

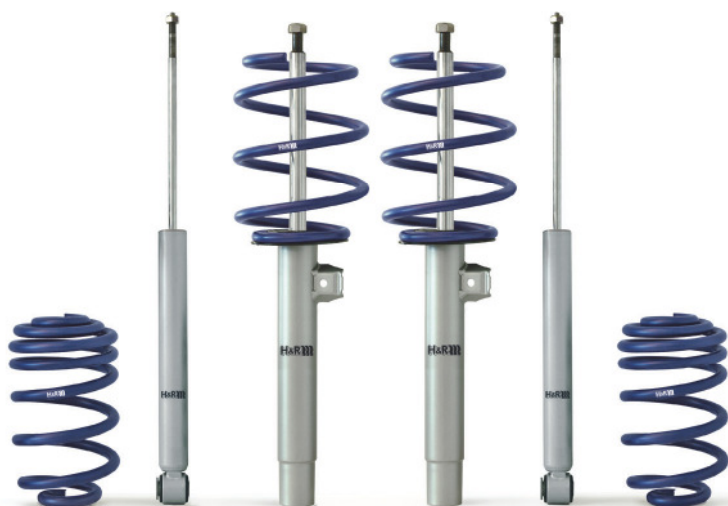
H&R Cup-Kits in Sport and Comfort Configurations



H&R Cup-Kits take the guesswork out of performance suspension selection by combining our famous Sport Springs with precisely calibrated shock absorbers. The result is an application specific system designed to deliver improved handling, aggressive appearance and superb ride quality. Choose from our Comfort version, which closely approximates the OEM ride, or our Sport version for those who prefer a firmer ride and increased handling performance.

Product benefits:

- Improved handling
- OEM quality shortened shock absorbers
- Precision wound Sport Springs lower ride height
- Adjustable damping (depending on application)
- ABE or TUV approval
- Shock absorbers available separately
- Engineered and manufactured in Germany



ORDERING AND MOUNTING GUIDELINES

To enable us to correctly process orders we need the following information

- Motor/Vehicle type and version and/or year of manufacture,
- Engine type
- Axle load,
- Self levelling – yes or no.

Please note that all measurements regarding lowering are approximate and can differ depending on the age of the vehicle and fittings.

Installation

Additional information regarding the installation can be found in the **H&R warranty passport**, which is supplied with each set of springs. Before fitting please check that the contents of the carton match the enclosed TÜV-approval. (Colour and stamp of the spring) The vehicle must be re-aligned after the installation of an H&R-spring/suspension-system. When the spring is fitted the stamp markings on the spring should be readable, i.e. not upside down. The extension of lowering has to be reduced by the series lowering.

Axle/Wheel Alignment

For wheel alignment after fitment refer to the vehicle manufacturer's data. If this data can not be achieved (e.g. at low ride height) try to approach the data as close as possible.

Self Levelling/Sensors

H&R springs can be used on vehicles fitted with a factory self levelling suspension. The self levelling system needs to be reset at an authorised garage. If an aftermarket self levelling kit is fitted to the car, it is unlikely the H&R springs can be used. To avoid damage of the self-levelling system and/or headlight height adjustment these connecting links should be untightened before removing the shock absorber.

Servo Brake Adjuster

The setting of the rear brake adjuster needs to be checked, where applicable.

ABS (Anti-Lock Brakes)

Please note that the brake sensors might need re-adjusting (on some models) VAG = VW, Audi.

Shock Absorbers

If the existing shock absorbers are not in good condition, we recommend that you change them for new OE parts. However, best suited for all sport springs is the use of sport shock absorbers which H&R offers for most spring sets. These will offer optimum performance and handling.

Notes regarding Mercedes-Benz vehicles

H&R offers different sport springs for each type of vehicle, to allow differences in equipment. The lowering can be adjusted even further by using original MB rubber spring inserts with different thickness levels (8 – 23 mm).

Trailer Coupling

With use of a trailer coupling the distance between the top of the trailer coupling and the road must be 350-420 mm.

Base Version

The mentioned car-type is always for the base-version only. Other types like 4WD, convertible, station wagon, sport-versions etc. are not included if not specially mentioned.

Product-Return + Reclamations

Returning and claim products have to be released in writing! You can get the necessary forms to fill out on request. These products have to be in an impeccable and marketable condition. A copy of the delivery note is necessary and the products have to be sent in f.o.c.. The credit will be made over the value of goods less 15 % storage replacement costs. Returned products have to be new, not mounted.

