

Service Instructions

Syntron®
F-440-D Feeder



Syntron® Electromagnetic Vibratory Feeder

Model: F-440-D

Spring Replacement

Parts List

Coil and/or Core Replacement

Operating Specifications

SPRING REPLACEMENT GUIDE

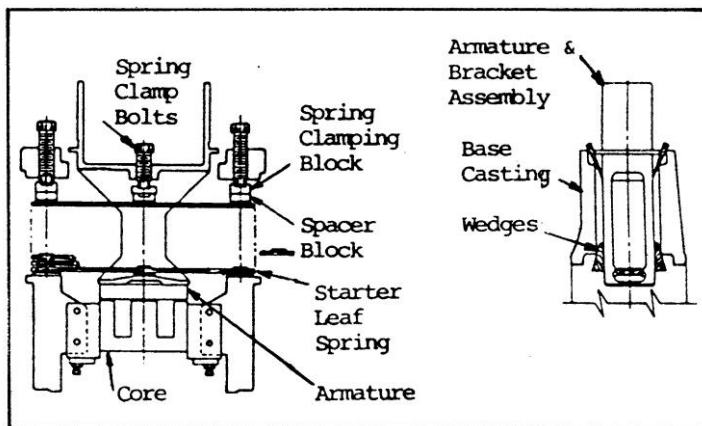


WARNING: Before performing any maintenance work the electrical supply must be disconnected at safety disconnect switch.



CAUTION: If the trough must be removed to gain access to the spring clamping bolts, first provide a means of supporting the trough and drive unit. The trough can be removed by removing the mounting bolts (Q) located on the side of the wing plates.

1. Remove side covers (CC), remove back cover (BB). If the springs are replaced without separating the drive unit from the trough, slit the diaphragm (M) to gain access to install hardwood wedges.
2. Hold armature bracket in alignment with the base casting by driving hardwood wedges between the armature bracket (J) and the base casting (AA). This will insure correct alignment of the replacement springs on the spring alignment bar (U).



3. Loosen the spring clamping bolts (K & R) enough to permit removal of the clamping blocks (S & T). If necessary, use penetrating oil.
4. With the clamp blocks removed the leaf springs (V & W) can be removed and examined.
5. When installing new springs, the starter spring (W) with spacers on BOTH SIDES must be placed in the spring cavity first, then the other springs will have a spacer on ONLY ONE SIDE. Insert these springs so the spacer side

will contact the plain side of the previously placed spring.

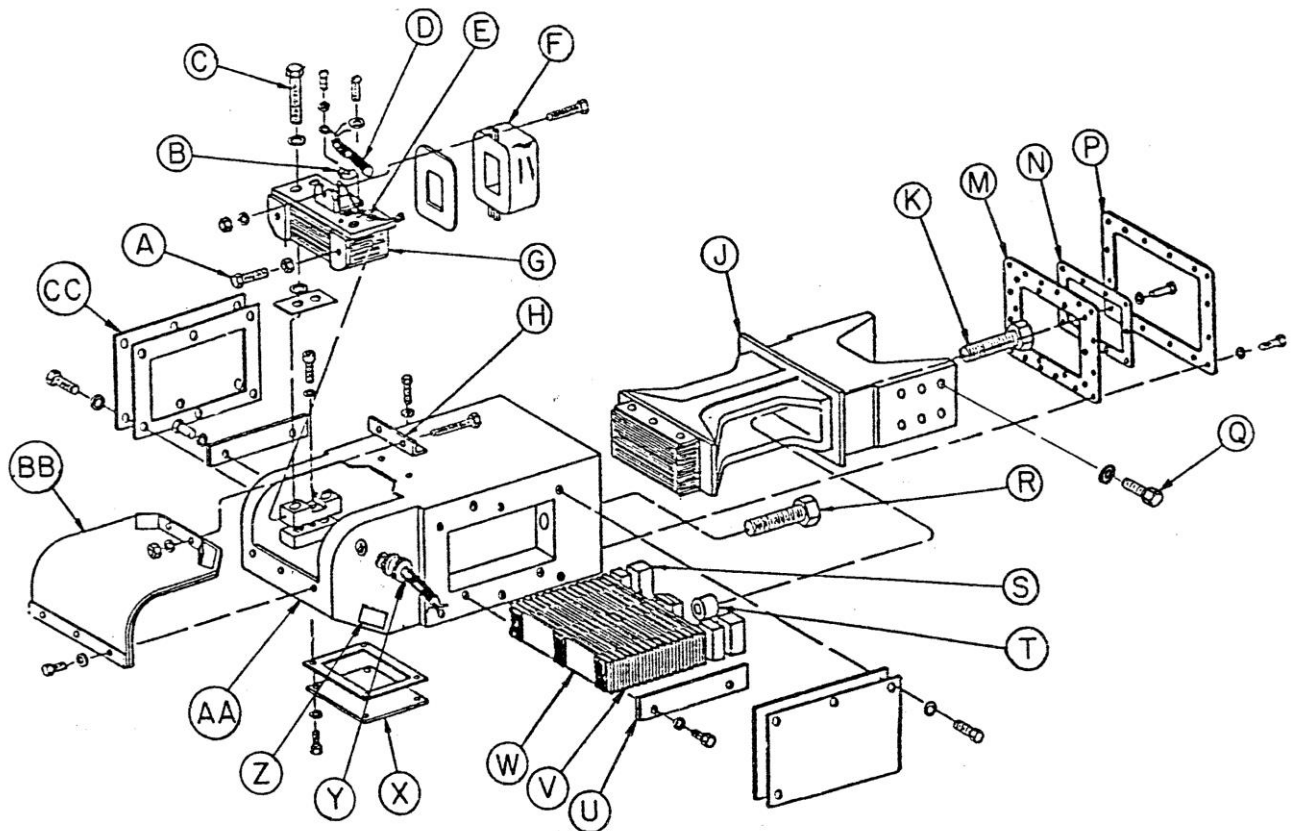
6. With all springs installed and resting on the alignment bars (U) check alignment of armature bracket (J). The armature bracket should not be twisted with-in the base casting. The core and armature "pole faces" should be parallel to each other.
7. Replace the center clamp blocks (T) and center spring clamping bolt (K).
8. Replace the end clamp blocks (R) and tighten the end clamp bolts enough to hold the spring stack in position.
9. Torque center and the end spring clamping bolts alternately to equalize the pressure across the springs. Torque to 2,000 foot-pounds.
10. Remove wooden wedges and replace trough, if removed.

