**Introduction**

The HepcoMotion® PDU2M is a new addition to the popular PDU2 range of belt driven linear units. It shares all of the key features and benefits of the PDU2 but with increased load capacity and stiffness. L1 load capacity is 50% higher, MS moment load capacity is 200% higher, and MS stiffness is improved ten fold. These improvements make the PDU2M particularly suitable for use in multi-axis systems, as well as in demanding single-axis applications. The unit is available with a number of carriage designs which allow the quick and easy construction of multi-axis systems with a minimal requirement for brackets and hardware. The PDU2M unit is essentially a modified PDU2 unit, and many details of the two products are the same. This document should be read in conjunction with the PDU2 catalog (available at www.bwc.com) to provide full information on the unit.

**Carriage**

- High load capacity - up to 750N and 1.5Nm
- 10 times torsional stiffness of PDU2
- High speed - Up to 6m/s
- Long life with no relubrication
- Multiple on a single unit available

**Internal Buffer**

End of stroke protection at both ends.

**Several carriage styles**

To suit single axis and multi-axis applications

**Felt wipers**

Sweep debris away from the path of the Herculane® wheels

**Limit switch & bracket**

Mechanical & Inductive versions available. IP67 rating. Switches attach to T-slot under the beam and can be positioned anywhere along it.

**Data & Dimensions**

The main dimensions of the PDU2M are shown in the drawing below. Further details can be obtained from the 2D and 3D CAD files, available from www.bwc.com. Bishop-Wisecarver’s Technical Department is on hand to assist with application inquiries or to undertake the design of complete mechanical systems.

The weight of a PDU2M unit in kg = 1.9 + 3.36 x L (where L = beam length in m).

The above drawings show PDU2M units with carriages of type 1 & type 5. Carriage type 1 is the “general purpose” design. Note that the carriage wraps around the beam and the limit switches are mounted under the beam. This is suitable in applications where the unit spans a gap and is supported at the ends. Carriage type 5 does not extend below the underside of the beam and thus can be used when the PDU2M beam is supported along its length. This type does not have a switch cam facility. Other carriage types are similar to type 1, and are designed for specific types of multi-axis connection (see next page.)
**Service Interval Calculations**

After very long service, slight play in the carriage may develop. This can be corrected by re-adjusting the carriage, which will return the unit to its original condition. Adjustment is quick and simple and may be repeated several times. The table shows the maximum carriage loading, and the calculation below determines the service interval. Bishop-Wisecarver® will provide more data and carry out calculations for your application, on request.

<table>
<thead>
<tr>
<th>Carriage Load Capacity</th>
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<tbody>
<tr>
<td>L1</td>
</tr>
<tr>
<td>750N</td>
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To determine service interval, first calculate the load factor \( L_f \) using the equation below.

\[
L_f = \frac{L_1}{L_{1\text{max}}} + \frac{L_2}{L_{2\text{max}}} + \frac{Ms}{Ms_{\text{max}}} + \frac{Mv}{Mv_{\text{max}}} + \frac{M}{M_{\text{max}}} \leq 1
\]

Service Interval (km) = \[
\frac{5000}{(0.25 + 0.75 \times L_f)}
\]

*Note: life will be several times this service interval*

**How to order**

The ordering information below is given to assist communication, but you are recommended to discuss your application with Bishop-Wisecarver® first so that we can help to specify the best unit to suit your needs.

**Main Unit**

- **Product range** = **PDU2M**
- **L2468** = beam length in mm (max 6000). Note that stroke length is 175mm shorter.
- **Shaft Handling**: \( R \) = right handed, \( L \) = left handed, \( D \) = double shaft (see picture below for example)
- **T** = beam with T-slots (this is the only option at present)
- **DC** = (belt) driven carriage (this is the only option at present)

**Carriage Type Number**: select 1, 2, 3, 4 or 5 (type 3 shown below, types 1 & 5 on previous page)
- (type 2 used to connect PDU2M carriage to PSD80 beam)
- (type 4 used to connect PDU2M carriage to PSD80 carriage, see PSD80 datasheet for more details)

**Carriage Handling**: \( R \) = right handed, \( L \) = left handed (see picture below for example)

**Ancillary Components**

T-nuts, T-slot covers, motor connection kits, gearboxes and limit switches from the PDU2 catalog (available at [www.bwc.com](http://www.bwc.com)) are compatible with the PDU2M. Other items including motors, drives, axis connection kits, drive shafts and other compatible axes and components are available from Bishop-Wisecarver®.

**Example 3-axis system**
Bishop-Wisecarver® is proud to be the exclusive North American distributor of HepcoMotion® products since 1984.

Components & Accessories
DualVee®
MadeWell®
GV3
SL2
PRT2
HDS2
HDRT
MCS
Motor Mounts
Gantry Brackets
Wrenches

Manual Linear Guide Systems
DualVee®
UtiliTrak®
MinVee®
GV3
Simple Select®
SL2
HDS2
MHD
HTS

Actuated Linear Guide Systems
LoPro®
XLA™
ECO60™
SlickStick™
SteadyRail™
HDLS
HDCS
PDU2
DAPDU2
SBD
PSD
SDM
DLS

Rotary Guide Systems
PRT2
DTS2
DTS
ALR
HDRT
1-Trak
GFX

Robot Transfer Units
LoPro® RTU
DualVee® RTU

Custom Solutions
Extruded Profile Guides
Custom Bearings
Custom Subassemblies
Engineering Services
Large Diameter Ring Guides and Track

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Women’s Business Enterprise
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Quality Certifications
• Certified Bay Area Green Business
• Certified Evergreen

Certifications & Compliance
• EN 9100:2018
• JISQ 9100:2016
• ISO 13485 & GMP Compliance
• Responsible Minerals Initiative
• RoHS
• International Traffic in Arms Regulations Compliant