Welcome to Serpent

Thank you for choosing the Serpent Spyder SC car kit, and joining the growing Team Serpent Network!

Serpent started the development and production of rc cars in 1980 in Europe, and has continued to do so ever since! The line of cars has grown to over 20 different types for almost all categories of racing. Serpent is very successful in racing and many Championship titles have been won, including 9 World Titles.

The development of the Serpent Spyder range of cars is done by World Champion Billy Easton from the USA. He used his vast racing and engineering experience to create this top of the range racing car and this shows. By racing all types of offroad cars for many years, he knows what it takes to design a car that finishes races and wins!

The Serpent production and packing department have secured that your car kits is complete and will meet your high expectations for quality and durability, like with every Serpent car. In case you still find some issue or have a questions then ask your reseller or the Serpent distributor in your country.

INSTRUCTIONS
Serpent’s long tradition of excellence extends to their instruction manuals, and this instruction manual is no exception. The easy-to-follow layout is richly illustrated with 3D-rendered full-color images to make your building experience quick and easy.

EXPLODED VIEWS AND PARTS LIST
The exploded views and parts lists for the Serpent Spyder are included in the back of this manual. The exploded views show all the parts of a particular assembly step along with the Serpent part number. The parts lists indicate the part number and name of each part for easy reference when ordering.

TEAM SERPENT NETWORK
You can share your rc experience and learn from others through the Serpent media like the Serpent website, Facebook, G+, Teamblog, Twitter and Youtube. All links can be found on www.serpent.com

Enjoy your racing!

Team Serpent
The racing experience

SAFETY
Read and take note of the ‘Read this First section’ before proceeding to assemble the car-kit. This car-kit is intended for persons aged 16 or older.

CUSTOMER SERVICE
Serpent has made a strong effort to make this manual as complete and clear as possible. Additional info may be published in our website: www.serpent.com or you may ask your dealer or the Serpent distributor for advice, or email Serpent direct: info@serpent.com

The Serpent Facebook, Twitter and Youtube pages give additional means of support and communications.

INSTRUCTIONS, HOW TO USE
The kit includes bags, with bag numbers, which refer to the same step in the manual. Open only the indicated bag(s) per step and finish that part of the assembly.

Remaining parts will be needed later on in the assembly process.

SETUP
In many assembly steps you mount specific parts that suit the default set-up. We advice to keep the separate default set-up sheet alongside the manual, during all assembly. Other finetuning of the set-up, must be done at the track.

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Read this first!

- This is a highly technical hobby product, intended to be used in a safe racing environment. This car is capable of speeds in excess of 80 km/h or 50mph. Please follow these guidelines when building and operating this model.
- Parental guidance is required when the builder/user of this car is under 16.
- Follow the building instructions. If in doubt, contact your dealer or importer.
- Be sure to use the proper tools when assembling the car. Always exercise caution when using electric tools, knives and other sharp objects.
- Be careful when using liquids like lubrication oil, fuel or glue. Do not swallow.
- Follow the manufacturer's instruction in case you experience irritation after using the product.
- Be careful when operating the car. Stay away from any rotating parts such as wheels, gears and transmission. Stay away from motor, engine and exhaust pipe system or speedo during and immediately after use, as these parts may be very hot. We advise to use protective hand cloves.
- Only operate this car in a safe environment, like a special racing track or a closed parking lot. Avoid using this car on public roads, crowded places or near infants.
- Before operating this car, always check the mechanical status of the car. Also check that the transmitter and receiver frequencies correspond and are not used by any other racer at the same time. Check that the batteries of the transmitter and receiver are fully charged.
- After use, always check all the mechanics of the car. We advise to clean the car immediately after use, and inspect the parts for wear or fractures. Replace when necessary. Do not use water, methanol, thinner or other solvents to clean the car.
- Empty the fuel tank (depending on model) if needed and disconnect the receiver battery.
- Store the car in a dry and heated place to avoid corrosion of metal parts.
- Avoid using this car in wet conditions as the water will cause corrosion on the metal parts and bearings and these parts will cease to function properly. If driven in the wet, ensure that all the electric equipment is waterproofed and after use, that all moving parts are dried immediately.

