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## Weld-In Front Frame Clip and Suspension for 1964-1970 Mustang



### The Most Complete Subframe System

Total Control Products front subframe clip is a direct-fit, high-performance suspension solution designed for 1964-1970 Mustangs, featuring a factory-welded subframe with g-Machine double A-arm, rack-and-pinion crossmember. The system deletes the original shock towers opening up the engine bay to accept bolt-in installation of all popular early- or late-model engines including Ford Coyote and Chevy LS-Series. With the broadest selection of supporting suspension, steering, and brake components, the TCP frame clip system is the most highly configurable system available. Custom-tailored performance and prices levels that fit the needs of your project. Visit the TCP website and E-store for realtime price quotes.



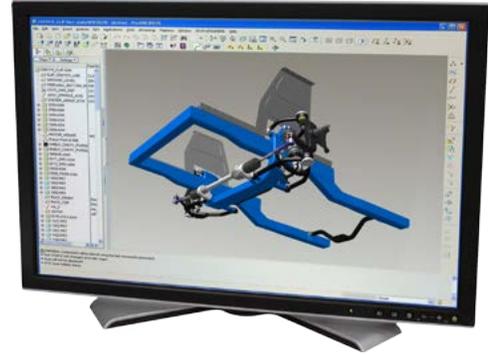
## Precision-Fit Quality Through Advanced Technology

One of the key pieces of advanced technical equipment used in development of our vehicle-retrofit component systems is the FaroArm portable coordinate-measuring machine. The FaroArm is an articulating, multi-segmented arm that enables

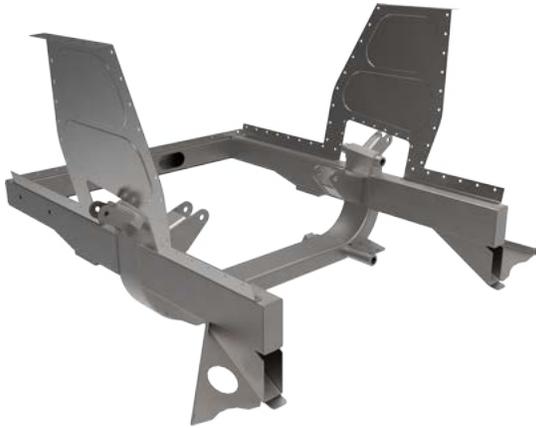


precise three-dimensional digitization of vehicle surfaces and mounting points, accurate to within .003". To begin, multiple identical vehicles are extensively measured to find the OEM tolerance range we must accommodate in our final design. From these scans, an exact model of the vehicle chassis is created in our Pro/ENGINEER software. Engineers can then accurately and efficiently design systems, simulate movement or conditions,

and conduct finite element analysis (FEA) testing to optimize performance and durability before physically making any parts. Manufacturing fixtures and tooling are also based on the original vehicle scans, avoiding loose tolerances of transferred prototype dimensions and ensuring the quality and ease of fit of the final product.



## Firewall-Length Subframe Clip

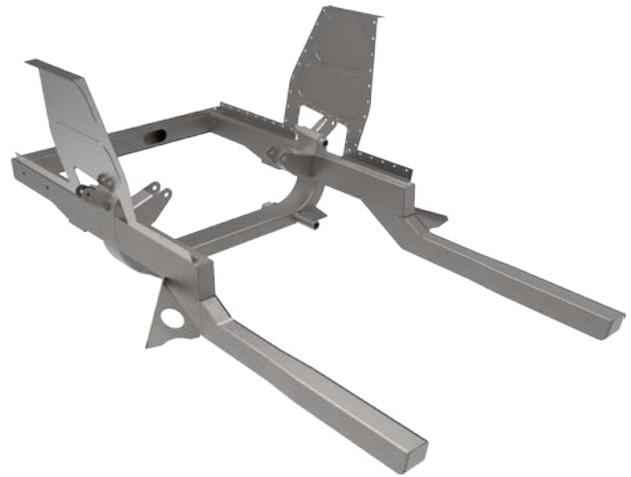


Chassisworks-assembled frame clip inserts and welds into factory frame-rail bulkhead. Select this option if OEM subframe rails are in good condition and vehicle is primarily used for street and mild performance applications.

