



60 SERIES HEAVY DUTY UNIPAC BRAKE INSTRUCTIONS



Figure 1. 60 Series Heavy Duty Brake

Model	Standard Enclosure		Number Of Rotating Discs	General Dimensions In Inches				Wt. (Lbs.)		Thermal Capacity H.P. Sec/Min.	Inertia Rotating Parts $\frac{WK^2}{in Lb. Ft.^2}$
	Torque (Lb. Ft.)			C	AC	G*	X	Net	Pkg'd.		
2-61001-24	1½		1	4¼	¾	1¾	¾	8½	9½	7	.0042
2-61003-24	3		1	4¼	¾	1¾	¾	8½	9½	7	.0042
2-62006-24	6		2	4¼	¾	1¾	¾	9	10	8	.0081
**2-63009-24	9		3	4¼	¾	1¾	1¾	10	11	9	.0119
2-62010-24	10		2	4¼	¾	1¾	¾	9	10	8	.0081
**2-63010-24	10		3	4¼	¾	1¾	1¾	10	11	9	.0119
2-63015-24	15		3	4¼	¾	1¾	1¾	10	11	9	.0119
2-63020-24	20		3	4¼	¾	1¾	1¾	10	11	9	.0119

- * Length of mounting hole thru bracket.
- ** These models are replaced by 2-62010-24

Table 1. List of Models and Dimensions

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 pre-alignment of rotating discs for ease of installation.

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 discs wear, the magnet gap will increase. The magnet gap should be checked periodically and adjusted when necessary.

CSA Listed

STANDARD NEMA SHAFT EXTENSION MAY BE USED.

½" NPT LEADWIRE OUTLET FOR EXTERNAL CONNECTION LEFT HAND STANDARD; RIGHT HAND UPON REQUEST (BRAKE CAN BE ROTATED TO PLACE HOLE AT TOP, BOTTOM, OR EITHER SIDE.)

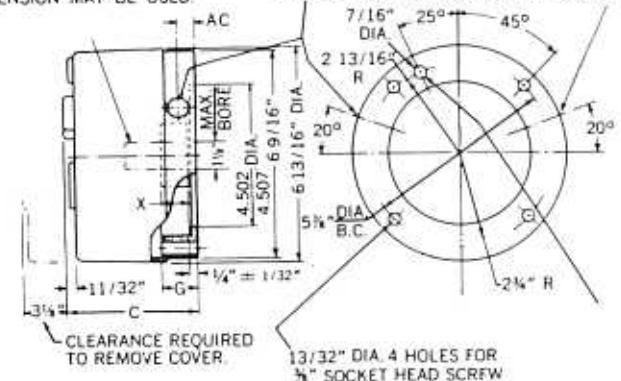


Figure 2. Outline Dimensions of Brake

INSTALLATION (See Figures 2, 4 & 5)

1. Remove hub (1) from brake and position on motor shaft with key as illustrated in Figure 2. Stamped part number on hub should face away from motor. Tighten hub set screws to shaft with 8 - 10 lb. ft. torque.
2. Remove two cover screws (32) and cover (31) and position brake over hub on shaft. Bolt brake to motor flange or floor mount.
3. Connect coil wire leads as shown in Figure 4. Replace cover and cover screws.

MANUAL RELEASE (See Figure 5)

To manually release the brake, rotate release knob (21) clockwise until it strikes stop pin (22). The brake will remain in the release position until manually reset, or automatically reset when electric power is restored.

MAINTENANCE AND SERVICE

FRICITION DISC REPLACEMENT (See Figure 5)

When total wear on rotating friction disc reaches $1/16"$, replace as follows:

Remove cover. With release knob (21) in released position, remove three mounting screws (27) and remove operator assembly (6) as a unit. Spring (5) is a loose part. Avoid loss. Remove stationary discs (3), install new rotating discs (4) and reassemble all parts in reverse order. After starting three screws (27), turn two wear adjustment screws (26) counterclockwise to allow the three posts on end plate assembly (7) to seat against the bracket (2). Tighten screws (27). Readjust magnet gap (see WEAR ADJUSTMENT). Replace cover.

MAGNET ASSEMBLY REPLACEMENT

Remove cover. Unscrew two flat head screws (13), remove shoulder nuts (12) and rubber washers (11). Remove and replace magnet assembly (9) and reassemble parts in reverse order. Magnet and armature faces must be clean and parallel to insure quiet operation (see WEAR ADJUSTMENT and TROUBLE SHOOTING). If manual release does not operate properly, see TROUBLE SHOOTING.