USING THE MANUAL

Each step contains a variety of numbers, lines, and symbols. The numbers represent the order in which the parts should be assembled. The lines and symbols are described below.

1. Step number; the order in which you should assemble the indicated parts
2. Length after assembly
3. Assembly path of one item into another
4. Group of items (within lines) should be assembled first
5. Direction the item should be moved
6. Glue one item to another
7. Press/Insert one item into another
8. Connect one item to another
9. Gap between two items
10. Apply graphite grease (Grey), Apply silicon grease (Orange),
11. Apply threadlock (Blue), Apply silicone oil
**Front Assembly**

**Step 1**
Bag 1

**Step 2**

- M3x12
- 4x8x3
- 3x6x0.5
- Nylock nut M3

**Step 3**

- M3x12
- 3x6x0.5

**Note:**
Make sure to assemble the ballstud through the conical shim in the direction indicated by the red arrow.

**CompetitionX**
A website for the serious racer
5.1

Use the following servo horns with this brand of servos:
23 - Sanwa / KO/ JR
24 - Hitec
25 - Futaba / Hitec/ Savox

NOTE:
Make sure to put servo in neutral before mounting the steering lever.

5.2

<table>
<thead>
<tr>
<th>Servo Manufacturer</th>
<th>Spacer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airtronics</td>
<td>1+3+4</td>
</tr>
<tr>
<td>Futaba</td>
<td>3+4</td>
</tr>
<tr>
<td>Hitec</td>
<td>2</td>
</tr>
<tr>
<td>JR</td>
<td>1+2</td>
</tr>
<tr>
<td>KO Propo</td>
<td>1+2+3</td>
</tr>
<tr>
<td>Spektrum</td>
<td></td>
</tr>
</tbody>
</table>
**STEP 6**

**M3x18**

**M3x10**

**M3x4**

**M3x12**

**1mm**

**NOTE**

Place the caster shims and the bushings in the steering block first (1). Then slide the assembly onto the caster block (2) and fix it with the screws (3).

**STEP 7**

**7.1**

**7.2**

**NOTE**

There are three types of steering arms. Please, assemble number 2 as default.

**Steeringblock assembly detail view**

**NOTE**

There are three types of steering arms. Please, assemble number 2 as default.

**MORE ACKERMAN**

**LESS ACKERMAN**

**Bag 2**

**STEP 8**

**M2.3x4**

**3x24**
NOTE:
Make sure to assemble the ballstud through the conical shim in the direction indicated by the red arrow.
**12.1**

Measurement: 46.3 mm

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**12.2**

NOTE:
Make sure to assemble the ballstud through the conical shim in the direction indicated by the red arrow.

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**STEP 13**

- M3x10
- M3x14
- M3x14
- M3x22
- M3x22

Front Shocks position detail view
ASSEMBLY CORRECT ORDER:
1) Introduce the pin in the wishbone
2) Place the rear insert in the rear part of the toe block
3) Place the wishbone and pin in the rear toe block
4) Place the inserts in the front toe block
5) Assemble the front toe block.
**balls**

**NOTE:**

Lubricate o-ring with grease

**NOTE:**

8 balls

**HOW TO ADJUST THE DIFF**

As default setting screw all the way in, and back out ¼ turn.

Make small adjustments depending on the track condition.
**OPTIONAL GEAR-DIFF ASSEMBLY #500192**

**GEAR-DIFF STEP 1**

Use some grease during assembly

**GEAR-DIFF STEP 2**

Use some grease during assembly

**GEAR-DIFF STEP 3**

**NOTE:** Add just enough oil to cover the large gear before assembling the small satellite gears and cross pins (step 3.3).

