

# **FLEX·CABLE**

Engineered Solutions



## **Resistance Welding Catalog**

Products, Services and Performance Specifications

*www.flexcable.com*  
*sales@flexcable.com*  
*(800) 245-3539*

## Engineered Solutions

In today's world of rapid growth and high technology, where a product can be here today and gone tomorrow; service, quality and technology are the key assets which separate the few from the many. For more than 55 years, Flex-Cable has developed these assets in order to be recognized as a leader in Resistance Welding Cable technology.

The Flex-Cable team has strived to set high standards and then go beyond them. The results? Operating at a world-class level of engineering and manufacturing capacity that allows for:

- ▶ Increased quality
- ▶ Increased flexibility
- ▶ Superior customer service
- ▶ Leading innovation
- ▶ Decreased cost
- ▶ Minimize lead time

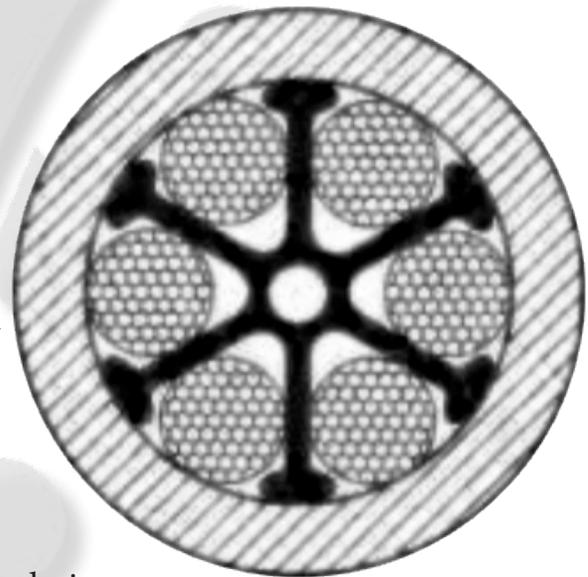
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## Exceptional Design and Assembly

**W**ound with precision, these cables alternate in polarity conduction through its arrangement which neutralizes the energy kick and increases power throughout a carefully controlled helical wire configuration. This design minimizes wear points and ensures proper water flow. The wires are terminated in a swagged, mechanically reinforced and silver plated connector that also provides the strong, uniform electrical connection.

**L**ong ago, Flex-Cable recognized the need for an improved Kickless Cable and was the first manufacturer to develop this six rope alternate polarity cable, having perfectly balanced water cooled ropes via an extruded six point internal separator. This concept is now the industry standard.



**T**hese flexible, low-maintenance cables provide a longer cable life. Our six conductor design eliminates magnetic stresses and enhances bending and twisting motions. Size for size, the conductor arrangement gives approximately 10% more current for a given applied voltage than other available cable types.



## The Standard Process

**P**atented process with a six rope alternate polarity utilizing a unique, low wear point wire rope design. Providing the lowest inductive reactance and lowest impedance with the highest electrical power factor of all cables in today's market place. The positive cooling paths maximize thermal efficiency and special water passageways reduce terminal heating.



### Color-Flex Cable

The Color-Flex cable jacket is made up of a specially formulated, six layer, natural rubber compound with an abrasion resistant bumper as an integral part of the jacket, making it completely durable to overcome distress and flexure.



### Complex Cable

Available in both Standard and Flex-cel Process, these cables are made of specially designed rubber jacketing with ergonomics in mind, offering individually wrapped internal copper ropes with a perforated protective sleeve, which would improve water flow, decrease operating temperature and improve flexibility.

## The Flex-cel Process

State-of-the-art, patent-pending process which incorporates a specially extruded ethylene propylene diene monomer rubber material covering each individual conductor rope within the cable. Then punched with symmetrical cooling channels to capture and isolate broken strands of copper wire to prevent cooling system contamination and obstructed water flow.



### American Power Cable

Combined with proper dress out and a good preventative maintenance program, this cable will virtually eliminate down time. The interior construction and outer hose make this cable a hard worker and a true value.



### Euro-Flex Cable

These cables have a rugged urethane outer jacket allowing for the combined advantage of safety, abrasion- resistance and long cable life into one unique design. Perforations and flow space between the wire and material create a sufficient Thermally Forced Cooling System.



# Kickless Cable Selection Guide

## ***COLOR-FLEX CABLE***

### **Applications: Medium robotic use**

Standard cable for typical robotic applications. The outside hose has a durable rubber blend outer covering which gives good support for the cable while allowing the cable to bend and twist.

## ***AMERICAN POWER CABLE***

### **Applications: Medium to heavy robotic use**

The best solution for applications that perform many tight bends and twists. The jacket construction is the same as Color-Flex, while the interior construction is Flex-cel, giving good support and resisting abrasion. While improving flex life, cooling channels trap broken wire strands and prevent plugged water ports.

## ***EURO-FLEX CABLE***

### **Applications: Heavy to extreme robotic use**

The best cable for high abrasion situations. This cable has all the benefits of the American Power Cable with the addition of a Polyurethane outer layer on the jacket. Euro-Flex combines all of the advantages of a reinforced rubber hose with the abrasion resistance of urethane and a durable interior creating the highest performing cable ever.

## ***COMPLEX CABLE***

### **Applications: Manual gun use**

The cables excellent ability to bend and twist reduces the ergonomic stress on the gun operator while maintaining the safety of a reinforced rubber tube inside.



# Kickless Cable Order Form

<input type="checkbox"/>															
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**MCM SIZE**

- 30 = 300MCM
- 40 = 400MCM
- 50 = 500MCM
- 65 = 650MCM
- 80 = 800MCM

**CABLE TYPE**

- LC = COLOR-FLEX
- AP = AMERICAN POWER
- UR = EURO-FLEX
- CR = COMPLEX
- LH = HIGH-VOLT

**TERMINAL 1**

See terminal chart.

**TERMINAL 2**

See terminal chart.

**LENGTH IN INCHES**

Please specify.

**OPTIONS**

- E = EXO SYSTEM ON CABLE
- SR = STRAIN RELIEF (installed at Terminal 1 end) SRSR (installed at both ends)
- B = FLEX-CEL CONSTRUCTION
- SI = SPECIAL INSTRUCTIONS (ie; rotated terminals, oversized ports, etc.)

