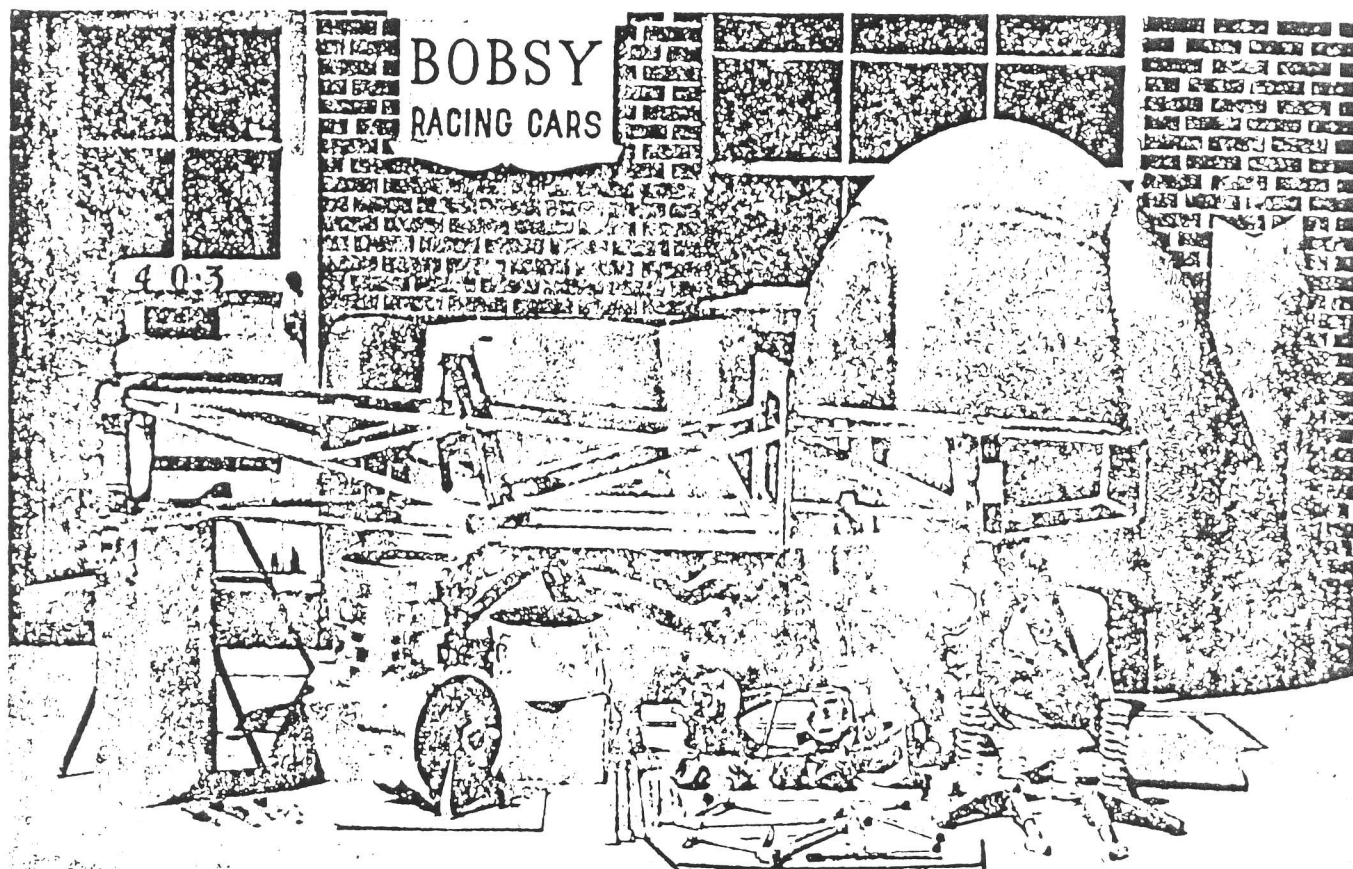




BOBSY SR3 KIT



Potential buyers of modified sports racing cars usually possess two things in great abundance. One is a collection of racing car parts, including an engine, a gearbox or two, seats, and assorted bits and pieces. The second is considerable degree of mechanical skill.

