



INSTALLATION GUIDE

TOYOTA LANDCRUISER 70

78 SERIES (TROOP CARRIER) /
79 SERIES (SINGLE / DUAL CAB) / 2013+
GVM Upgrade Kit

TOY047CKFGVM / TOY047DKFGVM
TOY047CKFGVM1 / TOY047DKFGVM1



SAFETY WARNING: Ironman 4X4 requires this system be installed by an Ironman 4X4 appointed GVM Upgrade Installer. In addition to these instructions, professional knowledge of disassembly/reassembly procedures and post installation checks must be known and carried out.

Document Number: FM-EN-14 11/9/13 Revision 00

NOTE: Occupational Health & Safety procedures must be observed at all times.

IMPORTANT: Installations should only be done by a qualified person and it is the responsibility of this person to ensure correct fitment.

Pre-Installation Procedures

PART #	DESCRIPTION	QUANTITY
TOY046C	Front Coil Springs	1 (Pair)
TOY047C or TOY047D	Rear Leaf Springs	2
1084UK	Rear Polyurethane Bush Kit	1
416UBK or 416UBKL	Rear U-Bolt Kit	2
24091FE	Front Shock Absorber Foam Cell	2
24094LFE	Rear Shock Absorber Foam Cell	2
1141	Rear Greasable Shackle	2
1142	Rear Greasable Pin	2
FM-EN-12	3900kg Compliance Plate (Pre-registration Only)	1
FM-EN-13	Tyre Placard	1
FM-EN-14	Fitting Instructions	1

Measure and record the height of the vehicle.

With the vehicle on a level surface, measure vertically, from bottom of wheel rim to underneath the guard, or flare, or tray. Record measurements for all 4 wheels and record wheel rim size on the Installation Form.

Check tyre size and ratings

The tyres required for the increased GVM must have a load rating of at least 1215 Kg ("115") and a speed rating of at least 170 Km/h ("R")

Ironman 4X4 recommends the GVM upgrade kit is fitted with the vehicle on a two post hoist and suitable support stands must be available.

Kit Definitions

TOY047CKFGVM: **Pre-registration**, 300kg - 3900kg - Up to GVM occasionally.

TOY047DKFGVM: **Pre-registration**, 3900kg - Permanent loaded to GVM.

TOY047CKFGVM1: **Post-registration**, 300kg - 3900kg - Up to GVM occasionally.

TOY047DKFGVM1: **Post-registration**, 3900kg - Permanent loaded to GVM.

Compliance

The Ironman 4x4 GVM Upgrade for Toyota Landcruiser is approved by the Department of Infrastructure, Transport, Regional Development and Local Government (DOTARS). Ironman 4x4 Pty Ltd is an approved second stage manufacturer under authority, CPA 45466.



INSTALLATION FORM

Fax this installation form to Ironman 4x4
Fax: 03 8588 6427

Always ensure you have all the correct parts before beginning installation.
Installing suspension often requires special tools and expert knowledge. All fitment should be performed by a qualified and experienced fitter.
Always tighten bushed components after the vehicle is let down onto the ground at normal ride height, otherwise damage from torsional stresses can occur.
Brake proportioning valves should only be adjusted by a qualified brake specialist if necessary.
Ironman recommends a wheel alignment after fitment of new suspension, consideration to natural spring settling should be taken into account before alignment is done.
Always adhere to vehicle manufacturers torque specification when tightening fasteners.
Always grease polyurethane bushes prior to fitment, Ironman 4x4 recommends a molybdenum based grease or grease specified for polyurethane.

OWNER DETAILS

NAME: PHONE:
ADDRESS:

VEHICLE DETAILS

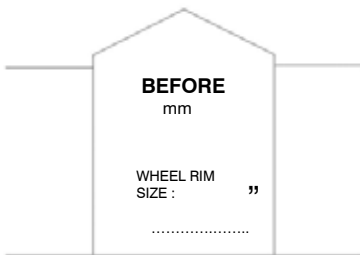
MAKE: MODEL: REG / VIN: MILEAGE:
ENGINE TYPE: BODY TYPE:
PRE EXISTING MODIFICATIONS OR WEIGHTED ACCESSORIES:
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PART NUMBERS TO BE INSTALLED

