

Service Instructions

Syntron®
Electromagnetic
Vibratory Feeder
Model: F-660-B



Syntron® Electromagnetic Vibratory Feeder

Model: F-660-B

Spring Replacement
Parts List
Coil and/or Core Replacement
Operating Specifications

SPRING REPLACEMENT GUIDE



WARNING: Before performing any maintenance work, the electrical supply must be disconnected at the safety disconnect switch.

The F-660-B Feeder contains two spring stacks. Work on one stack at a time. This permits the remaining stack to support the armature bracket and drive assembly as a single unit.



CAUTION: Never loosen both top and bottom spring stacks at the same time.

1. Remove side covers (BB), back cover (AA), and the bottom cover (X).
2. Loosen hex nut on set screw (A) and remove set screw.
3. Disconnect cable assembly from the power supply and ground jumper from base casting. Loosen cable grip (Y) and pull cable through cable grip into base casting.
4. Remove four (4) core clamping bolts from core assembly and core clamping bars (B).



CAUTION: The coil and core assembly weighs approximately 380 pounds. Use a lifting device to safely remove core, lifting lugs are provided.

5. Carefully remove the core and coil as a single unit.



CAUTION: The armature assembly weighs approximately 170 pounds. Use a lifting device to safely remove the armature. A 1/2"-13 UNC tapped hole is provided.

6. Remove four (4) armature mounting bolts and armature assembly (G).
7. Working on the bottom stack first, remove the three bottom spring clamp bolts (P, W) to permit removal of the spring clamping blocks and spacers (S & T). If necessary use penetrating oil.
8. While taking note of the arrangement of springs (Q, R), tuning springs and spacers (if any), remove the springs one at a time.



WARNING: Do not damage or remove spring pads on replacement leaf springs.

9. While the bottom spring stack has been removed, check the springs in the top stack for defects. An effective check is to tap the bottom edge of each spring on both sides of the armature bracket starting near the center spacer and moving toward each end spacer. A dull noise will indicate a defective spring; a sharp ringing noise indicates a good spring.
10. Mark each end of any defective springs in the top stack.
11. Clean the threads on spring clamping screws (P & W) and lubricate with EEZ Lubricant, or equal. Replace into armature bracket and base casting only far enough that the threads do not extend thru the armature bracket or base casting.



CAUTION: Lubricated spring clamping screws must turn into the armature bracket and base casting by hand.

12. Install a center spacer block (T) against the center clamping screw (P), then install an end clamp block against each end of the clamping screws (W). Place a center clamp block against the center spacer block and an end spacer block against each of the end clamp blocks (S). Insert a spring (spacers on one side) with the spacers against the spring spacer blocks.
13. Position the spring so it is centered across the width of base casting and resting firmly on the spring alignment bars (U). Install the remaining springs placing the spacer against the previously placed spring. Replace any spacers in their original position. The end spring (R), spacer on both sides, is installed last.
14. Check to be certain each spring is resting on the spring alignment bars (U) and that the stack is straight and centered across the width of the base casting.
15. Tighten the end clamping screws (W) enough to hold the spring stack in place. Torque the center spring clamping screws (P) according to the specifications on page 4.
16. Tighten the end clamping screws (W) a little at a time and alternately to equalize the pressure across the springs. Torque to the specifications on page 4.
17. Check the torque of the center clamping screws, re-torque if necessary.

