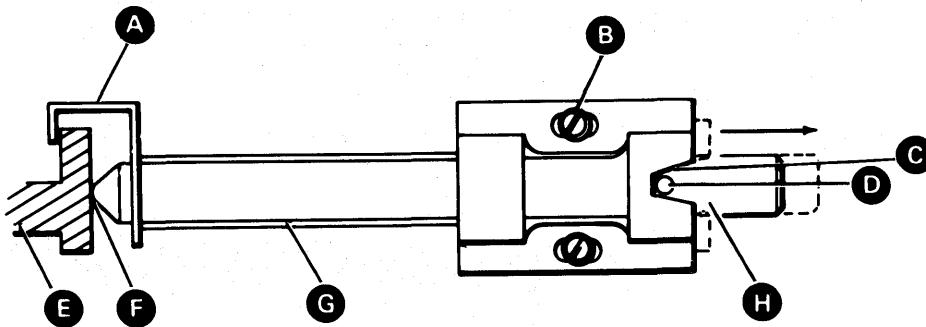
Removing the Drive Belt Tensioner

1. Set Power to O (operator panel).
2. Lift the motor against the belt tensioner spring **G**. When the pin **D** in the shaft **H** is free of the opening **C**, turn the shaft 90 degrees to hold the spring, and lower the motor.
3. Remove the two screws **B** and the belt tensioner.

Reinstalling the Drive Belt Tensioner

1. Ensure that the pin in the shaft is holding the belt tensioner spring **G** (see step 2 of *Removing the Drive Belt Tensioner*).
2. Locate the two screws **B** in the belt tensioner assembly but do not tighten.
3. Locate the belt tensioner with no gap at **F** and tighten the two screws.
4. Lift the motor against the belt tensioner spring **G**, turn the shaft **H** 90 degrees to place the pin **D** in the opening **C**, and lower the motor.

Note: The belt tensioner bracket **A** must overlap the motor bracket **E**.



10-060 DRIVE MOTOR ANTISTATIC BRUSH

Removing the Motor Antistatic Brush

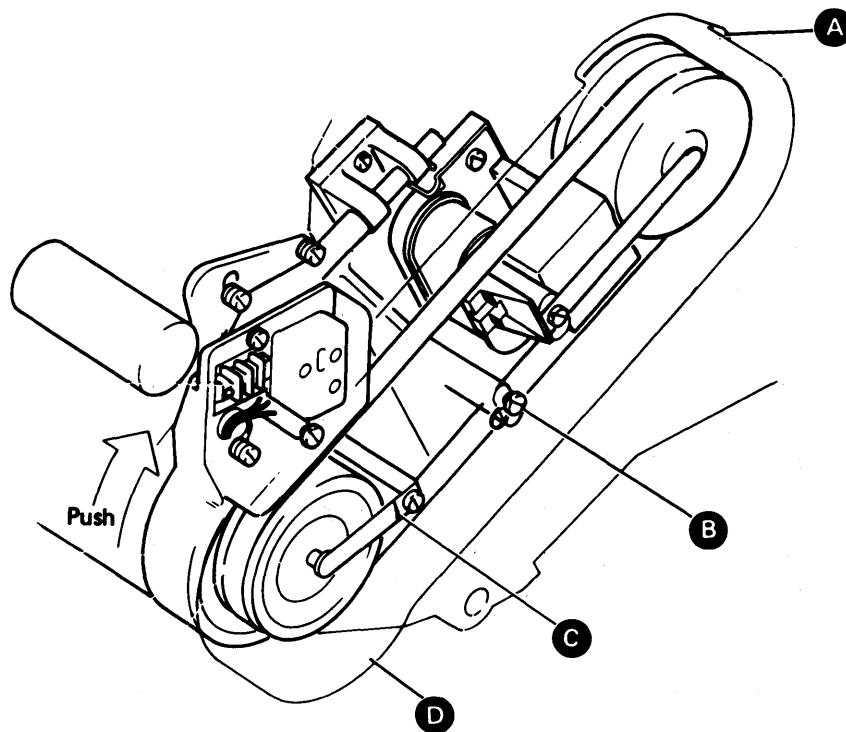
1. Set Power to O (operator panel).
2. Loosen the two screws **A** and **B** and remove the belt guard **D**.
3. Remove the screw and the motor antistatic brush **C**.

Reinstalling the Motor Antistatic Brush

1. Locate the screw through the antistatic brush **C**, center the antistatic brush on the motor shaft, and tighten the screw.

Note: If there is a worn spot on the antistatic brush, put the spot back on the same place on the motor shaft.

2. Reinstall the belt guard **D** and tighten the two screws **A** and **B**.



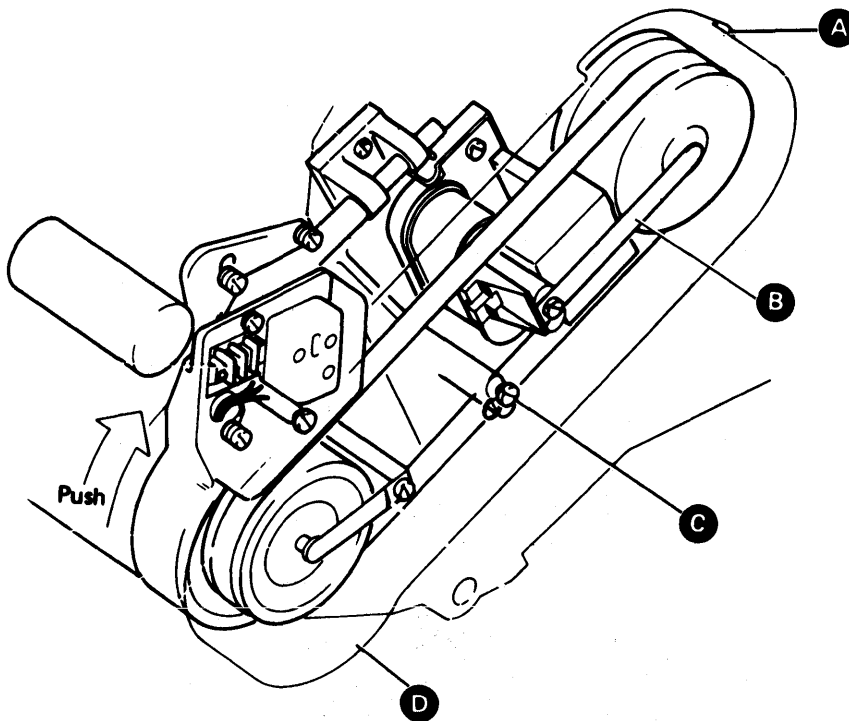
10-070 SPINDLE ANTISTATIC BRUSH

Removing the Spindle Antistatic Brush

1. Set Power to O (operator panel).
2. Loosen the two screws **A** and **C** and remove the belt guard **D**.
3. Remove the screw and the spindle antistatic brush **B**.

Reinstalling the Spindle Antistatic Brush

1. Locate the screw through the antistatic brush **B**, center the antistatic brush **B** on the spindle shaft, and tighten the screw.
- Note:* If there is a worn spot on the antistatic brush, put the spot back on the same place on the spindle shaft.
2. Reinstall the belt guard **D** and tighten the two screws **A** and **C**.



10-080 MOTOR ASSEMBLY TERMINAL BLOCK (TB1)

Removing TB1

1. Set Power to O (operator panel).
2. Set CB1 off (see paragraph 05-310 for the location of CB1).

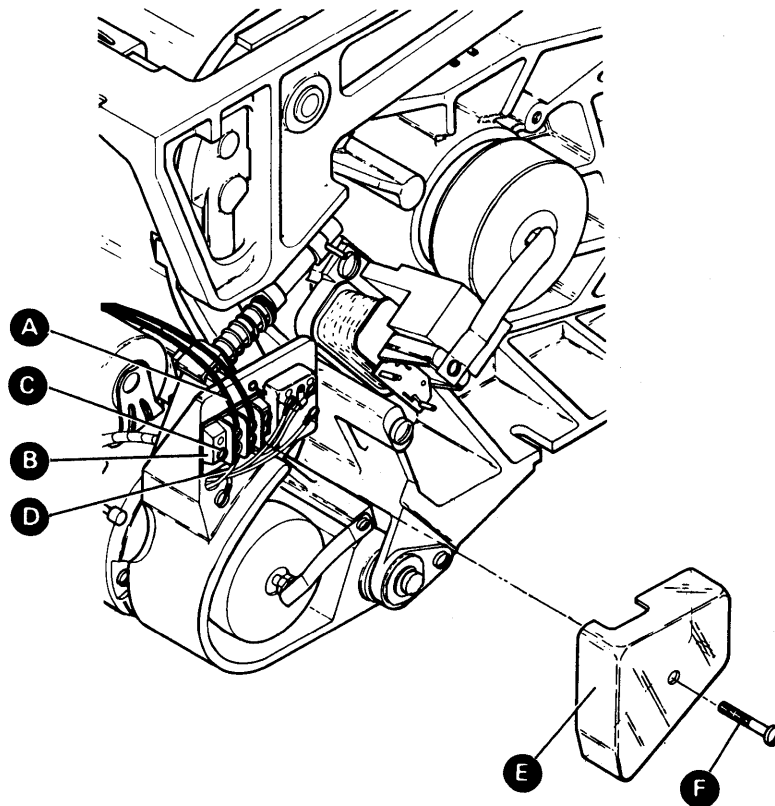
DANGER

CB1 must be off to remove AC voltage from this circuit.

3. Remove the screw **F** and the cover **E**.
4. Disconnect the two system wires **D** and the two motor wires **A**.
5. Remove the two screws **C** and the terminal block **B**.

Reinstalling TB1

1. Locate the two screws **C** through the terminal block **B** and tighten.
2. Connect the two system wires **D** and the two motor wires **A**.
3. Locate the screw **F** through the cover **E** and tighten.



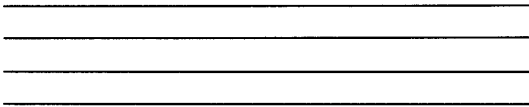
10-090 CARD GATE FAN ASSEMBLY TERMINAL BLOCK (TB2)

Removing TB2

1. Set Power to O (operator panel).
2. Set CB1 off (see paragraph 05-310 for the location of CB1).

DANGER

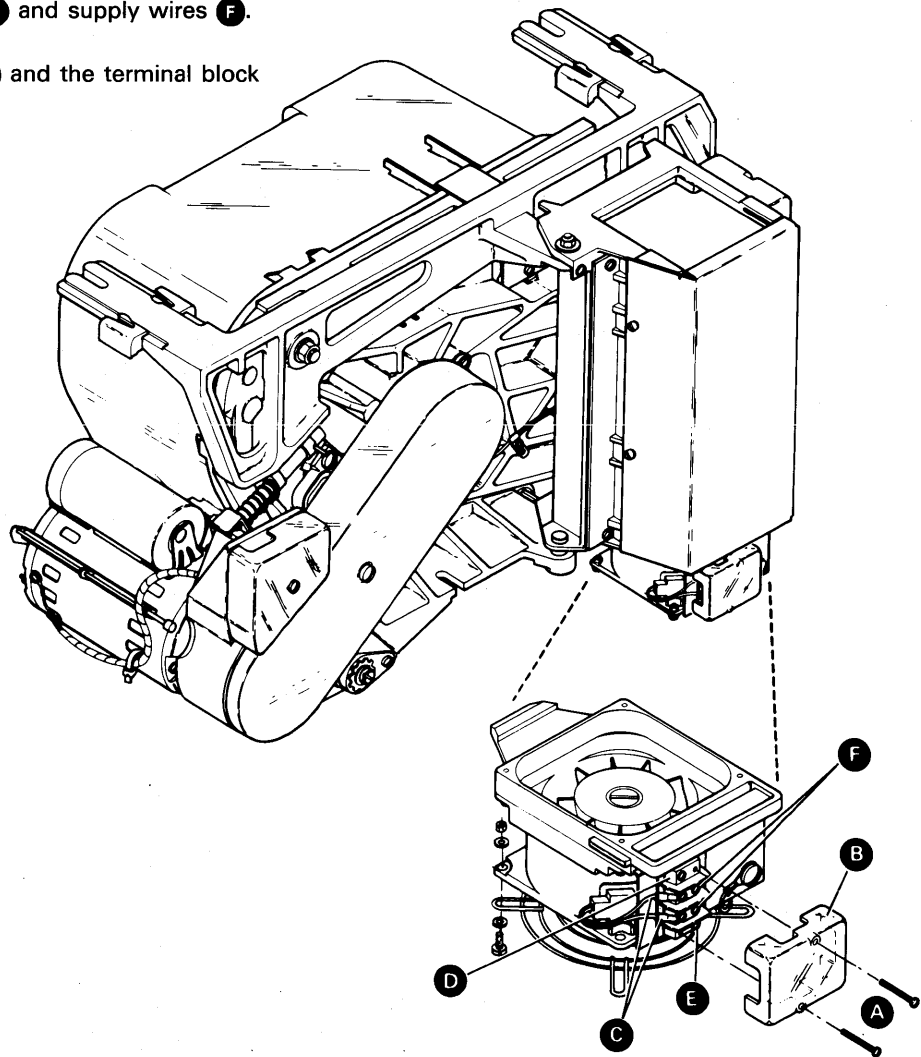
CB1 must be off to remove AC voltage from this circuit.



3. Remove the two screws **A** and the cover **B**.
4. Disconnect the fan wires **C** and supply wires **F**.
5. Remove the two screws **E** and the terminal block **D**.

Reinstalling TB2

1. Locate the two screws **E** through the terminal block **D** and tighten.
2. Connect the fan wires **C** and supply wires **F**.
3. Locate the screws **A** through the cover **B** and tighten.



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10-100 DRIVE MOTOR ASSEMBLY

Removing the Drive Motor Assembly

The drive motor assembly includes the following field-replaceable units; the motor, the pulley, and the motor mounting bracket.

1. Set Power to O (operator panel).
2. Set CB1 off (see paragraph 05-310 for the location of CB1).

DANGER

CB1 must be off to remove AC voltage from this circuit.

3. Loosen the two screws **D** and **G** and remove the belt guard **F**.
4. Lift the motor **H** against the belt tensioner spring **U**. When the pin **R** in the shaft **V** is free of the opening **Q**, turn the shaft 90 degrees to hold the spring. Lower the motor until the belt supports it.
5. Remove the two screws **P** and the belt tensioner.
6. Remove the screw **J** and the cover **C** from TB1.
7. Disconnect the two system wires **B** and the AC ground wire **A**.
8. Remove the pivot pin clip **M** from the motor bracket pivot pin.
9. Take the weight of the drive motor in your left hand, remove the belt **E**, and push the motor toward the disk enclosure until the pivot pins **K** are free of their holes. Lift out the motor assembly.