**USE 7000 cst oil as default value.**

**NOTE:** Step 1 and Step 2:
To mount the pin, first put the pin in the purpose made slot as shown, and after slide it through the hole in the shaft.

**NOTE:** The gear is NOT symmetrical. The side with the larger 4 holes must face upward in step 3.1.

**NOTE:** Add just enough oil to cover the large gear before assembling the small satellite gears and cross pins (step 3.3).

Use 7000 cst oil as default value.
NOTE:
1) Assemble the o-ring before adding the oil.
2) Add oil so the cross pins are just covered (DO NOT overfill).

NOTE:
The diff assembled as shown here, should weigh max 16.9 grams.
TRANSMISSION ASSEMBLY

21.1

Step 21

21.2

NOTE:
The diff screw has to be oriented to the right side of the car.

21.3

DIFF HEIGHT SETTING:
Change the indicated inserts to move the diff up or down. Adapt the diff and idler insert accordingly.

Default position mid diff.

Nylock nut M3

3x7x0.5

INITIAL SETTING OF THE SLIPPER

1.5 - 2 mm

1.5x8

1

2

3

4

Bag 6

Bag 7

Bag 8

NOTE:
The diff screw has to be oriented to the right side of the car.

Pinion is NOT INCLUDED in the kit. See Serpent pinion list in the reference guide.
NOTE: Make sure to assemble the ballstud through the conical shim in the direction indicated by the red arrow.
**SHOCK ABSORBERS ASSEMBLY**

**30.1**

Use some silicone oil during assembly.

Note orientation of the shock cartridge.

**30.2**

1. Insert the o-ring inside the nut.
2. Nut M2

**30.3**

**30.4** **REAR SHOCKS**

Use some silicone oil during assembly.

0.75 mm

0.75 mm

37mm

**30.4** **FRONT SHOCKS**

Use some silicone oil during assembly.

0.75 mm

0.75 mm

1.25 mm

24mm

**30.5**

Fill the shockbody with silicone oil fully.

Move the shockrod up and down slowly to let air bubbles escape.

**30.6**

Apply the gasket and cap and close fully.

Bleed: push the shockrod all the way in slowly, to allow excessive oil to escape.

[CompetitionX] A website for the serious racer
30.7
With shockrod fully in, mount the o-ring and screw.

30.8
Assemble the spring and spring-cup (align correctly) to complete the shock.

NOTE:
Do not overtighten and smash bushing with the nut and note orientation of the lower shock pivot ball.

NOTE:
Do not overtighten and smash bushing with the nut and note orientation of the lower shock pivot ball.
**ELECTRONICS ASSEMBLY**

**STEP 38**

![Diagram of electronics assembly]

**NOT INCLUDED**

- M3x3
- M3x16
- Battery pad thick
- Battery pad thin

Tip: Use double sided tape to mount the ESC and RX to the chassis.

**STEP 39**

**NOTE: WEIGHT BALANCE**

To adjust the weight balance, move the batterypads accordingly, more front or backwards as needed.
NOTE:
- Rims included in the kit
- Rubber tyres not included in the kit
- Be sure to glue your rubber tyres to the wheels using Cyanoacrylate glue

BODYSHELL:
1) Apply the masking sheet provided and paint the body on the inside.
2) Cut the body along the provided cutting lines on the body for a perfect fit. Same for the body mounting holes.
3) Remove the body protection film on the outside of the body.
4) Apply the provided Serpent and Spyder decals, and mount the body on the bodyposts, with the provided body clips.
REF GUIDE:

EXPLODED VIEWS and PARTS-LIST

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TRANSMISSION ASSEMBLY
**SHOCK SPRINGS**

