

Mardave 0533 - 624701

STOCKMASTER

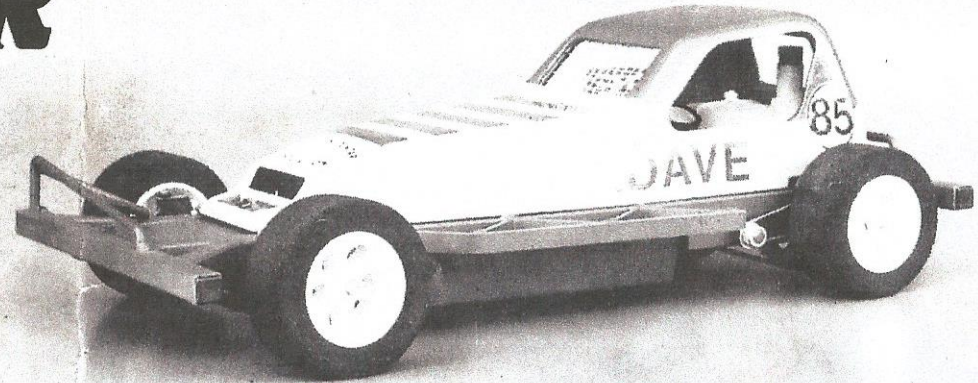
1/8 SCALE I.C. ENGINE POWERED STOCK CAR FOR RADIO CONTROLLED RACING.

RADIO STOCK CAR RACING

Radio controlled Stock Car racing is one of the most exciting and least expensive radio control hobbies. Started in 1973 by Mardave, model stock cars are now regularly raced all over Britain and also in Holland, Germany, Italy, etc. Each year there is a European championship and a World championship meeting. Racing in Britain is controlled by the Radio Stock Car Association which co-ordinates a full programme of race meetings and provides race and construction rules for the guidance of clubs and individuals in the hobby. Costs of cars and engines are restricted to ensure that stock cars remain the least expensive form of i.c. powered r/c racing.

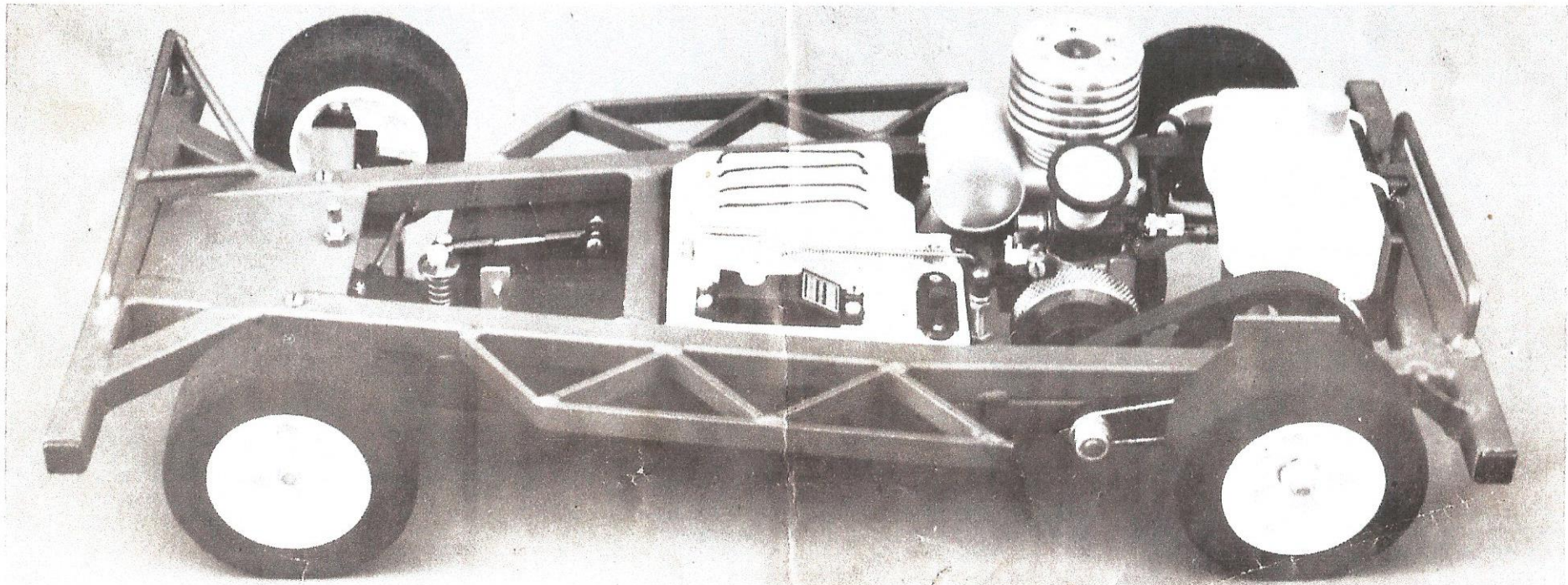
EXTRA EQUIPMENT REQUIRED

Radio control If you do not already have radio control gear, this should be of the two channel proportional type and a twin stick transmitter is recommended in preference to a steering wheel one.



