Dings CO. DYNAMICS GROUP

50 Series Standard Brake Instructions

Figure 1. 50 Series Brake

Standard Housing		Wt. Lbs.		Inertia Rotating Parts
Model	Torque Lb-F.	Net	Pkg'd	WK^2 in $Lb\text{-}Ft^2$
51001-050	1.5	6	7	.002
51003-050	3	6	7	.002
51006-050	6	6	7	.002

Table 1. List of Models

IMPORTANT

Read this bulletin carefully before installing or operating this brake. Failure to comply with these instructions cancels all warranties.

WARNING

Brake performance and features must be carefully matched to the requirements of the application.

Consideration must be given to torque requirements, especially where an overhauling condition exists, as well as thermal capacity, ambient temperature, atmospheric explosion hazards, type of enclosure and any other unusual conditions.

Improper selection and installation of a brake and/or lack of maintenance may cause brake failure which could result in damage to property and/or injury to personnel.

If injury to personnel could be caused by brake failure, additional means must be provided to insure safety of personnel.

Do not operate manual release or energize brake coil before installation, in order to preserve prealignment of rotating discs for ease of installation.

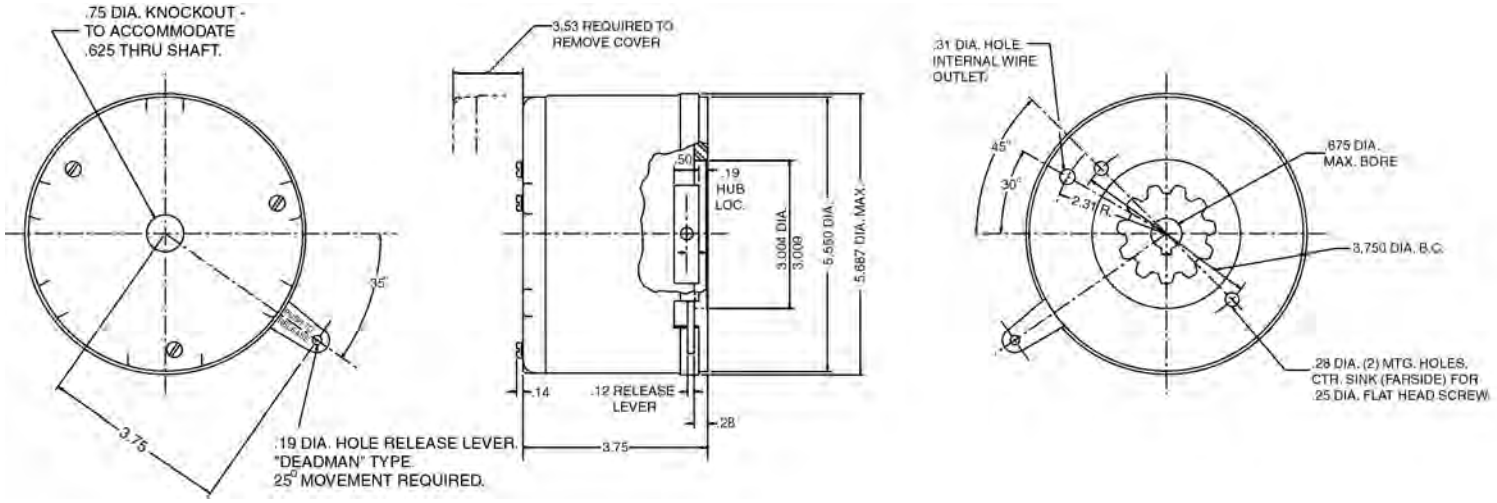

Figure 2. Dimensions of Brake

DESCRIPTION

This brake is direct acting, electromagnetically released and spring set. It uses rotating and stationary disc contact to supply positive braking action. It retains quick release and setting capabilities at all times.

Simplicity of design has reduced maintenance to an absolute minimum. As with any electromechanical equipment, however, periodic inspection and adjustment will assure optimum performance. As the friction disc wears, the magnet gap will increase. The magnet gap should be checked periodically and adjusted when necessary.

INSTALLATION (See Figures 2, 3, 4 & 5)

Before installing, refer to section on Torque Selection.

1. Remove hub (2) from brake and position on motor shaft with key per dimension shown in Figure 2. Stamped part number on hub should face away from motor. Tighten hub set screws to shaft with 6-8 lb. ft. torque.
2. Remove the three cover screws (3) and cover (4) and position brake over hub (2) on shaft. Bolt brake to motor flange with two 1/4" flat head screws. (NOTE: Be sure anti-rattle spring (5) does not rest in hub tooth space containing a set screw.)
3. Connect coil wire leads as indicated in Figure 3. Replace cover and three cover screws.

