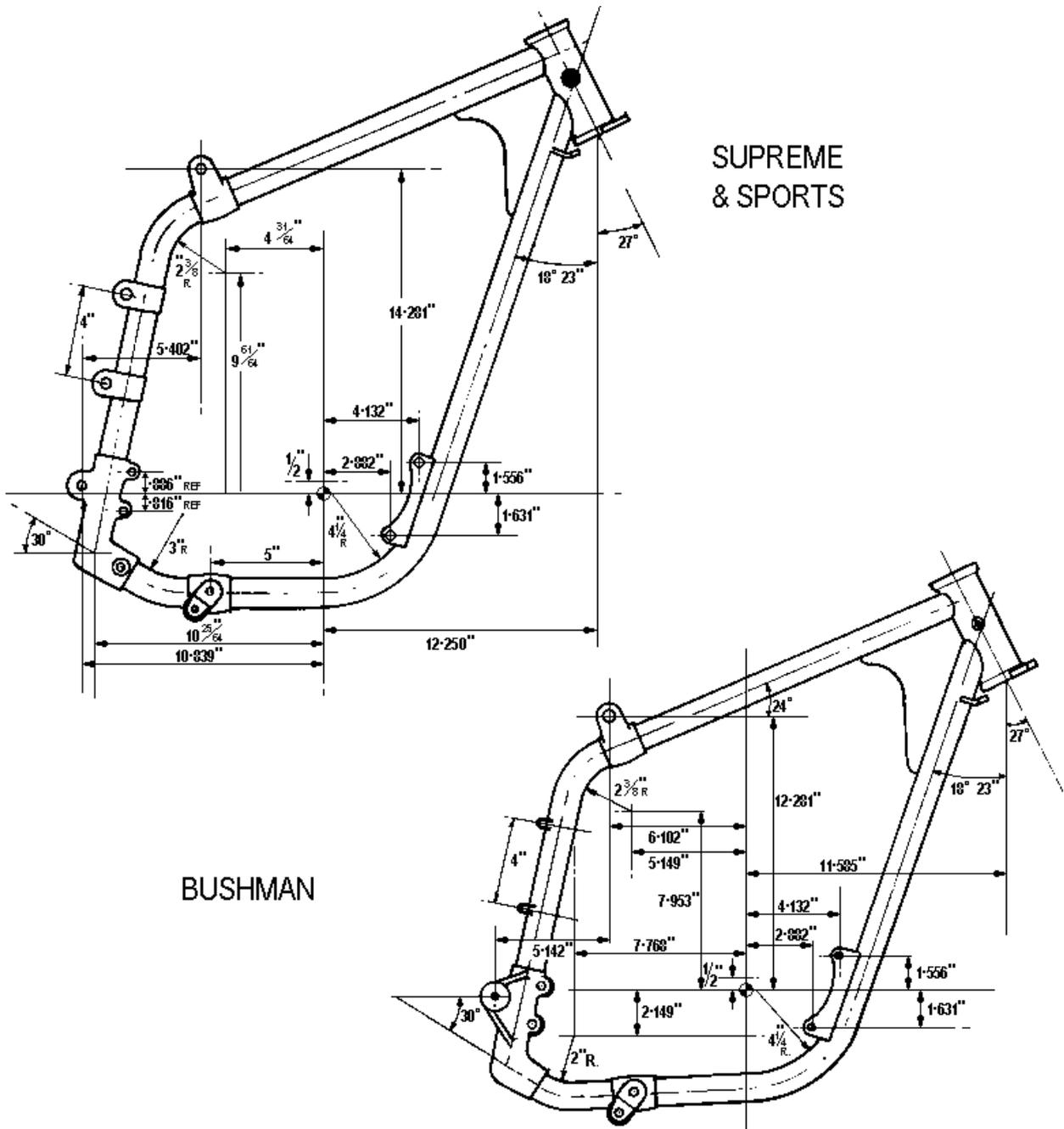

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LATER MODELS HAVE
TWIN GUSSET PLATES

FIG. D1. Frame dimensions.

