

MARKET SOLUTIONS



AUTOMOTIVE MARKET SOLUTIONS



TPC WIRE & CABLE CORP.
EXPECT HIGH PERFORMANCE®

Automotive Market Solutions

TPC Wire & Cable Corp. is a leading supplier of high-quality, high-performance wire, cable, connectors, and assemblies designed and engineered to withstand harsh industrial environments. We know how critical it is that your cables and connectors be able to survive abuse from flexing, impact, abrasion, extreme temperatures, and caustic chemicals. TPC products solve the most difficult application problems and outlast ordinary cable 10:1, reducing your downtime, labor, and overall costs.

Tier-1 Auto Parts Supplier's Servo Motor Cable Doesn't Cut It

Problem

A Tier-1 automotive supplier of underbody structural parts was experiencing problems with the power cable for its servo motors and needed to replace it every 1.5 months. The cable would be cut by parts, fail, and sometimes blow out the servo motors to the tune of \$3,000+ each. The cost to replace the cable was \$546 in product and labor expenses each and every time.

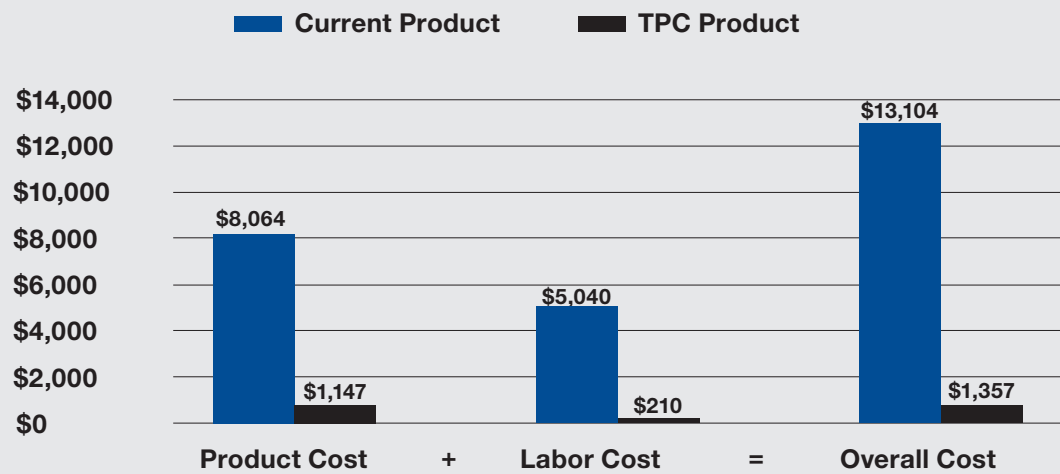
Solution

The TPC representative recommended Super-Trex® Reduced Diameter Control Cable customized and strengthened with aramid. Already designed with a high strand count and construction that provides long life in dynamic flexing applications, the thermoplastic elastomer (TPE) jacket was enhanced with an aramid fiber vest to yield exceptional strength and cut-through resistance. The customized cable solution would also provide excellent protection against oil and most industrial chemicals.

Result

TPC's Super-Trex® Reduced Diameter Control Cable with aramid over-braid was installed on all 6 servo motor units. After 1 year in use, the cables were holding up well against cutting hazards. After 3 years in use, again without failure, it was determined the customer was able to avoid 144 hours in downtime and the total cost in products and labor for TPC's solution was just \$1,357 — compared to the \$13,104 the customer would've spent replacing cable every 6 weeks across 6 units over the course of 36 months. Ultimately, TPC was able to save the customer \$11,747 in expenses and delivered a 138-hour increase in production time. Since then, in response to customer needs, TPC has introduced Trex-Onics® Servo Motor Cable, color-coded orange and specifically designed to protect motors from damage by reducing noise issues while extending conductor life in dynamic applications.

