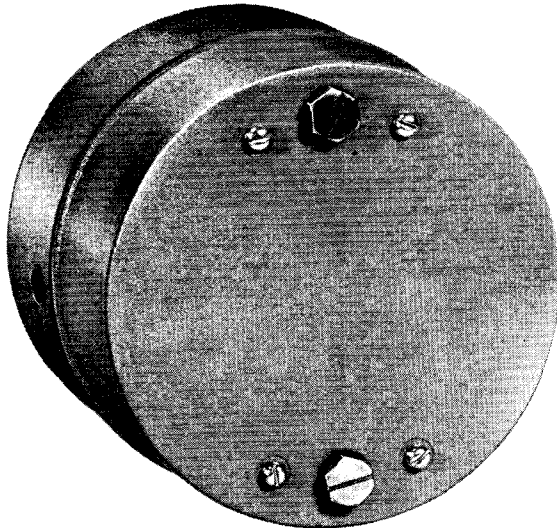




**DYNAMICS GROUP**

# DIRACT BRAKES 70 SERIES 4 POST BRAKE INSTRUCTIONS

Figure 1.



## INSTALLATION

Refer to Figures 3 & 5, Tables 2 or 3

1. Remove hub (1) from brake and position on motor shaft with key according to dimension "N." Stamped part number on hub should face away from motor. Tighten hub set screws with 12 ft. lbs. torque.
2. Remove cover screws (24) and cover (23), plus "O" ring (28) and gasket (32) on Severe Duty and Enclosed Housings.
3. Place brake on motor, guiding discs on hub.
4. Bolt brake to motor "C" face with four socket head cap screws. See Figure 3 to determine bolt length.
5. Connect coil leads per appropriate wiring diagram in Figure 2 and replace cover.

## IMPORTANT

Read this bulletin carefully before installing or operating this brake. Failure to comply with these instructions cancels all warranties since the safety of the unit may be endangered by improper installation or operating procedures.