FRAME ALIGNMENT

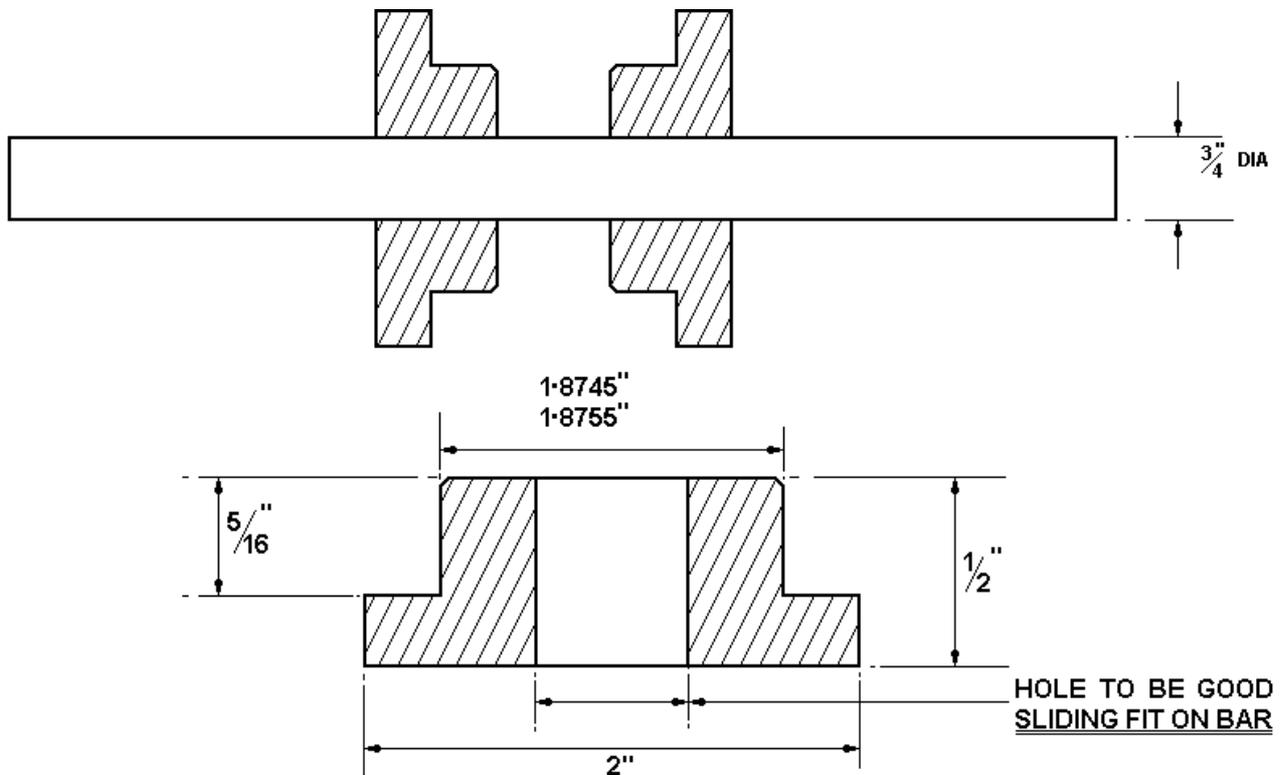


FIG. D2.

The only satisfactory way of checking the D14 Bantam frame for correct alignment is on an engineer's setting-out table. In addition to the table, which should be approximately five feet by three feet, the following equipment will also be necessary.

One mandrel and two blocks for the steering head, as in Fig. D2.

One set-square.

One 18" Vernier height gauge or large scribing block.

One pair of large vee-blocks and several adjustable height jacks.

If a scribing block is used in preference to an Vernier height gauge, then an 18" steel rule will also be required. All mandrels must be perfectly straight and round, otherwise measurements will be affected.

Figure D3 shows the basic set-up for checking the D14 Bantam frame, though variations can be used, according to the facilities available.

Place the blocks into the steering head, insert the mandrel and support with the vee-blocks at one end to ensure that it is parallel with the surface of the table. Insert the swinging arm spindle through its pivot hole in the rear frame member.

Now, using jacks or packing pieces, set the frame horizontal to the table so that checks taken at (A) are the same. If the frame has suffered damage in an accident, it may not be possible to set points (A) parallel, in which case points (B) can be used.

Sometimes, if the machine has been subjected to a frontal impact, the main tubes may remain parallel at points (A) but will be bent as shown in Fig. D4. A straight-edge made from piece of good quality hardboard can be used for checking purposes, but the actual checking edge must be quite straight.