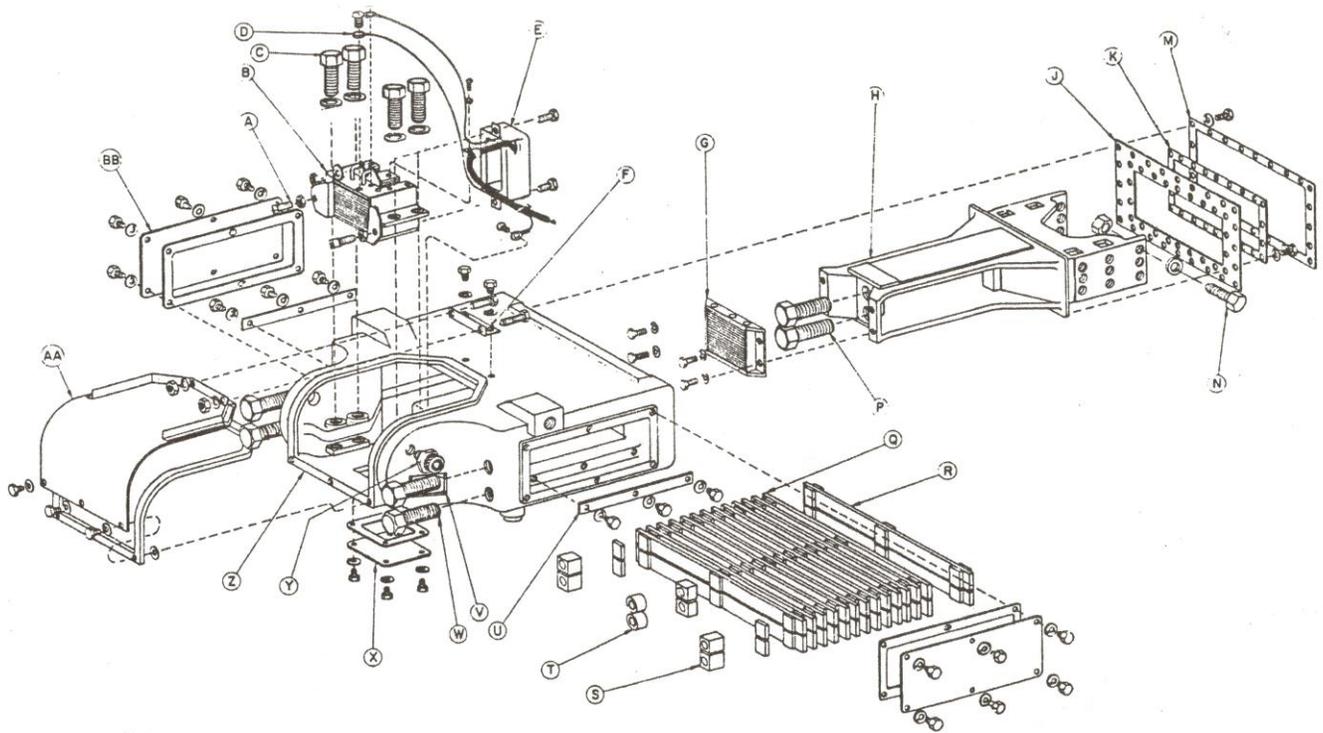
The replacement of the bottom spring stack is now complete.



CAUTION: Always maintain 1/8" gap between top and bottom spring racks.

18. Insert a 1/8" thick steel spacer between top and bottom racks.
19. Loosen spring clamping screws (P & W) enough to remove the defective spring.
20. Replace the broken spring with one of the same thickness and same spring pads.
21. Tighten the end clamp screws (W) enough to hold the spring stack in place. Torque the center spring clamping screw (P) according to the specifications on page 4.

22. Tighten the end clamping screws (W) a little at a time and alternately to equalize the pressure across the springs. Torque to the specifications on page 4.
23. Check the torque of the center clamping screws, re-torque if necessary.
24. Remove the 1/8" thick steel spacers from between the spring racks.
25. Replace the armature assembly (G) with four (4) armature mounting bolts. Torque to specifications on page 4.
26. Replace core and coil into base casting. Insure ground connection between core and base casting is securely connected.
27. Replace core mounting bolts and core mounting bars.
28. Close air gap so that pole faces of magnet and armature are in contact. Snug down the clamping bolts to hold the core in place to offer some resistance when turning in the set screws to adjust the air gap. Check from both top and bottom to be sure the core and armature "faces" are parallel.
29. Insert cable through cable grip, tighten cable grip and reconnect cable leads to the power supply.
30. Adjust air gap to .085" See "The Air Gap" section of Service Manual No. SM0560 or SM0571 for procedure.
31. Torque the core clamping bolts, refer to page 4.
32. Replace the covers.
33. Check trough stroke - maximum allowable. See operating specifications on page 7.



TORQUE SPECIFICATIONS

<u>ITEM</u>	<u>TORQUE VALUE DRY</u>	<u>TORQUE VALUE LUBRICATED</u>
C	730 Ft-Lbs	540 Ft-Lbs
E	35 Ft-Lbs	-----
G	640 Ft-Lbs	490 Ft-Lbs
N	800 Ft-Lbs	600 Ft-Lbs
P, W	-----	2000 Ft-Lbs