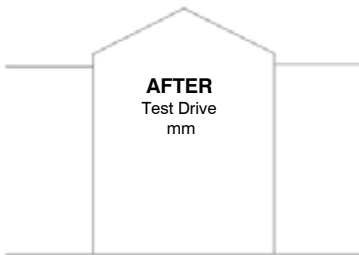
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SUSPENSION MEASUREMENTS

VEHICLE HEIGHT
LOWER OF WHEEL RIM TO GUARD

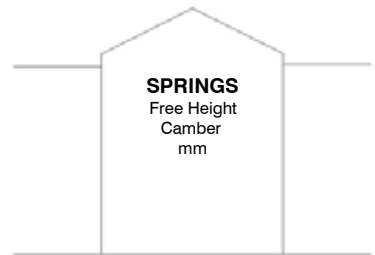


AFTER
Test Drive
mm



SUSPENSION MEASUREMENTS

ACTUAL MEASUREMENT OF NEW SPRINGS
PRIOR TO INSTALLATION



NOTES AND COMMENTS

NOTES:
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All measurements to be taken prior to installation, immediately after initial test drive and again at 500km check.
All vehicle height measurements to be taken from lower of wheel rim to guard unless otherwise stated. Up to 10 mm height reduction in springs can be considered normal setting over time. All measurements are metric except wheel rim size. Warranty period is 1 year or 20,000 km unless otherwise stated.



Front Suspension – Removing components

1. Raise the vehicle on the hoist.
2. Remove the wheels
 - Ensure all new components received are correct before removal of existing parts
 - Coil Springs store massive amounts of energy when compressed, extreme care must be used when handling.
 - Retain all OE hardware.
 - Perform the following procedures one side at a time, unless otherwise shown.



FRONT SUSPENSION REMOVAL

3. Remove front shock absorbers
4. Unclip diff breather hose.
5. Disconnect front sway bar.
6. Remove coil springs from vehicle.



Take care not to overstretch brake hoses. if necessary disconnect hose bracket to allow greater range of movement.



Front Suspension – Installing components

COIL INSTALLATION

7. Install front coil springs, being sure to align the coil ends with the step located in the spring platform.
8. Install front shock absorbers using supplied hardware being sure to leave the bushes finger tight until the weight of the vehicle is lowered to the ground.

It may be required to raise the axle to allow shock absorber to connect.

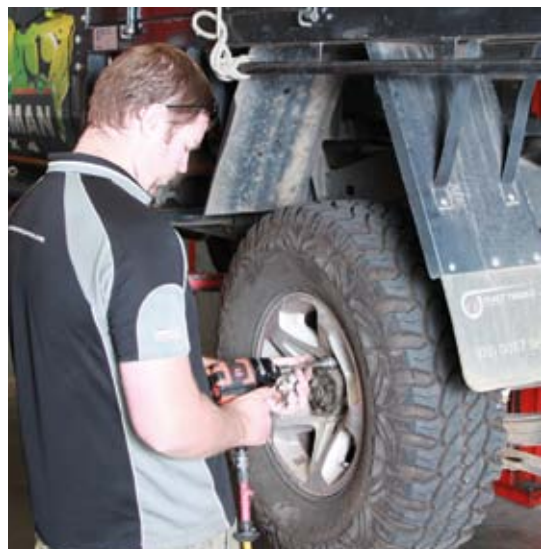
DO NOT Tighten shock absorber bushes at this time. Leave only finger tight.

9. Reconnect sway bar, diff breather and brake hose bracket.
Perform same operation to both sides of vehicle.



Rear Suspension – Removing Components

1. With the vehicle on the hoist. Remove the wheels



2. Support rear differential with floor stand/s to prevent damage to brake hoses from over stretching.



3. Remove the leaf spring U-bolts.
4. Remove the OE Shock Absorber.



5. Remove the fixed end pin and the spring shackle.
6. Remove the spring from the vehicle.
7. Remove the OE frame shackle bushings.



Greasable Shackle

- 1) Screw grease nipples into shackle pins and tension to 4-5ft/lb.
- 2) Screw shackle pins into head plate by hand until firm.

*Press bushes into leaf spring eyes.
Grease inside of bushes and the head flange only if polyurethane bushes are being used. (Do not apply grease to outside of bush).*

Also apply an even coverage of grease to shackle pin surface.