### 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.

## 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.

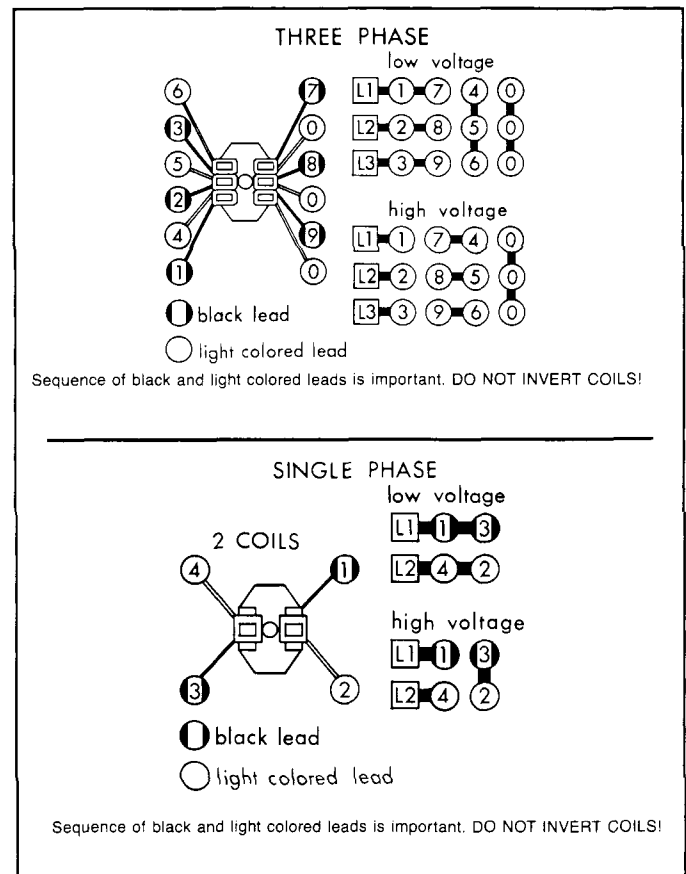


Figure 2. Wiring Diagram

## MANUAL RELEASE OPERATION

Refer to Figure 5

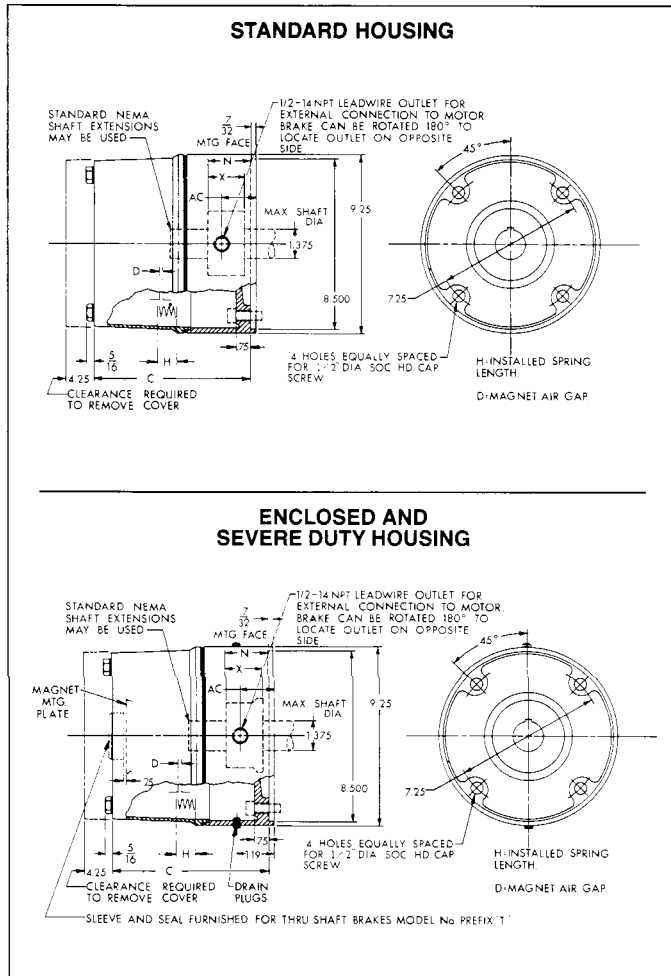
To manually release the brake, rotate two rods (10) clockwise until stop screw (14) hits pin. Brake will remain in released position until rods or lever are manually returned to original position, or until electrical power is restored which automatically resets the brake.

## TORQUE ADJUSTMENT

Refer to Figures 3 & 5, Tables 2 or 3

Brake is factory set for rated torque per spring length "H." To increase stopping time and lower torque, turn two locknuts (9) counter-clockwise, increasing dimension "H." All spring lengths should be equal. Do not decrease spring length "H" as this may cause coil to burn out.

Figure 3.



