FOR EVALUATION PURPOSES ONLY

Whilst every effort has been made to ensure the information in the following pages is accurate; this beta version of Assembly Guide is published to gain feedback on the layout and principle only.

Please address any comments to: assemblyguide@caterham.com

21 July 2016
When using a torque wrench, listen/feel the click and then stop. It does not need to be any tighter and you might actually weaken the fixing by ‘over-torquing’ it. Always wind your torque wrench setting back to free when you’ve finished with it.

John K

A ‘nyloc’ nut is one with a nylon insert that gets cut by the bolt thread, making it resistant to unwinding itself. This means that they should not be repeatedly re-used.

Chris B

1Nm of torque equals 0.736lbft.

Mick F

When using a spanner, always use the ring end wherever possible. The open end is really only for those times that access is too limited for a ring spanner or socket.

Mick A

A ‘spring washer’ has a split in it and squashes up closed when a fixing is tightened. It is usually used under a bolt head to help resist it coming undone.

John S

A ‘caphead bolt’ has a circular head with a hexagonal drive inside it. It is tightened with an allen key or hex drive socket. Capheads are useful where there is limited space around the head for a spanner or socket. They look nice too!

John K
HINTS & TIPS

You can tell if you have ‘wide track suspension’ car by looking at the front dampers. Wide track has a 25mm long hexagonal spacer between the top spring retainer and the mounting bush.

Matt T

Thread lock is used to stop something coming undone, but it only needs a little drop on the thread to be effective.

Jamie A

A bolt size is described by its diameter (eg M10=10mm) by the length not including the head (eg 65mm).

James A

Generally, metric Nyloc nuts have a blue nylon insert and imperial ones a white nylon insert.

Grant P

Left and right are as viewed from the driver’s seat.

Harrison P

Teabag, boiling water, then the milk, in that order.

Simon L
<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NUMBER</th>
<th>QTY USED ON</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>AA BM12X100</td>
<td>2</td>
<td>Lower wishbone rear</td>
</tr>
<tr>
<td>2</td>
<td>AB BM12X65</td>
<td>2</td>
<td>Lower wishbone front</td>
</tr>
<tr>
<td>3</td>
<td>AC BM10X65</td>
<td>2</td>
<td>Upper wishbone rear</td>
</tr>
<tr>
<td>4</td>
<td>AD BM10X60</td>
<td>2</td>
<td>Upper wishbone front</td>
</tr>
<tr>
<td>5</td>
<td>AE BM8X40</td>
<td>4</td>
<td>Anti-roll bar mounting brackets</td>
</tr>
<tr>
<td>6</td>
<td>AF NMPH14</td>
<td>1</td>
<td>Temporary use to help lock upper wishbone ball joint</td>
</tr>
<tr>
<td>7</td>
<td>AG NMYF12</td>
<td>2</td>
<td>Lower wishbone rear</td>
</tr>
<tr>
<td>8</td>
<td>AH NMYF10</td>
<td>4</td>
<td>Upper wishbone</td>
</tr>
<tr>
<td>9</td>
<td>AJ WPCM12</td>
<td>18</td>
<td>Lower wishbone</td>
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<td>10</td>
<td>AK WPHM8</td>
<td>4</td>
<td>Anti-roll bar mounting brackets</td>
</tr>
<tr>
<td>11</td>
<td>AL WPH3/8</td>
<td>2</td>
<td>Brake pipe</td>
</tr>
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</table>

Drawings are for illustrative purposes only and are not to scale.

This pack may include extra fasteners to cover different options.

&&(Indicates number of each fixing required)

(Greyed out area indicates fixings are not required for current step)
<table>
<thead>
<tr>
<th>Tool</th>
<th>Image</th>
<th>Tool</th>
<th>Image</th>
<th>Tool</th>
<th>Image</th>
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<tbody>
<tr>
<td>Allen key</td>
<td><img src="image" alt="Allen key" /></td>
<td>Grease</td>
<td><img src="image" alt="Grease" /></td>
<td>Pop rivet gun</td>
<td><img src="image" alt="Pop rivet gun" /></td>
<td>Socket wrench</td>
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<td>Hammer</td>
<td><img src="image" alt="Hammer" /></td>
<td>Power adhesive</td>
<td><img src="image" alt="Power adhesive" /></td>
<td>Socket wrench (allen)</td>
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<td>Axle stand</td>
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<td>Heat gun</td>
<td><img src="image" alt="Heat gun" /></td>
<td>Pozidrive screwdriver</td>
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<td>Combination spanner</td>
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<td>Junior hacksaw</td>
<td><img src="image" alt="Junior hacksaw" /></td>
<td>Pozidrive screwdriver (stubby)</td>
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<td>Mallet</td>
<td><img src="image" alt="Mallet" /></td>
<td>Side cutters</td>
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<td>Flat dzuz screwdriver</td>
<td><img src="image" alt="Flat dzuz screwdriver" /></td>
<td>Marker pen</td>
<td><img src="image" alt="Marker pen" /></td>
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<td><img src="image" alt="Silicon" /></td>
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<td>Flat head screwdriver</td>
<td><img src="image" alt="Flat head screwdriver" /></td>
<td>Muscle</td>
<td><img src="image" alt="Muscle" /></td>
<td>Silicon gun</td>
<td><img src="image" alt="Silicon gun" /></td>
<td>Tape measure</td>
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</tr>
</tbody>
</table>
LETS GET READY

**P A R T S**

- Fixings

**T O O L S**

- x3

**F I X I N G S**

**T I P S**

When deciding how high your axle stands should be (the higher the better for working on), don’t forget that a complete car will need to come down off them, so make sure your trolley jack can reach and lift the height you set them too!

