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Weld-In Front Frame Clip and Suspension for 1960-1965 Falcon, Comet and Ranchero



The Most Complete Subframe System

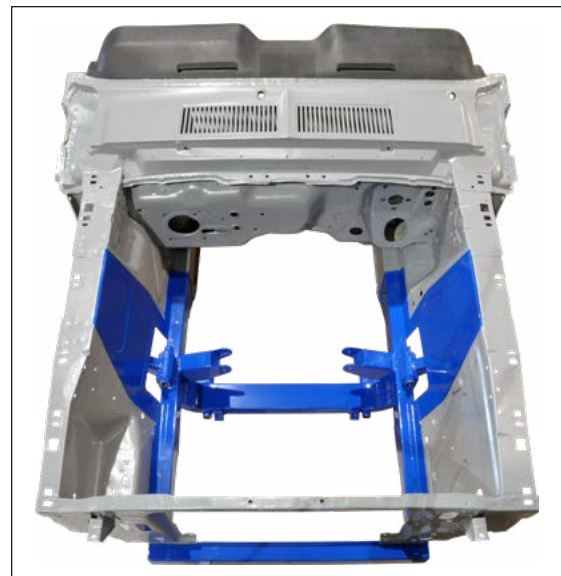
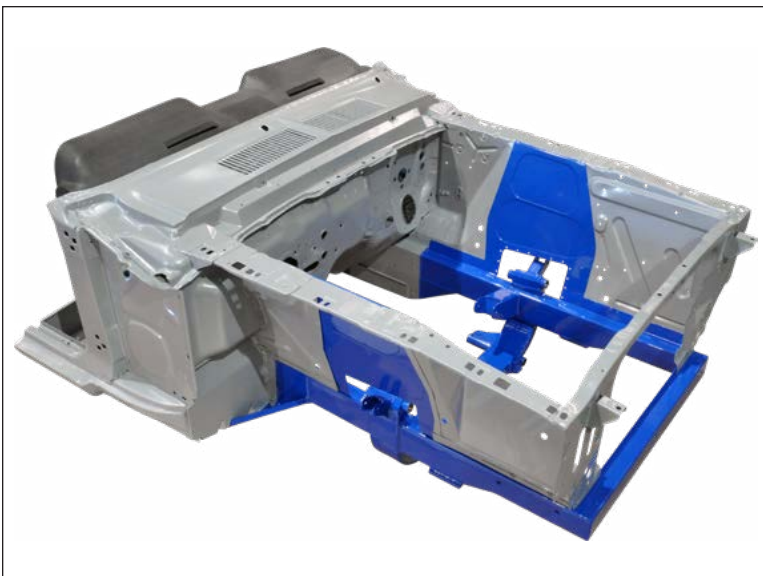
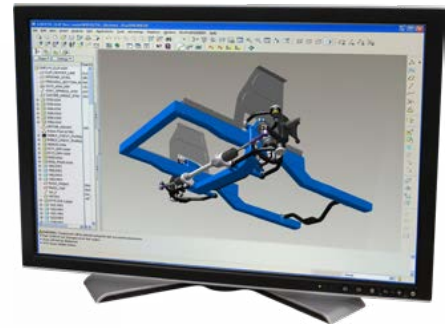
Total Control Products offers a direct-fit, high-performance front subframe clip and suspension system designed for 1960-1965 Falcon, Comet, and Ranchero vehicles. The system features a factory-welded subframe with tubular, double A-arm suspension and rack-and-pinion crossmember, eliminating the original shock towers to create more space in the engine bay. The versatile system accommodates a wide range of engine choices 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. An excellent solution for those looking to enhance their classic vehicle's performance and handling.

- Direct-fit, high-performance suspension solution
- Factory-welded subframe with g-Machine double A-arm and rack-and-pinion crossmember
- Shock tower deletion, creating more engine bay space for various powertrain combinations
- Compatible with early- and late-model Ford and GM engines
- Highly configurable suspension system options
- Allows for staged budgeting and installation flexibility

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.



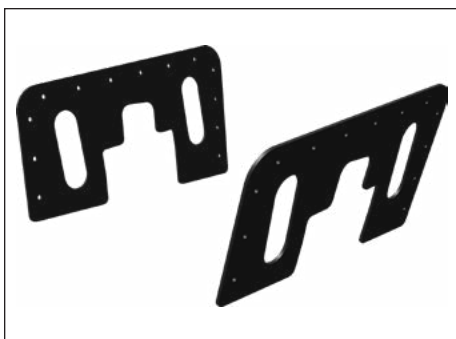
Welded Subframe Clip

The welded subframe clip is available to purchase ahead of the suspension, steering and brakes. This allows staging the budget for the build as the subframe can be installed prior to paint and body work.

