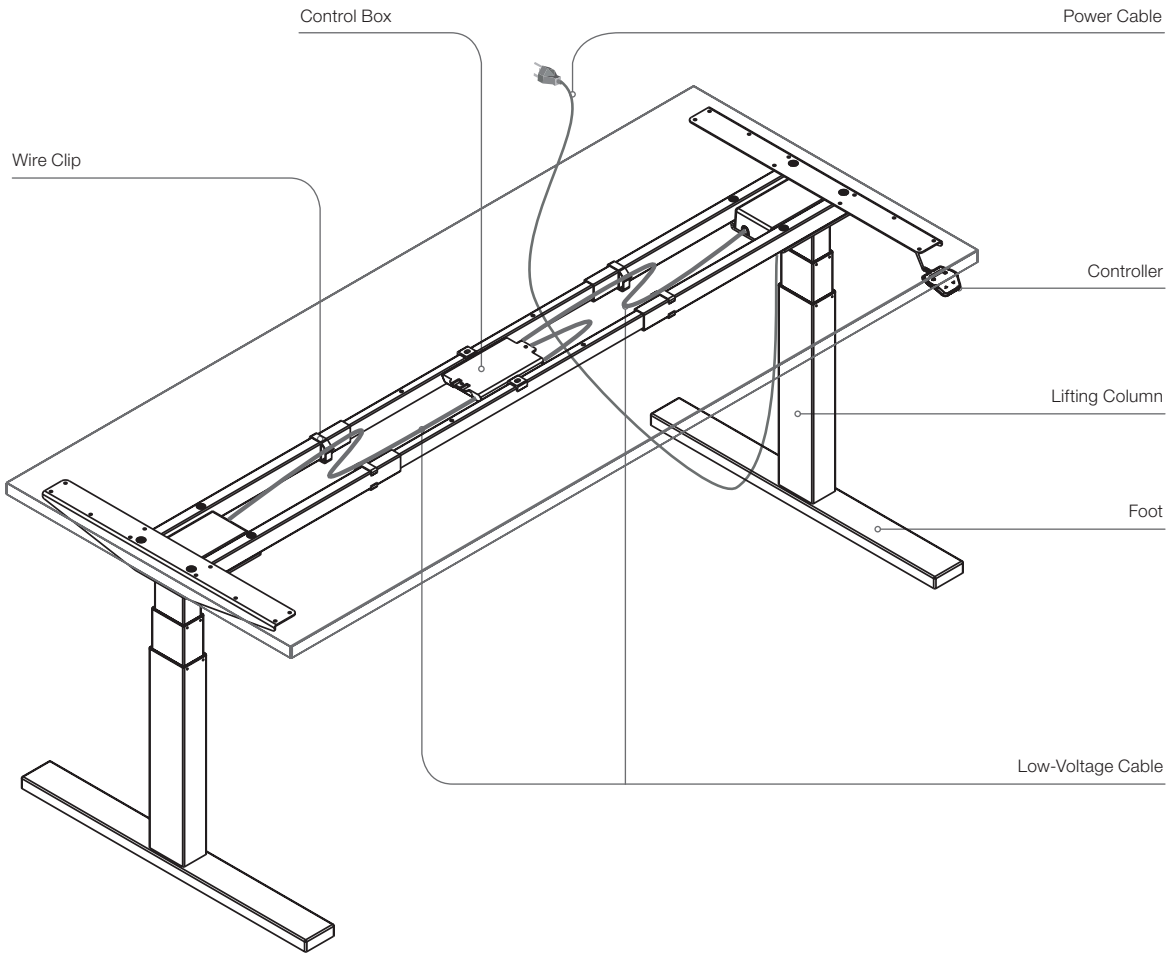

MIGRATION SE or BIVI HEIGHT-ADJUSTABLE DESK AND BENCH

HOW THEY WORK

- Each Lifting Column contains an individual motorized lift mechanism.
- The Control Box contains a power transformer. This converts high-voltage AC current from the wall outlet to low-voltage 24v DC current, which powers the Lifting Columns.
- Only the main power cable carries high voltage. All other cables carry low voltage.
- The Control Box contains a computer processor, with embedded software controllers.
- The Control Box controls all aspects of Desk and Bench motion, and synchronizes motion of the individual Lifting Columns.
- The Control Box will shut down the entire Desk or Bench if a fault is detected. For example, if one Lifting Column is binding or trapped, it will draw significantly more current than the other Lifting Column, and the Control Box will shut down the entire Desk or Bench to prevent further damage.
- The Controller is the user interface to the Desk and Bench, and directs all Desk and Bench movements via the Up-Down buttons and the Preset buttons.
- Preset data is stored in the Control Box, not in the Controller itself.

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Steelcase

READ THE ASSEMBLY DIRECTIONS AND USER GUIDE

Many times, problems can be the result of improper assembly. Reference the Assembly Directions document to ensure the Desk or Bench is assembled correctly. If so, reference the troubleshooting steps throughout this document.

TROUBLESHOOTING PARTS KIT

Having a spare part that is known to work will quickly lead to accurate identification of faulty components. Without this, it can be little more than guesswork.

Steelcase strongly recommends that every Dealer maintain a small kit of parts for troubleshooting purposes.

This kit of parts should include:		**Desk** *Part No.*	**Bench** *Part No.*
1. Lifting Column	qty=1	25316701SR	1355943001SR Ext, LH
2. Lifting Column	qty=1	25316702SR	1355943002SR Ext, RH
3. Control Box	qty=1	1298401001SR	1298401003SR
4. Controller (Digital / Preset)	qty=1	1298394002SR	1298394002SR
5. Power Cable	qty=1	22047321SR (see Service Parts catalog for grounded power cords)	22047321SR

Always maintain a complete kit of troubleshooting spare parts that are known to work properly, to quickly identify the root-cause of problems and resolve customer issues on the first try.

TROUBLESHOOTING STEPS