Engine The car is designed around the Irvine 20 cu. in. glow plug ignition engine but most similar sized engines are suitable with possibly small modifications, see Engine Installation instructions. The clutch adaptor supplied with the kit is threaded 1/4" U.N.F. which fits most engines. Some engines are 6mm thread however and a suitable adaptor for these is available, see spares list.

A silencer will be required for the engine. Suitable ones are produced by Mardave for the Irvine and Veco engines. A carburettor air filter is also necessary and some fuel tubing and a fuel filter for connection between tank and engine.



MARDAVE STOCKMASTER ASSEMBLY INSTRUCTIONS

The following are suggested methods and sequence of assembly.

Chassis The chassis is supplied ready primed and requires only finishing paint (Cellulose aerosol sprays are very suitable). Press fit four plugs into ends of chassis tubes.

Front axle beam First assemble the front body fixing stud through hole in chassis plate with nuts above and below plate. Assemble axle beam to chassis with M4 x 35 screws, lock washers and nuts. Fit four retaining circlips to grooves in ends of stub axles and king pins. Assemble steering blocks with stub axles to ends of beam with king pins, coil springs, lock washers and nuts.

Rear suspension Fit large pulley to rear axle with tubular pin provided. Assemble L.H. radius arm to chassis stud with spring through loop on arm and fit washer and nyloc nut. Fit rear axle through L.H. radius arm, assemble drive belt over axle and assemble R.H. radius arm, spring, washer and nut.

Wheels and tyres The tyres must be bonded to the wheels. Impact adhesives such as Evo-Stick are most commonly used. Roughening the wheels with coarse emery paper or a file will help the bond. Apply adhesive to wheel and tyre and fit immediately while still wet. Leave for a few hours to dry. Assemble rear wheels to axle with special slotted washers on inside faces and secure with plain washers and nyloc nuts. Assemble front wheels to stub axles with washers either side and nyloc nuts.

Fuel tank mounting plate Fit plastic plate to chassis with screws provided. Note outer holes in chassis are threaded, internal holes require self tapping with screws.

Engine The engine mounting screws provided are 4BA and most engine holes will require opening out with a drill to 3.6mm diam.

The engine mounting blocks are drilled to suit the Irvine 20 Car engine. Other engines may fit these blocks but if not, blank mounting blocks (tapped for chassis fitting) are available and can be obtained from Mardave in exchange for returned standard blocks plus 50p handling charge.

Remove the circlip, washer and drum from the centrifugal clutch unit. Check that the inside of the crankshaft adaptor in the flywheel is clean and free from swarf and assemble flywheel to engine. Hold flywheel in a vice to tighten the adaptor nut securely. Refit the clutch drum, washer and circlip.

Assemble the mounting blocks to engine with 4BA cap screws and tighten with key. Assemble engine to chassis (with belt over clutch drum) with hex head screws and washers. The engine position is adjustable to allow for belt tensioning.

If the belt does not align properly on the large pulley it may be necessary to either reposition the pulley wheel or move the engine by slotting the holes in the chassis.

Drive belt tension If the belt is not sufficiently tight, it will slip over the clutch drum teeth when the car is running and will wear quickly. To check for a loose belt, hold the clutch drum between thumb and fingers of left

hand and try to turn the rear wheels with the right hand. If the belt is too slack it will jump over the clutch drum teeth. If it is excessively tight however, it will create friction and wear in the clutch bearing and so it is important to have it sufficiently tight but no tighter than is necessary.

Fuel tank Attach the tank to the mounting plate with tie wraps round the tank and through the holes in the plate. Connect to the engine with suitable clear fuel tube (silicone type is recommended) and include a fuel filter.

