Multiple Surface Clutch & Brake General Notes & Data

Consult SEPAC Engineering prior to making final selection

NOTE:

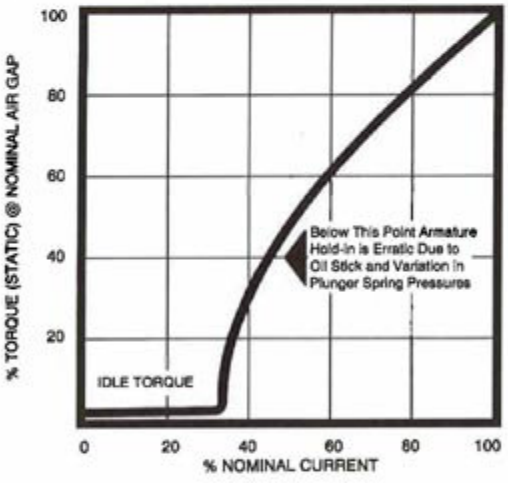
1. All dimensions are in inches.

2. Standard bore and keyway tolerances are in accordance with ANSI 9002-A86-1995. Bores are Class 1 clearance fit and keyways are commercial fit. Special tolerances can be supplied at added cost. Standard Metric bores per ANSI B4.2-1978 and keyways per BS 4235-1972 are available at no added cost. Maximum bore dimensions are based on using a standard key height.

3. Standard stationary field model anti-rotation hole location is 30° clockwise from the leads when viewed from the magnet body end. Other holes and locations can be provided to meet specific customer requirements.

4. Standard leads - 18AWG stranded conductor, UL 1180 (200 Deg. C, 300 Volt), 18" long. Conduit connectors and other leads and terminations available.

5. Torque varies linearly over a range from approximately 40% to 100% rated current for in oil or dry type clutches and brakes. Torque of the in oil type clutches and brakes can be regulated on a broader range of approximately 20% to 100% of rated current. This torque regulation is important in slipping applications or where precise torque control is needed.



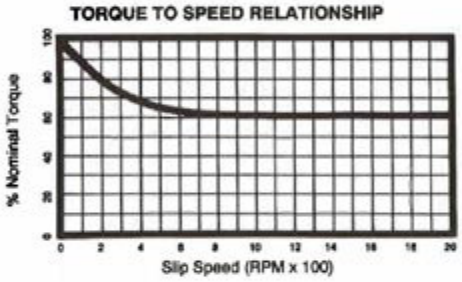
6. Dowel holes are drilled in spiders approximately .015 undersized to allow for line reaming at installation.

7. Some models can only be used in oil. Other models can be used either in oil or dry based on using different friction disc materials. Consult SEPAC Engineering regarding the model you need. When using clutches or brakes in oil the oil level should not cover more than approximately 10% of the clutch or brake diameter. The viscosity of the oil used should not exceed 150 S.S.U. at 100° F. (SAE 10W)

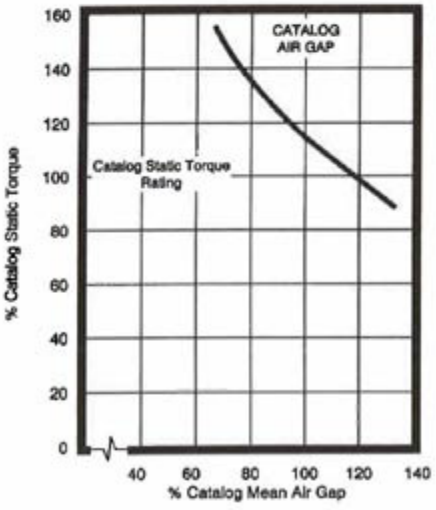
8. Units can be mounted in horizontal or vertical positions.

9. Other sizes and configurations can be made to suit customer application requirements.

10. The starting torque of a friction clutch or brake varies as the different speed, on engagement, of the driven and driving members changes. Multiple disc clutches and brakes have been designed for a minimum of variance at a maximum torque capacity. The area of any significant change in starting torque, due to relative speed, is from 0 RPM (static) to approximately 300 RPM. From that point to the maximum recommended speed, the curve assumes a nearly flat condition as shown on the starting torque vs. relative speed curve below. This curve assumes that the air gap is set at the recommended distance and that the coil is at continuous duty operating temperatures.