- **500230** Shock spring orange 2.0lbs (2) SRX2
- **500231** Shock spring red 2.1lbs (2) SRX2
- **500232** Shock spring pink 2.2lbs (2) SRX3
- **500233** Shock spring blue 2.3lbs (2) SRX2
- **500234** Shock spring purple 2.4lbs (2) SRX2
- **500235** Shock spring green 2.5lbs (2) SRX2
- **500337** Shock spring orange 3.0lbs (2) SRX2 SC
- **500338** Shock spring red 3.1lbs (2) SRX2 SC
- **500339** Shock spring pink 3.2lbs (2) SRX2 SC
- **500340** Shock spring blue 3.3lbs (2) SRX2 SC
- **500341** Shock spring purple 3.4lbs (2) SRX2 SC
- **500342** Shock spring green 3.5lbs (2) SRX2 SC
PARTS-LIST

Part no Description
500004 Serpent Spyder SXR-2 SC 2wd 1/10

DECALS
1886 Decal Serpent black/white 1/10 (2)
1888 Decal Serpent chrome 1/10 (2)
500102 Decal sheet Spyder black/white (2)

RADIO INSTALLATION / BATTERY
1606 Antenna rod black (2)
500165 Battery plate nut (4) SRX2
500188 Battery case inserts foam (6) SRX2 RM
500329 Batteryplate nylon SRX2 SC

Options
500129 Speedcontroller mount SRX2 RM
500330 Batteryplate carbon SRX2 SC
500331 Batteryplate foam SRX2 SC (2)

SERVO SAVER AND STEERING
411187 Pivotball with shaft (2)
500117 Steeringarms L+R (3) SRX2
500118 Servomount (2) SRX2
500119 Servomount spacers (8) SRX2
500120 Steeringlever (3) SRX2
500121 Steeringrack (3) SRX2
500133 Steeringrack bold (4) SRX2
500147 Pivotball shim conical (10) SRX2
500149 Pivotball with shaft med (5) SRX2
600180 Washer shock shaft (4)

Options
500197 Servomount alu (2) SRX2
500236 Steeringrack alu (3) SRX2
500287 Steering arm nr 1 brass L+R
500288 Steering arm nr 2 brass L+R
500289 Steering arm nr 3 brass L+R

SHOCK ABSORBERS
500136 Shock parts frame (44) SRX2
500137 Nut nylon M3 flanged (8)
500152 Pivotball shock (4) SRX2
500176 Shock top (2) SRX2
500177 Shock cartridge spacer (4) SRX2
500178 Shock cartridge spacer stepped (4) SRX2
500179 Shock top gasket (4) SRX2
500183 Shock adjust nut / oring (2) SRX2
500184 Shock bleeding oring (4) SRX2
500185 Shock oring bottom (4) SRX2
500324 Shock body rr (2) SRX2 SC
500326 Shock shaft rr (2) SRX2 SC
500327 Shock shaft rr (2) SRX2 SC

OPTIONALS
500180 Shock membrane (4) SRX2
500199 Shock top bushing delrin (4) SRX2
500238 Shock piston conical 2 holes (4) SRX2
500239 Shock piston conical 3 holes (4) SRX3
500240 Shock piston conical 4 holes (4) SRX4

SPRINGS
500230 Shock spring orange 2.0lbs fr (2) SRX2
500231 Shock spring red 2.1lbs fr (2) SRX2
500232 Shock spring pink 2.2lbs fr (2) SRX3
500233 Shock spring blue 2.3lbs fr (2) SRX2
500234 Shock spring purple 2.4lbs fr (2) SRX2
500235 Shock spring green 2.5lbs fr (2) SRX2
500337 Shock spring orange 3.0lbs fr (2) SRX2 SC
500338 Shock spring red 3.1lbs fr (2) SRX2 SC
500339 Shock spring pink 3.2lbs fr (2) SRX2 SC
500340 Shock spring blue 3.3lbs fr (2) SRX2 SC
500341 Shock spring purple 3.4lbs fr (2) SRX2 SC
500342 Shock spring green 3.5lbs fr (2) SRX2 SC

