



SPARTAN CHASSIS, INC.

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NHTSA # 06V-029

RSB06-250-001

February, 2006

RECALL SERVICE BULLETIN

- SUBJECT:** Front Suspension – Timoney 22 IFS
- APPLIES TO:** Specific Spartan Chassis Fire Truck Units Produced with a Timoney 22 IFS Front Suspension; Sales Order Numbers: 45501, 47061, 47479, 48156, 48848, 52061, 52787, 53162, 53413, and 54078
- CONDITION:** Kingpin assembly failure may occur, resulting in disengagement of the associated wheel from the suspension system with potential of consequential injury to vehicle occupants, property damage, and/or damage to the vehicle.
- CAUSE:** Defective kingpin material
- CORRECTION:** Replace kingpin assemblies.
- LABOR TIME:** N/A – Arranged by Timoney Technology Ltd.

**PLEASE READ THE ENTIRE BULLETIN BEFORE PROCEEDING WITH ANY WORK.
CONTACT SPARTAN CHASSIS IF THERE ARE ANY CONCERNS WITH THE
PROCEDURES CONTAINED IN THIS DOCUMENT**

PREPARATION AND PROCEDURE:

- 1.0 Observe all industry safety standards and secure vehicle to allow for replacement of the kingpin assemblies.

The following documentation for kingpin replacement is provided by Timoney Technology Ltd.:

- Timoney (IFS) Independent Front Suspension Upper & Lower Kingpin Retrofit
- SAF-T-EZE Technical Data Sheet

In reference to step 1.1 of the Timoney (IFS) Independent Front Suspension Upper & Lower Kingpin Retrofit document, additional language has been added by Spartan Chassis to disconnect batteries.

Technical Service Bulletins are intended for use by Professional Technicians only. They are written to guide Professional Technicians in performing service to vehicles of product specific nature in conjunction with industry standards. Professional Technicians are appropriately trained on industry standards and have the tools and equipment to perform procedures safely and properly.



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Timoney (IFS) Independent Front Suspension Upper & Lower Kingpin Retrofit

Timoney Technology Ltd

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Co Meath, Ireland
Tel: + 353 46 90 55100
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Email: info@timoneygroup.com



Tools Required:

- 3/4" Drive breaker bar (700 Lb. Ft.)
- Sledgehammer
- Pneumatic impact gun – 3/4" drive
- 33 mm A/F impact socket (for wheel nuts)
- 75 mm A/F special kingpin locknut spanner
- 75 mm special fabricated spanner (8 – 10 mm)
- 13:1 torque multiplier
- 3/4" Female drive – 1" male drive adaptor
- 50 mm special multi-point socket (2 off)
- 3/4" Drive torque wrench (600 Lb. Ft.)
- 1/2" Drive metric socket set
- 1/2" Drive torque wrench (150 Lb. Ft.)
- 3 Lb. brass mallet
- 3/4" Drive 46 mm socket (2 off)
- Wire brush or, preferably, air drill and wire brush attachment
- Pry podger bar (18" (450 mm) long approx)
- 5/16" Allen key socket x 1/2", or 8 mm (for shoulder bolts)
- Special bushing alignment tool for rod end and bushes (5/8" bolt with rounded end)

Consumables:

- Loctite 242
- Anti-seizure compound (SAF-T-EZE or equivalent)
- Cleaning rags

Workshop Requirements:

- Jack (7 Tonne)
- Engine hoist
- Sling or chain for engine hoist
- Chain with locking hook
- Workshop compressed air
- Oxy-acetylene torch for heating
- Axle stands (29,000 Lb) for 4x4 truck

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Parts Required per Wheelstation:

Qty. 1, Retrofit Upper Kingpin Assembly, P/N C01075

Qty. 1, Retrofit Lower Kingpin Assembly, P/N C01074

Retrofit Procedure:

- 1.1 Raise cab to lock position and isolate electrics. (Disconnect batteries to isolate electrical system.)
- 1.2 Loosen wheel nuts.
- 1.3 **Jack vehicle or axle wheelstation in accordance with Timoney IFS Service Manual instructions.**
- 1.4 Remove the road-wheel(s).
- 1.5 Remove bump stop and bump stop plate from spring cap and upper control arm respectively.
- 1.6 Remove ABS sensor complete with cable.
- 1.7 Remove pneumatic pipe from brake actuator.
- 1.8 Remove the locknut from the shoulder bolt in the outer rod-end of the track rod assembly and withdraw the shoulder bolt. Remove the rod-end from the steering arm fork. Re-fit the shoulder bolt and nut into the rod-end and pull back the track rod assembly to allow access to the suspension and hub assemblies.
- 1.9 Loosen M35 upper and lower Kingpin Nuts.
- 1.10 Using engine hoist and sling, support the hub assembly in a balanced position. **NB: Take care when completing this operation. Review the Timoney IFS Service Manual.**
- 1.11 Remove M35 locknut from upper kingpin using M50 12-point (or 46 mm) socket. Tap the top of the kingpin or the control arm to break the kingpin taper hold in the knuckle and withdraw the hub assembly. Discard the M35 locknut after removal.
- 1.12 Remove the lower kingpin M35 locknut and tap the top of the kingpin or the knuckle to break the kingpin taper hold in the wishbone and withdraw the hub assembly. It may be necessary to heat the M35 nut. Discard the nut after removal.

