# TEEBRO TOYOTA GVM SERVICE GUIDE

### **3900 / 4200kg GVM - LEAF 70 SERIES** VDJLS J7LS & 1GD (VAT-062143)





### CUSTOMER HANDBOOK Product Service & Maintenance Guide FOR TEEBRO GVM VEHICLES

#### SSM 70 SERIES LEAF GVM

Approval Number	Model	GVM
VTA-050368	VDJ LS	3900/4200KG
VTA-062143	J7 LS & 1 GD	3900/4200KG

#### **RECOMMENDED SERVICING:**

All JMACX products should be serviced at regular intervals as per installation guidelines and original equipment manufacturer (OEM) standards. It is the responsibility of the Customer to maintain servicing of the Goods. Vehicle servicing standards are based on the normal driving use of the vehicle. Extreme driving conditions, increased load and stress on the vehicle will require more regular service intervals and major servicing. Failure to meet stated service requirements will void warranty coverage.

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### TEEBRO TOYOTA

Congratulations on the purchase of your TEEBRO Toyota GVM Upgrade. This document contains details for the proper use and servicing of your vehicle.Due to specific differences among GVM upgrades, you may find that some information may not be applicable to your vehicle. For questions regarding your TEEBRO Toyota please contact the JMACX approved installation facility that completed the installation of your GVM upgrade or contact JMACX Head Office at sales@jmacx.com.au.

#### WARRANTY

TEEBRO GVM upgrades include standard manufacturer warranty. Normal driving use/conditions does not include driveline abuse, excessive power upgrades, excessive speed/driving style, larger than recommended tyres or excessive loads. Extreme driving conditions ie. Cape York / Simpson Desert travel will require a major service on the vehicle upon return of travel. Exposure of the Goods to aggressive corrosive environments such as salt water without sufficient cleaning and rock damage, will void the warranty. Where there is an alleged warranty issue, the Customer must obtain advice and approval in writing by JMACX prior to carrying out any repairs. Warranty does not cover product used in any type of racing or Motorsport competition, custom or modified applications under JMACX range of product, any illegal highway, marine, industrial or commercial use. JMACX does not accept liability for the voiding of a vehicle's manufacturer's warranty or part thereof subsequent to the fitting of the Goods to the Customer's vehicle.

- 1. Warranty only covers faulty components or faulty workmanship with respect to the purchased product.
- 2. This Warranty does not cover damage, fault, failure or malfunction of the Goods due to external causes including but not limited to accident, abuse, misuse, problems with electrical power, servicing not authorised by JMACX Off road Solutions, usage and/or storage and/or installation not in accordance with Product instructions, failure to perform required preventive maintenance, normal wear and tear, or any attempt by any other person other than JMACX Off road Solutions personnel or any person authorised by JMACX Off road Solutions, to adjust, repair or support the Goods and problems caused by use of parts and components not supplied by JMACX Off road Solutions.
- 3. JMACX Off road Solutions does not accept liability for the voiding of a vehicle's manufacturer's warranty or part thereof subsequent to the fitting of the Goods to the Customer's vehicle.
- 4. No warranty will be considered on any item that has been modified eg ground, drilled or welded without the written consent of JMACX Off road Solutions.
- 5. No product manufactured by JMACX or its subsidiary companies can be altered, modified or rewelded without the written consent of JMACX.
- 6. Oil seals and gaskets carry only 3 month warranty on vehicles being driven on road only
- 7. The warranties do not apply where the following may apply:
  - I. the incorrect grade of lubricant or insufficient amount of lubricant causing damage
  - II. the Goods are used beyond the expectations of the original vehicle or Goods' manufacturer
  - III.Acts of neglect or misuse are evident
  - IV.Product has been modified
  - V. Used in racing or competition conditions without prior consent of JMACX Off Road Solutions
  - VI.Used beyond the expectations of the original vehicle manufacture and or JMACX Off Road Solutions specifications.2

#### SERVICING

8. It is the responsibility of the Customer to maintain servicing of the Goods. Vehicle servicing standards are based on the normal driving use of the vehicle. Extreme driving conditions, increased load and stress on the vehicle will require more regular service intervals and major servicing. Failure to meet stated service requirements will void warranty coverage. Normal driving use/conditions does not include driveline abuse, excessive power upgrades, excessive speed/driving style, larger than recommended tyres, excessive loads. Extreme driving conditions ie. Cape York / Simpson Desert travel will require a major service on the vehicle upon return of travel.