Step 1: Check for power at the wall outlet; ensure Desk or Bench is properly assembled, and all cables are securely connected. Upon powering up the Desk or Bench, the Control Box will click twice to indicate normal operation and verify that connections are properly made. If it clicks only once, or if it clicks 3 or more times, there is a fault in the system.

Step 2: Check all connections of Lifting Column Low-Voltage Cables. Check the connection points on the Control Box: are any of the pins in the connectors damaged or not making contact? *(see Fig. 2 on page 6)*

Step 3: Obtain a Control Box, Digital / Preset Controller, and Power Cable that are known to work.

Caution! If the Lifting Column is assembled to a Desk or Bench, first flip the Desk or Bench upside-down. This will allow full and free motion of the Lifting Columns, and will prevent any further damage to them.

Step 4: Test Lifting Columns for proper function, and replace any faulty Lifting Columns. To do this, create a bench-testing setup using known good components, for example from your troubleshooting parts kit. Use these known good components to test the Lifting Columns of the suspect Desk or Bench as follows:

A. Verify the function of the bench-test setup by connecting all the known-good components, including Lifting Columns, synchronize the Lifting Columns (see Common Procedures), and check for proper function.

B. Disconnect power to the Control Box, and connect the Lifting Columns of the suspect Desk or Bench to the bench-test setup. If the Lifting Columns of the suspect Desk or Bench now operate normally using the bench-test setup, then the Lifting Columns of the suspect Desk or Bench are good. Move on to Step 5.

C. If the Lifting Columns of the suspect Desk or Bench do not operate normally, observe the error code shown in the display of the Digital / Preset Controller of the bench-test setup. The following error codes may indicate a fault with the Lifting Column, its Low-Voltage Cable, or the cable connector:

1. E12 / E13 / E14: Defect on channel 1 / 2 / 3.
2. E24 / E25 / E26: Overcurrent on motor M1 / M2 / M3
3. E36 / E37 / E38: Plug detection in motor socket M1 / M2 / M3

D. Using error code E12 as an example…error code E12 may indicate a fault with the Lifting Column plugged into channel 1 of the Control Box. To verify this, first disconnect power to the Control Box, and then swap the Lifting Column low-voltage connectors between channels 1 and 2, so that Lifting Column 1 is now plugged into 2, and 2 is plugged into 1. Re-connect the power.