MANUAL RELEASE (See Figure 4)

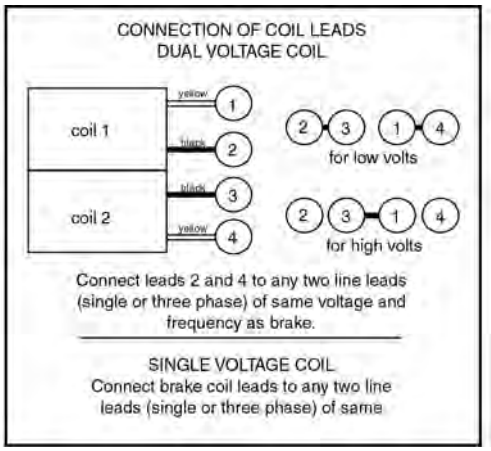

Figure 3. Wiring Diagram

Manually release the brake by pushing the release lever (1) forward until it has moved approximately 25°. THe brake will remain in the released position as long as you hold the lever in this position.

MAINTENANCE AND SERVICE

FRICTION DISC REPLACEMENT (See Figure 4)

When total wear on rotating discs (11) reaches 1/16", replace disc as follows:

1. Remove the three cover screws (3), cover (4), nuts (9), magnet assembly (8), washers (10), nuts (12), torque springs (13), armature (14), nut (7), nut (6), pressure arm (15) and stationary disc (16).
2. Install new rotating disc (11) making sure anti-rattle spring (5) is installed in position shown and does not rest in a hub tooth space containing a set screw.
3. Reassemble all parts in reverse order.

NOTE: In reassembly, tighten nut (6) so that it just makes contact with pressure arm (15). LOCATE nut (12) 1/2" from end of stud as shown in Figure 4. Tighten nut (9) as described under MAGNET ASSEMBLY REPLACEMENT. Readjust magnet air gap as described under WEAR ADJUSTMENT.

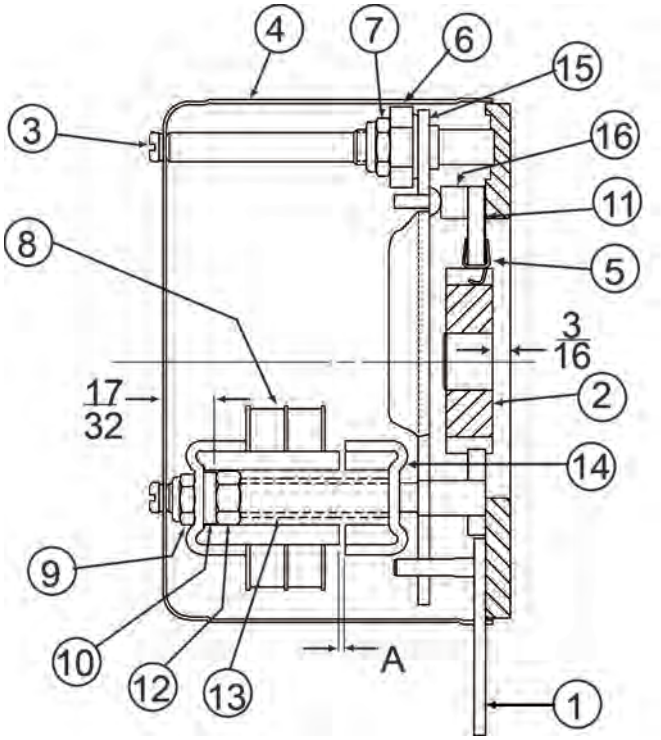

Figure 4. Brake Gap Adjustment

WEAR ADJUSTMENT (See Figure 4).

As friction disc wears, magnet air gap "A" increases. When air gap "A" reaches .150" maximum, adjust to .060"-.070". To adjust: Hold pivot nut (6), loosen lock nut (7), turn pivot nut (6) clockwise until air gap "A" measures .080" at center of magnet. (NOTE: Air gap should decrease slightly to measure .060"-.070". When lock nut (7) is tightened against the pivot nut (6).) Hold pivot nut (6) and tighten lock nut (7) against it. Operate brake several times to see if ;060"-.070" air gap is maintained. If not, re-adjust following same procedure again. Any delay in adjusting air gap will result in a loss of torque and/or coil burn out.

MAGNET ASSEMBLY REPLACEMENT (See Figure 4)

Remove cover screws (3), cover (4), nuts (9) and magnet assembly (8). Replace magnet assembly. Be sure rubber pads (10) are under magnet bracket. TIghten nuts (9) to remove end play between nut and magnet bracket. TIghten with an additional 1/3 turn (two flats on nut). Check air gap as described under WEAR ADJUSTMENT and replace cover and cover screws.