Road S

- 9. A full suspension check must be completed within 500km-1000km of suspension installation by a JMACX approved and certified installer, failure to do so will void warranty.
- 10. The 500-1000km mandatory suspension check must be completed at the facility the works were carried out at.
- 11. The Customer warrants to service the vehicle at recommended intervals.

#### **GVM SUSPENSION UPGRADES**

- 12. A full suspension check must be completed within 500km-1000km of suspension installation by a JMACX approved and certified installer, failure to do so will void warranty.
- 13. The 500-1000km mandatory suspension check must be completed at the facility the works were carried out at.
- 14. Removal of any JMACX Off Road solutions supplied component that forms part of the Federally approved GVM including computer re calibration will void any warranty.
- 15. JMACX Off Road Solutions GVM upgrades may have specific warranty terms. Refer to the Customer GVM handbook for details.

#### **HIGH LIFT**

- 16. When the lift on a vehicle exceeds 50mm we stipulate that low range should not be used in a scenario where the vehicle is travelling at a speed in excess of 40km p/hr due to driveline angles. OEM diff lockers are designed to disengage at speeds in excess of 40km p/hr therefore JMACX Off Road Solutions deems there to be no reason to be engaged in low range 4WD exceeding this speed.
- 17. If a customer has a reason to be above 40KM p/hr is low range, it is recommended to purchase at additional cost products that achieve this outcome that is not normally required. For example on a 4495kg GVM a Cardinal drive shaft can be added at an additional cost.

#### FITTING

- 18. Damage to products through fitment error by an installer other than JMACX Off Road Solutions HQ is not covered under warranty. Warranty may become void when product is installed in conjunction with anything other than genuine manufacturer or JMACX components.
- 19. Where required, JMACX recommend a wheel alignment after fitment of any new suspension component. Obtaining wheel alignments is the responsibility of the Customer.

#### **BRAKE DOWNS**

20. JMACX Off Road Solutions is not liable for any costs incurred to the customer in the event of a vehicle break down. This includes accomodation, towing fees, out of pocket expenses, emotional distress or loss of business expenses.



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#### JMACX FACILITIES

21. Any works, services or product fittings performed by a JMACX Off Road Solutions approved Facility or Installer that are deemed faulty are the responsibility of the Facility/Installer to rectify.

For full Warranty information see the full JMACX Off Road Solutions Terms & Conditions available at www.jmacx.com.au

#### GVM & WEIGHT CARRYING SPECIFICATIONS

View your Gross Vehicle Mass (GVM) Specification on your Secure Vehicle Identification (SVI) sticker, located on your vehicle. For your GVM, front and rear axle load ratings and maximum towing mass see your GVM sticker located on your vehicle.

#### TYRE LOADING

View your Tyre Loading information on your Tyre Placard fitted to your vehicle. This includes your cold tyre inflation pressures and load capacity per axle.

#### ESSENTIAL MAINTENANCE & SERVICING

#### **RECOMMENDED SERVICING:**

All JMACX products should be serviced at regular intervals as per installation guidelines and original equipment manufacturer (OEM) standards. It is the responsibility of the Customer to maintain servicing of the Goods. Vehicle servicing standards are based on the normal driving use of the vehicle.

Extreme driving conditions, increased load and stress on the vehicle will require more regular service intervals and major servicing. Failure to meet stated service requirements will void warranty coverage.

#### WHEEL NUT CHECK:

All Vehicles with a GVM upgrade will require load rated wheels to be fitted to the vehicle. You MUST arrange for your wheel nuts to be torqued to specifications at 50-100km by a competent person.

#### **500KM SERVICE CHECK:**

After initial installation of any JMACX GVM the customer is required to have their vehicle checked at a JMACX authorised facility as soon as the vehicle has reach 500KM. If you do not return the vehicle to the JMACX facility that completed the original GVM works, an additional cost may occur as this service is part of the original fitting price.

This is a mandatory check to ensure all componentry is settled and compliant with all torque specifications. NOTE: Failure to do this check will void all JMACX warranty.

\* Please see Warranty terms for full advice.

This vehicle has been fitted with a JMACX rear differential housing. APPLIES TO VEHICLES WITH FACTORY ELECTRIC LOCKERS ENGAGE 4WD & LOCKER <u>BEFORE</u> AXLE OR DIFF REMOVAL

DO NOT DIS-ENGAGE UNTIL NEW AXLES ARE ARE FITTED THIS WILL STOP THE LOCKER DRIVER MECHANISM FALLING OUT.



