

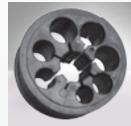
# **ROBOTIC CABLE** MANAGEMENT SOLUTIONS

















1-800-841-5804

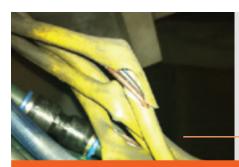
AUTOMATION AND HI-TECH CABLE PROTECTION SYSTEMS

**REIKU NORTH AMERICA** www.reikuna.com



# CABLE SAVER

## Patented NEW Technology Compatible with all makes and models of Robots



Almost 85% of Robotics and Automation "downtime" can be directly attributed to cable or hose failure.

### STOP Cable failures and Robotic downtime

#### Cable Saver™



Our Cable Saver™ Solution eliminates: Downtime loss of revenue, Expensive cable & hose replacement costs, Maintenance labour costs

All of the Robot's cables and hoses are protected when routed through the Cable Saver™ 15 million + cycle corrugated tubing.

Robot movements require that there be surplus cables and hoses in order to service these dynamics. The Cable Saver<sup>TM</sup> uses a spring retraction system housed inside the Energy Tube<sup>TM</sup> to keep this service loop out of harms way in safe location at the rear of the Robot when not required.

#### Select Kit Size | Available in three sizes 36, 52 and 70 mm

#### 36MM/1.417"

Ideally suited for smaller payload Robotic applications such as arc welding, assembly, machine tending, material handling/removal.

#### 52MM/2.047"

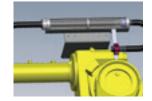
Ideally suited for medium payload Robotic applications such as spot welding, assembly, machine tending, material handling/removal, paint/dispensing.

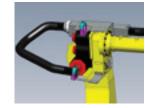
#### 70mm/2.756"

Larger payload applications, spot weld, material handling, palletizing paint/dispensing, part transfer.

- COMPLETE solution for any make or model of Robot
- Use our online system size calculator and check out the Cable Saver™ video at www.reikuna.com
- Installs quickly on either side of the Robot
- Our tubing has been tested to resist over 15 million repetitive cycles







### Cable Saver™ Installation Options



### Each Cable Saver™ Kit

comes complete with

- 5 meters/16 feet of REIKU Nylon 12 conduit
- Axis 3 REIKU Gripping Clamp Assembly
- Patented Energy/Spring Tube complete
- Axis 6 REIKU Gripping Clamp Assembly

Cable Saver™ Part numbers

CSK-36 36MM I.D. Cable Saver Kit

CSK-52 52MM I.D. Cable Saver Kit

CSK-70 70MM I.D. Cable Saver Kit

**CSMOUNT-STD** Cable Saver<sup>™</sup> mounting hardware kit- for all sizes



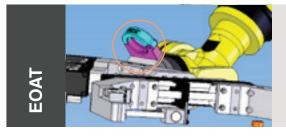
Cablestar



A custom prepared grommet known as a Cablestar is a CRUCIAL component that must be installed at both termination points.

Precision holes are water-jetted into the soft rubber compound so that each cable and hose is independently held fast against lateral movement. Please supply the **exact quantity and outside diameter for each cable and hose per installation.** 

## **End of Arm Tool Options- EOAT**

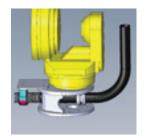


The easiest method for terminating at the EOAT is to either fasten the REIKU Clamp directly to the tool or fabricate a small mounting bracket.

If mounting directly to the EOAT area is not an option then REIKU offers 4 alternative mounting solutions below.