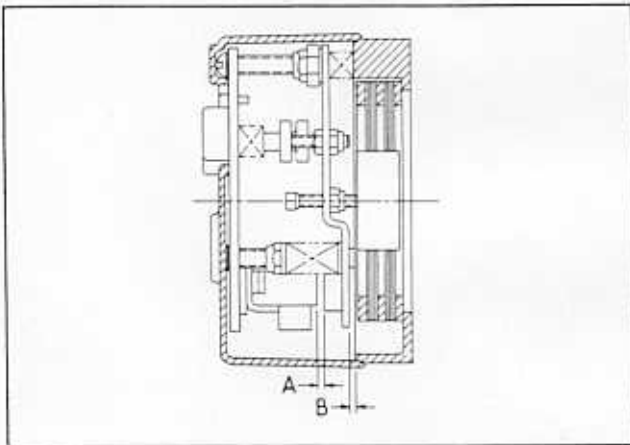


Figure 3. Brake Gap Adjustment

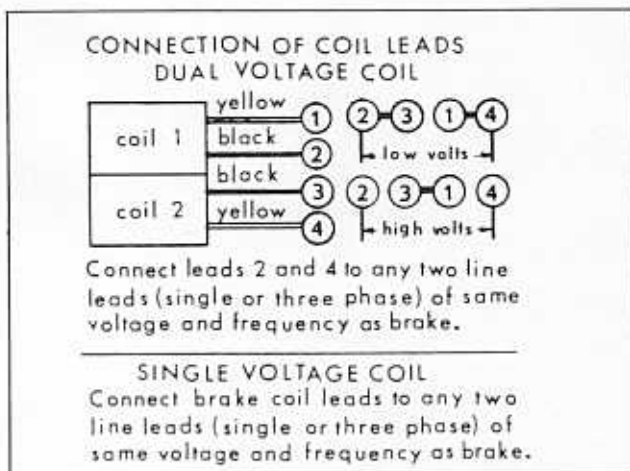


Figure 4. Wiring Diagram

WEAR ADJUSTMENT (See Figure 3)

When armature plate (25) touches bracket (2), closing gap "B," adjustment for friction disc wear is required. Turn two screws (26) clockwise until magnet gap "A" reads $.040"$ to $.045"$ at narrowest gap, for 1 and 2 disc models, and reads $.050"$ to $.055"$ at narrowest gap, for 3 disc models. Any delay in adjusting gap will result in eventual loss of torque.

TORQUE ADJUSTMENT

The 60 Series Brake is factory set for rated static torque. To increase stopping time and lower torque, turn two locknuts above torque springs (16) counterclockwise, increasing spring length. Each full turn decreases torque by approximately 10%. Do not adjust brakes for higher torque, as this will cause premature coil burnout.

TROUBLE SHOOTING

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 coil (coil may be charred or burned).

BRAKE DOES NOT STOP

Check that manual release is in normal reset position.
Check brake visually for broken or damaged parts.
Check disc wear (See WEAR ADJUSTMENT).
Check for broken friction disc.
Make certain hub has not shifted position on shaft and that all rotating discs are fully engaged on hub.

BRAKE CHATTERS OR HUMS

Clean magnet faces if dirty. Insert a clean sheet of paper between magnet faces and energize brake. Move paper around between faces to dislodge dirt. Finally, remove paper.

Check that magnet faces are parallel in closed position.

1. If not parallel along length of magnet, check bushings (14) under torque springs for binding or excessive wear.
2. If not parallel across width of magnet, adjust pivot nut (8) on post to obtain minimum magnet hum. After adjusting pivot nut, lock in place with nut (item 7, part "C"). Check magnet gap "A" and adjust if necessary (See WEAR ADJUSTMENT). Operate manual release (21) and adjust if necessary.

Check if shading coil (10) is cracked, broken or out of position. Replace magnet assembly if cracked or broken.

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 spring (24). Brake will not reset automatically if this spring is broken.
Check magnet gap "A" with knob in released position. Gap must be $.030"$ at narrowest point. If gap is too wide, motor shaft will not turn freely. If gap is too small, knob will not return automatically when power is applied.

Adjustment for correct magnet gap is made by turning nuts (18 and 19). Make sure nuts are tight against armature plate (25) after adjusting release.