E. If the error code now reads E13, indicating a fault on channel 2, then the fault moved with the Lifting Column. Therefore, the problem must reside with the Lifting Column 1, which was moved from channel 1 to 2.

F. If the error code instead continues to read E12, then both Lifting Columns may be faulty.

G. For further verification, repeat this process by swapping out the suspect Desk or Bench Lifting Columns with the Lifting Columns from your troubleshooting parts kit, to zero in on which Lifting Column is faulty, if not both. *(If the suspect Desk or Bench Lifting Columns function normally in the bench-test setup, move on to Step 5.)*

Any faulty Lifting Columns must be replaced.
There are no field-serviceable parts inside the Lifting Column.

Between each of the following steps, be sure to disconnect the Control Box from the power source for at least 5 seconds to power down the internal processor.

Step 5: If there are no error codes to indicate faults with the Lifting Columns or their Low-Voltage Cables or connectors, progressively swap out parts in the bench-test setup as follows:

A. Swap the known-good Power Cable with the original from the non-functioning Desk or Bench. If it stops working, the Power Cable is faulty.

B. Using the original Power Cable, swap the known good Controller with the original from the non-functioning Desk or Bench. If it stops working, the Controller is faulty.

C. Using the original Power Cable and Controller, swap the known good Control Box with the original from the non-functioning Desk or Bench. If it stops working, the Control Box is faulty.

Be sure to go through all of the steps above to fully identify all faulty components. There could be more than one!

COMMON PROCEDURES

POWER-SAVING CONTROL BOX:

- The Control Box automatically powers down into ‘Standby’ mode after 20 seconds of inactivity.
- During ‘Standby’ mode, the Control Box only consumes 0.1 watt of power.
- With the Control Box in ‘Standby’ mode, the Desk or Bench can lose power without affecting the synchronization of the Lifting Columns. However, a power loss still allows the Control Box to power down and ‘Soft Reset.’ (see below)

DUTY CYCLE:

- In order to prevent excessive heat buildup and avoid damage to the system, the Control Box limits the Up-Down function of the Desk or Bench to a maximum of 1 minute of continuous operation in a 10-minute timeframe (10% duty cycle).
- To cool off the desk, wait for 20 minutes before operating the desk again.
- If the 10% duty cycle is exceeded, the Control Box may still allow limited movement, for example 3 seconds of movement after 10 seconds of rest. If further movement is desired, allow the Desk or Bench to cool off before making further adjustments.
- If the Desk or Bench does not function at all after long periods of operation, allow the Desk or Bench to cool off, until the Control Box has been idle for the entire duty cycle period.
- If the Control Box overheats, the display of the Digital / Preset Controller will read ‘HOT.’ Simply wait until the Control Box cools off, and ‘HOT’ is no longer displayed, before attempting further adjustments.

CONTROL BOX SOFT RESET:

- Unplugging the Control Box from the power source, and then plugging it back in, interrupts power to the processor inside the Control Box. This power interruption causes the processor to reset.
- If the Desk experiences unexplained freezing or erratic performance, unplug the Control Box from the power source to cut power to the processor, and reset its routine. Wait a minimum of 5 seconds, and then re-connect the power.
- If this does not restore normal performance, additional troubleshooting steps are required.