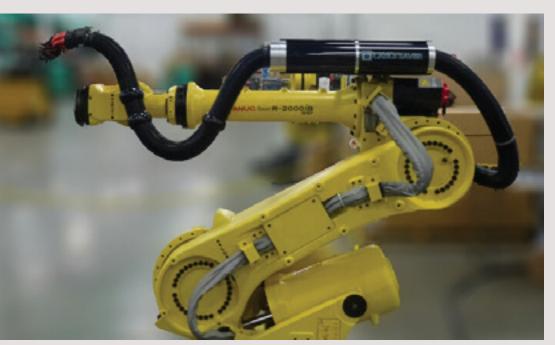
**Frying-pans** 

Flat Handle "Frying-pan" with either short or long handle

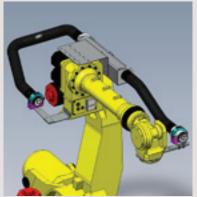
Round Handled frying-pan which can offer even greater adjustability for tight EOAT areas such as tooling fixtures. "Cow's" mouth offers a completely open space for the conduit to ride inside the "mouth" area preventing the conduit from wrapping around the wrist or getting snagged in the tooling area.



## **Installed Cable Saver™ Examples**







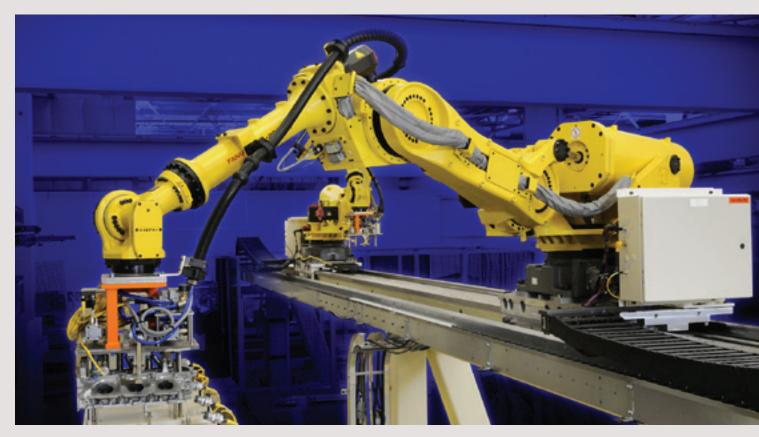




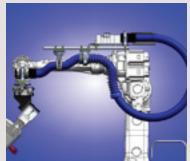


## **REIKU Component Solution Examples**

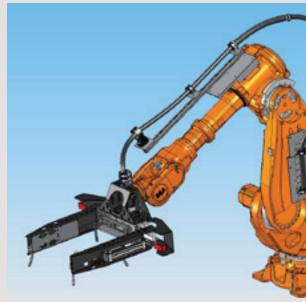










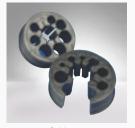




## **REIKU Component Solutions**



Rotary Base



Cablestar

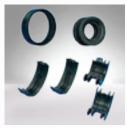


Conduit Protector



Gripping Clamp Steel Latch

Spring Assembly



Middle Jaw Set





Cablestar in protector



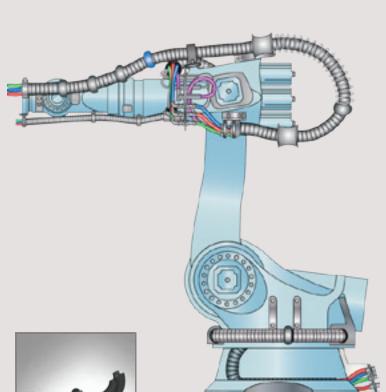


Hi Flex conduit



90° Elbows









Gripping Clamp Nylon Latch



Wrap Tie Protector



Ball Joint



Ball Joint



Comb Jaw



Cable Star in Clamp



Rotary Fork Assembly





### All conduits are not created equal

REIKU's patented conduit profile allows for a tighter bending radius without reducing the conduit's inside diameter. REIKU recommends a maximum 75% conduit fill capacity in order to prevent the chaffing of cables and hoses. Please refer to our conduit size calculator tool at www.reikuna.com.

REIKU conduit part numbers contain the actual Inside Diameter or I.D. of the conduit in millimeters

The proper conduit diameter selection should be based on the area that is required to fit all of the cables and hose 0.D.'s used in the application. REIKU recommends that a maximum, of 75% conduit capacity fill be considered in order to prevent the potential chaffing of cables and hoses inside the conduit and also to allow for "future use" potential. REIKU conduit part numbers contain the Inside Diameter or I.D. of the conduit as a suffix.

