

Automation Devices, Inc.

MODEL 5300A (T-18) IN-LINE INSTRUCTIONS

➤ INTRODUCTION

All In-Line Feeders manufactured before February of 1992 were factory tuned for a specific track weight which was referred to as the *Load Rating*. (The **standard** load ratings for the Model 5300 In-Lines are 2, 3, and 4 pounds.) Field adjustment was not practical. Changing tracks (or the weight of a track) changes the Load Rating and required that the customer send both the **In-Line** and the **track** back to the factory for retuning.

Automation Devices now offers an **AC tuned** (120 pulses per second) **adjustable** In-Line Feeder which can easily be tuned by the customer. The Model **5300A** can be adjusted in the field to accommodate a Load Rating range from 2 pounds to a maximum of 8 pounds.

➤ MOUNTING & INSTALLATION

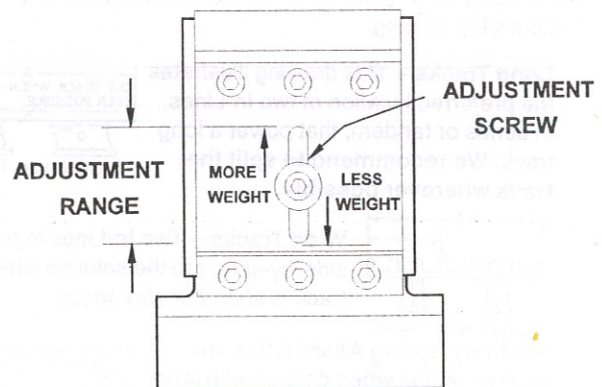
The **5300A** In-Line feeder should be rigidly attached to the mounting surface using four #10-32 SHC (or equivalent) screws through the holes in each corner of the base casting. An alternate method of mounting is to use four 1/4"-20 screws from the underside of the mounting surface. Several units may be placed in series for longer tracks, or in parallel for wider tracks. The outer set of springs on the *pickup* end of the In-Line feeder includes a screw that when loosened can slide up and down in a slot in the spring. This is the **ADJUSTMENT SCREW**. Using a long handled hex key wrench, tighten all the screws **except** the adjustment screw which is located in the slot of the **SLOTTED SPRING**.

➤ COIL GAP ADJUSTMENT

Check the air gap between the **SOLENOID** and the **ARMATURE**. The air gap on the Model 5300A In-Line Feeder should typically range from .050 inch to .090 inch. Optimum operating efficiency can be achieved by loosening the three #10 screws in the slots of both side plates of the In-Line. Slide the two side plates (with the **SOLENOID** attached) nearer or farther away from the **ARMATURE**. Ideally, the gap should be as small as possible without the **SOLENOID** and the **ARMATURE** hitting each other at full amplitude. The gap can be observed through the viewing hole in either side plate. When adjusting the **SOLENOID**, be sure that the face of the **SOLENOID** is parallel with the **ARMATURE** and that the **SOLENOID** and the **ARMATURE** do not rap.

➤ ADJUSTMENTS

Record the weight of the track, the spacer (if used), and the track fasteners before assembling them to the In-Line Feeder. After mounting the track onto the In-Line, secure the In-Line to the table and check to be sure that the **ADJUSTMENT SCREW** (in the **SLOTTED SPRING**) is centered in the slot and is finger tight. Turn the controller on (if one is used) and set the dial for maximum output. For heavy loads, loosen the **ADJUSTMENT SCREW** and slide it **upward** in no larger than 1/16 inch increments, stopping after each change to retighten the **ADJUSTMENT SCREW** and to observe the In-Line Feeder's amplitude of vibration as observed on the amplitude sticker supplied and mounted to the side of your track. In a similar manner, slide the **ADJUSTMENT SCREW downward** for light loads. After the position of maximum amplitude has been reached, further movement of the **ADJUSTMENT SCREW** will decrease the amplitude. At this point, restore the **ADJUSTMENT SCREW** to its previous position of maximum amplitude and carefully tighten it. **NOTE:** Do not overtighten the **ADJUSTMENT SCREW** since excessive torque will damage the **SLOTTED SPRING**.



The published maximum **LOAD RATING** of the 5300A is 8 pounds. Consult the factory if this maximum will be exceeded.

➤ REPAIR PARTS

Replacement parts are listed on the reverse side of these instructions. Please provide the operating voltage, the frequency, and the serial number of each unit along with an order.

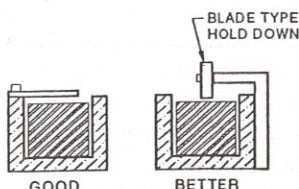
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➤ TRACK DESIGN

The maximum length of the track should not exceed 24 inches. The track should be centered over the In-Line with no more than six inches of overhang at either end.