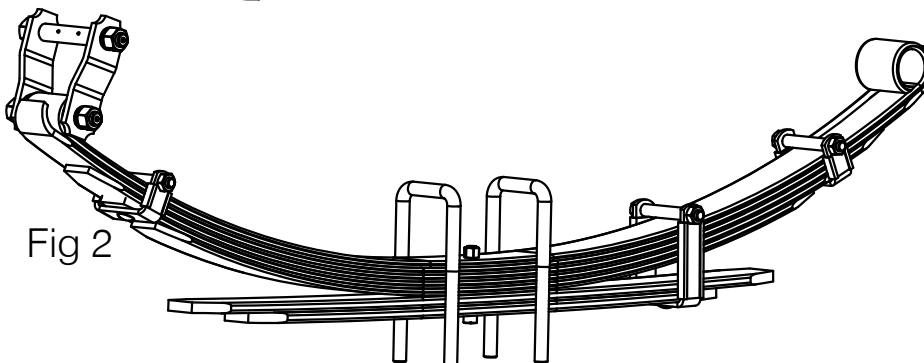
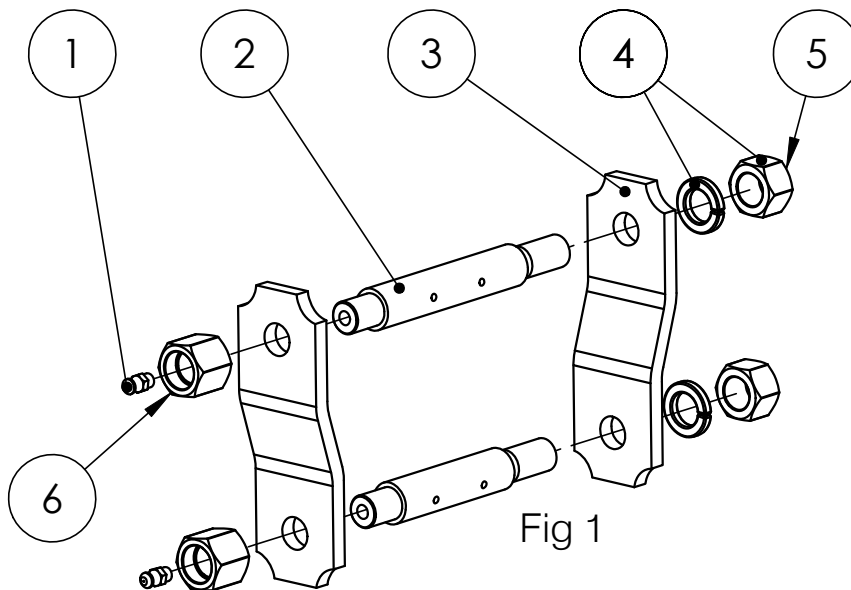
Insert shackle assembly through bushes, ensure mounting direction allows future access to grease nipples.

- 3) Place remaining shackle plate over pin ends.
- 4) Place spring washers and nuts over pin ends.

*(Do not tighten at this stage, firm finger tight will be sufficient).
Lower vehicle to ground and bounce to neutralise. Ensure shackles are operating freely and have settled into correct position. (See fig 2)*

- 5) After vehicle is lowered to ground, now you can tighten the short nuts to 90ft/lb.
- 6) Fit and tighten head plate deep nuts to 85ft/lb

Check all fasteners after 500km, re-grease periodically if polyurethane bushes have been fitted.



Actual components may vary depending on model.
Some image detail omitted for clarity.

Rear Suspension – Installing Components

9. Install the new bushings (P/N 1084UK) in the spring eyes and frame. Use a thin coat of grease (molybdenum disulphide) on the inside of the bush and the outer face of the flange.

DO NOT grease the outside diameter of the bush.



10. Check new spring centre bolt is tight (45Nm).



11. Install new leaf spring (P/N TOY047C or D), fixed end pin (P/N 1142) and greasable shackle (P/N 1141) on the vehicle, reverse of removal. Only finger tighten at this time, to prevent shackle lock.



12. Mate the axle to the spring, making sure to align the spring center bolt with the hole in the spring perch. Install new U-bolts, nuts and washers (P/N 416UBK or 416UBKL). Torque U-bolts to 120 Nm.



13. Install new Ironman shock absorber, using supplied hardware and leave finger tight until vehicle is at ride height



14. Refit all wheels. Tension wheel nuts to 90 Nm. lower the vehicle to the ground and bounce the vehicle to settle the suspension. Re-tension wheel nuts to 110 Nm.