For assistance in calculating the area requirements for your project please refer to our on-line size calculator tool at www.reikuna.com. Please be advised that adding all of the cable and hose O.D.'s together will not provide the correct area requirement.

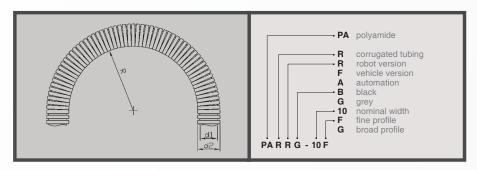
REIKU Robotic Conduit Materials **PARAB Nylon 12** conduit is used in most Robotic applications. This proprietary Nylon 12 polymer offers an operating range of -50 degree C up to +150 degree C with superior chemical and abrasion resistance properties. **Tested to withstand in excess of 15 MILLION repetitive bends.** 

**PARRB** is a "stiffer" Nylon 12 conduit for applications that require extreme mechanical protection or more integral wall thickness to support heavier cable and hose contents.

**PU RVB "Heavy" Polyurethane** conduit is used in Robotic applications that have extreme dynamic requirements. This "softer" compound offers an operating range of -05 degree C up to +105 degree C with lower chemical and abrasion resistance properties than the Nylon 12 conduits.

#### **NOW AVAILABLE Environmentally friendly conduit**

**BIORRB Nylon 11** conduit is a highly flexible conduit that is derived from vegetable oil instead of being petroleum based reducing carbon footprint impact.



PARAB Polyamide 12, Part Number Black	black NW mm	d2 0.D.	d1 I.D.	Radius (stat.)	mm (dyn)	kg/100m	Pkg Qty Meters
PARAB-17F	21	16.5	30	80	0.30	5.50	50
PA R A B-23G	23	28.0	22.3	40	100	9.2	50
PA R A B-29G	29	34.0	28.2	50	120	12.0	50
PA R A B-36G	36	42.0	35.9	60	180	16.0	30
PA R A B-42M	42	49.0	40.7	65	190	17.7	30
PA R A B-48G	48	54.0	46.5	70	200	22.0	30
PA R A B-52G	52	62.8	52.0	125	300	36.5	10/30
PA R A B-70G	70	82.5	70.0	150	(350)	51.0	10/30
PA R A B-95G	90	105.5	87.5	170	(400)	85.0	10/30



## **Clamping Options**

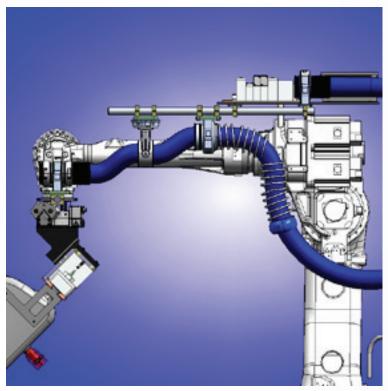
to secure the conduit and Abrasion Protection offerings

All jaws listed below rotate radially 360° inside gripping clamps. Middle jaws have a ridge to prevent lateral movement of conduit. Sliding jaws have no ridge and allow lateral movement of conduit.