CONTROL BOX RE-INITIALIZATION:

- In the event that a 'Soft Reset' does not restore normal operation, a 'Hard Reset' may be required.
- Currently, it is necessary to use a Digital / Preset Controller to perform this operation.
- To reset the Control Box to its factory settings:
  1) Press memory positions 1, 2 and the Up button simultaneously for 10 seconds
  2) Display shows 'S5'
  3) Press and hold the Up button until the display reads 'S0'
  4) Press '💾 Save'; the unit is reset to factory settings
  5) The display shows 'E70' after factory reset
  6) Soft reset the control box (unplug and replug the power cord)
  7) Synchronize the lifting columns

SYNCHRONIZING / INITIALIZING LIFTING COLUMNS:

- Operate the Desk all the way down to the lowest position, and release the Down button.
- Press the Down button again, and hold.
- After a few seconds, the Desk will visibly move up and down, settling to its correct 'bottom' position.
- The Lifting Columns are now synchronized via the software in the Control Box.
- Operate the Desk all the way up and down to confirm proper function.

TESTING INDIVIDUAL LIFTING COLUMNS:

- The Control Box is coded to operate only when all Lifting Columns are properly connected. It is not possible to operate Lifting Columns individually for troubleshooting purposes.
- To properly identify faulty Lifting Columns, refer to Step 4 of the Troubleshooting Steps.

Any faulty Lifting Columns must be replaced.
There are no field-serviceable parts inside the Lifting Column.

TROUBLESHOOTING: CAUSES AND SOLUTIONS

PROBLEM	POTENTIAL CAUSE	POTENTIAL SOLUTION
No power to Desk or Bench	No power at wall outlet	Check outlet with another device; check circuit breakers/fuses/wiring.
	Power Cable not plugged into wall outlet	Confirm proper cable engagement into wall outlet.
	Power Cable not plugged into Control Box	Check that Power Cable is fully seated into Control Box. *(see Fig. 1 on page 6)*
	Faulty Power Cable	Inspect the Power Cable for damage; replace any damaged cables.
	Desk or Bench wiring not properly assembled	Check that all cables are connected per the Assembly Directions. When first plugged in, the Control Box will click twice to confirm proper connection.
Digital Controller does not work or illuminate	No power at wall outlet	See above.
	Control Box has wrong firmware	Control Box firmware must be 1.9 or later for Digital/Preset Controller compatibility. *(see Fig 4 on page 6)*
Desk or Bench will go neither up nor down	No Power	See above.
	Desk or Bench is severely overloaded	Maximum weight capacity is 220 lbs (99.8 kg). Overloading the Desk or Bench could lead to damage that would not be covered by warranty. ERROR CODE E24/25/26, E48/49 = Over Current *Tip: When calculating lifting capacity, subtract the weight of the worksurface*
	Control Box requires reset	Perform initialization procedure. *(see Common Procedures)* Lower Desk or Bench all the way down, and perform synchronization procedure. *(see Common Procedures)*
	Damaged pins inside multi-pin connectors (Low-Voltage Cable / connector)	Ensure the Desk or Bench is in 'Standby' mode. (>20 seconds of inactivity) Unplug each multi-pin connection point and inspect the pins in the Control Box connector. Are they all straight, and making good contact? If not, try using a push-pin to straighten them. *(see Fig. 2 on page 6)* (Otherwise, replace necessary components with undamaged versions.)
	Damaged Lifting Column Low-Voltage Cable	Carefully check the condition of the Low-Voltage Cable of each Lifting Column. *(see Fig. 3 on page 6)* If any Low-Voltage Cables are damaged, the entire Lifting Column must be replaced.
	Faulty Lifting Column	To prevent further damage, the Control Box will shut the whole Desk or Bench down if one Lifting Column is faulty. Test Lifting Columns *(see step 4 of Troubleshooting Steps)*, and replace any faulty Lifting Columns.
	Faulty Controller (or) faulty Controller receptacle in Control Box	Swap with Controller known to work (and/or) check operation.
	Outdated Digital Controller software	Control Box firmware before version 1.9 is not compatible with the Digital/Preset Controller. *(see Fig. 4 on page 6)* Replace with a new Control Box with firmware 1.9 or later.
	Faulty Control Box	Swap with Control Box known to work.
Desk or Bench goes up, but not down (or vice-versa)	Damaged pins inside multi-pin connectors (Low-Voltage Cable / connector)	Unplug Power Cable from wall. Unplug each multi-pin connection point, and inspect the pins. Are they all straight, and making good contact? If not, try using a push-pin to straighten them. *(see Fig. 2 on page 6)* (Otherwise, replace necessary components with undamaged versions.)