Wheel and Tire Clearance

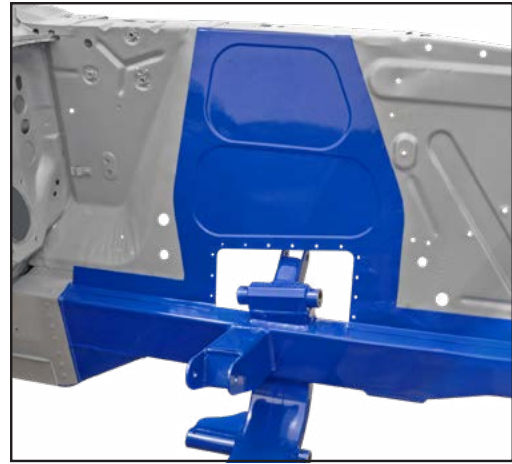
The inner fender panel and outside fender are in the exact same position as stock. Any tire and wheel width combination that fits the stock car will fit with our clip. Contact your wheel manufacturer or supplier to verify what wheel and tire sizes fit your car. The TCP front clip hub-to-hub width differs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

TCP KCFT5	Subframe clip for rear-mounted tubular anti-roll bar			
TCP KCFA5	Subframe clip for front-mounted splined anti-roll bar			
OPTIONS				
Motor Frame Mounts	Ford	Small-block, big-block		
		Coyote, Modular		
	Chevrolet	LS, SB, BB		
	Omitted	For custom or motor-plate installation		
Engine Side Mounts	Ford	Coyote, Modular	Fixed	Steel
		260, 289, 302	Fixed	Steel
			Adjustable	Steel
		351W	Adjustable	Steel
		Big Block (FE)	Fixed	Steel
	Chevrolet	LS	Fixed	Aluminum
			Fixed	Steel
		SB, BB	Fixed	Aluminum
Fixed			Steel	
	Omitted	For custom or motor-plate installation		
Add-Ons	Subframe extensions, rubber splash flaps			

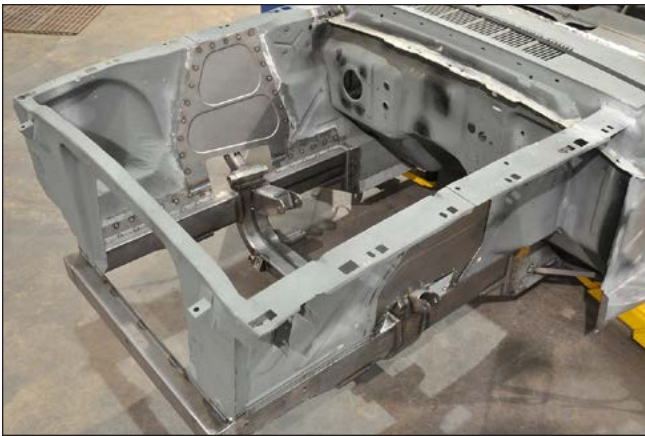


Shock Tower Deletes

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 offered as an option. Panel edges are pre-drilled for rosette welding to factory inner fenders and securing splash flaps with included hardware.



TCP JA3	1960-65 Falcon tower delete panels
TCP JC1	inner fender splash flaps



Oil Pan Fitment and Notes

Ford 289/302	Use Ford Performance oil pan kit #M-6675-A50. 5.0L oil pan kit. Includes rear sump oil pan, dipstick, dipstick tube, pickup and main cap stud. Ideal for engine swaps. NOTE: Does not have provision for low oil sender. Fasteners not included. Directly fits 1983-2001 production blocks only. Blocks prior to 1982 require modification to incorporate dipstick receiver (Canton 20-850 or 20-854).
Ford 351W	Use Ford Performance oil pan kit #M-6675-A58. 351W/5.8L oil pan kit. Includes rear sump oil pan, dipstick, dipstick tube, pickup and main cap stud. Ideal for engine swaps. Fits 1969-1997 production blocks. Fasteners not included.
Ford 351C	Requires custom oil pan.
Ford 390/428	Requires use of custom pan with external oil pump or drysump. Visit www.aviaid.com for product options.
Ford MOD/ Coyote	Most Mustang OEM oil pans clear front crossmember. Must use front-mounted (splined) anti-roll bar. Modular Motor & 5.0L & 5.2L Mustang Coyote 2011-2016.
GM LS-Series	Requires custom oil pan.

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.

TCP MM-C1S	Ford	260, 289, 302	Steel
TCP MM-C2S	Ford	390, 427, 428 - FE	Steel
TCP MM-C3S	Ford	Coyote, V8 Modular	Steel
TCP MM-C4S	Ford	260, 289, 302 - (adjustable)	Steel
TCP MM-C5S	Ford	351W, 351C - (adjustable)	Steel
TCP MM-C6A	Chevy	LS-series	Aluminum
TCP MM-C7A	Chevy	V8 side mount	Aluminum
TCP MM-C8S	Chevy	LS-series	Steel
TCP MM-C9S	Chevy	V8 side mount	Steel

FORD - Adjustable Position, Steel



Small Block Short (TCP MM-C4S)
Fits: 260, 289, 302



Small Block Tall (TCP MM-C5S)
Fits: 351W, 351C

FORD - Fixed Position, Steel



Small Block Short (TCP MM-C1S)
Fits: 260, 289, 302



FE Big Block (TCP MM-C2S)
Fits: 390, 427, 428



Modular-Coyote (TCP MM-C3S)
Fits: Modular, Coyote 2011-2016

CHEVY - Fixed Position, Steel



LS Series (TCP MM-C8S)
Fits: All LS style engines



Chevy V8 (TCP MM-C9S)
Fits: All big- and small-block engines

CHEVY - Fixed Position, Aluminum



LS Series (TCP MM-C6A)
Fits: All LS style engines



LS Series (TCP MM-C7A)
Fits: All LS style engines

Suspension Systems

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

Ultimate Pro-Touring System



g-Machine System



Restomod System



Drag Race System



Ultimate Pro-Touring System (TCP KS4)