TCP KCFT	Firewall-length subframe clip welded assembly for tubular anti-roll bar
TCP KCFA	Firewall-length subframe clip welded assembly for splined-end anti-roll bar



## Full-Length Subframe Clip



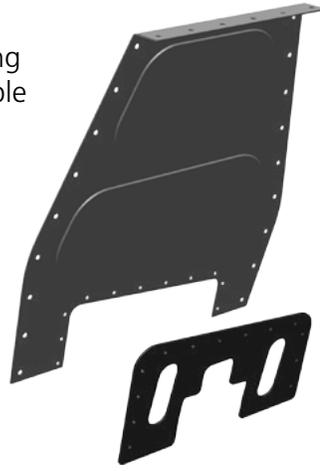
Fully boxed rails with heavier wall thickness provide a more rigid structure. Recommended for high-performance, high-horsepower builds. Combine with TCP g-Connector subframe system to create a tubular structure that extends to the rear suspension.

TCP KCST	Full-length subframe clip welded assembly for tubular anti-roll bar
TCP KCSA	Full-length subframe clip welded assembly for splined-end anti-roll bar



## Shock Tower Deletes

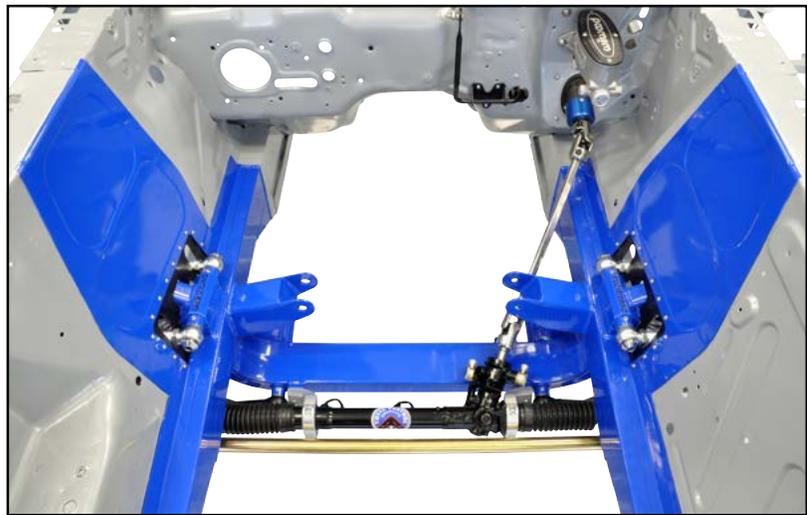
A common obstacle when working on or swapping to a more desirable powertrain combination are the factory shock towers. Each frame clip includes a pair of recessed-pocket steel delete panels with rubber splash flaps. Panel edges are pre-drilled for rosette welding to factory inner fenders and securing splash flaps with included hardware.



TCP JA1	1964-66 Mustang tower delete panels
TCP JA2	1967-70 Mustang tower delete panels
TCP JC1	1964-66 Mustang inner fender splash flaps

## Engine Mounts

The significant increase in engine bay space make room for most engine choices. Straight-forward, simple bolt-in installations are accommodated by our poly-bushed steel mounts for popular early- and late-model Ford and GM engines.