Mick F

Some tape or foam on the top of the axle stands will stop them scratching the chassis.

Matt T
LETS GET READY
START WITH THE SUSPENSION WISHBONES

**PARTS**

1. Lower wishbone
2. Upper wishbone
3. Wishbone bush sleeve

**TOOLS**

- 17mm
- 19mm

**FIXINGS**

**TIPS**

For now, only tighten the nuts/bolts lightly and then torque them up when the car is finished and on the ground. This sets the bushes correctly and ensures the best handling.

Harrison P
START WITH THE SUSPENSION WISHBONES
NOW FOR THE STEERING RACK

**PARTS**

1. Steering rack
2. Rack clamps
3. Column universal joint
4. Track rod end
5. IVA cover

**TOOLS**

- 10mm
- 13mm
- 5mm
- 13mm
- 22mm
- ¾"

**FIXINGS**

**TIPS**

Finding the right IVA cover isn’t obvious because it is effectively a long cap. To use it, you cut the closed end off.

Jamie A
NOW FOR THE STEERING RACK

1. [Assembly part]

2. [Assembly part]

3. [Assembly part]

4. [Assembly part]

5. [Assembly part]

- **35mm**: 11Nm
- **20Nm**

**Notes**
- BA
- BH
- BK
- BC
- BG
- BE
AND THEN THE DAMPERS

PARTS

1. Spring / damper
2. Lower damper eyelet
3. Upper damper eyelet

TOOLS

6mm

FIXINGS

TIPS

Put the top of the damper on first.
Grant P

The bottom can be a tight fit!
Mick F

Other fixings provided in chassis & wishbone.
AND THEN THE DAMPERS
Some of the fixings required and shown on the drawings, such as the ball joint nut, are already on the part and not in the fixing pack.

Anthony L

Put the ‘upright’ into the lower wishbone joint then attach the steering before tightening the bottom nut. This stops it all swinging around the hitting the side of the chassis.

John S

The drilled hole is for the side repeater earth that we’ll fit later. It’s easier to drill from the top and down through both sides of the tube, rather than through one side from the bottom (where the earth will be fixed).

Tiago O

Use the plain nut to pull the top ball joint home before using a nyloc, otherwise the thread will spin.

Chris N

22mm ½"

Pack A

CATERHAM

Pack A

CATERHAM

22mm

PARTS

TOOLS

1
Wingstay

2
Front brake & upright assembly

PARTS

Tools

22mm

¼"

Fixings

Tips

The drilled hole is for the side repeater earth that we’ll fit later. It’s easier to drill from the top and down through both sides of the tube, rather than through one side from the bottom (where the earth will be fixed).

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Anthony L

Put the ‘upright’ into the lower wishbone joint then attach the steering before tightening the bottom nut. This stops it all swinging around the hitting the side of the chassis.

John S
IT'S TIME FOR THE WINGSTAYS

(1) 1 x 1/8"

(2) WIDE TRACK

AR (STANDARD TRACK ONLY)

54Nm

AS
LAST PART OF THE FRONT SUSPENSION: CONNECTING THE TWO SIDES TOGETHER

**PARTS**

1. Anti-roll bar
2. Anti-roll bar bracket
3. Anti-roll bar rubber
4. Anti-roll bar ball
5. Anti-roll bar dust cover

**TOOLS**

- 13mm

**FIXINGS**

<table>
<thead>
<tr>
<th>Pack A</th>
<th>CATERHAM</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<tr>
<td>1</td>
<td>Anti-roll bar</td>
<td><img src="image1" alt="Image" /></td>
</tr>
<tr>
<td>2</td>
<td>Anti-roll bar bracket</td>
<td><img src="image2" alt="Image" /></td>
</tr>
<tr>
<td>3</td>
<td>Anti-roll bar rubber</td>
<td><img src="image3" alt="Image" /></td>
</tr>
<tr>
<td>4</td>
<td>Anti-roll bar ball</td>
<td><img src="image4" alt="Image" /></td>
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<tr>
<td>5</td>
<td>Anti-roll bar dust cover</td>
<td><img src="image5" alt="Image" /></td>
</tr>
</tbody>
</table>

**TIPS**

- Check that the colour of the mounting rubbers matches the colour spot on the bar.
  - John K
- Use four small cable ties to secure the dust cover.
  - Mick F
- Grease the balls and cups generously.
  - Matt T
- Getting the assembled anti-roll bar fully into both cups on the upper wishbone can be a bit of a fight. It’s made of springy stuff, so don’t worry that you are bending it.
  - Jamie A
LAST PART OF THE FRONT SUSPENSION: CONNECTING THE TWO SIDES TOGETHER

1. [Diagram showing the connection between the two sides of the front suspension]

2. [Diagram showing the lubrication process using spray cans]

3. [Diagram showing the tightening of the connecting bolts with specified torque]

4. [Callout for parts AE, AK, AN]

5. [Callout for the torque specification 20Nm]