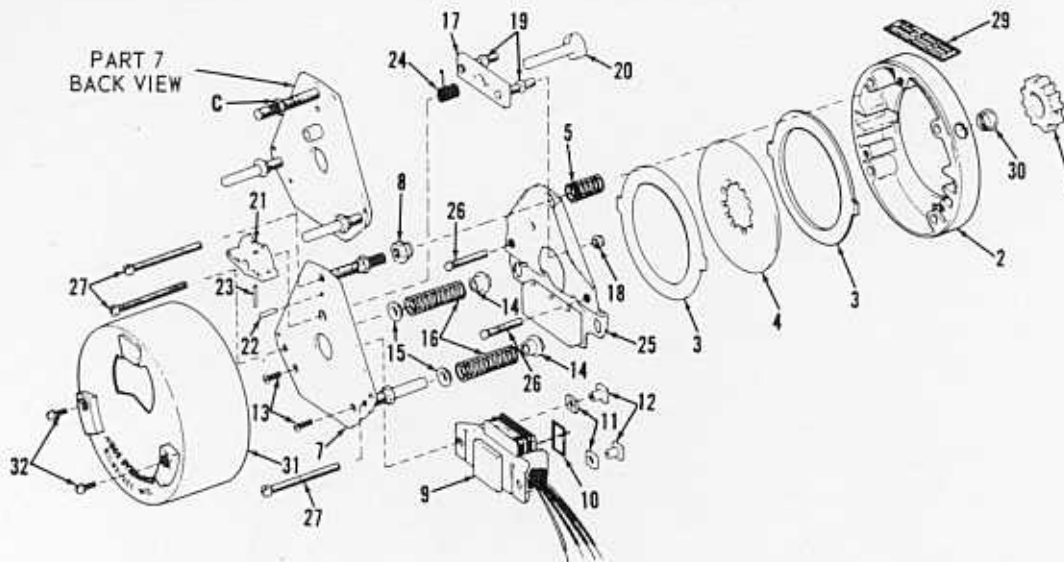


Figure 5. Exploded View of Brake

Item No.	Pcs. Req.	Net Wt. Per Piece (Oz.)	Description	Part No.	Item No.	Pcs. Req.	Net Wt. Per Piece (Oz.)	Description	Part No.
1	1	14	Hub with Set Screws (Specify Bore and Keyway)	K60107	16	2	1	Torque Spring, Models 2-61003-24, 2-62006-24 and 2-63009-24	G60275-2
2	1	14	Bracket, Models 2-61001-24, 2-61003-24, 2-62006-24 & 2-62010-24	L60038	16	2	1	Torque Spring, Models 2-62010-24 & 2-63015-24	G60275-4
2	1	20	Bracket, Models 2-63009-24, 2-63010-24, 2-63015-24 & 2-63020-24	L60075	16	2	1	Torque Spring, Model 2-63020-24	G60275-5
3	**	7	Stationary Disc	H60147	16	2	1	Torque Spring, Model 2-63010-24	G60275-3
4	*	7	Rotating Disc	H60157-1	17	1	6	Lift Bar Assembly (Includes Item 19)	G60295-1
4A	*	13	Heavy Duty Rotating Disc	H60398-1	18	2	1	Locknut	3-13-1
5	1	1	Compression Spring	G60297	19	2	1	Jam Nut	3-7-1
6	1	76	Operator Assembly (Includes Items 7 thru 26)	K60132	20	1	2	Release Camshaft	K60105-2
7	1	32	End Plate Assembly (Includes Item 8)	H60198	21	1	1	Release Knob	H60170-2
8	1	1	Pivot Nut	G60267	22	1	1	Groove Pin	5-4-2
9	1	24	Magnet Assembly (Includes Item 10) Models 2-61001-24, 2-61003-24, 2-62006-24, 2-63009-24 and 2-63010-24	H60199	23	1	1	Roll Pin	5-3-73
9	1	24	Magnet Assembly (Includes Item 10) Models 2-62010-24 & 2-63015-24	H60200	24	1	1	Return Spring	G60277
9	1	24	Magnet Assembly (Includes Item 10) Model 2-63020-24	H60230	25	1	20	Armature Plate Assembly (Includes Item 26) Models 2-61001-24 and 2-61003-24	H60162-1
10	1	1	Shading Coil	G60346	25	1	20	Armature Plate Assembly (Includes Item 26) Models 2-62006-24, 2-63009-24, 2-62010-24, 2-63010-24, 2-63015-24 and 2-63020-24	H60162-2
11	2	1	Rubber Washer	G60310	26	2	1	Set Screw, Square Head	2-3-1
12	2	1	Shoulder Nut	G60305	27	3	1	Round Head Machine Screw w/Springtite Lockwasher	1-3-6
13	2	1	Flat Socket Head Cap Screw with Nylok Insert	1-17-3	29	1	1	Nameplate	K60210
14	2	1	Bushing	G60268	30	1	1	Cap Plug	8-3-1
15	2	1	Washer	G60294	31	1	32	Cover	L50053
16	2	1	Torque Spring, Model 2-61001-24	G60275-1	32	2	1	Pan Head Machine Screw w/Springtite Lockwasher	1-6-4

* For number of rotating discs, see Table 1, page 1.

