



# FOUR-WHEEL LASER WHEEL ALIGNER

MODEL NO: **GA70.V2**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to instructions



Wear protective gloves



Wear safety footwear



Wear protective clothing



Keep in dry area protect from rain



Warning laser beam

## 1. SAFETY

### 1.1 GENERAL SAFETY

- ❑ **WARNING!** Ensure Health & Safety, local authority, and general workshop practice regulations are adhered to when using this equipment.
- ✓ Maintain the wheel aligner in good condition (use an authorised service agent).
- ✓ Replace or repair damaged parts. *Use genuine parts only. Non-authorized parts may be dangerous and will invalidate the warranty.*
- ✓ Locate wheel aligner in a suitable working area, keep area clean and tidy and free from unrelated materials.
- ❑ **WARNING!** Use aligner on vehicles that are parked on level and solid ground.
- ✓ Keep the gauge clean to ensure accurate performance.
- ✗ **DO NOT** use outside in damp or wet weather conditions.
- ✗ **DO NOT** allow untrained persons to operate the aligner.
- ✗ **DO NOT** leave the aligner unattended.
- ❑ **WARNING!** When setting front end alignment on commercial vehicles never make adjustments to drop arms or interconnecting links. Doing so could result in serious tyre, wheel and steering problems.
- ❑ **WARNING!** The warnings, cautions and instructions contained within this document cannot cover all possible conditions and situations that may occur. It must be understood that common sense and caution are factors which cannot be built into this product, but must be applied by the operator.
- ✓ Any alignment changes deemed necessary as a result of using this equipment must be made strictly in accordance with the vehicle manufacturer's recommendations.

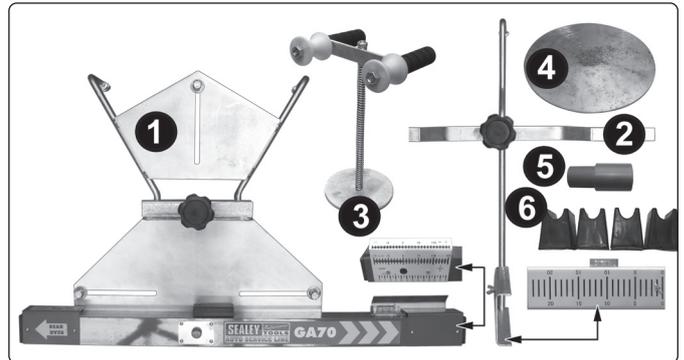
### 1.2 LASER SAFETY

The **GA70** utilises a Class II laser that emits low levels of visible radiation (i.e. wavelengths between 400 and 700 nanometres) which are safe for the skin but not inherently safe for the eyes. The Class II emission limit is set at the maximum level for which eye protection is normally afforded by natural aversion responses to bright light. Accidental eye exposure is therefore normally safe, although the natural aversion response can be overridden by deliberately staring into the beam, and can also be influenced by the use of alcohol or drugs.

- ❑ **WARNING! DO NOT** look or stare into the laser beam as permanent eye damage could result.
- ✗ **DO NOT** direct the laser beam at any person's (or animal's) eyes as eye damage could result. If the beam is obstructed by a person during use, release the contact switch immediately.
- ✗ **DO NOT** use the equipment while under the influence of alcohol, drugs or whilst on medication.
- ✓ Be aware that reflections of the laser beam from mirrors or other shiny surfaces can be as hazardous as direct eye exposure.

## 2. INTRODUCTION

Fast, simple and accurate alignment of both front and rear wheels. Optimises vehicle performance and set up after installation or modification of steering and suspension components. Simple and fast to use, it is ideal for the busy professional workshop and has a fast return on investment - potentially adding value to every steering or suspension job. This fully portable kit is also ideal for track-day set up for the enthusiast. Works on practically all cars and light commercials with rim diameters between 330mm(13") and 560mm(22"). Supplied with steering wheel clamp, wheel turn plates and wheeled storage rack and comprehensive operating instructions.



The GA70.V4 kit consists of: Mobile storage unit (see below)

1. Laser Measuring Head	X2	4. Dished Turning Plate	X2
2. Alignment Assembly Flags	X2	5. Extension Bobbins	X6
3. Steering Wheel Clamp	X1	6. 13" Wheel Spacers	X4



### 3. SPECIFICATION

Model No: ..... **GA70.V2**  
 Minimum Rim Diameter ..... 330mm  
 Maximum Rim Diameter ..... 560mm  
 Optional Accessory: . . . **GA70CR** - Calibration Rig (Sold Separately)

### 4. FOUR WHEEL ALIGNMENT

4.1. Accurate four wheel alignment should always take place with reference to the vehicles centre line to avoid problems similar to the one shown in (fig.1) where the vehicle will steer to the left resulting in the steering wheel having to be turned to the right to compensate. Basically, rear wheel tracking must be kept equal to the centre line and correctly toed in or out according to the vehicle manufactures specification in order for the vehicle to handle correctly. Check thrust lines are equal to centre line before proceeding.

