THE CROSSLÉ CAR COMPANY LIMITED

RORY'S WOOD - KNOCKNAGONEY HOLYWOOD CO DOWN
Telephone Belfast 63332 Northern Ireland

CROSSLÉ TYPE 30F SUSPENSION SETTING (Early Steel)

Before making any measurements or adjustments to the suspension, it is imperative that the car be placed on a level floor or that it be shimmed under the tyres so that it is standing on four level pads. It is also imperative that the tyres be inflated to the correct racing pressures. When this has been done the correct order of adjustments is as follows.

1. Weight down to correct ride height.
2. Front castor.
3. Front camber.
4. Rear camber.
5. Front wheel alignment.
6. Rear wheel alignment.
7. Rear wheel castor.
8. Careful re-check of 1 - 7.
9. Setting of ride height or ground clearance for driver.

Any serious deviation from the above will result in inaccuracies.

1. Ground clearance.	Front	$2\frac{7}{8}$"
	Rear	$3\frac{1}{4}$"

The ground clearance is measured under the rear cross member and under the front cross member. The chassis should be loaded with weights so that when pushed downwards it returns to the correct ground clearance, since this will affect the camber setting. If this can be done by having the driver or someone of similar weight in thecar together with an approximate quantity of fuel, water and oil. then No.9 above may with advantage be set first.

2. Front castor - 5 degrees.

The lower front wishbone joints should be $1\frac{3}{8}$" from the centre of the joint to the end of the wishbone leg. When this condition occurs, it should be considered 'fixed length' and no further adjustment is necessary. If a proprietary castor gauge is not available it may be measured by propping a plumb-rule a convenient distance ahead of the hub carrier and measuring with a rule to the forward face of the 1" diameter extension piece just above the lower wishbone cup and to the forward face of the upper ball joint stem just above the hub carrier forging and below the rubber cap. The upper measurement should be 15/16" longer than the lower one. Any adjustment fore and aft should be done on the rear leg of the upper wishbone.

3. Front camber.	Racing tyres	$\frac{1}{4}$ degree negative
	Dunlop CR 65	1 degree negative

The camber is set by screwing in or out the upper ball joint. It is suggested that the easiest way to achieve this is by removing the wishbone from the chassis and turning it, leaving the ball joint attached to the hub carrier.

4. Rear camber.	Racing tyres	$\frac{1}{2}$ degree negative
	Dunlop CR 65	1 degree negative

The camber is set on the upper transverse link only, by slacking off the locknuts and turning the upper transverse link. Take the mean of 4 readings exactly $\frac{1}{4}$ revolution apart.

5. Front wheel alignment. 1/16" over 18" each side toe in

or 0 degrees 24 minutes overall toe in.

Unless a proprietary alignment gauge is available (we suggest the Dunlop AGO 30 Optical Alignment Gauge) the best method is to use a length of fine string. Using this method, the first essential is to measure the overall width difference between front and rear. This is done by placing two straight edges up the outsides of the rear tyres and measuring across the tops of the treads. The same process is repeated for the front, except that the measurement is taken a distance above the tread, this distance being half of the difference in diameter between front and rear tyres.

By halving the difference between the overall dimension for front and rear tyres the amount of shimming which must be held against the front wheel can be found. For most tyre 'set-ups' this will be around ½". The shim should be 18" long.

The string should be held at hub height against the rear tyre, the shim being held horizontally at hub height against the front tyre. When the string just touches the rearward end of the shim, it should clear the forward end by 1/16" on each side. It is important that the steering tie rods be adjusted equally on either side. Take the mean of four readings taken a quarter revolution apart.

6. Rear wheel alignment 1/32" toe in each side.

or 0 degrees 6 minutes toe in each side.

Place the shim referred to under 'Front wheel alignment' vertically against the front wheel and pass the string round it at hub height and along the edge of the rear wheel at hub height. When touching the rearmost bulge of the rear tyre there should be a gap of zero to 1/32" at the frontmost bulge. The necessary adjustment should be made by turning the lower trailing link, shortening of which produces toe in and vice versa. Take the mean of four readings taken a quarter revolution apart. The rear toe in may also be checked using the proprietary alignment gauge. However, it is necessary to use the string method so that the rear wheels are in correct alignment to the front of the car.

7. Rear castor. 0 degrees or vertical.

A plumb rule held against the lower machined face of the hub carrier where it joins to the wishbone should pass 2-7/16" from the upper machined face where it joins the upper transverse link. Adjustments should be made by turning the upper trailing link.

8. The car should now be ready for a re-check. It is imperative that the correct ground clearance be maintained.

9. Ride height. When finally setting the ground clearance the car must be complete with body, oil, fuel, water and driver. The spring platforms should then be adjusted until the car will return to the correct ground clearance when it is depressed and released. It is essential that the damping is kept at the circuit setting during this operation. Care should be taken that the springs are equally adjusted.