For these people, Bobsy is making its SR3 available in kit form. The design of the proven, all-aluminum chassis is versatile enough to accept many different engines for racing in H modified up through under-2-liter racing.

The kit is made up of those components which would be impossible for the home constructor to

make on his own. Those parts which he can fabricate or purchase himself, such as wiring, instrumentation, steering, and upholstery have been left out of the kit.

You will need to devote many evenings and weekends to building your SR3, but when you are finished, you will have a racing car with a value considerably greater than the original investment. Complete step-by-step instructions are furnished with each kit, and part numbers are given for any parts not furnished. Following is an explanation of components supplied in each kit. A price list is furnished overleaf.

BASIC KIT

1. **Chassis frame.** This is a complete, welded aluminum space frame. It includes all suspension pickup points, gas tank brackets, shift mounting pad, steering gear mounts, and roll-over bar, and back brace. Pedal mounting lugs and master cylinder mountings are provided. The engine bay will accept SAAB, Ford, Alfa, Climax, OSCA, twin-cam Ford, and many other engines. Appropriate engine mounting points are provided.

2. **Suspension members.** A complete set of 12 suspension members of steel, aluminum and magnesium is furnished ready to assemble to the chassis frame. All threaded holes are Heli-coiled and rubber bushing or rod ends are installed where necessary.

3. **Two complete front suspension assemblies.** Each includes the cast magnesium upright/steering arm, brake disc, axle, caliper mounting lug with bearings and seals installed and adjusted.

5. **Fiberglass body shell.** It requires cutting out of the inside wheel housings (pattern provided) and bonding them into place. It will be necessary to fabricate a mounting bar and bond it to the tail section (plans are included). Sanding and painting also are necessary. Door hinges are provided, but not installed.

7. **Set of suspension springs.** These are wound to suit the SR3 design and are plated.

9. Front and rear anti-roll bars.

10. Four lightweight magnesium wheels 6 in. wide by 13 in. in diam. Seven and 8-in. wide wheels also are available as optional extras.

12. Two formed prexaglas headlight covers.

14. Chassis frame paneled.

15. Two fiberglass seats.

1. Chassis Frame	\$ 695.00
2. Suspension Arm Set, 12 pieces	273.00
3. Two front suspension assemblies	240.72
4. Two rear suspension assemblies	268.00
5. Body shell	350.00
6. Four Airheart brake calipers, type 175 x 1*	122.40
7. Set of suspension springs	35.00
8. Eight spring seat castings	8.00
9. Front anti-roll bar	38.00

*Type 175 x 2 calipers are recommended for E and F cars. Add\$79.40

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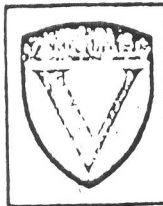
10. Four Magnesium wheels, 6 x 13**	\$ 252.00
11. Windscreen	35.00
12. Pair of headlight covers	10.00
13. Pedals, master cylinders, brake lines, and fittings (installed on chassis)	159.60
14. Chassis frame paneling installed	113.20
15. Pair of fiberglass seats	38.00

Total price, deluxe kit	\$2637.42
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****7 x 13 and 8 x 13 wheels also are available. Add \$16.00 per 8" wheel**

****7 x 13 and 8 x 13 wheels also are available. Add \$11.00 per 7" wheel**

**BOBSY DIVISION
VANGUARD AUTOMOTIVE ENTERPRISES INC.
139 Koons Ave.
Medina, Ohio**



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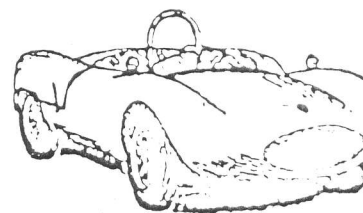
MEDINA, OHIO