### 5. OPERATION

**IMPORTANT:** Prior to use, check that the tyre pressures are correct and if wheel covers are fitted, remove them. Ensure that the vehicle is on a smooth level surface with the wheels pointing straight ahead. **DO NOT** reverse the vehicle into position, but drive straight ahead into position. Ideally vehicle should be on a ramp or lift for easier access to the track rods, if adjustment is necessary.

#### 5.1. FRONT TO REAR WHEEL ALIGNMENT

5.1.1. Place both dished turn plates in front of the front wheels, with their curve facing downwards. Drive the vehicle onto the turn plates, ensuring they are central to the wheels (fig.2).



fig.2

- 5.1.2. Set steering wheel in straight ahead position and lock using the steering wheel clamp (fig.3).
- 5.1.3. Hang both laser measuring heads on the front wheels with toe scales positioned to the front of the vehicle (fig.4).

**NOTE:** Extension bobbins are used for vehicles that have dished wheels (eg 4x4 or vans) where the silver bobbins won't reach onto the wheel rim. The Extension Bobbins fit over the silver bobbins to give an extra 40mm of reach.

**NOTE:** use 13" Wheel Spacers under the Laser Measuring Heads when necessary.

5.1.4. Hang the alignment assembly flags onto the top of the rear tyres and make adjustments, so that the horizontal bar is sitting at approximately the centre of the wheel and touching the tyre at both ends. Ensure that the scale is at 90° to the wheel. Check the spirit level to ensure the correct position is achieved (fig.5).



fig.4



fig.5



fig.3

5.1.5. Turn on both front laser measuring heads, then look to rear flags (fig.6) there will be a reading on both sides, (the readings may not be the same). If there are two different readings on the rear flags, adjust both front track rod ends, ensuring that the front wheels are in line with the rear.

5.1.6. The first step to achieving this, is to add both rear scale readings together and divide by 2.

5.1.7. For example:

5.1.8. N/S/R reading 2 O/S/R reading 4 ( $2 + 4 = 6 \div 2 = 3$ )

5.1.9. Adjust both front track rod ends until 3 on both rear flags is achieved.

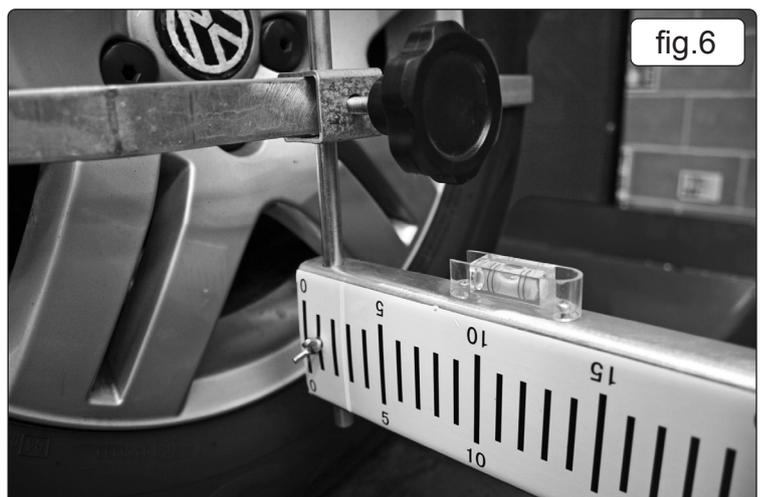
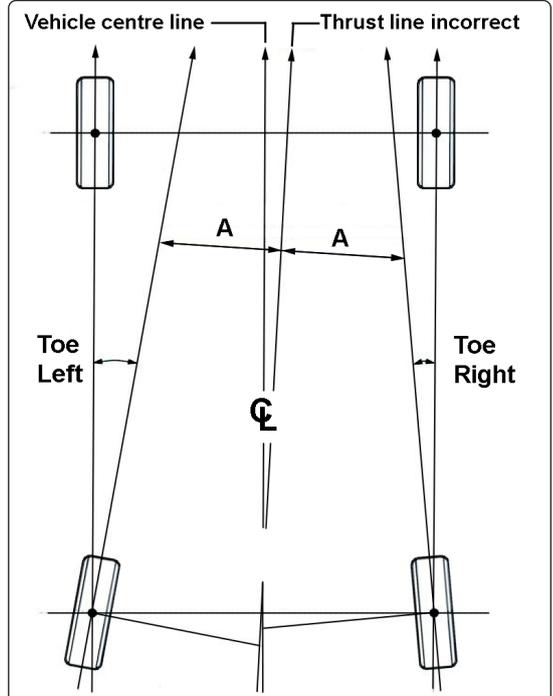


fig.6

fig.1



**PROBLEM: UNEQUAL REAR TOE ADJUSTMENT CAUSES THRUST LINE TO MOVE AWAY FROM VEHICLE CENTRELINE CAUSING STEERING AND ALIGNMENT PROBLEMS**

