

Np 2012-660



OWNER'S MANUAL

We wish to thank you for choosing a D.J.P. Sidecar. It is the culmination of advanced engineering, exhaustive testing and continuous development for maximum comfort, safety and handling.

By giving your sidecar the proper care and maintenance outlined in this manual, you will be helping to ensure a long trouble free life.

Owner's Name.....

Owner's Address.....

Serial No. of sidecar.....

Boot key No.....

Date Purchased.....

N, M12/238910/R
16.3.2012

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IN ALL THY WAYS ACKNOWLEDGE THE LORD, AND HE SHALL DIRECT THY PATHS.

PROVERBS 3:6.

FITTING INSTRUCTIONS.

Please read carefully and follow the various steps in the order described.

Some basic principles of sidecar fitting and set-up should be understood prior to attempting to fit the sidecar to your motorcycle. The following information is mainly general in nature due to the many variables which exist between different motorcycle and sidecar combinations. The measurements indicated are to be used as starting points from which finer adjustments can subsequently be made.

Toe-in refers to the slight inward set of the sidecar wheel in relation to the wheels of the motorcycle. The purpose of toeing the sidecar wheel inward is to offset the slight crabbing tendency of the outfit and provide for even tyre wear. In some cases, incorrect toe-in (particularly in conjunction with not enough lean-out) can contribute to handling difficulties, noticeably a tendency for the outfit to pull to the left. Sidecar wheel toe-in should be between 12mm & 25mm. This is measured by means of two straight edges, one laid against the sidecar wheel and the other laid against the wheels of the motorcycle. Alternatively just one straight edge can be used along the sidecar wheel while the motorcycle side measuring point can be taken from the centerline groove in the motorcycle tyres. Either way, the motorcycle wheels should be perfectly aligned a good method being to sight the wheels by eye from the rear of the motorcycle while on the hands and knees. Measurement "A" (fig. 1) should be 12mm to 25mm less than measurement "B" when measured at the points shown.

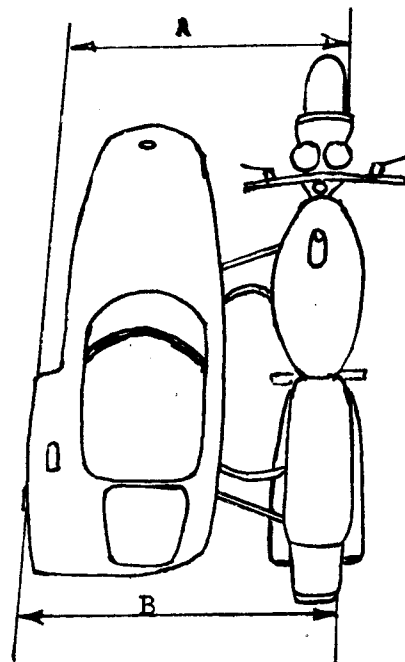


fig.1

Lean-out. In general, the amount of lean-out needed for the outfit to track without it pulling to the left or right at a given speed, will to a small extent depend on the actual weight of the motorcycle, but to a much larger extent depend upon the load the motorcycle and/or the sidecar is being asked to carry. Obviously, if the sidecar is loaded to the hilt, the sidecar suspension is forced down and the lean-out is reduced. It becomes clear therefore that insofar as lean-out is concerned, a "happy-medium" or compromise is needed as in most cases a passenger or other weight in the sidecar is not always carried. Generally, the more weight in the sidecar, the more lean-out needed.

One other factor which influences the amount of lean-out required, is the intended cruising speed. An outfit that cruises comfortably at 100 KPH with neutral steering will probably exhibit a pulling to the left tendency if the cruising speed is increased to 130KPH. This is due to far greater pronounced air drag on the sidecar and will quickly result in tired arms unless the lean-out is increased to off-set the increased air drag.

The following measurements can be used as a starting point. The motorcycle should lean slightly away from the sidecar when the outfit is unladen and parked on a flat area. "Slightly" is defined as being 3mm to 6mm in 600mm as measured with a 600mm carpenter's square aligned with the motorcycle's rear tyre centerline or sidewall. Under normal operating conditions including riding within speed limits, the outfit should track straight and evidence very little pull to one side or the other. Severe pulling to the left can be corrected by increasing lean-out and severe pulling to the right can be corrected by decreasing lean-out.

