

Electromagnetic vibratory feeder

Syntron ®

Model: BF-3

Guide for strip repositioning

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Guide for strip repositioning



PRECAUTION: Disconnect electrical power to the equipment using the earth differential breaker.

Suitable placement of the parts which make up the sets of vibrating strips is of prime importance for correct feeder operation. When these sets are dismantled, it is necessary to accurately note their arrangement, so that they may be replaced with full confidence of correct positioning.

The number of elastic strips and their thickness varies depending on the tray size, power supply voltage and operating frequency. It is important for the strip replacements to be suitable for the equipment. Each strip should be carefully examined and any broken ones or those showing signs of cracking should be replaced.

However, it is recommended that the entire set of strips be replaced, instead of just the defective ones.

The nuts and bolts used to hold the strip sets in place should be secured using the torque levels which are given in this specification.

The strips are correctly assembled when there is no stress or distortion.

After replacing or remaking the strip sets, it is possible that the equipment's air gap requires readjustment. Details of this operation are given in the instruction manual for these feeders (model: series "BF").

Once this adjustment has been correctly performed, the feeder is ready for operation.

After several hours of operation, the torque for the nuts and bolts used to hold the elastic strips in place should be rechecked. The settling of the sets or packets of strips could cause a reduction in the strip set compression, which in turn, could lead to alterations in feeder operation.

List of materials

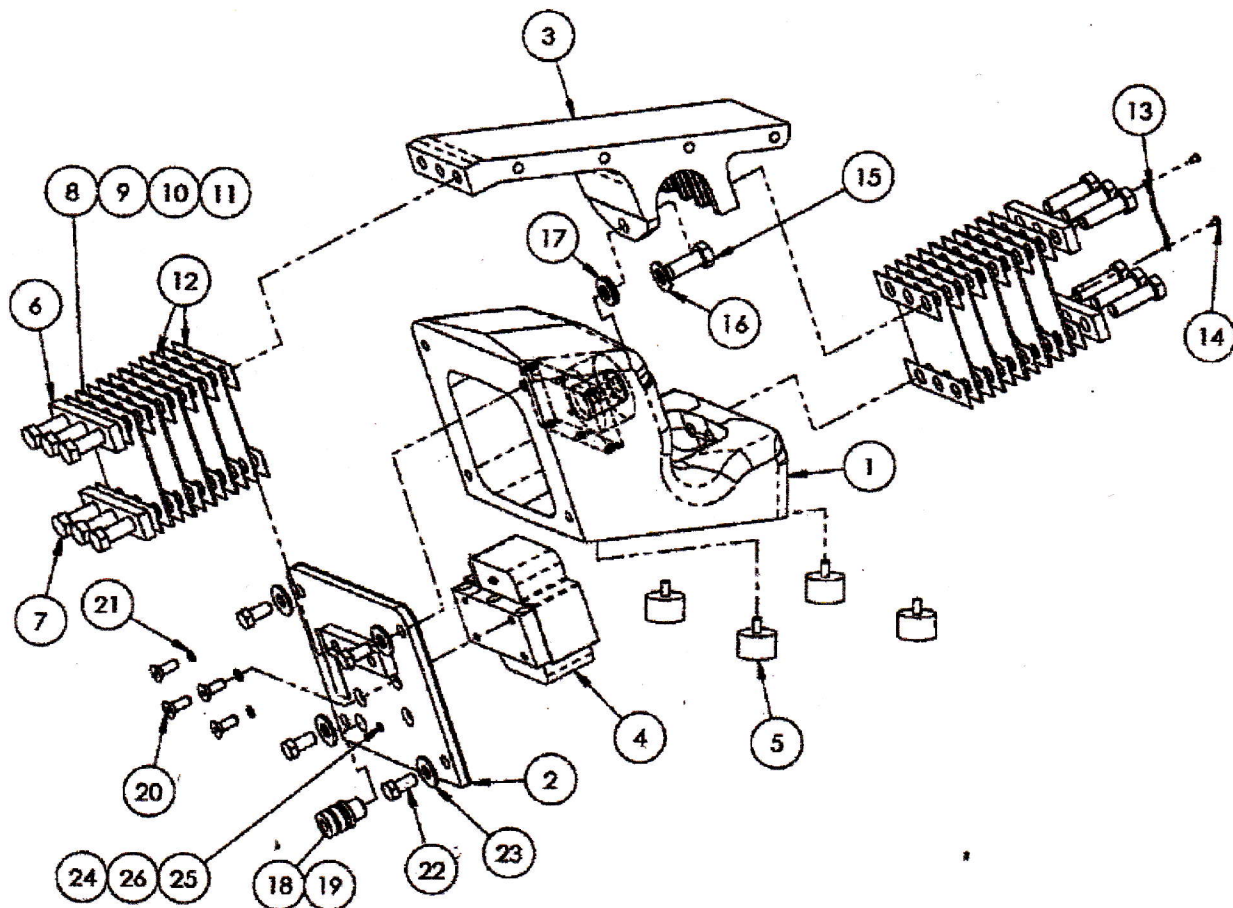
<i>Item</i>	<i>Description</i>	<i>Quantity</i>	<i>Reference</i>
1	Base/Armature	1	53339
2	Back plate	1	53405 53411
3	Trough mounting bracket	1	53412
4	Magnet assembly 230V 60 Hz Magnet assembly 230V 50 Hz Magnet assembly 380V 50 Hz Magnet assembly 115V 60 Hz Magnet assembly 115V 50 Hz	1	175849-AC 175849-AG 175849-AH 175849-AB 175849-AF
5	Rubber foot (Standard) Rubber foot (Stud) Rubber foot (Sándwich)	4	53776-2 53776-1 53776-3
6	Clamp bar	4	53409-A
7	Hex head cap screw M16x50	12	DIN 933
8	Leaf spring 2,7 mm	6	53413-6
9	Leaf spring 2,1 mm	1	53413-5
10	Leaf spring 1,7 mm	1	53413-4
11	Leaf spring 1,4 mm	2	53413-3
12	Spring spacer	24	53410
13	Ground strap	1	37654-N
14	Drive screw M4x6	2	DIN 86
15	Hex head cap screw M16x1,5	1	53402
16	Plain washer Ø16	1	DIN 125
17	Belleville spring washer Ø31,5xØ16,3x1,5	3	DIN 2093
18	Sealing cable grip	1	PG 13,5
20	Flat head cap screw M10x25	4	DIN 912
21	O-ring Ø10	4	DIN 127
22	Hex head cap screw M12x25	4	DIN 933
23	Plain washer Ø12	4	DIN 125
25	Screw M4x6	1	DIN 86
26	Lockwasher Ø16	1	DIN 127
27	Safety label	1	125694