MAXIMUM SPEED FOR ALL MODELS IS 3600 RPM

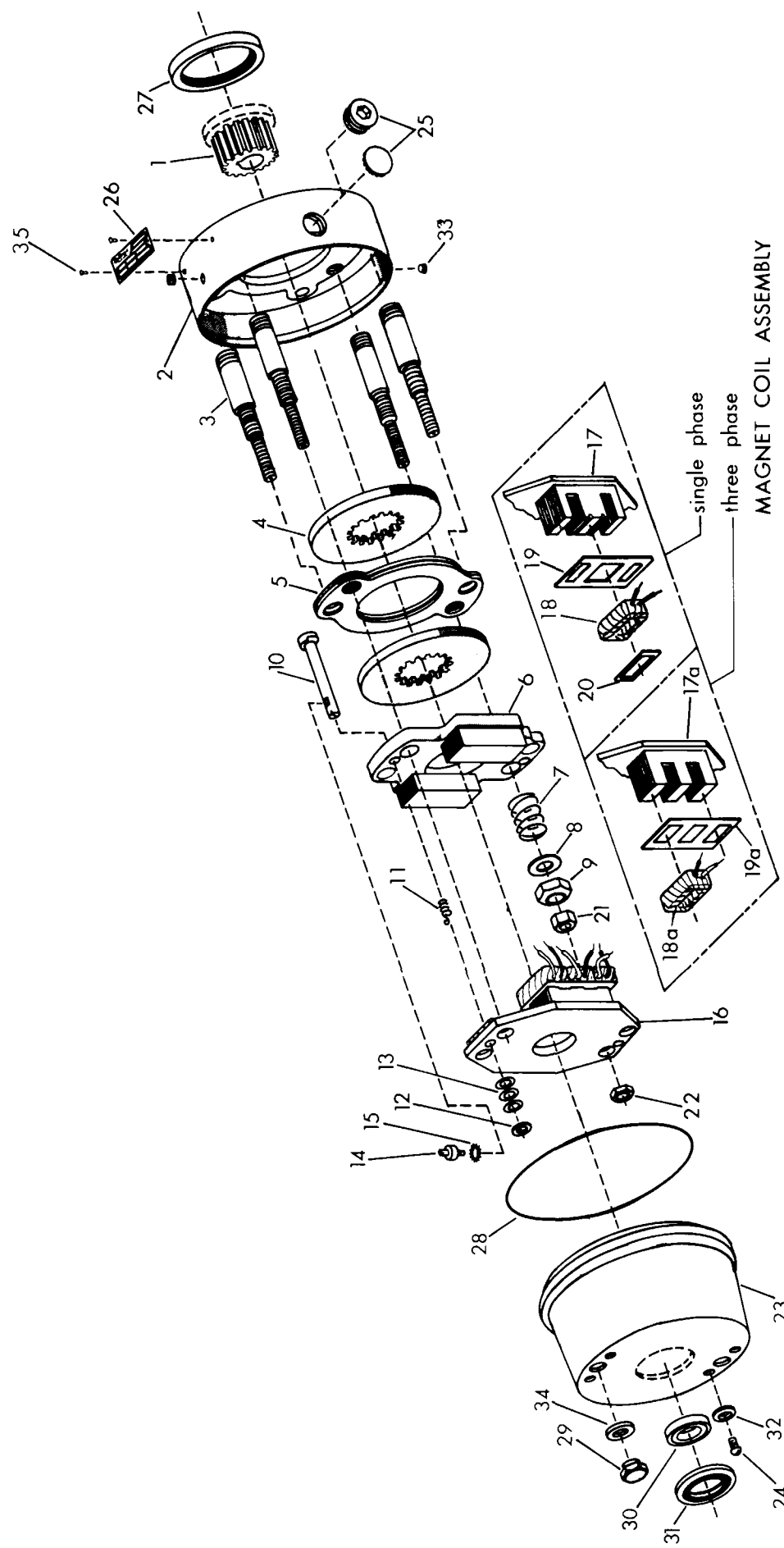


Figure 5. Exploded View of Brake

**Table 1. Parts List**

ITEM NO.	PCS. REQ'D.	DESCRIPTION	6-70000-55 SERIES PART NO.	6-70000-57 SERIES PART NO.	6-70000-58 SERIES PART NO.
1	1	Hub	Specify Model No., Shaft Dia. and Key Size		
2	1	Bracket W/Studs — 1 Disc	H070252-001	H070289-001	
2	1	Bracket W/Studs — 2 Disc	H070252-002	H070289-002	
2	1	Bracket W/Studs — 3 Disc	H070252-003	H070289-003	
2	1	Bracket W/Studs — 4 Disc	H070252-004	H070289-004	
2a	1	Bracket W/High Tensile Studs	H070252-005	H070289-005	
2a	1	Bracket W/High Tensile Studs	H070252-006	H070289-006	
2a	1	Bracket W/High Tensile Studs	H070252-007	H070289-007	
2a	1	Bracket W/High Tensile Studs	H070252-008	H070289-008	
3	4	Stud — 1 Disc	G070213-001		
3	4	Stud — 2 Disc	G070213-002		
3	4	Stud — 3 Disc	G070213-003		
3	4	Stud — 4 Disc	G070213-004		
3a	4	Stud — 1 Disc High Tensile	G070219-001		
3a	4	Stud — 2 Disc High Tensile	G070219-002		
3a	4	Stud — 3 Disc High Tensile	G070219-003		
3a	4	Stud — 4 Disc High Tensile	G070219-004		
4	*	Rotating Friction Disc	H070103-004		
4a	*	Heavy Duty Rotating Fraction Disc (Alt.)	H070047-001		
5	**	Stationary Disc	K070305-001		
6	1	Pressure Plate	K070307-001		
7	4	Torque Spring	G070068-001 (10 Lb.Ft.) G070525-001 (25 Lb.Ft.) G080192-001 (All Others)		
8	4	Torque Spring Washer	W004004-001		
9	4	Torque Adjusting Nut	W003001-022		
10	2	Manual Release Rod	G070001-002		
11	2	Manual Release Spring	G060010-001		
12	2	Manual Release Washer	W004004-003		
13	As Req'd	Manual Release Shim	W004004-004		
14	2	Manual Release Slop Screw	G060029-001		
15	2	Manual Release Lockwasher	W004007-007		
16	1	Magnet Assembly, Single Phase — Complete with Coils	See Ordering Info on Pg. 6		
16	1	Magnet Assembly, Three Phase — Complete with Coils	See Ordering Info on Pg. 6		