Coil Over

For some cars extensive chassis-work may be required to reach the maximum possible lowering of the coil overs. Please ask your H&R dealer or workshop about the costs before installation.

With use of LPG, trailer coupling, bike racks, other additional weight, heavy accessory in the trunk, e.g. HiFi the (statistic) heights may vary depending on the general weight and center of gravity. Please note special suspension components offered for these cars and/or contact us prior to ordering and fitment.

EU-guidelines

Version	height above the driveway (mm)		
	maximum	minimum	
passing light	1200		500
clearance light	1500,	(2100)	
driving light		-	
fog light	< passing light		<250>
flash lamp (f/r)	1500,	(2100)	<350>
sidewise	1500,	<(2300)>	<350>
parking lamp	1500,	(2100)	
backup lamp	1200,		<250>
stop light	1500,	<(2100)>	350
tail lamp	1500,	(2100)	350
rear fog lamp	1000,	(2100)	250
reflex reflector (not triangular)	900,	<2100>	<250>

Numbers in <> brackets according to 76/756 EWG deviant of the federal motor vehicle safety standards.

Numbers in () brackets = alternatives for special cases.

The measurement of the heights is taken at the unloaded, fully fueled car without driver.

Usually the reference us the lowest edge of the actual emission-opening of the optical system (reflector, ending panel).

Height of the official license number (§60 StVZO) front >200mm, rear >300mm.

trailer coupling: upper edge coupling ball - driveway: 350mm.

This new catalogue supersedes all previous catalogues and price lists. We accept no responsibility got typographical and photographic errors.
All data contained in this catalogue is subject to change where necessary.
The relevant approval certificates are important for the homologation.

All pictures, illustrations, sketches, texts and logos in this catalogue are copyrighted.
Any use of this is liable to prosecution.



Important product information – must be read before installation!

H&R suspension components are developed and designed from a sporting viewpoint and have more sporting and tighter handling characteristics than original manufacturer products. The amount of lowering was measured on the vehicle made available to us for test conversion and for testing by TUV (German Inspection Organization), and was confirmed by TUV. Nevertheless, the details on lowering should be treated only as approximate guidelines, and on each vehicle are influenced by the following factors:

- Different engine size, e.g. 4 cylinder or 6 cylinder
- Extra equipment or special aftermarket parts which may increase vehicle weight (gas fuel conversions/HiFi conversions/trailers)
- Accessory deadweight can add up very quickly
- Original vehicle model tolerances
- Type and construction of the installed shock absorbers
- Variations in fuel level
- Age and condition of stock springs

Because of these outside influences, we can not accept any liability for the degree of lowering.

H&R suspension components are manufactured under constant quality control and with the greatest of care; nevertheless, even top-quality products may become defective. To avoid damage to the product, please note the following information:

- Do not overload the vehicle, and do not exceed the axle loading prescribed by the manufacturer or TUV.
- Avoid unusual and aggressive driving maneuvers which place excessive demands on the vehicle (racing events, etc.)
- Because of the reduced ground clearance, avoid off-road use.
- Watch your speed to avoid hitting the undercarriage on speed bumps, etc.

H&R suspension components are intended exclusively for use in vehicles which are permitted for use on public roads, and which fulfill the applicable legal requirements. You are unconditionally advised against any other use.

Make sure that the components are installed only by an authorized mechanic/workshop. Only these authorized mechanics have the necessary specialized knowledge and equipment.

1. Before installation:

- Please compare the item delivered with the delivery note
- Please compare the content of the delivery with the parts approval/vehicle type approval
- Please also compare the parts approval/vehicle type approval with the vehicle papers
- Check that the delivery is complete
- Please check that the appropriate tools are available for fitting
- Order any additional parts which may be necessary
- Measure all dimensions relevant to the conversion
- If there are disagreements or deviations, please contact your vendor

2. During installation:

- Work as per the vehicle's factory service manual or workshop manual
- Comply with all details in the technical tips provided with product (installation or mounting instruction)
- Please check that all parts removed function correctly
- Replace defective original parts with new original parts
- Use only suitable tools and equipment for installation and disassembly
- Do not carry out extra work on parts or adapt them to fit

If products do not match, stop the installation or conversion immediately. The installation of products into vehicles for which they are not suitable can result in severe material damage and physical injury.

In this case, contact your dealer and explain the problem to him. Keep the vehicle papers and/or technical documentation on hand, so that you can answer any questions which arise. Please ensure that after a conversion is complete, there are not more parts left over than you replaced.