Note: The motor pivot bushings **L** could fall off as the motor is removed.

10. Remove and inspect the motor bushings **L**. If they are damaged, install new bushings.

Reinstalling the Drive Motor Assembly

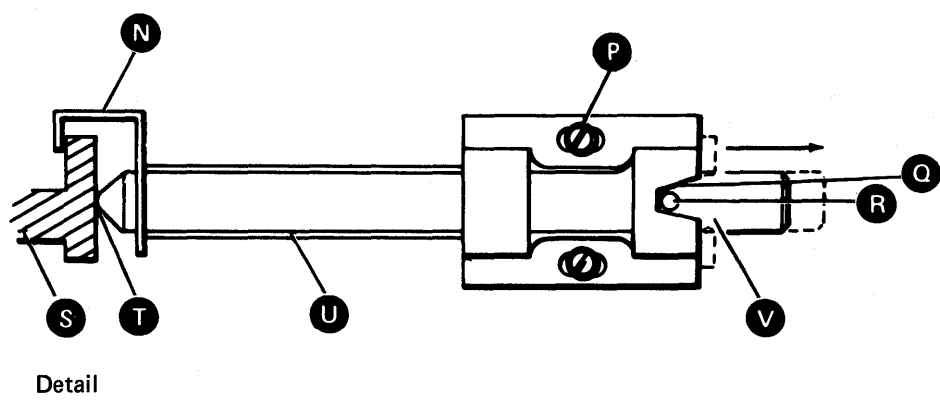
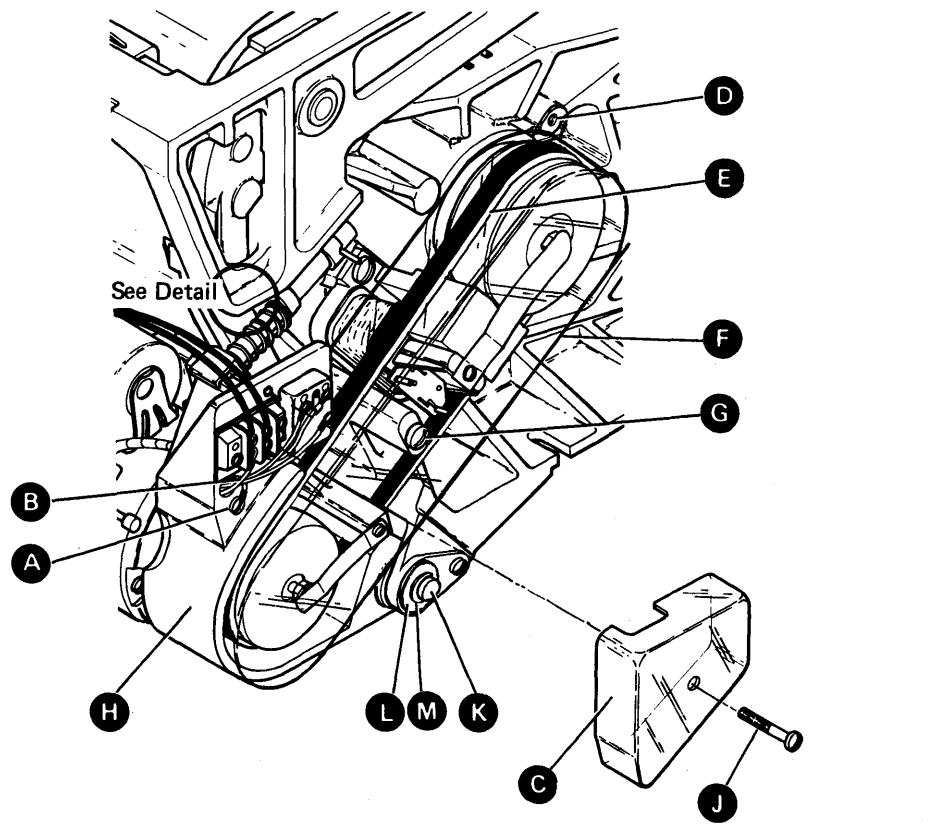
1. Check that the motor pivot bushings **L** are not damaged and are in the pivot holes.
2. Guide the motor assembly pivot pins **K** into their holes and slide the assembly away from the disk enclosure.
3. Reinstall the pivot pin clip **M**.
4. Lift the motor **H** against the force of the belt tensioner spring **U**, reinstall the belt **E** on the pulleys, and lower the motor until the belt is tight.

Note: Reinstall the smooth side of the belt against the pulleys and center the belt.

5. Ensure that the pin in the shaft is holding the belt tensioner spring (see step 4 of *Removing the Drive Motor Assembly*).
6. Locate the two screws **P** in the belt tensioner assembly but do not tighten.
7. Adjust the belt tension.
 - a. Locate the belt tensioner with no gap at **T** and tighten the screws **P**.
 - b. Lift the motor against the belt tensioner spring **U** and turn the shaft **V** 90 degrees to place the pin **R** in the opening **Q**.
 - c. Lower the motor.

Note: The belt tensioner bracket **N** must overlap the motor bracket **S**.

8. Connect the two system wires **B** and the AC ground wire **A**.
9. Locate the screw **J** through the TB1 cover **C** and tighten the screw.
10. Reinstall the belt guard **F** and tighten the screws **D** and **G**.



10-110 BRAKE ASSEMBLY AND COIL

Removing the Brake Assembly and Coil

CAUTION

Do not turn the disk spindle pulley **Q** counterclockwise; head and disk damage can occur.

1. Set Power to 0 (operator panel).
2. Loosen the two screws **A** and **H** and remove the belt guard **F**.
3. Lift the motor **J** against the force of the belt tensioner **E**, remove the belt **D**; then lower the motor until it is on its stop.
4. Disconnect wires 1 and 2 **G** from the brake coil **C**.
5. Remove the two screws **B** and the brake assembly with the antistatic brush still attached to the assembly.

Reinstalling the Brake Assembly and Coil

1. Insert the two screws **B** through the brake assembly and locate the brake assembly on the disk enclosure but do not tighten the screws.

CAUTION

Wires 1 and 2 must be connected to terminals 1 and 2 or the driver card will be damaged. (The terminals on the new coil may not be located in the same place as on the old coil.)

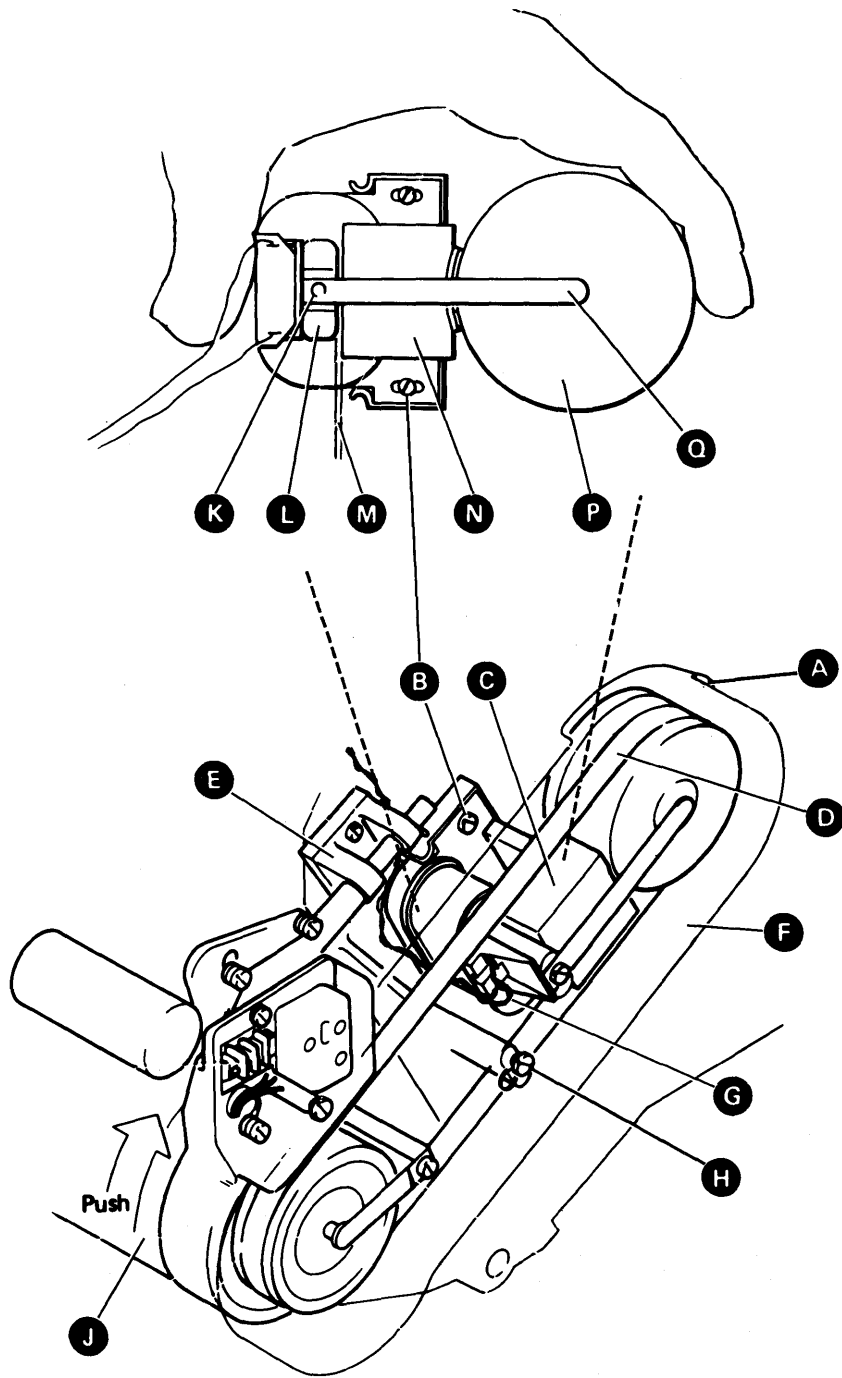
2. Connect wires 1 and 2 **G** to terminals 1 and 2 on the coil **C**.
3. Adjust the brake.
 - a. Place a 0.25 millimeter (0.010 inch) gauge **M** between the armature casting **L** and the solenoid **N**, slide the brake assembly toward the disk enclosure spindle pulley **P**, and tighten the two holding screws **B**.
 - b. Remove the gauge **M**.
4. Loosen the screw **K**, center the antistatic brush **Q** on the spindle **P** and tighten the screw **K**.

Note: If there is a worn spot on the antistatic brush, put the spot back on the same place on the spindle shaft.

5. Lift the motor **J** against the force of the belt tensioner **E**, reinstall the belt **D** on the pulleys; then lower the motor until the belt is tight.

Note: Reinstall the smooth side of the belt against the pulleys and center the belt.

6. Reinstall the drive belt guard **F** and tighten the two screws **A** and **H**.



10-120 SHOCK MOUNTS

Removing the Shock Mounts

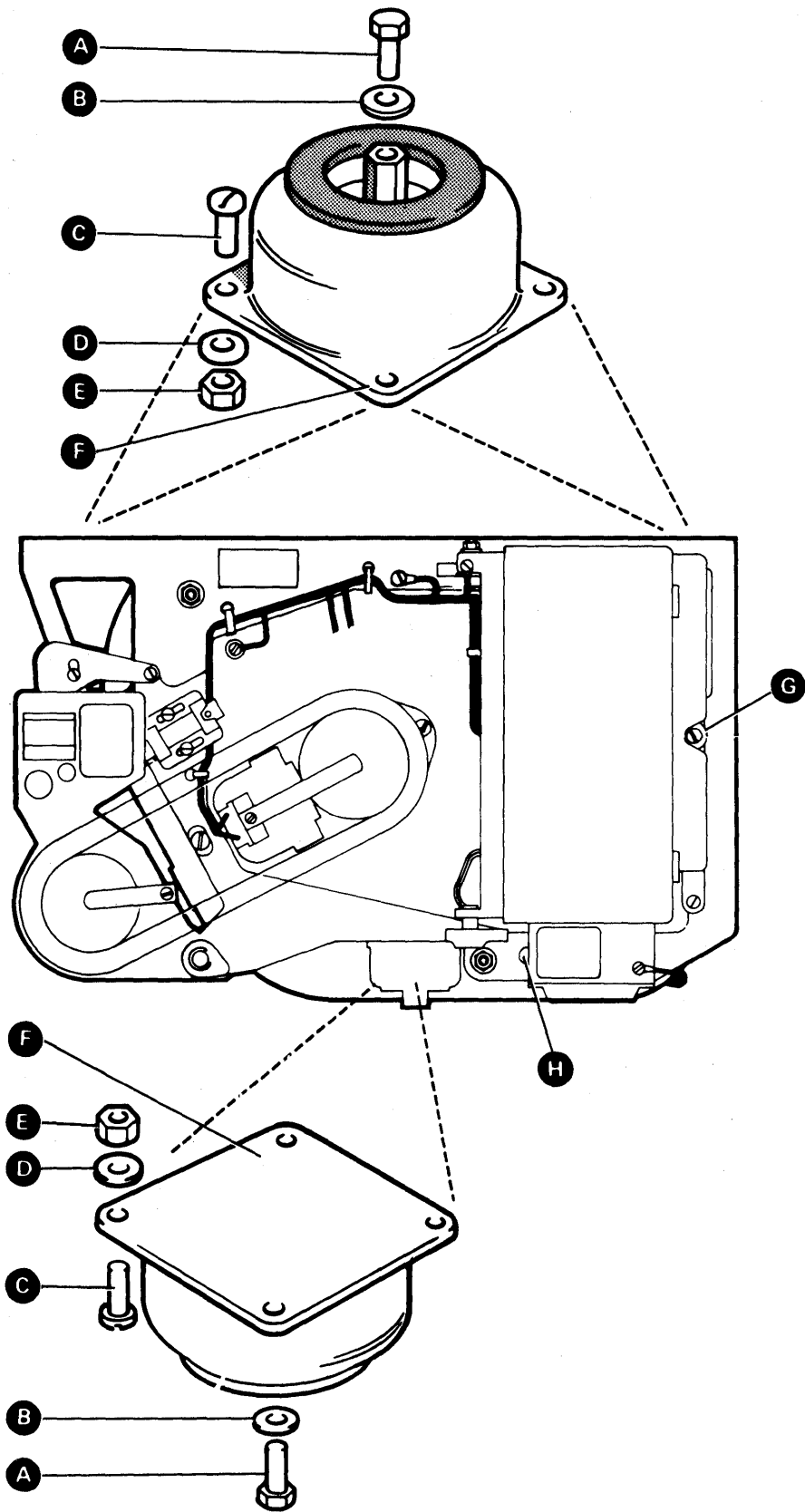
CAUTION

Do not remove more than one shock mount at a time unless the disk enclosure has been removed.

