

SWIFT SC92F 1600 KENT TECHNICAL GUIDE

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Race Cars Designed to Win

SC92F LINK AND JOINT SETTING SHEET

LINKS

Link	Length (mm)
Front Pushrod	590
Rear Pushrod	484
Front Damper	373
Rear Damper	355
Front Anti-Roll Bar Link	440
Rear Anti-Roll Bar Link	110
Steering Rack Length	428
Front Spring Length	110 (Approx depending on driver weight and pre-load on a 150lb/in spring)
Rear Spring Length	216 (Approx depending on driver weight and droop on a 325lb/in spring)

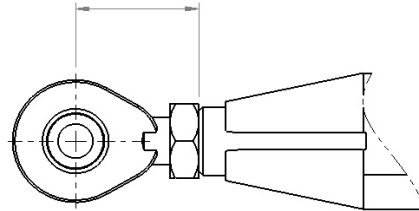
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JOINTS

Measured from eye to wishbone bush;



Joint		Length (mm)
Front Upper Wishbone	In board	25
	Out board	35
Front Lower Wishbone	In board	35
Rear Upper Wishbone	In board	28
	Outboard	38

RIDE HEIGHTS

Pushrod (1 turn)	Change in height (mm)
Front	5
Rear	4

CAMBER

Camber adjuster (1 turn)	Change in camber (Degrees)
Front	0.3
Rear	0.4

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SETTING UP THE SC92F

Set all links as prescribed in the link and joint setting sheet supplied when building and preparing your car.

The following details the recommended set up procedure. Recommended dimensions can be found on the set-up sheet and link and joint setting sheet provided.

1. CASTOR

Front castor is adjusted via the inner top wishbone joints only. Do not attempt to adjust via the bottom wishbone. Screw two cap head bolts into the front caliper lugs and measure with a camber gauge across the heads. The castor angle is relative to the car floor hence level the car beforehand.

Example:- Lengthening the front joint and shortening the rear joint of the wishbone increases castor and vice-versa.

2. FRONT BUMP STEER

After the castor is set, check the bumpsteer. There should be no change of wheel alignment from ride height to full bump travel.

Adjust by altering the height of the steering arm joint and washer.

Example:- If toe-in during bump travel, move the joint downwards
If toe-out during bump travel, move the joint upwards.

3. REAR BUMP STEER

Adjust the rear bump steer by adjusting the castor. The castor angle at the rear has no relevance but to achieve zero bumpsteer, hence castor does not require any measuring. Adjust via the inner lower forward wishbone joint.

Example:- If toe-in during bump, lengthen the front joint of the lower wishbone.
If toe-out during bump, shorten the front joint of the lower wishbone.

4. FLAT PATCH

The car can now be placed on a flat area which must be level longitudinally and laterally. The driver should be seated, tyres pressured (ensure tyres are within 5mm circumference) and that the anti-roll bars are disconnected.

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5. FRONT PRE-LOAD AND RIDE HEIGHT

Set the pushrod and damper length to the standard settings prescribed in the link setting sheet.

To set the car to run zero droop, first ensure springs compress slightly when the driver sits in the car by winding off any pre-load above zero droop. Then wind the platforms up one 360 degree turn at a time until the dampers are fully extended. The ride height should now be adjusted via the pushrods.

On smooth fast circuits you can run up to one turn of pre-load above zero droop.

For bumpy circuits run 5mm of droop measured at floor. Set using the same methods as for the rear.

6. REAR DROOP AND RIDE HEIGHT

The rear suspension runs 25mm +/-3mm of droop as standard. Set the pushrods and dampers to the lengths prescribed in the link setting sheet. Measure height of rear bottom wishbone ear (with driver on board) and then lift the car with a jack until the dampers are fully extended and re-measure.

The difference in the two measurements gives the droop. Adjust via spring platforms, up giving less droop, down giving more.

The ride height can now be adjusted via the pushrods.

7. FRONT CAMBER

Measure the cambers with the driver on board and ride heights set. Use a camber gauge vertically across the tyres and adjust via shims.

Camber is adjusted by lengthening or shortening the front upper wishbone outer joint using the camber adjuster.

8. REAR CAMBER

As for front, camber is adjusted by lengthening or shortening the rear upper wishbone outer joint using the camber adjuster.

9. TRACKING

Use parallel bars only for setting the tracking. Align the parallel bars with the centreline of the car and measure the distances of the front and rear edges of the tyres.

The difference gives the amount of toe-in. Adjust accordingly.

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10. CORNER WEIGHTS

Adjust the corner weights via the rear pushrods only. The driver must be seated and the anti-roll bars disconnected. Lengthening one rear pushrod will transfer the weight diagonally to the opposite front wheel.

Weights should be equal side to side or 5lbs heavy on the inside front wheel.

Front pushrod lengths must remain equal on each side.

Once weights are corrected, adjust the anti-roll bar links so that there is no load on the anti-roll bars. This is essential otherwise they will not work properly.

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ENGINEERING THE SC92F

The standard set up should work at most circuits, with only fine adjustments required.