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- 1.13 Heat the M50 locknut on the lower kingpin assembly to break Loctite. **NB: No more than 150 Deg. C should be applied locally to break the Loctite seal.** Loosen the M50 locknut using 75 mm adapted spanner and sledgehammer. Remove lower kingpin from knuckle. Take care not to damage brake actuator fitting.
- 1.14 Clean knuckle in kingpin area and apply anti-seizure compound (SAF-T-EZE or equivalent) to cylindrical diameter on kingpin.
- 1.15 Fit the lower kingpin to the knuckle and start M50 nut on thread. Apply Loctite 242 to the kingpin thread, tighten fully and torque to 1306 Lb. Ft. (1770 Nm) using the special 75 mm A/F spanner and the torque multiplier.
- 1.16 Heat upper control arm in kingpin thread area and remove kingpin and M50 nut. **NB: No more than 150 Deg. C should be applied locally to break the Loctite seal.** Apply Loctite 242 to kingpin thread. Fit kingpin to upper control arm and set the kingpin relative to the control arm to the 7 ± 1 mm dimension shown in Fig. 1 below. Tighten the M50 locknut to 1306 Lb. Ft. (1770 Nm) using the special 75 mm A/F spanner and the torque multiplier.

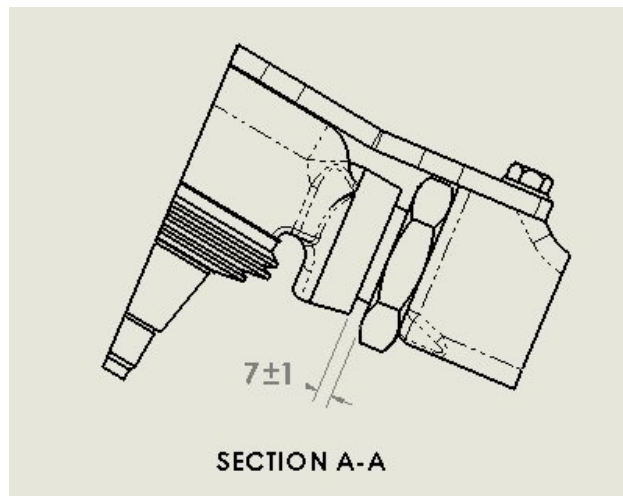


Fig. 1. Upper Control Arm Kingpin Setting

- 1.17 Refit hub to lower wishbone and upper control arm.
- 1.18 Torque M35 locknuts on upper and lower kingpins to 664 Lb. Ft. (900 Nm) (Un-lubricated) and stake both nuts.

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- 1.19 Fit the track rod bearing into the steering arm fork. Align the pivot holes and fit the shoulder bolt. Fit ½" UNC shoulder bolt locknut and torque to 77 Lb. Ft. (104 Nm).
- 1.20 Refit brake pneumatic pipe to brake actuator.
- 1.21 Reconnect ABS sensor complete with cable.
- 1.22 Refit bump stop and bump stop plate.
- 1.23 Fit the road-wheel and tighten wheel nuts.
- 1.24 Remove jack.
- 1.25 Torque wheel nuts to 400 Lb. Ft. (540 Nm) (un-lubricated).

OM, JMCK, TMCC, CB, 9 Feb. '06

- 2.0 Reconnect batteries and lower cab.

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SAF-T-EZE

TDS-R

Regular Hi-Temp Anti Seize

Technical Data Sheet

GENERAL INFORMATION: *SAF-T-EZE Regular Hi-Temp* provides protection as a high temperature anti-seize and extreme pressure lubricant. *SAF-T-EZE* stops corrosion, galling and seizure between metal parts. *Regular Hi-Temp* performs to 2000°F.

PRODUCT DESCRIPTION: *SAF-T-EZE Regular Hi-Temp Anti-Seize* is a smooth, non-separating formula consisting of a lithium soap thickened grease into which is compounded very fine flaked copper as well as graphite lubricants and corrosion fighting inhibitors. This high performance grease and solid additives provide extreme pressure lubricating properties that prevent galling and cold welding and at the same time prevent water wash out and galvanic pitting from electrolysis of road salt, acid rain or salt water.

SAF-T-EZE Regular Anti-Seize is non-hardening and has exceptional thermal stability. The particles present are inert and will not evaporate at extreme temperatures and their heat resistant qualities will prevent carbon fusion and seizure at temperatures approaching 2000°F. This anti-seize compound does not contain lead, molybdenum disulfate or halogen compounds.

PHYSICAL PROPERTIES:

Color	Silver Gray
Temperature Range	-65° to 2000°F
NLGI Grade	1
Specific Gravity	1.2
Weight per gallon	10.3 lbs.
Penetration	270 ± 20
Drop Point	380°F
Flash Point: C.O.C.	500°F
Particle Size	1.5 Mil Maximum (25 μ)
Coefficient of Friction	0.08 (Shell 4 Ball Method)

APPLICATION: *SAF-T-EZE Regular Anti-Seize* can be used as a lubricant, a sealer, a break in lubricant, a tapping compound on plastics as well as metals. Surfaces are best cleaned before application as grit or low quality oil/grease may be present and best performance is required. The reduction in assembly friction increases torque tension by about 20 percent. Use on threaded parts, bushings, gears, valve stems, chains, sprockets, levers, hinges, pivots, rollers, heat exchanger or manifold bolts, or as a gasket release agent, etc.

NOTE: This product is not recommended for pure oxygen systems.

IMPORTANT NOTICE: All statements and technical data contained herein are based on tests we believe to be reliable, but the accuracy of completeness thereof is not guaranteed. It is recommended that the buyer test this product to determine its suitability for his application before use. *SAF-T-EZE Div., STL Compound Corporation* is not responsible for loss, claim or damages resulting from use of its products.

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