Instruction Guide

Speedtech Performance Spindle
67-81 F-Body, 68-74 X-Body, 64-72 A-Body, 77-87 G-Body

Speedtech PERFORMANCE

CHASSIS - SUSPENSION - PRO TOURING - AUTOCROSS - DRAG RACING - CUSTOM BUILDS

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Figure 1: 1956 Bel Air features our Extreme spindles [photo by Kyle Phillips]

Congratulations on the purchase of your new Speedtech Performance spindles. Use only approved, appropriately rated jack and jack stands, and take all required safety precautions to complete the job safely and correctly. If you have any uncertainties, seek the assistance of a highly qualified workshop.

Read and understand all instructions thoroughly before you begin. Your main assembly and setup of your new spindles can be done in a home garage with hand tools.

Speedtech enjoys seeing the progress our customers are making as they work through their builds. Join the group Team Speedtech on Facebook and share your pictures and story.

Speedtech Performance wishes you the best with your project!

TABLE OF CONTENTS

1.0 GENERAL INFORMATION

Back to Table of Contents

1.1 THIS GUIDE

Thank you for purchasing your new Speedtech Performance spindle. Read through all instructions thoroughly before beginning, and take all safety precautions required to do the job carefully and correctly.

The following instructions are intended for professional installers and are guidelines only. Speedtech Performance assumes no responsibility for the installation of any of its products installed by others. All products are intended to be installed by qualified professionals.

While Speedtech's spindles work great as an upgrade to your factory suspension, they are also designed to meet the needs of those participating in off-highway road racing and autocross competition. To achieve maximum benefit from our system, you should anticipate adjusting and tuning the suspension to optimize performance for the vehicle, driver, and type of racing. Some of this, such as tuning sway bars and shock settings, can be done trackside by making adjustments and seeing/feeling how the car reacts to these changes. Speedtech recommends that a tire probe pyrometer and a good-quality air pressure gauge be in your track-side tuning kit.

WARNING: Once assembled, you will need a professional wheel alignment performed. Driving a vehicle without proper alignment can be dangerous; towing is recommended to transport the car before the alignment is performed.

1.2 OVERVIEW

These instructions outline the spindles. The system has been designed to work with a factory subframe or chassis.

Photos in the instruction process may vary slightly from your exact operation. For example, in this guide, we have only used pictures of the spindles for the early Camaro. Your application may have a slightly different shape, but the part is functionally the same and is installed in the same manner described.

1.3 TOOLS

Installation of the Speedtech Performance spindles can be done on the floor with a basic welder, cut-off tool, and simple hand tools.

Additional things to have before you start:

- Wrench Set
- Torque Wrench
- Floor Stands
- Floor Jack

2.0 CHECK IN PARTS AND HARDWARE

Back to Table of Contents

2.1 CHECKING IN THE ORDER

Check in your order as soon as possible. To check the order, Speedtech has provided a table that can be used as a checklist, as shown in Figure 2. All bolts and nuts are NF unless otherwise noted. Hardware comes in several boxes. If you discover anything missing from your order, call your authorized dealer as soon as possible.

2.2 CHECK IN TABLE

X	#	Description	Size
	1	Driver's Side Spindle	Depends on Vehicle
	1	Passenger Side Spindle	Depends on Vehicle
	4	Steering Arm Mount Bolt	½" x 2 ¾" NF
	4	Steering Arm Mount Washer	1/2"

Figure 2: Check in table with the amounts, descriptions, and sizes

NOTE: Caliper mounting bolts and washers are not included in this kit. Since you will be using Corvette-based brake kits, most aftermarket brake companies assume you already have these parts and do not include them with their brake kits. They can be purchased from several sources. Speedtech recommends GM part numbers 14084051 for the bolts and 10268875 for the washers. You will need four of each.

3.0 GETTING STARTED

Back to Table of Contents

3.1 LEVELING AND SUPPORT

WARNING: The vehicle should be on a level surface before you start.

Jack up and properly support the vehicle's frame. Remove the front wheels. For cars with drop-off style rotors, reinstall one lug nut, if needed, to prevent the rotor from falling off.

4.0 FACTORY DISASSEMBLY

Back to Table of Contents

4.1 STEERING ARM REMOVAL

Back off the castle nut on the tie rod end so that there are only a few threads engaged.

Using a pickle fork, break the steering arm loose from the tie rod end, then remove the nut and tie rod end from the steering arm.

Remove the steering arm from the factory spindle, then set it aside.

4.2 SPINDLE REMOVAL

Loosen the castle nuts.

Using the pickle fork, repeat the process for breaking loose the upper and lower ball joints.

NOTE: There will be tension on the coil spring, and the vehicle may jump slightly. Take caution when doing this procedure, and be sure the floor jack securely supports the lower control arm.

Once both upper and lower ball joints are broken loose from the spindle, carefully remove the upper ball joint castle nut and spindle from the control arm. Repeat the process for the lower ball joint and remove the factory spindle from the vehicle.