REAR ROLL BAR

Stiffening increases corner exit oversteer or corrects corner exit understeer and vice versa. To stiffen move sliders towards front of car.

FRONT ROLL BAR

Stiffening improves traction but increases mid to exit understeer and vice-versa. To stiffen move anti roll bar links towards the centreline of the car on the front bellcranks.

REAR RIDE HEIGHT

Raising increases corner entry and mid corner oversteer or corrects understeer. Lowering will cause the opposites. Adjust via the pushrod only.

REAR CAMBER

Increases will provide addition traction and correct corner exit understeer, or correct corner exit oversteer. Decreases will provide the opposite effects.

FRONT CAMBER

Increases will improve mid corner and exit understeer. Decreases will produce opposite effects. Excessive camber can prolong tyre scrubbing time, overheat inside edges of tyres and reduce braking capability.

FRONT PRELOAD

Increase will improve fast corner stability and can, on occasions, cure fast corner understeer but will adversely effect the ride and increase slow corner understeer. Use no more than 1.5 turns above zero droop.

FRONT DROOP

Use on slow very bumpy circuits. It will improve ride especially over curbs, use approx 5mm.

ADJUSTMENT ORDER

1. Tyres
2. Ride Height
3. Roll Bars
4. Cambers
5. Pre-Loads/Droop

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Other adjustments if required:

TOE-INS

At certain circuits the toe-ins may require re-setting, for instance at a very fast circuit where increased stability and reduced steering response is required you may wish to increase the toe-ins to perhaps 2mm per wheel.

SPRINGS

Spring changes are only advised if you are an experienced driver and team. Really only required on a very bumpy circuit if the ride is poor.

Rear Spring Limits: 200-350lb/in Spring free length 9"

Front spring limits: 130-250lb/in Spring free length 6", below 150lb/in 7"

Any rate outside these ranges shall not be compatible with the standard dampers.

WET CONDITIONS

Set up as per set-up sheet. Blank NACA ducts, fit lightly scrubbed tyres at prescribed pressures. Do not re-connect rear bar and stiffen front bar until puddles disappear and track is purely damp.

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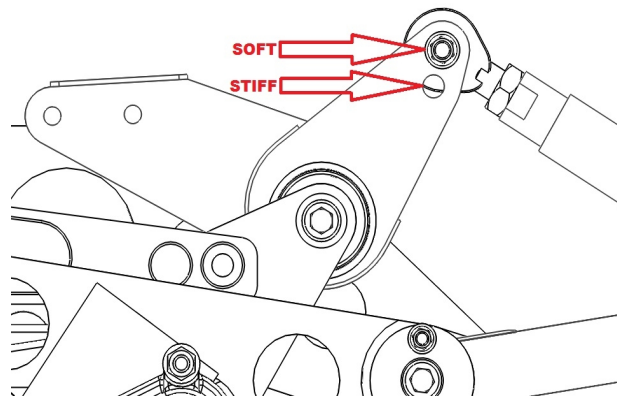
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SC92F GENERAL INFORMATION

REAR BELLCRANK

Run the car using the top hole only. The bottom hole is a much stiffer setting and should only be used with 225-250lb/in springs and 0.65 – 0.70" rear anti roll bar.



SPHERICAL JOINTS

Loctite all spherical joints in their housings with loctite bearing fit.

The front and rear upper wishbone outer rod end **must** be a high quality stainless steel or chrome-moly joint such as NMB.

GEARBOX OIL

Fill the gearbox with one litre of gear oil from dry.

OIL TANK

From dry the car will take approx 5 litres. Top up while engine is ticking over so that that oil just covers the web seen through filler cap.

RADIATORS

After engine change bleed radiators. Bleeds are located at the front of the radiators. Allow water to bleed for at least 5 seconds and then top up water tank.

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OIL COOLERS

Only use if ambient temperature exceeds 29C (85F)

MASTER CYLINDERS

Front brake: 0.625 Girling

Rear brake: 0.750 Girling

Clutch: 0.700 Girling

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COMPONENT LIFE

For the following listing, half a season is considered to be 10 races and 10 tests, a full season 20 races and 20 tests.

Wishbone joints: Replace after half a season.

Pushrod joints: Replace after half a season.

Roll bar link joints: Replace after one season.

Brake Discs: Replace after half a season.

Hubs: Crack test after half a season.

Wheels: Crack test after half a season.

Wishbones: Crack test after half a season

Pushrods: Crack test after half a season

Bellcranks: Crack test after half a season

Trackrods: Crack test after half a season

Anti Roll Bars and Drop links: Crack test after half a season

Uprights: Crack test after half a season

Suspension and steering mounts: Crack test after half a season

Springs: Replace after one season.

Caliper piston seals: Replace after half a season.

Clutch seals: Replace after half a season.

Gearbox dog rings: Replace as required.

Dampers: Rebuild after half a season.

Steering column: Replace after one season.

Clutch release bearing: Replace after half a season.

Electrical switches: Replace after half a season

Check and replace all other components as necessary.

Always use genuine SWIFT spares.

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