#### WARNINGS

#### ▲ DIFFERENTIAL WARNING:

For 70 series Landcruiser vehicles fitted with factory electric lockers the locker must be engaged and 4WD selected before axle and/or diff removal. Do not disengage until axles are re fitted. This will stop the locker driver mechanism from falling out. (Applies to front diff also)

#### ▲ PRODUCT SAFETY WARNING:

JMACX Off Road Solutions (JMACX) suspension products are intended to improve on and off road performance of your vehicle. Modifying your vehicle may result in vehicle handling differently than a factory equipped vehicle.

Extreme care must be used to prevent loss of control or vehicle rollover. Failure to drive your modified vehicle safely may result in serious injury or death. JMACX does not recommend the combined use of suspension lifts, body lifts or other lifting devices.

Always drive your modified vehicle at reduced speeds to ensure your ability to control your vehicle under all driving conditions.

#### ▲ GVM AXLE OVERLOADING WARNING:

Overloading of GVM on front or rear axle loads will void your warranty and may cause serious injury or death.

#### ▲ LEAF GVM PAYLOAD WARNING:

#### 79 SERIES LEAF 4200 Kg GVM TEEBRO:

This GVM requires a constant payload weight of no less than 600Kg. If your vehicle is no longer fitted with a minimum payload of 600Kg, the suspension must be reconfigured.

#### 79 SERIES LEAF 3900 Kg GVM TEEBRO:

This GVM requires a constant payload weight of no less than 400Kg.

-If your vehicle is no longer fitted with a minimum payload of 400Kg, the suspension must be reconfigured.

 Please contact your nearest JMACX representative to discuss reconfiguration of your suspension.



#### **PRODUCT INSTALLATION**

 $\triangle$  Installation must be completed by a qualified service person.

The qualified service person has an obligation to obtain and follow the correct product installation specifications. JMACX will not be held liable for inadequate installation. Detailed installation instructions are provided to JMACX Authorised Installation Facilities or by request by email to sales@jmacx.com.au. These installation instructions are in addition to the original equipment manufacturer (OEM) manual.

#### PRE INSTALLATION NOTES:

- Refer to Original Equipment Manufacturer (OEM) service manual for model/year of vehicle for correct disassembly/reassembly procedures of all OEM components.
- Secure and properly block vehicle prior to installation of JMACX suspension products. Adhere
  to recommendations when replacement fasteners, retainers and keepers are called out in the
  OEM manual.
- Larger rim and tyre combinations may increase leverage on suspension, steering and related components. When selecting combinations larger than OEM, consider the additional stress you could be including on the OEM and related components.
- Post suspension system vehicles may experience driveline vibrations. Angles may require tuning, slip joints on shaft may require replacement, shafts may need to be lengthened or trued, and universal joints may need to be replaced.
- Secure and properly block vehicle prior to installation of JMACX suspension components.

#### **COIL SPRINGS:**

- Install new springs in the correct orientation and mounting position as the old springs. Be sure to re-install the original rubber insulators if fitted, or replace them if damaged.
- Please note that springs marked N/S are fitted to the near side (Passenger side), springs marked D/S are fitted to the drivers side. Variations to this can occur between left and right hand vehicles, or vehicles with modified weight distribution.
- Once installation is complete and the vehicle has settled if the vehicle seems to lean to a certain side, consider swapping the coils from side to side to resolve the issue.
- As some coil springs are of progressive rate design, the progressive portion (closer coils) should be fitted to the top.
- If in some cases the new coil spring installed may be shorter than the original spring ensure that the coil spring remains captive upon full articulation.

**MODIFICATION CERTIFICATION:** After fitment to any road registered vehicle, engineer modification certification is required as per law applicable in state of registration.



