



1953-1956 Ford Truck Custom IFS

Tech line: 1-855-693-1259 - www.totalcostinvolved.com

Read and understand these instructions before starting any work!

USE THE PARTS LIST BELOW TO MAKE SURE YOUR KIT IS COMPLETE BEFORE INSTALLATION.
IF ANY PIECES ARE MISSING, PLEASE CONTACT: Total Cost Involved Engineering 1-855-693-1259

Front Suspension Installation Instructions

Thank you for choosing TCI Engineering's Custom IFS package. This kit features our custom spindles and geometry for unmatched drivability and performance. This design utilizes a stainless eccentric for easy alignment adjustments and also features our new 1" anti-sway bar which is stiffer than the 3/4" previously offered.

Original Stock Chassis



Custom IFS on Original Stock Chassis

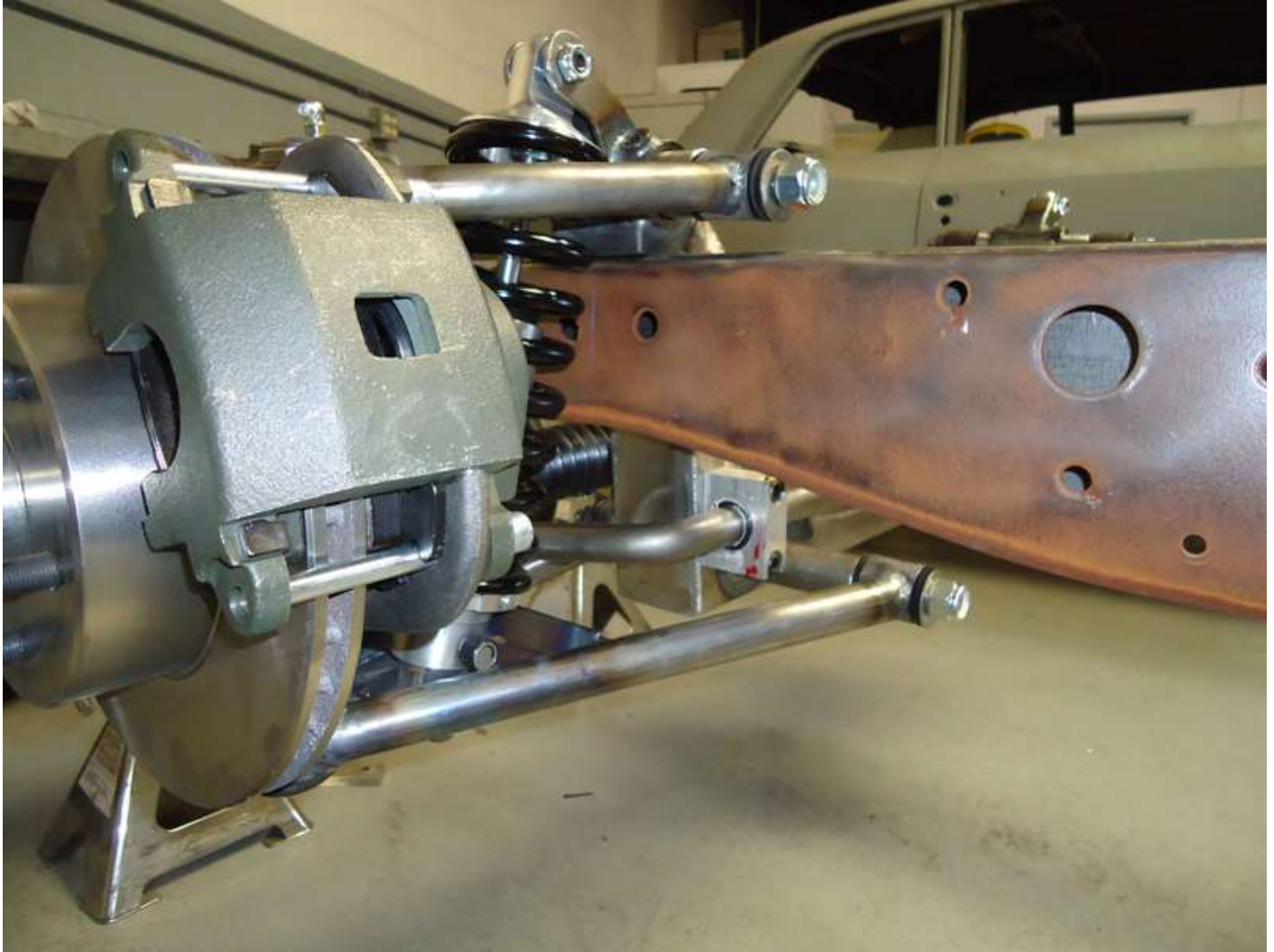


1953-1956 Ford Truck Custom IFS Parts List

Part #: * 213-2200-0cp-c3k-1ex or 213-2202-00-0sm-a6k-4gx – The asterisk shown is the plain and standard package

1	Custom IFS Cross member	1	Rack & Pinion – Only
			- Power Rack Part #: 304-3215-00 + 2 in. - Manual Rack Part #: 304-3205-00 + 2 in.
	1953-1956 Ford Truck Part #: 213-2202-00	1	Rack & Pinion Bolt Kit – Hardware