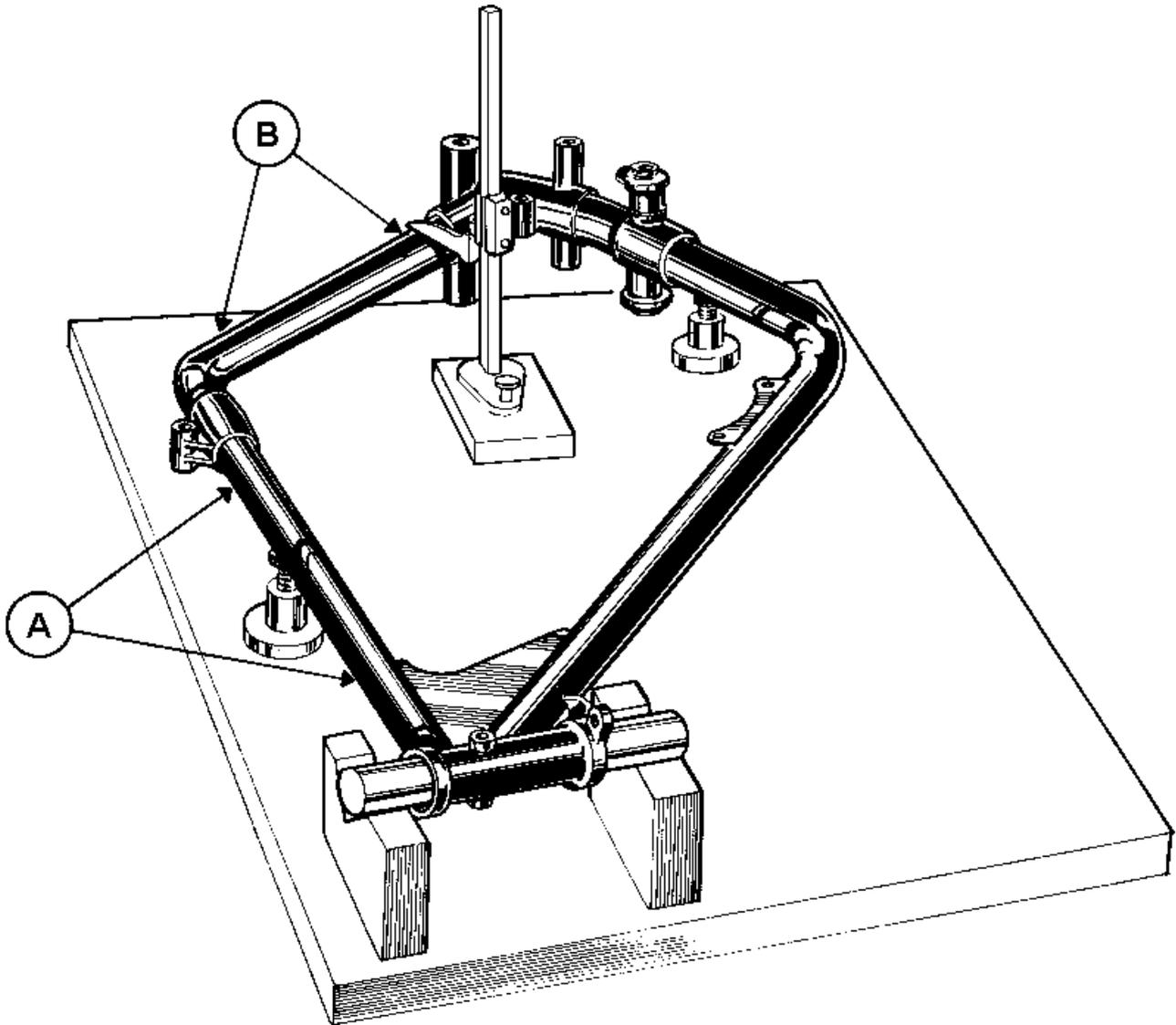


FIG. D3. *Frame on setting-out table.*

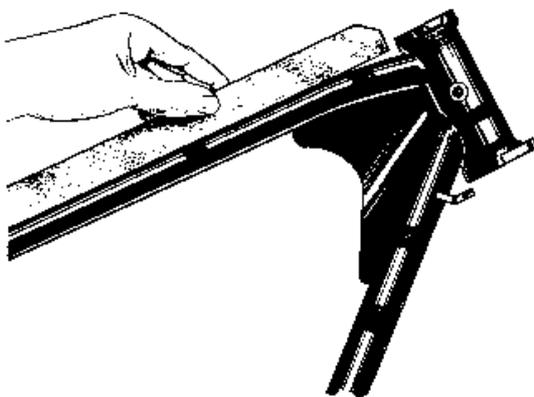
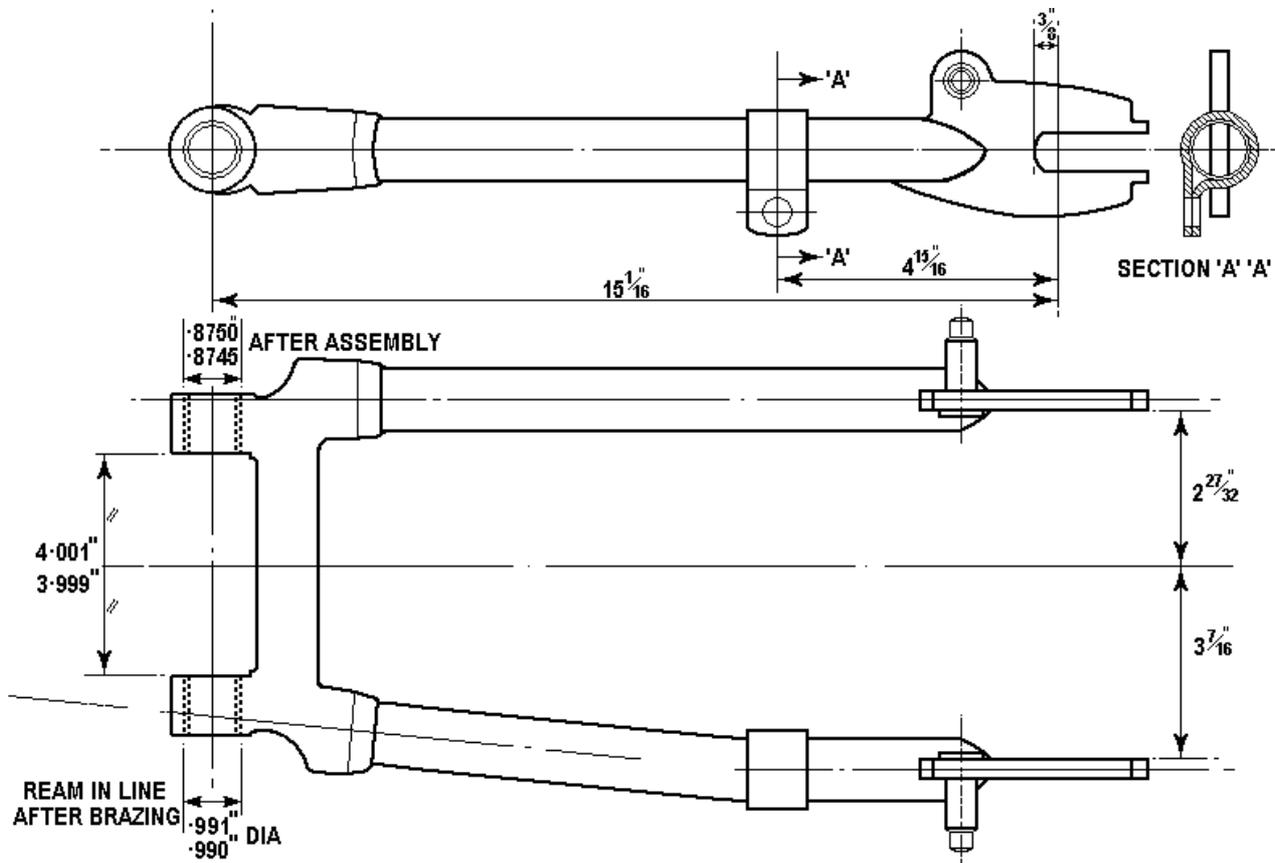


