Warranty

Newport Corporation warrants this product to be free from defects in material and workmanship for a period of 1 year from the date of shipment. If found to be defective during the warranty period, the product will either be repaired or replaced at Newport's discretion.

To exercise this warranty, write or call your local Newport representative, or contact Newport headquarters in Irvine, California. You will be given prompt assistance and return instructions. Send the instrument, transportation prepaid, to the indicated service facility. Repairs will be made and the instrument returned, transportation prepaid. Repaired products are warranted for the balance of the original warranty period, or at least 90 days.

Limitation of Warranty

This warranty does not apply to defects resulting from modification or misuse of any product or part.

Limitation of Warranty

This warranty does not apply to defects resulting from modification or misuse of any product or part.

© 2018 by Newport Corporation, Irvine, CA. All rights reserved.

No part of this document may be reproduced or copied without the prior written approval of Newport Corporation. This document is provided for information only, and product specifications are subject to change without notice. Any change will be reflected in future publishings.
Table of Contents

Warranty .................................................................................................................................ii

1.0 — Introduction ...............................................................................................................1

2.0 — Cable Kits ..................................................................................................................2
  2.1 Selection Table .............................................................................................................2
  2.2 Kit Descriptions ..........................................................................................................2

3.0 — Cables .......................................................................................................................3
  3.1 E3763x: Encoder Cable ...............................................................................................3
  3.2 E3839x: Motor Cable ..................................................................................................3
  3.3 E3840x: End-of-Run & Thermistor Cable .................................................................4
  3.4 E4025x: Motor, End-of-Run & Thermistor Cable ....................................................4
  3.5 E4949x: Motor Cable ................................................................................................5
  3.6 E5775x: Encoder Cable ...............................................................................................5
  3.7 E5776x: Motor, End-of-Run & Thermistor Cable ....................................................6
  3.8 E5777x: Motor, End-of-Run & Thermistor Cable ....................................................6
  3.9 EDBCABLE-E1: End-of-Run Cable ..........................................................................7
  3.10 EDBCABLE-M1: Motor Cable ..................................................................................7
  3.11 EDBCABLE-M2: Motor, End-of-Run & Thermistor Cable ....................................8

Service Form .......................................................................................................................9
Cable Kits for Direct Drive Motor Stages
XPS Series

1.0 Introduction

This document describes the cable kits necessary to connect your Newport stage to your XPS-Q, XPS-RL or XPS-D controller.

RECOMMENDATION
We recommend you call your Motion Control Newport representative if you are unsure of your choice.

WARNING
The cables included in these kits are shielded correctly. For a correct operation, make sure to lock connectors (ground continuity provided by the cable).

WARNING
Keep the motor cable at a safe distance from other electrical cables in your environment to avoid potential cross talk.
# Cable Kits

## 2.1 Selection Table

Below is the table that allows you to find the cable kit for connecting your Newport stage to the XPS controllers, following the motor driver.

<table>
<thead>
<tr>
<th>Stage</th>
<th>XPS-Ω or XPS-ROM</th>
<th>XPS-EDBL</th>
<th>XPS-Ω or XPS-ROM</th>
<th>XPS-EDBL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILS-LM-S</td>
<td>XPS-RK11</td>
<td>XPS-RK13</td>
<td>XPS-DK26</td>
<td>XPS-DK21</td>
</tr>
<tr>
<td>IMS-LM-S</td>
<td>XPS-RK12</td>
<td>XPS-RK14</td>
<td>–</td>
<td>XPS-DK23</td>
</tr>
<tr>
<td>RGV100BL-S</td>
<td>XPS-RK11</td>
<td>–</td>
<td>XPS-DK21</td>
<td>–</td>
</tr>
<tr>
<td>RGV100HL-S</td>
<td>XPS-RK11</td>
<td>XPS-RK13</td>
<td>XPS-DK21</td>
<td>XPS-DK23</td>
</tr>
<tr>
<td>XML-S</td>
<td>XPS-RK12</td>
<td>XPS-RK14</td>
<td>–</td>
<td>XPS-DK22</td>
</tr>
<tr>
<td>XMS-S</td>
<td>XPS-RK12</td>
<td>–</td>
<td>XPS-DK22</td>
<td>–</td>
</tr>
</tbody>
</table>

## 2.2 Kit Descriptions

Each kit includes several cables that allow to connect the motor, encoder, end-of-runs,… to the controller. The table below indicates the reference of these cables.