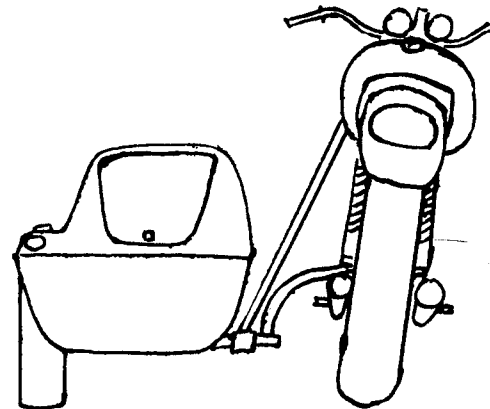


fig.2

Sidecar wheel location in relation to the wheels of the motorcycle. The axle line of the sidecar wheel can be positioned anywhere from 150mm to 300mm forward of the axle line of the motorcycle's rear wheel without any noticeable adverse effects. Alternative positioning holes are provided on the sidecar chassis to allow the sidecar wheel axle line to fall within the above measurements. In the case of some of the larger Japanese motorcycles that have exceptionally long wheelbases, a maximum sidecar wheel lead of 400mm would be permissible.

Now that the three main variables, toe-in, lean-out and sidecar wheel location, are understood in principle, a start to fitting the sidecar can be made.

1. The first step is to fit the frame clamps consisting of the parts illustrated in fig. 3. The frame clamps are to be fitted to the motorcycle frame in the positions outlined in the frame sketch on the last page. Particular note should be made that all frame clamps are stamped with a size number on the outer bend and that the size number for each clamp is inserted on the frame sketch. The front top, rear top and rear lower frame clamps consist the ball and socket type coupling while the front lower position uses the male and female clevis coupling. After fitting the first three (ball & socket type), screw them up as tight as possible while the front lower male clevis type should be left semi-tight so as the male clevis can be readily aligned with the slotted (female) clevis. The frame clamp bolt can then be tightened after the sidecar is fitted.

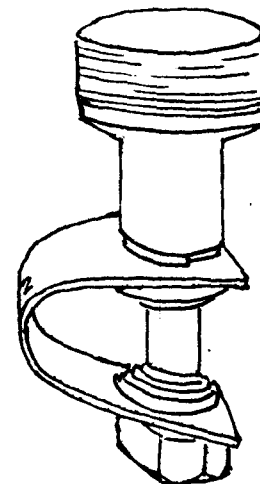


fig.3

2. Before the sidecar is fitted to the motorcycle the rear shocks should be adjusted to the stiffest setting and if the front fork springs are particularly soft, e.g., B.M.W., they should be stiffened up, the easiest method being to preload the springs by means of a 25mm long spacer made from a length of 20mm I.D. pipe, inserted under each front fork top cap. The correct amount of preload i.e., spacer length can be arrived at by experimentation after the sidecar is fitted and similarly, gearing. If it was considered beneficial to gear the bike down we would recommend a 10% increase in rear sprocket size on motorcycles within the 550cc to 750cc range. Under 550cc a 15% increase in rear sprocket size would be a good starting point.

Handlebars are important! The correct choice of bars will make the world of difference. Narrow B.M.W. type bars are out, "ace" or dropped bars are out, six bend pullbacks are out. We recommend stock type 150mm rise touring bars for reasons of leverage which will result in greatly reduced rider fatigue.

Steering dampers are a worthwhile accessory. Some outfits will not display any handlebar shimmy but for those outfits that do have a tendency to 'shake their head' at slow speed, we would recommend the genuine Kawasaki steering damper. (Kawasaki part No. 46117-006)

3. Getting down to work, the next step is to have the sidecar sitting on level ground with blocks positioned under the front and rear of the square box section part of the chassis so that the front is blocked approximately 25mm higher than the rear. The sidecar should be sitting level when viewed from the front and back.

With the two straight struts bolted to the sidecar and temporarily pushed back to the sidecar body (the longer of the straight struts generally bolts into the front hole) and the rear lower curved strut bolted to the sidecar, position the bike alongside the sidecar so that the rear lower socket that has been already fitted to the bike, mates with the ball. Semi tighten the socket nut with the special spanner provided.