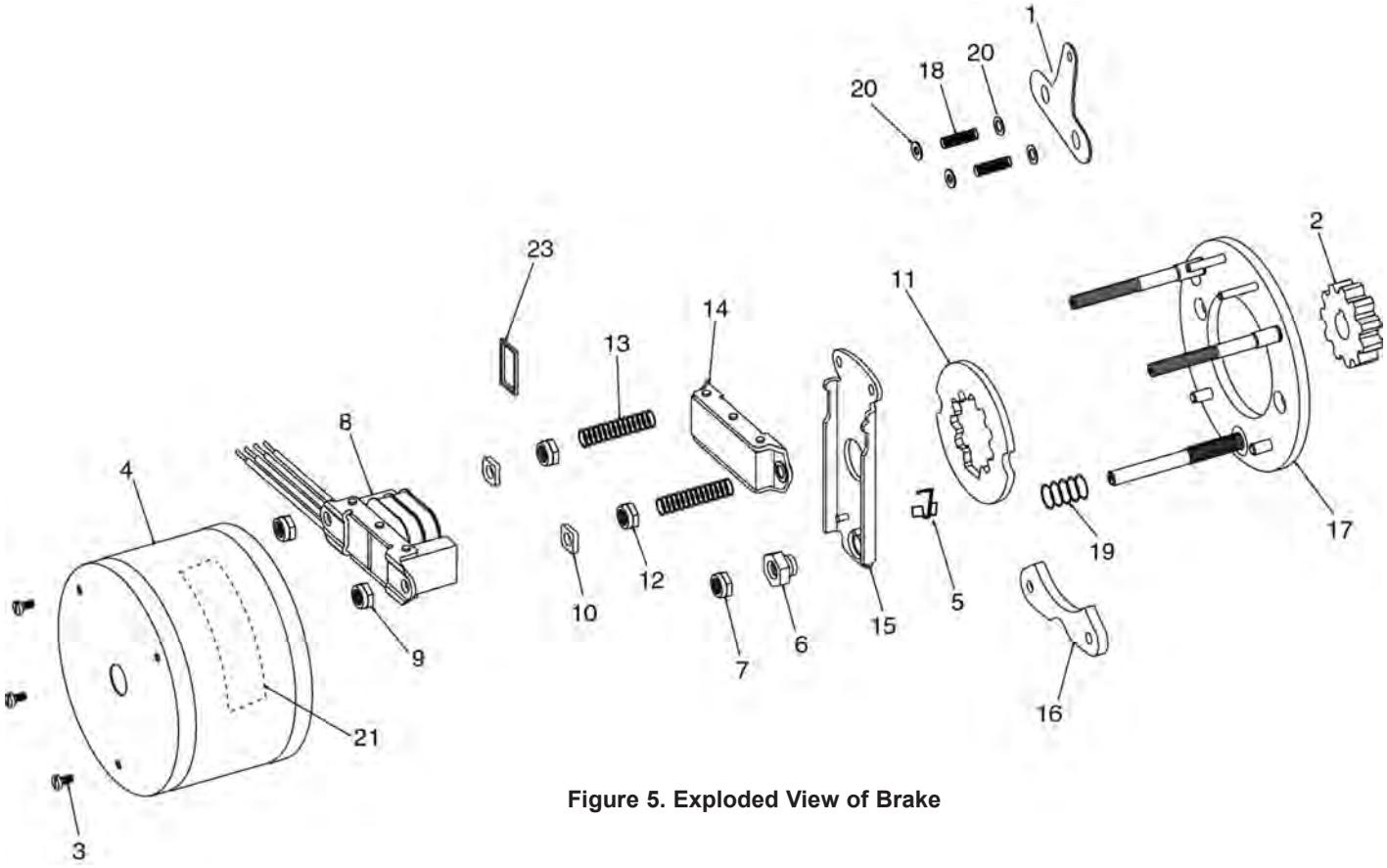

Figure 5. Exploded View of Brake

Table 2. Parts List

ITEM NO.	PIECES REQ'D	NET WT. PER PIECE	DESCRIPTION	PART NO.
1	1	1 oz.	RELEASE LEVER	G050073-001
2	1	4 oz.	SPLINED HUB W/ SET SCREWS (SPECIFY BORE & KEYWAY)	H050038
3	3	1 oz.	MACHINE SCREW, PAN HD. WITH LOCKWASHER	W001006-022
4	1	12 oz.	COVER	K050043-004
5	1	1 oz.	ANTI-BACKLASH SPRING	H060466-001
6	1	1 oz.	PIVOT NUT	G060267-001
7	1	1 oz.	LOCKNUT	W003001-018
8	1	21 oz.	MAGNET ASSEMBLY (INCLUDES ITEM 23)	Specify voltage
9	2	1 oz.	LOCKNUT	W003001-015
10	2	1 oz.	RUBBER WASHER	G060310-001
11	1	2 oz.	ROTATING DISC	H050028-001
12	2	1 oz.	NUT, HEX	W003002-002
13	2	1 oz.	TORQUE SPRING - SILVER - (MODEL 2-51001-050)	G050076-001
13	2	1 oz.	TORQUE SPRING - BRONZE - (MODEL 2-51003-050)	G050077-001
13	2	1 oz.	TORQUE SPRING - OLIVE - (MODEL 2-51006-050)	G050078-001
14	1	5 oz.	ARMATURE ASSEMBLY	H050034-002
15	1	8 oz.	PRESSURE ARM ASSEMBLY	H050036-002
16	1	3 oz.	STATIONARY DISC	G050074-001
17	1	24 oz.	BRACKET ASSEMBLY	K050047-001
18	2	1 oz.	RETURN SPRINGS	G050075-001
19	1	1 oz.	COMPRESSION SPRING	G050107-001
20	4	1 oz.	BRASS WASHER	W004003-020
21	1	1 oz.	NAMEPLATE	K060210-001
22	1	1 oz.	SEAL (WHEN USED) - NOT SHOWN	G050111-001
23	1	1 oz.	SHADING COIL	G060346-001

BRAKE DOES NOT RELEASE

Check for failure of power supply to brake.
Check brake visually for broken or damaged parts.
Check for broken leadwire or bad electrical connection.
Check for correct voltage. Voltage must correspond to that listed on brake nameplate. If voltage is more than 10% below figure stamped on nameplate, magnet will not pull in, causing coil to burn out within minutes. If voltage is more than 10% above, coil will overheat and burn out.
Check for burned out coils (coils may be charred or burned).

BRAKE DOES NOT STOP

Check brake visually for broken or damaged parts.
Check disc wear (see WEAR ADJUSTMENT).
Check for broken friction disc.
Check hub. Be certain hub has not shifted position on shaft and rotating disc is fully engaged on hub.

BRAKE CHATTERS OR HUMS

Clean magnet faces if dirty. Insert a clean sheet of paper between the magnet faces and energize brake. Move paper around between faces to dislodge dirt. Finally, remove paper.
Check if shading coil (23) is cracked, broken or out of position.
Check for low voltage. Magnet will not pull in and coil will burn out if voltage is more than 10% below figure stamped on nameplate.

MANUAL RELEASE DOES NOT WORK

Check for broken or damaged parts.
Check return springs (18). Replace if broken.