2	Plain Upper Control Arms – Hardware		- Power Rack Part #: 300-3233-00 - Manual Part #: 300-3231-00
	* Part #: 204-2224-00 – Plain - Part #: 204-2224-01 – Black - Part #: 204-2224-02 – Polished	1	Tie Rod Ends Set – Hardware
2	Plain Lower Control Arms – Hardware		Part #: 301-3238-00
	- Part #: 213-2324-00 – Coil-Over – Plain - Part #: 213-2324-02 – Coil-Over – Black - Part #: 213-2324-05 – Coil-Over – Polished	2	Assembled: Drop Spindle w/11" Rotors and Calipers 4.5" B/P Part# SPASYCPB11PAD-GMS
		2	Sway Bar and Mount – Hardware 3/8 Bolt Kit
			- Plain Part #: swaybar-f14-pln - Chrome Part #: swaybar-f14-pln - Part #: swy-bar-mnt-05-pln
2	Shocks Body - Part #: skbdy02-0		- Part #: swy-bar-heims12reg -1/2 Modified Heims: - Part #: swy-bar-bolt-11-pln
2	Coil-Springs - Black Powder Coated - Part#: springs500b		

~ Custom IFS Installed ~



Installing the boxing plates:

Measure the width of the top and bottom of the rails. Cut or grind the longer lip back to make them both the same width. This will allow installation of the boxing plate square to the frame.

NOTE This picture is with the frame upside down.