4. With someone holding the bike or with it blocked upright with wood, (note: do not use the center-stand) bolt the front lower curved strut to the sidecar chassis in whichever hole*that allows the female clevis to slot with the male clevis that is already attached to the motorcycle. With the clevis pin bolt in the hole;

* Refer to fig 4.

4a. set the lean-out as described in page 2.

4b. measure the toe-in as described page 1.

Always be sure to set the lean-out before measuring toe-in.

If the outfit does not have enough toe-in, slip the clevis pin bolt out and part the curved arm at the clevis fitting, adjust the threaded rod into the curved strut a few turns, refit the clevis joint and recheck the toe-in. Repeat this procedure until the correct toe-in has been set.

NOTE: Always keep in mind that the threaded rod is 150mm long and that at least 25mm at the min. is needed inside the curved strut. If it is necessary to thread the rod all the way into the curved strut, the rod will need to be removed and shortened by some 25mm with a hacksaw in order to avoid fouling the inner curve of the strut.

5. With the two lower curved struts bolted in position, the toe-in set and the bike leaning out the correct amount, swing the straight struts across to their corresponding frame clamps. Adjust the threaded rod so that the ball and sockets fit neatly together.

NOTE: The threaded adjustment rod on the straight struts is 200mm long. Check with a tape measure that there is at least 25mm left inside the strut.

6. Now that all the mounting struts are in position, methodically tighten the three socket nuts with the special spanner provided AND LOCK-WIRE THE THREE SOCKET NUTS THROUGH THE LOCK-WIRE HOLE THAT IS DRILLED THROUGH ONE OF THE 'C' SPANNER HOLES ON EACH SOCKET NUT.

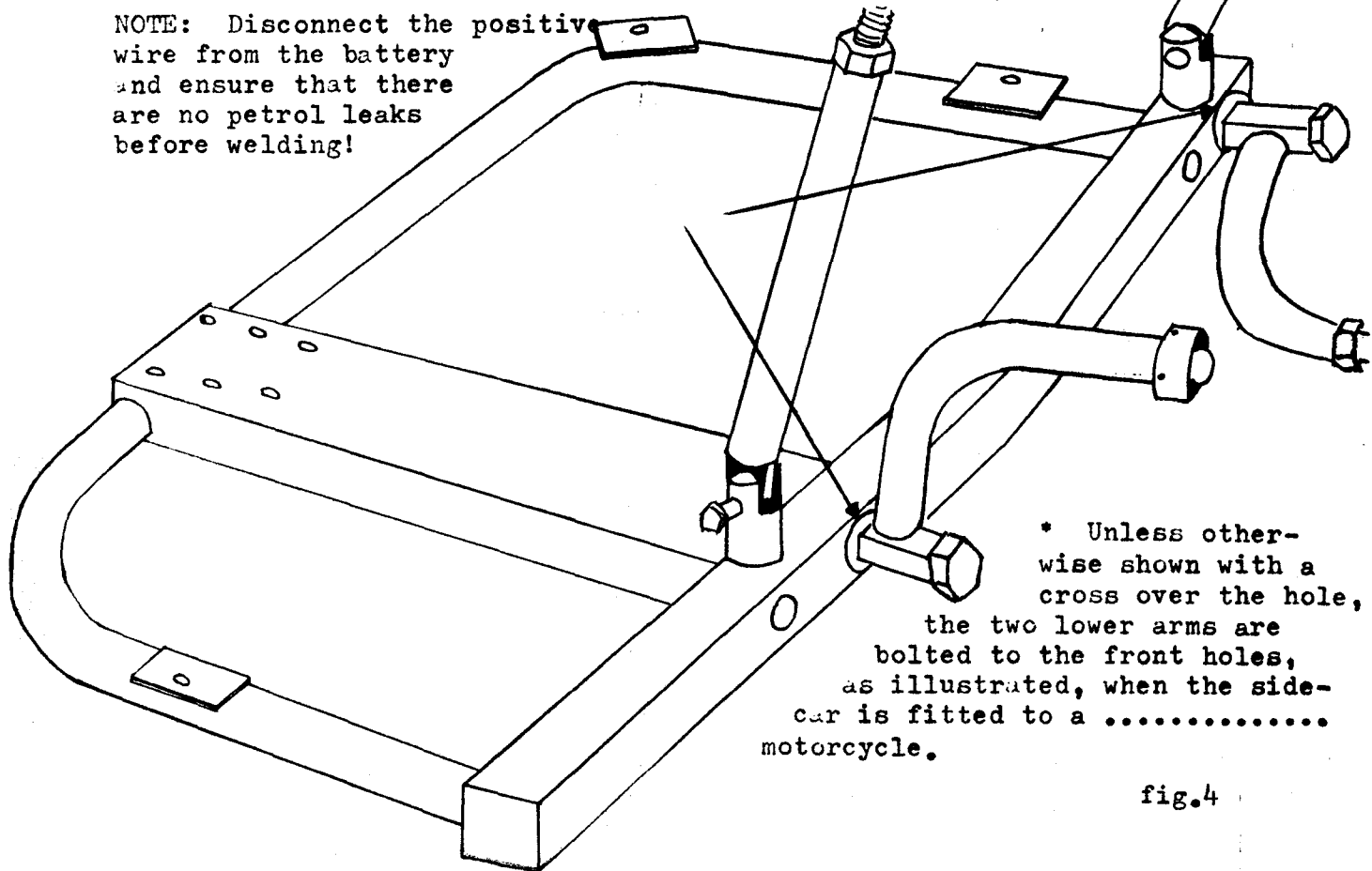
Tighten the three clevis bolts and nyloc nuts, the adjustment rod lock-nuts, frame clamp bolts as well as the four bolts which fasten the struts to the sidecar chassis. NOTE: Do not strike the 'C' spanner with a hammer to tighten. Use hand pressure only.

