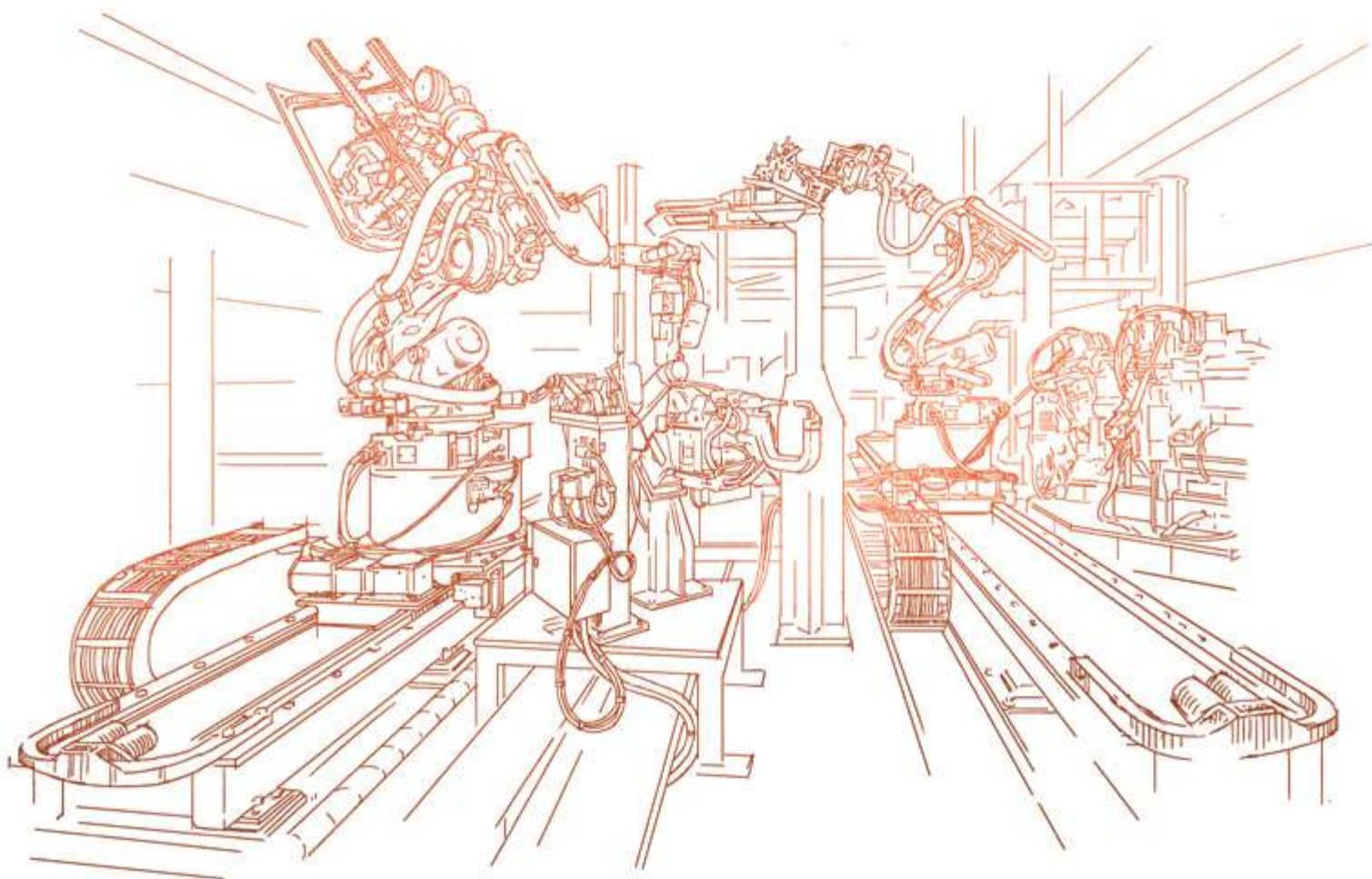


Torsion-resistant cables for robotic applications

HELUKABEL® ROBOTICS



**(Channeling
POWER)** 

Industrial robotic applications

Robots are an essential part of highly dynamic manufacturing industries around the world, and it is difficult to imagine these industries without them. Robots and cobots can be found operating and interacting in close proximity with humans on production lines, but they also perform tasks independently. Modern industrial robots move in three-dimensional space and are able to carry out a great variety of tasks. In doing so, the robot, or rather the robot arm, repeats a sequence of movements millions of times. It nevertheless completes repetitive work processes with continuous precision while maintaining consistent quality – without daily variations or signs of fatigue.