CURRENT PRODUCT VS. TPC PRODUCT



Total Saving in Materials & Labor = \$11,747
Production Increase = 138 Hours

Source: TPC Cost Value Analysis Report #1361

TPC Products Solve Problems in Automotive Applications

POWERTRAIN, TRANSMISSION & ENGINE		
AREA	APPLICATIONS	TPC PRODUCTS
Machining / Metalworking	CNC Machine	• Chem-Gard® 200 Multi-Conductor
	Drive System	• Super-Trex® SJOO Micro Cord Sets
	Material Handling Equipment	• Super-Trex® Reduced Diameter Control Cable
	Portable Welding Units	• Super-Trex® Servo Motor Cable
Tool Making	Pendant	• Super-Trex® & Trex-Onics® VFD Cables
	Portable Power	• Trex-Onics® Ethernet CAT6A/CAT7A Cable & Assemblies
	Tooling & Valves	• Trex-Onics® High-Flex Encoder Cable
	Prox Sensor, Signal & Control	• Super-Trex® Power Cables
Low Pressure Die Casting	Drive Cable Assemblies	• Super-Trex® Welding Cable
Aluminum Casting	Engine Test Harness	• 4 & 8 Button Aluminum Pendants
Forging of Cranks & Camshafts	Valve Control	• Super-Trex® Multi-Conductor P&R Cable
High Pressure Diecasting	Manifolds & Sand Molding	• Super-Trex® Portable Cord
	Material Handling Equipment Robots	• 7 Pin Molded Valve Plugs
	Casting Machines & Pendant Stations	• Trex-Onics® Individually Shielded Pairs
	Die Blocks, Light Curtains	• Trex-Onics® Encoder/Resolver Cable
	Safety Switches, Photo Eyes, Sensors	• SJOO M12 Cord Set
Melting Furnace	Thermocouples	• Thermo-Trex® 500-K Single / Multi-Conductor Cable
	Temperature & Measuring Equipment	• Thermo-Trex® 2000 Multi-Conductor Cable
	High Temp. Power and I/O	• Super-Trex® & Trex-Onics® M12 Cord Sets
	Motors	• Thermo-Trex® Thermo-Couple Extension Wire
	Material Handling Equipment Robots	• Chem-Gard® Multi-Conductor Cable
	Robot Handling Equipment, Air Hoses, Electrical Cable, Hydraulic Cable	• Super-Trex® Type W Portable Power & Automation Cable
	Cranes & Jib Crane	• Trex-Onics® Overall Shielded Control Cable
Engine Assembly	Drive Power & Encoder Cable	• Chem-Gard® 200 Cable
	Festoon Systems	• Super-Trex® Ultra-Gard Portable Cord
	Material Handling Equipment Robots	• Super-Trex® Mini Cord Sets
	Engine Test	• DIN Connectors
	Palitizers	• High Temp Mini, Micro & DIN Cord Sets
		• Resistive Thermal Device (RTD) Assemblies
		• Custom Engineered Assembly Solutions

TPC Products Solve Problems in Automotive Applications (continued)

ASSEMBLY		
AREA	APPLICATIONS	TPC PRODUCTS
Trim / Chassis / Final	Elevators / Skillet System AGVs	<ul style="list-style-type: none"> • Super-Trex® Power Cable • Super-Trex® Reduced Diameter Control Cable • Super-Trex® (500 MCM / 350 MCM) Power Cable • Trex-Onics® Overall Shielded C-Flex Multi-Conductor Cable • Micro Cord Sets • Super-Trex® & Trex-Onics® VFD Cable • Trex-Onics® Servo Motor Cable • Trex-Onics® Shielded Cables • Lift Assist • Overhead Loaded Cable Carrier Systems • Micro / Mini Cord Sets • <i>Custom Engineered Assembly Solutions</i>
	Prox Switch, Photo Eyes	
	Hand Tools	
	OBD Test Assembly	
	Drive System	
	Master Power Distribution Drop	
	Festoon Systems	
	Door System Test	
	Fill Line Gas Fill, Radiator Fill, Air Conditioning Fill, Brake Fill	

STAMPING / BODY (WELD)		
AREA	APPLICATIONS	TPC PRODUCTS
Stamping	Bolster Cables	<ul style="list-style-type: none"> • Super-Trex® Multi-Conductor P&R Cable • Super-Trex® Reduced Diameter Control Cable • Custom Bolster Cable • Trex-Onics® Overall Shielded C-Flex Multi-Conductor Cable • Trex-Onics® Industrial Ethernet Cables • DC Micro Cord Sets • Super-Trex® Power Cables • Multi-Run Cable Assemblies • Trex-Onics® Device-Net™ Flex-Net™ Cable • Trex-Onics® High-Flex Ultra-Coil Retractable • Retractable Quick-Connects™
	Cable Carriers	
	Reeling Systems	
	Shorting Plugs for Safety Gates	
	Press to Control Panels	
	Die Power & I/O	
	Retractable Cords	
	Material Handler Cable Carrier	
Die Shop	Portable Power	<ul style="list-style-type: none"> • Super-Trex® Ultra-Gard Portable Cords • Cable Stripper • Super-Trex® Welding Cable
	Hand Tools	
Body (Body Weld)	Weld Cable Assemblies	<ul style="list-style-type: none"> • Trex-Onics® High-Flex Encoder Cable • Portable Power & Automation Cable • Cable Carrier • Super-Trex® & Trex-Onics® VFD Cable • DIN Cord Sets • Robot Dress Pack • <i>Custom Engineered Assembly Solutions</i>
	7-Axis Robot	
	Weld Cell	
	Robot Power Control	
	Tool Changer	

TPC Products Solve Problems in Automotive Applications (continued)