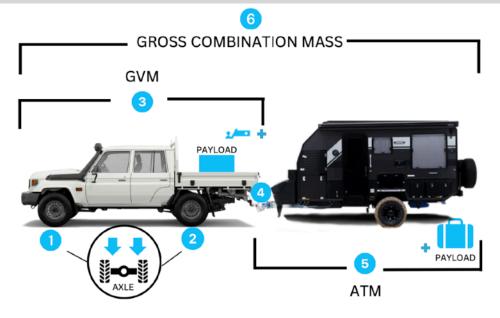
#### **POST-INSTALLATION WARNINGS:**

- Ensure all fasteners are checked and torqued to correct specifications. Check all steering components for clearance.
- Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness.
- Check steering components for clearance. Test and inspect brake system.
- Inspect brake hoses and breathers at full extension for adequate slack. Failure to carry out this check may result in component failure. If there is an issue with hose length the correct length hose should be sourced and replaced before completion of the vehicle. Longer replacement hoses, if needed should be purchased.
- All fasteners must be checked and torqued to specification after 500km. Fasteners and components should be inspected during regular servicing

**DIFFERENTIAL:** For vehicles fitted with JMACX rear (APPLIES TO FRONT DIFFS TOO) differential housing, you must engage 4wd and rear locker before removing axles.



#### GVM & BTC LOADING



#### **DEFINITIONS**

#### **GROSS VEHICLE AXLE MASS**

The maximum load on either the Front or Rear axle resulting from the distribution of the GVM.

#### 3 GROSS VEHICLE MASS (GVM)

GVM is the maximum allowable laden weight of a vehicle, as set by the manufacturer/GVM Provider. The vehicle, including its passengers, luggage, fuel, and weight on the tow ball can not exceed these figures.

#### 4 TOW BALL WEIGHT

The proportion of the trailer weight that is applied to the rear of the tow vehicle. Most trailer mass is on wheels when you tow a caravan/trailer. However a small amount of the towing weight passes to the vehicle via the tow bar and ball. It is recommended to take your vehicle to a weigh bridge for an accurate calculation of tow ball weight.

#### AGGREGATED TRAILER MASS

The maximum that the trailer may weigh when its fully loaded, including tow ball weight.

#### 6 GROSS COMBINATION MASS

**BRAKE TOW CAPACITY** 

The maximum total combined mass of a vehicle, its load including fuel, accessories, passengers, their gear and the total weight of any trailer it's towing.

The maximum laden mass of the vehicle combination (tow vehicle and caravan) is not permitted to exceed the GCM rating. It is important to note that even if the tow vehicle and trailer are individually within their respective maximum ratings, the combination may not necessarily be within the GCM rating of the tow vehicle.

#### 6°

The maximum weight that a vehicle will be able to tow when the trailer being towed is equipped with its own braking system, this includes ball weight.



#### GROSS VEHICLE MASS (GVM) - SPECIFIED BY THE VEHICLE MANUFACTURER/ GVM PROVIDER

#### **GVM LOADING EXAMPLES**

#### **GVM TOWING**



#### Example:

Use scales to measure front & rear axles with vehicle fully loaded then add Tow ball down weight.

Figures 1 & 2 CAN NOT be individually exceeded regardless of vehicle total weight.

#### GVM NOT TOWING



#### Example:

Use scales to measure front & rear axles with vehicle fully loaded.

Figures 1 & 2 CAN NOT be individually exceeded regardless of vehicle total weight.

#### GROSS COMBINATION MASS (GCM) - SPECIFIED BY THE VEHICLE MANUFACTURER/ GVM PROVIDER



#### MAXIMUM VEHICLE GCM

\*GVM type dependant \*GCM conditions apply Pre registration \*Post registered may vary as this is State & engineer dependant

#### BRAKE TOW CAPACITY (BTC) - SPECIFIED BY THE VEHICLE MANUFACTURER/ GVM PROVIDER





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### GVM & BTC LOADING

**BTC Under Second Stage Manufacture =** Post registration approved & State dependant

GVM	втс	GCM	FRONT AXLE	REAR AXLE	APPROVALS
3900KG	3500KG	7400KG	1480KG	1550KG	Post rego/Engineer/State dependant
4200KG	3500KG	7700KG	2850KG	2850KG	Post rego/Engineer/State dependant



WARNING: Overloading of either GVM on front or rear axle may result in serious injury or death, and will void all JMACX warranty.



#### PRODUCT INSTALLATION

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The qualified service person has an obligation to obtain and follow the correct product installation specifications. JMACX will not be held liable for inadequate installation. Detailed installation instructions are provided to JMACX Authorised Installation Facilities or by request by email to sales@jmacx.com.au. These installation instructions are in addition to the original equipment manufacturer (OEM) manual.