725-4350

725-4359

BOBSY SR3 KIT INSTRUCTIONS

S. C. C. A. 1963 G MODIFIED NATIONAL CHAMPION



The first operation in finishing your car should be to panel the chassis frame, Use aluminum type 3003-H14 or 6061-T6 sheet. Use no thinner than .025 or thicker than .032. Be sure the panels are securely rivited on as they do contribute somewhat to the strength of the chassis frame. I suggest the use of Star brand pin type drive rivits. Be sure the floor pan extends out past the gas tank mounting brackets 1" on each side of the car as the fiberglass side of the body rest on this edge. At the front of the frame form a " U " shaped panel of at least .040 material. This panel will hold the radiator and the front lower edge of the body. Be sure to panel the frame sides at the front as there is no bracing in this area. A deflector panel can be installed to exit the hot air from the radiator to the sides of the car. A panel should be installed behind the seats to act as a firewall. The sides of this panel should extend out past the edges of the frame until they are on line with the floor pan. This part of the panel will give something for the fiberglass wheel housing to attach to. Use material .040 thick.

The radiator should be of the crossflow type if possible. Core stock can be had from radiator supply houses cut to what ever size you want and also in a specific thickness, Tanks can be fabricated of brass or tin with copper inlets from a plumbing supply company. We generally use one inch heater hose to pipe the water to the rear. Aluminum tubes can be formed if one desires. Do not attempt to run water thru the frame. A header tank of some sort should be installed at the highest point in the system. Run the hot water from the engine up the left side of the frame and the cold water down the right side.

The steering gear should be from a LHD Mini-Minor. Turn the gear upside down so the pinion is on the right. 4 holes are drilled on the front side of the front bulkhead to use for mounting. One should make up small mounting pads of aluminum and use " U " bolts to secure the gear to the bulkhead.

The gear should be centered on the bulkhead. To give the best handling one should shorten the gear 2" overall. First, disassemble the gear and check its condition. Then remove a 2" section from the center of the rack housing. Weld the two halves back together being sure to keep the parts in line. It will be necessary to turn reliefs in the aluminum end to permit installation of the " U " bolts which secure the gear to the front bulkhead. Shorten the rack by cutting 2" off the end opposite the teeth and chase on new threads. You will need one universal in the steering shaft at the steering pinion. This joint should have at least 1/4" pins. Use a 5/8" diameter tube for the steering shaft and run it thru the nylon bearing in the dash panel. This bearing can be installed either thru the dash panel or below it depending on just where the steering wheel is preferred. High or low. A 12" GO Kart steering wheel works just fine. It is important to see that when toe settings are finalized that the tie rods are of equal length and that the inner ends are positioned so they intersect a line drawn thru the inner attachment points for the front upper control arm when the wheels are in the stright ahead position.

On the front half of the front bulkhead are the mounting locations for the brake cylinders. VW fluid reservoirs make a neat installation. If one desires to use a fluid clutch there are mounting holes provided for a Girling master cylinder. When installing the pedals use a bolt and stop nut and tighten the nut just enough to take out any play in the pedals. They must still be free to work. Lubrication is important. Small bits of sponge rubber glued to the floor and stuffed behind the pedals will eliminate the possibility of a stone getting behind the pedal and causing it to jam. Brake ratio changes can be effected by changing the length of the spacers in the balance bar. Be sure to keep the sperical bearing in the brake pedal oiled as it will seize if it drys out. The throttle pedal is drilled to permit changes in the throttle cable movement relative to the pedal movement.

Cast pillow blocks are supplied with the frame to facilitate installation of the front and rear anti roll bars. The rear anti roll bar mounts on the front half of the rear bulkhead with the links attaching to the rear lower arms at their front. The use of the rear anti roll bar is optional. Generally the heavier, larger displacement cars (1500 cc thru 2000 cc) will most certainly require its use. On H and G cars it will mostly be a matter of driver style and taste. Anti roll bar links can be made of aluminum rod with rubber bushed ends or spherical rod ends.