PAINT		
AREA	APPLICATIONS	TPC PRODUCTS
Paint Shop	Phosphate Wash	<ul style="list-style-type: none">• IP69K & Chemical Resistant Cables• Grounding Cable• Power & I/O Cable• High Temp. Micro & Mini Cord Sets• Chem-Gard Shielded / Unshielded Cables• Thermo-Trex® Cord Sets• Trex-Onics® Industrial Ethernet Patch/Work Area CAT7A• Super-Trex® Power Cables• Trex-Onics® & Super-Trex® Control Cables• Class I Div. I Connectors• Thermo-Trex® High Temp Cable• Thermocouple Extension Wire• Aluminum Pendant Box Assembly• Trex-Onics® High-Flex Encoder Cable• Custom Engineered Assembly Solutions
	Ecoat & Oven (Motors & Drives, Lights)	
	Sealing & Oven	
	Primer & Oven (Power for Robots, Drive Systems, Prox Switches, Light Curtains)	
	Plastics (Molding)	



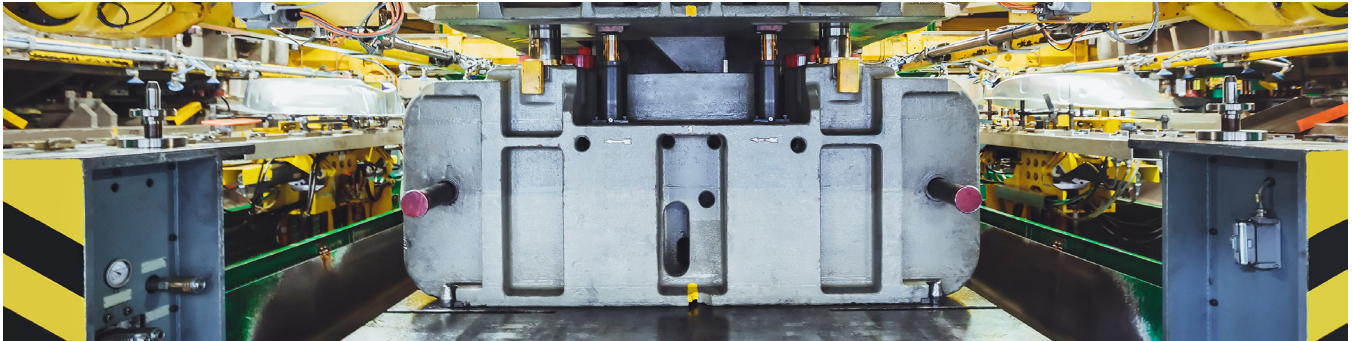
Cable Carriers

TPC delivers solutions that save labor, material, and downtime costs. We understand how important a high-quality cable is to a cable carrier system, and we have decades of experience with continuous systems, piggy-back systems, dual cable carriers, double-stacked cable carriers and more.

The cable package within a carrier system usually makes up the majority of the investment. TPC can provide high-quality, high-flexible cable and integrated chains that are designed for longer-term performance in the automotive plant environment. Upon careful consideration of your carrier dimensions, clearance, travel orientation, bracket configuration and other variables, TPC will design and deliver a complete system that arrives ready for installation, saving you additional labor and downtime.

Custom Design & Engineering Capabilities

TPC Wire & Cable Corp. offers custom-engineered products that are designed using specific application and environmental information and built to solve a particular problem for the individual customer. These product solutions represent a unique and valuable service offered by TPC, whose engineers are experienced in the electrical, mechanical, chemical, and industrial engineering disciplines. TPC engineers assemble the critical components of your cable into a final design that delivers a longer-lasting, cost-effective alternative to the constant replacement of ordinary cable.



Automotive Stamping Plant Boosts Production & Eliminates Failure with Custom Bolster Cable

Problem

A large vehicle manufacturing plant in Kentucky was replacing bolster cable on its stamping press every 10-11 months due to failure. The inner conductors would fatigue, deteriorate, and ultimately fail from constant environmental pressures that included flexing, motion, and tension. In addition, the outer jacket was being abraded and cut by metal scrap in the area. Over the course of 32 months, the failures added up to \$12,767 in product and labor expenses plus, as a result, the application was down for 53 hours total during that time period.

Solution

The customer's TPC representative worked with TPC's in-house engineering team to develop a custom solution stemming from the Trex-Onics® product line designed for continuous flexing applications in harsh environments. The cable featured an aramid fiber braid embedded into the jacket to add 1,800 lbs tensile strength as well as tinned copper conductors that lengthen flex life in flexing and twisting applications. A polyurethane jacket also served as a superior first line of defense by providing heavy-duty abrasion resistance.

Result

Checking in on the application 32 months after installation, it was determined that the custom bolster cable still had not yet required repair or replacement. The total cost for product & labor to implement the solution amounted to just \$5,145, saving the customer \$7,622 and allowing the plant to increase production time by 37 hours.

Source: TPC Cost Value Analysis Report #3146



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