If you use $\frac{1}{8}$ inch thick material on gravity tracks, you may want to use $\frac{3}{16}$ inch thick material for the sides of the In-Line tracks. **Note:** Any material that lies directly on top of the In-Line (shims, risers, etc.) can be of thinner stock. If you need a thicker riser, use light-weight material.

Covers may be required to assist in maintaining the orientation of parts that are being conveyed via In-Line Feeders. Care



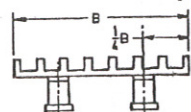
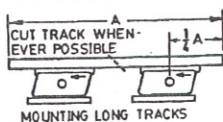
should be taken not to restrict part movement. Remember that the track is, in fact, moving up and down under vibration. The clearance between the underside of the cover and the top of a part is critical with regard to the

forward movement of the part under vibration. It is also worthy of note to minimize the area that the covers occupy in the event that a bent part would need to be removed from the track. Where practical, designs using a round rod or thin blade are less restrictive to the forward motion of parts while still assisting with maintaining part orientation.

➤ MOUNTING THE TRACK

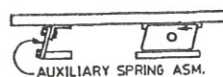
Eight #10-32 mounting holes in the top mounting plate fasten the track. The track should be sufficiently rigid so that any overhanging portion does not flex and defeat the feeding action of the In-Line Feeder. The track should have its center of gravity as close to the midpoint of the top of the In-Line Feeder as possible for optimum results. **Avoid excessive track overhang.** No more than $\frac{1}{4}$ of the track should overhang either end of the In-Line's top casting.

Long Tracks – This drawing illustrates the preferred location of two In-Lines, in series or tandem, that power a long track. We recommend to split the track wherever possible.



Wide Tracks – Two In-Lines in parallel, or side-by-side, are the solution when the track is short but very wide.

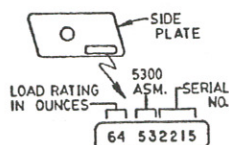
Auxiliary Spring Assemblies are another option when dealing with long tracks. This springing method uses only one In-Line Feeder.



➤ TROUBLESHOOTING AFTER INSTALLATION

Find out what differences exist from how the In-Line Feeder was tested at ADI versus the way the In-Line is set up at your facility.

- Does the unit make any noise ... a slight hum? Check your power source up to the connection to the In-Line's coil.
- Does the weight of your track and mounting hardware match the load rating stamped on the In-Line's side plate?



- Are you using the correct controller? Is it set to AC?
- Are the track mounting screws *too long* and restricting the movement of the reaction mass inside the In-Line?
- Is there enough clearance between the In-Line track and the parts feeder's discharge? What about between the track and the device receiving the In-Line's parts?

➤ REPAIR PARTS

Replacement parts are listed in the exploded view shown in Document AF05.01. When placing a parts order, please provide the operating voltage and the serial number of each In-Line Feeder.

➤ SOLENOID TO ARMATURE GAP ADJUSTMENT

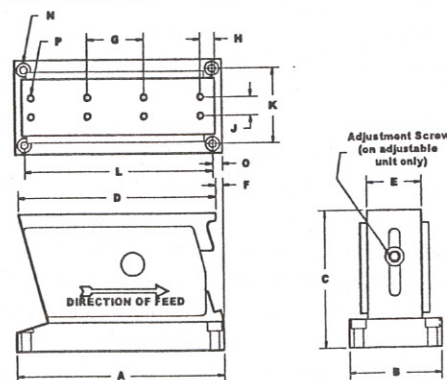
After a feeder's springing has been adjusted, a higher amplitude of vibration may cause the laminations of the feeder's solenoid (Part Number 5311) to begin hammering, or striking, on the armature plate (Part Number 5316). When this occurs, you can hear the noise emitted from the In-Line. *Another common cause of this hammering is a line voltage increase at your plant.*

Determine the present gap before making the adjustment. Loosen the side plates after measuring the gap. Insert a shim .030 inches greater than the measured gap when adjusting the Model 5300A. Slide the side plates so that the shim is held firmly between the coil and armature. Tighten the screws that hold the side plates and remove the shim.

The Model 5300A should have a coil gap in the range of .025 to .050 inches.

If you have a relatively constant line voltage supply, then increasing the size of the solenoid/armature gap will decrease the feeder's amplitude. Conversely, decreasing the size of the gap will increase the feeder's amplitude.

➤ MODEL 5300A DIMENSIONS



A	B	C	D	E	F	G	H
13	4 1/2	5 7/8	9 3/4	3 1/4	2 1/2	2 1/4	1 9/16

J	K	L	N Holes	O	P Holes	Shipping Weight
2	3 1/2	12	1/4 - 20 (4 holes)	1/2	#10-32 (8 holes)	35 pounds

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