PARTS LIST

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>PART NO.</u>
A	Set Screw, Sq. Hd. , Cup Pt. (3/4"-10 x 2 1/2")	2	H0415400
	Hex Nut (3/4"-10)	2	H0105401
B	Core Assembly	1	C-132126
C	Cap Screw, Hex. Hd. Gr. 5 (1"-14 x 7")	4	H0326301
	Lockwasher (1")	4	H0114409
	Plainwasher (1")	4	H0117962
	Core Clamping Bar	2	A-52564
D	Ground Jumper	1	B-192419-F
	Cap Screw, Hex. Hd., Br. (1/4"-20 x 3/4")	2	H0301202
	Lockwasher, Ext. Tooth (1/4")	2	H0114904
	Wire Ties	2	0038X354
E	Coil and Cable Assembly (460V)	(1 Only)	C-192470-G
	Coil and Cable Assembly (575V)		C-192470-J
	Coil Washer	1	A-132121
	Paper Insulation (not shown)	1	B-33309-EF
	Cap Screw, Hex Hd. (1/2"-13 x 1 1/2")	2	H0315401
	Plain Washer (1/2")	2	H0117301
	Lockwasher (1/2")	2	H0113609
	Stop Nut (1/2"-13)	2	H2100415
	Cable Clamp	1	0198X036
	Cap Screw, Hex Hd. (5/16"-18 x 1/2")	1	HO306401
	Cable Clamp	1	0198X024
	Lockwasher Ext. Tooth (1/4")	1	H0114904
	Cap Screw, Hex. Hd., Br. (1/4"-20 x 1/2")	1	H0300801
	Lockwasher (5/16")	1	H0113001
	Cap Screw, Hex. Hd., Br. (1/4"-20 x 3/4")	3	H0301202
	Lockwasher Ext. Tooth (1/4")	3	H0114904
F	Bracket	1	A- 79605
	Cap Screw, Hex Hd. (1/2"-13 x 1 1/2")	2	H0315401
	Lockwasher (1/2")	2	H0113609
G	Armature Assembly	1	B-132117
	Cap Screw, Hex Hd. Gr. 5(1"-8 x 2 1/4")	4	H0314210
	Lockwasher (1")	4	H0114409
H	Armature Bracket	1	D-80450-B
	◇ Armature Bracket	1	D-80450-A
J	◇ Diaphragm	1	B-81323
K	◇ Diaphragm Clamp (Armature Bracket)	1	B-81322
	◇ Cap Screw, Hex Hd. (1/2"-13 x 1 1/2")	20	H0315401
	◇ Lockwasher, (1/2")	20	H0113609
M	◇ Diaphragm Clamp (Base Casting)	1	B-81324
	◇ Cap Screw, Hex Hd. (1/2"-13 x 1 1/2")	28	H0315401
	◇ Lockwasher, (1/2")	28	H0113609
N	Structural Bolt Hvy Hex, A-325 (1"-8 x 3")	18	H0528701
	Structural Hvy. Hex Nut (1"-8)	18	H0106812
	Plain Washer H.S. (1")	18	H0117962
P	Center Spring Clamp Screw	2	A-17809

PARTS LIST – con't.

<u>ITEM</u>	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>PART NO.</u>
Q	Leaf Spring (1" Tk.)	28	A-72743
	Leaf Spring, (25/32" Tk.)	If Req'd.	A-72775
R	End Leaf Spring (1" Tk.)	2	A-7277 4
S	End Clamp Block	4	A-18841-C
	End Spacer Block (2" Thk)		A-74575-A
	End Spacer Block (1 1/2" Thk)	(4 only)	A-74575-B
	End Spacer Block (1" Thk)		A-74575-C
	End Spacer Block (1 1/4" Thk)		A-74575-D
T	Center Clamp Block	2	A-34790-C
	Center Spacer Block (1" Thick)	(2 Only)	A-19090-A
	Center Spacer Block (2" Thick)		A-19090-B
U	Spring Alignment Bar	2	B218287-001
	Cap Screw, Hex Hd. (1/2"-13 x 1")	6	H0315401
	Lockwasher, (1/2")	6	H0113609
V	■ Name Plate	1	A-97298
	Drive Screw, P.K. Ty U (#2 x 1/4")	4	H0425100
W	End Spring Clamping Screw	4	A-27851
X	◇ Bottom Cover	1	A-79566
	◇ Bottom Cover Gasket	1	A-79568
	◇ Cap Screw, Hex Hd. (1/2"-13 x 1 1/2")	4	H0315401
	◇ Lockwasher (1/2")	4	H0113609
Y	Cable Grip	1	0102X012
Z	Base Casting	(1 Only)	D-77138-B
	◇ Base Casting		D-77138-A
AA	Back Cover Assembly	1	B-79617
	Gasket (132")	1	0237X021
	Cap Screw, Hex Hd. (1/2"-13 x 1 1/2")	3	H0315401
	Lockwasher, (1/2")	3	H0113609
	Cap Screw, Hex Hd. (1/2"-13 x 4")	2	H0316701
	Hex Nut (1/2"-13)	2	H0104001
	Lockwasher, (1/2")	2	H0113609
BB	◇ Side Cover	2	A-82603
	◇ Gasket	2	A-95698
	Cap Screw, Hex Hd. (1/2"-13 x 1")	12	H0315401
	Lockwasher, (1/2")	12	H0113609
	■ Warning Label	1	125694
	■ Warning Label	1	125254
	■ Bilingual Instruction Label	1	195774
	■ Safety Label	1	125255

◇ Used on Dust-Tight Units Only.