Suspension Components



- CONTROL ARMS:**
- gStreet style
 - Wide-track geometry



- SPINDLES:**
- Billet aluminum
 - Unit-bearing hub
 - Centerlock option



- ANTI-ROLL BARS:**
- 1-1/4" splined bar
 - Adjustable rate



- TOOLS:**
- Shock simulators

Shock Absorbers



- COIL-OVERS:**
- Single or double adjustable
 - 500 to 750 lb/in



- QR4 COIL-OVERS:**
- 4-way adjustable
 - Remote reservoir
 - Reservoir mounts



- AIR-SPRING SHOCKS:**
- Single or double adjustable



- SHOCK HARDWARE:**
- Grade 8 hex head
 - Stainless spuds

Steering



- POWER RACK:**
- Left-hand drive (USA)
 - Right-hand drive (AUS)



- TIE RODS:**
- Bump steer kit

Brakes



- 14 x 1.25":**
- Vented iron rotor
 - Billet-aluminum hat and hub
 - 6-piston caliper
 - Black, red, or nickel caliper



- 15 x 1.25":**
- Vented iron rotor
 - Billet-aluminum hat and hub
 - 6-piston caliper
 - Black, red, or nickel caliper

g-Machine System (TCP KS3)

Suspension Components



- CONTROL ARMS:**
- g-Machine style
 - Paintable steel



- SPINDLES:**
- Sculpted style
 - Paintable



- ANTI-ROLL BARS:**
- 1" fixed rate
 - 1-1/4" fixed rate
 - 1-1/4" splined adjustable



- TOOLS:**
- Ball-joint wrench
 - Shock simulators

Shock Absorbers



- COIL-OVERS:**
- Preset, single or double adjustable
 - 500 to 750 lb/in



- QR4 COIL-OVERS:**
- 4-way adjustable
 - Remote reservoir
 - Reservoir mounts



- AIR-SPRING SHOCKS:**
- Single or double adjustable



- SHOCK HARDWARE:**
- Grade 8 hex head
 - Stainless spuds

Steering



- POWER RACK:**
- Left-hand drive (USA)
 - Right-hand drive (AUS)



- TIE RODS:**
- OEM style
 - Bump steer kit

Brakes



- 11-3/4 x .81":**
- 1-piece vented rotor and hub
 - 4-piston caliper
 - Black or red



- 13 x 1.00":**
- Vented iron rotor
 - Billet-aluminum hat and hub
 - 4-piston caliper



- 14 x 1.25":**
- Vented iron rotor
 - Billet-aluminum hat and hub
 - 6-piston caliper

Restomod System (TCP KS2)

Suspension Components



CONTROL ARMS:

- Street Machine style
- Paintable steel



SPINDLES:

- Sculpted style
- Paintable



ANTI-ROLL BARS:

- 3/4", poly-poly
- 1", bearing-poly
- 1-1/4", bearing-poly



TOOLS:

- Ball-joint wrench

Shock Absorbers



COIL-OVER SHOCKS:

- Preset, single or double adjustable
- 500 to 750 lb/in



AIR-SPRING SHOCKS:

- Single or double adjustable



SHOCK HARDWARE:

- Grade 8 hex head
- Stainless spuds



TOOLS:

- Shock simulators

Steering



MANUAL RACK:

- Satin anodized



POWER RACK:

- Left-hand drive (USA)
- Right-hand drive (AUS)



TIE RODS:

- OEM style
- Bump steer kit

Brakes



11-3/4 x .81":

- 1-piece vented rotor and hub
- 4-piston caliper
 - Black or red



13 x 1.00":

- Vented iron rotor
- Billet-aluminum hat and hub
- 4-piston caliper



14 x 1.25":

- Vented iron rotor
- Billet-aluminum hat and hub
- 6-piston caliper

Drag Race System (TCP KS5)

Suspension Components



- CONTROL ARMS:**
- Street Machine style
 - Black or bare arms



- RACE SPINDLES:**
- Fabricated 4130
 - Black



- STREET SPINDLES:**
- Fabricated 4130
 - Black or bare



- TOOLS:**
- Ball-joint wrench

Shock Absorbers



- COIL-OVER SHOCKS:**
- Single or double adjustable
 - 250 to 500 lb/in



- TOOLS:**
- Shock simulators

Steering



- MANUAL RACK:**
- Satin anodized



- TIE RODS:**
- OEM style
 - Bump steer kit

Brakes



- 11-3/4 x .35":**
- Slotted rotor
 - Billet-aluminum hub
 - 4-piston caliper



- 11-3/4 x .81":**
- 1-piece vented rotor and hub
 - 4-piston caliper
 - Black or red

Control Arms

Street-Machine Arms

- Street and drag race performance applications
- Adjustable upper control arm
- Low-friction, deflection free polymer pivots
- Heavy-duty screw-in ball joints
- Mandrel-bent 7/8" and 1" mild-steel tubing