Suggested damper settings. Front - No.3 plus or minus 1 according to driver
Rear - No.2 plus or minus 1 preference.

Effect of front anti-roll (sway) bar. Moving the adjusters forward will increase the understeer and vice versa.

Effect of rear anti-roll (sway) bar. Moving the adjusters forward will increase the oversteer and vice versa.

Timer Dim 20F 168 Acheson uses 18 all round wet & dry.

CROSSLE TYPES 30F, 31F, 32F, 33F, SUSPENSION SETTING

In order to obtain the best possible results from setting up the car it is necessary to set the rod ends on the front lower & rear lower wishbones to specific centre distances. This is done at the factory on all new cars but will need to be checked when replacement parts are fitted. The distances from the centre of the spherical joint on the lower front wishbone to the centres of the joints on the ends of the wishbone legs is 16-9/16" (41.3cms) and 18-7/16" (46.9cms). When this condition occurs, it should be considered 'fixed length' and should not be further adjusted. (42.1)

On the rear lower wishbone the outer forward rod end (the one nearest the trailing link brackets) should be set so that the distance from its centre to the fore-aft tube on the wishbone is as close as possible to 1.3inches (3.3cms) and locked up. The centre distance from this rod-end to the inner rod end should then be set to 14-13/16 inches (37.6cms) and the inner one locked up. Neither of these rod ends should be further adjusted.

When these dimensions have been corrected, proceed to normal setting-up procedure as described below;

Before making any further measurements or adjustments to the suspension, it is imperative that the car be placed on a level floor or that it be shimmed under the tyres so that it is standing on four level pads. It is also imperative that the tyres be inflated to the correct racing pressures. When this has been done the correct order of adjustments is as follows;

1. Weight down to correct ride height.
2. Front castor.
3. Front camber.
4. Front wheel alignment.
5. Wheelbase.
6. Rear castor.
7. Rear wheel alignment.
8. Rear camber.
9. Careful re-check of 1-8.
10. Setting of ride height or ground clearance for driver.

Serious deviation from the above order will result in in-accuracies.

1. RIDE HEIGHTS The ground clearances are measured under the main bulkhead on which the steering rack is mounted at the front and under the rearmost chassis crossmember at the rear.

2. FRONT CASTOR - 5 degrees If a proprietary castor gauge is not available the castor angle may be measured by propping a plumb-rule a convenient distance ahead of the hub carrier and measuring with a rule to the forward face of the 1-1/8 diameter extension piece just above the lower wishbone cup and to the forward face of the upper ball joint stem just above the hub carrier forging and below the rubber cap. The upper measurement should be 1" longer than the lower one. Any adjustment fore and aft should be made on the rear leg of the upper wishbone.

3. FRONT CAMBER The camber is set by screwing in or out the upper ball joint. It is suggested that the easiest way to achieve this is by removing the wishbone from the chassis and turning it, leaving the ball joint attached to the hub carrier. Take the mean of four readings a

5. WHEELBASE Having set up the front suspension the wheelbase is set on the lower trailing link. The quickest way is to adjust this link so that the distance from the rear of the 1-1/8 diameter extension welded to the front upright just above the spherical bearing in the wishbone, to the machined face on the rear hub carrier at the lower wishbone and damper mounting is 91-1/16 inches, (231.3cms).

6. REAR CASTOR A plumb rule held against the lower machined face of the hub carrier where it joins to the wishbone should pass 2-7/16" (6.2cms) from the upper machined face where it joins the upper transverse link. Adjustments should be made by turning the upper trailing link.

7. REAR WHEEL ALIGNMENT Adjustment is made by moving the rearmost rod end of the lower rear wishbone out or in by turning its two locking nuts. In order to ensure that the rear wheels make the same angle with the car's centre-line check that a straight line (suggest fine string) along edge of each rear wheel clears each front wheel by an equal dimension. Take the mean of four readings a quarter revolution apart.

8. REAR CAMBER The camber is set on the upper transverse link only, by slacking off the locknuts and turning the upper transverse link. Take the mean of 4 readings exactly 1/4 revolution apart.

9. The car should now be ready for a re-check. It is imperative that the correct ground clearance be maintained.

10. RIDE HEIGHT When finally setting the ground clearance the car must be complete with body, oil, fuel, water and driver. The spring platforms should then be adjusted until the car will return to the correct ground clearance when it is depressed and released. It is essential that the damping is kept at the circuit setting during this operation. Care should be taken that the springs are equally adjusted, that is the adjustable platforms should be the same distance from the end of the damper body on each side.

Suggested damper settings ARMSTRONG

Front - No. 3 plus or minus 1)
Rear - No. 2 plus or minus 1) according to driver preference

Effect of front anti-roll (sway) Bar

Moving the adjusters forward will increase the understeer and vice versa.

Effect of rear anti-roll (sway) Bar

Moving the adjusters forward will increase the oversteer and vice versa.