Gripping Clamps	Con Con	Part No.  PASSB-17K PA SSB-29K PA SSB-36K PA SSB-36S PA SSB-52M PA SSB-52M PA SSB-52K PA SSB-70M PA SSB-70M PA SSB-70K PA SSB-70S PO SSB-90K PO SSB-90M	with nylon fastener with nylon fastener with nylon fastener with screw fastener with metal fastener with nylon fastener with nylon fastener with nylon fastener with nylon fastener with screw fastener with nylon fastener with nylon fastener with nylon fastener	Pkg Qty  25 25 10 10 10 10 10 10 10 10 10 10	REIKU Gripping Clamps must be purchased with one of the 3 available "Jaw-sets" listed.  Gripping Clamps are used to secure the conduit. The clamps are available with 3 closure system offerings, nylon thumb latch "K" version or stainless steel "M" version or "S" version has screw fastener.
Combi- Middle Jaw		Part No.  PA KMB-36/36 PA MBB-52 PA KMB-68 PA KMB-70 PA KMB-90	Middle/Combi - Jaw Middle/Combi - Jaw Middle/Combi - Jaw Middle/Combi - Jaw Middle/Combi - Jaw	Pkg Qty  10 10 10 10 10 10 10	This over-sized middle jaw enables connection of one conduit with one cable star.
Middle-and End Jaws	0	Part No.  PAKMB-17 F/G PA MBB-23 F/G PA MBB-29 F/G PA KMB-36/36 PA MBB-42 PA MBB-42 PA MBB-52 PA MBB-52 PA KMB-68 PA KMB-70 PA MBB-70 PA EBB-70 PA KMB-90	Middle/Combi Jaw Middle Jaw Middle Jaw Middle/Combi- Jaw Middle Jaw Middle Jaw Middle/Combi -Jaw Middle/Combi Jaw Middle/Lombi Jaw Middle Jaw End Jaw Middle/Combi -Jaw	Pkg Qty  25 25 10 10 10 10 10 10 10 10 10 10 10	Used in conjunction with gripping clamps, these jaws have ridges to hold conduits rigid
Sliding Jaws		Part No. PO FHB-23/29 PA GLB-36 PA GLB-48 PA GLB-52 PO GTB-70 PA GLB-70	Spring Holder Trumpet Sliding Jaw Sliding Jaw Sliding Jaw Trumpet Sliding Jaw	Pkg Qty  25 10 10 10 10 10	Used in conjunction with gripping clamps these jaws have no ridges allowing conduit to slide freely
Conduit Protectors		Part No.  PA PRB-23 F/G PA PRB-29 F/G PA PRB-36 F/G PA PRB-42 PA PRB-48 F/G PA PRB-52 PA PRB-52BL* PA PRB-50BL* PA PRB-70 PA RB-70BL* PA PRB-90	NW  23 29 36 42 48 52 52 68 70 90	Pkg Qty  25 25 10 10 10 10 10 10 10 10 10 10 10 10	Provides shock and abrasion protection for conduits. Ideal for repairs and splicing different types of conduits together.  *Blue protectors are used to indicate where there is a splice or where two different conduit materials are joined.
Rotary Protectors		Part No.  PA DPB-36 PA DPB-52 PA DPB-70	36 52 70	Pkg Qty  10 10 10	The Rotary Protector has only one central rib and does not restrict the bend radius of the conduit like the multi-ribbed PA PRB versions can. The single rib also allows the Protector to rotate or spin freely around the conduit.
Cable Tie Protectors		Part No. РА РКВ-17 РА РКВ-29 РА РКВ-36	17 29 36	Pkg Qty  25 25 10	This style of Conduit Protector uses cable ties instead of screws for easier relocation

### **Spring Retractor Components**









In order not to restrict the demanding movements of Robotic applications surplus lengths of cables and hoses are required. These surplus lengths of cables and hoses or service loops as they are known will now be housed inside the REIKU conduit. It is strongly recommended that a spring retraction system be utilized in order to keep this service loop from getting tangled or hung up. Generally the area behind Axis 3 at the rear of the Robot is a "safe area" and the spring system can be installed to pull the conduit back when not required. The spring system can be located on either side of the Robot in a vertical orientation or even side to side on a horizontal plane.







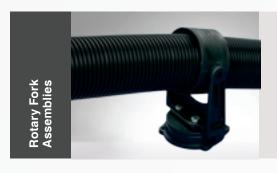
Part No.		Pkg Qty
PO FHB-36/36 used with PASSB-36S	Spring Holder for use with 29 & 36 mm conduits S or PASSB-36K Gripping Clamp	10
PA FHB-70 used with PASSB-701	Spring Holder for use with 52 & 70 mm conduits of PASSB-70K Gripping Clamp	10



Part No.		Spring Length
DFST-36NEW used with PO FHB-36/3	Spring for use with 29 & 36mm conduits 36 Spring Holder	36"
DFST-5270 used with PA FHB-70 S	Conical Spring for use with 52mm conduit only Spring Holder	30"
DFST-30 used with PA FHB-70 S	Spring for use with 70mm conduit only Spring Holder	30"
DFST-237695 used with PA FHB-70 S	Spring for use with 70mm conduit only Spring Holder	46"



### **Components for Added Mobility**



The Rotary Fork has a central pivot point which allows it's jaw assembly to move up and down in a pitch and yaw motion.