FRONT SECTION
411187 Pivotball with shaft (2)
500110 Front bulkhead-insert SRX2
500117 Steeringarms L+R (3) SRX2
500118 Servomount (2) SRX2
500119 Servomount spacers (8) SRX2
500120 Steeringlever (3) SRX2
500121 Steeringrack (3) SRX2
500132 C-hub insert (6) SRX2
500133 Steeringrack bold (4) SRX2
500138 Balljoint set (14) SRX2
500144 Hinge pin fr inner / rr outer (2) SRX2
500145 Hinge pin fr outer (2) SRX2
500146 Shock mount (4) SRX2
500147 Pivotball shim conical (10) SRX2
500148 Pivotball with shaft low (4) SRX2
500149 Pivotball with shaft med (5) SRX2
500150 Pivotball with shaft high (4) SRX2
500151 Casterblock bushing (4) SRX2
500163 Hinge pin brace 25 deg fr SRX2
500302 Rim 1/10 SRX2 SC white (4)
500308 Bumper set front SRX2 SC
500310 Shocktower fr SRX2 SC
500312 Wisbones fr L+R SRX2 SC
500314 Bulkhead fr SRX2 SC
500316 C-hub L+R SRX2 SC
500317 Steeringblock L+R SRX2 SC
500321 Wheel axle fr (2) SRX2 SC
500323 Track rod M3x71 (2) SRX2 SC

Options
500194 Antiroll bar set fr SRX2
500198 Pivotball with shaft short (4) SRX2
500200 Front bulkhead inserts alu (6) SRX2
500203 Pivot pin brace 20 deg fr SRX2
500204 Pivot pin brace 30 deg fr SRX2
500208 Antiroll bar fr 0.9 SRX2
500209 Antiroll bar fr 1.0 SRX2
500210 Antiroll bar fr 1.1 SRX2
500243 Front bulkhead alu SRX2
500250 Front bulkhead brass SRX2
500258 Antirollbar balljoints (2+2) SRX2
500262 Pivot pin fr inner / rr outer TiN coated (2)

MIDDLE SECTION
500165 Battery plate nut (4) SRX2
500188 Battery case inserts foam (6) SRX2 RM
500304 Chassis SRX2 SC
500329 Batteryplate nylon SRX2 SC
500332 Side guard set L+R SRX2 SC
500345 Side guard insert L+R

Optional
500112 Speedcontroller mount SRX2 RM
500330 Batteryplate carbon SRX2 SC
500331 Batteryplate foam SRX2 SC (2)