6171	Street-Machine Upper Arms, bare steel
6172	Street-Machine Lower A-Arms, bare steel



g-Machine Arms

- Street and performance-handling applications
- Rigid triangulated arm brace design
- Upper arm couplers for on-car adjustment
- Low-friction, deflection free polymer pivots
- Heavy-duty screw-in ball joints
- Mandrel-bent 1" and 1-1/4" mild-steel tubing

6152	g-Machine Upper Arms, bare steel
6153	g-Machine Lower A-Arms, bare steel



gStreet Arms

- Ultimate pro-touring and race applications
- Wide track suspension geometry
- Requires gStreet billet-aluminum upright
- High load capacity pivot ball mechanisms
- Rigid triangulated arm brace design
- Mandrel-bent 1" and 1-1/4" mild-steel tubing

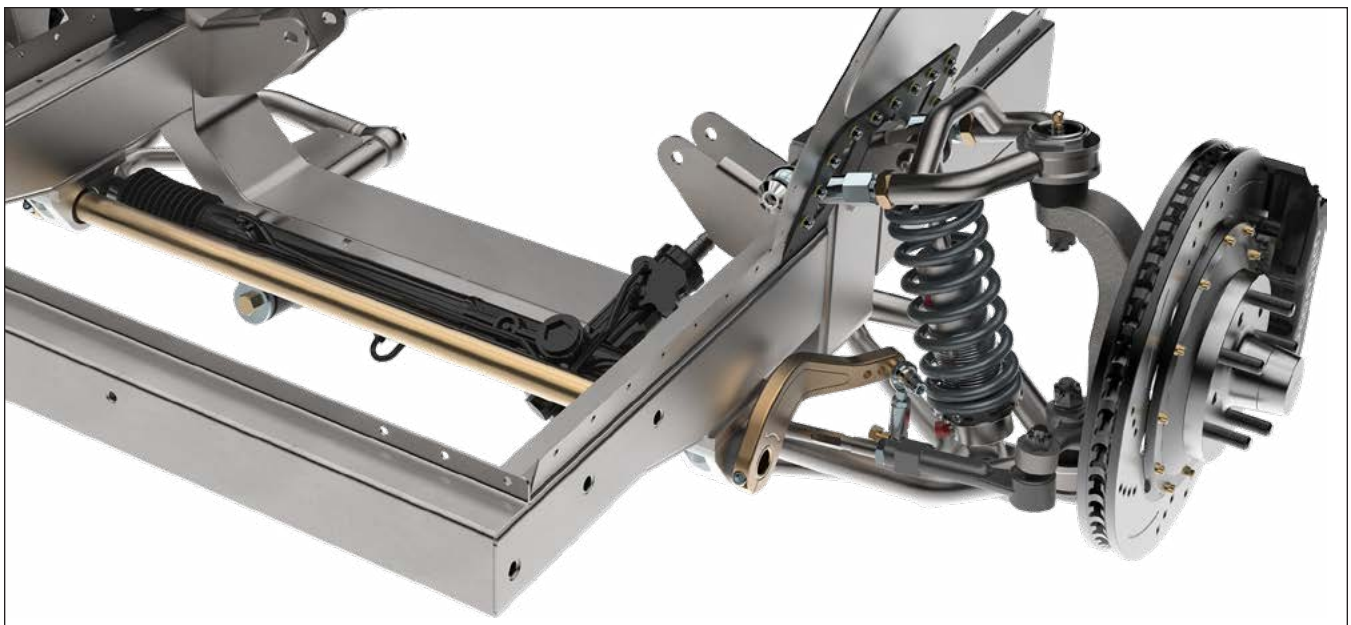
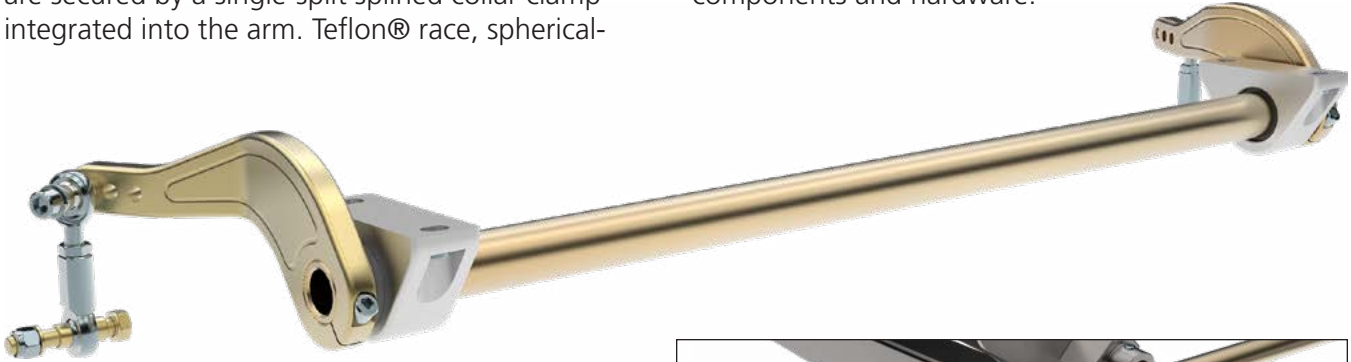
6156	gStreet Upper Arms, matte black
6157	gStreet Lower A-Arms, matte black