Installation of front lower arm: This is the cast alloy arm with rubber bushings fitted to its ends. Note that it will be necessary to install flat washers between the rear bushing and the frame mounting lug to take up the space between the two. There should also be a large flat washer under the head of the thru bolt. The 5/8" rod end is installed with lock tite and should not be disturbed. When mounting the shock absorber to the front lower arm be sure the barrel cannot foul the casting during its travel from full bump to droop. Also be sure to shim between the shock lower mounting lug and the cast alloy arm so as to not break the arm when tightening the lower shock mounting bolt.

The front upper arm is a two piece unit. Use the short arm for camber adjustment and the long one for caster. Notice the small spacer to be used between the two outside rod ends. It is very important that after the front suspension is installed that it can be raised and lowered thru its travel without fouling any of the rod ends. A long 7/16" bolt should be used for the front inner attachment of the upper arm and spacers should be installed between the halves of the front bulkhead and also between the top shock loop and the mounting lug. Use a female rod end as a tie rod end and shim up the end so as to give it operating clearance when the suspension goes from bump to droop. Also make sure the tie rod lies exactly parallel to the upper arm when viewed from the front. This will preclude any possibility of toe change on bump and droop. The short springs are used on the front.

Modify the shock by cutting off the dust shield to permit installation of the upper spring seat, Adjust the lower seat so as to produce a car height loaded of $3\frac{1}{4}$ " measured at the front under the front bulkhead. When tightening the bolt which secures the lower end of the shock to the front arm, use discretion so as to not break the casting.

Installation of the rear suspension is straight forward and reference to the enclosed photos should answer any questions. You will note the need for small spacers at various points such as the front of the lower radius arms. Again be sure that no rod ends foul during suspension travel. The rear frame height should be $3\frac{3}{4}$ " loaded with $1\frac{1}{2}^{\circ}$ of negative camber and zero toe in. Toe can be adjusted by using the $\frac{7}{16}$ " rod end on the lower arm. The chassis should be checked for tracking and equal wheel base side to side. Adjust the radius arms length to correct this and the hub carrier inclination. The rear spring/shock set up is the same as the front.

The top edge of the rear bulkhead has mounting points for the Hewland VW type gearbox, Use a number HB 735 rubber bushing in the mounting holes.

It is most important that the upper half of the rear bay be triangulated, Note the mounting lugs in the corners of the frame, Due to the differences in engine design it is not possible to supply a back bay brace which will work out every time. After the engine is installed send us an accurate drawing with dimensions and the brace will be supplied to you.

A mounting pad is welded to the frame beside the steering wheel as a place to mount a shift unit. No attempt will be made to give instructions as to how to fabricate this unit due to the different requirements involved. Close inspection of the photos will show how we do it. As with the fuel tank mounting, there are many good ways to go about it.

When mounting the body one should first clamp the body panels in the correct positions. Be sure it is mounted square. Patterns for wheel housing panels are provided. These panels should be cut from flat fiberglas stock of about 1/8" thickness. With the body clamped into position the panels should be placed in position and bonded into place. They should overlap the aluminum dash panel in the front and the sides of the firewall at the rear. Note that the door panel must be cut down the scratch line on it. Refer to the photo. Pop rivit the hinge into place. In mounting the rear body section I suggest bonding a tube across the back of the body to which are welded hook type brackets. A bracket can be made and attached to the rear of the gearbox to engage the hooks. This will permit the rear body section to be removed with a minimum of bother. Use spring hooks at the front edge of the rear to hold it down. Slots can be cut in the top of the rear body to feed a cold air box if one is used.

The windscreen should be positioned and 1/2" holes drilled in the body for the rubber fastners to go thru.

The formed headlight covers are attached with small bolts.

Before any painting the body should be sanded and dewaxed.

Carefull referance to the photos supplied will no doubt answer more questions than further instructions. For specific questions write the above address.