Check magnet air gap “A” with lever in the normal position. Gap must be .060” at narrowest point. If gap is too small, motor shaft will not turn freely.
Adjust to correct magnet gap as described under WEAR ADJUSTMENT.

SPECIFICATIONS

MOTOR FRAMES . . . . . .48 Frame
HOUSING . . . . . .Steel
DUTY . . . . . .Rated for continuous duty
VOLTAGES . . . . . .All standard NEMA single phase voltages and frequencies available. Other voltages and frequencies are optional.
MOUNTING . . . . . .Direct to NEMA “C” motor flanges. Brake is all position mounting.
TORQUE . . . . . .1.5, 3 and 6 lb-ft

ORDERING INFORMATION

The following data should be furnished with your order for:

REPLACEMENT PARTS
Brake Model Number
Part Number from Table 2
Part Description from Table 2
(On hub order furnish bore dia. & keyway dimensions)
(On electrical parts specify voltage, phase & frequency)

REPLACEMENT BRAKE
Model Number
Voltage, Phase & Frequency
Hub Bore & Keyway Dimensions

WARRANTY

Seller warrants products manufactured by it and supplied hereunder to be free from defects in materials and workmanship under normal use and proper maintenance for a period of twelve months from date of shipment. If within such period any such products shall be proved to Seller’s reasonable satisfaction to be defective, such products shall be repaired or replaced at Seller’s option Seller’s obligation and Buyer’s exclusive remedy hereunder shall be limited to such repair and replacement and shall be conditioned upon Seller’s receiving written notice of any alleged defect no later than 10 days after its discovery within the warranty period and, at Seller’s option, the return of such products to Seller, f.o.b. its factory, when such return is feasible. Seller reserves the right to satisfy its warranty obligation in full by reimbursing Buyer for all payments it makes hereunder, and Buyer shall thereupon return the products to Seller. Seller shall have the right to remedy such defects. Seller makes no warranty with respect to wear or use items, such as belts, chains, sprockets, discs and coils, all which are sold strictly AS IS.

The foregoing warranties are exclusive and in lieu of all other express and implied warranties (except of title) including but not limited to implied warranties of merchantability, fitness for a particular purpose, performance, or otherwise, and in no event shall the Seller be liable for claims (based upon breach of express or implied warranty, negligence, product liability, or otherwise) for any other damages, whether direct, immediate, incidental, foreseeable, consequential, or special.

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