<table>
<thead>
<tr>
<th>Cable Kit</th>
<th>Encoder + End-of-Runs</th>
<th>Motor (+ Thermistor)</th>
<th>End-of-Runs (+ Thermistor)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XPS-RK11</td>
<td>E3763x</td>
<td>E4025x</td>
<td>–</td>
</tr>
<tr>
<td>XPS-RK12</td>
<td>E3763x</td>
<td>E3839x</td>
<td>E3840x</td>
</tr>
<tr>
<td>XPS-RK13</td>
<td>E3763x</td>
<td>EDBCABLE-M2</td>
<td>–</td>
</tr>
<tr>
<td>XPS-RK14</td>
<td>E3763x</td>
<td>E3840x</td>
<td>EDBCABLE-E1</td>
</tr>
<tr>
<td>XPS-RK15</td>
<td>E3763x</td>
<td>E4949x</td>
<td>–</td>
</tr>
<tr>
<td>XPS-DK21</td>
<td>E5775x</td>
<td>E5775x</td>
<td>–</td>
</tr>
<tr>
<td>XPS-DK22</td>
<td>E5775x</td>
<td>E5765x</td>
<td>–</td>
</tr>
<tr>
<td>XPS-DK23</td>
<td>E5775x</td>
<td>EDBCABLE-M2</td>
<td>–</td>
</tr>
<tr>
<td>XPS-DK24</td>
<td>E5775x</td>
<td>EDBCABLE-M1</td>
<td>EDBCABLE-E1</td>
</tr>
<tr>
<td>XPS-DK25</td>
<td>E5775x</td>
<td>E4949x</td>
<td>–</td>
</tr>
<tr>
<td>XPS-DK26</td>
<td>E5775x</td>
<td>E4025x</td>
<td>–</td>
</tr>
</tbody>
</table>

1) The low case letter "x" at the end of the reference represents the revision index of the cable and can therefore be modified at any time without notice.

---

### RoHS Compliant

This product complies with the RoHS directive (Restriction of Hazardous Substances).

### WARNING

A label stucked on the connectors of most cables indicates its function. Be careful to properly connect each cable in the appropriate stage and controller connectors. The cable diagrams in the following chapter indicate the stage and controller sides of the cable connectors.
3.0 Cables

WARNING
Always turn the controller’s power OFF before connecting to a stage.

3.1 E3763x: Encoder Cable
- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D15F
  - Controller side: SUB-D15M
- Outer diameter: .24 in (6 mm)
- Min. static bending radius: .79 in (20 mm)
- Min. dynamic bending radius: 2.95 in (75 mm)

3.2 E3839x: Motor Cable
- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D9F
  - Controller side: SUB-D9M
- Outer diameter: .28 in (7 mm)
- Min. dynamic bending radius: 2.76 in (70 mm)
### 3.3 E3840x: End-of-Run & Thermistor Cable

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D9M
  - Controller side: SUB-D9F
- Outer diameter: .28 in (7 mm)
- Min. dynamic bending radius: 1.77 in (45 mm)

### 3.4 E4025x: Motor, End-of-Run & Thermistor Cable

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D15M
  - Controller side: SUB-D9M
    - Outer diameter: .28 in (7 mm)
    - Min. dynamic bending radius: 2.76 in (70 mm)
  - Controller side: SUB-D9F
    - Outer diameter: .28 in (7 mm)
    - Min. dynamic bending radius: 1.77 in (45 mm)
3.5 **E4949x: Motor Cable**

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: DB9W4F
  - Controller side: DB9W4M
- Outer diameter: .45 in (11.5 mm)
- Min. static bending radius: 3.39 in (86 mm)
- Min. dynamic bending radius: 4.53 in (115 mm)

```plaintext
DB9W4F CONNECTOR
A1  A2  A3  A4
1  2

STAGE SIDE
CONNECTED TO THE CAP

DB9W4M CONNECTOR
A1  A2  A3  A4
1  2

CONTROLLER SIDE
CONNECTED TO THE CAP
```

