Parking Brakes
Spring Applied Hydraulic Released
For High Torque piston motors
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**WARNING — USER RESPONSIBILITY**

Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

**Offer of Sale**

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Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
INTRODUCTION
The Calzoni brake series is a “spring applied - hydraulic release” multi-disc wet parking brake, that has been designed for those applications where it is absolutely necessary to hold the system under an external torque. The maximum braking torque is achieved when the brake is not fed. Typical characteristics of the Calzoni brakes are:
— direct coupling with radial piston Calzoni motor types;
— compact design;
— thorough quality control and thorough material and product testing;
— double range of drum roller bearing for heavy external loads (on request);
— no oil refilling problem;
— lower braking torque units available on Customer request for torque limiting devices.

Application examples:
• winches;
• slewing drives;
• parking brake for track driving;
• mining industry;
• industrial applications.

TECHNICAL TIPS
Hydraulic motors usually have a leakage connection, which means that a hydraulic motor can never hold a load for a long period without a pressure feeding. So, a mechanical brake is used to hold the load on the motor in place.
The brake is operated by a single-acting piston (1) with opposing springs (2) between the piston and the cap end (3). During load braking and stop, the springs press against the piston blocking the discs. Hydraulic pressure is required to release or “hold off” the brake and during normal operation the brake is pressurized in the released position: any function which reduces the hydraulic system below the release pressure of the brake will cause the brake to be applied.

The picture below represents a typical hydraulic circuit where a brake is used to hold the load when no hydraulic pressure is used to feed the motor.

When the directional control valve is shifted, hydraulic pressure releases the mechanical brake and allows the load to be moved. When no feed pressure is supplied to the brake, the brake springs push the brake disks holding the load.
Parking Brakes
For Calzoni HTLS (radial) Piston Motors

BRAKES DATA

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>BRAKE SIZE</th>
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<tr>
<td></td>
<td>B190C</td>
</tr>
<tr>
<td>Static braking torque</td>
<td></td>
</tr>
<tr>
<td>Max. Nm</td>
<td>1500</td>
</tr>
<tr>
<td>Min. Nm</td>
<td>1400</td>
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<tr>
<td>Dynamic braking torque</td>
<td></td>
</tr>
<tr>
<td>Max. Nm</td>
<td>1000</td>
</tr>
<tr>
<td>Min. Nm</td>
<td>900</td>
</tr>
<tr>
<td>Release pressure</td>
<td>bar</td>
</tr>
<tr>
<td>Max. continuous release pressure</td>
<td>bar</td>
</tr>
<tr>
<td>bar</td>
<td>30</td>
</tr>
<tr>
<td>Max. peak release pressure</td>
<td>bar</td>
</tr>
<tr>
<td>bar</td>
<td>250</td>
</tr>
<tr>
<td>Max. speed</td>
<td>rpm</td>
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<tr>
<td>Weight</td>
<td>Kg</td>
</tr>
<tr>
<td>Weight</td>
<td>27</td>
</tr>
<tr>
<td>Inertia of rotating parts</td>
<td>kg m²</td>
</tr>
<tr>
<td>Inertia of rotating parts</td>
<td>0,0046</td>
</tr>
<tr>
<td>Working volume</td>
<td>cm³</td>
</tr>
<tr>
<td>New</td>
<td>17</td>
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<tr>
<td>Working volume</td>
<td>cm³</td>
</tr>
<tr>
<td>New</td>
<td>34</td>
</tr>
</tbody>
</table>

IMPORTANT NOTES:
The braking force values are based on coefficient friction $\mu = 0.14$.

The brake can be used in dynamic conditions only in case of emergency (pump failure).

The release pressure represents the pressure value to completely release the brake.

For correct operations, the hydraulic release pressure to the brake must fall to zero. Any residual release back pressure applied to the brake, as shown in the graph below, will degrade braking torque and may result in hazardous conditions.

The brakes are suitable for wet operation (please contact Parker Hannifin in case dry operation are required).

When intending to use low flammable liquids and bio-oils please consult Parker Hannifin.
BRAKE SELECTION

For ordering information you should select:
— brake size;
— brake input shaft;
— brake output shaft;
— seal type.

The brake size has to be selected according to the required braking torque. The static braking torque has to be greater than the required torque. The brakes in this catalogue are suitable for direct coupling with Parker Calzoni radial piston motors: in this case the brake size can be selected according to the motor size (see table below).

The brake input shaft has to be selected according to the motor shaft (see overall dimension drawings). In case the motor is a Calzoni radial piston type, the shaft code is the same of the brake input shaft code.

The brake output shaft can be selected according to the application the brake has to be assembled with.