1. Set Power to O (operator panel).
2. Turn screw **G** counterclockwise and open the card gate.
3. Turn the actuator lock knob **H** clockwise (through 120 degrees) until the actuator lock reaches its stop.
4. Remove the four sets of screws **C**, washers **D**, and nuts **E** and remove the single screw **A** and washer **B**.
5. Remove the shock mount **F**.

Reinstalling the Shock Mounts

1. Slide the shock mount **F** into position.
2. Reinstall and tighten the single screw **A** and washer **B** and the four sets of screws **C**, washers **D**, and nuts **E**.
3. Turn the actuator lock knob **H** counterclockwise (through 120 degrees) until the actuator lock reaches its stop.
4. Close the card gate and tighten the screw **G**.



10-130 CARD GATE FAN ASSEMBLY

CAUTION

Before removing the fan, note the label indicating the air flow direction to ensure the fan is reinstalled correctly.

Removing the Card Gate Fan Assembly

1. Set Power to O (operator panel).
2. Set CB1 off (see paragraph 05-310 for the location of CB1).

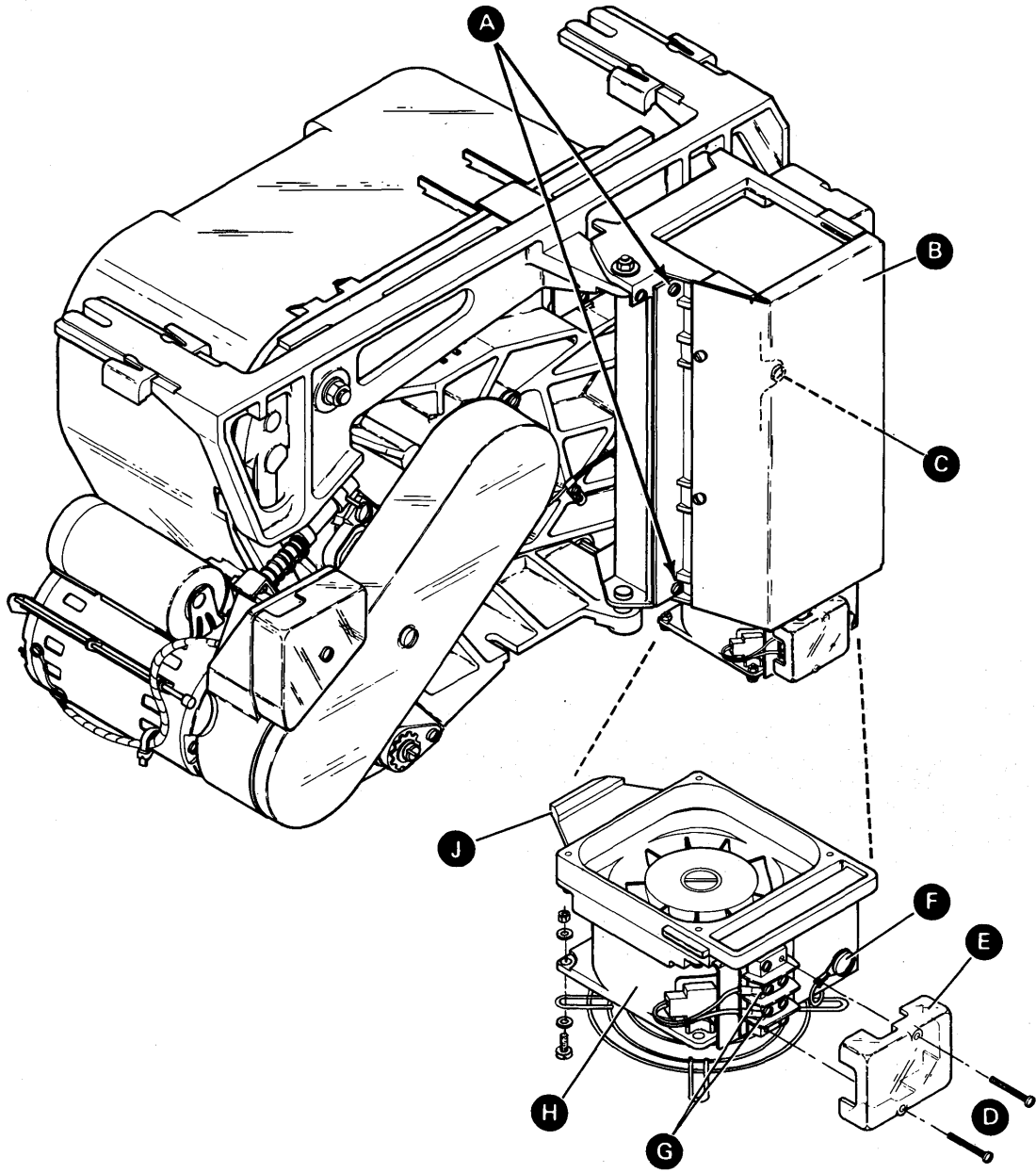
DANGER

CB1 must be off to remove AC voltage from this circuit.

3. Remove the two screws **A** and the card gate cover **B**.
4. Remove the two screws **D** and the cover **E** from TB2.
5. Disconnect the fan supply wires **G**.
6. Remove the ground screw **F** and ground wire.
7. Turn the screw **C** counterclockwise and open the card gate.
8. Press down on the fan retainer **J** at the rear of the card gate and slide the fan assembly **H** from the card gate.

Reinstalling the Card Gate Fan Assembly

1. Align the fan assembly **H** on the bottom of the card gate and slide together until the fan retainer **J** latches on the rear of the card gate.
2. Close the card gate and tighten the screw **C**.
3. Reinstall the ground wire with its screw **F**.
4. Connect the fan wires **G**.
5. Locate the screws **D** through the cover **E** and tighten.
6. Reinstall the card gate cover **B** using the two screws **A**.



10-140 TERMINATOR CARD

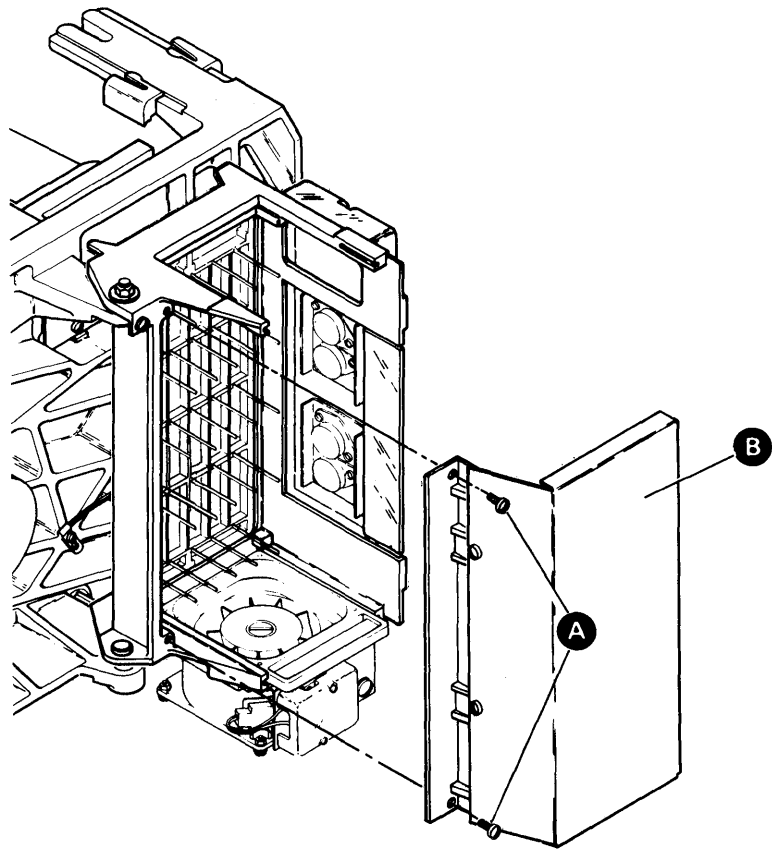
Note: On systems with more than one disk, the terminator card is located in the last drive.

Removing the Terminator Card

1. Set Power to 0 (operator panel).
2. Remove the two cable clamp screws **A** and remove the cable clamp and the attached card gate cover **B**.
3. Remove the terminator card from A4.

Reinstalling the Terminator Card

1. Plug the terminator card into A4.
2. With the cables in position, use the two screws **A** to reinstall the cable clamp and the attached cover **B**.



10-150 FLAT CABLES AND CONNECTORS

Disconnecting the Flat Cables and Connectors

1. Set Power to O (operator panel).
2. Remove the two cable clamp screws **A** and remove the cable clamp and the attached card gate cover **B**.
3. Disconnect the cables **C** (A3, A4, and A5). If this is the only or last disk drive, A4 contains a terminator card.

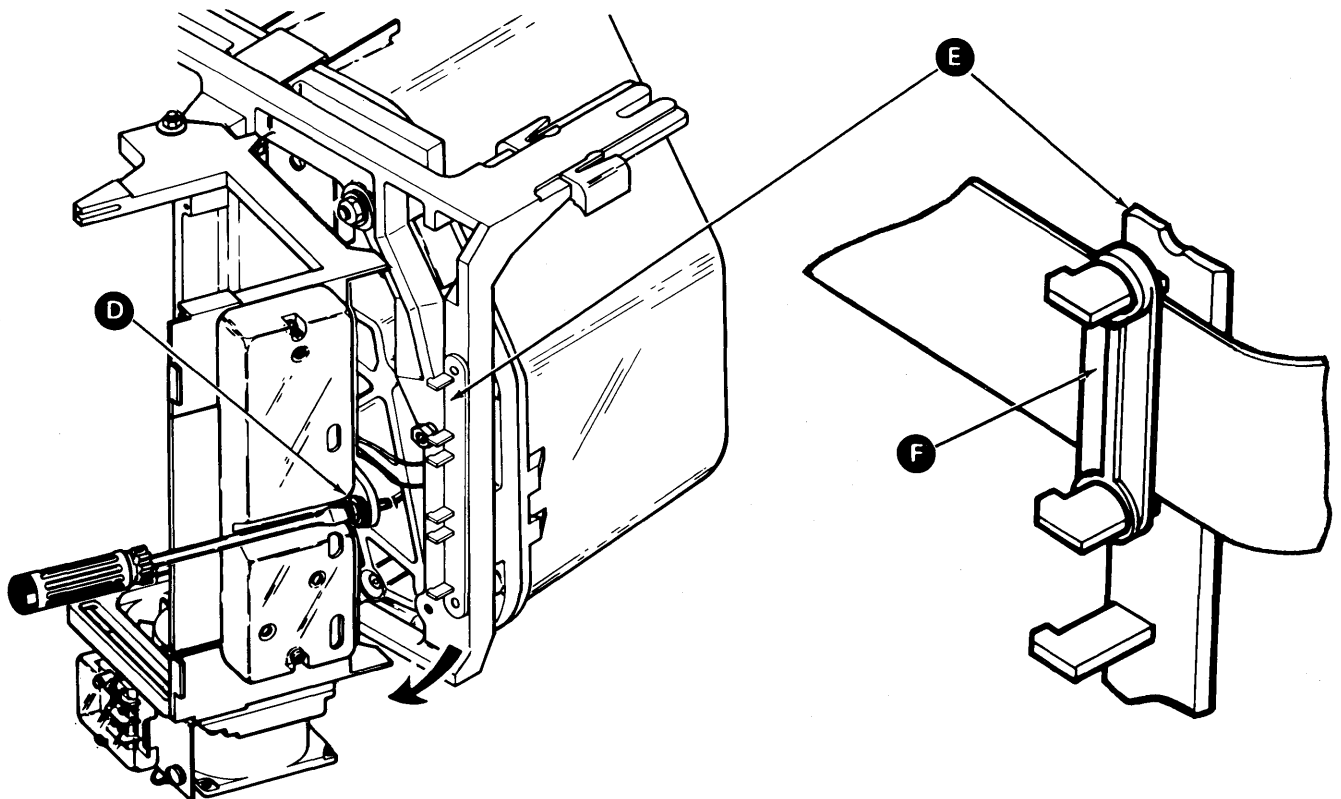
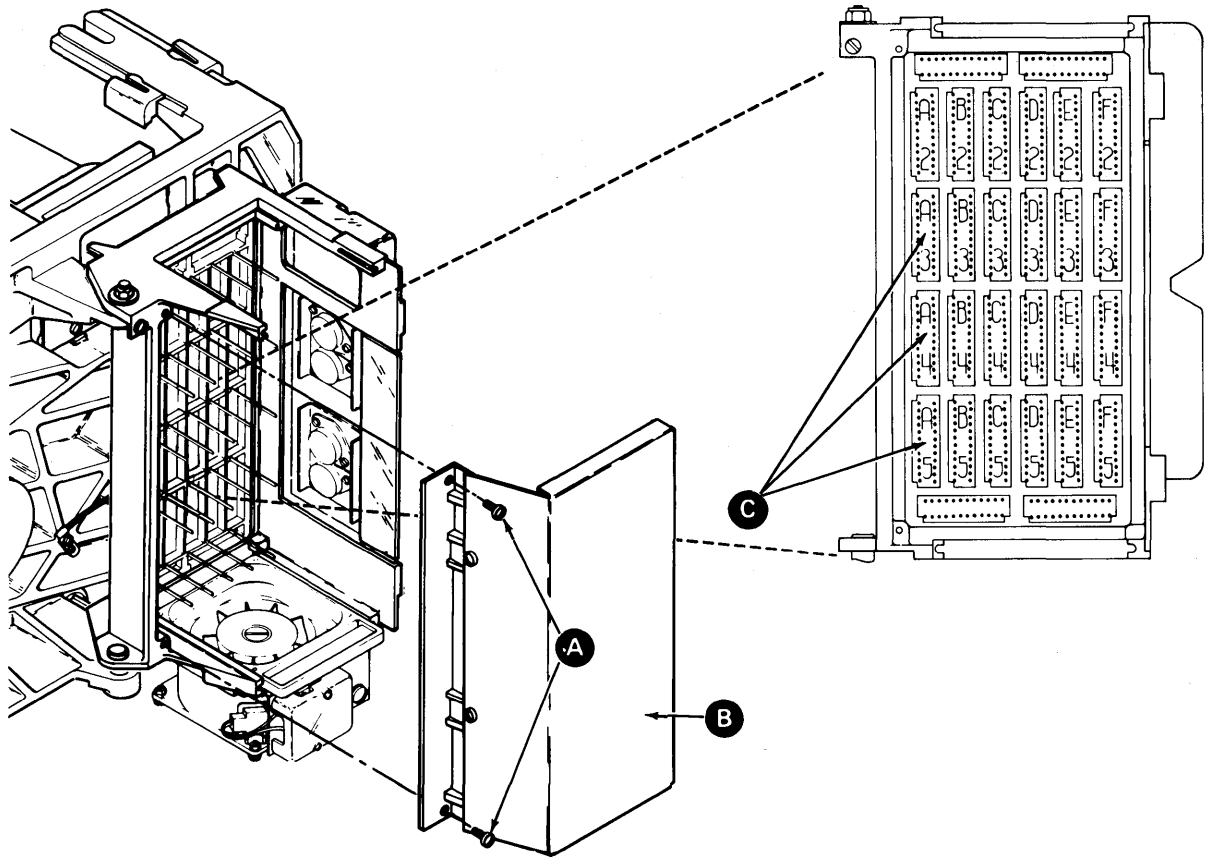
Note: For drives C and D, the procedure is done; for drives A and B only, continue with steps 4, 5, and 6.