**EXAMPLE:**

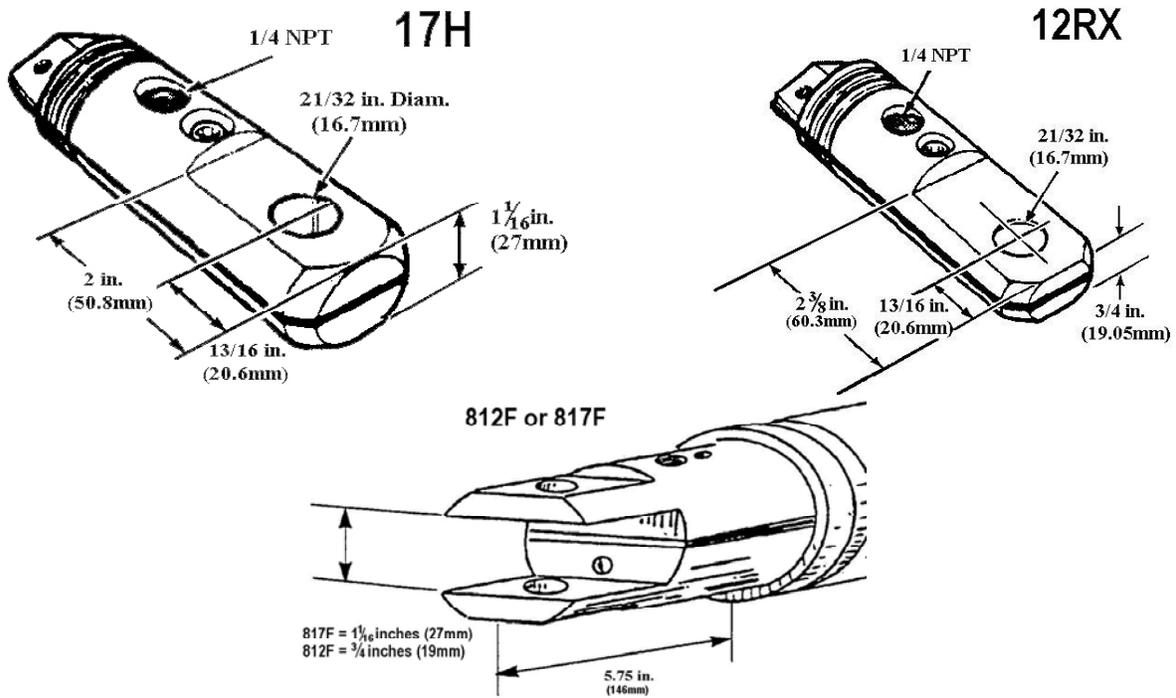
**DESCRIPTION:**

**40CR017H12RX-SRSR  
10FT., 400MCM, COMPLEX WITH 17H & 12RX  
TERMINALS, WITH STRAIN RELIEF ON BOTH  
TERMINALS**

Call, email or check out our website for technical support or questions on our products



# Kickless Cable Terminal Chart



Flex-Cable offers a complete line of terminals machined from high-conductive copper bar stock. Terminals are kept in matched halves throughout production and assembly. Our exceptionally wide selection offers complete compatibility with foreign-made cables.

17HS	17HF	17HE
D21	17HAL	821F
6WHL	17H2AL	6WHS
6AHL	17G	6AHS
9L	YW4MLH	12R-2
12R5	17HL	12RL
12RF	17HX	12RI
12RXAL	17T	12XE
12XS	17HI	17B
17CE	17HS	17CS
17HC	17H	

\*\*Custom terminals also available



## Water Cooled Cables



### Color-Flex Cable

The Color-Flex cable jacket is made up of a specially formulated, six layer, natural rubber compound with an abrasionresistant bumper as an integral part of the jacket, making it completely durable to overcome distress and flexure.



### Complex Cable

Available in Standard and Flex-cel Process, these cables have a rubber jacket that is ergonomical, offering individually wrapped internal copper ropes with a perforated protective sleeve, which would improve water flow, decrease operating temperature and improve flexibility.



### American Power Cable

Combined with proper dress out and a good preventative maintenance program, this cable will virtually eliminate down time. The interior construction and outer hose make this cable a hard worker and a true value.



### Euro-Flex Cable

These cables have a rugged urethane outer jacket allowing for the combined advantage of safety, abrasion- resistance and long cable life into one unique design. Perforations and flow space between the wire and material create a sufficient Thermally Forced Cooling System.



# Water Cooled Cable Selection Guide

## ***COLOR-FLEX CABLE***

### **Applications: Medium robotic use**

Standard cable for typical robotic applications. This cable offers good support while allowing the cable to bend and twist. Made of polyester tire cord for durability.

## ***AMERICAN POWER CABLE***

### **Applications: Medium to heavy robotic use**

The step up from Color-Flex, this is the best solution for applications that perform many tight bends and twists. Constructed the Flex-cel way, this cable gives good support and resists abrasion. While improving flexibility, the cooling channels trap broken wire strands and prevent plugged water ports.

## ***EURO-FLEX CABLE***

### **Applications: Heavy to extreme robotic use**

This cable can handle high abrasion situations with a Polyurethane outer layer on the jacket. Euro-Flex combines a durable interior with a durable exterior creating the highest performing cable ever.

## ***COMPLEX CABLE***

### **Applications: Manual gun use**

This cables ability for extreme bends and twists reduces the ergonomic stress on the gun operator and maintains safety with a reinforced rubber tube inside.



# Water Cooled Cable Order Form

<input type="checkbox"/>													
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**MCM SIZE**

**35** = 350MCM  
**40** = 400MCM  
**50** = 500MCM  
**60** = 600MCM  
**75** = 750MCM  
**10** = 1000MCM

**CABLE TYPE**

**LC** = COLOR-FLEX  
**AP** = AMERICAN POWER  
**UR** = EURO-FLEX  
**CR** = COMPLEX

**TERMINAL 1**

See terminal chart.

**TERMINAL 2**

See terminal chart.

**LENGTH IN INCHES**

Please specify.