** Number of stationary discs is one more than number of rotating discs.

Table 2. Parts List

VERTICAL MOUNTING INSTALLATION AND ADJUSTMENT

Installation and adjustment of the vertically mounted DINGS UNIPAC BRAKE is the same as on the standard model (this bulletin, pages 1 thru 3).

FRICITION DISC REPLACEMENT

When replacing friction discs, follow procedure outlined on page 1, with this addition:

Care must be taken to insure proper insertion of disc separating springs. Springs are color coded for easy identification, and reference is made to spring color, (see Figure 6 and Table 3). The installation order of the disc springs is dependent on brake mounting position, (above or below motor), so make sure to consult the correct diagram for spring location.

ITEM	DESCRIPTION	PART NO.	NO. OF ROT. DISCS		
			1	2	3
1	SPRING (SILVER)	G60350-1	2	2	2
2	SPRING (BLACK)	G60350-2	-	2	2
3	SPRING (BRONZE)	G60350-3	-	-	2
4	ROLL PIN - 1/8" x 5/8"	59-028-125-0625	2	-	-
5	ROLL PIN - 1/8" x 1"	59-028-125-1000	-	2	-
6	ROLL PIN - 1/8" x 1-3/8"	59-028-125-1375	-	-	2
7	STATIONARY DISC	H60203-4	1	2	3
8	STATIONARY DISC	H60203-3	1	1	1

Table 3. Parts for Vertical Mounting

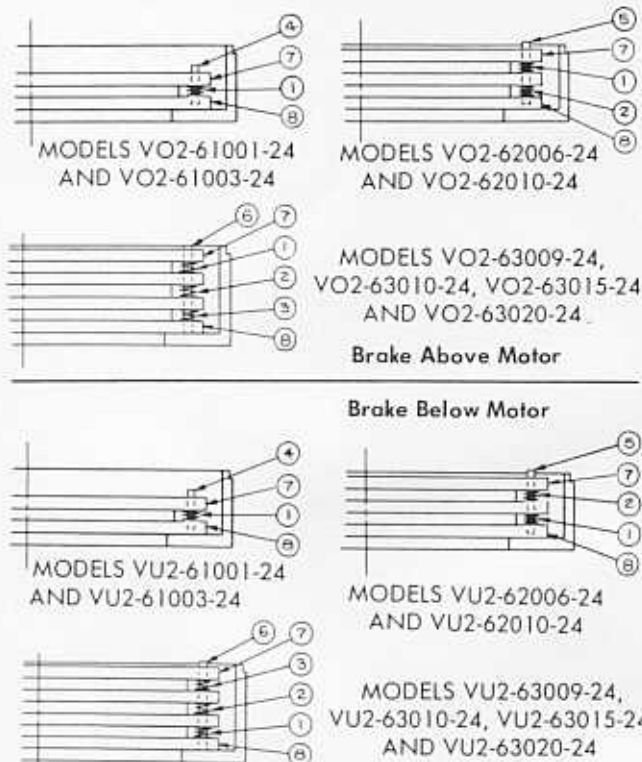


Figure 6. Vertical Mounting Brakes

BRAKE SPECIFICATIONS

TORQUE: 1-1/2 thru 20 lb. ft.

MOTOR FRAMES: 56C, 66C, 143TC, 145TC

HOUSING: All aluminum die cast.

VOLTAGES: All NEMA single phase voltages and frequencies are standard. Others optional.

DUTY: Rated for continuous duty cycle.

MOUNTING: Direct to NEMA "C" motor flanges. Adaptors for larger or smaller frames, foot mounting, wall mounting, or vertical mounting, available on request.

HUB MOUNTING: NEMA standard length motor shaft extensions may be used. Thru shaft also available with simple cover modifications.

ORDERING INFORMATION

The following data should be furnished with your parts order:

Brake Model Number.

Serial Number if available.

Part Number from Table 2.

Part Description from Table.

(On hub order, specify bore dia. & keyway dimensions. On electrical parts, specify voltage, phase & frequency.)

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