4. Turn the screw **D** counterclockwise and open the card gate.
5. Remove the cable strap **F** from the cable guide **E**.
6. Remove the flat cables from the disk enclosure.

Connecting the Flat Cables and Connectors

Note: For drives A and B only, begin with step 1. For drives C and D, begin with step 3 (skip steps 1 and 2).

1. Place the flat cables into the cable guide **E** and reinstall the cable strap **F**.
2. Close the card gate and tighten the screw **D**.
3. Plug in the cables **C** (A3, A4, and A5). If this is the only or last disk drive, A4 contains a terminator card.
4. With the cables in position, use the two screws **A** to reinstall the cable clamp and the attached card gate cover **B**.



10-160 DISK CARDS

Note: Jumpers are installed on the disk drive C2, D2, and E2 cards at the factory. All jumper positions on a card must have a jumper installed in order for the card to function correctly. Before installing a new card, ensure that all jumpers are on the card, and that they are seated correctly.

Removing Cards from the Card Gate

1. Set Power to 0 (operator panel).
2. Remove the two screws **A** and the card gate cover **B**.
3. Remove the selected card.

Reinstalling Cards in the Card Gate

1. Plug the card into the selected position.
2. Locate the card gate cover **B**, reinstall the two screws **A** through the cover, and tighten the screws.

Removing the Actuator Coil Driver Card

1. Set Power to 0 (operator panel).
2. Turn the screw **C** counterclockwise and open the card gate.
3. Disconnect voltage connectors **G** (VC7, VC8, and VC10).

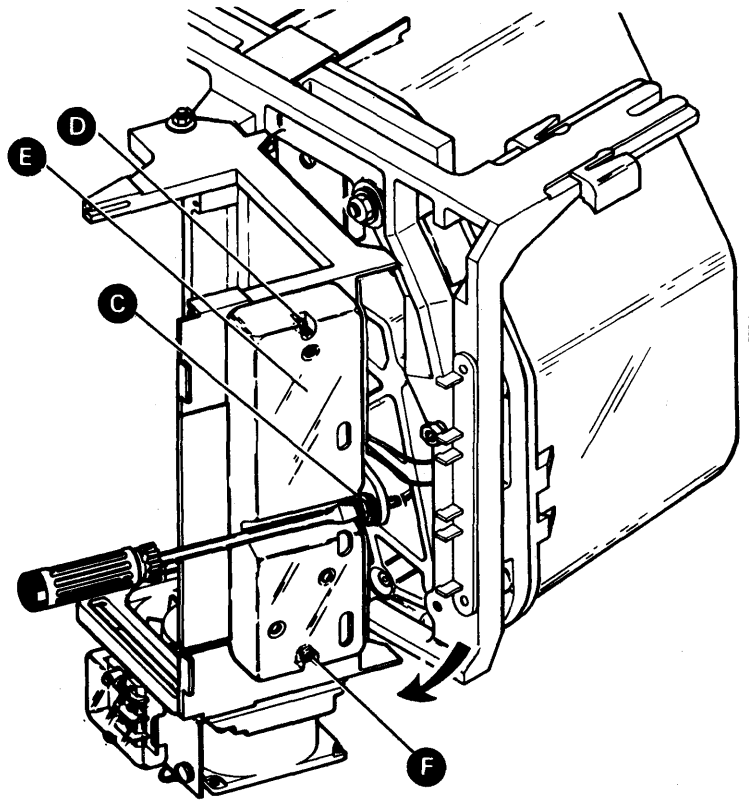
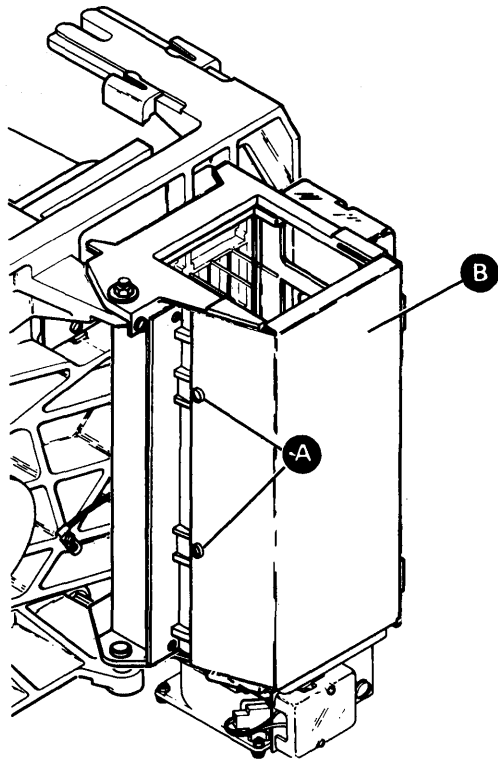
4. Remove the two screws **D** and **F** and the transparent cover **E**.

Note: The actuator coil driver card is attached to the transparent cover **E** and the cable attached to the card will limit the movement of the cover.

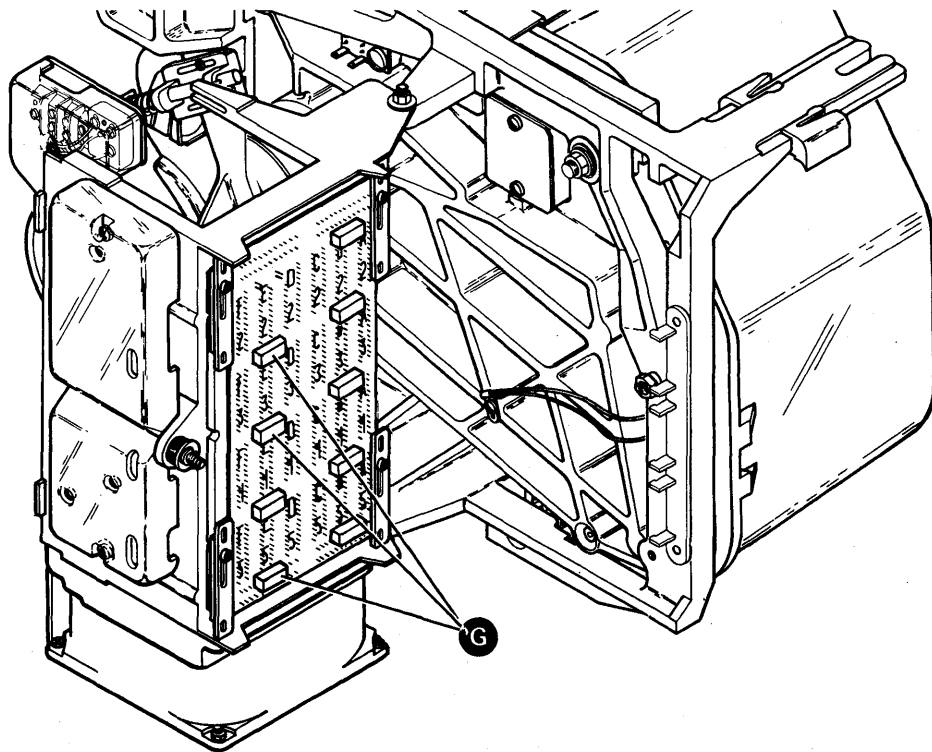
5. Remove the three holding screws to remove the actuator coil driver card from the transparent cover **E**.

Reinstalling the Actuator Coil Driver Card

1. Place the card in the transparent cover **E**, install and tighten the three holding screws for the actuator coil driver card.
2. Position the transparent cover **E** on the card gate, reinstall the two screws **D** and **F**, and tighten the screws.
3. Connect voltage connectors **G** (VC7, VC8, and VC10).
4. Set Power to I (operator panel).
5. Check the voltage on pins C and D of VC10 **G** (see paragraph 27-190).
6. Close the card gate and tighten the screw **C**.



10



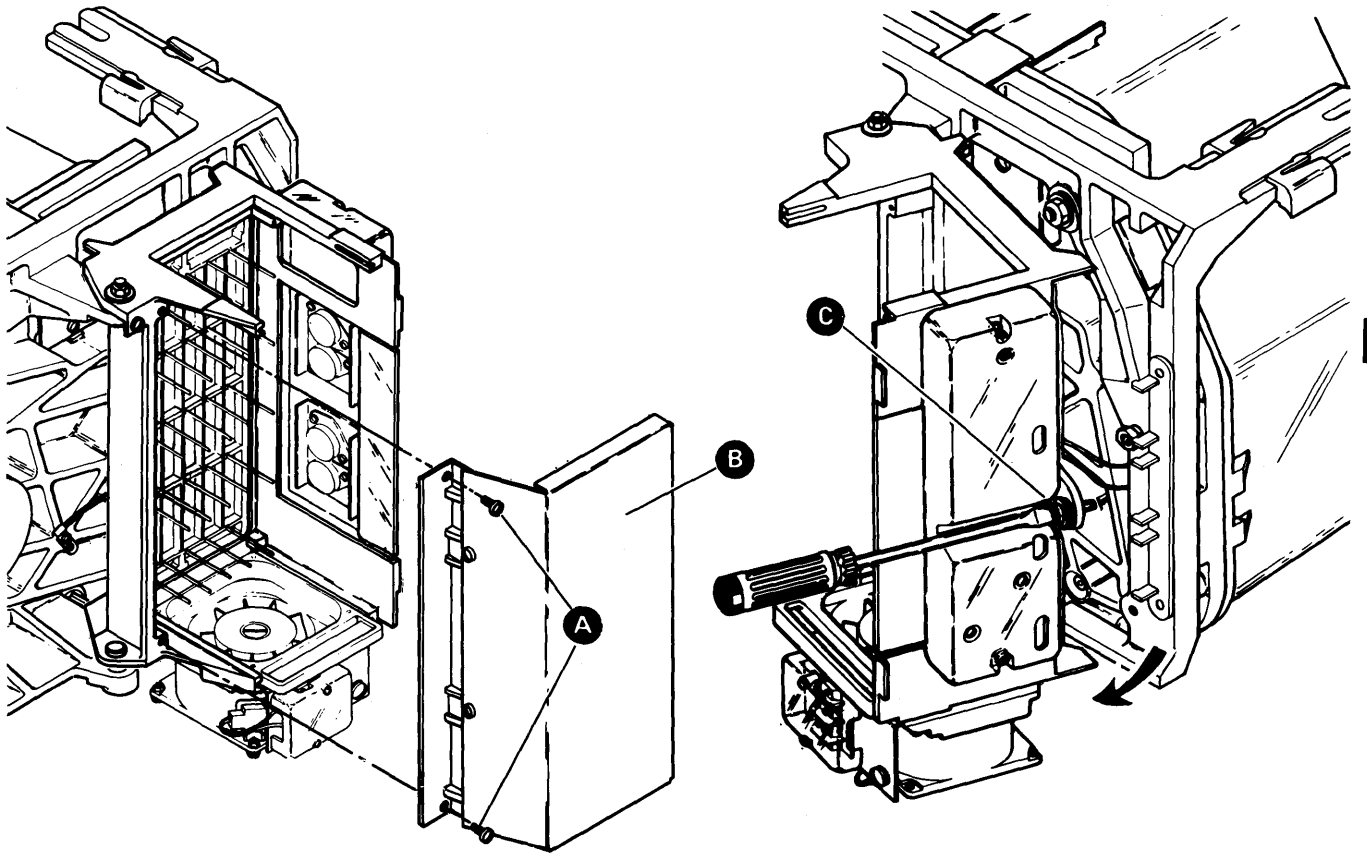
10-170 DISK BOARD

Removing the Disk Board

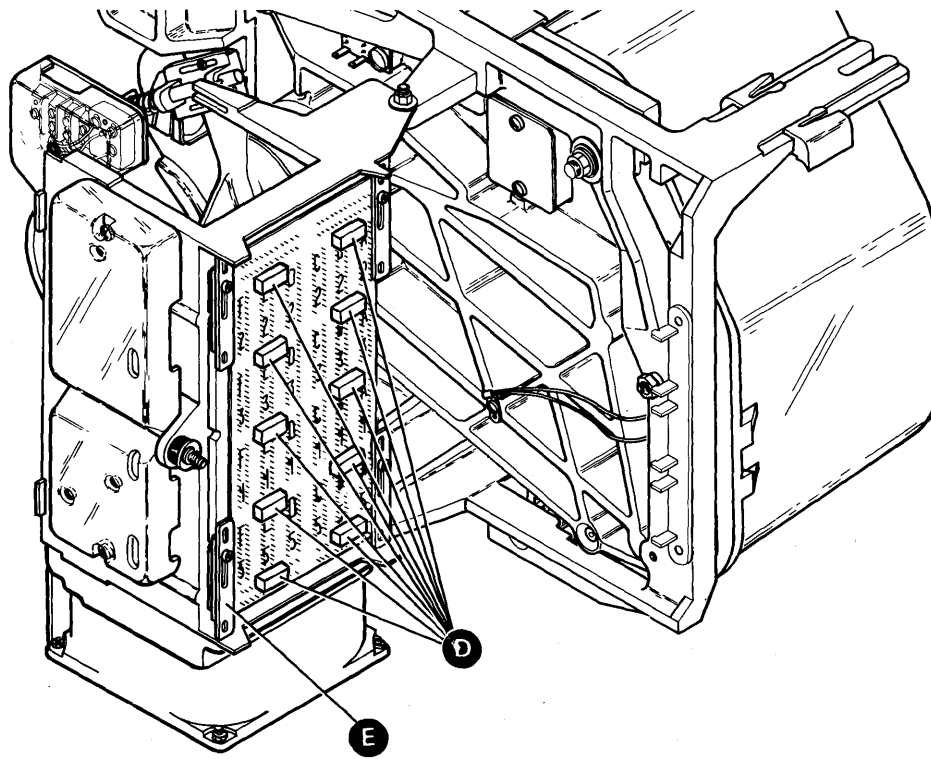
1. Set Power to 0 (operator panel).
2. Remove the two cable clamp screws **A** and remove the cable clamp and the attached card gate cover **B**.
3. Note the position of the cards and cables and then remove the cards and cables.
4. Turn the screw **C** counterclockwise and open the card gate.
5. Disconnect the voltage connectors **D**.
6. Loosen the screws in the four board retainers **E** and remove the board.