**OPTIONS**

**E** = EXO SYSTEM ON CABLE  
**B** = FLEX-CEL CONSTRUCTION  
**SB** = STAINLESS STEEL BANDS  
**DB** = DOUBLE BANDING  
**M** = EXO SYSTEM ON CABLE AND FLEX-CEL CONSTRUCTION

**EXAMPLE:**

**35WSW1FW6-22-E**

**DESCRIPTION:**

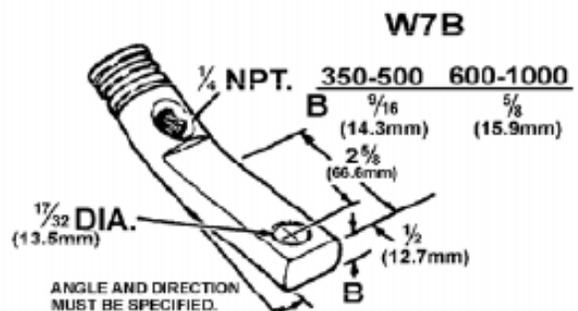
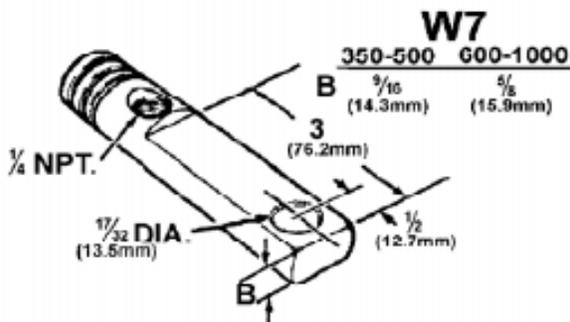
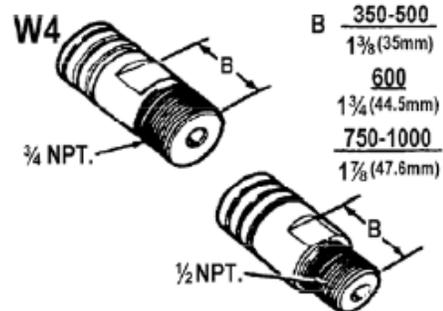
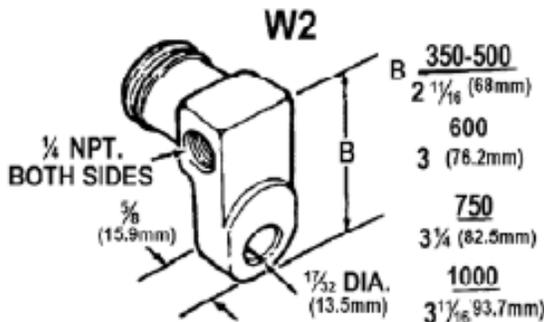
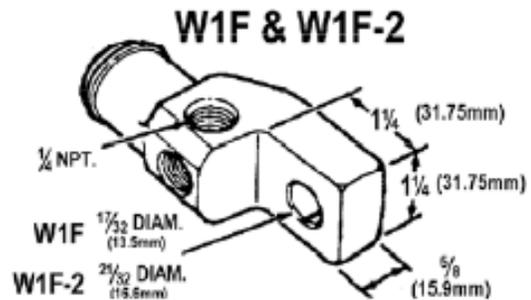
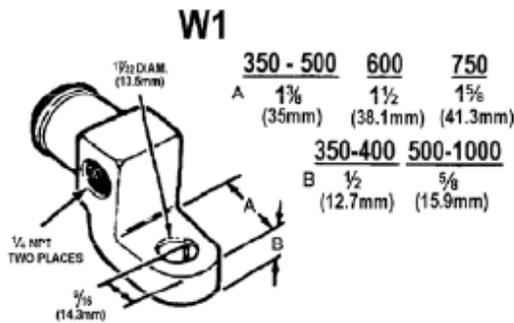
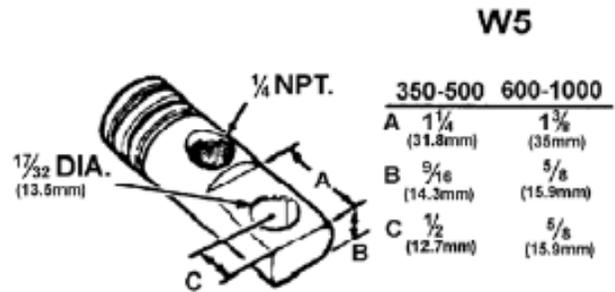
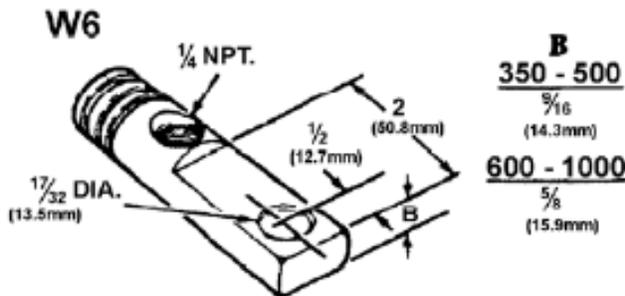
**22 IN., 350MCM, COLOR-FLEX WITH W1F & W6 TERMINALS, CABLE WRAPPED WITH EXO.**

Call, email or check out our website for technical support or questions on our products