7. Tape the sidecar light wire to the rear top strut, wire one wire direct to earth and the other wire to the live tail light wire of the bike.

6.

8. After the sidecar has been fitted, all bolts, nuts as well as the socket nuts correctly tightened down and finally the toe-in and lean-out rechecked, the two lower curved struts should be welded to the sidecar chassis at the points indicated by the arrows. This will completely eliminate the possibility of the sidecar alignment being altered due to harsh road surfaces or riding habits. Each weld should be at least 25mm long.

NOTE: Disconnect the positive wire from the battery and ensure that there are no petrol leaks before welding!



* Unless otherwise shown with a cross over the hole, the two lower arms are bolted to the front holes, as illustrated, when the sidecar is fitted to a motorcycle.

fig.4

PERIODIC MAINTENANCE & CARE. It is important to maintain and properly care for your sidecar to ensure that it enjoys a long and trouble free life. Pride of ownership and resale value are other factors which are affected by the degree of maintenance performed.

1. Tightening of bolts. Check at least once a fortnight the tension of all sidecar mounting bolts. Use the correct size spanners in order to protect nuts and bolts from becoming rounded. Mark the socket nuts with a texta to give you an at-a-glance indication that they have not unscrewed. Check sidecar wheel nuts at least once a fortnight.
2. Alignment. Perform an alignment check every three months. Readjust if necessary according to step 4 on page 5.
3. Steelwork. The chassis and connecting struts can be cleaned from road grime by using 'Steelo' or 'Jex' type soap pads.
4. Windscreen. Always use plenty of soapy water with a sponge or soft cloth. Polish with 'Mr Sheen' and a soft cloth. NEVER clean a dry screen.
5. Upholstery. The seats should be cleaned with a proper vynal cleaner. The carpets can be removed and beaten whenever they need it.
6. Fibreglass. As the fibreglass body comprises the most seen part of the sidecar, particular attention should be given to its upkeep. Any fibreglass part will weather if it is not looked after properly. Particularly, if the sidecar is made in a darker colour, care should be taken to avoid parking the outfit in the hot sun for long periods. The fibreglass should always be protected by a wax based polish. Light scratches can be eliminated by a quick cut and polish using a fine compound while deeper scratches can be dealt with by careful use of some 1200 grade wet & dry sandpaper with water followed by a good cut and polish. After such treatment reseal the surface with a wax based polish. As the surface thickness of the gelcoat is approximately .5mm, there is little chance of rubbing through to the fibre with sandpaper.