TROUBLESHOOTING: CAUSES AND SOLUTIONS

PROBLEM	POTENTIAL CAUSE	POTENTIAL SOLUTION
Desk or Bench does not go through full range of motion	Re-synchronize Desk or Bench	Refer to Lifting Column synchronization procedure. *(see Common Procedures)*
	Faulty Lifting Column	Test Lifting Columns per step 4 of the Troubleshooting Steps, and replace any faulty Lifting Columns. Be sure to test all Lifting Columns! Why? Because another Lifting Column may have the same problem at a different height.
Lifting Columns not synchronized (one is higher than the other)	Re-synchronize Desk or Bench	Refer to Lifting Column synchronization procedure. *(see Common Procedures)*
	Faulty Lifting Column	Test Lifting Columns per step 4 of the Troubleshooting Steps, and replace any faulty Lifting Columns. Be sure to test all Lifting Columns! Why? Because another Lifting Column may have the same problem at a different height.
Desk or Bench movement is not smooth; Lifting Columns jerk or hop while raised or lowered	Faulty Lifting Column	Test Lifting Columns per step 4 of the Troubleshooting Steps, and replace any faulty Lifting Columns. Be sure to test all Lifting Columns! Why? Because another Lifting Column may have the same problem at a different height.
	Lifting Columns are not parallel with one another, causing them to bind	First ensure that glides are properly adjusted, and the Desk or Bench is level. Lift one side of the Desk or Bench off the floor and reposition so that both Lifting Columns are parallel to each other.
Error Code displayed on Digital Controller	Refer to Error Code listing	Follow instructions on error code listing; is Desk or Bench functioning normally anyway? Try initializing the Control Box. *(see Common Procedures)*

PROBLEM ILLUSTRATIONS

Fig. 1 - Power Cable not fully seated in Control Box

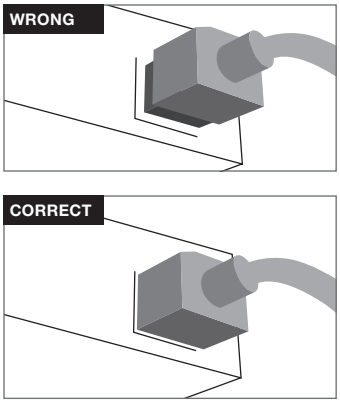


Fig. 2 - Damaged pins in the low-voltage wiring connectors

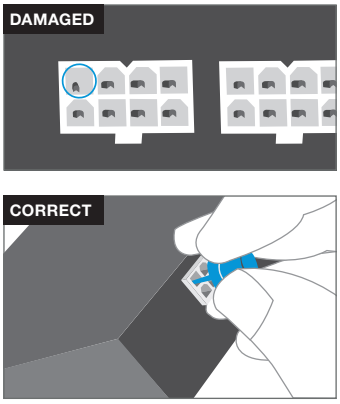
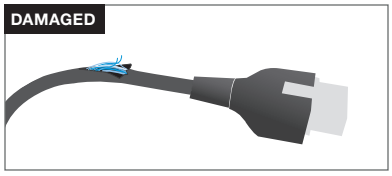


Fig. 3 - Frayed/damaged Low-Voltage Cables (damaged Lifting Column wiring harness shown)



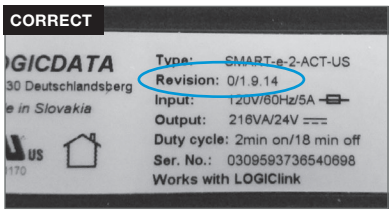


Fig. 4 - Firmware version 1.9 or later is compatible with the Digital/Preset Controller.