#### PRE INSTALLATION NOTES:

- Refer to Original Equipment Manufacturer (OEM) service manual for model/year of vehicle for correct disassembly/reassembly procedures of all OEM components.
- Secure and properly block vehicle prior to installation of JMACX suspension products. Adhere
  to recommendations when replacement fasteners, retainers and keepers are called out in the
  OEM manual.
- Larger rim and tyre combinations may increase leverage on suspension, steering and related components. When selecting combinations larger than OEM, consider the additional stress you could be including on the OEM and related components.
- Post suspension system vehicles may experience driveline vibrations. Angles may require tuning, slip joints on shaft may require replacement, shafts may need to be lengthened or trued, and universal joints may need to be replaced.
- Secure and properly block vehicle prior to installation of JMACX suspension components.

#### **COIL SPRINGS:**

- Install new springs in the correct orientation and mounting position as the old springs. Be sure to re-install the original rubber insulators if fitted, or replace them if damaged.
- Please note that springs marked N/S are fitted to the near side (Passenger side), springs marked D/S are fitted to the drivers side. Variations to this can occur between left and right hand vehicles, or vehicles with modified weight distribution.
- Once installation is complete and the vehicle has settled if the vehicle seems to lean to a certain side, consider swapping the coils from side to side to resolve the issue.
- As some coil springs are of progressive rate design, the progressive portion (closer coils) should be fitted to the top.
- If in some cases the new coil spring installed may be shorter than the original spring ensure that the coil spring remains captive upon full articulation.

**MODIFICATION CERTIFICATION:** After fitment to any road registered vehicle, engineer modification certification is required as per law applicable in state of registration.



#### **POST-INSTALLATION WARNINGS:**

- Ensure all fasteners are checked and torqued to correct specifications. Check all steering components for clearance.
- Verify clearance between exhaust and brake lines, fuel lines, fuel tank, floor boards and wiring harness.
- Check steering components for clearance. Test and inspect brake system.
- Inspect brake hoses and breathers at full extension for adequate slack. Failure to carry out this check may result in component failure. If there is an issue with hose length the correct length hose should be sourced and replaced before completion of the vehicle. Longer replacement hoses, if needed should be purchased.
- All fasteners must be checked and torqued to specification after 500km. Fasteners and components should be inspected during regular servicing

**DIFFERENTIAL:** For vehicles fitted with JMACX rear (APPLIES TO FRONT DIFFS TOO) differential housing, you must engage 4wd and rear locker before removing axles.



### **APPLIES TO VEHICLES WITH FACTORY ELECTRIC LOCKERS**

### **ENGAGE 4WD & LOCKER <u>BEFORE</u> AXLE OR DIFF REMOVAL**

### DO NOT DIS-ENGAGE UNTIL NEW AXLES ARE ARE FITTED THIS WILL STOP THE LOCKER DRIVER MECHANISM FALLING OUT.

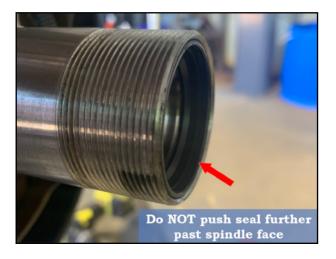
### **DIFF INSTALLATION INSTRUCTIONS**

1. Remove diff centre housing studs from factory diff housing and re install new JMACX housing using LOCTITE. ENSURE the 3 longer bolts are fitted in the correct position as per below image



2. Re assemble diff as per factory manual using factory axle seals and diff centre gasket. **NOT SUPPLIED** - Recommend to only use genuine Toyota axle seals.

Seal is to be fitted flush with spindle face.





### **DIFFERENTIAL SERVICING DETAILS**

INTERVALS	PART	MAINTENANCE REQUIRED
First 1,000 km	General	- Bolt check/re torque and oil change to completed at 1,000km.
First 1,000 km	Oil Change	Differential oil must be changed at 1,000km. (Oil change is an additional charge not covered by original fitment price)
Every 50,000 or after extreme use.	Oil Change	NOTE: Extreme conditions and/or extreme use will require more frequent servicing. (See below Warranty advice) Park on level ground. Fill with oil to plug level. <b>Oil Type:</b> 75W -90W oil as per original manufactures recommendation <b>Oil capacity of Diff:</b> 3.5 Ltrs (approx.)
Periodic Visual	General	Periodic visual inspection of the entire assembly is required. Check torque on all fasteners. Rotate hub assembly with drive flange and Axle removed to check hub bearings for smoothness. Check for leaks.
Every 20,000 km	Bearings	Mandatory wheel bearing servicing at 20,000km. Strip, inspect & repack bearings with high quality bearing grease. JMACX recommend to fit both a new 'Drive flange oil/ Axle seal' and a 'Drive flange to hub o-ring'.
Every 00,000 km	Bearings	REPLACE bearing - SEVERE DUTY/USE MAY REQUIRE REPLACEMENT SOONER