Tighten leaf spring fixed end pin (120 Nm) and shackle pins (90 Nm)



15. Torque the rear shock absorber mounts (105 Nm).

Torque the front shock absorber mounts to (95 Nm), with the vehicle on flat level ground.

Re-check all fasteners for correct torque.

16. Measure and record ride height after initial test drive using installation form (Page 2).
17. A wheel alignment should be carried out within 2 weeks or 500 km after fitment of suspension.
18. Check headlight alignment.
19. Check all fasteners after 2 weeks or 500km.

Post Installation Procedures

20. The newly supplied Tyre Placard (FM-EN-13) is to be affixed on top of the original placard. This placard is a self adhesive label.

Adjust tyre pressures on vehicle according to new tyre placard.



21. For vehicles fitted prior to registration, the self adhesive Compliance Plate supplied with the kit, has the information provided with the initial order from the Authorised Installer. The new Compliance Plate is to be affixed to the vehicle, after installation, adjacent to, or as close as possible to, the original Compliance Plate. **The original Compliance Plate must not be removed from the vehicle.**
22. After fitment it is essential to check the height of the reflectors on the rear of the vehicle (may be incorporated in tail lamp assembly). The top of the reflectors must be not more than 900 mm above the ground, when the vehicle is unladen. In the event that this measurement exceeds 900 mm, new reflectors must be fitted, on the rear of the vehicle, not more than 900 mm above the ground and not less than 400 mm from the outside line of the vehicle.

The reflectors must be entirely visible, horizontally, at an angle of not less than 15 degrees on the outside line of the vehicle and not less than 45 degrees at the centre line of the vehicle. The reflectors must also be entirely visible, vertically, at an angle of not less than 45 degrees from the horizontal. An ADR approved reflector, measuring not less than 95mm x 45mm, is suitable for this purpose.

23. Rear mud flaps must cover the full section width of the rear tyre and extend downwards to within 300 mm of the ground with vehicle unladen and parked on level ground.
24. If the GVM Upgrade Kit is fitted after registration of a vehicle, State Compliance is required. This involves inspection of the vehicle by a Certified Engineer, registered in the state in which the vehicle is registered. A vehicle modification Compliance Plate can only be affixed by a Certified Engineer.

The compliance plate used for vehicles fitted prior to registration is not used, in this case.

25. After the installation has been completed, the Authorised Installer is required to fax to Ironman 4X4 Pty. Ltd. (03 8588 6427) the original copy of the installation form (Page 2 of the fitment instructions FM-EN-14).

Copies of the initial Landcruiser GVM Upgrade Order Form Document Number FM-EN-10 and the Landcruiser Check List FM-EN-11 are to be securely filed at the Authorised Installers place of business.



WARRANTY STATEMENT

This Warranty Statement should be read in conjunction with Ironman 4x4's, Terms and Conditions of Sale which can be found on the Ironman 4x4 website, www.ironman4x4.com.

The Toyota Landcruiser GVM upgrade kit must be fitted by an authorised Ironman 4x4 Suspension workshop. A safety check must be carried out after 500km and tension on all fasteners must be checked.

Ironman 4x4 Pty. Ltd. warrants the suspension products used in the Toyota Landcruiser GVM Upgrade Kit for a period of 1 year or 20,000km, whichever occurs first. As a Secondary Manufacturer, in accordance with regulations laid down by the Department of Infrastructure, Transport and Regional Development, Ironman 4x4 Pty. Ltd. is responsible for ensuring compliance with Australian Design Rules affecting this modification.

The fitting of an Ironman 4x4 GVM upgrade kit does not affect the Vehicle manufacturer's original warranty.

In the unlikely event of an original equipment component failure and the failure to be directly attributable to the GVM upgrade on the vehicle, then Ironman 4x4 Pty. Ltd. will, subject to testing by an independent body, cover the warranty of the component. The Ironman 4x4 warranty does not cover the clutch assembly on manual transmission models. Clutch parts, including aftermarket clutch components should be considered.

A wheel alignment must be carried out after the suspension kit has been fitted. In the absence of any better advice, set the toe to zero. Premature tyre wear may occur if this procedure is not carried out.

IRONMAN 4X4

1300 731 137

suspension@ironman4x4.com

www.ironman4x4.com