11. In our technical data we have shown the recommended air gap settings for each size clutch and brake. Clutches and brakes set at these points will transmit our rated torque, have a minimum of idle torque, and require very little, if any, adjustment for wear, if the clutch has been properly applied. However, if required by the application, the torque capacity can be varied by means of an air gap adjustment. The following chart shows the effect of air gap adjustment on torque. Keep in mind that reducing the air gap below the catalog specification will increase idle torque.

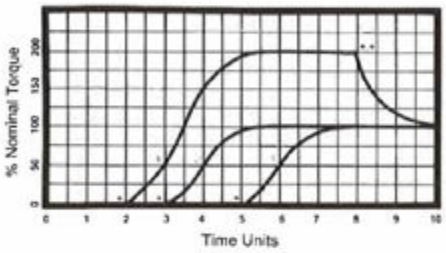


12. Hubs on RFDC, SFDC and MDB models are machined at approximately .010 over the specialized clutch bore.

13. Spider bolt patterns shown are recommended and can be furnished at extra cost. Other patterns can also be furnished at extra cost. Consult SEPAC Engineering.

14. Overenergization is used when there is a need for higher torque or faster response time. A higher voltage is applied to the clutch or brake coil for a short period of time to accomplish this. This technique is also used on magnetically engaged brakes where a load needs to be stopped quickly.

TYPICAL OVERENERGIZATION CURVE



1 - 3x nominal w/time delay and series resistance
2 - 3x nominal w/series resistance
3 - Nominal

* - Armature engagement
** - Relay timer drops out

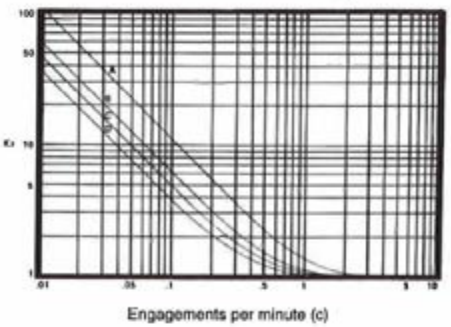
15. Thermal capacity

$E \times C \leq Q \times K_1 K_2$ where:

E = BTU/Engagement calculated from the formulas (#9, #10 or #11) in the SEPAC Application and selection Guide.
C = Number of engagements per minute.
Q = Thermal Capacity (BTU/minute) for the model selected.
K_1 = Wet (with oil spray) 1.00*
Wet (10-20% submerged) .86
Dry (fan cooled) .74
Dry (no cooling) .53
K_2 = From chart below

*Factors as high as 2.00 can be obtained by forcing oil through the discs.

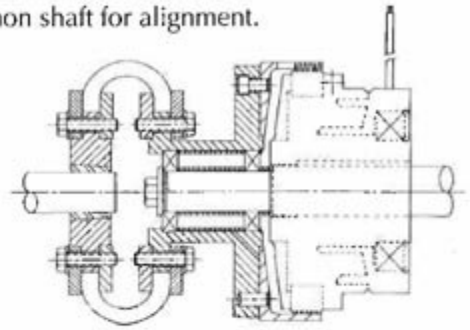
ENGAGEMENTS PER MINUTE (c)



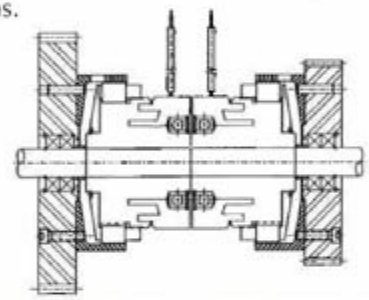
NOTE: For thermal capacity of dry application, Non-Asbestos or bronze disc stacks, consult SEPAC Engineering.
Graph A ERD. All sizes.
Graph B SFDC, RFDC, and MDB. Sizes 395, 435 and 475.
Graph C SFDC, RFDC, and MDB. Sizes 520 and 580.
Graph D SFDC, RFDC, and MDB. Sizes 640, 720, 795 and 925.

Typical Installations

The sketch below shows a typical installation of the SEPAC Model SFDC with a standard flexible coupling. This clutch model, or any other model, can be mounted to other types of couplings in a similar manner. The input and output halves of the clutch or brake should be mounted on a common shaft for alignment.



The sketch below shows two Model SFDC clutches with different size gears on a common shaft for speed changing applications.



The sketch below shows how to properly install a Model SFDC with a gear output. Sprockets, pulleys, etc. would be mounted in the same manner on this or any other model of multiple disc clutch or brake. The input and output halves of the clutch or brake should be mounted on a common shaft for alignment.

SEPAC can supply gears, sprockets, pulleys, couplings, etc. on the output side of our clutches and brakes to make a complete package, simplifying your installation.