### Ford - Small Block

260, 289, 302, 351W, 351C



### Ford - SB Adjustable

260, 289, 302, 351W, 351C



### Ford - FE Big Block

390, 427, 428



### Ford - Modular

Coyote, V8 Modular

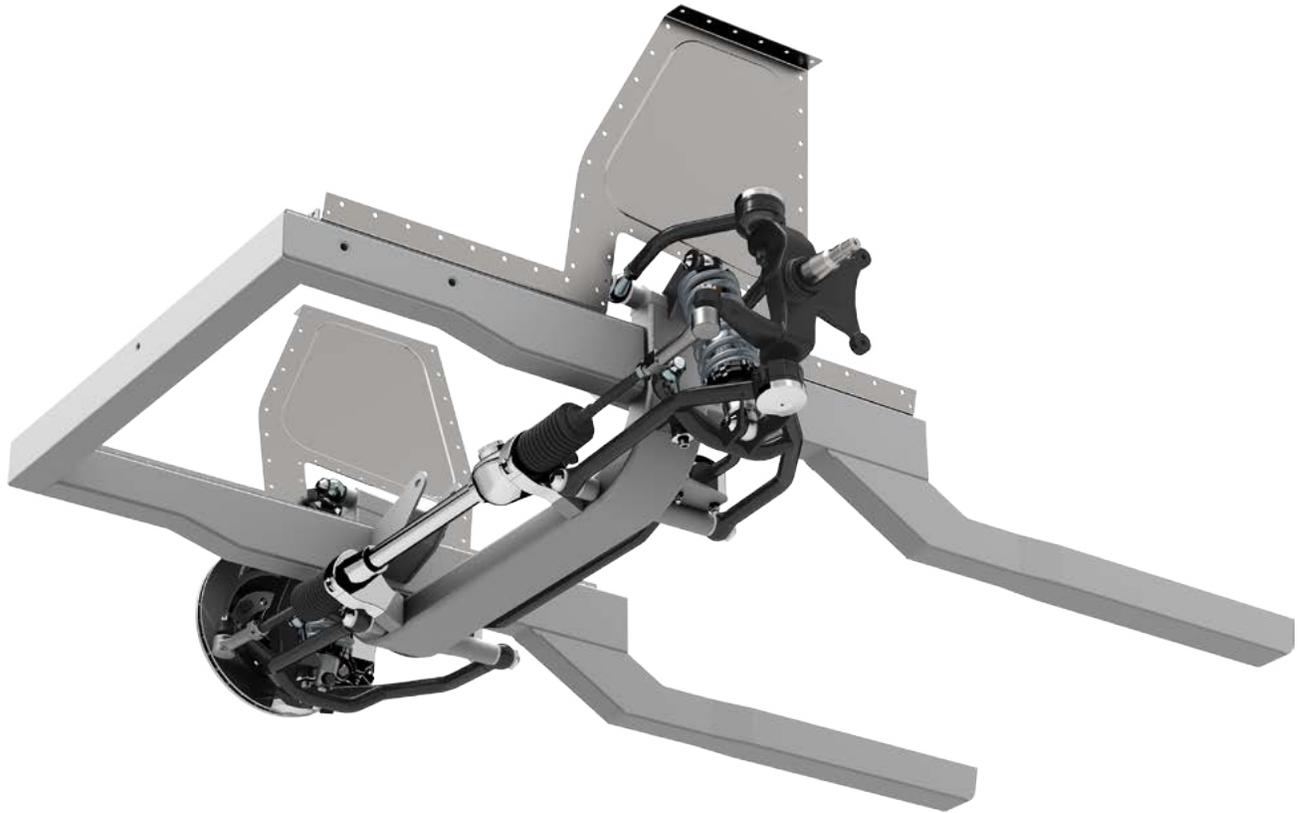


### Chevrolet - V8

Small Block, Big Block



### Chevrolet - LS-Series



### Single-Piece 4 x 2" Crossmember

Bent-tube, billet-component crossmembers are a completely closed, rigid structure with greater strength and resistance to bending and twisting than other designs. Formed from a single piece of 4 x 2 x .120" steel tubing, large-radius mandrel bends are placed at each end to distribute loads throughout the crossmember, eliminating fatigue points at critical areas. Slots for the billet-mount tabs are machined in a horizontal machining center with dedicated fixturing to guarantee correct component geometry that ensures the suspension moves as designed.



Locating features are machined into each crossmember to enable self-positioning of billet components.

### Interlocking-Slot-Tab Technology

Self-ixturing female slots used with machined male tabs provide an interlocking assembly method that enables A-arm, rack and pinion, and shock mounts to be accurately positioned in all axes. This guarantees the suspension will perform as designed. Non-interlocking designs are not nearly as accurate after welding. Our superior spray-arc welding process produces the best weld penetration with excellent appearance.