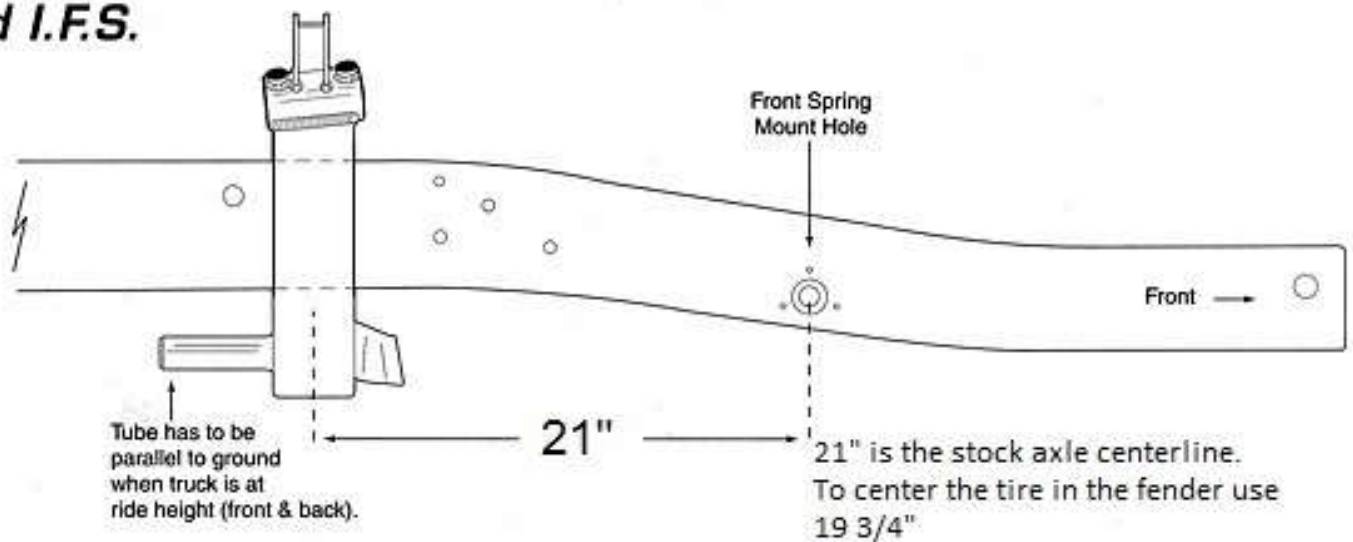
The boxing plate is tapered. Place the plate onto the frame within the corresponding taper/size.



It is important that the boxing plates be positioned on the edge of the frame rail so that you can maximize weld penetration. This will ensure there is enough weld to grind and smooth out the corners. Use a square to make sure that the plates are square to the frame. Tack welds all 4 corners of the plate to the rail and make sure they are still square. Once the boxing plates are confirmed square you can begin welding them in place. Weld 6" sections at a time switching from driver to passenger so heat is kept to a minimum.



Ford I.F.S.



Locating the axle center line:

Using the illustration above, find and mark the axle center line on both the passenger and driver side frame rail.

Note: 21" is the stock axle center line. To center the tire in the fender, use 19 3/4"



Installing the cross member:

2 degrees frame rake (vehicle stance) is typical. The flat area on top of the cross member should be level to the ground or 0 degrees when the frame is at proper rake.

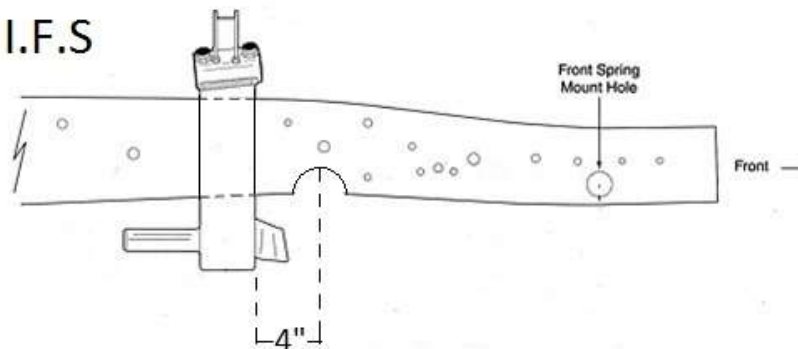
Center the cross member on the axle center line mark made earlier. **Only tack weld the cross member into place at this time.**

NOTE Grinding the cross member to make it fit between the rails may be necessary.



Double check all measurements and finish welding the cross member into place.

Ford I.F.S



**** NOTE - If you purchased the MOD Crossmember Upgrade for a Coyote Engine application, the C-Notch will be different. Please skip to Installing Mod Style C-Notch for that set up.**



Installing standard c-notches:

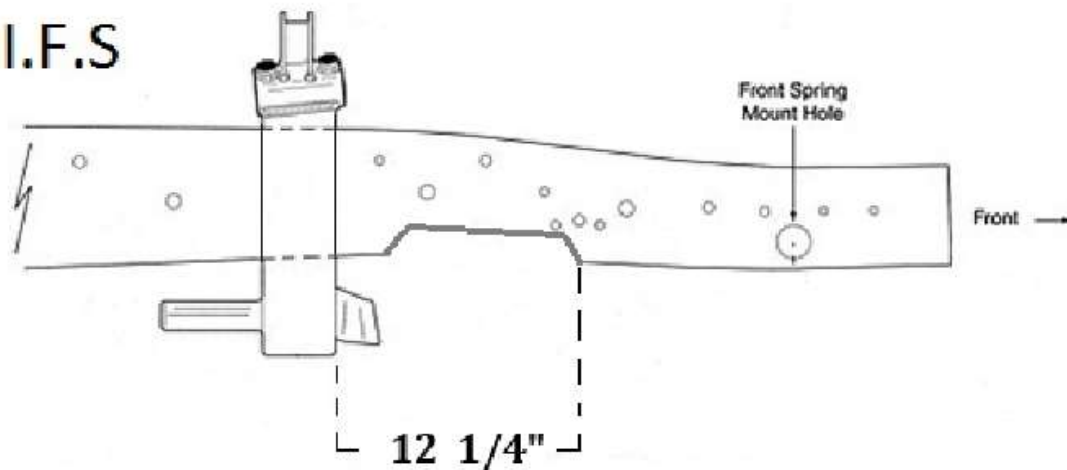
Once the wheelbase is marked on the frame you can now properly install the c-notches. Using the diagram above measure 4" forward from the face of the cross member. This will be the center of the c-notch. Now measure up the rail 1.5" and mark it. Use the c-notch as a template on the frame using the mark on the frame as the center/top of the c-notch. Cut the frame to match the c-notch.

NOTE Make sure not to cut too much of the frame.

Place c-notches into the frame and weld in place.

MOD IFS Crossmember C-Notch Placement

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Installing MOD Style C-Notches

With your wheel base set and crossmember in place, you can now locate the long mod style C-Notch plate 12 1/4" from the front face of the crossmember to the front edge of that C-notch along the bottom of the frame rail and 1 1/8" deep into the frame.

Next you can locate the flat plate with the 2 weld nuts onto the C-notch plate at 8 1/2" from the front face of the IFS crossmember to the center of the flat plate.



NOTE: Frame flipped upside down for ease of picture

Installing the lower control arms:

NOTE The acorn side of the 5/8" shaft faces forward.

Place one washer onto the 5/8" control arm shaft and push it through the front bushing of the control arm. Place a 2nd washer behind the bushing and push the 5/8" shaft into the front of the cross member.

NOTE Driver side control arm is pictured.

****NOTE****

- Standard IFS models – Sway bar tab on lower control arms point down.
- Mod Motor IFS Models – Sway bar tab on lower control arms points up.





Place the 3rd washer in between the bushing and the pin as shown.

Push the 5/8" shaft all the way through the pin and bushing. You may need a little elbow grease to get the shaft all the way through.



The 4th and final washer can now be placed on the 5/8" shaft and the Nylock can be installed.

Torque to 75 ft lbs



Installing the upper control arms:

NOTE The acorn side of the 5/8" shaft faces forward.

Place one washer onto the 5/8" control arm shaft and push it through the front bushing of the control arm.

Place a 2nd washer behind the bushing and push the 5/8" shaft into the front of the eccentric housing.

NOTE Driver side control arm is pictured



Place the 3rd washer in between the bushing and the eccentric as shown.

Push the 5/8" shaft all the way through the eccentric and bushing. You may need a little elbow grease to get the shaft all the way through.



The 4th and final washer can now be placed on the 5/8" shaft and the Nylock can be installed.

Torque to 75 ft lbs



Install the 1/2-20 set screws into the Eccentric housing and tighten.

Final alignment will be done once vehicle is finished.

Standard IFS Models
Installing the anti-sway bar:

This sway bar set up mounts behind the suspension crossmember as shown on the pictures to the left. Slide the lock ring collar over the bar on each side first. The split bushings go over the bar and then the aluminum blocks slide on over the bushings.



The anti-sway bar mounts to the rear of the cross member above the lower control arm pins. Use the supplied hardware to install the aluminum blocks onto the cross member. Torque to 35 ft lbs.