Note: Some of the indicated materials and quantities on this list may vary depending on the exact application for which the equipment is used.

When parts are ordered, please state all the data given on the specifications plate.

TARNOS reserves the right to modify, at any time, without prior notification, or any other obligation, the materials, models, equipment and specifications, or to cease production of them or their components.

Model BF-3 (Assembly)



Do not remove or paint over safety labels or nameplates. If safety labels need replaced, contact TARNOS for an additional supply free or change.

Operating specifications

MAXIMUM TROUGH WEIGHT:	18 kg
MINIMUM TROUGH WEIGHT:	9 kg
TROUGH STROKE AMPLITUDE	2.3 mm
MINIMUM NATURAL FREQUENCY:	3850 rpm (60 Hz)
	3250 rpm (50 Hz)
MAXIMUM CURRENT RATING:	10.0 Amps (115V/50/60 Hz)
(Specifications plate)	5.0 Amps (230V/60 Hz)
	4.5 Amps (230V/50 Hz)

Torque specifications

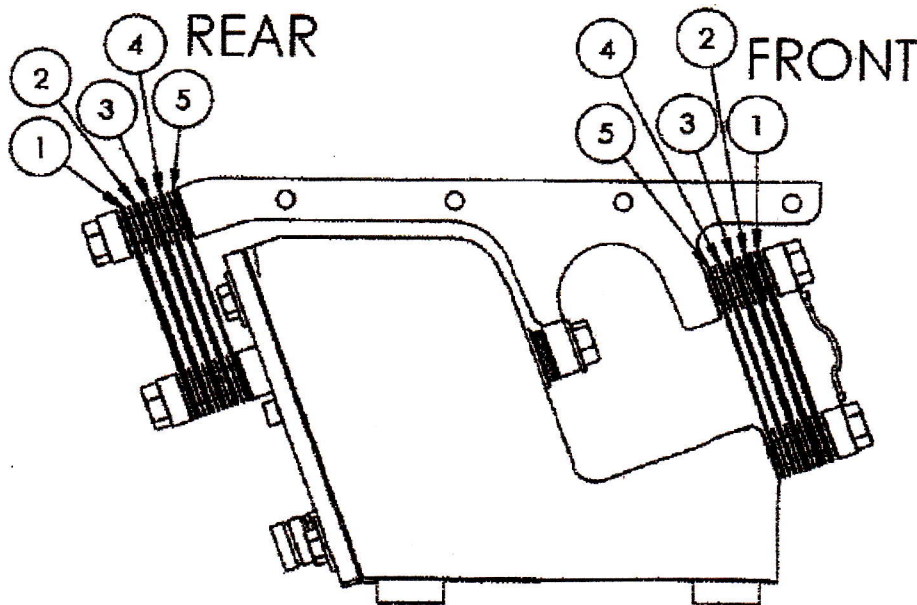
<i>Item</i>	<i>Torque</i>
7	165 Nm
20	21 Nm
22	53 Nm