Gun-Drilled Splined-End Anti-Roll

Our street/track performance gStreet anti-roll bar offers substantially increased stiffness and flatter cornering over our standard Street-Machine component. Kits are designed for Chassisworks direct-fit frame clips or custom 30", 32" and 33" g-Machine crossmember systems equipped with g-Machine A-arms. Anti-roll bar manufacturing begins with 1.25" OD alloy steel bar, which is then gun-drilled to significantly reduce weight. The billet lever arms feature multiple endlink mounting holes for a total of six different spring rates and are secured by a single-split splined collar clamp integrated into the arm. Teflon® race, spherical-

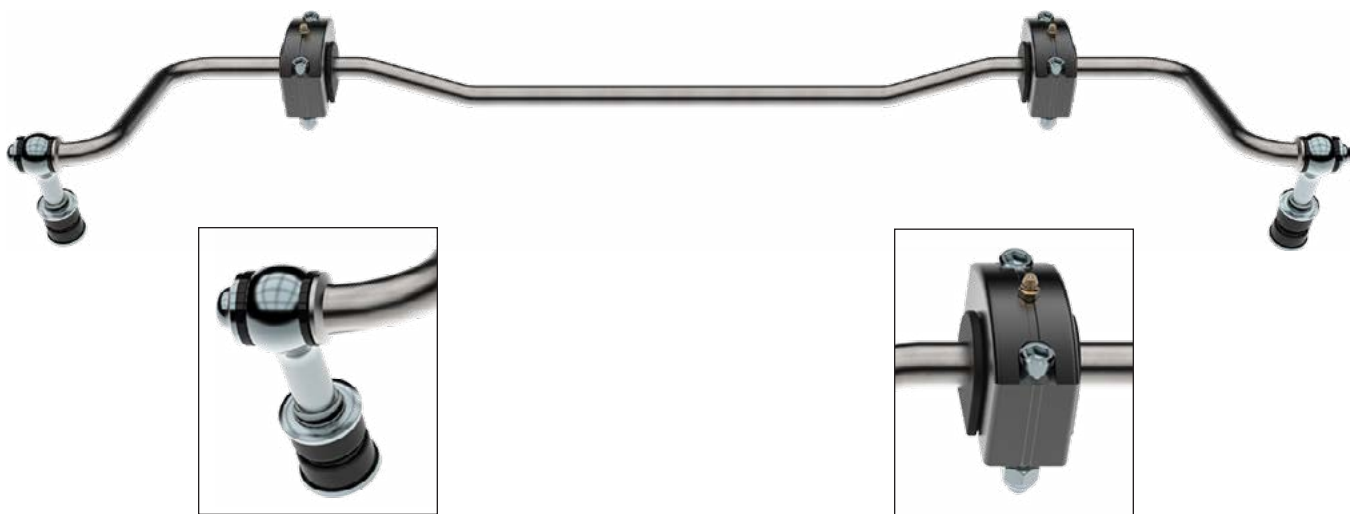
bearing, end-link assemblies create deflection-free pivot points with minimal-resistance and enable the anti-roll bar's effects to be immediate, more linear, and predictable. End-link length is also adjustable to eliminate static preload and ensure balanced handling. Billet aluminum bearing housings mount the anti-roll bar to the factory-welded mounting blocks and are securely held by 3/8" socket-head bolts. Low-friction polymer bearings allow the bar to pivot freely without introducing off-axis free play. Anti-roll bars ship as complete kits with zinc-plated components and hardware.



g-Machine 3/4" Anti-Roll Bar for Street-Machine A-Arms

Suitable for street/strip performance vehicles, our tubular anti-roll bars for g-Machine crossmember systems equipped with Street-Machine A-arms offer increased stiffness with less body roll than standard OEM suspensions. Anti-roll bars are constructed from 3/4" x .120"-wall, 4130 chromemoly tubing with relatively short lever arms to provide large-diameter stiffness and performance in a much smaller, lighter-weight component. To guarantee correct component clearance and end-link geometry, bars are bent on our fully automated CNC bender to precisely fit each of our 15 different-width Street-Machine crossmembers. Threaded

adapters are welded at each end to provide a positive stop for 3/8" button-head bolts and ensure bushings are correctly preloaded. Polished, billet aluminum clamps mount the anti-roll bar to the factory-welded crossmember mounts and are securely held by 3/8" socket-head bolts. End links are a unique, billet steel component with an eye-style upper mount to allow unrestricted bar rotation and a stem-style lower end to better dampen vibration. Graphite-impregnated, black urethane bushings are used throughout to improve lubrication and isolate the anti-roll bar at the frame mounts and end links.