OBTAINING REPLACEMENT PARTS

Contact your local Steelcase dealer to help identify and order Service Parts. If you need help, call 888.STEELCASE.

MIGRATION SE DESK AND BENCH ERROR CODES

Error codes are only available with the Digital/Preset Controller.

HOT The display reads HOT.

E00 The display reads E + an error code.

ERROR CODE	NAME	DESCRIPTION	POTENTIAL CAUSE	SOLUTION/TROUBLESHOOTING
HOT	Overheating	The Control Box incorporates software protection against overheating	Exceeding the Duty Cycle; operation in an extremely hot environment.	Wait until the HOT error message is no longer displayed. May need to wait for entire remaining 18 minutes of 20 minute duty cycle period.
E00	Internal error, Channel 1	Relay sticks, MOSFET defect	Control box fault, or fault at connectors.	Try soft reset (unplug, wait 5 sec, plug back in); if this does not solve the issue, re-initialize the Control Box. Verify function of Control Box via troubleshooting steps. Replace Control Box if faulty.
E01	Internal error, Channel 2	Relay sticks, MOSFET defect		
E02	Internal error, Channel 3	Relay sticks, MOSFET defect		
E12	Defect, Channel 1	Short circuit, impulse timeout	Lifting Column fault, or fault in Low-Voltage Cables, or at connections to Control Box.	Verify low-voltage connections are properly made, and that pins / connectors are not damaged. Test Lifting Columns per troubleshooting steps, and proceed through rest of steps if Lifting Columns are not faulty.
E13	Defect, Channel 2	Short circuit, impulse timeout		
E14	Defect, Channel 3	Short circuit, impulse timeout		
E24	Overcurrent, Motor M1	Over current on channel	Desk or Bench is overloaded, or has hit an obstruction.	Remove excessive loads, remove any obstructions. The Lifting Columns may need to be re-synchronized. After this, verify proper function. If not functioning properly, proceed through troubleshooting steps.
E25	Overcurrent, Motor M2	Over current on channel		
E26	Overcurrent, Motor M3	Over current on channel		
E48	Overcurrent, Motor Group 1	Over current on group		
E49	Overcurrent, Motor Group 2	Over current on group		
E60	Collision Protection	Collision detected		
E62	Overcurrent, Control Box	Control box over current over all motor groups, or SMPS overload		
E36	Plug Detection in Motor Socket M1	Lifting Column not detected on channel	Low-voltage connectors disconnected, or not connected properly; Lifting Column fault.	Check connections for damage / proper attachment. Check Low-Voltage Cables for damage. Proceed through troubleshooting steps.
E37	Plug Detection in Motor Socket M2	Lifting Column not detected on channel		
E38	Plug Detection in Motor Socket M3	Lifting Column not detected on channel		
E61	Lifting Column Changed	Lifting Column has been changed	Lifting Column has been changed.	Re-synchronize Lifting Columns.
E55	Synchronization Lost, Motor Group 1	Synchronization Lost, Motor Group 1	Lifting Columns have lost synchronization.	Re-synchronize Lifting Columns.
E56	Synchronization Lost, Motor Group 2	Synchronization Lost, Motor Group 2		
E67	High Voltage	Over voltage	Internal fault, or power supply too high.	Verify power at outlet is normal using another device. If power is abnormal, disconnect from source. Try soft reset / initialization of Control Box if power is normal.
E70	Motor Configuration Changed	Motor Configuration Changed		
E71	Anti-Pinch Configuration Changed	Anti-Pinch Configuration Changed		
E81	Internal Error	CRC flash CRC EEPROM Data not saved at power off HW initialization FW-driver initialization	Control box fault, or fault at connectors.	Try soft reset (unplug, wait 5 sec, plug back in); if this does not solve the issue, re-initialize the Control Box. Verify function of Control Box via troubleshooting steps. Replace Control Box if faulty.

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