17	1	Magnet Plate W/O Coils, Single Phase	K070352-001		
17a	1	Magnet Plate W/O Coils, Three Phase	K070306-001		
18	2	Magnet Coil — Single Phase	See Ordering Info on Pg. 6		
18a	6	Magnet Coil — Three Phase	See Ordering Info on Pg. 6		
19	2	Insulating Washer — Single Phase	G070029-001		
19a	2	Insulating Washer — Three Phase	G070037-001		
20	2	Shading Coil, Single Phase Only	G070032-001		
21	4	Gap Adjusting Nut	W003003-023		
22	4	Gap Adjusting Nut	W0053001-020		
23	1	Cover, Standard	K070353-001		
23	1	Cover, W/Thru Shaft	K070405	K070404-001	
24	4	Cover Screw	W001004-012	W001002-103	
25	1	Conduit Hole Plug	W008003-001	W010002-004	
26	1	Name Plate (Specify Data)	Specify Data		
27	1	Hub Seal	-----	W011001-007	
28	1	"O" Ring Seal	-----	W006001-010	
29	2	Release Cap	G060170-002		
30	1***	Thru-Shaft Sleeve (Specify Bore and Keyway)	-----	H070080	
31	1***	Thru-Shaft Seal	-----	W011001-006	
32	4	Cover Screw Gasket, Stat-O-Seal	-----	W011002-005	
33	2	Drain Hole Plug	-----	W010002-001	
34	2	Release Cap Gasket	G70381-001		
35	2	Drive Screw	W001012-048		

\* Number of Rotating Discs is shown as second digit of Model No.: Example - R72025  
 \*\* Number of Stationary Discs is one less than number of Rotating Discs.  
 \*\*\* For models with prefix "T" (thru shaft) only.

**Table 2. Standard Housing**

MODEL NO.	TORQUE LB. FT.	WEIGHT LBS.	† THERMAL CAPACITY HPS/MIN.	INERTIA WK <sup>2</sup> LB. FT. <sup>2</sup>	DIMENSIONS						
					C	D ± .005		H	N ± 1/32	X	AC
						MAX.	ORIGINAL SETTING				
6-71010-55	10	40	10	.028	5.75	.060	.035	1.31	1.5	1	1.47
6-71015-55	15	40	10	.028	5.75	.060	.035	1.31	1.5	1	1.47
6-72025-55	25	45	11	.051	6.37	.060	.035	1.31	2	1.5	2.09
6-72035-55	35	45	11	.051	6.37	.065	.040	1.22	2	1.5	2.09
6-73050-55	50	50	12	.075	7.00	.065	.040	1.25	2.5	2	2.72
6-74070-55	70	50	13	.049	7.62	.065	.040	1.22	3	2.5	3.34