Driver-Side (viewed from rear; frame hidden)



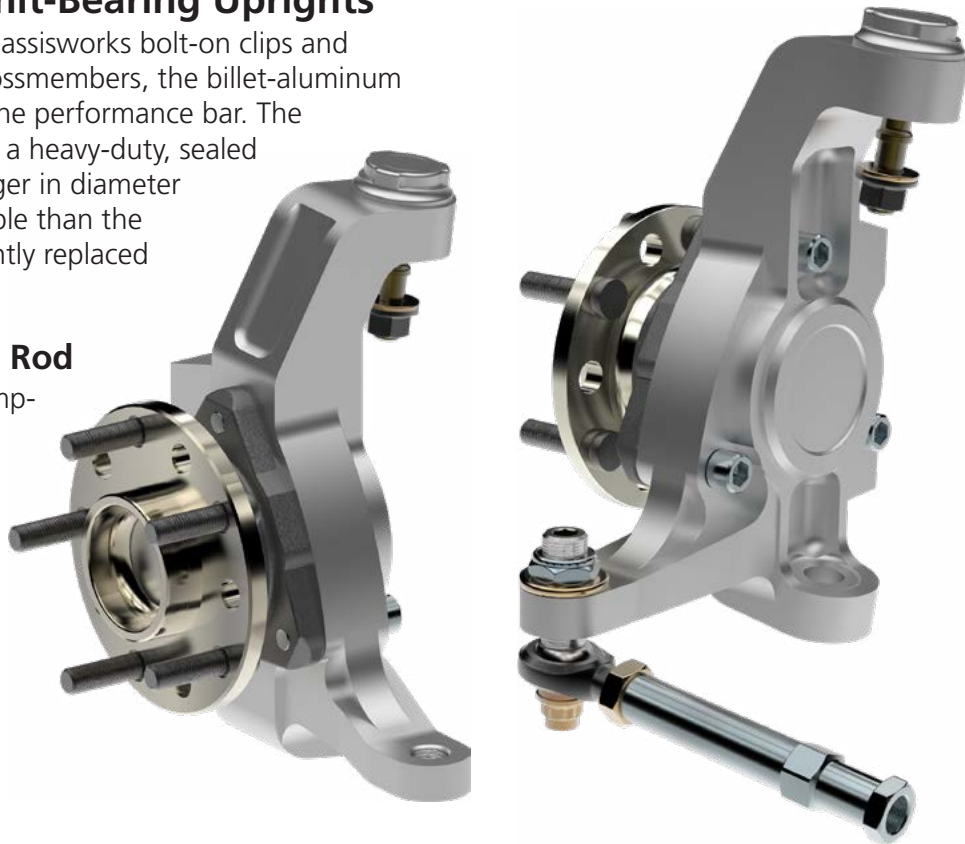
Driver-Side (viewed from front)

Billet-Aluminum Unit-Bearing Uprights

Engineered to work with Chassisworks bolt-on clips and 4x2" weld-in suspension crossmembers, the billet-aluminum unit-bearing upright raises the performance bar. The lightweight upright features a heavy-duty, sealed unit bearing that is both larger in diameter and considerably more reliable than the commonly used and frequently replaced Corvette components.

Bump-Steer Outer Tie Rod

Our infinitely adjustable bump-steer kit with Teflon®-lined 4130 rod end. Utilizing a unique 3/4" threaded stud with locknut, the height of the pivot point can be quickly adjusted without disassembly or hasseling with shim stacks. No other adjustment mechanism is this precise.



- Heat-treated, corrosion resistant pivot stud
- Aluminum cap permits access to joint tension adjustment
- Lightweight billet-aluminum upright
- Integrated caliper bracket mounts
- Unit-bearing hub mounting hardware
- Integrated steering arm
- Threaded adjuster allows infinite adustment without disassembly or the hassle of shim stacks.
- Heavy-duty, sealed, tapered roller bearing hub assembly with precision bearings

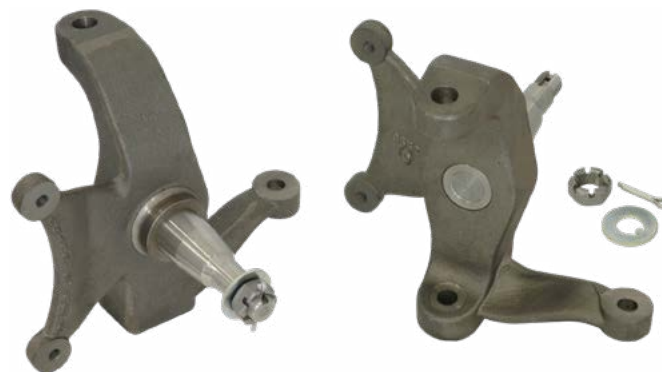
Hub Wheel Mount Options

- 5 on 4-3/4", with 1/2-20 x 2-1/4"-long wheel studs
- 5 on 4-1/2" with 1/2-20 x 2-1/4"-long wheel studs
- Forgeline Center-Lock, standard and short versions



g-Machine Sculpted Spindles

Designed for Chassisworks' g-Machine crossmember system, our sculpted, two-piece spindle provides reliable and predictable performance for everyday street or road-handling use. Spindles feature a 2"-dropped ride height and are taller than commonly used OEM spindles, providing a lower center of gravity and a quicker camber curve for improved cornering traction. High-strength ductile iron, cast exclusively for Chassisworks by a foundry with over 50 years of spindle-making experience, enables excellent strength-to-weight ratio through design flexibility and efficiency not possible with machined or welded designs. Specifically curved surface transitions throughout the integrated steering arm, caliper mount, and upright body were designed using state-of-the-art finite element analysis (FEA) software to eliminate stress concentrations while significantly improving strength and durability. Mounting bosses and tapered bores are machined into the raw spindle castings using our fully automated, CNC horizontal machining



center to ensure spindle geometry is absolutely correct. Spindle axles are machined from special high-strength alloy steel (Tensile 150,000 psi), then inserted into the machined upright forming an inseparable shrink-fit pressed assembly. Recommended brakes for use with sculpted spindles are the vented 11-3/4" heavy-duty, and g-Street 13" or g-Street 14" directional-vane-rotor brake kits. Spindles accept large 1.378"-inner and 0.866"-outer wheel bearings and ship with bare or black-powder-coat finish and necessary hardware.