3.6 **E5775x: Encoder Cable**

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D15F
  - Controller side: SUB-D26HDM
- Outer diameter: .24 in (6 mm)
- Min. static bending radius: .79 in (20 mm)
- Min. dynamic bending radius: 2.95 in (75 mm)

```plaintext
SUB-D15F CONNECTOR
1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26

STAGE SIDE
CONNECTED TO THE CAP

SUB-D26HDM CONNECTOR
1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28

CONTROLLER SIDE
CONNECTED TO THE CAP
```
3.7 E5776x: Motor, End-of-Run & Thermistor Cable

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D9F
    - Outer diameter: .28 in (7 mm)
    - Min. dynamic bending radius: 2.76 in (70 mm)
  - Stage side: SUB-D9M
    - Outer diameter: .28 in (7 mm)
    - Min. dynamic bending radius: 1.77 in (45 mm)
  - Controller side: SUB-D25M

3.8 E5777x: Motor, End-of-Run & Thermistor Cable

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D15M
  - Controller side: SUB-D25M
- Outer diameter: 2 cables .28 in (7 mm)
- Min. dynamic bending radius: 2.76 in (70 mm)
3.9 **EDBCABLE-E1: End-of-Run Cable**

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D9M
  - Controller side: SUB-D9M
- Outer diameter: .24 in (6 mm)
- Min. dynamic bending radius: 1.77 in (45 mm)

![Diagram of SUB-D9M connector](image)

- AWG26 (0.15 mm²) WHITE
- AWG26 (0.15 mm²) BROWN
- AWG26 (0.15 mm²) GREY
- AWG26 (0.15 mm²) PINK
- AWG26 (0.15 mm²) BLUE

3.10 **EDBCABLE-M1: Motor Cable**

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D9F
  - Controller side: DB9W4M
- Outer diameter: .32 in (8.2 mm)
- Min. dynamic bending radius: 3.15 in (80 mm)

![Diagram of SUB-D9F/DB9W4M connector](image)

- AWG21 (0.5 mm²) WIRE #1
- AWG21 (0.5 mm²) WIRE #2
- AWG21 (0.5 mm²) WIRE #3
- AWG21 (0.5 mm²) YELLOW/GREEN
- AWG22 (0.34 mm²) WHITE +
- AWG22 (0.34 mm²) WHITE -
3.11 EDBCABLE-M2: Motor, End-of-Run & Thermistor Cable

- Length: 16.4 ft (5 m)
- Connectors:
  - Stage side: SUB-D15M
  - Controller side: DB9W4M
    - Outer diameter: .28 in (7 mm)
    - Min. dynamic bending radius: 2.76 in (70 mm)
  - Controller side: SUB-D9M
    - Outer diameter: .28 in (7 mm)
    - Min. dynamic bending radius: 1.77 in (45 mm)
Service Form

Your Local Representative
Tel.: __________________
Fax: __________________

Name: ____________________  Return authorization #: ____________________
    (Please obtain prior to return of item)
Company: ____________________
Address: ____________________  Date: ____________________
Country: ____________________  Phone Number: ____________________
P.O. Number: ____________________  Fax Number: ____________________

Item(s) Being Returned:
Model #: ____________________  Serial #: ____________________
Description: ____________________
Reasons of return of goods (please list any specific problems):
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
North America & Asia
Newport Corporation
1791 Deere Ave.
Irvine, CA 92606, USA

Sales
Tel.: (800) 222-6440
e-mail: sales@newport.com

Technical Support
Tel.: (800) 222-6440
e-mail: tech@newport.com

Service, RMAs & Returns
Tel.: (800) 222-6440
e-mail: service@newport.com

Europe
MICRO-CONTROLE Spectra-Physics S.A.S
9, rue du Bois Sauvage
91055 Évry CEDEX
France

Sales & Technical Support
Tel.: +33 (0)1.60.91.68.68
e-mail: france@newport.com

Service & Returns
Tel.: +33 (0)2.38.40.51.55