Center the anti-sway bar and lock down the set screws against the bushings.

MOD IFS Models
Installing Front Sway Bar:

This sway bar set up installs below the frame rail, onto the Mod style C-notches that were installed in an earlier step. Pre-assemble the sway bar as pictured. Slide the locking collars onto the bar, slide the bushings on with the flange facing inward and slide the blocks onto the bushings. The bar attaches to the bottom of the frame at the front of the Mod style C-notches that were welded in previously. Use the supplied hardware to bolt the bar assembly to the frame.

Mod Front Sway bar Assembly Installed!



Installing the Coilovers:

The Custom IFS suspension comes with Ridetech billet aluminum coil-over shocks standard. The shock extended length is 14.25" and 10.25" collapsed and has 24 position rebound control.

Mount the shock into the subframe with the threaded body facing up. Install the $\frac{1}{2}$ x button head bolt and washers through the upper bracket and $\frac{1}{2}$ Nylock nut.



Extend the shock through the cutout in the lower a-arm and install with the bolt, washers, spacers and nut. Tighten securely.

The bottom bolt has a modified head that needs to be installed from the back to the front.



Installing the spindle assemblies:

Place the spindle onto the lower ball joint with the steering arm facing forward with the large I/D tie rod end taper facing down. (The tie rod end goes up into the steering arm)

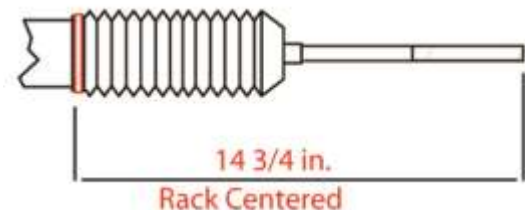
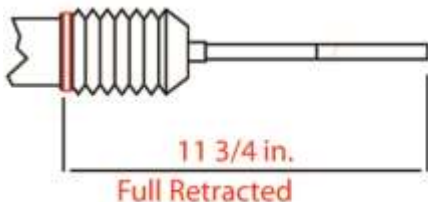
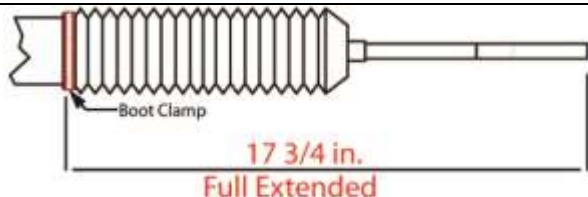
Place the ball joint washer first and then the castle nut. Torque the lower ball joint to 90 ft. lbs and install the cotter pin. The lower ball joint is a **MOOG K719**
Pull the upper control arm down onto the spindle.

Place the ball joint washer first and then the castle nut. Torque the upper ball joint to 70 ft. lbs and install the cotter pin. The upper ball joint is a **MOOG K772**

NOTE Caliper Fittings:

GM Calipers = 10mm x 1.5

Wilwood Calipers = 1/8" NPT



Centering the rack assembly:

The rack needs to be centered to allow equal steering left to right. On a bench, turn the pinion out to lock one way. Measure from a convenient point to the end of the inner tie rod. (This rack was 17 3/4). Turn the pinion of the opposite lock position and measure from the same point to the end of the same tie rod (11 3/4). $17 \frac{3}{4} \text{ minus } 11 \frac{3}{4} = 6$. Divided by 2 = 3 Add that number to the smallest measurement ($11 \frac{3}{4} + 3 = 14 \frac{3}{4}$) and turn the pinion back till you get that measurement and your rack is centered.



Installing the rack and pinion:

Place the rack on the cross member brackets as shown. Use the supplied 5/8" hardware to fasten it into place. The picture shows a power rack that requires a 5/8" spacer between the rack and the mounting brackets. A manual rack bolts directly to the mounting brackets not needing these spacers.