g-Machine Fabricated Drag Race Spindles

Chassisworks offers an extremely lightweight (6.56 lb), fabricated, chrome-moly spindle for weight-sensitive, drag race g-Machines with a crossmember and skinny tires (not recommended for street use). The use of finite element analysis (FEA) software enabled selective removal of excess material to reduce weight without decreasing strength or reliability. Our final design was first computer stress-tested for durability, then thoroughly physically tested prior to production. Components are CNC-machined with interlocking features, then fixture TIG-welded to ensure broad stable contact surfaces, consistent quality welds, and correct spindle geometry. Spindle uprights are 1-1/2" x .250"-wall chromemoly tubing and provide an extremely rigid and lightweight structural base for the remaining components. Balljoint-boss material thickness is increased at the overhanging end to establish a deeper bore with a larger taper contact area. Steering arms are a stout 1/2" thick with large machined pockets and 1/2" threaded outer-tie-rod hole for use with our threaded-stud bumpsteer kit (6167). The brake caliper mount is integrated into the welded spindle



assembly, simplifying installation and eliminating any additional weight from adapter brackets or hardware. Geometry is borrowed from our performance-bred g-Machine sculpted spindle for proven, responsive, and predictable steering characteristics. Recommended brakes for use with fabricated spindles are unvented 11-3/4" medium-duty or vented 11-3/4" heavy-duty kits. Spindles accept large 1.378"-inner and 0.866"-outer wheel bearings and ship with black-powder-coat finish and necessary hardware.

Brake Kits

Spindle	Rotor	Caliper	Mount	Hub Width	Brake Kit	Change in Hub Width (per side)	
						1960-1963	1964-1965
Drag Race	11-3/4" x .35"	4-piston	Lug	56-1/2"	TCP DB111-XX	0"	-1/2"
Sculpted, Drag	11-3/4" x .81"	4-piston	Lug	56-3/4"	TCP DB122-XX	+1/8"	-3/8"
Sculpted	13" x 1"	4-piston	Radial	58"	TCP DB143-XX	+3/4"	+1/4"
Sculpted	14" x 1.25"	6-piston	Radial	58"	TCP DB175-XX	+3/4"	+1/4"
Billet	14" x 1.25"	6-piston	Radial	59"	TCP DB275-XX	+1.25"	+3/4"
Billet	15" x 1.25"	6-piston	Radial	59"	TCP DB295-XX	+1.25"	+3/4"

Street Machine Sculpted Spindle



TCP DB122-BK
11-3/4" x .81" vented 1-piece rotor with 4-piston caliper; optional red caliper not shown



TCP DB143-BK
13"x 1" vented rotor billet-aluminum hat and hub, with 4-piston radial-mount caliper



TCP DB175-BK
14"x 1.25" vented rotor billet-aluminum hat and hub, with 6-piston radial-mount caliper

gStreet Pro-Touring Billet-Aluminum Upright (Unit-Bearing Hub)



TCP DB275-BK
14" x 1.25" vented rotor with billet-aluminum hat and 6-piston radial-mount caliper



TCP DB295-BK
15" x 1.25" vented rotor with billet-aluminum hat and 6-piston radial-mount caliper



Drag Race 4130 Fabricated Spindle



TCP DB111-BK
11-3/4"x .35" slotted rotor billet-aluminum hat and hub, with 4-piston (Drag race only)



TCP DB122-BK
11-3/4" x .81" vented 1-piece rotor with 4-piston caliper; optional red caliper not shown



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.



Paintable Steel



Black Powder Coat

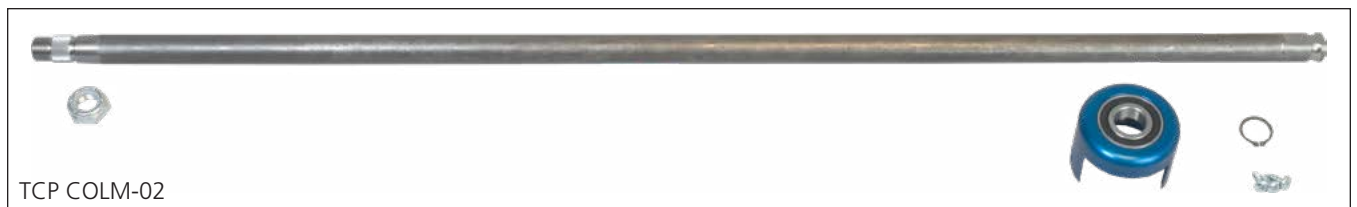


Chrome Plated

1964 Falcon	Column Shift	Paintable	IDT 1130904010
		Black	IDT 1130904051
		Chrome	IDT 1130904020
	Floor Shift	Paintable	IDT 1170904010
		Black	IDT 1170904051
		Chrome	IDT 1170904020
1965 Falcon	Column Shift	Paintable	IDT 1130906010
		Black	IDT 1130906051
		Chrome	IDT 1130906020
	Floor Shift	Paintable	IDT 1170906010
		Black	IDT 1170906051
		Chrome	IDT 1170906020

OEM Column 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.



