



INSTRUCTIONS FOR: CAMBER, CASTOR & KING PIN GAUGE SET Model No: **GA42**

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 OR PERSONAL INJURY, AND WILL INVALIDATE THE WARRANTY. PLEASE KEEP INSTRUCTIONS SAFE FOR FUTURE USE.

1. SAFETY INSTRUCTIONS

- ❑ **WARNING!** Ensure Health & Safety, local authority, and general workshop practice regulations are adhered to when using this equipment.
- ✓ Maintain the gauges 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.
- ❑ **WARNING!** Use the gauges on level and solid ground.
- x **DO NOT** use outside in damp or wet weather conditions.
- x **DO NOT** allow untrained persons to use the gauges.
- ❑ **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.
- ✓ Any alignment changes deemed necessary as a result of using this equipment must be made strictly in accordance with the vehicle manufacturer's recommendations.



fig.1

2. INTRODUCTION & SPECIFICATION

The GA42 consists of two separate instruments. The long handled assembly is used to measure camber angles and check floor level. The smaller assembly checks castor angles and king pin inclination in one operation and can be attached to a stub axle nut, to a wheel stud or to a centre lock wheel. It is recommended that these instruments are used in conjunction with the GA44 steering turntables for greater accuracy.

3. CONTENTS

Carefully unpack the contents of the box. If anything is missing or damaged contact your Sealey dealer immediately.

Contents :

1. **CAMBER ANGLE GAUGE.**
2. **Stud axle clamp.**
3. **CASTOR & KING PIN GAUGE.**
4. **Wheel stud mounting bracket**
(large) for use with item 3.
5. **Wheel stud mounting bracket**
(small) for use with item 3.
6. **Hook for centre lock clamp.**
7. **Large conical washer**
(for use with item 4)
8. **Centre lock clamp**
9. **Hook for centre lock clamp**
10. **Small conical washer**
(for use with item 5)

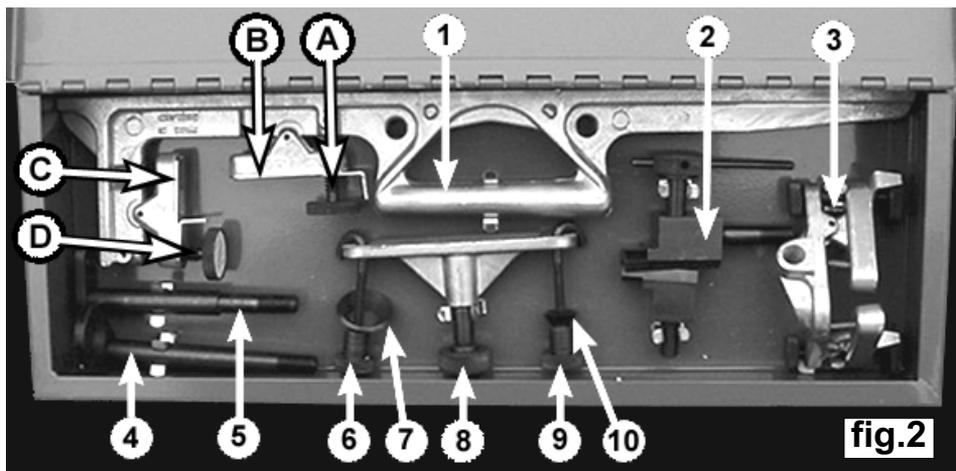


fig.2

5. MEASURING CAMBER ANGLE

- 5.0 Check whether the floor is level as described in Section 7 and that tyres are correctly inflated.
- 5.1 To set the gauge up hold it in the vertical position and adjust the dial marked 'camber' (fig.2 - D) so that '0' is in line with the index mark.
- 5.2 Apply the long edge of the gauge to the tyre sidewall holding it in a vertical position. To obtain an accurate reading avoid the part of the tyre that bulges at ground level.
- 5.3 Turn the camber dial (fig.2 - D) in either direction until the bubble in the spirit level (fig.2 - C) is centred. The number of graduations turned through represents the camber 'in' or camber 'out' depending on which way it was necessary to turn the dial.
- 5.4 **NOTE :** The camber angle is additive. If the dial is rotated half a revolution and the spirit level bubble has not centred, continue turning the dial until the bubble has centred. The total angle measured is obtained by counting the number of graduations through which the dial has been rotated.
- 5.5 If it has been established that the floor is not level make any necessary adjustments to the readings. (See Section 7)