Billet rack-and-pinion mount bases insert into the machined crossmember slot.

## Steering Components

### Manual Rack and Pinion

(Left Hand Drive - USA, Europe)

Billet-aluminum construction available in brushed or polished finish.

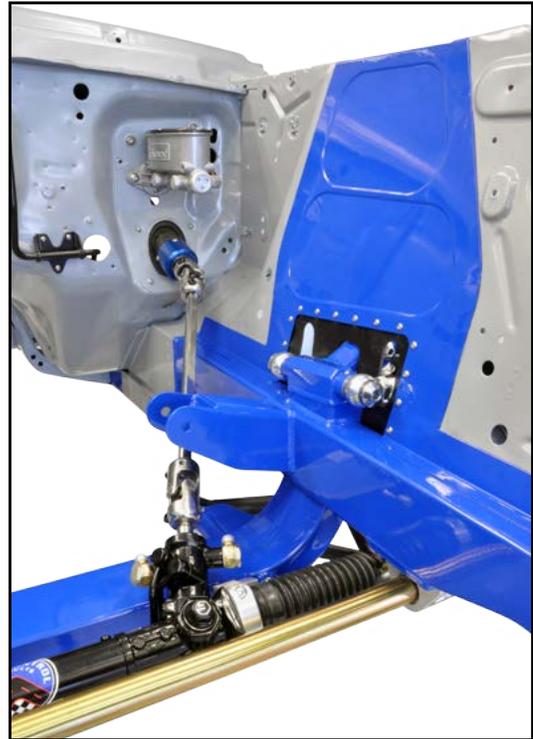


### Power Rack and Pinion

(Left Hand Drive - USA, Europe)

(Right Hand Drive - Australia, New Zeland, U.K., Japan)

Specific-configuration steel-body rack with rotatable banjo fitting; black finish.



### Billet Rack Mounts and Clamps

Billet steel rack mounts using dual slot-tab technology form an interlocking bridge between the 4 x 2" crossmember and billet aluminum rack brackets. The angled mount fixture welds to a 4 x 2" crossmember, attaching to the rack body at the widest points. This allows positioning of the rack above the bottom of the crossmember, safe from road hazards. Billet aluminum rack clamps attach into interlocking grooves in the rack gearbox, preventing flex in hard cornering unlike rubber-mounted designs. This also allows rotation of the input shaft to aid steering-shaft installation around engine obstacles and the exhaust system



Slot-Tab Technology, Interlocking Joint



Pinion Rotated **Up**



Pinion Rotated **Down**

## Wheel and Tire Clearance

The inner fender panel and outside fender are in the exact same position as stock. Any tire and wheel width combination that fits the stock car will fit with our clip. Contact your wheel manufacturer or supplier to verify what wheel and tire sizes fit your car. The TCP front clip hub-to-hub width differs depending upon suspension and brake choice, so wheel offset must be adjusted accordingly.

## Benefits of Increasing Hub Width

- Decreased scrub radius; tire pivots about its center
- Reduced steering effort
- Less weight jacking effect
- Improved suspension geometry (Wide Track Arms)

### 1965-1966 Mustang

Brake Kit	Clip	Hub Width	Change (per side)
Stock Drums	Stock	56-3/4"	0"
8319, 8387, 8388, 8389	TCP	57-3/4"	+1/2"
8320, 8322, 8323, 8324, 8336	TCP	59"	+1-1/8"
8377, 8378 (wide-track arms)	TCP	62"	+2-5/8"

### 1967-1970 Mustang

Brake Kit	Clip	Hub Width	Change (per side)
Stock Drums	Stock	58-3/4"	0"
8319, 8387, 8388, 8389	TCP	57-3/4"	-1/2"
8320, 8322, 8323, 8324, 8336	TCP	59"	+1/8"
8377, 8378 (wide-track arms)	TCP	62"	+1-5/8"

## Steering Shaft Components

A selection of hardware component kits are available to complete installation with OEM or aftermarket steering columns. Kits include replacement OEM shaft, floor mount with rubber gasket, column roller bearing, intermediate steering shaft, and universal joints.