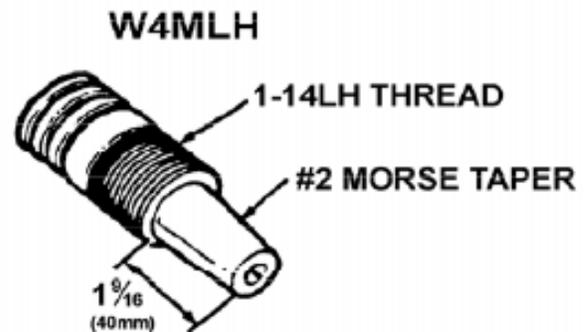
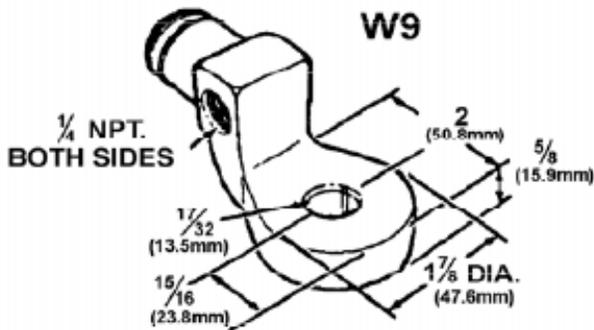
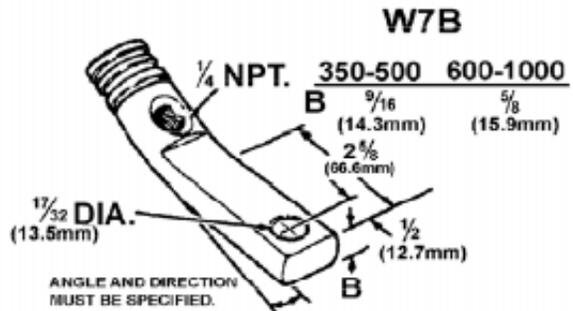
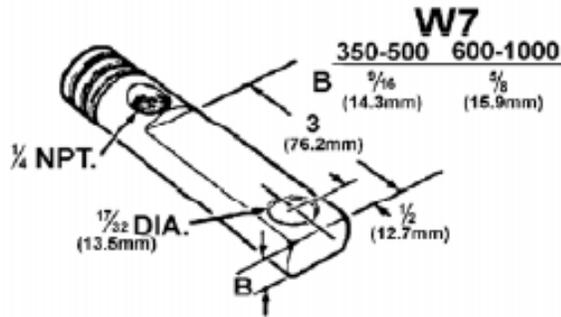


# Water Cooled Cable Terminals Chart

Flex-Cable offers a complete line of terminals machined from high-conductive copper bar stock. Terminals are kept in matched halves throughout production and assembly. All Water Cooled cables are air pressure tested under water and quality assured. Cable resistance documentation for cable life expectancy is available as required.



# Water Cooled Cable Terminals Chart



A variety of terminals are also available as needed.

W6-2	W9M	W4MRH
W5GB	W5M	W6-2
W6-D	W6-D2	W6-S
W6-S2	W62	W62D
W62E	W9	W9M
W11	W20M	W22
W24	W25	W26
W27	W28	W29
W30	W31	

\*\*Custom terminals also available



## Air Cooled Cable Selection Guide



### ***COLOR-FLEX CABLE***

These jumpers are extra flexible cable rope-type secondary conductors (0.010 inch strands) featuring silver plated connectors swedge-formed on each end. Standard air cooled jumpers are encased in a loose fitting, non-flammable, neoprene impregnated sheath to provide abrasion protection, flexibility and cooling. Color coded for easy identification. Save time in replacement by easily matching the color and identifying the length.



### ***FLEX-TRA CABLE***

These jumpers were developed to allow freedom in design for today's automotive and robotic welding applications. Flex-Tra utilizes a unique wound wire which allows that cable to bend, twist, loop and curl under static or dynamic loading. The optional perforated cover enhances flexibility and allows for greater cooling, adding to service life.



### ***IW-FLEX CABLE***

This individually wrapped jumper cable is engineered for special applications and flexibility. Advancements include:

- ▶ Each rope is individually insulated
- ▶ Increased flexibility and versatility
- ▶ Improved insulation method does not require standard hose cover
- ▶ Eliminates frictional wear between adjacent ropes
- ▶ Reduces strand failure at rear of terminal

# Air Cooled Cable Order Form

<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> -S
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**MCM SIZE**

**40** = 400MCM  
**50** = 500MCM  
**60** = 600MCM  
**75** = 750MCM  
**10** = 1000MCM  
**12** = 1200MCM  
**15** = 1500MCM  
**20** = 2000MCM

**CABLE TYPE**

**A** = COLOR-FLEX  
**X** = FLEX-TRA  
**I** = IW-FLEX

**STYLE**

See terminal configuration chart.

**HOLE DIAMETERS**

**1717** = 17/32" AND 17/32"  
**1721** = 17/32" AND 21/32"  
**2121** = 21/32" AND 21/32"  
**XXXX** = CUSTOMER SPECIFIC HOLE DIAMETERS

**LENGTH IN INCHES**

Please specify.

**OPTIONS**

**WK** = 1 3/8 INCH TERMINAL WITH 400-750MCM SIZES  
**P** = PERFORATED COVER  
**E** = EXTENDED COLLAR

**EXAMPLE:**
**DESCRIPTION:**
**12AA1721-18-S**
**18 IN., 1200MCM, COLOR-FLEX WITH 17/32" AND 21/32"  
HOLES IN SILVER PLATED TERMINALS**

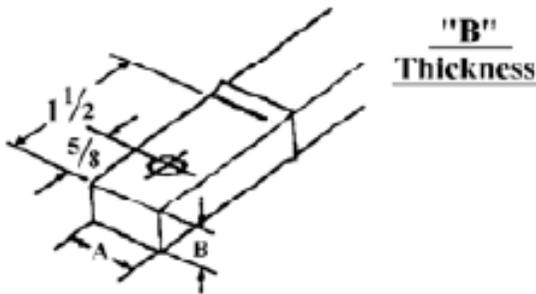
Call, email or check out our website for technical support or questions on our products