11. Adjust the air gap to .085" See the "Air Gap" section of Service Manual SM0560 or SM0571 for procedure.
12. Replace covers (BB & CC).
13. Connect the power supply. After the unit has been operating for several hours, check clamping bolts for tightness.

! CAUTION: Never oil the spring assembly!

TORQUE SPECIFICATIONS

ITEM	TORQUE VALUE DRY	TORQUE VALUE LUBRICATED
C	730 Ft-Lbs	540 Ft-Lbs
K,R	-----	2000 Ft-Lbs
Q	375 Ft-Lbs	281 Ft-Lbs



PARTS LIST – VIBRATORY FEEDER MODEL: F-440-D

ITEM	DESCRIPTION	QTY	PART NO.
A	Set Screw, Sq. Hd. , Cup Pt. (3/4"-10 x 5")	2	H0404000
	Hex Nut (3/4"-10)	2	H0105401
B	Cable Clamp	1	0198X036
	Lockwasher (5/16")	1	H0113001

ITEM	DESCRIPTION	QTY	PART NO.
	Cap screw, Hex Hd, (5/16"-18 x 1/2"	1	H0306401
	Cable Clamp	1	0198X024
	Lockwasher Ext. Tooth (1/4")	1	H0114904
	Cap Screw, Hex. Hd. Gr. 5 (1"-14 x 5 1/2")	4	H0326001
C	Cap Screw, Hex Hd. (3/4"-16 x 4 1/2")	4	H0323401
	Plainwasher (1")	4	H0117962
	Lockwasher (1")	4	H0114409
	Core Clamping Bar	2	A-135027
E	Ground Jumper	1	B-192419-E
	Wire Ties	2	0038X354
	Lockwasher (1/4")	3	H0114904
	Mach. Screw, Rd. Hd., Br. (1/4"-20 x 3/4")	3	H0301202
F	Coil and Cable Assembly (230V/60 Cy)	(1	B-192455-J
	Coil and Cable Assembly (460V/60 Cy)	Only)	B-192455-E
	Coil and Cable Assembly (575V/60 Cy)		B-192455-F
	Washer Coil	1	A-18542-A
	Paper Insulation (Not Shown)	1	B-33309-BY
	Cap Screw, Hex Hd. (1/2"-13 x 2")	2	H0315801
	Locknut (1/2"-13)	2	H0104001
	Plain Washer	2	H0117301
G	Core Assembly	1	B-135023
H	Cover Angle Bracket	1	A-91224
	Lockwasher (1/2")	2	H0113609
	Cap Screw, Hex Hd. (1/2"-13 x 1 3/4")	2	H0315001
J	Armature and Bracket Assembly (Unsealed)	1	B-124663-B
	oArmature and Bracket Assembly (Dust-Tight)	Only	B-124663-A
K	Center Clamping Screw	1	A17809
M	oDiaphragm	1	B-26536
N	oDiaphragm Clamp (Armature)	1	A-29160
	oCap Screw, Hex Hd. (5/16"-18 x 1")	18	H0307201
	oLockwasher (5/16")	18	H0113001
P	oDiaphragm Clamp (Base Casting)	1	A-29159
	oCap Screw, Hex Hd. (3/8"-16 x 1")	26	H0310201
	oLockwasher (3/8")	26	H0113204
Q	Plain Washer H.S. (3/4")	12	H0117762
	Structural Bolt Hvy Hex (3/4"-10 x 1 3/4")	12	H0524101
R	End Clamping Screw	2	A-27851
S	End Clamp Block	2	A-18841-C
	End Spacer Block (2" Thk)		A-74575-A
	End Spacer Block (1 1/2" Thk)	2	A-74575-B
	End Spacer Block (1" Thk)	Only	A-74575-C
T	Center Clamp Block	1	A-34790-C
	Center Spacer Block (1" Thick)	1	A-19090-A
	Center Spacer Block (2" Thick)	Only	A-19090-B
U	Spring Aligning Bar	2	B218286-001
	Lockwasher (3/8")	4	H0113204
	Cap Screw, Hex Hd. (3/8"-16 x 1")	4	H0310201
V	Leaf Spring (Spacer, One Side) 5/8" Tk.	7	A-69882
	Leaf Spring 1/2" Tk.	If	A-72634
	Leaf Spring 3/8" Tk.	Req'd.	A-73285
W	Leaf Spring (Spacer, Both Sides) 5/8" Tk.	7	A-70067