FIG. D4. *Showing bent top tube.*

When the frame is set parallel to the surface of the table, the swinging arm pivot spindle should be vertical. This can be checked using the set square and internal calipers or a slip gauge between the spindle and the square.

Find the frame tube centre line and make a thorough check at all points to ensure that the frame is not twisted. A check must also be taken at the engine mounting lugs. Errors at any point should not exceed $1/32$ " ($\cdot 79$ mm.).

SWINGING ARM

FIG. D5. *Swinging arm dimensions.***Removal**

Take off the rear wheel, mudguard, dampers and chainguard, as described on pages F3, D9, D6 and D9 respectively.

Release the silencer bracket from the right-hand sub-frame down tube (Bushman and Sports models).

Remove the pillion footrest brackets (not fitted to Bushman Pastoral models) and note that the lower fixing bolt on each bracket is fitted with a spacer tube. To facilitate removal of the left-hand bracket, it will be necessary to take off the brake pedal and to disconnect the brake light switch at its snap connectors. The brake pedal is retained by a pivot bolt with nut and a return spring.

On Bushman models only, the prop stand must also be removed, the bracket for which is held by two nuts and bolts.

Removal of the special bolts at the top of the brackets also releases the ends of the sub-frame or saddle support which can be tied up out of the way to provide more access. Note that the bolts are each fitted with a grease nipple to enable the bushes to be lubricated.

The pivot spindle can now be extracted with a suitable drift and a raw-hide mallet should then be used to tap the swinging arm away from the frame lugs. When finally withdrawing the swinging arm, note the location of any spacing shims which may have been fitted.