#### Refer to JMACX Warranty terms for advice on "Normal use" of the upgraded diff housing.

#### WARRANTY

26. Normal driving use/conditions DOES NOT include: driveline abuse, excessive power upgrades, excessive speed/driving style, larger than recommended tyres, excessive loads. Extreme driving conditions ie. Cape York/Simpson desert travel will require a major service on the vehicle upon return of the travel.

### **3900 & 4200 LEAF GVM** AXLE GUIDE



### **APPLIES TO VEHICLES WITH FACTORY ELECTRIC LOCKERS**

### ENGAGE 4WD & LOCKER <u>BEFORE</u> AXLE OR DIFF REMOVAL

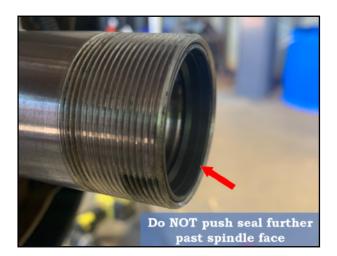
### DO NOT DIS-ENGAGE UNTIL NEW AXLES ARE ARE FITTED THIS WILL STOP THE LOCKER DRIVER MECHANISM FALLING OUT.

### **AXLE INSTALLATION INSTRUCTIONS**

1. MUST use brass drift/punch to remove cones in conjunction with jacking bolts to remove drive plate. Drive plates are hardened steel, use of a hammer WILL cause fractures

2. Seal is to be fitted flush with spindle face.

## RECOMMENDED TO ONLY USE GENUINE TOYOTA AXLE SEALS.



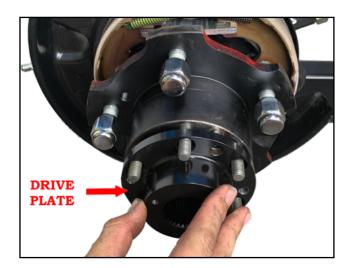
3. Insert JMACX axles into housing with

circlip end facing outward on wheel hub

end. Lightly grease the spline.



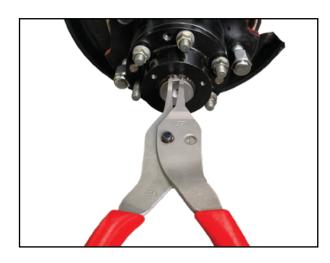
4. Fit JMACX drive plates to wheel hubs as per factory workshop manual for existing axle fitment.



### **3900 & 4200 LEAF GVM** AXLE GUIDE



5. Fit Circlip to axle groove, ensuring circlip is firmly locked into position.



6. Apply a small amount of grease to blue end cap before fitting with 3 M6 bolts & o'ring.



#### WHEEL BEARING SERVICING

- Mandatory wheel bearing servicing at every 20,000km as per OEM book.

### **3900 & 4200 GVM** LEAF AXLE & DIFF

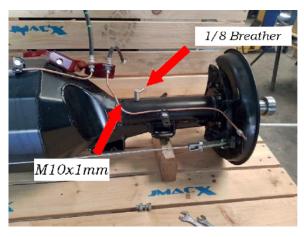


STEP 1.

Fit factory hand brake cable. Install hand brake tabs to extend at cable ends use 2 x M8 bolts supplied.



### 8-2016 to CURRENT DPF Brake line Fitting





For DPF model fit supplied 1/8 bung to 2nd M10x1mm hole (closest to the diff pumpkin on DPF model) as this is not required. Use thread lock/loctite.

#### 8-2007 to 2016 NON DPF Brake





# - Check ALL suspension bolts at 1,000km -

### **3900 & 4200 GVM** ALPHA SHOCKS





For all ALPHA electric and manual instructions please see the seperate 'ALPHA Manual & Electric' install guides.

Below are the QR quick links:





Manual Install Guide

**Electric Install Guide** 

#### SHOCK CARE GUIDE ALSO AVAILABLE - Available at JMACX.com.au



MANUAL 'HOW TO USE' GUIDE AVAILABLE - Available at JMACX.com.au