Torque bolts to 90 ft. lbs

NOTE Power Rack & Pinion fittings:

9/16"-18 Pressure side & 5/8"-18 Return side



Install the jam nut and outer tie rod end onto both sides of the rack. With the rotors pointing straight ahead (0 toe) install the tie rod ends into the bottom of the steering arm. Torque the tie rod ends to 60 ft. lbs. and install the cotter pin.

***NOTE* Rack & Pinion output shaft:**

Manual rack = 9/16"-26 spline

Power rack = 3/4"-36 Spline thru 4/2021

After 4/2021 3/4" Ford V



Standard IFS Models - The sway bar routes from behind the cross member above the control arms and hooks up to the front of the control arms. Use the supplied hardware to install the heims with the male on the bottom.

Mod IFS Models – The sway bar swings back towards the suspension from ahead of the motor. And attaches to the lower control arms. Use the supplied hardware to install the heims with the male on the bottom.

NOTE You can adjust the preload (or lack thereof) once the vehicle is ready to be driven. Disconnect one heim, place driver in the driver's seat, adjust the loose heim until the bolt goes onto the anti-sway bar with zero load.

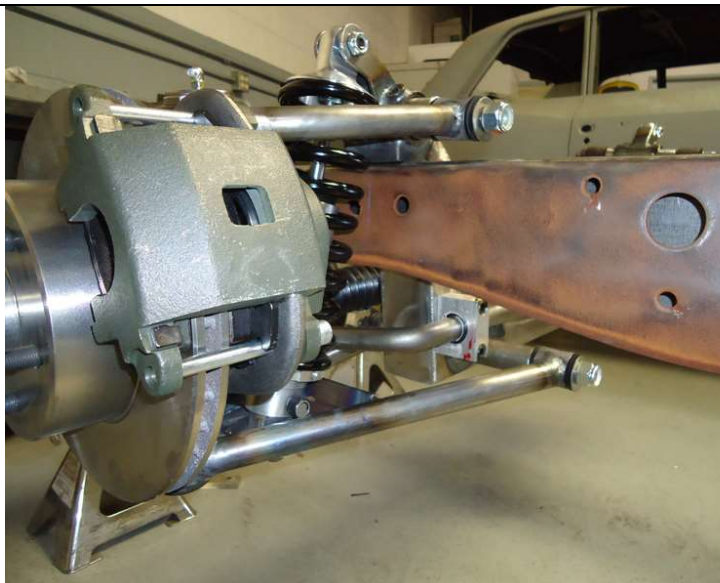


Setting up power steering

The rack ports are 9/16"-18 Pressure side & 5/8"-18 Return side

Unisteer 8026070 is a recommended fitting kit.

The recommended pump output is 800-1000psi and 2.0 gallons per minute. Exceeding this can cause the steering to feel "twitchy" and excess pressure can damage the rack.



Alignment specifications

Caster: Power rack 4-6 degrees positive
Manual rack 2-4 degrees positive

Camber: 0 Degree

Toe-in: 1/32 to 1/16 inch

The lower control arms should be level to the ground or within a degree or two once the vehicle is at full weight. You can then perform the final alignment.

AXLE STUD SIZES:

4.5" Bolt circle rotors = 1/2"x20('75-'80 Ford Granada)

4.75" Bolt circle 10.5" rotors = 12mmx1.5('82-'87 Camaro)

4.75" Bolt circle 11" rotors = 7/16"x20('75-'80 Granada redrilled)

ALL Wilwood hubs = 1/2"x20



OIL PANS

289-302 = Ford Racing # M-6675-A50

351 Windsor = Ford Racing # M-6675-A58

429-460 = Ford Racing # M-6675-A460

No returns or exchanges without a RMA#.

Packages must be inspected upon receipt & be reported within 10 days.

If you are missing parts from your kit, TCI Engineering will send the missing parts via FedEx or U.S. mail ground.

Returned packages are subject to inspection before replacement/refund is given. (Some items will be subject to a 15% restocking fee)

Thank you for your business!



1956 F-100 - Bobco