In order to be able to do this, the cables in the robots must meet the highest of standards. Rapid acceleration and deceleration, tensile loads as well as combined bending and torsional movements are just a few of the operating conditions taken into account during cable design. At the same time – and depending on the application – space-saving solu-

tions are needed to feed the cables into or along the robot arm whilst maintaining the greatest possible freedom of movement. Mechanical stress as well as chemical and thermal factors often play a role here too. With our Roboflex® brand of cables, we have the right solution for a wide variety of applications. Resistance to oil, abrasion, notch and welding beads or extreme bending radii are just some of the requirements fulfilled by our cables.

HELUKABEL's assortment of cables for robotic applications includes control and motor cables of many different dimensions, hybrid cables and cables for the sensor and data, network and bus technology sectors. In addition to high levels of stock availability, HELUKABEL also offers bespoke solutions and develops cables tailored to your application.

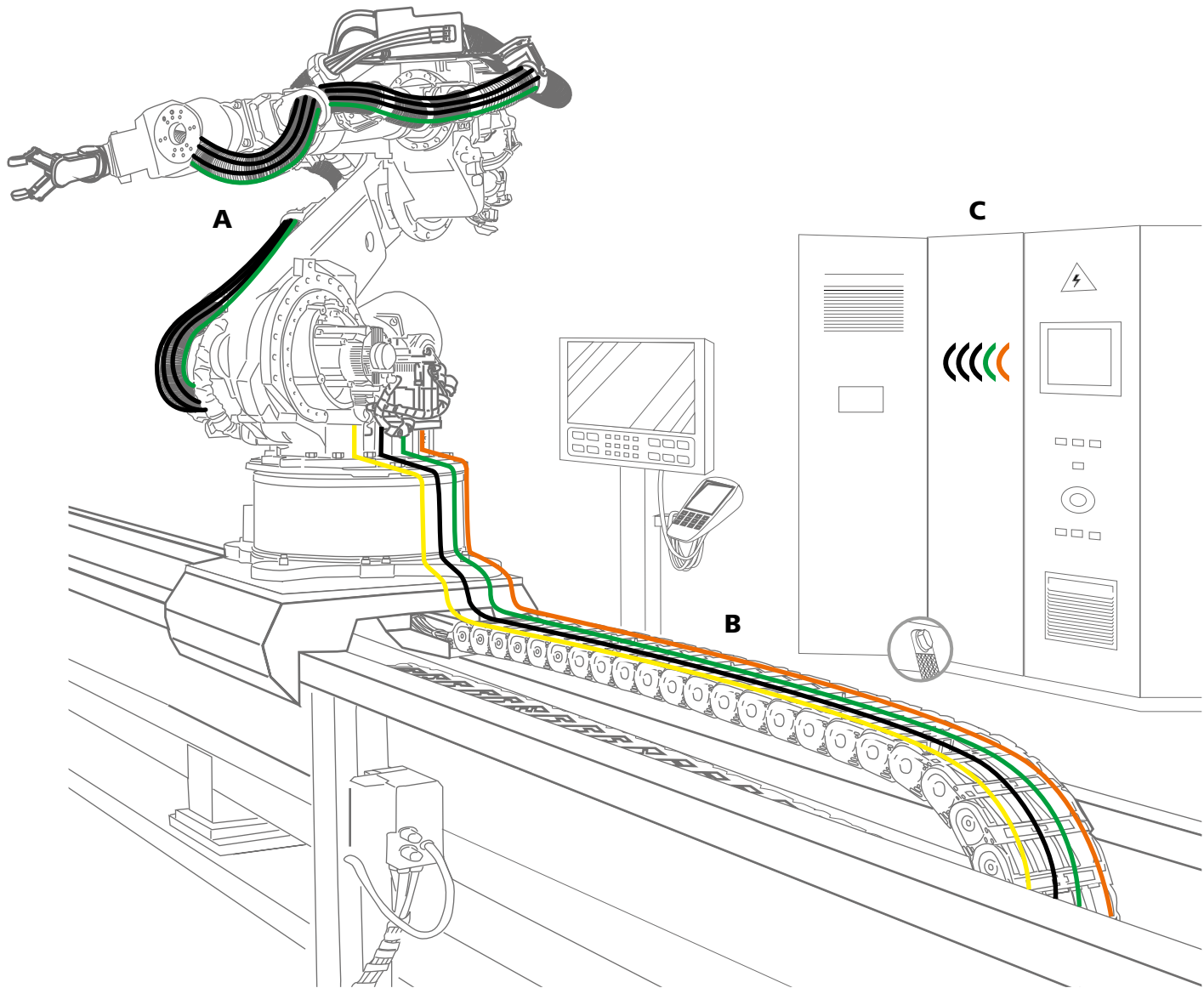
We are also able to provide customised, assembled and ready-to-install dresspacks through our one-stop shop supplier and subsidiary, Robotec-Systems GmbH.