ITEM	DESCRIPTION	QTY	PART NO
X	○Bottom Cover	1	A-79566
	○Bottom Cover Gasket	1	A-79568
	○Lockwasher (1/2")	4	H0113609
	○Cap Screw, Hex Hd. (1/2"-13 x 1 3/4")	4	H0315001
Y	Cable Grip	1	0102X012
Z	■Name Plate	1	A-97298
	Drive Screw, P.K. Ty U (#2 x 3/16")	4	H0430500
AA	Base Casting (Unsealed)	1	C-89248-B1
	○Base Casting (Dust-Tight)	Only	C-89248-A1
BB	Back Cover	1	B-91223
	Back Cover Gasket (95" Lg.)	1	0237X021
	Cap Screw, Hex Hd. (1/2"-13 x 1 3/4")	3	H0315001
	Cap Screw, Hex Hd. (1/2"-13 x 3 1/2")	2	H0316501
	Hex Nut (1/2"-13)	2	H0104005
	Lockwasher (1/2")	2	H0113609
	CC	Side Cover	2
	Side Cover Gasket	2	A-95696
	Lockwasher (3/8")	12	H0113204
	Cap Screw, Hex Hd. (3/8"-16 x 1")	12	H0310201

○ Used on Dust-Tight Units Only.

■ Do not remove or paint over safety labels. Should safety labels require replacement, contact Syntron Material Handling for an additional supply free of charge.

OPERATING SPECIFICATIONS

Maximum trough weight:	550 Lbs.
Trough stroke range: (Max. Trough Weight)	.055" TO .058"
Minimum Natural Frequency:	4000 VPM (60 Cy)
*Maximum Current Rating: (nameplate)	40.0 Amps (230V/60 Cy) 20.0 Amps (460V/60 Cy) 16.0 Amps (575V/60 Cy)
Nominal Static Air Gap:	.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 power supply must be disconnected at the safety disconnect switch.

1. Remove back cover (BB) and bottom cover (X).
2. Loosen hex nut on set screw (A) and remove set screws.
3. Disconnect cable assembly from the power supply, loosen cable grip(Y) and pull cable through cable grip into the base casting.
4. Remove the four (4) core clamping bolts (C) from core assembly (G) and core clamping bar .
5. Carefully removing the core and coil as a single unit.



CAUTION: The magnet assembly weighs approximately 200 pounds. Use a lifting device. To safely remove core, lifting lugs are provided.

6. Observe location of coil/core and washers used to connect the ground wire.
7. Remove the coil (F) from the core (G).
8. With the core upright and the coil washer and paper insulation in their original location, lower the replacement coil onto the core.
9. If either coil mounting lug shows a space between it and the washer(s), add extra washer(s) (shim) to close the space.
10. Attach the coil to the core, using existing bolts, washers, and locknuts.
11. Connect the green ground lead to core at its original location. Be sure to locate the shakeproof lockwasher between the terminal and the core.
12. Replace core and coil into the base casting. Insure ground connection between core and base casting is securely connected.
13. Replace core mounting bolts and core mounting bars.
14. 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.
15. Insert cable through cable grip, tighten cable grip and reconnect cable leads to the power supply. Insure ground connection between core and base casting is securely connected.
16. Adjust air gap to .085” See “The Air Gap” section of Service Manual No. SM0560 or SM0571 for procedure.
17. Torque the core clamping bolts, refer to page 2.
18. Replace the back cover (BB) and bottom cover (X).
19. Check trough stroke – maximum allowable is .058”.

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