Reinstalling the Disk Board

1. Locate the board and tighten the screws in the four board retainers **E**.
2. Connect the voltage connectors **D**.
3. Carefully close the card gate. Be careful not to pinch the cables. Tighten the screw **C**.
4. Plug the cards and cables into the correct positions.
5. With the cables in position, use the two screws **A** to reinstall the cable clamp and the attached card gate cover **B**.



10



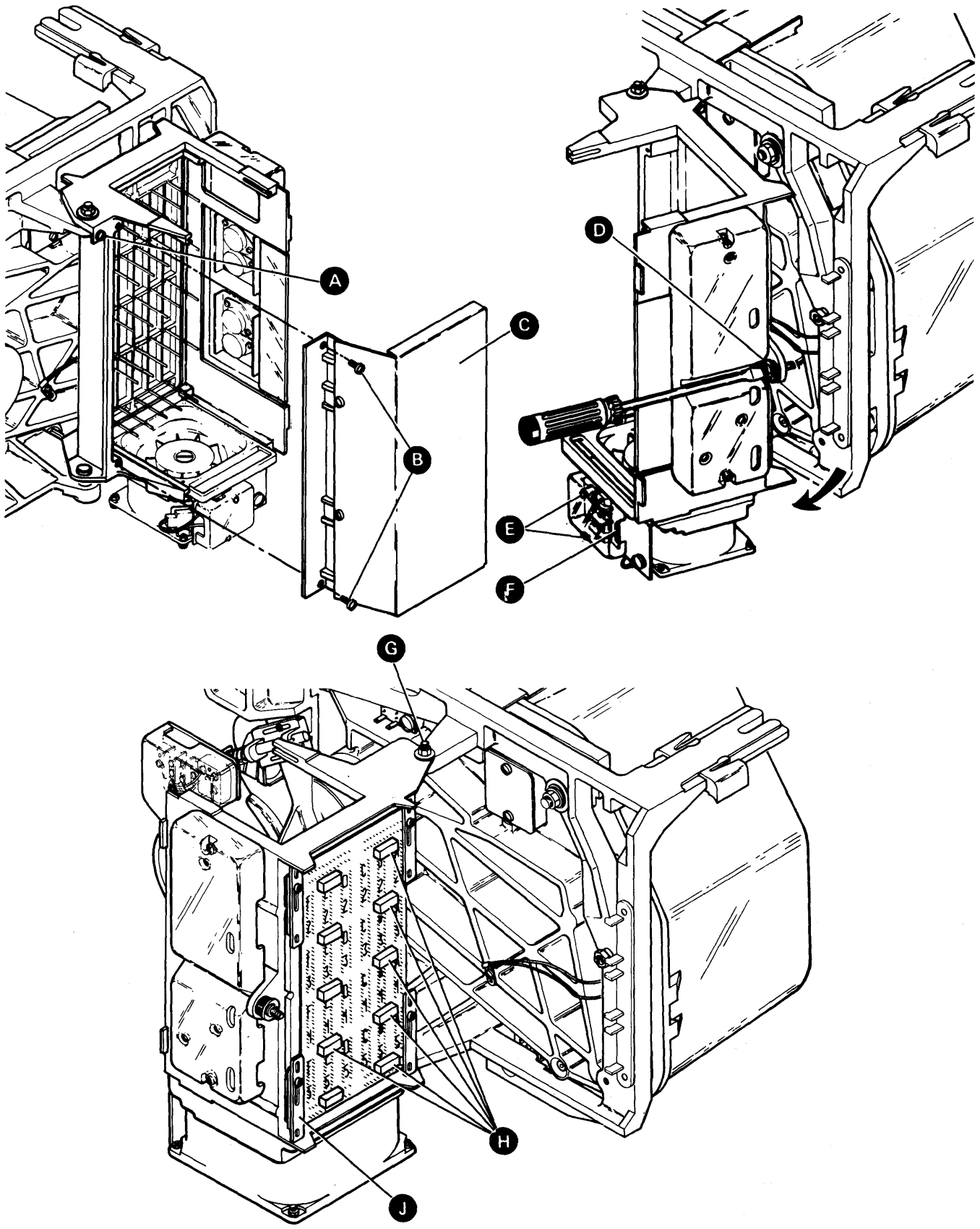
10-180 CARD GATE

Removing the Card Gate

1. Set Power to O (operator panel).
2. Remove the two cable clamp screws **B** and remove the cable clamp and the attached card gate cover **C**.
3. Turn the screw **D** counterclockwise and open the card gate.
4. Disconnect the cables (A2, A3, A4, and A5). If this is the only or last disk drive, A4 contains a terminator card.
5. Remove the screw **A** and disconnect the ground wire from the card gate.
6. Loosen the screws in the board retainers **J** to release the actuator cable.
7. Disconnect the voltage connectors **H** (VC1, VC2, VC3, VC4, VC5, and VC9).
8. Remove the two screws **E** and the cover **F** from TB2 and disconnect the AC supply wires.
9. Remove the top pivot nut **G** and lift the card gate off the disk enclosure.

Reinstalling the Card Gate

1. Locate the card gate on its pivots (top pivot first) and lower into place.
2. Reinstall the top pivot nut **G** and tighten.
3. Connect the voltage connectors **H** (VC1, VC2, VC3, VC4, VC5, and VC9).
4. Place the actuator cable under the two board retainers **J** and tighten the screws.
5. Attach the ground wire to the card gate and tighten the screw **A**.
6. Plug in the cables (A2, A3, A4, and A5). If this is the only or last disk drive, A4 contains a terminator card.
7. Close the card gate and tighten the screw **D**.
8. With the cables in position, use the two screws **B** to reinstall the cable clamp and the attached card gate cover **C**.
9. Connect the AC supply wires to TB2, reinstall the two screws **E** through the cover **F**, and tighten the screws.



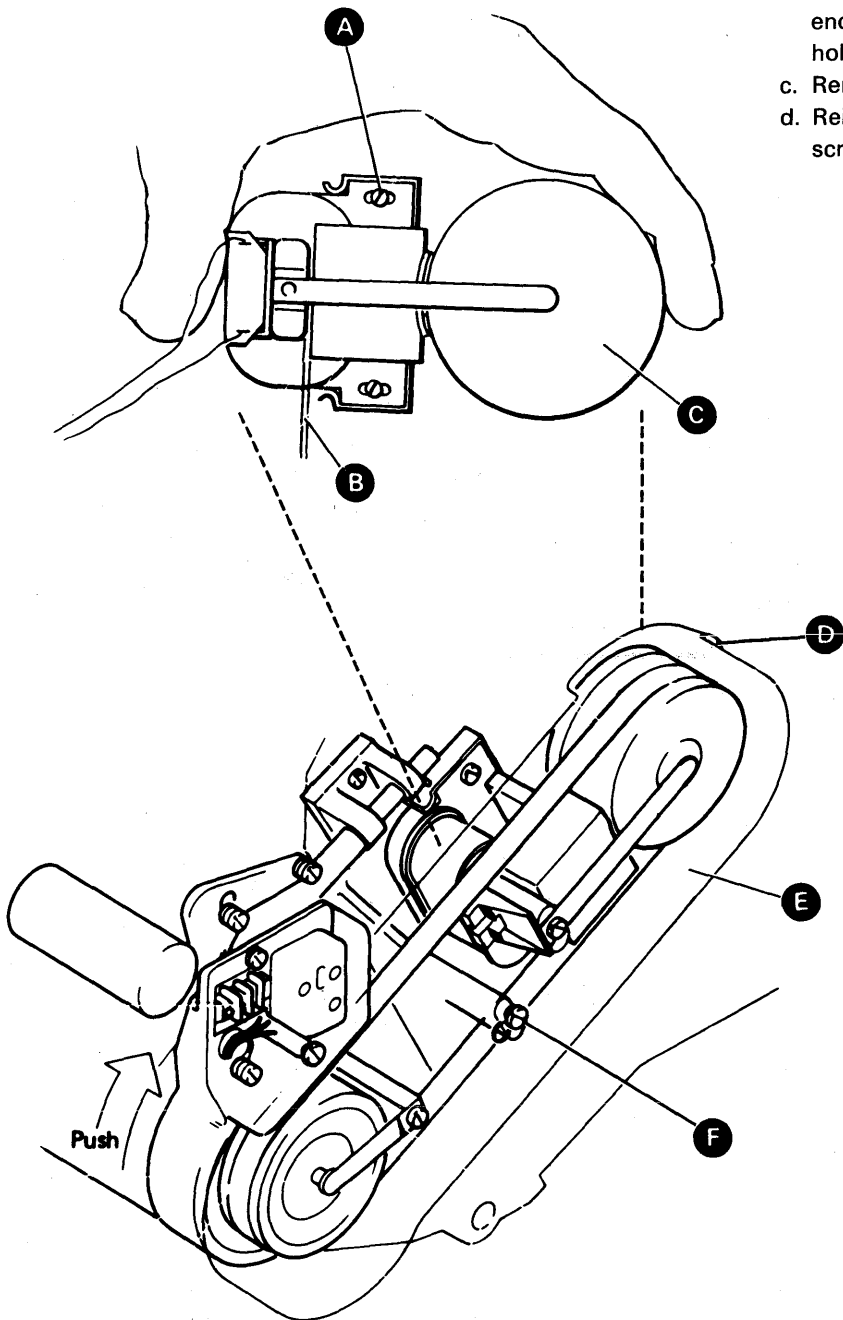
10-190 CHECKS AND ADJUSTMENTS

The following are the check and adjustment procedures for the 62PC disk drive:

- Brake Assembly
- Drive Belt Tension
- Drive Motor Thermal (50 and 60 Hz)
- Voltages

Brake Assembly

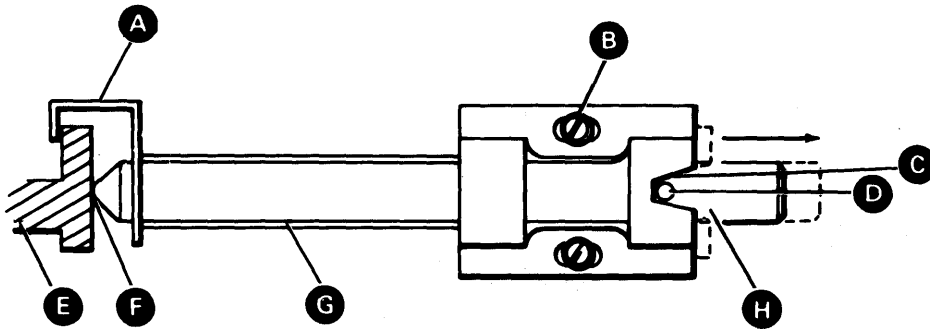
1. Set Power to 0 (operator panel).
2. Loosen the two screws **D** and **F** and remove the belt guard **E**.
3. Check for a 0.25 millimeter (0.010 inch) gap **B** between the armature casting and the solenoid.
4. Adjust the brake if necessary.
 - a. Loosen the two holding screws **A**.
 - b. Place a 0.25 millimeter (0.010 inch) gauge **B** between the armature casting and the solenoid, slide the brake assembly toward the disk enclosure spindle pulley **C**, and tighten the two holding screws **A**.
 - c. Remove the gauge **B**.
 - d. Reinstall the belt guard **E** and tighten the two screws **D** and **F**.



Drive Belt Tensioner

1. Set Power to O (operator panel).
2. Lift the motor against the belt tensioner spring **G**. When the pin **D** in the shaft **H** is free of the opening **C**, turn the shaft 90 degrees to hold the spring, and lower the motor.
3. Check for no gap at **F**.
4. Adjust the belt tensioner if necessary.
 - a. With the pin in the shaft holding the belt tensioner spring, (step 2 above), loosen the two screws **B**.
 - b. Locate the belt tensioner with no gap at **F** and tighten the two screws **B**.
 - c. Lift the motor against the belt tensioner spring **G**, turn the shaft **H** 90 degrees to place the pin **D** in the opening **C**, and lower the motor.

Note: The belt tensioner bracket **A** must overlap the motor bracket **E** as shown.

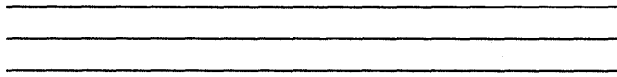


Drive Motor Thermal

The disk drive motor has a thermal to prevent overheating.

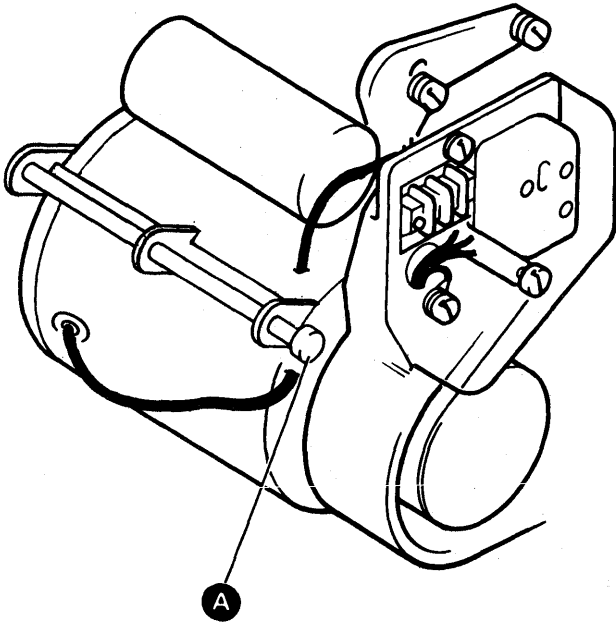
CAUTION

Set Power to O (operator panel) before pressing the thermal reset.