Assembly example with radial piston motor:
Motor MR1100G-N1 ... (motor shaft code N1)
Brake B1100G-N1 ... (brake input shaft code N1)

RADIAL PISTON MOTOR COUPLING

<table>
<thead>
<tr>
<th>BRAKE SIZE</th>
<th>Suitable for radial piston motor type</th>
</tr>
</thead>
<tbody>
<tr>
<td>B190C</td>
<td>MR125C ... MR160C ... MR190C ...</td>
</tr>
<tr>
<td>B300D</td>
<td>MR200D ... MR250D ... MR300D ...</td>
</tr>
<tr>
<td></td>
<td>MRE330D ... MRA400D ... MRD300D ...</td>
</tr>
<tr>
<td></td>
<td>MREDE330D ...</td>
</tr>
<tr>
<td>B450E</td>
<td>MRE305E ... MRE450E ... MRE500E ...</td>
</tr>
<tr>
<td></td>
<td>MREDE500E ... MRV450E ...</td>
</tr>
<tr>
<td>B700F</td>
<td>MR600F ... MR700F ... MRE600F ...</td>
</tr>
<tr>
<td></td>
<td>MRD700F ... MRDE800F ... MRV700F ...</td>
</tr>
<tr>
<td>B1100G</td>
<td>MRE1000G ... MRA1600G ... MRE1100G ...</td>
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<td></td>
<td>MRDE1400G ... MRV1100G ... MRVE1400G</td>
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<tr>
<th>BRAKE SIZE</th>
<th>Suitable for radial piston motor type</th>
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<tbody>
<tr>
<td>B1800H</td>
<td>MR1600H ... MR1800H ...</td>
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<tr>
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<td>MR2100H ... MRA2400H ...</td>
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<tr>
<td></td>
<td>MRD2100H ... MRDE2100H ...</td>
</tr>
<tr>
<td></td>
<td>MRV1800H ... MRVE2100H ...</td>
</tr>
<tr>
<td>B2800I</td>
<td>MR2400I ... MR2800I ...</td>
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<tr>
<td></td>
<td>MR3100I ... MRA3500I ...</td>
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<td></td>
<td>MRD2800I ... MRDE3100I ...</td>
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<tr>
<td></td>
<td>MRV2800I ... MRVE3100I ...</td>
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<td>B4500L</td>
<td>MR3600L ... MR4500L ...</td>
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<td></td>
<td>MRDE4500L ... MRVE4500L ...</td>
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<tr>
<td>B7000M</td>
<td>MR6500M ... MR7000M ...</td>
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<tr>
<td></td>
<td>MRDE5400L ... MRVE5400L ...</td>
</tr>
<tr>
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<td>MRV7000M ... MRVE8200M ...</td>
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Parking Brakes B190C
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

<table>
<thead>
<tr>
<th>CODE</th>
<th>SEAL TYPE</th>
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<tbody>
<tr>
<td>N1</td>
<td>NBR: mineral oil</td>
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<tr>
<td>V1</td>
<td>FPM seal</td>
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ORDERING INFORMATION
Parking Brakes B300D
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

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<thead>
<tr>
<th>CODE</th>
<th>SHAFT - OUTPUT</th>
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<tbody>
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<td>N1</td>
<td>NBR: mineral oil</td>
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<td>V1</td>
<td>FPM seal</td>
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ORDERING INFORMATION

<table>
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<th>SHAFT OUTPUT</th>
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### Ordering Information

<table>
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<tr>
<th>Code</th>
<th>Seal Type</th>
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<tr>
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<tr>
<td>Brake Type</td>
<td>Shaft Output</td>
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<td>N1</td>
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<td>V1</td>
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Parking Brakes B700F
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

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</table>

Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B1100G
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

<table>
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<td>FPM seal</td>
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B1100G - 
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<tr>
<th>BRAKE TYPE</th>
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<th>SHAFT INPUT</th>
<th>SEAL TYPE</th>
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</table>

Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
Catalogue HY29-0504/UK
Parking Brakes B1800H
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

 Ordering Information

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<td>FPM seal</td>
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VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B4500L
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

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<td>NBR: mineral oil</td>
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<tr>
<td>V1</td>
<td>FPM seal</td>
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</tbody>
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B4500L - BRAKE TYPE
- SHAFT OUTPUT
- SHAFT INPUT
- SEAL TYPE

Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B7000M
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

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<td>N1</td>
<td>NBR: mineral oil</td>
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<tr>
<td>V1</td>
<td>FPM seal</td>
</tr>
</tbody>
</table>

B7000M - BRAKE TYPE

- SHAFT OUTPUT
- SHAFT INPUT
- SEAL TYPE
CUSTOMIZATIONS

Brakes can be customized on customer request. Please consult Parker Hannifin for different mounting flanges and shaft dimensions, high radial and axial load capacity, and configuration not included in this catalogue.

In the pictures below some example solutions for customer requests with customized brakes are shown.

Brake with high capacity bearings for radial load support.

Brake with high capacity bearings for radial load support and only one spline.

Brake with high capacity bearings for radial load support and through shaft.

Direct mounted winch drum drive and brake (high capacity bearings for radial load support).
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