7. Tyre. Maintain the tyre pressure no lower than 15psi. Due to the relative low weight of the sidecar even in its loaded state, it should not be necessary to exceed 20psi. Providing the outfit is set up correctly, tyre life should be virtually indefinite.

8. Wheel bearings. The sidecar wheel should be checked after the first week of operation as follows: Block the sidecar up so that the sidecar wheel is clear of the ground. Holding the wheel firmly with both hands try and detect any play in the hub by rocking the wheel. If there is play evident, adjust the wheel bearings by prising off the chrome grease cap, removing the split pin and turning the axle nut one castellation in a clockwise direction. Repeat this procedure one castellation at a time until the play has disappeared.

NOTE: A new split pin MUST be used every time this operation is performed. Re-grease the wheel bearings liberally every 20,000 km.

RIDING INSTRUCTIONS. If you are new to the three wheel dimension, EXTREME CAUTION in the initial stages of learning to ride cannot be over emphasised. Practise should first be obtained in an enclosed area such as a large lawn or flat paddock or empty parking lot, and a venture out onto the street should not be attempted until the 'feel' of 'steering' the outfit around obstacles to the left and right has been properly mastered.

DURING THE FIRST WEEK OF RIDING AN OUTFIT, A 50KG BAG OF BALLAST (e.g. sack of road screenings) SHOULD BE CARRIED IN THE SIDECAR BOOT unless a passenger is carried during this initial learning to ride time.

At all times left hand turns should be negotiated VERY SLOWLY as too much speed especially without a passenger or ballast can cause the sidecar wheel to aviate placing the rider in a very disconcerting situation, (not to mention his passenger!)

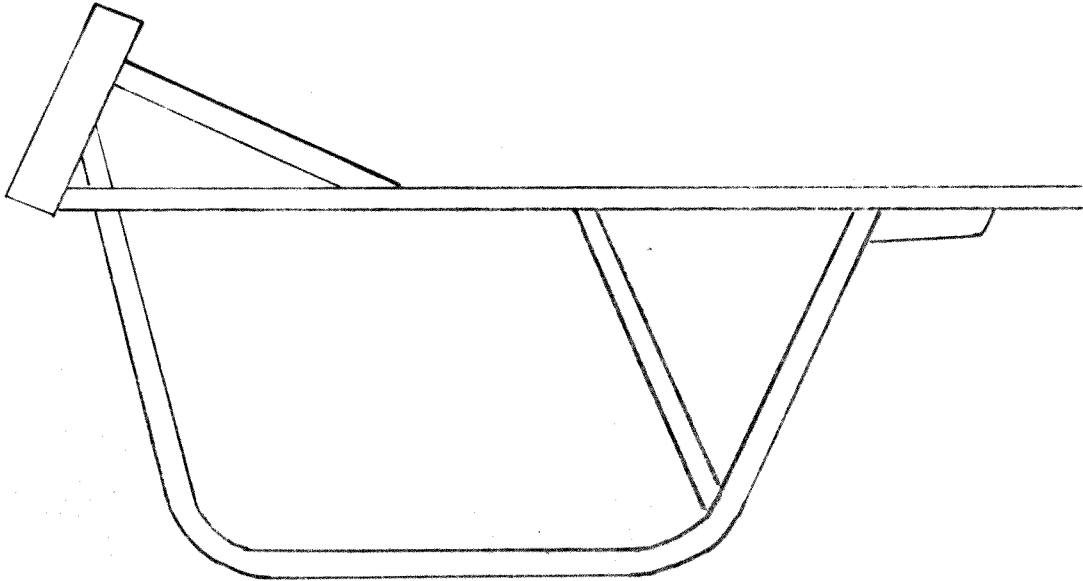
NEVER brake into a left hand corner. When approaching left-handers all braking should be carried out while still travelling in a straight line before the corner is reached. Once the corner is reached, GENTLY apply the throttle so as the bike slowly accelerates around the sidecar.