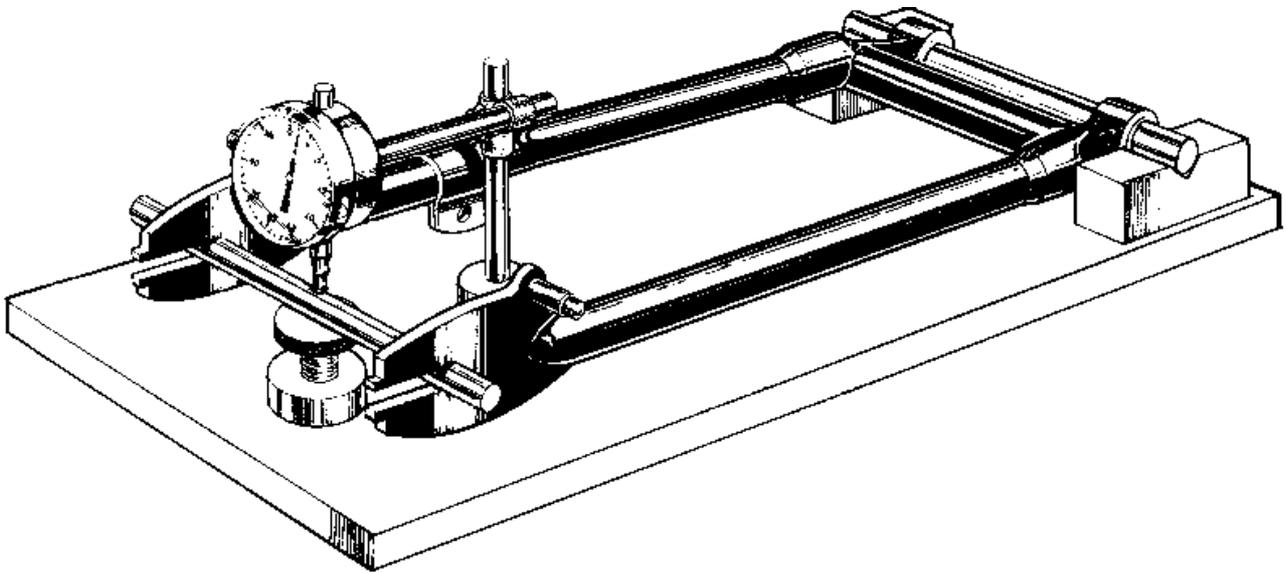


FIG.D6. *Checking the swinging arm.*

The two phosphor-bronze bushes can be tapped out of the swinging arm pivot lugs with a suitable drift.

Alignment

Before a proper check of the swinging arm can be made, it must be established that the bushes are in good condition.

Insert the wheel spindle through the pivot bushes and set the swinging arm in vee-blocks as shown in Fig. D6. Place a suitable mandrel in the fork ends and use small adjustable height jacks to set both the mandrel and the pivot spindle parallel to the surface table. If a mandrel for the fork end is not available, then the rear wheel spindle can be used.

Now, using a Vernier gauge, check the forks ends for alignment. Should there be less than $\frac{1}{4}$ " (6.35 mm.) malalignment, it is permissible to correct it by means of a suitable lever. Care must be taken, however, to avoid causing further damage.

To check that the forks are square to the pivot, they must be swept up at 90° to the position illustrated, so that the pivot is vertical. Next, find the centre of the pivot and check that all measurable points are in accordance with the dimensions shown in Fig. D5.

NOTE:—There may also be variation in the rear dampers and a careful examination should be made of the overall length between the mounting eyes of each unit. It is possible that one damper may be weaker than the other, caused by the "settling" of a spring. If this should be the case, it is advisable to renew the springs in both dampers, using the information given below.

REAR DAMPERS

The rear dampers or shock absorbers, are of the coil spring type, hydraulically damped and are mounted on bonded rubber bushes at each end. The actual damping units are a sealed assembly and the only service work that can be carried out on the dampers is for the renewal of the springs.

To remove a damper, take out the top fixing bolt with nut and washers then unscrew the lower fixing nut. Pull the damper off the stud at the bottom and withdraw from the top frame bracket.

The removal and replacement of the mounting bushes will be found much easier if a little liquid soap is applied.

The spring is retained at its base by split collets and, to enable the spring to be removed the collets must be extracted. Assemble service tool No. 61-5064, as shown in Fig. D7, and screw down the nut until the spring is sufficiently compressed to allow the collets to be extracted through the apertures in the tool. The spring will be released when the tool is removed.



FIG. D7.

Using service tool No. 61-5064.

Having renewed the spring, reassemble in the reverse manner, again using the service tool to compress the spring.

The dampers fitted to the Sports and Bushman models, have no spring cover, but are dismantled in the same manner.

When refitting the dampers to the machine, note that the top fixing bolts also retain the ends of the dualseat bracket.

PETROL TANK

Turn off the petrol tap and detach the petrol pipe at its union on the float chamber.

Take out the two fixing bolts from the front of the tank and note that the large washers are fitted between the tank brackets and the steering head lugs. Loosen the rear fixing bolt; it will not be necessary to remove this bolt. The petrol tank can now be withdrawn from the front.

Take note of the way in which the chrome beadings are fitted. These are loosely located over the tank and are held at each end by the fixing bolts.

The petrol tap is screwed into the base of the tank and is fitted with a fibre washer. If the washer appears unserviceable, replace it to avoid any leakages.

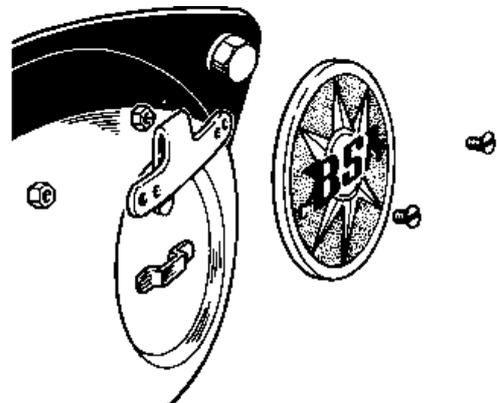


FIG. D8. *Petrol tank badge.*

To remove one of the tank badges, loosen the two fixing screws and pull the badge upwards to disengage from the clip. The Bushman models are not fitted with badges of this sort.