Figure 3: Spindle removal

5.0 INSTALLATION

Back to Table of Contents

5.1 SPINDLE INSTALLATION

Install the Speedtech spindle onto the lower ball joint.

NOTE: The brake caliper mount is towards the rear of the vehicle.

Thread on the lower ball joint castle nut. Repeat the process for the upper ball joint and castle nut.

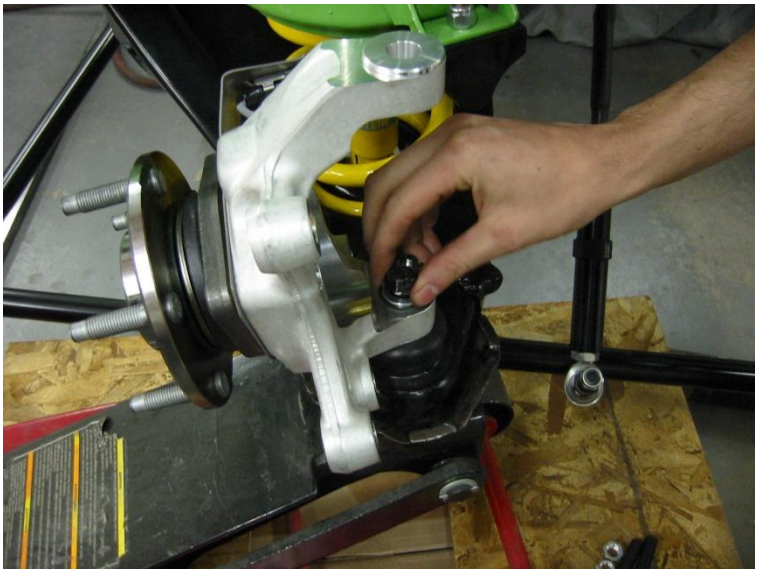


Figure 4: Spindle installation

5.2 SPINDLE TORQUE

Torque the lower ball joint to 41 ft/lbs. and replace the cotter pin.

Torque the upper ball joint to 31 ft/lbs. and replace the cotter pin.

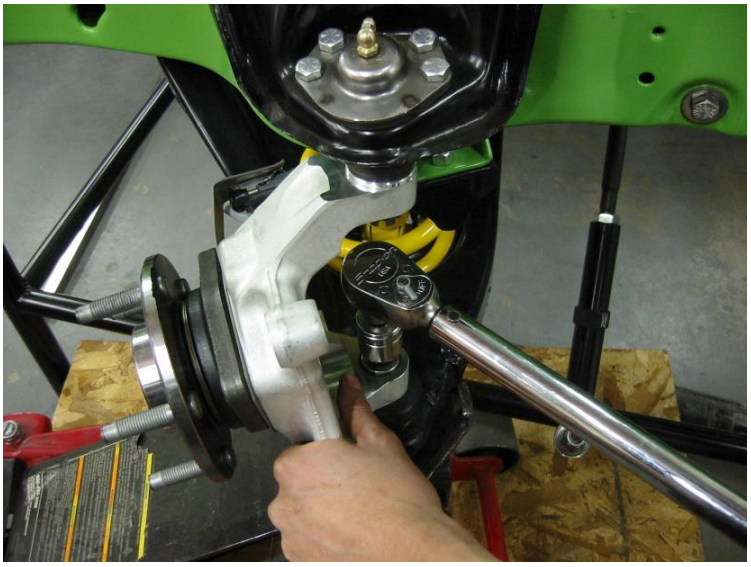


Figure 5: Spindle torque

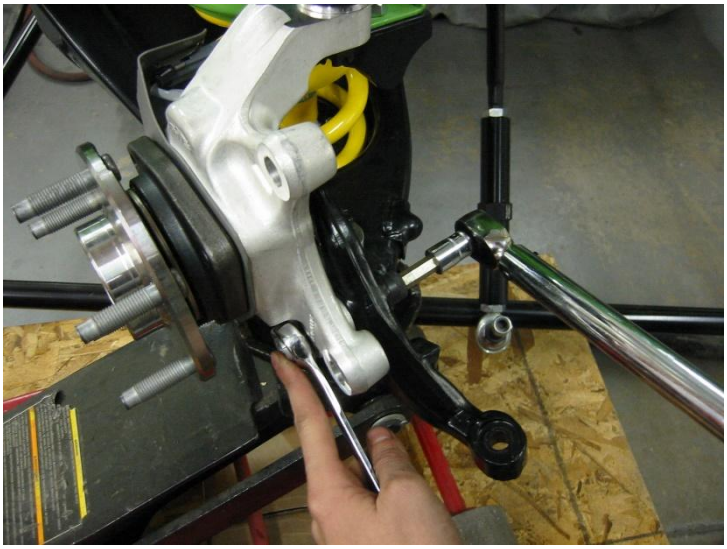
6.0 FACTORY STEERING ARMS

Back to Table of Contents

NOTE: Due to length variances in factory applications, Speedtech does not supply the bolts for factory steering arms. You will need to source Grade 8 bolts of the proper length.