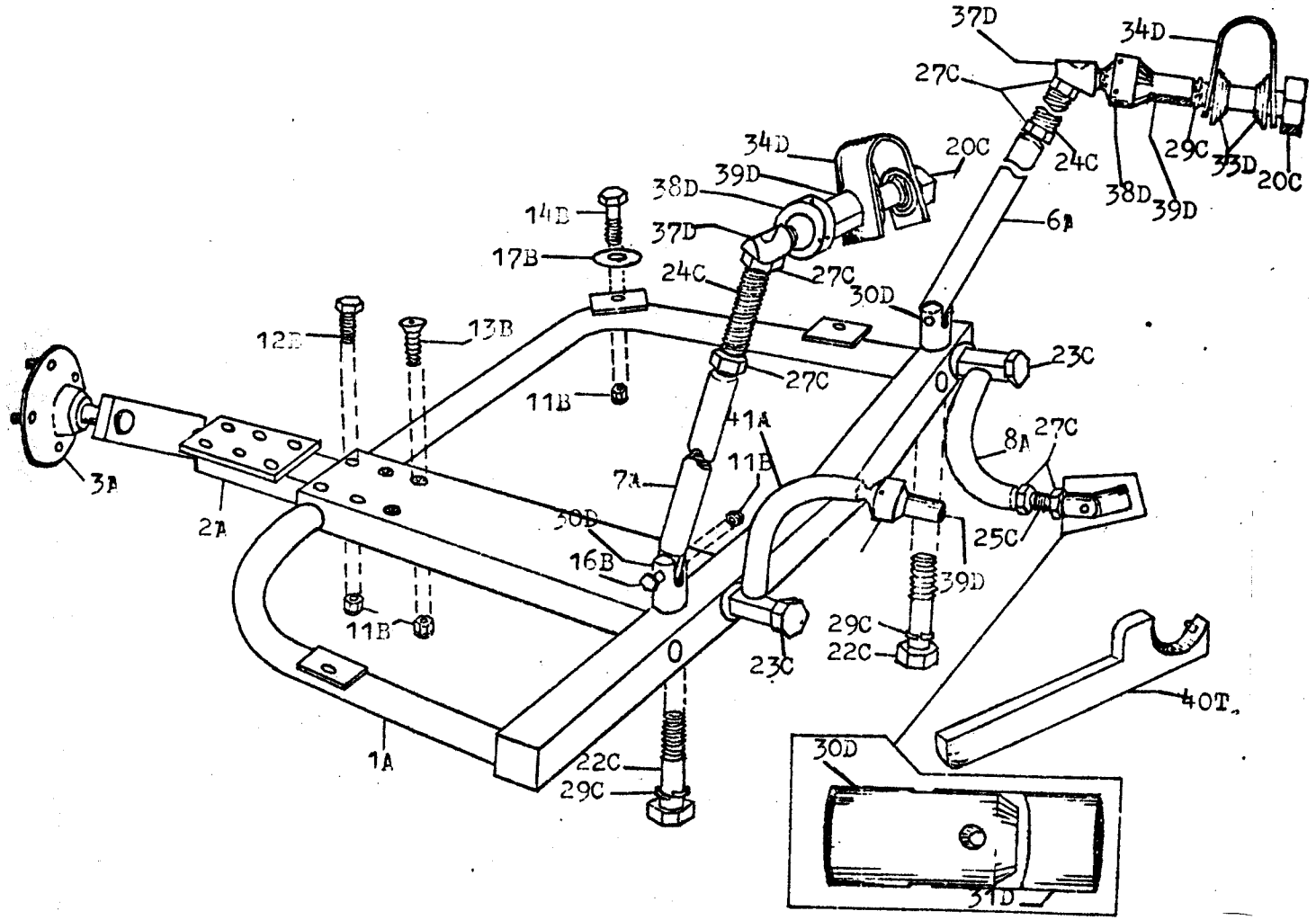
Cornering to the right is done in exactly the opposite fashion. The correct method is to come into the corner while still applying the brakes. This lessens the effort needed to turn the corner as the sidecar wants to keep going around the bike to a degree.

We must repeat however that EXTREME CAUTION MUST BE EXERSIZED DURING THE INITIAL STAGES OF LEARING TO RIDE AN OUTFIT.

Once the art of outfit riding is fully mastered, you will find it a very satisfying and convenient form of transportation.

We, at D.J.P. SIDECARS, wish you many pleasureable miles ahead.





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