Feeder tuning

Each BF-3 drive is provided with enough springs to ensure the drive can be turned correctly with a 18 kg trough. This spring combination allows the user to adjust the tuning for lighter troughs. Tuning adjustment is accomplished by changing out the springs according to the weight of the trough.

This information is provided as a guide for tuning purposes. The data presented is close to real life values. However, variations in thickness, width, and slight material differences can affect the tuning. Therefore, the user should verify the final tuning and adjust as needed to obtain optimal tuning.

The diagram below shows the springs numbered 1-5 for both front and rear spring assemblies.



The two tables below show the positions of the springs (1 to 5) and the thickness of the spring that must be placed in that position: 1.4, 1.7, 2.1 or 2.7 millimeters. If the square is black, no spring must be placed in that position.

60 Hz operation (natural frequency 3900 rpm)										
Trough weight (kg)	Rear springs					Front springs				
	1	2	3	4	5	1	2	3	4	5
19,5	2,7	2,7	2,7	2,1	1,4	2,7	2,7	2,7	1,7	1,4
19,1	2,7	2,7	2,7	2,1		2,7	2,7	2,7	1,7	1,4
18,4	2,7	2,7	2,7	2,1	1,4	2,7	2,7	2,7	1,4	
17,5	2,7	2,7	2,7	1,4		2,7	2,7	2,7	1,7	1,4
16,6	2,7	2,7	2,7	1,4		2,7	2,7	2,7	1,7	
16,1	2,7	2,7	2,7			2,7	2,7	2,7	1,7	
15,7	2,7	2,7	2,7	1,4		2,7	2,7	2,7		
15,0	2,7	2,7	2,1	1,4		2,7	2,7	2,7	1,7	1,4
14,3	2,7	2,7	2,1	1,4		2,7	2,7	2,7	1,7	
13,6	2,7	2,7	2,7	2,1		2,7	2,7	1,7		
13,2	2,7	2,7	2,7	2,1	1,4	2,7	2,7			
12,7	2,7	2,7	2,7	2,1		2,7	2,7			
12,3	2,7	2,7	2,7	1,4		2,7	2,7	1,7		
11,8	2,7	2,7	2,7			2,7	2,7	1,7		
11,4	2,7	2,7	2,7			2,7	2,7	1,4		
10,6	2,7	2,7	2,1	1,4		2,7	2,7	1,7	1,4	
10,2	2,7	2,7	2,1	1,4		2,7	2,7	1,7		
9,6	2,7	2,7	2,1	1,4		2,7	2,7	1,4		
9,1	2,7	2,7	2,1	1,4		2,7	2,7			

50 Hz operation (natural frequency 3300 rpm)										
Trough weight (kg)	Rear springs					Front springs				
	1	2	3	4	5	1	2	3	4	5
19,3	2,7	2,1	1,7	1,7	1,4	2,7	2,7	2,7	1,4	1,4
18,6	2,7	2,1	1,7	1,7	1,4	2,7	2,7	2,7	1,4	
17,7	2,7	2,1	1,7	1,7		2,7	2,7	2,7	1,4	
17,0	2,7	2,1	1,7	1,4		2,7	2,7	2,7	1,4	
16,4	2,7	2,1	1,7	1,7		2,7	2,7	2,7		
16,1	2,7	2,1	1,7	1,7	1,4	2,7	2,7	1,4	1,4	
15,2	2,7	2,1	1,7	1,7	1,4	2,7	2,7	1,4		
14,8	2,7	2,1	1,7	1,7	1,4	2,7	2,7			
13,9	2,7	2,1	1,7	1,7		2,7	2,7			
13,2	2,7	2,1	1,7	1,4		2,7	2,7			
12,9	2,7	2,1	1,7	1,7	1,4	2,7	2,7	1,4	1,4	
11,9	2,7	2,1	1,7	1,7		2,7	2,7	1,4	1,4	
11,4	2,7	2,1	1,7	1,7		2,7	2,7	1,4		
10,9	2,7	2,1	1,7	1,7		2,7	2,7			
10,0	2,7	2,1	1,7	1,4		2,7	2,7			
9,1	2,7	2,1	1,7	1,4		2,7	1,4	1,4		