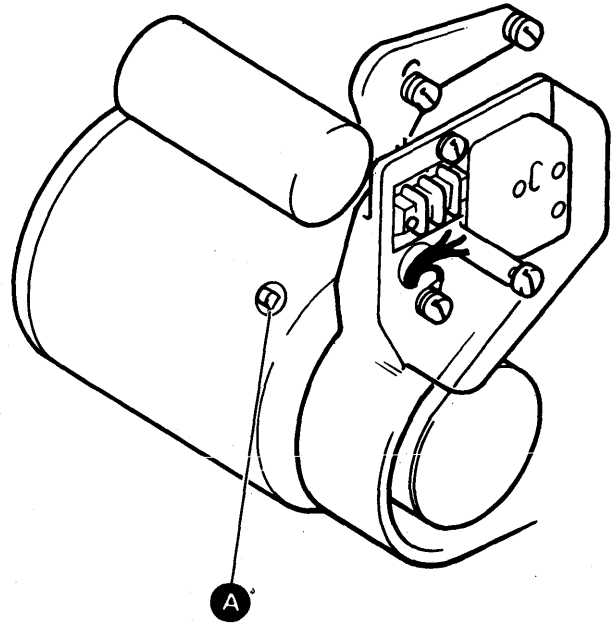


Press the thermal reset **A** to reset the motor.

60 Hz Motor

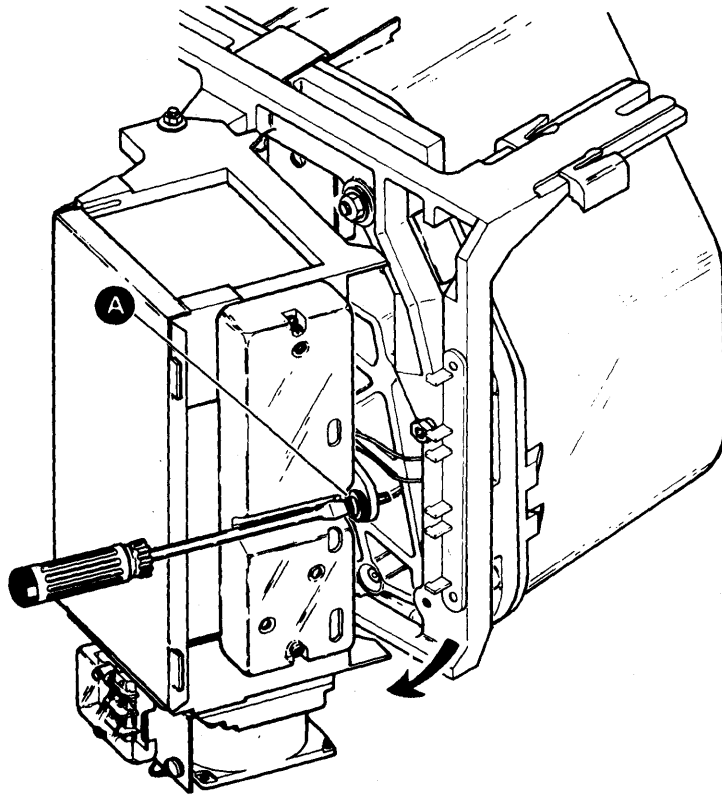


50 Hz Motor



Voltages

1. Set Power to O (operator panel).
2. Turn the screw **A** counterclockwise and open the card gate.
3. Set Power to I (operator panel).
4. Use the following charts for the locations to check the voltages.
5. Set Power to O (operator panel).
6. Close the card gate and tighten the screw **A**.



62PC Voltages Supplied by the System/34

Card Name	Card Plug Position	Voltage ($\pm 10\%$) ²						
		-12	-4	+5	+12	+24	+24 Gnd	+24 Brake Applied
Data Channel	B2	D12	B06 G06 M06 S06	D03 J03 P03 U03	B11			F14
Logic 1	C2	D12		D03 J03 P03 U03	B11			
Logic 2	D2	D12		D03 J03 P03 U03	B11	S02		
Servo 1	E2	D12	B06 G06	D03 J03 P03 U03	B11			
Servo 2	F2	D12 J12 P12 U12	B06 G06 M06 S06	D03 J03 P03 U03	B05 G11 M11 B11 S11	G02	S09	

Cable Name	Card Plug Position	Voltage ($\pm 10\%$) ²						
		-12	-4	+5	+12	+24	+24 Gnd	+24 Brake Applied
Actuator	A2		D06					
Bus In	A3							
Bus Out	A4			D03				
Dedicated	A5							

¹Contains a terminator card if this is the only or last disk drive.

²Voltages on this chart are measured on the disk drive boards (E-A1 for disk drive A, E-B1 for disk drive B, E-C1 for disk drive C, and E-D1 for disk drive D).

62PC Voltages Supplied by the 62PC

Card Name	Card Plug Position	Voltage ($\pm 10\%$) ²		
		-8	-7	+6
Data Channel	B2			B1
Logic 1	C2			
Logic 2	D2			
Servo 1	E2		D10	
Servo 2	F2	S04	D10 J10 P10 U10	

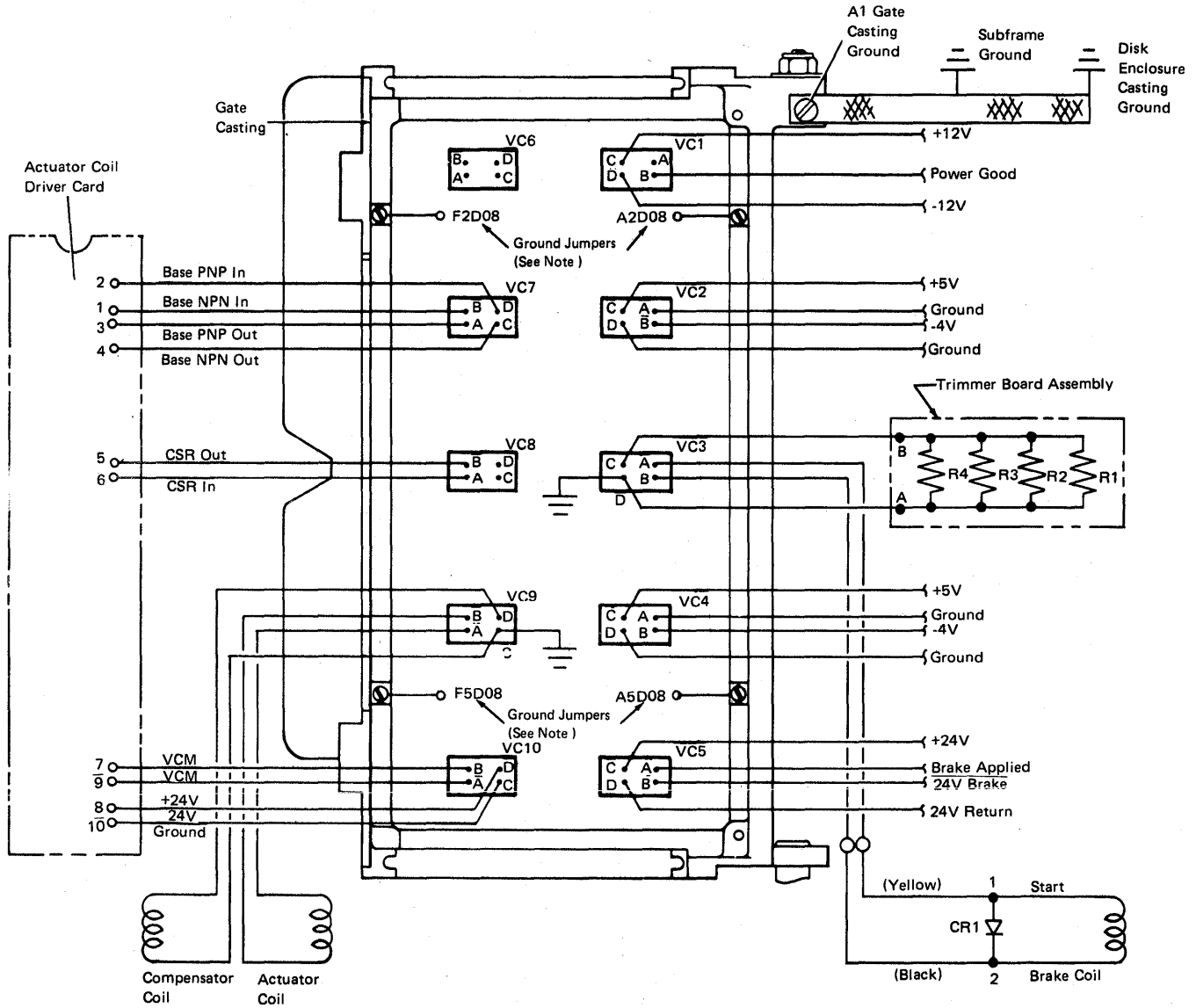
10

Card Name	Card Plug Position	Voltage ($\pm 10\%$) ²		
		-8	-7	+6
Actuator	A2	B10 B12 D09 D13		D03
Bus In	A3			
Bus Out ¹	A4			
Dedicated	A5			

¹Contains a terminator card if this is the only or last disk drive.

²Voltages on this chart are measured on the disk drive boards (E-A1 for disk drive A, E-B1 for disk drive B, E-C1 for disk drive C, and E-D1 for disk drive D).

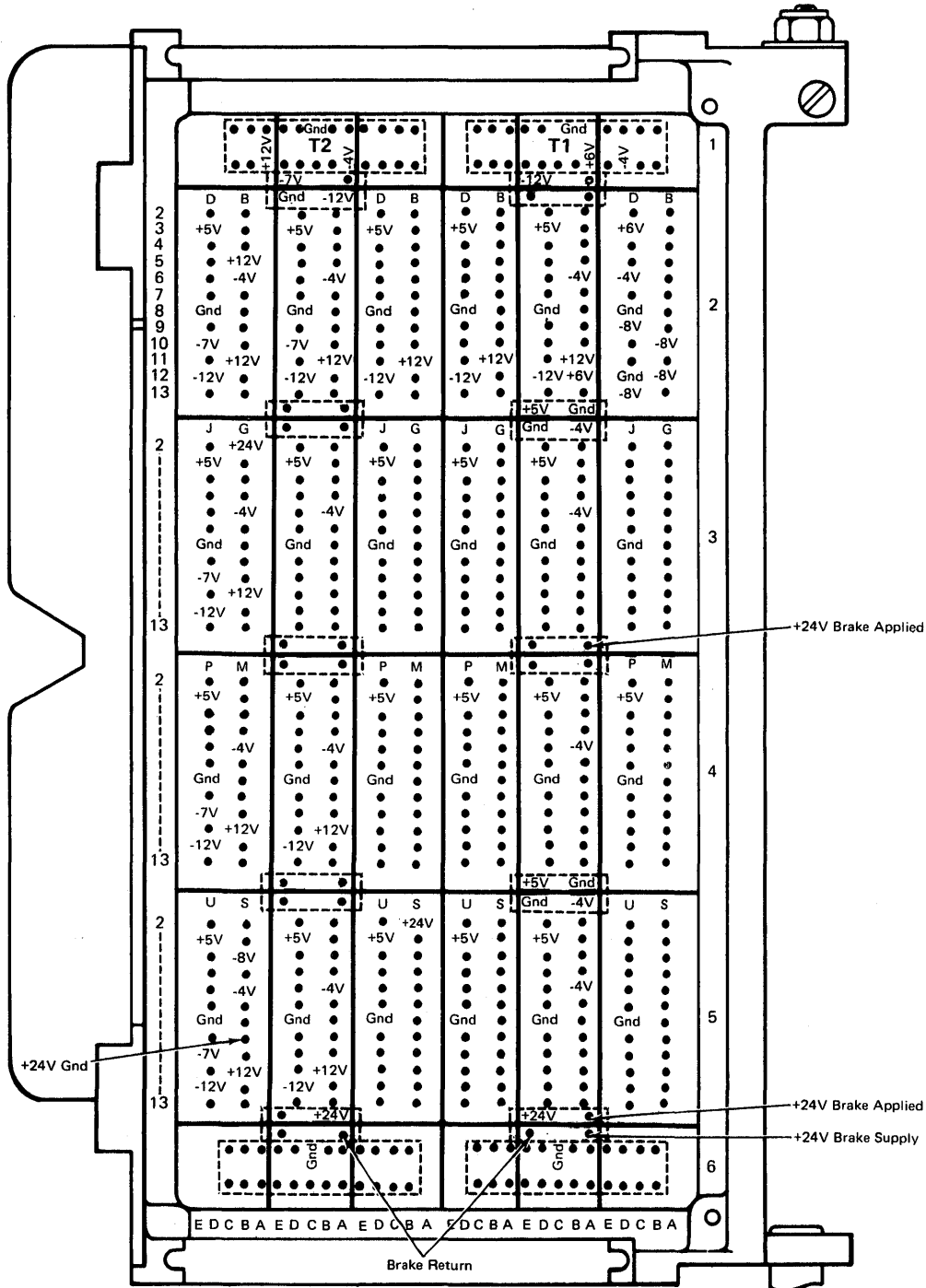
62PC Disk Drive Board (E-A1, E-B1, E-C1, or E-D1)



Voltage Cross-Over Cable Locations
(Pin Side)

Note: All four jumpers may not be present.