Steering bellcrank and linkages Assemble self tapping plastic ball sockets to the track rod ends and adjust to give a length of 67mm between ball centres. Assemble ball sockets to steering servo connecting rod and adjust to approx. 55mm. Assemble rods to steering servo saver bellcrank with three steel ball joints, screws and nyloc nuts fitting servo rod to centre hole in bellcrank initially. Assemble bellcrank mounting screw to chassis through hole provided and secure with locking washer and nut. It may be necessary to leave this nut loose until after bellcrank has been fitted. Secure bellcrank on screw with a nyloc nut. Remove output disc or arm from the servo to be used for steering (see Radio Installation inst.) drill out hole as necessary and assemble connecting rod ball end to output disc.

Radio installation Assuming that the radio control equipment to be used is of the two channel type with two servos and a twin stick transmitter, it is normal for the R.H. stick to be used for steering and for the radio to be installed so that the car turns to the right (going away from the driver) when the stick is moved to the right and for the car to accelerate away when the L.H. or throttle lever is moved up or away from the driver.

Some servos operate in a clockwise direction, others anti-clockwise. It is therefore first necessary to connect up the radio gear and operate the servos to ascertain in which direction they rotate so that they can be mounted and the linkages so arranged to achieve the correct end result. The steering can, if necessary, be reversed by connecting to the bottom of the servo output disc instead of to the top. In this case it is recommended that the ball joint on the bellcrank be fitted underneath the arm instead of on top as shown. The throttle can also be reversed by loosening the carburettor arm and repositioning it upwards instead of downwards.

The plastic radio crate is intended to accommodate and protect the radio receiver, battery, throttle servo and steering servo. The steering servo is carried on a separate alloy mounting bracket. First drill holes 3.6mm diam. through the mounts marked in the radio crate lid and base. Then fit the lid moulding onto the chassis undertray (allowing space for the lid around front and sides) and drill two holes through undertray to suit. Cut and file a slot in the base moulding where marked for the steering servo lead. Fit base moulding to chassis using one 60mm long screw at the front and one 45mm screw, two lock washers and nuts.

Mark out, drill, cut and file an aperture in the lid moulding to suit the throttle servo. Drill four holes to suit self tap screws or bolts as supplied with the radio and fix servo with these and rubber grommets. Drill and fit switch as

shown. Fit receiver and battery pack into base and pack with foam rubber or similar.

Cut and file steering servo mounting bracket to suit servo and drill four holes for fixing screws. Fit servo with screws and grommets. Position servo and bracket into chassis and fit output disc onto servo.

With servos connected to the receiver, switch on transmitter and receiver, centralise trim levers on transmitter and switch off (receiver first, then transmitter). Drill two holes 3.6mm diam. through chassis from servo mounting bracket, deburr holes and fix with 4BA screws and nuts. The receiver aerial required varies with the radio used. In most cases taping or drilling and fitting to the crate lid is quite sufficient. If not satisfactory, a vertical whip type aerial should be fitted.

Throttle lighting It is recommended that an override system is used for the throttle. This allows the throttle to be opened for engine starting and testing without the radio being switched on. In the system shown, the servo opens the throttle and a spring returns it. Assemble the throttle bellcrank to its mounting screw with two lock nuts underneath it. Fit screw to hole threaded in chassis with locknut above chassis. Make carb. to bellcrank and bellcrank to servo linkages as shown from steel wire supplied. The servo to bellcrank link is shaped thus at the bellcrank end. Fit one self tap screw to the servo output arm and shape linkage to slide over this.

Body Mark out, drill, cut and file windows. Drill one hole at front 4.8mm diam. and one at rear 6.5mm diam. to suit body fixing studs. Cut away body well clear of engine heatsink. Trim windscreen mesh to suit and bond in place with impact adhesive.

Cellulose aerosol sprays are very suitable for painting the body.

The body is held in place by sliding forward over the rear stud and fixing at the front with the wire clip. The height of the front stud should be adjusted to suit.

Operation and maintenance The engine is started by holding the flywheel against a rotating rubber wheel. This is usually fitted to an aircraft type hand starter or preferably to a home made starting box containing a 12 volt battery and a car starter motor. A glow plug lead and clip will be required with a 1½ or 2 volt battery depending on the voltage of the glow plug.

The engine should start with the throttle closed or nearly closed. A few drops of fuel can be primed directly into the carburettor but care should be taken not to flood the engine. When left standing, it is recommended that the front of the car be raised to avoid fuel draining from the tank into the engine.

Front axles, king pins and rear axle bearings should be lightly oiled regularly. The clutch bearing should be packed with grease whenever the engine is removed from the car. Check and clean out drive pulley teeth occasionally, especially if the car is run on grass.

We are constantly endeavouring to improve the Stockmaster and so reserve the right to make minor changes at any time. The model may therefore differ slightly from that shown and described in the assembly instructions.

