

Microstructure of **CARBON PLUS 50X**

INDUSTRIAL BRAKE & FRICTION SUPPLY
AUTHORISED AUSTRALIAN DISTRIBUTOR

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STEEL MATING PLATES

We always recommend changing the steel plates when refurbishing any component. They are designed to work a set number of hours by the OEM, plus a safety margin. Thereafter the plate could suffer stress fractures of the teeth/lugs or even of the working surface. They could also become dished/coned and hence lead to premature failure on a rebuilt unit.

Whilst on first inspection used plates might look acceptable to reuse in a transmission or brake, there is no way of telling if the stresses the plate has been put under are close to causing the part to fail. Best practice is to replace all the steels.



CARBON PLUS

COMPOSITE FRICTION MATERIAL

DESCRIPTION

CARBON PLUS is an advanced carbon friction material based on natural and synthetic fibres and fillers strengthened by a unique resin binder. It provides superior heat resistance and anti-wear performance under severe power conditions with varying pressures and temperatures.

- High energy capability
- Close to 1:1 relationship between static to dynamic coefficient of friction giving smooth engagement and superior NVH performance.
- Stable coefficient of friction over speed and pressure
- Superior wear resistance
- Good oil compatibility
- Able to withstand higher temperatures than F37 and graphite

AVERAGE FRICTION COEFFICIENT (WET)

Static: 0.09 - 0.14

Dynamic: 0.10 - 0.13

RECOMMENDED MAX LOAD

Max dynamic pressure: 6 N/mm² (870 psi)

Max rubbing speed: 50 m/s (164 Ft/sec)

Max specific power: 4.4 W/mm² (3.74 HP/in²)

OIL GROOVING

Multi-pass tangential groove patterns in variety of configurations.

Grooves can either be pressed or machined.

DIMENSIONS

Friction thickness: 0.50mm (0.02") to 1.5mm (0.06")

Friction diameter: 1,000mm Max (39.37")

MATING MATERIAL

Surface finish < 0.5µm Ra (20µ"CLA)
No special Hardness requirements

TYPICAL APPLICATIONS

Transmission clutch, LSD, and Wheel Brakes

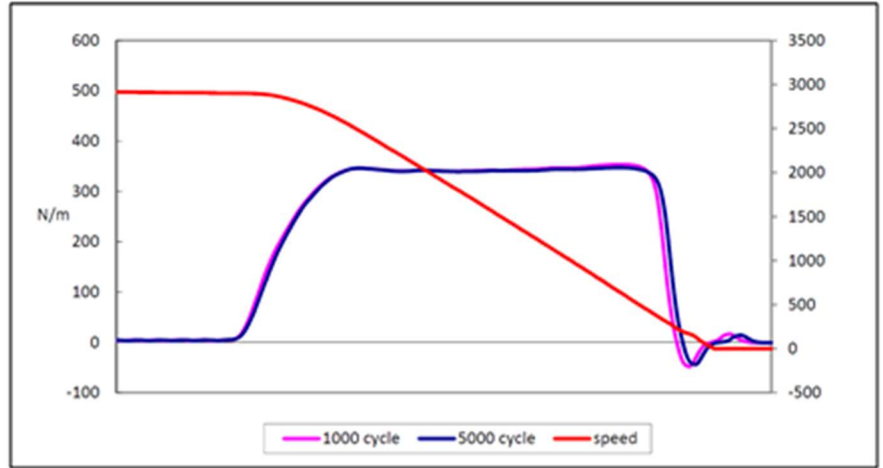
The above data is taken from specific test parameters therefore results can vary in different application conditions

LABORATORY TESTS

Tests carried out over 5000 cycles.

TORQUE TRACE

A smoother curve indicates low NVH (Noise, Vibration and Harshness). This results in a smoother engagement with less heat generation.

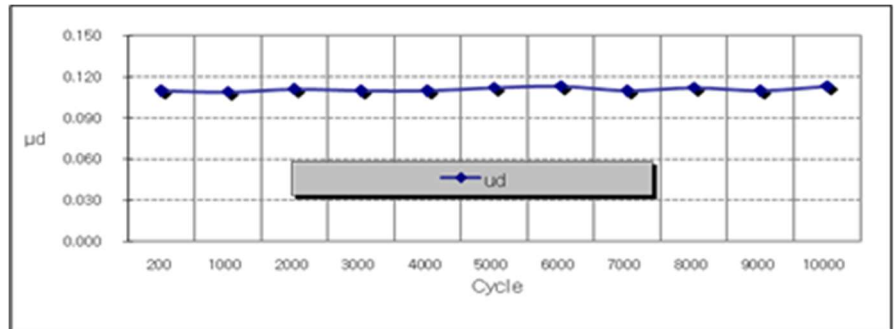


TORQUE TRACE

DYNAMIC COEFFICIENT OF FRICTION

Dynamic Coefficient refers to the sliding friction while discs are in motion. Over 5000 cycles, friction coefficients remain stable resulting in reliable performance after repeated engagements.

When coefficients are low friction is reduced resulting in more heat build-up and glazing.



CHANGE OF DYNAMIC COEFFICIENT OF FRICTION

CROSSOVER PART NUMBERS

OEM part numbers cross referenced to IBFS internal part numbers.

ELASTOMER (F37)		GRAPHITE (HDT 303)		CARBON PLUS	
9P7390	3921	6Y9807	2245	Alt	20165
9W9856	4157	1697055	2127	Alt	9891
8E9849	4431			Alt	9921
1733271	4667	2414890	2979	Alt	20163
8E0985	6131			Alt	9923
1733272	9151	2627320	9167	Alt	20167
		6I9255	2387	Alt	20327
		8E6961	2383	Alt	20341
		1028671	2751	Alt	20169
		4430663	8105	Alt	20329
		6Y7219	2755	Alt	20171

CROSSOVER PART NUMBERS