3. After the conversion:

- Use only the tightening and fixing values provided by the vehicle's factory service manual
- Test and adjust the correct securing of all loosened and fitted parts
- Test and adjust the ease of movement of the wheel/tire combination (loaded/unloaded)
- Test and adjust the ease of movement of all axle and steering parts (for all steering movements)
- Test and adjust the ease of movement of all brake parts and brake hoses (for all steering movements)
- Test and adjust the braking system and the adjustment of the load-dependent brake force compensator
- Test and adjust the setting of the headlights
- Test and adjust the setting of the level adjustment
- Test and adjust the setting of the axles
- Measure all dimensions relevant to the conversion

Comply with the authorization permissions and regulations applicable in your country. The following minimum clearances from the road surface are defined in EU test standard ECE 48: edge of headlight opening: 500mm, daytime headlights: 250mm, brake and tail lights: 350mm, fog lights front/rear: 250mm, indicators front, rear, side: 350mm, number plate front 200mm, number plate rear 300mm. The clearance of the trailer connection at the permitted axle loading must be 350mm to the midpoint of the ball head. Ensure that a vehicle acceptance is carried out immediately by an authorized testing organization.

Non-compliance with this test and adjustment work can result in failure of vehicle systems, material damage and physical injury with severe consequences.

4. Test drive

- Installing H&R products will alter the handling of your vehicle.
- Therefore, drive with care until you have become accustomed to the altered vehicle characteristics.
- Unexpected vehicle handling characteristics can indicate that the products installed are not suitable for your vehicle, or that there are errors in installation and/or in adjustment to the suspension geometry. In this case, please have the vehicle inspected immediately in a specialist workshop.

Failure to do so can result in severe material damage and physical injury.

With some vehicles, lowering of the front axle can result in noises at full steering lock. Noise can also occur due to tolerances when the shock absorbers are extended to their full length. These potential noises are design-related. They may not necessarily indicate a defect which affects driving safety. Installation of noise damping sleeves may help to correct this; they are available from your specialist dealer.

If you have complaints after purchase and/or installation of H&R products, please contact your dealer.

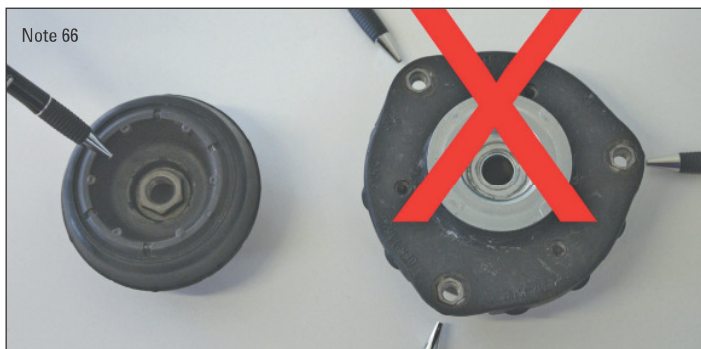
TECHNICAL GUIDELINES SUSPENSION-PROGRAM

L = Luxury Car, discount following Product Group II (Cup Kit)