62PC Disk Drive Board (E-A1, E-B1, E-C1, or E-D1)



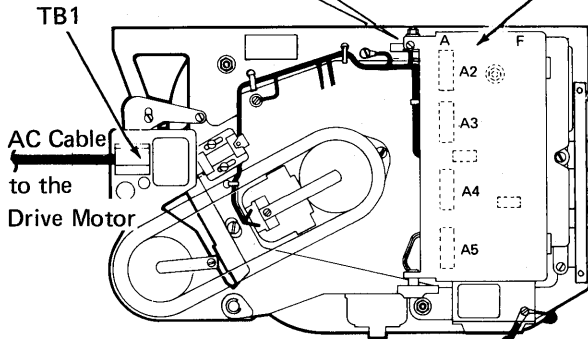
Voltage Pin Locations
(Pin Side)

10-200 CABLE AND CARD LOCATIONS

Brake Cable
 +24V }
 +24V }
 +12V } From Power Supplies
 +5V }
 -4V }
 -12V }
 -Power Good—From power supply logic
 Ground—From power supply logic
 -Brake Applied—To power supply logic

Card Gate Assembly Card Position	Card Name
B2	Data Channel
C2	Logic 1
D2	Logic 2
E2	Servo 1
F2	Servo 2

Drive	From
A	A-A2A5
B	E-A1A4
C	E-B1A4
D	E-C1A4

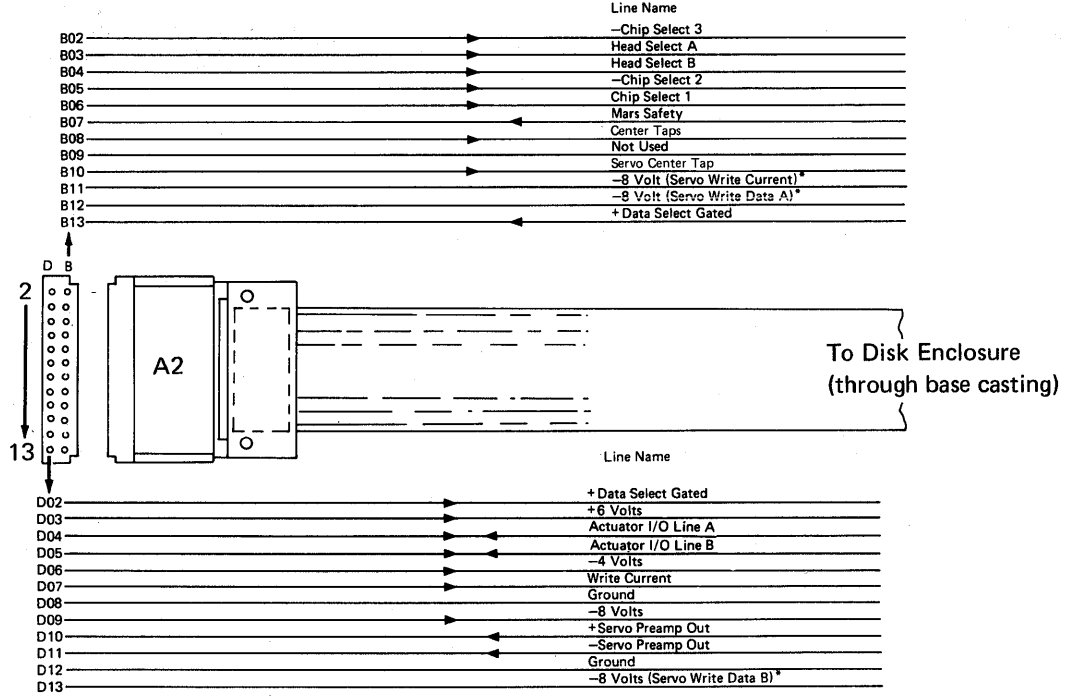


Bus Cable: This cable goes to the next drive. If there is no next drive, A4 connector of last drive contains a terminator card.

Drive	From
A	A-A2A4
B	A-A2Z1
C	A-A2B4
D	A-A2B5

Last Drive	Terminator
A	E-A1A4
B	E-B1A4
C	E-C1A4
D	E-D1A4

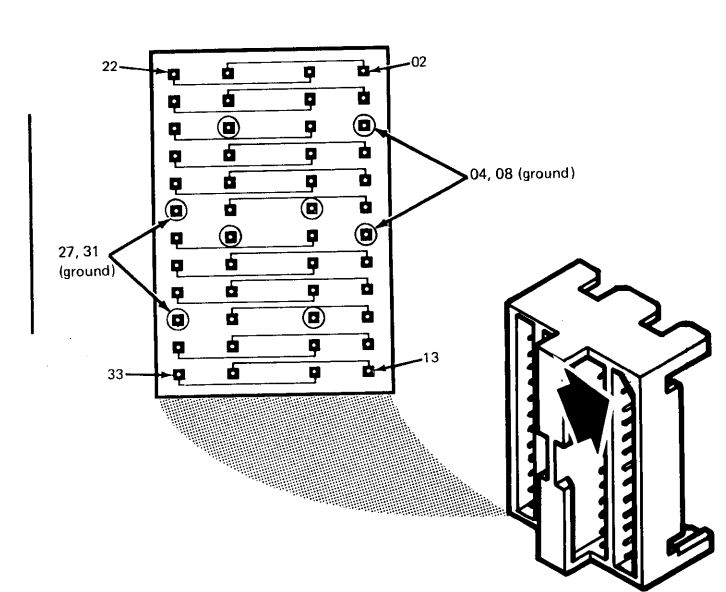
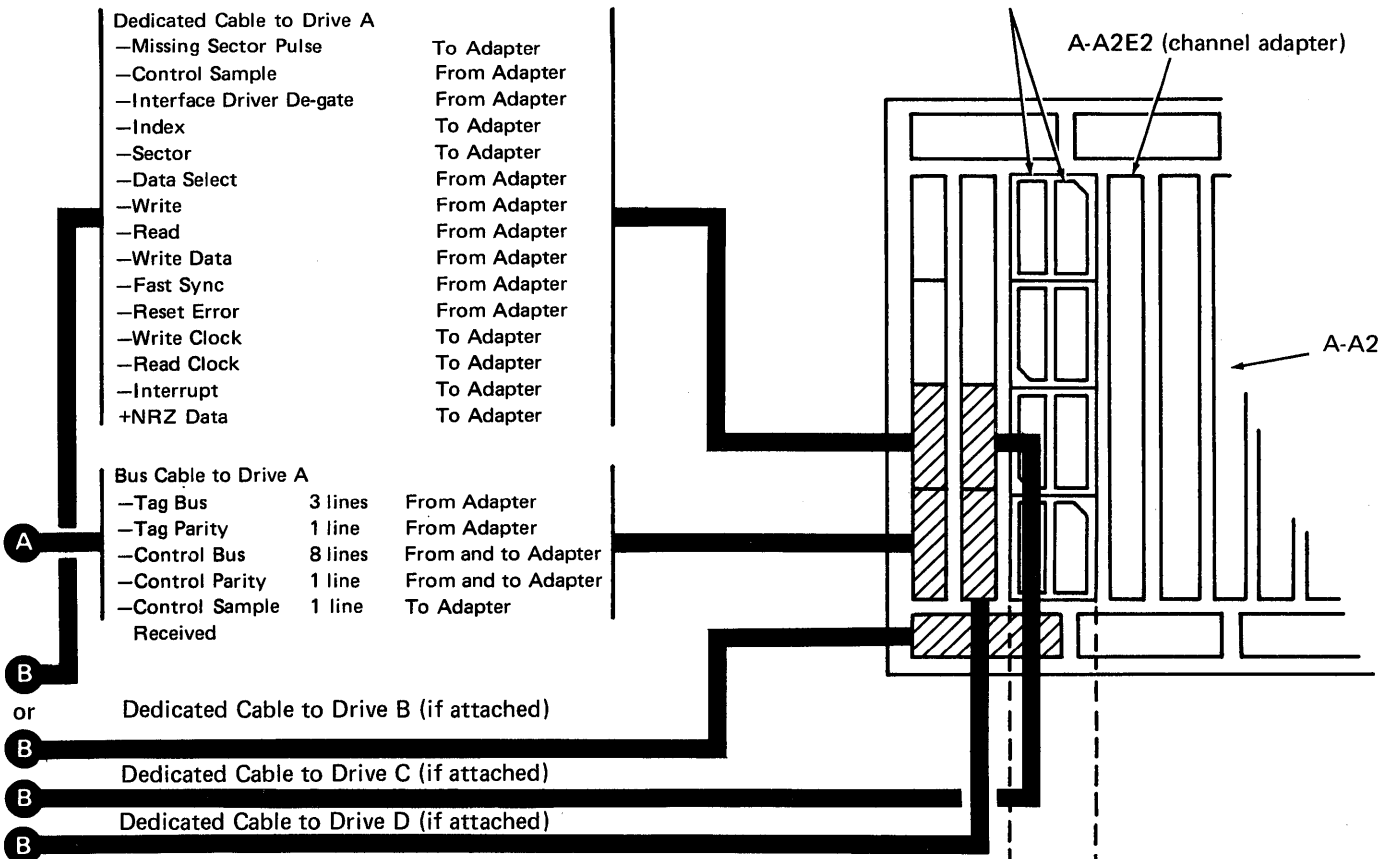
AC Cable to the Cooling Fan
 The AC voltage to the fan is present even when the drive motor is off. This provides cooling for the cards.



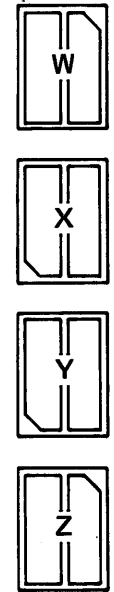
Note: If drives B, C, or D are installed, the line names are the same, but the board locations are E-B1, E-C1, and E-D1.

*Plant use only

A-A2C2 and A-A2D2 (common adapter)
 These cards are connected by four top card connectors (see Note).

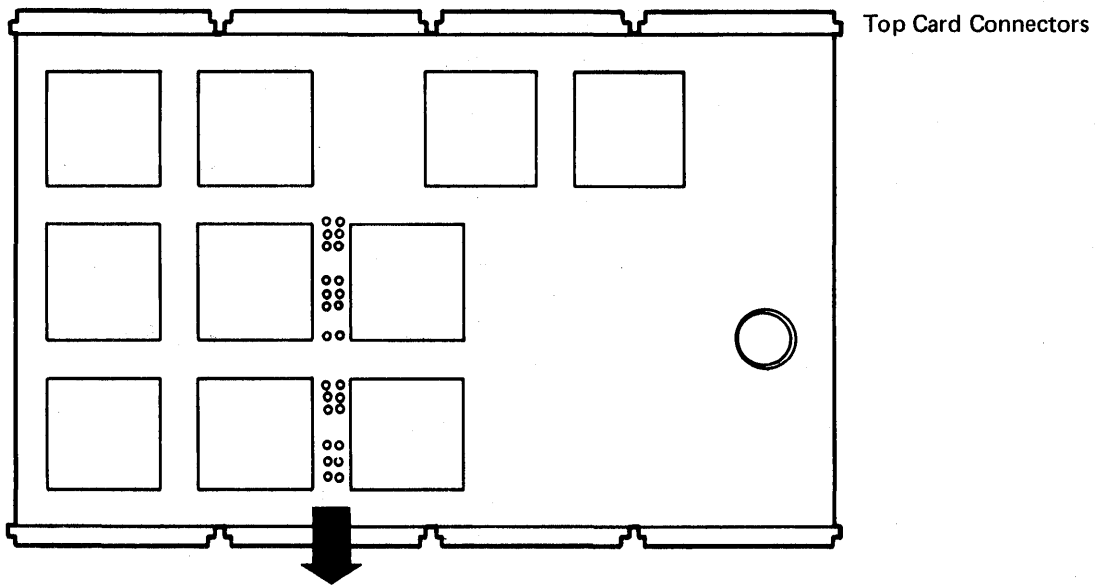


Top Card Connector



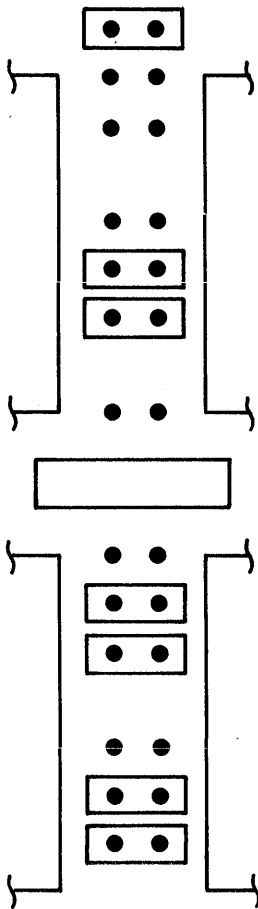
Note: The top card connectors on the common adapter are not interchangeable with the top card connectors on the line printer, work station, or 1255 magnetic character reader attachments.

10-210 CHANNEL INTERFACE CARD (A-A2D2) JUMPERS

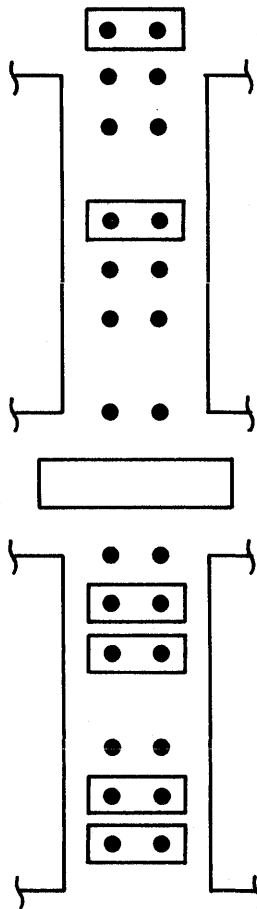


Install the jumpers as shown below:

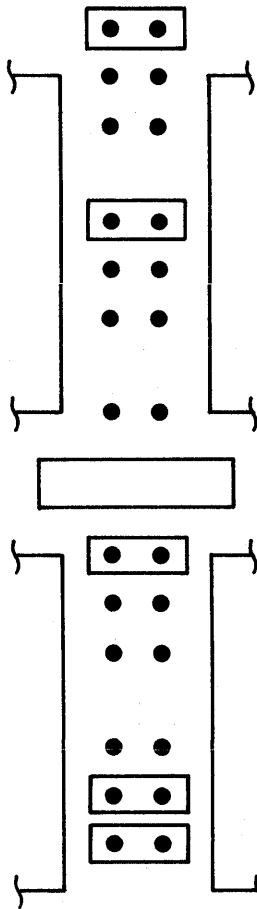
For a 65-megabyte system:



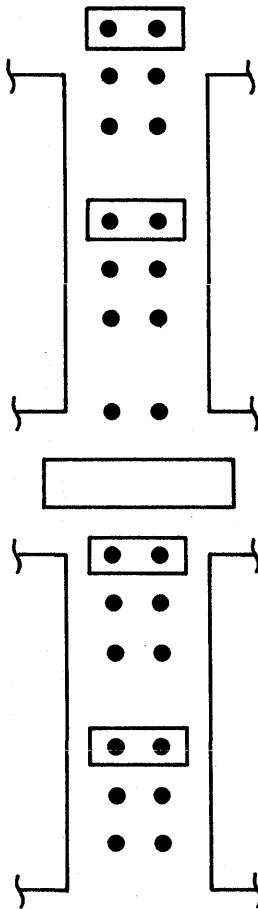
For a 130-megabyte system:



For a 195-megabyte system:



For a 260-megabyte system:



10-220 DRIVE ASSEMBLIES C AND D

Removal

CAUTION

Do not turn the disk spindle counterclockwise; you may damage the disk and head.