CORPELIMA S.A.C.

Importadores y Líderes en Soluciones Eléctricas



A Tube Dresspacks

HELUCONTROL® ROBOFLEX®-D
HELUDATA® ROBOFLEX®-D-PAAR
HELUPOWER® ROBOFLEX®
HELUKAT® 100 T Tordierflex
PROFINet Type R
600 S PROFINet Torsion, SF/FTP, Cat. 7
HELUcond PA12 Corrugated tube

B Drag chain - Axis 7

TOPSERV® Hybrid PUR
TOPGEBER 512 PUR
HELUKABEL® ROBOFLEX®-recycle
MULTISPEED® 500-PUR UL/CSA
PROFINet Type C
HELUTOP® MS-EP4 EMV cable gland

C Switch cabinet

H07V-K / 07V-K
FIVENORM
PROFINet Type A or B
Cu-Earthing strap

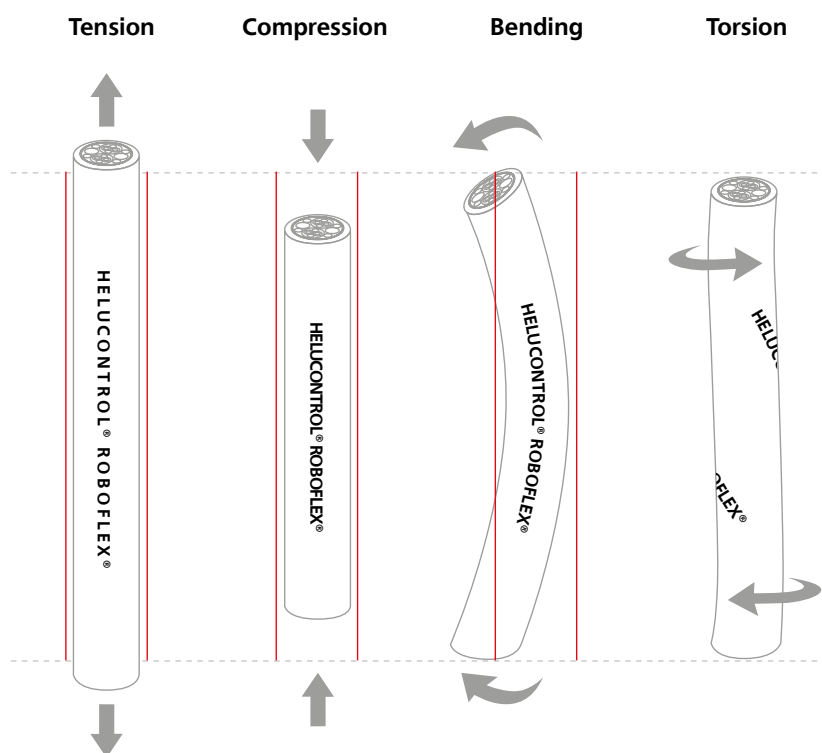
HELUKABEL®



CORPELIMA S.A.C.
Importadores y Líderes en Soluciones Eléctricas

ROBOFLEX® – cables for highly dynamic, 3D-applications

FORCES ACTING ON CABLES AND WIRES IN ROBOTICS



The cables and wires used in robotics are subject to a variety of forces: the millions of repetitive bending and torsional movements cause high compression and tensile loads, putting considerable strain on the cables. Cable design must also take into account

rapid accelerations and decelerations which make high abrasion, notch and tear resistance essential. The high temperatures often encountered in the applications are an additional stress factor.



ROBOFLEX®- SERIES

NEW

- with UL/CSA approval
- temperature resistant to 90°C
- halogen-free

DETAILED INFORMATION:

- **Core insulation:** Polyolefin, smooth, high-quality core insulation supports sliding movement and, in conjunction with special matched lay lengths, ensures long service life under combined bending and torsional stresses
- **Outer sheath:** Special grade of full polyurethane, highly abrasion-resistant, notch-resistant, tear-resistant, cut-resistant, wear-resistant, low adhesion