- 1 Polo/Audi up to 8/97, use spring cup No. 86141413 B.
- 2 Audi 80 4-Cylinder up to Chassis-No. 8192278802. Use cylindrical front springs. These are available on request.
- 3 On models up to year 12/95 the rubber-pads from models 1/96-up have to be used
- 4 BMW 7 series, E23 from 9/76, diameter for front and rear springs need to be checked. These differ according to engine and level of equipment:
Front: 174, 180, 190mm; Rear 114, 125mm (all dimensions in mm)
- 5 For Vehicles fitted with big dia. wheels use rubber pad „4 point“ on front axle. Restrict steering wheel lock if necessary.
- 6 Height adjustable the front axle only
- 7 Vehicles with high specifications which increase front axle load should use stronger front springs.
- 8 MB 190 E 2,3/16V. Due to higher engine weight and original equipment with self levelling system on rear axle, stiffer front and shorter rear springs will be supplied. Readjust levelling system.
- 9 Recommended only for vehicles with few extras that put no extra load on the axle (i.e. not with Automatic Gearbox, Air Condition).
- 10 Delivery includes only 2 front axle springs (VW-Bus, MB-M-Class, Ford Maverick, Mitsubishi Pajero, Nissan Terrano, Opel Frontera only 2 rear axle springs).
- 11 In order to achieve the indicated lowering the standard rubber pads should be exchanged if necessary (size 1-4). For Mercedes W 203 (part no. 31004-1) this refers to the rear axle only.
- 12 Vehicles fitted with BMW M-Technic, MB-Sportsline, Audi Sportsuspension etc. will show less lowering as they are already factory lowered.
- 13 With standard wheel/tyre combination and some aluminium wheels wheel spacers are required.
- 14 Ascona C, Monza-Senator, Sierra Salon, Sierra Estate. For these vehicles cylindrical springs are available on request.
- 15 We do not recommend these springs for Golf I Convertible, Diesel. If fitted to Golf I GTI, please ensure that only new shock absorbers are used.
- 16 Vehicles with large front spring cups (partly) also require additional Original-VW-Parts. Please confirm when ordering.
- 17 Adjustable suspension kit is height adjustable within the dimensions as specified in the TÜV-report.
- 18 Attention: Rasp off the protrusion of the front axle washer or use new OE washer with round bore. Properly tie up the shock absorber wiring after installing the connectors. After fitment of the suspension the controller (OE-ECU) must be reprogrammed (to the status of models without PASM)!!!
- 19 The locking ring for the strut fixation can not be taken apart non-destructive. It has to be replaced by a new one., Opel/GM part no. 24402155.
- 20 For vehicles with factory mounted trailer coupling we recommend a stronger rear spring (29749-3/29749-4).
- 21 Golf/Scirocco up to 8/97 use OE spring cup no. 171412341 A.
- 22 Cup-Kit shock absorbers: Use OE bump-stop, spring-cup and dust cover if not co-packed. Check good condition of these items prior to fitment, exchange if in doubt.
- 23 Send in front strut housings without wheel bearings, ABS brackets, cartridges etc. Damaged strut housings will be either rejected or repaired for extra charge if possible. In case of in advance delivery by H&R a deposit between 205 and 575,- EURO per strut will be required.
- 24 Cars equipped with rough road suspension (OE-part) are lowered approx. 15-20 mm more as they are higher in OE condition.
- 25 Not suitable for vehicles with factory fitted sport suspension.
- 26 On vehicles based on the VW Golf IV platform (VW Golf/Bora/Beetle, Seat Leon/Toledo, Skoda Octavia) from a lowering of appr. 30 mm onwards a contact between driveshaft and anti-roll bar can occur. In Case of contact the H&R anti-roll bar 33525-1 must be fitted. This anti-roll bar is mandatory from a lowering of 35 mm onwards (f.e. for Cup Kit and coil over suspensions).
- 27 Vehicles fitted with load dependant brake control require separate TÜV approval despite of ABE (In countries where TÜV or the like is required). In any case set brake control to required level after lowering! In any case set brake control to required level after lowering!
- 28 Depending on engine, gearbox/transmission, equipment and vehicle tolerances lowering may differ from the values given.
- 29 Please note before purchase: This suspension is a very low version! Customer and/or workshop is responsible for clearance, necessary work and/or additional other modifications/changes. This rework and/or arising cost is not covered by H&R.
- 30 Lowering beyond the dimensions given in the TÜV approval may lead to contact of the driveshaft with the chassis. Any resulting damage .
- 31 OE torsion bars need to be adjusted to lower the vehicle.
- 32 Also for vehicles with automatic gearbox and/or air conditioning.
- 33 Golf III FA-spring cups to be exchanged. Please use OE VW-parts.
Basis Suspension 80 mm - original VW part no. 191.412.341
Plus Suspension 80 mm - original VW part no. 1H0.412.341
Plus Suspension 60 mm - original VW part no. 357.412.341 A
- 34 For these vehicles we recommend the use of sport dampers. These are also available from H&R.
- 35 In the case of ordering complete struts these are only for 2.0 L 16 V, with wheel bearings dia. 72 mm and ABS brackets. Vehicles with bigger or smaller wheel bearings (i.e. wheel bearing dia. 64 mm, 66 mm, 74 mm) struts have to be sent in advance.
- 36 In the case of ordering complete struts, these are only for Polo B. However, they can also be used for Polo A. Send in Polo B struts only to get back deposit.
- 37 For proper function of the suspension the original rear torsion bar suspension must be removed. A report of sufficient strength of the modified rear suspension has been performed.
- 38 Send in existing front and rear struts without wheel bearings and other attachments. Refer also to note no. 23!
- 39 In case of ordering complete struts we need additional information:
a) struts „with“ or „without“ stabilizer holder
b) bore diameter at the brackets: 12 mm or 14 mm
- 40 The sway bar link on the front axle has to be shortened by 60 mm or the sway bar link OE Toyota-part no. 4883017050 has to be fitted.