DUALSEAT

Should it be found necessary to remove the dualseat, first loosen the damper top fixing bolts sufficient to allow the ends of the seat bracket to be released. Raise the seat at the rear and withdraw rearwards to disengage the front clip from the frame tie bar. The bracket is held to the base of the seat by two nuts with washers.

Replace in the reverse manner but ensure that the damper top fixing bolts are tightened firmly.

Some Bushman Pastoral models are fitted with a single seat, being held to the sub-frame at the rear by two clips.

SIDECOVERS

The left-hand sidecover is held in place by two "Oddie" studs which only require a half-turn to release.

The sidecover can now be removed to reveal the tool roll (Bushman) or to give access to the battery (Supreme). To remove the battery, lift the tag on top of the battery carrier and lift the battery out.

To remove the left-hand back plate on the Supreme, unscrew the two large nuts at the front of the plate.

Now remove the single small nut and bolt from the top right-hand corner of the plate, also slacken the bolt behind the mudguard, and remove back plate.

Access will now be gained to the coil and rectifier, both being dealt with in the Electrical section. The coil retaining clip is fixed to the top of the rear mudguard by two nuts and bolts.

A single nut secures the rectifier to its bracket. Care must be taken when tightening this nut, and the bolt head should be held firmly with a second spanner to prevent it from turning. If this precaution is not taken, the rectifier plates may twist and break the internal connections.

To remove the right-hand sidecover and back plate on the Supreme models, first unscrew the two chrome-headed screws in the cover, these have a circlip fitted on them behind the cover to prevent them from falling out. When the cover is removed, unclip the rubber band from around the air cleaner element and remove.

Behind the element is one of the fixing bolts.

Remove the two nuts from the left-hand side back plate and withdraw the bolts from the right-hand side releasing battery carrier and horn. There are four spacers fitted between the back plates and the frame brackets, the two on the left-hand side being shorter.

Now slacken off the bolt behind the mudguard and remove the small nut and bolt from the top left-hand corner.

Slacken the clip securing the air cleaner hose on to the carburetter intake, and remove back plate complete with hose.

Replacement of all sidecover components is the reverse of removal.

Bushman Pastoral models

Since these models are not fitted with a battery, battery carrier or horn, the sidecovers are of a much simpler design. The toolbox cover on the left-hand side is retained by two "Oddie" studs. These studs need only half a turn to release and on removal of the cover it will be seen that a large spring clip holds the toolbag in place. Two large bolts with spacers secure the triangular plate to the frame lugs, and the tag at the base is held by one of the mudguard fixing bolts. The plate and the air cleaner cover on the right-hand side are held together by two tie brackets, the smaller one being at the front.

To remove the air cleaner cover therefore, it will only be necessary to release the tie brackets (two small nuts and bolts) and to slacken the mudguard bolt that holds the lower tag.

CHAINGUARD

The chainguard is held by one nut and bolt to the rear mudguard. On Bushman models, only one bolt is used to secure the sidecover bracket, mudguard and chainguard to the sub-frame lug. Another fixing bolt holds the chainguard front to the crankcase, but this bolt need only be loosened.

Release the fixing bolts and carefully withdraw the guard from the rear.

With the exception of the Bushman, all models are fitted with a chainguard extension plate, being held to the left-hand pillion footrest by one small nut and bolt.

MUDGUARDS

Front — Supreme models

Remove four nuts and bolts holding the mudguard to the support stays. Release one nut and bolt securing each guard bracket to the fork legs and note that the left-hand bolt also retains the licence holder. Having removed the fixing bolts, the mudguard can now be withdrawn from the front.

The support stays are each secured to the base of the fork legs by one nut with washers.

Two nuts retain the number plate from below the mudguard. When refitting, ensure that the rubber beading is correctly located beneath the plate.

Front — Bushman models

On these particular models it is conveniently possible to remove the mudguard without disturbing the support stays, though, with the exception of the Bushman Pastoral model, the number plate must first be taken off. After releasing its five fixing nuts and bolts, the mudguard can be drawn away from the front.

Rear

The rear mudguard is fixed to the lugs on the sub-frame down tubes, by two bolts from inside. Two nuts and bolts hold the guard at the top, to the saddle support rail brackets.

Take off the left-hand sidecover and remove the coil, held by two nuts and bolts. Also take out one nut and bolt fixing the rectifier bracket to the top of the guard.

Disconnect the rear light cables at their connectors near the battery. The brown cable is connected to the brake light switch and the black cable joins the main harness.

Release the mudguard fixing bolts and take out the single nut and bolt from the chainguard top bracket, (not applicable on Bushman models), before finally withdrawing the guard from the rear.