## 5.2. CHECKING TOE ON FRONT WHEELS Refer to fig.7

- 5.2.1 Now that the front wheels are aligned with rear wheels, **see section 5.1.5**, next check the toe readings on the front laser measuring head scales.
- 5.2.2 To obtain the toe, a small calculation is required. The reason for this is because you cannot ensure that both the O/S/F and N/S/F laser heads are positioned 100% equal to each other when fitted to the wheels.
- 5.2.3 **RULES FOR CALCULATION**  
If both lasers are hitting in the same colour zones, add them together to obtain the vehicle's toe.

### Example 1:

O/S/F Scale                      N/S/F Scale  
- 1 Red                              -2 Red (Toe is currently -3 toe out)

### Example 2:

O/S/F Scale                      N/S/F Scale  
+ 1 Green                            + 2 Green (Toe is currently +3 toe in)

If the lasers are hitting in two different colour zones, subtract the lesser number from the higher number.

### Example 3:

O/S/F Scale                      N/S/F Scale  
- 3 Red                                + 4 Green (Toe is currently + 1 toe in)

If the lasers are hitting in different colour zones but have equal readings, then the toe is 0.

### Example 4:

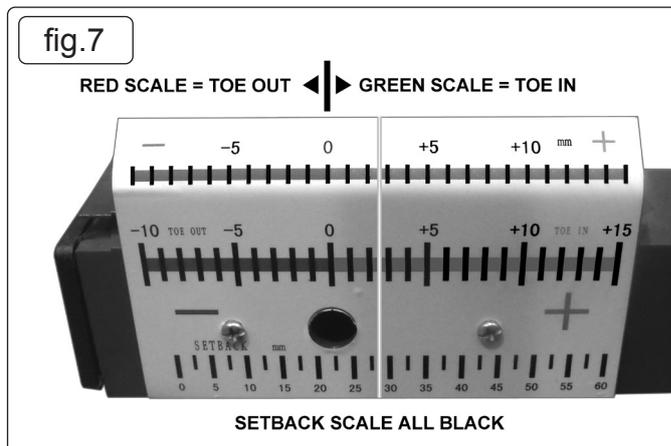
O/S/F Scale                      N/S/F Scale  
- 2 Red                                + 2 Green (0 toe).

## 5.3. ADJUSTING TOE

- 5.3.1. Now that the vehicle's toe has been obtained using **section 5.2** calculations, it may be necessary to adjust the toe according to the manufacturer's specifications.
- 5.3.2. When adjusting track rod ends, make sure to adjust equally on both sides. If it needs to be adjusted half a turn on the O/S/F then it needs to be adjusted half a turn on the N/S/F. Once the desired toe is obtained using the calculations, then check the rear flags to see whether they have equal readings on both sides.
- 5.3.3. **NOTE:** If the rear toe has been adjusted, the rear flag reading will have changed from the original, set in **section 5.1.5**. If they are still equal then the job is complete.
- 5.3.4. If the rear flags are not equal then this would suggest the O/S/F and N/S/F has not been adjusted, track rod ends equally when adjusting the toe, or the thrust angle is not equal on the rear wheels in relation to the centre line.

## 6. MAINTENANCE

- 6.1. After use, always secure all tools and measuring units back onto the mobile storage unit to minimise damage.
- 6.1.1. If a laser beam becomes difficult to see on the gauge, the batteries in question may need changing.
- 6.1.2. To replace the batteries, slide back the battery covers on the laser alignment unit to reveal the battery compartments and fit new batteries. Dispose of old batteries correctly (see Battery Removal section on next page). Refit the covers.
- 6.1.3. Periodically clean all the measuring units and tools with a slightly dampened cloth.
- 6.1.4. The lasers should be calibrated on a yearly basis and in particular if the units are damaged and there is doubt that the laser heads are still in alignment. Contact your Sealey stockist to arrange returning the unit for re-calibration.
- 6.1.5. Alternatively, a calibration rig (**Model No: GA70CR**) is available for purchase if required.