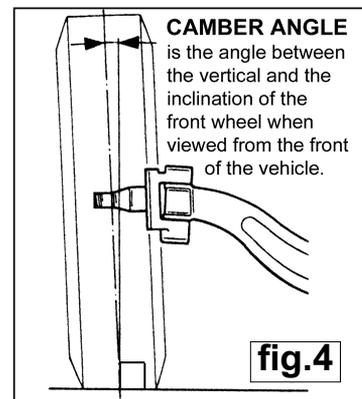


fig.4

6. MEASURING CASTOR ANGLE & K.P.I.

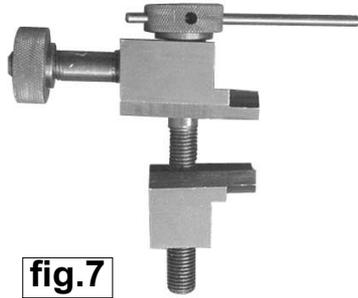


fig.7



fig.6



fig.5

- 6.0 **USE OF GA44 STEERING TURNTABLES.** It is recommended that the gauge be used in conjunction with a pair of GA44 steering turntables to improve accuracy. The vehicles front wheels should be positioned centrally on the turntables as described in the instructions for the GA44. Front wheel drive vehicles should have the foot brake applied by means of a brake pedal depressor or similar means to prevent the front wheels rotating whilst using the gauge. Before taking any readings the locking pins should be removed from the turntables.
- 6.1 **MOUNTING THE GAUGE.** There are three alternative ways of mounting the castor angle and king pin inclination gauge to a wheel. The most common method will be to use one of the wheel stud brackets as shown in fig.5. Each wheel stud bracket is provided with a matching conical washer which may be needed to accommodate reduced diameter studs. The centre lock bracket shown in fig.6 is for use with centre lock wheels where the two hooks will either be attached to spokes on the wheel or hooked around the back of the centre lock nut. The stud axle clamp shown in fig.7 allows the gauge to be attached to a central hub nut. When the appropriate clamp is in position slide the gauge onto the spindle and secure it with the knurled nut in an approximate horizontal position. The castor dial should be on the left as shown in fig.5.
- 6.2 **CHECK THAT THE FLOOR IS LEVEL.** See section 7.0. Also check tyre inflation levels.
- 6.2 **TAKING READINGS.** Turn the front of the wheel to be checked IN by 20° (i.e. the right hand wheel turned to the left or the left hand wheel turned to the right.) Turn both dials on the gauge until zero is in line with the index pointer then centre the bubbles on both spirit levels by turning the knurled screws below each dial.
- 6.3 Next steer the front of the wheel being checked OUT by 20°.
- 6.4 Centre the bubbles in both spirit levels by turning the CASTOR dial and KPI dial respectively making a note of the number of graduations through which each dial rotates.
- 6.5 The scales on both dials are additive. If the king pin inclination dial is rotated a full revolution and the spirit level bubble is still not centred continue to turn the dial until it is centred. The king pin inclination angle is therefore the sum of the total number of graduations that the dial has been turned through. The same applies to the castor angle dial readings which are additive after the dial has been turned through half a revolution.

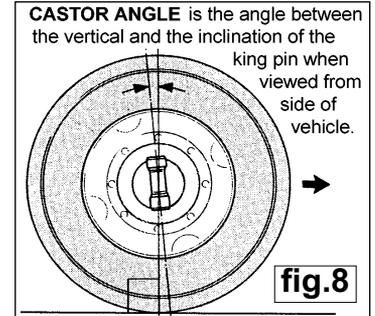


fig.8

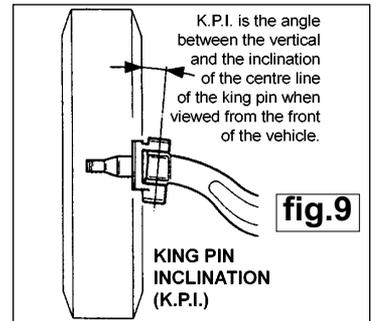


fig.9

7. CHECKING THE FLOOR LEVEL

- 7.1 Check that the floor is level using the camber gauge as follows. Turn the dial marked degrees (see fig.2 - A) so that '0' is in line with the index pointer. Place the gauge on the floor at right angles to the wheel to be checked. (Check floor level along the vehicles length when measuring castor angle). If the bubble in the spirit level is not centred then the floor is not level. Turn the dial in either direction until the bubble is centred. The slope of the floor in degrees is represented by the number of graduations turned through on the dial.
- 7.2 **ADJUSTING READINGS WHEN THE FLOOR IS NOT LEVEL.** Readings can still be taken on a sloping surface up to 3° maximum. Establish the angle of the slope using the camber gauge as described above. Note the direction of the slope and the vehicles orientation on it. To make a correction, the slope angle should either be added to, or subtracted from your reading according to the chart below. Where the chart indicates N/A this means that no adjustment is necessary in that particular orientation.

SLOPING FLOOR COMPENSATION CHART	SLOPING SIDE TO SIDE				SLOPING LENGTHWISE			
	NEAR SIDE (HIGH)	OFFSIDE	NEAR SIDE	OFFSIDE (HIGH)	REAR	FRONT (HIGH)	REAR (HIGH)	FRONT
SLOPE ANGLE ORIENTATION								
CAMBER ANGLE	ADD X°	SUBTRACT X°	SUBTRACT X°	ADD X°	N/A	N/A		
KING PIN Inclination	SUBTRACT X°	ADD X°	ADD X°	SUBTRACT X°	N/A	N/A		
CASTOR ANGLE	N/A	N/A	N/A	N/A	Subtract Y° from + readings Add Y° to - readings	Subtract Y° from + readings Subtract Y° from - readings		

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.
IMPORTANT: No liability is accepted for incorrect use of this product. **WARRANTY:** Guarantee is 12 months from purchase date, proof of which will be required for any claim. **INFORMATION:** Call us for a copy of our latest catalogue on 01284 757525 and leave your full name and address including your postcode.



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