REAR SECTION
401381 CVD insert (2)
500108 Skidplate SRX2 RM
500109 Suspension bracket rr fr SRX2 RM
103032 E-clip 4.0 (10)
103033 E-clip 5.0 (10)
103034 E-clip 7.0 (10)
103035 Segi clip 1x2x1.0 (10)
10306 E-clip 6.0 (10)
10307 E-clip 9.0 (10)
110400 Shim 6x8x0.2 (10)
110401 Shim 3.2x7x0.5 (10)
110402 Nut nylock M3 (10)
110403 Nut nylock M4 (10)
110404 Shim 6x8x0.3 (10)
110405 Nut nylock M4 flanged (10)
110406 Nut nylock M2.2 (10)
110407 Nut M3 (10)
110408 Shim 3x5x0.3 (10)
110409 Shim 3x5x1 (10)
110410 Shim 3x5x2 (10)
110411 Shim 3x5x4 (10)
110412 Shim 3.5x8x1 (10)
110413 Shim 3.5x12x0.2 (10)
110414 Shim 3x6x0.1 (10)
110415 Shim 3x6x0.5 (10)
110416 Shim 3x6x0.8 (10)
110417 Shim 3x6x3 (10)
110418 Shim 4x8x0.1 (10)
110419 Shim 4x9.5x1 (10)
110420 Shim 4x9.5x2 (10)
110421 Shim 4x9.5x4x (10)
110422 Shim 4x10x0.3 (10)
110423 Shim 5x8x0.1 (10)
110424 Shim 5x8x0.3 (10)
110425 Shim 5x10x0.3 (10)
110426 Shim 5x10x0.5 (10)
110428 Shim 6.5x8x0.25 (10)
110429 Shim 6x11.75x0.2 (10)
110431 Shim 8x11x0.1 (10)
110432 Shim 8x11x0.2 (10)
110433 Shim 12x15x0.25 (10)
110434 Shim 12x18x0.3 (10)
110435 Shim 13x16x0.2 (10)
110436 Shim 3x5x3 (10)
110437 Nut M2.5 (10)
110438 Shim 2.5x6x0.5 (10)
110439 Shim 3x7.5x1 (10)
110440 Shim 2.5x5x0.4 (10)
110441 Nut nylock M3 flanged (10)
110442 Shim 4x8x0.6 (10)
110443 Shim 5x15x0.2 (10)
110444 Nut M4 nylon (10)
110445 Shim 4x10x0.2 (10)
110446 Shim 5x15x0.2 (10)
110447 Shim 3x7x7 (10)
110448 Shim 3x8x6 (10)
110449 Shim 3x6x1 (10)
110450 Nut M2 (10)
110451 Nylock nut M4 flanged alu (10)
110452 Nut M4 flanged knurled (10)
110453 Shim 3x7x3 (10)

**MERCHANDISING**

1896 Cap black-orange
190172 Winter jacket Serpent black-orange hooded (4XL)
190173 Winter jacket Serpent black-orange hooded (M)
190174 Winter jacket Serpent black-orange hooded (L)
190175 Winter jacket Serpent black-orange hooded (XL)
190176 Winter jacket Serpent black-orange hooded (2XL)
190177 Winter jacket Serpent black-orange hooded (3XL)

190156 Polo shirt Serpent black (S)
190157 Polo shirt Serpent black (M)
190158 Polo shirt Serpent black (L)
190159 Polo shirt Serpent black (XL)
190160 Polo shirt Serpent black (2XL)
190161 Polo shirt Serpent black (XXXL)
190182 T-shirt Serpent Splash white (S)
190183 T-shirt Serpent Splash white (M)
190184 T-shirt Serpent Splash white (L)
190185 T-shirt Serpent Splash white (XL)
190186 T-shirt Serpent Splash white (XXL)
190187 T-shirt Serpent Splash white (XXXL)
190188 T-shirt Serpent Splash orange (S)
190189 T-shirt Serpent Splash orange (M)
190190 T-shirt Serpent Splash orange (L)
190191 T-shirt Serpent Splash orange (XL)
190192 T-shirt Serpent Splash orange (XXL)
190193 T-shirt Serpent Splash orange (XXXL)
190194 T-shirt Serpent Splash black (S)
190195 T-shirt Serpent Splash black (M)
190196 T-shirt Serpent Splash black (L)
190197 T-shirt Serpent Splash black (XL)
190198 T-shirt Serpent Splash black (XXL)
190199 T-shirt Serpent Splash black (XXXL)
190201 Hoody sweater Serpent black-zip (S)
190202 Hoody sweater Serpent black-zip (M)
190203 Hoody sweater Serpent black-zip (L)
190204 Hoody sweater Serpent black-zip (XL)
190205 Hoody sweater Serpent black-zip (2XL)
190206 Hoody sweater Serpent black-zip (3XL)
190207 Hoody sweater Serpent black-zip (4XL)
190215 T-shirt Serpent WC edition black (S)
190216 T-shirt Serpent WC edition black (M)
190217 T-shirt Serpent WC edition black (L)
190218 T-shirt Serpent WC edition black (XL)
190219 T-shirt Serpent WC edition black (XXL)
190220 T-shirt Serpent WC edition black (XXXL)
190502 Pit-bag medium. 3 drawers