1. Set Power to O (operator panel).

Note: Steps 2, 3, and 4 may already have been completed.
2. Turn the screw **A** counterclockwise and open the card gate.
3. Turn the actuator lock knob **B** clockwise (through 120 degrees) until the actuator lock reaches its stop to lock the actuator.
4. Remove the two cable clamp screws **C** and remove the cable clamp and the attached card gate cover **D**. Keep the clamp, cover, and screws.
5. Disconnect the cables (A3, A4, and A5). If this is the only drive or the last drive, A4 contains a terminator card.
6. Remove two screws **E** and the cover **F** from TB2 and disconnect the AC supply wires. Disconnect ground lead from screw **G**.
7. Remove screw **H** and cover **J** from TB1. Disconnect system AC wires from TB1 and ground wire from screw **K**.
8. Remove screws, washers, star washers, and nuts **L**.

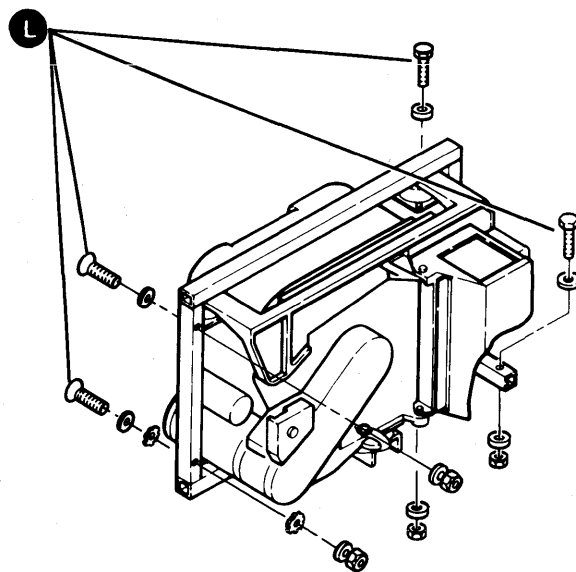
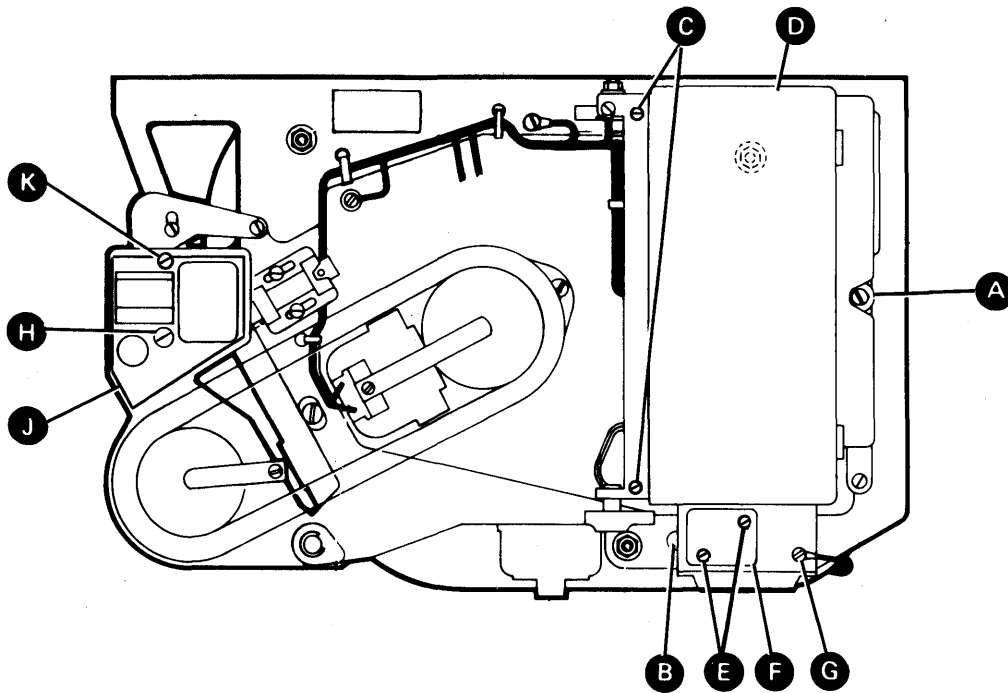
DANGER*

The disk drive assembly weighs 16 Kg (35 pounds). Clear a space for the disk drive assembly before removing it from the machine.

9. Remove disk drive assembly from rear of machine and set in a clear area.

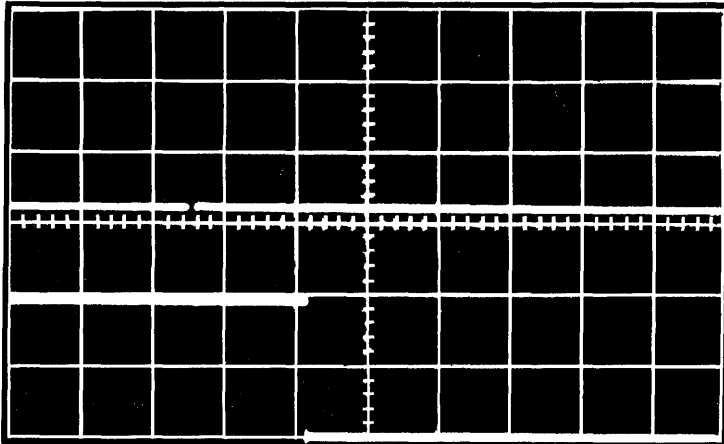
Replacement

1. Lift and insert disk drive assembly from rear of machine.
2. Reinstall four screws, eight washers, two star washers, and four nuts **L**.
3. Connect ground wire to screw **K** and two system AC wires to TB1.
4. Reinstall cover **J** over TB1 with screw **H**.
5. Connect ground wire to screw **G** and two system AC wires to TB2.
6. Reinstall cover **F** to TB2 with two screws **E**.
7. Connect cables (A3, A4, and A5). If this is the only drive or the last drive, A4 contains a terminator card.
8. Put the cables in position and reinstall cable clamp and attached card gate cover **D** with two screws **C**.
9. Turn actuator lock knob **B** counterclockwise (through 120 degrees) until the actuator lock reaches its stop.
10. Close the card gate and tighten screw **A**.



For Drives C and D Only

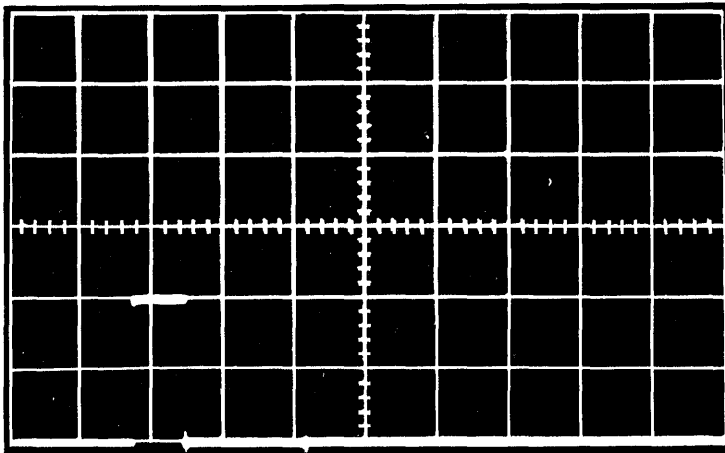
10-400 MAP SCOPE PICTURE 1



D2J09 + Shift Reg Clock

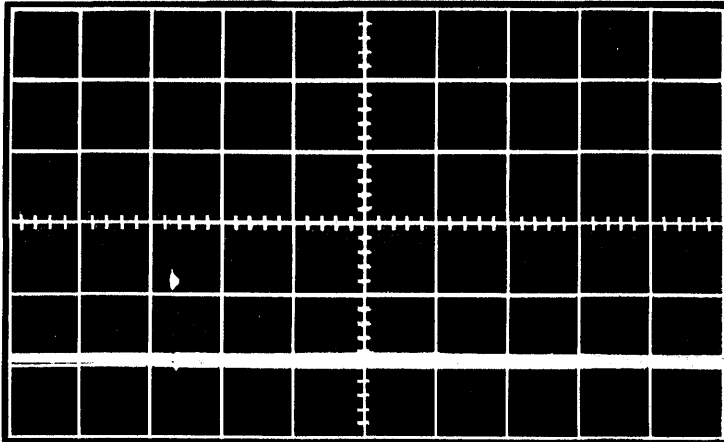
D2J10 + Enable Sample Servo

10-410 MAP SCOPE PICTURE 2



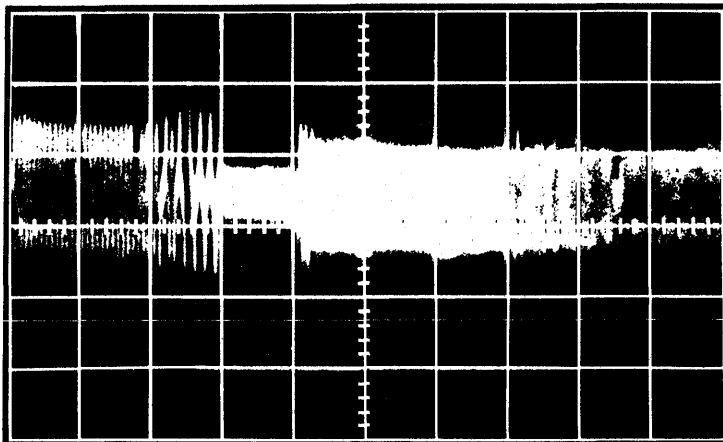
D2U13 + Enable Mark Detect

10-420 MAP SCOPE PICTURE 3



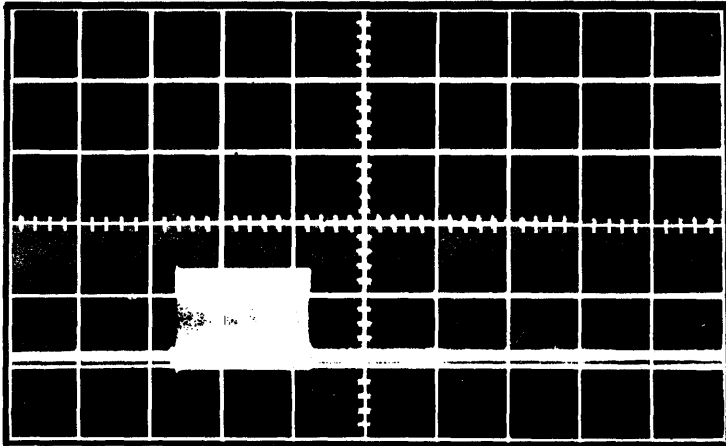
E2G03 + Servo Inhibit VCO

10-430 MAP SCOPE PICTURE 4



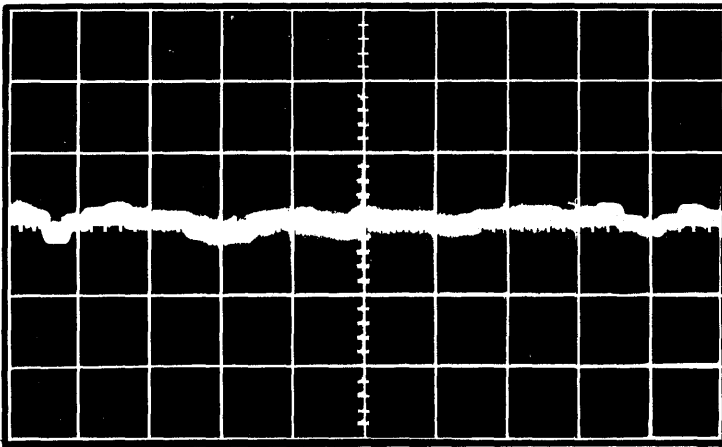
E2B03 Buffered Analog Data A

10-440 MAP SCOPE PICTURE 5



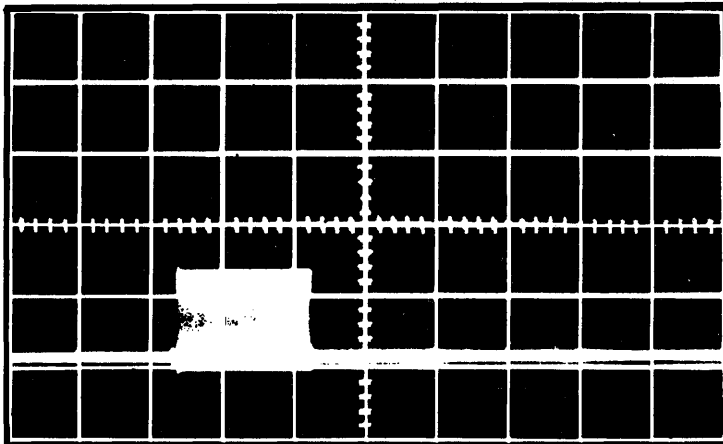
E2G08 + Data Servo 2F Burst

10-450 MAP SCOPE PICTURE 6



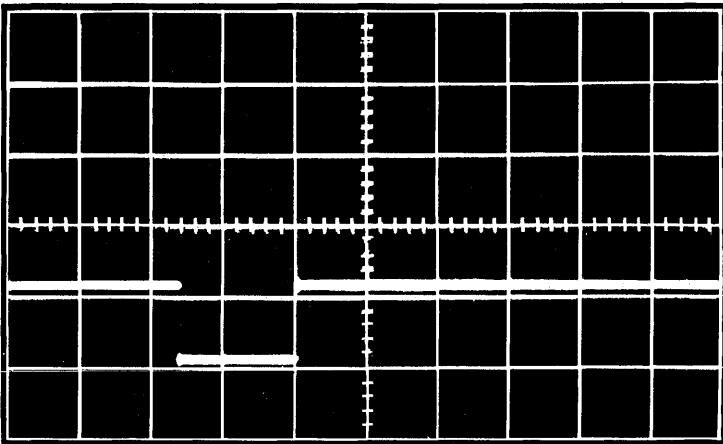
E2B13 Data PES

10-460 MAP SCOPE PICTURE 7



E2G03 + Servo Inhibit VCO

10-470 MAP SCOPE PICTURE 8



E2J05 - Counter Run