Bolt the factory steering arm onto the spindle. Note that there are two different length bolts; the longer of the two is used in the rear. Torque to 45 ft/lbs.

Reinstall the tie rod end into the steering arm and torque to 35 ft/lbs. Install a new cotter pin. Release the tension on the floor jack and move it out of the way. Repeat the process for the other side.



NOTE: The Speedtech spindle requires a C5/6 based brake package to be installed. Speedtech recommends Baer or Wilwood brakes. Follow the manufacturer's instructions for your specific brake system and be sure to properly bleed the brakes before driving the vehicle.

Figure 6: Two images of factory steering arms

7.0 SPEEDTECH PERFORMANCE BILLET STEERING ARMS

Back to Table of Contents

7.1 A and G BODY

Using the new bolts supplied in the kit, bolt the Speedtech steering arm onto the spindle.

NOTE: In the past, steering arms were machined to install only one way, with the tie rod end closer to the center of the car. This has always been a good improvement to the steering and bump steer.

Speedtech's new machining modification allows you to install the steering arm on opposite sides with the tie rod end further from the center. This change to the steering arm will improve the Ackermann setting and should be used on auto cross and road race cars.

Figure 7: Billet steering arms

NOTE: This is a custom application and should not be used by all customers. It will require additional parts and setup, including:

- Longer tie rod sleeves (These are available through Speedtech, but you must specify what length and what thread you require.)

- Alignment (After alignment, you may check and adjust the bump steer for the best performance. If you do not know how to do this, Speedtech suggests not doing this modification at home.)

NOTE: This is a custom setup application and should not be attempted by someone who is not familiar with this setup or is unable to measure and calculate the optimal settings.

LONG TIE ROD PART NUMBERS:

- 220512 - '64-70 A- Body & '78-88 G-Body, 5/8" thread, 7.45" OAL
- 220513 - '71-72 A- Body 11/16" thread, 7.45" OAL
- 220514 - '70-81 F- Body 11/16" thread, 6" OAL

Speak to a representative if you do not already have the proper tie rods for this modification.

7.2 70-81 F-BODY

Install the steering arm as shown, with the tie rod end facing outside and toward the wheel.

Torque supplied bolts to 45 ft./lbs.

Figure 8: Passenger side tie rod end and steering arm installation

7.3 TIE RODS

A special length tie rod set is included with factory inner and outer tie rods.

Figure 9: Tie rods

8.0 MAINTENANCE

Back to Table of Contents

All aluminum has an endurance limit. Therefore, it is recommended to replace spindles every. 15 years or 225,000 miles, whichever comes first, as a precautionary measure. Speedtech uses special jigs to install Corvette hubs into our spindles. Should your hubs ever need servicing, it is recommended. You ship the spindles to us so we can use the same process we used to build them originally. Servicing them other than through Speedtech Performance will waive any implied or expressed. liability for the hub and/or spindle.

9.0 ALIGNMENT

Back to Table of Contents

Double-check all the fasteners. Set the car to the approximate ride height by adjusting the shock lower spring nuts. This should be done before aligning the car. When finished, take the vehicle to a competent professional alignment shop for an alignment.

NOTE: Use alignment specifications below, not the alignment shop's pre-programmed factory Specifications.

The following specifications are only suggestions and may require additional changes to achieve optimal settings for your driving style or situation.

Daily Driving, Street Performance Specifications

Driver Side	Passenger Side
4 Degrees Positive Caster	4 ½ Degrees Positive Caster
0 To ½ Degree Negative Camber	0 To ½ Degree Negative Camber
3/ 32 Total Toe-In	3/ 32 Total Toe-In

Aggressive Track Alignment Specifications

Driver Side	Passenger Side
5 ½ Degrees Positive Caster	6 Degrees Positive Caster
½ To 1 Degree Negative Camber	½ To 1 Degree Negative Camber
3/ 32 Total Toe-In	3/ 32 Total Toe-In

Original Alignment Specifications

**For reference purposes only. Do not use these specs.

Driver Side	Passenger Side
½ Degree Positive Caster	½ Degree Positive Caster
¼ To ½ Degree Negative Camber	¼ To ½ Degree Negative Camber
1/8 Total Toe-In	1/8 Total Toe-In

Figure 10: Alignment specifications

10.0 CONGRATULATIONS

Back to Table of Contents

Congratulations on completing your project! We know you will get many years of enjoyment from your project. Please join the Team Speedtech group on Facebook. Team Speedtech is a community of customers, dealers, and factory employees who have a passion for pro-touring muscle cars and use Speedtech Performance products. You can ask questions, get advice from the group members, and share your experience. Everyone enjoys seeing the videos and pictures as your project progresses, and Speedtech encourages you to share them!

Thank you for choosing Speedtech Performance and entrusting us with your spindle for your custom muscle car.

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