Parking brakes
Spring Applied Hydraulic Released
For High Torque piston motors
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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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</thead>
<tbody>
<tr>
<td></td>
<td>B190C</td>
</tr>
<tr>
<td>Max. Static braking torque Nm</td>
<td>1500</td>
</tr>
<tr>
<td>Min. Static braking torque Nm</td>
<td>1400</td>
</tr>
<tr>
<td>Max. Dynamic braking torque Nm</td>
<td>1000</td>
</tr>
<tr>
<td>Min. Dynamic braking torque Nm</td>
<td>900</td>
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<tr>
<td>Release pressure bar</td>
<td>30</td>
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<tr>
<td>Max. continuous release pressure bar</td>
<td>250</td>
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<tr>
<td>Max. peak release pressure bar</td>
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<tr>
<td>Max. speed rpm</td>
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<tr>
<td>Weight Kg</td>
<td>27</td>
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<tr>
<td>Inertia of rotating parts kg m²</td>
<td>0,0046</td>
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<tr>
<td>Working volume New cm³</td>
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<tr>
<td>Wear cm³</td>
<td>34</td>
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**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>
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<tr>
<td>B190C</td>
<td>MR125C ... MR160C ... MR190C ...</td>
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<td>MR200D ... MR250D ... MR300D ...</td>
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<td>MRE330D ... MRA400D ... MRD300D ...</td>
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<tr>
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<td>MRE330D ... MRE330D ... MRDE330D ...</td>
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<td>B300D</td>
<td>MR300E ... MR450E ... MRE500E ...</td>
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<td></td>
<td>MRE500E ... MRE500E ... MRDE500E ...</td>
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<tr>
<td></td>
<td>MRV450E ... MRV450E ... MRVE450E ...</td>
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<tr>
<td>B450E</td>
<td>MR600F ... MR700F ... MRE600F ...</td>
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<td></td>
<td>MRE600F ... MRE600F ... MRDE600F ...</td>
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<td>MRV700F ... MRV700F ... MRVE700F ...</td>
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<tr>
<td>B700F</td>
<td>MR1100G ... MRE1400G ... MRA1600G ...</td>
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<td></td>
<td>MRD1100G ... MRDE1400G ... MRV1100G ...</td>
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<tr>
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<td>MR1100G ... MRE1400G ... MRA1600G ...</td>
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<tr>
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<td>MRD1100G ... MRDE1400G ... MRV1100G ...</td>
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<td></td>
<td>MRV1100G ... MRVE1400G ...</td>
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Parking Brakes B190C
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

**Dimensions**

- FLANGE MOTOR: 52.5
- DRILL PORT: 63/4" DEPTH ¾
- MOUNTING SURFACE: 14
- RELEASE PORT: 83
- BRAKE TYPE: CODE
- SHAFT INPUT: N1
- SHAFT OUTPUT: F1
- SEAL TYPE: D1

**Seal Types**

- N1: NBR: mineral oil
- V1: FPM seal

**Ordering Information**

- CODE
- SEAL TYPE
  - B190C
  - BRAKE TYPE
  - SHAFT OUTPUT
  - SHAFT INPUT
  - SEAL TYPE

Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B300D
For Calzoni HTLS (radial) Piston Motors

ORDERING INFORMATION

<table>
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<th>CODE</th>
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<tbody>
<tr>
<td>N1</td>
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<tr>
<td>V1</td>
<td>FPM seal</td>
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</table>

Catalogue HY29-0504/UK
Dimensions and ordering information

VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B450E
For Calzoni HTLS (radial) Piston Motors

Dimensions and Ordering Information

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<tbody>
<tr>
<td>CODE</td>
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<tr>
<td>N1</td>
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<tr>
<td>V1</td>
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</tbody>
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Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B700F
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

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B700F - 

BRake Type - SHAFT OUTPUT SHAFT INPUT SEAL TYPE
Parking Brakes B1100G
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

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<td>V1</td>
<td>FPM seal</td>
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</table>

B1100G - SHAFT OUTPUT SHAFT INPUT SEAL TYPE

B1100G - BRAKE TYPE

Parker Hannifin Corporation
VPDE Calzoni HTLS Motor
Bologna - Italy
Parking Brakes B1800H
For Calzoni HTLS (radial) Piston Motors

Dimensions and ordering information

ORDERING INFORMATION

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B1800H - SHAFT OUTPUT SHAFT INPUT SEAL TYPE
Parking Brakes B2800I
For Calzoni HTLS (radial) Piston Motors

ORDERING INFORMATION

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Dimensions and ordering information

Parker Hannifin Corporation
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>V1</td>
<td>FPM seal</td>
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### Parking Brakes B7000M

For Calzoni HTLS (radial) Piston Motors

#### Dimensions and Ordering Information

**Code** | **Seal Type**
---|---
N1 | NBR: mineral oil
V1 | FPM seal

**Ordering Information**

**B7000M**

- Brake type
- Shaft output
- Shaft input
- Seal type

![Diagram](image-url)
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).
Parker Worldwide

AE – UAE, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129
parker.argentina@parker.com

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2 9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

CH – Switzerland, Nivelles
Tel: +41 (0)21 37 280 900
parker.china@parker.com

CL – Chile, Santiago
Tel: +56 2 623 1216

CN – China, Shanghai
Tel: +86 21 5031 2525

CZ – Czech Republic, Klicany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)231 41016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 33 00 01
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (04) 50 25 80 25
parker.france@parker.com

FR – France, Contamine s/Arve
Tel: +33 (04) 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (01) 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Fujisawa
Tel: +81 (0)4 5635 3050

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 900
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +51 81 8156 6000

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 563 24 00
parker.poland@parker.com

PT – Portugal, Louca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645 2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 2 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2289 9987

UA – Ukraine, Kiev
Tel: +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +44 (0)1926 317 878
parker.usa@parker.com

US – USA, Lincolnshire
Tel: +1 847 821 1500

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

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Parker Worldwide

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, ES, FI, FR, IE, IT, NL, NO, PL, PT, RU, SE, UK, ZA)

Parker Hannifin spa
Vane Pump Division / Calzoni Plant
Via Caduti di Sabbiuno 15/17
40011 Anzola dell’Emilia (Bologna)
Italy
Tel.: +39 051 6501611
Fax: +39 051 736221
www.parker.com

Your local authorized Parker distributor