TCP COLM-02



TCP COLM-05



TCP ISFT-XX

Item	Column		Rack
TCP ISFT-10	Stock	3/4-DD	3/4-36
TCP ISFT-12	ididit	3/4-36	3/4-36
TCP ISFT-14	Flaming	1-DD	3/4-36

Item	Column		Rack
TCP ISFT-11	Stock	3/4-DD	16.8mm-DD
TCP ISFT-13	ididit	3/4-36	16.8mm-DD
TCP ISFT-15	Flaming	1-DD	16.8mm-DD

Complete your Falcon Chassis...

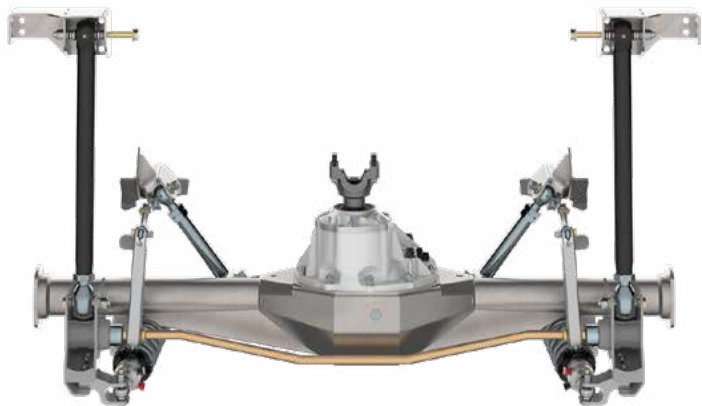
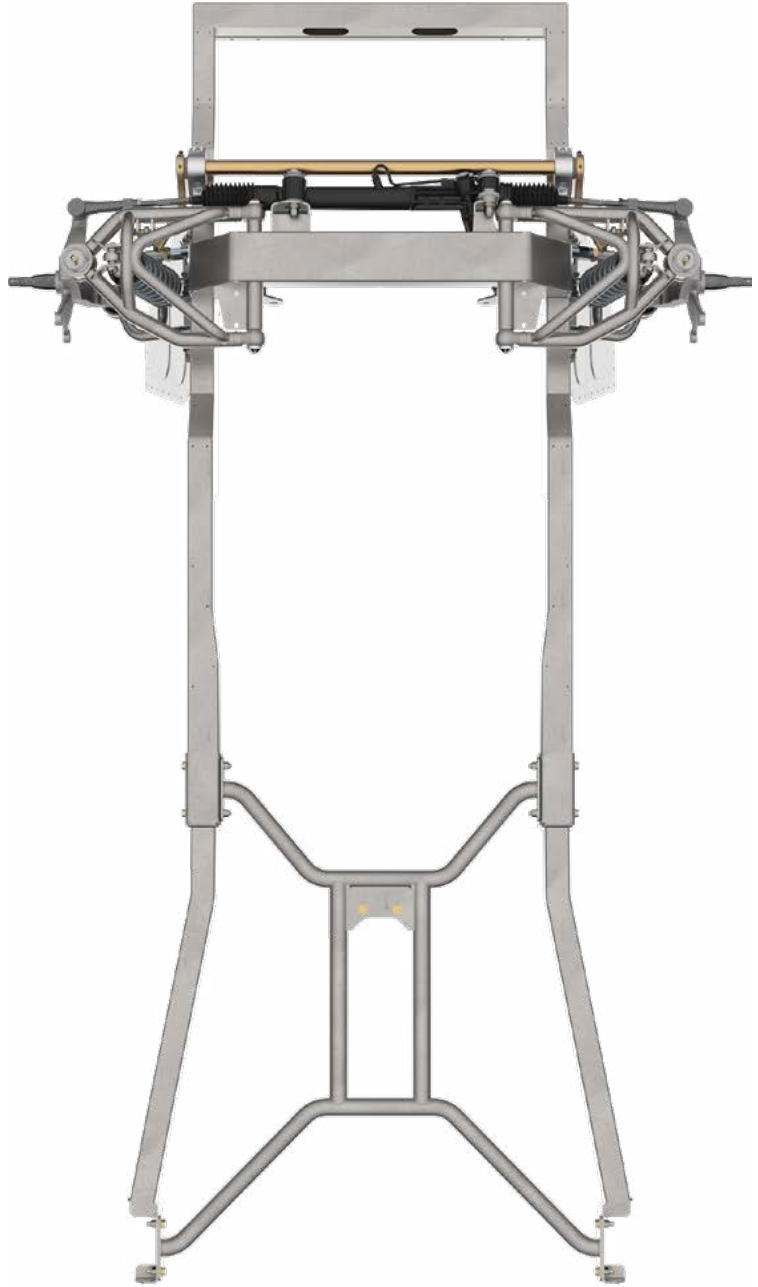
Front Frame Clip



Subframe g-Connector



g-Link Suspension



Notes:



Notes:

All prices subject to change. Current pricing available at www.totalcontrolproducts.com.



Total Control Products
8661 Younger Creek Drive – Sacramento, CA 95828
A Chris Alston's Chassisworks, Inc., Brand

Order: 800-722-2269
Tech: 916-388-0288
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