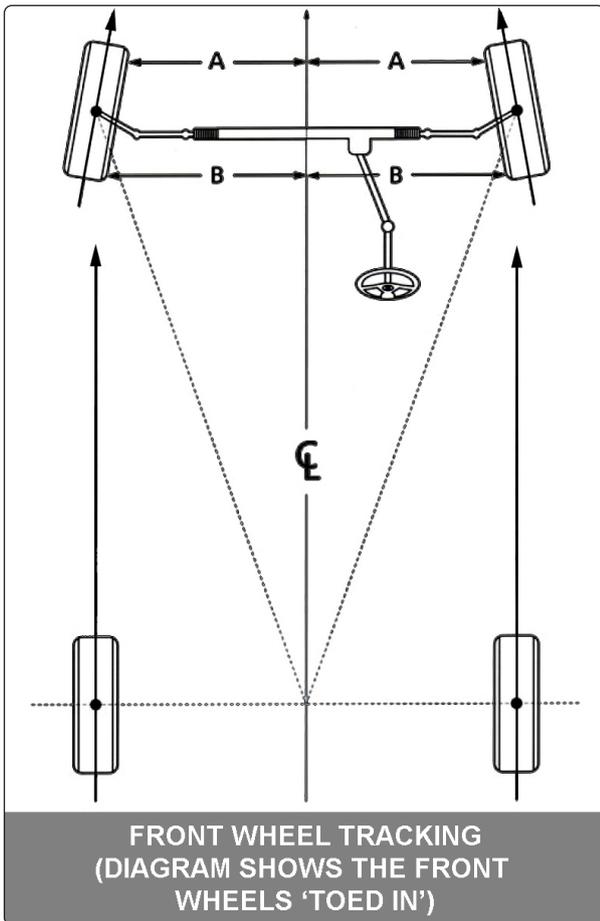


fig.8

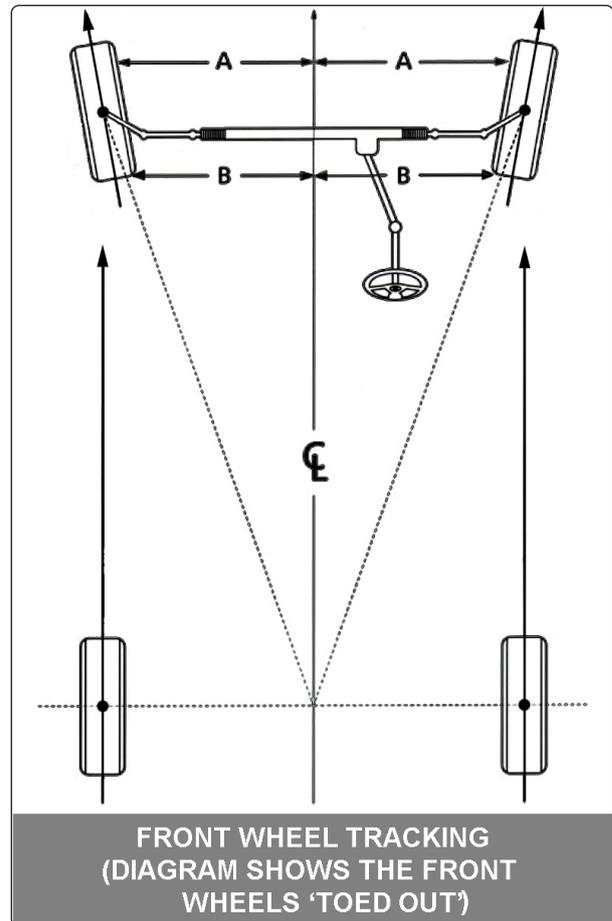


fig.9

Parts support is available for this product. Please log on to [www.sealey.co.uk](http://www.sealey.co.uk), email [sales@sealey.co.uk](mailto:sales@sealey.co.uk) or telephone 01284 757500



**ENVIRONMENT PROTECTION**

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



**BATTERY REMOVAL**

Under the Waste Batteries and Accumulators Regulations 2009, Jack Sealey Ltd are required to inform potential purchasers of products containing batteries (as defined within these regulations), that they are registered with Valpak's registered compliance scheme. Jack Sealey Ltd's Batteries Producer Registration Number (BPRN) is BPRN00705.



**BATTERY REMOVAL**

1. Remove the battery covers on each laser alignment unit by unscrewing the cover screws, to reveal the battery compartment.
2. Remove the 4 AA batteries from their holder and dispose of the batteries according to local authority guidelines.

**Note:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice. Please note that other versions of this product are available. If you require documentation for alternative versions, please email or call our technical team on [technical@sealey.co.uk](mailto:technical@sealey.co.uk) or 01284 757505. **Important:** No Liability is accepted for incorrect use of this product.

**Warranty:** Guarantee is 12 months from purchase date, proof of which is required for any claim.

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