



Installation & Maintenance Manual

NEMA FRAME COMBINATION AIR ENGAGED FRICTION CLUTCH- SRRING ENGAGED FRICTION BRAKES



Catalog Products:

[X5C2R-14H](#), [X5C2R-14HCA](#), [X5C2R-14HSS](#)
[X5C2R-56H](#), [X5C2R-56HCA](#), [X5C2R-56HSS](#)
[X7C2R-18H](#), [X7C2R-18HCA](#), [X7C2R-18HSS](#)
[X7C2R-21H](#), [X7C2R-21HCA](#), [X7C2R-21HSS](#)

And non-catalog variations of this clutch design.

CLICK on product numbers above to obtain the product detail sheet which includes dimensional data helpful during installation.

Mach III Technical Support

Toll Free: 866-291-0849
International: 001-859-291-0849
Email: engineering@machiii.com
www.machiii.com

Detail sheets and 3D models are available on the Mach III website:
<http://www.machiii.com/Products/Clutch-Brakes/NEMA-Frame-Clutch-Brakes-C-Face.asp>

Please contact Mach III to obtain assembly and parts list drawings.



These products include rotating equipment and should be guarded according to OSHA requirements and other Federal, State and local regulations. It is the responsibility of the user to provide the necessary guarding.



I. New Clutch-Brake Torque

New clutch or brake torque is approximately 40% less than rated design torque until the friction and drive discs are worn in (lapped, burnished). The length of time for wear-in to occur depends upon the application.

II. Clutch-Brake Installation

A. SHAFT PREPARATION

Mach III Clutch products are bored to fit a precision plug gauge for the specified bore size and should slide fit the mating shaft. Make certain that the shaft is free of burrs or nicks. It may be necessary to file or sand the shaft to assure a slide fit. **Never hammer the brake onto the shaft.** Hammering on the brake may cause evident damage or subtle injury that will shorten the wear life of the unit, and will void the warranty.

- (1) Apply the anti-seize (E-Z Break[®]) lubricant from the packet provided, or equivalent, to the shaft.
- (2) Insert key (customer supplied) onto the shaft.
- (3) Slide clutch-brake over key on the shaft.

B. MOUNTING

The clutch-brake mounts between a motor and gear reducer. These units may be suitable for belt drive (pulley output) applications. Consult factory for options.

C. AIR LINE CONNECTION

Refer to the dimensional spec sheet for NPT size to obtain correct fitting. Install fitting using a thread sealing compound to prevent air leakage. Connect an air line to the fitting. Air supply should be both filtered and regulated. Contamination in the air supply may damage the clutch.

D. FINAL INSPECTION & TESTING

Cycle the clutch with the machine off to check for air leaks and to ensure proper engagement and release. After a short run, check mounting screws.

III. Clutch-Brake Operation

The maximum operating pressure should not exceed 80 PSI. Operation at pressures greater than that required for proper function will decrease the life of the bearings.

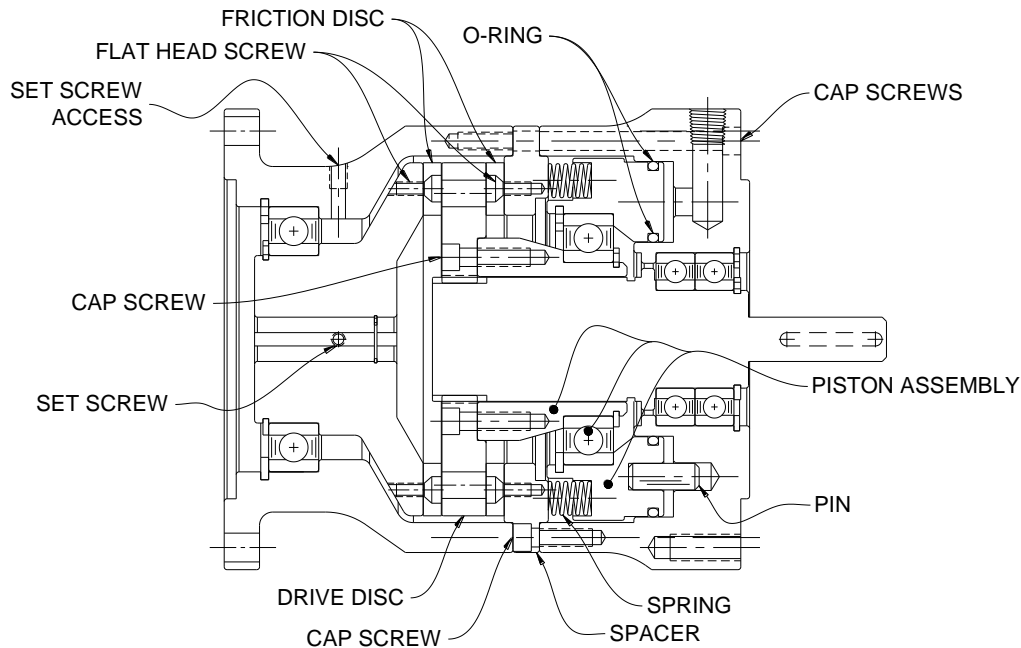
Special Note Regarding Friction Disc Contamination:

The friction material used in this product will absorb oil, water, chemicals and other contaminants. Depending on the type of contamination, clutch or brake may either seize up entirely or lose torque capacity. If friction discs become contaminated, they should be replaced. See repair kit ordering information below.

IV. Routine Maintenance

When installed and operated according to the preceding guidelines, Mach III Clutch products should require little or no routine maintenance. A repair kit is available which contains all parts subject to typical wear: friction discs, springs and O-rings.

V. Parts diagram



Repair Kit:	Part number = Clutch-Brake Product Number + “-RPRK” (e.g. X5C2R-56H-RPRK, X5C2R-56HCA-RPRK, Etc.).
Additional Parts:	Contact Mach III to obtain a complete listing of additional parts kits available for your specific clutch. Please reference product number when calling or e-mailing.
Repair services:	Factory repair is available. A return materials authorization (RMA) number must be obtained prior to sending any unit in for repair.

VI. Repair Kit Installation Procedure

<i>Tools Required</i>	<i>Compounds Required</i>
Hex Wrench Set	Grease O-ring Lubricant Anti-Seize Lubricant (for re-installation)

A. CLUTCH & BRAKE FRICTION DISC, O-RING & SPRING REPLACEMENT

- (1) Remove clutch-brake from shaft and place in vertical position with output shaft facing up.
- (2) Remove cap screws from case.
- (3) Remove top half of assembly and place on bench with output shaft facing down.
- (4) Remove cap screws from drive disc in a uniform manner. **The drive disc is under pressure from the springs.**
- (5) Remove the drive disc and set aside.
- (6) Remove flat head screws from friction discs and remove.
- (7) Remove cap screws from spacer in a uniform manner. **The spacer is under pressure from the springs.**
- (8) Remove springs and piston assembly consisting of piston, bearing, and cone.



CLUTCH & BRAKE FRICTION DISC, O-RING & SPRING REPLACEMENT CONTINUED:

- (9) Remove O-rings.
- (10) Replace O-rings that have been lubricated with an O-ring lubricant such as Dow Corning® #4 Compound or equivalent.
- (11) Inspect cylinder walls and lubricate with O-ring lubricant.
- (12) Replace piston assembly being sure the pins are located into the holes in the cylinder.
- (13) Replace springs, spacer and cap screws.
- (14) Replace friction discs and flat head screws.
- (15) The drive disc should be clean, dry and free of burrs or nicks.
- (16) Assure that drive disc moves freely on the drive hub and replace cap screws.
- (17) Replace top half of assembly with output shaft facing up and replace cap screws.
- (18) See “CLUTCH INSTALLATION” portion of these instructions for the proper procedure for reinstalling the clutch-brake.

Technical assistance is available by contacting Mach III Clutch, Inc.

Mach III Product Warranty

<http://www.machiii.com/Resources/Warranty-Info.asp>

Mach III Clutch, Inc.

101 Cummings Drive • Walton, KY 41094

Toll free 866.291.0849 • International 859.291.0849 • Fax 859.655.8362
info@machiii.com • engineering@machiii.com • www.machiii.com