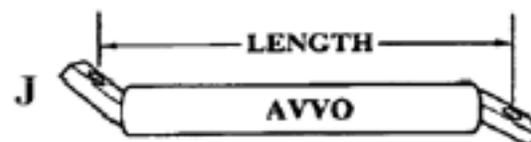
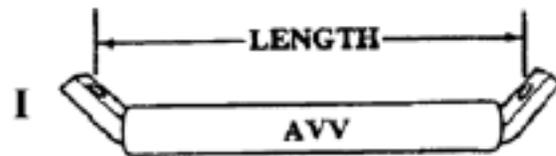
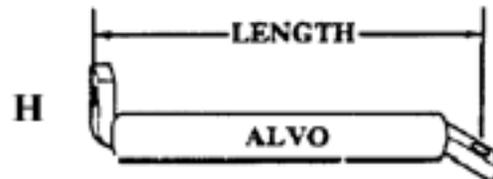
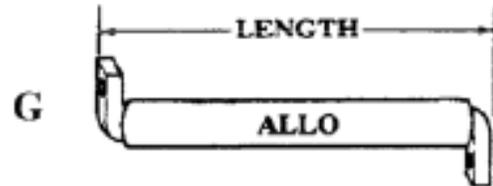
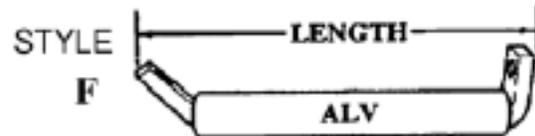
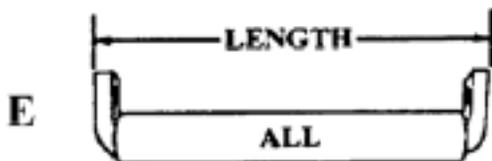
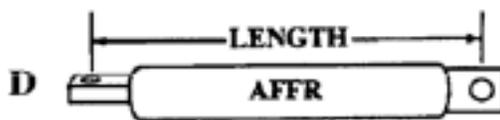
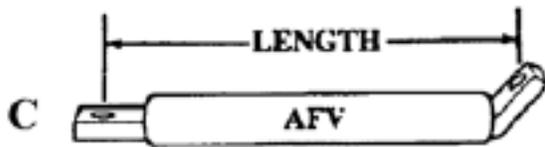
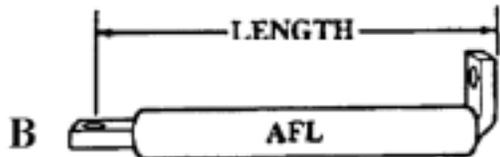
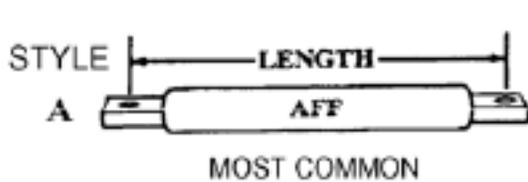
# Air Cooled Cable Terminal Chart

Flex-Cable offers a complete line of terminals machined from high-conductive copper bar stock. Terminals are kept in matched halves throughout production and assembly. Standard terminal width is 1-1/4 inch, 1-3/8 inch, and 1-1/2 inch are available upon request. See ordering chart for bolt hole diameters.

\*\*Custom terminals also available.



MCM	1-1/4 inch	1-3/8 inch	1-1/2 inch
400	0.38	0.35	-
500	0.44	0.41	-
600	0.50	0.46	-
750	0.63	0.58	-
1000	0.81	(0.74)	0.67
1200	0.97	(0.88)	0.81
1500	1.22	(1.11)	1.02
2000	-	-	-

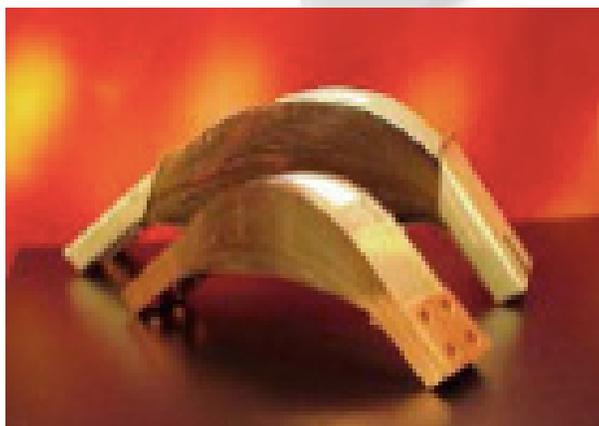
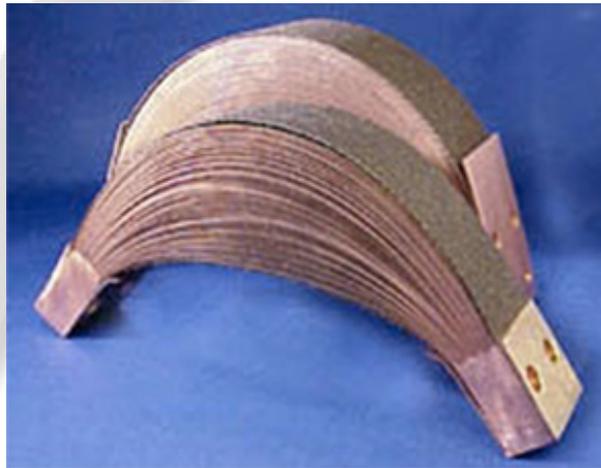


## Shunts

Offering many sizes and configurations of shunts tailored to our customers needs, Flex-Cable's resistance welded shunts improve electrical and mechanical properties in comparison to conventionally welded or riveted shunts. The individual copper strips of the shunts are fused, assuring minimal resistance and operation temperature which increases product life and reduces downtime.

Our new fused molecular process, along with a tin plated process, offers the following advantages

- ▶ Extra lubricity between the leaves.
- ▶ Long term corrosion protection of the leaves.
- ▶ Low temperature joining process. No fired molecular annealing of the leaves.
- ▶ Near perfect joint resistance. Combined joint resistance typically less than 1/2 micro ohm.
- ▶ Long shelf life resulting from low temperature jointing process, which seals out corrosion. Low resistance is maintained throughout the life of the shunt.
- ▶ Improved appearance.
- ▶ Eliminates the toxic hazard of lead in a soldered joint.
- ▶ Computer controlled process gives optimum blousing.



Fused for high conductivity.

Optional silver plating on contact surfaces.

Shunt Material Available:

- ▶ Half-hard
- ▶ Dead soft
- ▶ Combination
- ▶ Any of the above with "Hi-Life" TFE coating

Optional Teflon jacket available for improved wear and tear, insulation and protection.

# Shunt Order Form

Flex-Cable Part Number: \_\_\_\_\_

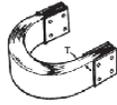
Customer Part Number: \_\_\_\_\_

### SHUNT TYPE

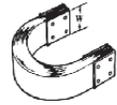


0 = OTHER (please specify on print)

### THICKNESS



### WIDTH



### OUTSIDE LENGTH



### INSIDE LENGTH



OPTIONAL:  
BLOUSING THICKNESS WILL BE APPROX. 1.5 X THICKNESS IF INSIDE LENGTH IS NOT SPECIFIED

**MATERIAL THICKNESS**  
.005 DEFAULT FOR SHUNTS LESS THAN 2" WIDE  
.010 DEFAULT FOR SHUNTS GREATER THAN

0.003

0.005

0.010

1/2 HARD TIN COATED C-110 IS  
DEFAULT FOR ALL SHUNTS

### HOLE/SLOT SIZE

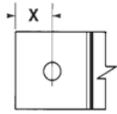
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\_\_\_\_\_

