SL
SPRING LOADED BRAKES
OPERATION

The spring loaded SL brakes are designed for all applications where a fail safe brake is required. The brake consists of an hydraulic assembly, a plate assembly and a driven hub which can be supplied by TRANSFLUID upon request or can be manufactured by Customer.  

SL brake is a hydro-mechanical device which is Spring Loaded and hydraulically released. A spring load exerts a compressive force between steel plates, which are mounted on the rotating shaft, and sintered plates mounted in the gear tooth ring. When oil pressure is applied, the spring load is relieved and the plates are free to move axially on the shaft hub allowing free rotation of the shaft. The brake is re-applied by dumping the oil pressure.

BRAKE SELECTION

Applications, where the brake is used to stop low inertia loads, can be handled with a brake having a torque rating equal to the full load torque of the motor. In this case use the formula:

\[ Ts = \frac{N \times 9550}{rpm} \]

Where:  
- \( Ts \) = brake static torque in Nm  
- \( N \) = motor power in kW  
- \( rpm \) = brake shaft speed

To brake high inertia loads, or when operating conditions are particularly severe, we suggest the following formula is used to select the brake:

\[ Td = \frac{GD^2 \times rpm}{38.2 \times 1} \]

Where:  
- \( Td \) = brake dynamic torque in Nm  
- \( GD^2 \) = inertia reduced to brake shaft Kg m²  
- \( rpm \) = brake shaft speed  
- \( \text{braking time in sec.} \)

The correct brake can be selected by using the above mentioned formula but our technical department will be pleased to make the selection for you.

LUBRIFICATION

Use SAE 10 W oil.
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<th>Model</th>
<th>DWG</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D Min</th>
<th>D Max</th>
<th>E</th>
<th>F Dia</th>
<th>F Nr</th>
<th>G</th>
<th>H</th>
<th>K</th>
<th>L</th>
<th>M</th>
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For economical quantities

Dimensions are subject to alteration without notice
SL SPRING LOADED BRAKES

ASSEMBLY
1. Fit hub A onto the shaft.
2. Mount gasket B and gear tooth ring C on the frame of the machine.
3. Insert the plates as follows: sintered plate D, steel plate E and so on: the complete pack should end with a sintered plate D.
5. Tighten screws L up to a particular locking torque.
7. Fill with oil the plate group up to the level hole which must then be closed by plug N (supplied by Customer). Close filling hole by plug P (supplied by Customer).
8. Connect the hydraulic assembly to the hydraulic circuit with pipe Q (supplied by Customer).

HYDROSTATIC TRANSMISSIONS APPLICATIONS

Open circuit hydraulic diagram

Closed circuit hydraulic diagram

P = Pump
D = Control valve
M = Hydraulic motor
R = Retarder
V = Max pressure valve
P' = Charging pump
D' = Brake control valve
S = One way valve