- **Resistant to:** UV radiation, ozone, oxygen, weathering effects, hydrolysis, microbes, coolants, hydraulic fluids, acids, alkalis, oil, greases, seawater and wastewater

Data cable, nominal voltage UL (AWM) 300V

HELUDATA® ROBOFLEX®

unscreened



Torsion load / cycles: 5 Mio. at +/- 360°/m
10 Mio. at +/- 180°/m
Bending cycles: 10 Mio.

HELUDATA® ROBOFLEX®-D

with D-screen, EMC-preferred type



Torsion load / cycles: 5 Mio. at +/- 180°/m
Bending cycles: 5 Mio.

HELUDATA® ROBOFLEX®-D-PAAR

paired, with D-screen, EMC-preferred type



Torsion load / cycles: 5 Mio. at +/- 180°/m
Bending cycles: 5 Mio.

Control cable, nominal voltage UL (AWM) 600V

HELUCONTROL® ROBOFLEX®

unscreened



Torsion load / cycles: 5 Mio. at +/- 360°/m
10 Mio. at +/- 180°/m
Bending cycles: 10 Mio.

HELUCONTROL® ROBOFLEX®-D

with D-screen, EMC-preferred type



Torsion load / cycles: 5 Mio. at +/- 180°/m
Bending cycles: 5 Mio.

 **HELUKABEL®**

Motor cable, nominal voltage UL (AWM) 1000V

HELUPOWER® ROBOFLEX®

unscreened



Torsion load / cycles: 5 Mio. at +/- 360°/m
10 Mio. at +/- 180°/m
Bending cycles: 10 Mio.

HELUPOWER® ROBOFLEX®-D

with D-screen, EMC-preferred type



Torsion load / cycles: 5 Mio. at +/- 180°/m
Bending cycles: 5 Mio.

Hybrid cable for power supply and transmission of control signals

HELUPOWER® ROBOFLEX® HYBRID

unscreened



Torsion load / cycles: 5 Mio. at +/- 360°/m
10 Mio. at +/- 180°/m
Bending cycles: 10 Mio.

HELUPOWER® ROBOFLEX® HYBRID-D

with D-screen, EMC-preferred type



Torsion load / cycles: 5 Mio. at +/- 180°/m
Bending cycles: 5 Mio.

Welding spark resistant sensor cable, nominal voltage UL (AWM) 300V

HELUDATA® ROBOFLEX®-recycle

unscreened



Torsion load / cycles: up to 10 Mio. at 360°/m
Bending cycles: up to 10 Mio.