**Table 3. Enclosed and Severe Duty Housing**

MODEL NO.		TORQUE LB. FT.	WEIGHT LBS.	† THERMAL CAPACITY HPS/MIN.	INERTIA WK <sup>2</sup> LB. FT. <sup>2</sup>	DIMENSIONS							
SEVERE DUTY	ENCLOSED					C	D ± .005		H	N ± 1/32	X		AC
							MAX.	ORIGINAL SETTING			ENCL	S.D.	
6-71010-58	6-71010-57	10	40	10	.036	5.75	.060	.035	1.31	1.5	1.31	1	1.47
6-71015-58	6-71015-57	15	40	10	.036	5.75	.060	.035	1.31	1.5	1.31	1	1.47
6-72025-58	6-72025-57	25	45	11	.059	6.37	.060	.035	1.31	2	1.31	1.5	2.04
6-72035-58	6-72035-57	35	45	11	.059	6.37	.065	.040	1.22	2	1.81	1.5	2.09
6-73050-58	6-73050-57	50	50	12	.083	7.00	.065	.040	1.25	2.5	2.31	2	2.72
6-74070-58	6-74070-57	70	55	13	.107	7.62	.065	.040	1.22	3	2.81	2.5	3.34

†Thermal capacity (HPS/MIN.) was determined under the following test conditions: a) Room temperature 72°F. b) Stopping time of one second or less. c) Brake mounted in a horizontal position. d) Equal on and off times. e) 1800 RPM. f) Coil energized with 110% of rated voltage.

## TROUBLE SHOOTING

**A. IF BRAKE DOES NOT RELEASE:**

1. Check brake visually for broken or damaged parts.
2. Check for broken leadwire or bad electrical connection.
3. Check for correct voltage. Line voltage must correspond to the voltage for which the brake coils are connected. If the line voltage is more than 10% below the voltage for which the brake coils are connected, the magnet will not pull in, causing the coils to burn out within minutes. If the line voltage is more than 10% above the voltage for which the brake coils are connected, the coils will overheat and burn out.
4. Check for burned-out coils (coils may be charred or burned).
5. Check for excessive magnet gap. (See WEAR ADJUSTMENT.)
6. Check for failure of power supply to brake.

**B. IF BRAKE DOES NOT STOP:**

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

**C. IF BRAKE CHATTERS OR HUMS:**

1. See that magnet faces are clean. To remove dirt, insert a clean sheet of paper between magnet faces and energize brake. Move paper around between faces to dislodge dirt, then remove paper.
2. Check for low voltage. Magnet will not pull in, and coils will burn out if line voltage is beyond 10% below the voltage the brake coils are connected for.
3. See that magnet faces are parallel within tolerance. Readjust magnet gap to "D" original setting. (See WEAR ADJUSTMENT.)
4. Check if shading coil (20) is cracked, broken or out of position (single phase only).

**D. IF MANUAL RELEASE DOES NOT WORK:**

1. Check for broken or damaged parts.
2. Check return spring (11). Brake will not reset automatically if this spring is broken.
3. Check quantity of shim washers (13) under release stop screws. (See MANUAL RELEASE ASSEMBLY.)

## **SPECIFICATIONS**

**MOTOR FRAMES** 182TC, 184TC, 213TC, 215TC, 254TC, 256TC.

**HOUSINGS** Cast iron.

**DUTY** Rated for continuous duty.

**VOLTAGES** All standard NEMA voltages and frequencies available. Other voltages and frequencies are optional.

**MOUNTING** Direct to NEMA "C" motor flanges. Adaptors for larger or smaller frames, foot mounting and vertical mounting are available.

**SHAFTS** NEMA standard length motor shafts and thru shafts may be used on all models. (Cover modification required for thru shafts.)

## **ORDERING INFORMATION**

The following data should be furnished with your order for:

### **REPLACEMENT PARTS**

Brake Model Number

Part Number from Tables

Part Description from Tables

(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

Mounting — Horizontal or Vertical. (If vertical, specify whether above or below motor. If brake includes foot mounting bracket or adaptor, specify.)

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## **NOTES**

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## **LOCAL ASSISTANCE**

Local assistance is available by a sales representative or distributor in the USA and Canada. Look in the Yellow Pages phone directory under Brakes Mfrs & Distrs., or call us at the factory at 414-672-7830 between 8:00AM and 4:30PM Milwaukee time (central time) Monday through Friday. Tell our operator that you want to get the name, location and phone number of a Dings Dynamics distributor or sales representative in your area.