On Supreme models, the rear light and number plate bracket is secured to the mudguard by three nuts and bolts. The rear light and number plate assembly on the Sports and Bushman models is of a different design, being fixed at the front by one nut with large washer, at the support bracket by two nuts and bolts and at the base of the number plate by a single nut. When replacing, do not omit to fit the rubber washer on to the rear fixing stud. Snap connectors are fitted to the rear light cables, below the bracket, to enable the unit to be removed.

AIR CLEANER

The air cleaner fitted to the Bantam Supreme and Sports models has a rubber-mounted wire mesh-covered felt element, and can be washed in petrol and allowed to dry at 5,000 miles (8,000 km.) intervals.

The air cleaner removal procedure is described on page D8, but before replacing check the condition of the element rubber surround, the rubber hose, and the retaining band. If any of these have perished they should be replaced.

Failure to clean the unit regularly will result in the element becoming choked, causing abnormally high fuel consumption and a deterioration in performance.

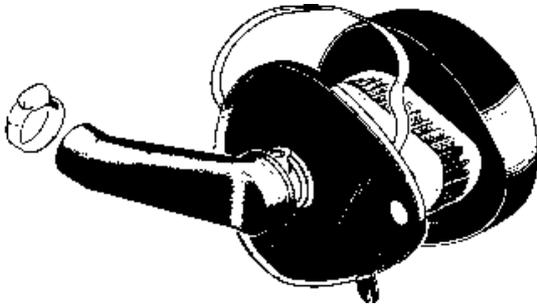


FIG. D9. *Air cleaner assembly.*

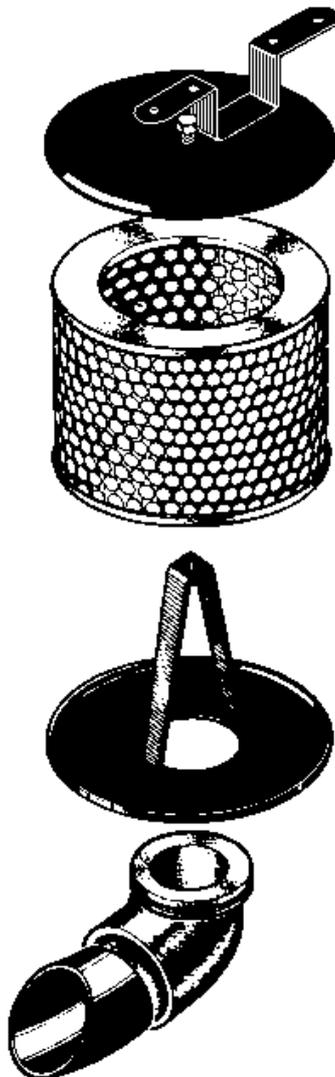


FIG. D10. *Air cleaner (Bushman).*

Before replacing the air cleaner, check that the rubber "O"-ring fitted on the carburetter intake, is undamaged and fit for further use.

Bushman Pastoral models

These particular models are fitted with a special dry-element air cleaner which should be regularly examined at intervals of 1,000 miles (1,600 km.).

The unit is mounted on the sub-frame, directly below the single seat and is protected by a shaped cover on the right-hand side of the frame. The cover is held by one nut and bolt at the front, by one nut and bolt at the top/rear and at its base by one of the mudguard fixing bolts which needs only to be loosened.

Reach below the seat at each side and release the bolts securing the air cleaner bracket to the sub-frame clips. Pull the adaptor hose from its location in the air cleaner base plate and withdraw the unit.

The air cleaner can be dismantled by first removing the clip screws which hold the perforated band. The element is composed of paper and it is therefore inadvisable to attempt to clean it. If it appears contaminated with excessive quantities of dirt, replace it with a new unit.

HEADLAMP REMOVAL

Supreme models

Loosen the single fixing screw at the top and withdraw the glass and rim assembly, complete with reflector.

Whilst supporting the unit, press in the main bulb holder and rotate anti-clockwise to release. Pull out the pilot bulb holder and place the headlamp unit to one side.

Detach the ignition switch and lighting switch cable sockets from the top of the cowl. These are simply a press-fit and are each retained by a spring clip. Pull out the speedometer bulb holder and unscrew the knurled ferrule, below the instrument head, to release the drive cable.

The headlamp cowl is fixed to the fork cover by four screws with nuts and can now be removed.

Two nuts and a bridge arrangement secure the speedometer head to the cowl. If it should be necessary to remove the instrument head, note that a black (earth) cable is fitted under one of the fixing nuts.

The glass and reflector unit is retained in the chrome rim by a number of equally spaced spring clips. The clips are quite strong and care should be taken when either removing or replacing them. Note that the glass is marked at the top, to ensure correct fitting.

The headlamp should be reassembled in the reverse manner but, if the cowl nacelle was disturbed, then the main beam must be readjusted as detailed on page G12.

Sports and Bushman models

Loosen the rim retaining screw at the base of the headlamp shell and take off the glass and rim assembly. Disconnect the switch sockets, bulb holders and speedometer drive cable. The procedure for these operations is the same as that of the Supreme models, detailed in the section above.