■ Do not remove or paint over safety labels. Should safety labels require replacement contact SMH, Tupelo, 2730 Hwy 145 South Slatillo, Mississippi 38866, Phone: 662.869.5711 for an additional supply free of charge.

OPERATING SPECIFICATIONS

Maximum trough weight:	2200 Lbs.	2500 Lbs.
Trough stroke range: (Max. Trough Weight)	.050" TO .055"	.048" TO .052"
Minimum Natural Frequency:	3850 VPM (60 Cy)	3850 VPM (60 Cy)
*Maximum Current Rating: (nameplate)	31.5 Amps (460V/60 Cy) 26 Amps (575V/60 Cy) .085"	31.5 Amps (460V/60 Cy) 26 Amps (575V/60 Cy)
Nominal Static Air Gap:	.085"	.085"

* When reading the current of the unit by using a tong meter, the meter reading must always be multiplied by a value of 1.7. A tong meter does not reveal the same current as stamped on the equipment nameplate due to the waveform characteristics of the feeder, when operating. Therefore the 1.7 multiplier must be used. All current readings must be taken at the controller.

COIL AND/OR CORE REPLACEMENT



WARNING: Before performing any maintenance work, the electrical supply must be disconnected at the safety disconnect switch.

1. Remove back cover (AA) and bottom cover (X).
2. Loosen hex nut on set screw (A) and remove set screws.
3. Disconnect cable assembly from the power supply and ground jumper from base casting. Loosen cable grip (Y) and pull cable through cable grip into the base casting.
4. Remove the four (4) core clamping bolts from core assembly (C) and core clamping bars (C).



CAUTION: The coil and core assembly weighs approximately 380 pounds. Use a lifting device. To safely remove core, lifting lugs are provided.

5. Carefully removing the core and coil as a single unit.
6. Remove the coil (E) from the core (B).
7. With the core upright and the coil washer and paper insulation in their original location, lower the replacement coil onto the core.

8. If either coil mounting lug shows a space between it and the washer(s), add extra washer(s) (shim) to close the space.
9. Attach the coil to the core, using existing bolts, washers, and locknuts. Torque locknuts to specifications on page 4.
10. Connect the green ground lead to core at its original location. Be sure to locate the shake proof lockwasher between the terminal and the core.
11. Replace core and coil into the base casting. Insure ground connection between core and base casting is securely connected.
12. Replace core mounting bolts and core mounting bars.
13. Close air gap so that pole faces of magnet and armature are in contact. Snug down the clamping bolts to hold the core in place to offer some resistance when turning in the set screws to adjust the air gap. Check from both top and bottom that core and armature "faces" are parallel.
14. Insert cable through cable grip, tighten cable grip and reconnect cable leads to the power supply.
15. Adjust air gap to .085" See "The Air Gap" section of Service Manual No. SM0560 or SM0571 for more information.
16. Torque the core clamping bolts, refer to page 4.
17. Replace the back cover and bottom cover.
18. Check trough stroke - maximum allowable. See operating specifications on page 7.

Note:

Syntron Material Handling reserves the right to alter at any time, without notice and without liability or other obligations on its part, materials, equipment specifications, and models. Syntron Material Handling also reserves the right to discontinue the manufacture of models, parts, and components thereof.

Your satisfaction is very important to us. Please direct any comments, questions, or concerns to our Marketing Communications Department.

Syntron Material Handling

Corporate Office

P.O. Box 1370

Tupelo, Mississippi 38802

Phone: 662.869.5711

Fax: 662.869.7449

Form No. SM0539_06242016 Printed in U.S.A

Syntron®
Link-Belt®

Tupelo

2730 Hwy 145 South
Saltillo, Mississippi 38866

Phone: 662.869.5711

Fax: 662.869.7493

Toll Free: 800.356.4898

info@syntronmh.com

Changshu

#2 Road No. 1

Changshu Export Processing Zone
Changshu, Jiangsu, China 215513

Phone: +86 0512.52299002

Fax: +86 0512.52297228

info@syntronmh.com