### HOLE SPECIFICATIONS

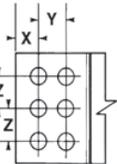
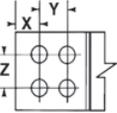
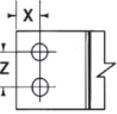
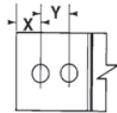
END 1

END 2



SLOT

SLOT



OTHER (Please specify on print)

### PLATE DIMENSIONS



END 1                      END 2

\_\_\_\_\_ OUTSIDE \_\_\_\_\_

\_\_\_\_\_ INSIDE \_\_\_\_\_

LEAVE BLANK IF NONE

### PLATE THICKNESS

DEFAULT IS 1/16"

1/16"  
1.6mm



1/8"  
3.2mm



3/16"  
4.8mm



1/4"  
6.4mm



### END TREATMENT

END 1                      END 2



FUSED / BONDED  
(default)



PLATE



LOOSE



OTHER  
(SEE PRINT)



### FLARING

FLARE IS 1/4" AT 45° (6mm)

END 1                      END 2



OUTSIDE



INSIDE



OTHER  
(Please specify on print)



### COATING OPTION

DEFAULT IS TIN COATED.  
IF PLAIN COPPER

END 1                      END 2



OUTSIDE



INSIDE



F = FIBERGLASS SHIELD  
T = TEFLON TAPE

### SILVER PLATING

END 1                      END 2



OUTSIDE



INSIDE



### COMMENTS:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### HOLE DIMENSIONS

END 1                      END 2

X = \_\_\_\_\_ X = \_\_\_\_\_

Y = \_\_\_\_\_ Y = \_\_\_\_\_

Z = \_\_\_\_\_ Z = \_\_\_\_\_



# Prime-Link System Standard Cable Connections

These connectors are specially designed and manufactured for maximum flex life. Every Prime-Link connector is molded to the cable and incorporates a Strain Relief for extra durability and longer cable life. Our innovative and consistent processing results in unparalleled performance.

- ▶ All Prime-Link cable ends are straight, the 90° is accomplished by the mounted connection
- ▶ The Prime-Link coupling provides a fast, yet secure, motionless connection
- ▶ The coupling ring is attached to the connector by a lanyard for safety and convenience



Rated Current (MAX)	230A (RMS)
Peak Current (10mSEC)	25,000A
Nominal Rated Current	170A (RMS)
Rated Voltage	600V



The optional mini clamp provides a tight grip on the integral strain relief

Large "key" for easy orientation

O-ring seal

Finger safe, recessed sockets eliminate accidental contact

The ground socket is not recessed ensuring first and last contact with the ground pin



# Prime-Link System Primary Cable Order Form

NFPN0  -  - M  -  **LENGTH**

**# OF CONTACTS**  
**3** = 3-POSITION  
**6** = 6-POSITION

**CONTACT TYPE**  
**0** = BLUNT  
**1** = MALE (RECEPTACLE)  
**4** = FEMALE (PLUG)

**HARDWARE**  
**1** = MOLDED BOOT  
**4** = FIELD CONNECTOR W/ REMOVABLE MOLDED BOOT  
**C** = FIELD CONNECTOR W/ BOOTIE  
**D** = FIELD CONNECTOR  
**M** = MOLDED BOOT W/ MECHANICAL CLAMP

**WIRE TYPE**  
**L** = REDUCED DIAMETER, 600V  
**P** = PRIME-FLEX / TYPE W, 2000V

**GAGE**  
**M** = 6 AWG  
**P** = 4 AWG  
**R** = 2 AWG

**UNIT**  
**E** = FEET  
**M** = METERS

**EXAMPLE:** NFPN03-4111-MPR-E010  
**DESCRIPTION:** PRIME-LINK, 3-PIN, FEMALE PLUG, STRAIGHT MOLDED BOOT, MALE RECEPTACLE, STRAIGHT MOLDED BOOT, PRIME-FLEX CABLE, 2 AWG, 10 FEET

Call, email or check out our website for technical support or questions on our products



# Prime-Link System Field Connectors Order Form

NFPN03 -  F  -  -

**CONTACT TYPE**  
1 = MALE (RECEPTACLE)  
4 = FEMALE (PLUG)

**CONNECTOR TYPE**  
P = PANEL MOUNT (2-PIECE)  
D = STRAIGHT CABLE ADAPTER (1-PIECE)

**HARDWARE**  
0 = NO FLANGE  
6 = 2.875 ROUND 6 HOLE (1/4-20)  
2 = 68mm DIAGONAL 4 HOLE (M5)

**GAGE**  
M = 6 AWG  
P = 4 AWG  
R = 2 AWG  
N25 = 25mm<sup>2</sup>  
N = 28mm<sup>2</sup>  
Q = 38mm<sup>2</sup>

**WIRE DIAMETER**  
12 12 12  
13 13 13  
14 14 14  
15 15 15  
14 16 16  
XX = FOR SINGLE CABLE IN mm

FOR 3 WIRE APPLICATIONS  
DIAMETER OF EACH WIRE IN mm

**OPTIONAL**  
B = STRAIN  
RELIEF BOOTIE

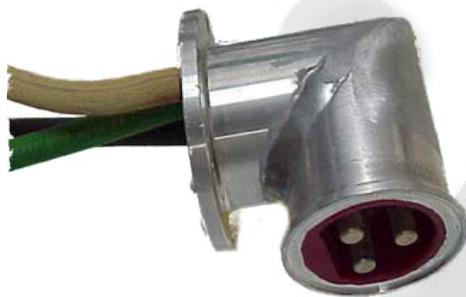


# Prime-Link System Mounted Cable Connections

Specially designed and manufactured to simplify your high current connections. Our innovative and consistent processing results in unparalleled performance.