Proceed by displacing the large rubber grommet in the base of the headlamp shell so that the cable harness with sockets can be withdrawn.

Whilst supporting the unit, take out the two bolts holding the shell to the fork leg brackets. Note on removal, that a spacer is fitted between each fixing bracket and the shell.

CONTROL CABLE REPLACEMENT

Throttle Cable

First turn the twist grip to open the throttle, then, whilst pulling the cable sleeve, release the grip to allow the slotted cable stop to be removed. Now remove the two screws from the twist grip control and take off the top half to expose the cable nipple. Ease the nipple out of the grip and remove the cable.

Fit the replacement cable to the grip by inserting it up through the lower half and locating the nipple in its slot. Replace the top half of the grip, but, before tightening the screws, check that the grip turns freely. Do not replace the cable stop at this stage.

Proceed by detaching the cable from the frame clips. To gain more access, it may be found necessary to temporarily remove the petrol tank (detailed on page D7).

Take out the two Phillips-head fixing screws and withdraw the carburetter top cover complete with throttle valve and air slide assembly. Compress the throttle spring, raise the needle with clip and after making careful note of its position, remove the needle clip to release the needle. Whilst still compressing the spring, push the cable downwards to release the nipple from its location in the valve. Take care not to lose the needle clip when taking off the spring and top cover.

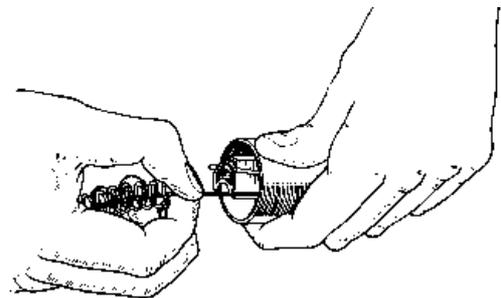


FIG. D11. *Renewing throttle cable.*

Before fitting the replacement cable, first slide the small rubber dust cover on to the outer cable, then pass the cable through the top cap, spring and needle clip. Whilst compressing the spring, insert the cable nipple through the valve needle hole and locate to one side. Fit the valve needle and secure with the spring clip in the correct needle groove (third from the top). Assemble the throttle valve and air slide to the carburetter body, making sure that the needle enters the needle squarely. Locate the peg on the throttle valve with the slot in the mixing chamber and fit the top cap. Do not tighten the cap fixing screws until the throttle valve and air slide have been checked for correct operation.

Finally attach the cable in the frame, replace the cable stop at the twist grip and adjust the cable as necessary (see page C4).

Air Control Cable — Concentric Carburetter

To replace an air control cable, first open the control lever to its fullest extent then, whilst pulling the cable, close the lever and release the cable nipple.

Take off the carburetter top complete with throttle valve and air slide assembly, as detailed on page D11.

Pull the air slide out of the throttle valve and compress the spring to release the cable nipple.

Fit the replacement cable in the reverse manner and proceed with the assembly as for the throttle cable.

Front Brake Cable

To remove the front brake cable, first unscrew completely the lower cable adjuster, then take out the nut and bolt holding the cable toggle to the lever on the brake cover plate. Now, slip the cable nipple out of the handlebar control lever and detach the cable from the clip fitted under the fork leg pinch bolt.

The replacement cable is supplied complete with its toggle and can be fitted in the reverse manner. Remember to re-adjust the brake cable and test the efficiency of the brake thoroughly before using the machine.

Clutch Cable

The cable must first be detached from the clutch actuating lever, situated behind the inner timing cover, next to the gearbox sprocket. As it will be necessary to work from below the machine, the machine should be carefully placed on to its right-hand side.

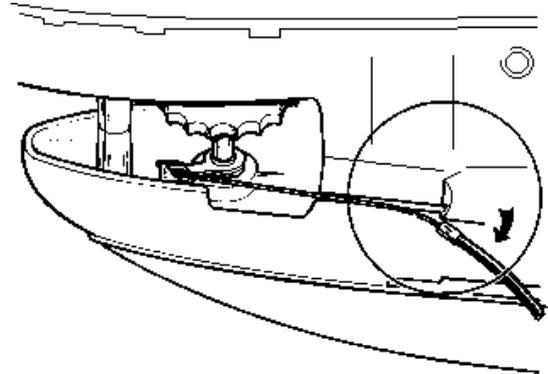


FIG. D12. *Removing clutch cable.*

Remove the rubber plug in the outer cover. Loosen the clutch adjuster locknut and unscrew the adjuster pin completely.

Pull the end of the outer cable from its location in the crankcase base and withdraw the inner cable from the slot, as indicated in Fig. D12. The cable will now be free, making it an easy task to release the nipple from the actuating lever.

Finally, detach the cable nipple from the handlebar control and withdraw the complete cable.

The replacement cable should be fitted in the reverse manner, starting at the handlebar control.

Adjust the clutch centre pin as detailed on page B18 to give correct operation.