## Components for Factory Columns

Vehicle specific installation kits are available for use of factory or aftermarket steering columns.

Non-collapsible steering columns were in use from 1960 through early 1967. Most vehicle's column tube and steering shaft were supported directly by the steering box. Rack installation requires the column tube be shortened, steering shaft replaced and the addition of a firewall mount. The remaining early 1967 vehicles featured a shortened column tube, factory firewall mount and rag-joint but remained non-collapsible. These applications are supplied a correct length steering shaft with roller bearing assembly (Photo 1) and pivoting firewall mount with factory seal (Photo 2). Non-collapsible tilt or swing-away columns must upgrade to factory collapsible or aftermarket columns.

Late 1967 through 1970 steering columns feature a slip-fit collapsible steering shaft and can be identified by measuring the 1" diameter shaft above the rag-joint. A replacement lower slip shaft, roller bearing assembly and firewall seal (Photo 3) is provided.

All installations also receive an intermediate steering shaft kit with needle bearing universal joints. Various u-joint sets are available to accommodate major aftermarket column manufacturers and high-misalignment applications (Photo 4).



Photo 1



Photo 2

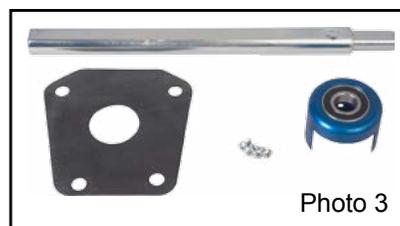


Photo 3

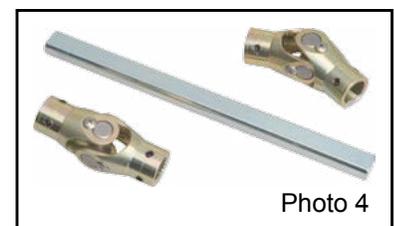


Photo 4

## Aftermarket Tilt Columns

Aftermarket, five-position, tilt steering columns are optional with the rack and pinion package. Column lengths are specific to our rack and pinion installation and provide improved universal joint alignment compared to competitors aftermarket columns. All columns have the stock Ford steering wheel spline, 11/16-36. The

spline at the steering column shaft is 3/4-36. Columns are available in three finishes, paintable, black powder coated or chrome plated. Electrical connectors and floor mounts are also included. Columns can also be purchased separately for use with the rack and pinion call for part numbers.



**Paintable Steel**  
(1964-1966 shown)



**Chrome Plated Steel**  
(1967 shown)



**Black Powder Coat**  
(1968-1969 shown)

Application	Description
1964-1966 Mustang	Paintable Tilt Column Stock Steering Wheel Spline
1967 Mustang/Cougar	Paintable Tilt Column Stock Steering Wheel Spline
1968-69 Mustang/Cougar	Paintable Tilt Column Stock Steering Wheel Spline
OPTIONS	Black Powder Coated
	Chrome Plated
Note	Aftermarket columns are not compatible with Rally-Pac gauge pod.

## Suspension Systems

Five-different base suspension and steering systems are offered with a variety of options from which to choose. Detailed option selectors are viewable online by adding to your shopping part.

TCP KS4	<b>Ultimate Pro-Touring</b> - gStreet wide-track suspension with billet-aluminum large-unit-bearing hub, remote-reservoir 4-way coil-over option. multiple brake options
TCP KS3	<b>g-Machine System</b> - g-Machine suspension with sculpted spindle, multiple brake options
TCP KS2	<b>Restomod System</b> - Street Machine stainless or black arms with sculpted spindle, multiple brake options
TCP KS1	<b>Value System</b> - Street Machine arms with sculpted spindle, multiple brake options
TCP KS5	<b>Drag Race System</b> - Street Machine arms with fabricated spindle, multiple brake options