- ▶ All Prime-Link cable ends are straight, the 90° is accomplished by the mounted connection
- ▶ The Prime-Link coupling provides a fast, yet secure, motionless connection
- ▶ The coupling ring is attached to the connector by a lanyard for safety and convenience

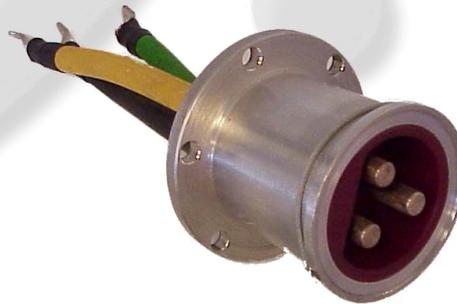
Rated Current (MAX)	230A (RMS)
Peak Current (10mSEC)	25,000A
Nominal Rated Current	170A (RMS)
Rated Voltage	600V



**Standard 90°**



**Standard Flange 90°**



**Round Flange**

**5D**



**5W**



**5E**



**6D**



**6W**



**ED**

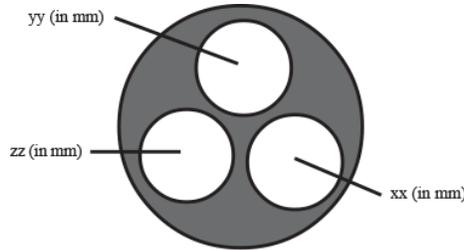




## Cable Strain Relief Boots and Booties

Strain reliefs extend cable life and reinforce the connection to equipment. A strain relief is attached to a cable or cable assembly and is designed to increase the bend radius and absorb the mechanical forces exerted during use.

### Strain Relief



Custom Hole(s) Pattern

Minimum 1 mm  
Maximum 17 mm

### Bootie



PART NUMBER	CABLE SIZE	INSIDE DIAMETER (METRIC)	INSIDE DIAMETER (STANDARD)	LENGTH	ASSEMBLED AS SHOWN	COMPRESSION NUT	RETAINING RING
381	Single Hole 1.125-1.37"	34.945mm	1 3/8"	5.5"	8916	7413	8788
381-xxyyzz	Up to 3 Holes Standard or Custom	34.925mm	1 3/8"	5.5"	8917	7413	8788
382	Single Hole 1.125-1.25"	31.75mm	1 1/4"	4"	8773	7413	8107
382-M27	Single Hole 1 - 1.093"	25.4mm	1"	4"	8772	7413	8107
382-xxyyzz	Up to 3 Holes Standard or Custom	31.75mm	1 1/4"	4"	8918	7413	8107

### STRAIGHT STRAIN RELIEF ASSEMBLY

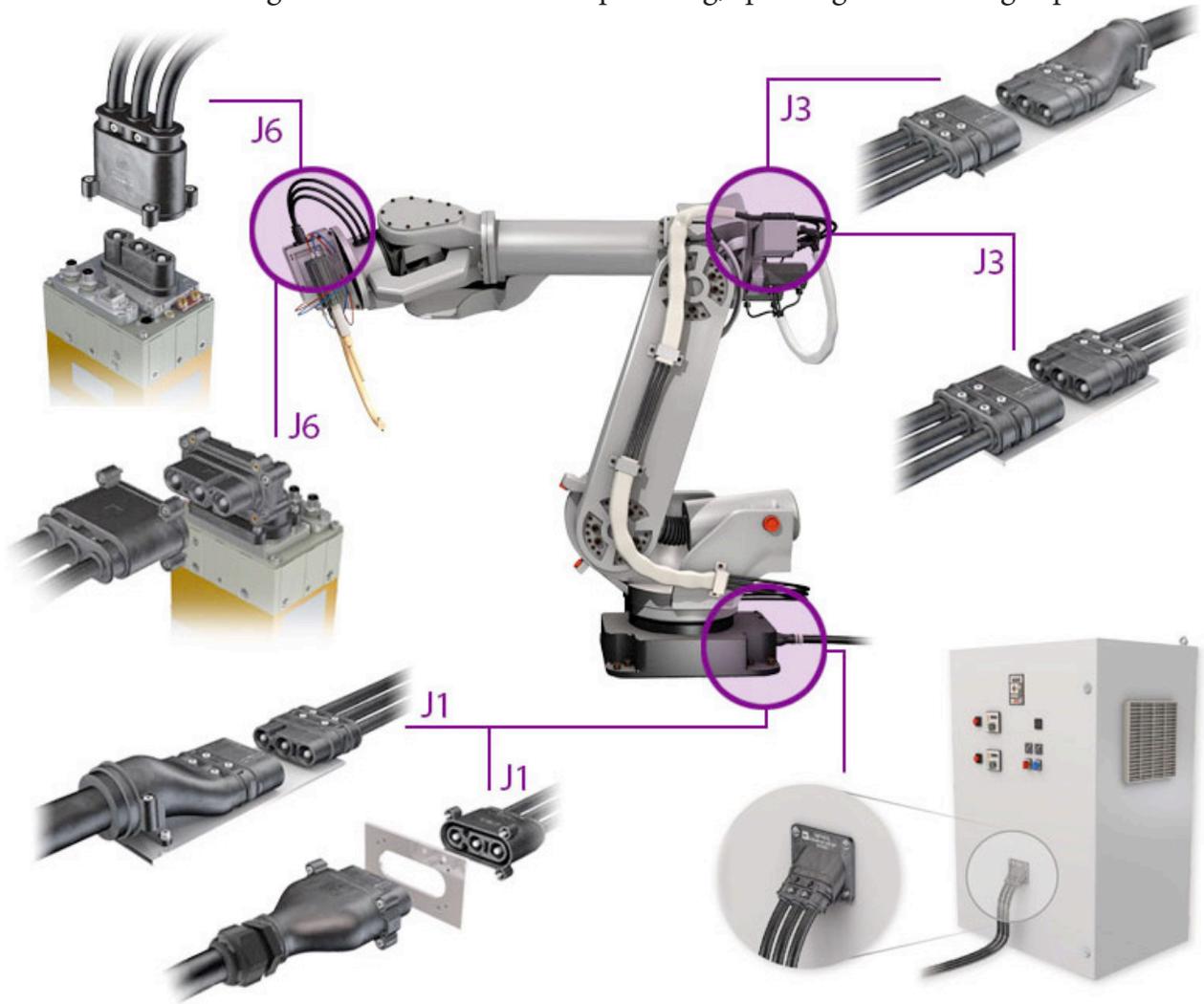
### 90° STRAIN RELIEF ASSEMBLY

LENGTH	CABLE DIAMETER	STRAIN RELIEF ONLY	STRAIGHT STRAIN RELIEF ASSEMBLY		90° STRAIN RELIEF ASSEMBLY	
			1 1/4 NPT	1 1/2 NPT	1 1/4 NPT	1 1/2 NPT
8"	1.25 - 1.75"	301	304	354	307	357
8"	1.125 - 1.25"	302	305	355	308	358
8"	1 - 1.125"	303	306	356	309	359
5.5"	1.25 - 1.375"	8771	8771-05	8771-55	8771-08	8771-58
5.5"	1.125 - 1.25"	8733	8733-05	8733-55	8733-08	8733-58



# RobiFix Multi-Contact Cables

Highly reliable, cost-effective and space-saving means of integrating power supplies in robotic dress packs and running them along robotic arms. This latest innovation does not require any special assembly tools; the insertion into and removal from the connector housing couldn't be any easier. The insulating material is resistant to spattering, sparking and welding vapors.