- 41 Use rear upper spring-pad no. 4D0-512-297-6 if not OE fitted .
- 42 Front axle - Only if the distance of the bottom fastening point bracket (center of the hole) up to the centre line of the strut housing = 56 mm
AND: If the distance of both fastening holes in the bracket = 54 mm (center of the hole).
Take these dimensions carefully from the original strut!
- 43 Front axle - Only if the distance of the bottom fastening point bracket (center of the hole) up to the centre line of the strut housing = 61 mm
AND: If the distance of both fastening holes in the bracket = 52 mm (center of the hole).
Take these dimensions carefully from the original strut!
- 44 Front axle - Only if the distance of the bottom fastening point bracket (center of the hole) up to the centre line of the strut housing = 64 mm
AND: If the distance of both fastening holes in the bracket = 54 mm (center of the hole).
Take these dimensions carefully from the original strut!
- 45 When fitting H&R stabilizers use OE mounting parts if not co-packed. Check that these parts are in a like-new condition; renew them in case they are not.
- 46 This stabilizer set - including two sway bar links - is for use with coil-over 29 325-1 only and must be used for lowering beyond approx. 50 mm to achieve sufficient freedom of motion between driveshaft and stabilizer.
- 47 Cut out front inner plastic wheel house for sufficient freedom of motion
- 48 This stabilizer set may only be used (and is TÜV approved) with coil-over suspension. It is not allowed to use it with OE suspension, spring set or other suspension.
- 49 When fitting rear axle stabilizers together with non OE exhaust systems packaging problems might arise. A contact between stabilizer and exhaust is possible. This has to be checked prior to fitment and solved prior to first driving.
- 50 FA stabilizer may also be used without rear stabilizer. In this case vehicle might tend to understeer.
- 51 For cars BMW E30 without OE-rear axle stabilizer the following original BMW spare parts are needed for mounting the H&R stabilizer (2 of each)
retaining clip stabilizer 33551129195
hexagon screw with disc 07119915066
sway bar link 33551126932
hexagon screw 07119912501
self locking hexagon nut 07129946400
sway bar link holder 33321127717
self locking collar nut 31331092887
- 52 For car with chassis number (last seven numbers) ...A497761/...F410043
....R111834 the following original Mercedes retaining clamp must be used:
Original MB-part number: A2033231240 (right) + A2033231140 (left). These have to be exchanged against the original retaining clamps.
- 53 At too much lowering on the rear axle please use the upper spring mounts of the rough road suspension (BMW original parts)
- 54 Prior to ordering RA shock absorbers as spares please check and forward:
> RA-Shock absorber with single spring or
> RA-Shock absorber with double spring system
- 55 The lowering dates were determined from the test cars. Please note that the maximum lowering can not be reached with every car, please refer conditions and notes in the parts approval and also to the technical guidelines suspension program 12,17,32.
- 56 Before ordering please check the upper front shock fixation, see picture.
- 57 Attention: For the FA an OE-BMW spring compressor is necessary.
- 58 If the car is equipped with a two-layer leaf spring the single-layer leaf spring (VW-OE-P/N. 2K3511151E - Maxi or 2K0511151N for Caddy/Caddy Life) must be fitted.
- 59 On the rear axle the height adjustment out of the coil over is used.
- 60 Not for cars with „Terrain-Tech“ package.
- 61 Change of upper FA-springplates. New inner diameter spring Ø83 mm, please measure!!! Old inner diameter spring Ø 100 mm.
- 62 For cars from vehicle identification number 1ZVBP8CF4B5113...
- 63 For modell 2011, from 10th. Position of the chassis-no. „B“ and higher (C/D/E...)
- 64 In particular cases cars prior to Facelift 2010 (10th position of the chassis no. „B“) may have the OE front-support bearing with the long pin. Here, the front struts out of 29170-1 and -2 need to be used. Please check, prior to fitment, the length of the upper mount pin of the OE-front-strut: pin with 75mm length = shock part-no. 22 15 452 -1/1 of coil over 29170-3; -4 - pin with 45mm length = shock part no. 22 15 452 - 2/1.

All data subject to change. H&R is not responsible for typographical or photographic errors.