Part No.		Pkg Qty
PA DGB-70 Used with either PA TBB-7	Rotary Fork O or PA DMB-70	10
PA TBB-70 has no ridges to hold cond	Trumpet Jaw for Rotary Fork uit and allows lateral movement	10
PA DMB-70 has ridges to prevent cond	Middle Jaw for Rotary Fork uit moving laterally	10







Rotary Base Flange





The Rotary Flange can be installed under most REIKU components and will enable the assembly to rotate on it's base axis acting like a "Lazy Susan"

Part No.		Pkg Qty
PA DFB-42	used with 42 mm REIKU components and smaller	10
PA DFB-52	used with 52 mm REIKU components	10
PA DFB-70	used with 70 mm REIKU components	10

#### For 29, 36, 52 & 70 mm conduit

Ball joint assemblies can be installed in locations where additional mobility for the conduit is required. The ball joint assembly will allow for + or - 12° of orbital movement in all directions

Ball Joint Assemblie 29 mm Assembly
PA KPB-29 Ball Joint Protector

PASSB-36 K/S Clamp

36 mm Assembly
PA KGB-36 Ball Joint Jaw

PA PRB-36 Protector
PA SSB-52 K/M Clamp

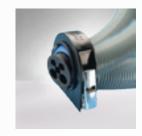
52 mm Assembly

PA KGB-52 Ball Joint Jaw PA PRB-52 Protector PA SSB-70 K/M/S Clamp 70 mm Assembly

PO KGB-70 Ball Joint Jaw PA GGB-70i

PO SSB-90 K/M Clamp









### **Termination Options**



# The use of REIKU Cablestars is **crucial** in creating an optimal cable management system

CABLESTARS are soft rubber "grommets" that are used at the termination areas of the conduit runs. These Cablestars are custom prepared for the customer's application. Each hole I.D. is precision water-jet bored to be MINUS 0.50 mm from the 0.D of each individual cable and hose . This ensures that the cables and hoses are secured from moving laterally and reduces the strain from connection points. The Cablestars also seal the conduit to prevent foreign materials from entering inside the tubes.

Cablestar grommets



PAPRB Style Protectors for sizes 23, 29, 36, 52 & 70 mm Cablestars



See page 6 for Gripping Clamp and Middle Jaw/ Combi-Jaw configurations



PA GOB/G-52 or PA GOB/G-70 Straight Flange available in 52 & 70 mm only



See ball joint assembly options for 36, 52 and 70 mm on page 10

**Frumpet Ball** 



#### Pkg Qty 10

The Trumpet Ball offers the same 360 degree orbital rotation and ball joint mobility as the Connection Joint. The Trumpet Ball has corrugations at one end to terminate the conduit but the opposite end has no ridges instead it has a smooth radius edge for the cables and hoses to exit the assembly without the risk of chaffing.

**Connection Joint** 



#### Pkg Qty 10

The Connection Joint offers 360 degree orbital rotation to release torsion load and also offers +/- 12 degree ball joint mobility. The Connection Joint has a corrugations at both ends, one to hold the conduit termination and one to hold a Cablestar.

Comb Jaw



#### Pkg Qty 10

The Comb Jaw offers a series of splines around the perimeter that cables and hoses can be secured to with the use of cable ties.

\* Recommended for static applications only



### TURN THIS INTO THIS WITH REIKU CABLE SAVER™

### ADDITIONAL REIKU HI-TECH CABLE PROTECTION PRODUCT LINES



REIKU GL HEAT PROTECTION HIGH TEMPERATURE MATERIALS





REIKU ELECTRICAL CONDUIT AND CONNECTOR SYSTEMS



For information or product catalog on REIKU® in North America contact:



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