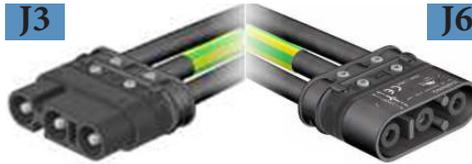
RobiFix is the smart solution. This new concept for primary power supply on welding robots offers:

- ▶ Quick disconnect solutions for minimized downtime
- ▶ Compact and modular design with superior performance
- ▶ Light weight ideal for down-sizing purposes
- ▶ Fast integration and easy maintenance
- ▶ Dependable with high-current capacity
- ▶ Total cost reduction about 50%



# RobiFix Multi-Contact Cables

NFWR03 - 3C2C-MCR- E   
**J3** **J6** LENGTH



NFWR03 - 3C08-MCR- E   
**J3** LENGTH



Female RobiFix with sockets

- ▶ Specified length in leads with butt-splices and loosely shrink packaged
- ▶ This is for splicing in at axis 3

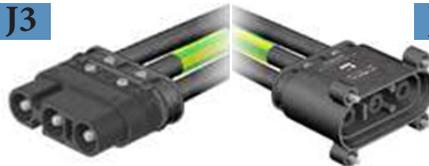
NFWR03 - 3C09-MCR- E   
**J6** LENGTH



Male RobiFix

- ▶ Specified length in leads with lugs
- ▶ This is for splicing in at axis 6

NFWR03 - 3C2M-MCR- E   
**J3** **J6** LENGTH



NFWR03 - 3D09-MCR- E   
**J6** LENGTH



Specified length in leads with lugs

NFWR03 - 3N09-MCR- E   
**J6** LENGTH

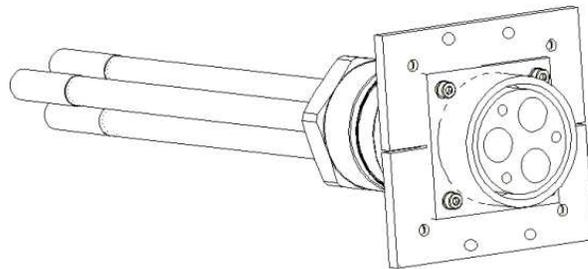


# Military Weld Cable Connectors

With American-made products and intimate, personalized attention, Flex-Cable supports the American military with quality cables and distinguished service throughout all branches.

Our Direct Support Electrical Test System Adapter offers the strongest weld for military robots.

NFMR03 - 3C09-MCR- E □□□  
LENGTH



**Military and RobiFix transformer cable securing assemblies**

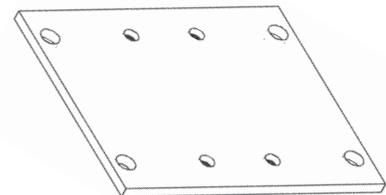
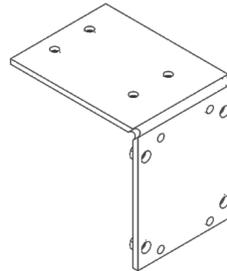
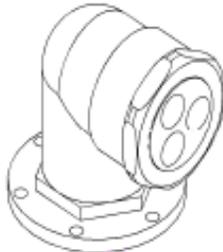
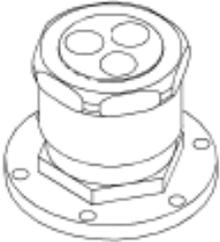
**Military and RobiFix mounting connector brackets**

**A10829**

**A10982**

**11728-MD-KIT**

**11749-MD**



# Flex-Cable's Other Product Lines

Flex-Cable doesn't just make products, we solve problems in the manufacturing sector for all customers.



## Custom Cables

Rectangular Connectors	Custom Assemblies
Military Connectors	Private Label Over-Molding
Circular Connectors	I/O Fan Out Cables



## Motion Control Cables

Servo Motor Cables	Servo Motor Purge Cables	Break-Out Boards
Servo Motor Extension Cables	Resistive Brake Module Cables	Transition Cables
Servo Motor Box Mount Cables	Stand-Alone Encoder Cables	Feedback Cables



## Robot Dress

Components (Clamps, Brackets, etc)	Universal Dress Systems	Custom Umbilicals
Retract Dress Systems	MIG Assemblies	Robot Bypass Box
Static Dress Systems	Cables & Hose Protection	



## Bus Bars

Solid Bus Bar w/ PEM Studs	Flexible Bus Bar	Shielded Bus Bar
Round Cable to Flexible Bus Bar	Round Cable	Aluminum Bus Bar
Round to Flat to Round Wire	Solid to Flexible Bus Bar	Jumpers



## Furnace Products

Carbon Arc Cables	Low Impedance Cables
Induction Furnace Cables	Air Cooled Cables
Induction Heating Cables	Copper Repair & Rebuild Services



## Injection Molding

Custom Molded Plastic Parts	Short Run & Prototype Molds
Plating Options Available	Multi-Component Capability
Finishing Options Available	



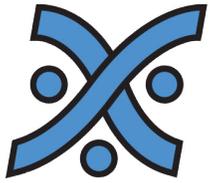
## Copper Stamping and Fabrication

Hybrid/Electric Vehicle Specialty	High Production Capability
Simple Blankings	Non-Ferrous Specialty
Complex Stamping Dies	Plasma Cutting



## Metal Fabrication

Sheet Metal Fabrication	Turning
Welding Services	Custom Machining
Milling & Drilling	Plating Options Available



# **FLEX·CABLE**

Engineered Solutions



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