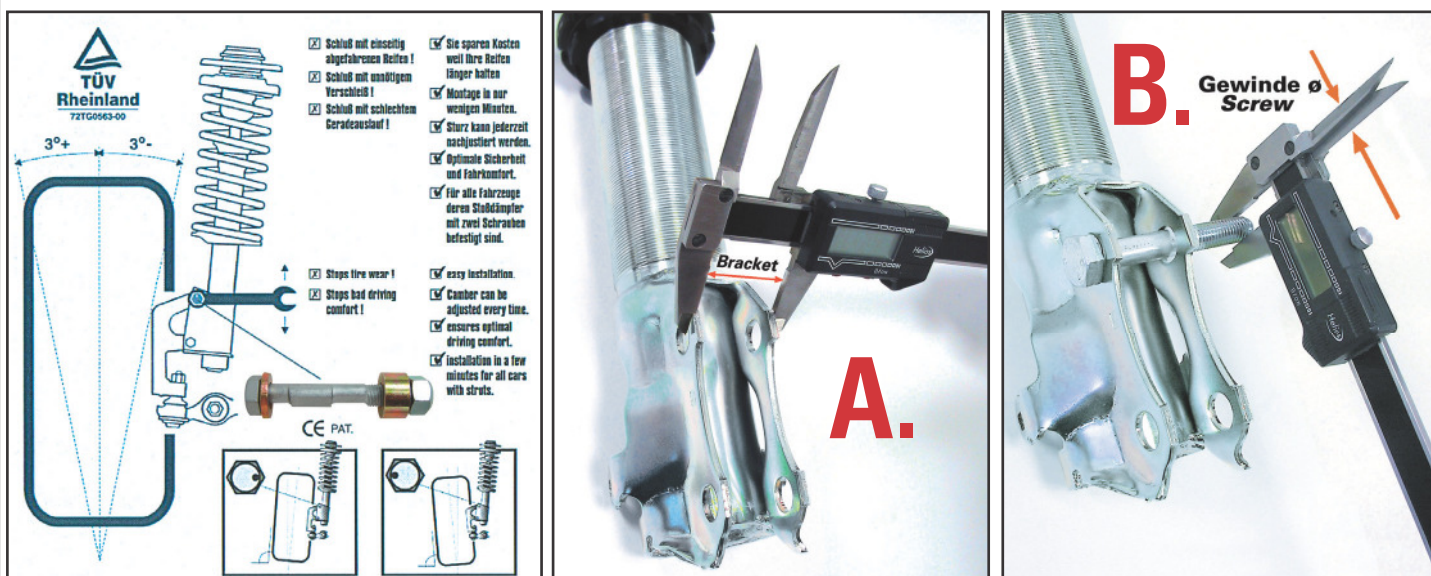
H&R TRIPLE C CAMBER ADJUSTMENT BOLTS

Whenever you lower a vehicle's ride height, negative camber is increased – how much depends on the vehicle and the reduction in ride height. H&R Triple C Camber Adjustment Bolts are a simple, yet very effective means of removing excessive camber, adjusting your vehicle's camber settings, or even correcting small side-to-side camber variations for precise alignment.

Consisting of a pair of specially-designed bolts, H&R patented Triple C Camber Adjustment Bolts replace the original upper fastening bolts on McPherson strut applications. As the bolt is turned, a small cam eccentric alters the vehicle's camber, allowing adjustments from 0-3 degrees, positive or negative. Installation takes only minutes with readily available hand tools.

1. Measurement A = Take measurement from outside of bracket

2. Measurement B = Measure the diameter of the bolts. Then you can choose the right Triple C (camber correction kit).



Part Nr.	Model/Type	Screw-diameter in mm	Bracket
① TC 110	Fiat, Lancia, Seat, Suzuki	10	36,0 – 48,0 mm
② TC 210	Auto Bianchi, Fiat, Lancia, Seat	10	45,5 – 48,0 mm
③ TC 114	Audi, Renault, Subaru	14	35,0 – 48,0 mm
④ TC 112	Austin, Fiat, Ford, GM/Holden, Lancia, Mazda, Nissan, Peugeot, Saab, Volvo, Kia, Toyota	12	40,0 – 48,5 mm
⑤ TC 212	Daewoo, Daihatsu, Fiat, Ford, GM/Holden, Hyundai, Kia, Mazda, Mitsubishi, Nissan, Opel, Porsche, Proton, Renault, Seat, Suzuki, Toyota, Vauxhall, Subaru, Volkswagen, Volvo	12	30,0 – 39,0 mm
⑥ TC 115	Chrysler, Toyota	15	35,0 – 43,0 mm
⑦ TC 116	Ford Mustang, Renault	16	41,5 – 48,0 mm
⑧ TC 117	Toyota	17	35,0 – 50,0 mm