### Ultimate Pro-Touring System



### g-Machine System



### Restomod System



### Value System



### Drag Race System



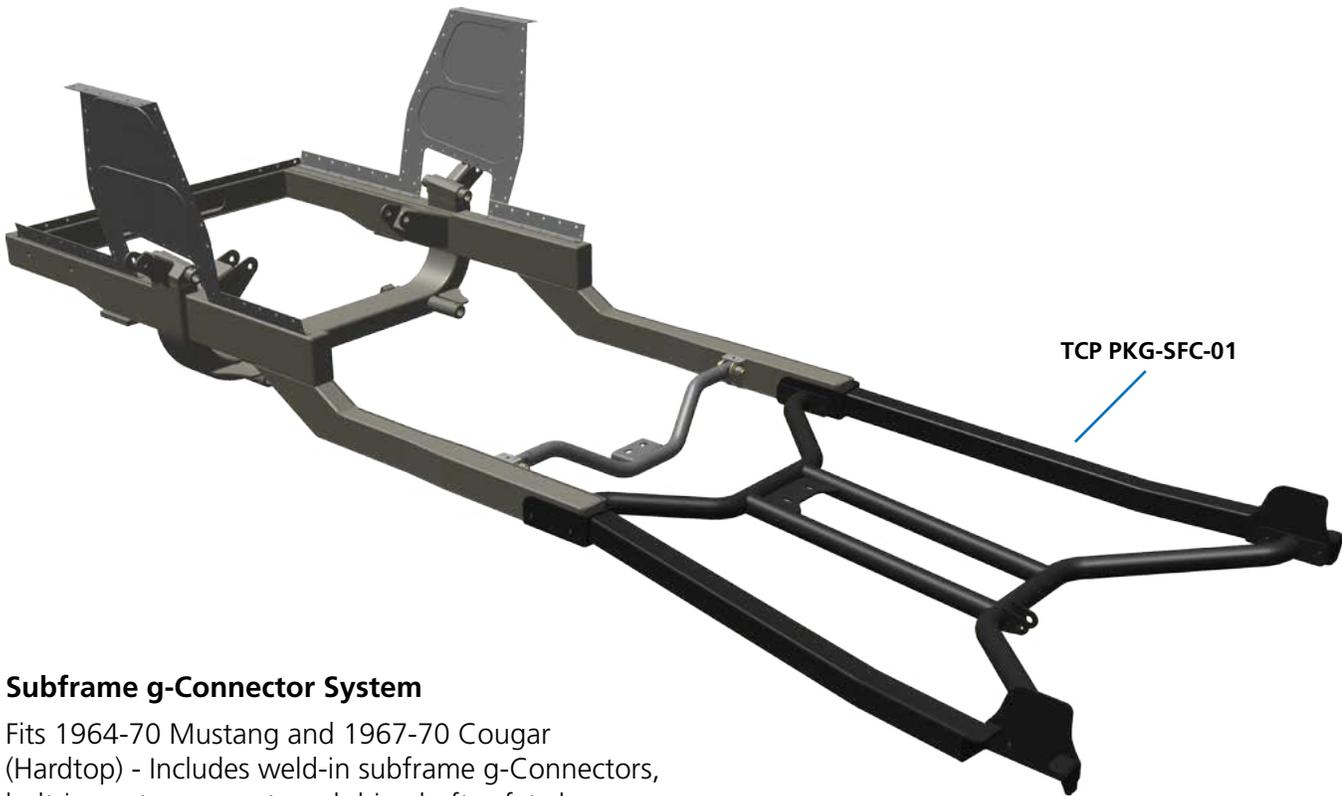
## Related Products

### Late Ford Transmission Adapter

Adapter allows use of late model Ford transmission with horizontal plane transmission crossmember; urethane mount included.

### Weld-In Transmission Crossmember

One and one-quarter inch bent crossmember allows drop and fore/aft position to be adjusted for best fit with non-standard engine and transmission swaps.



### Subframe g-Connector System

Fits 1964-70 Mustang and 1967-70 Cougar (Hardtop) - Includes weld-in subframe g-Connectors, bolt-in center support, and driveshaft safety loop. Fits completely under floor with mounts for optional center support and driveshaft loop.

All prices subject to change. Current pricing available at [www.totalcontrolproducts.com](http://www.totalcontrolproducts.com).



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