Lilac Neutral/Third Gear Indicator Switch

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This paper applies to many models including the V-twins and 500cc motorcycles.

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The pages are 8.25 x 11 inches and are meant to be readily printable on either US Letter or A4 paper.

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All modern motorcycles have a neutral indicator light. Since many Lilacs had a rotary transmission shift pattern whereby you could accidently shift into neutral or first from fourth gear, while intending to shift from third to fourth, a yellow third gear indicator light was employed, using the same switch mechanism as the neutral light.

The 500cc models had a transmission which was similar to the earlier models and, while it was no longer possible to shift up from fourth, the third gear indicator light was retained.

I was able to examine my 125cc CF-40, 250cc LS-18/1, 300cc MF-39, 500cc Marusho ST and 500cc Marusho Magnum. All of these bikes appear to use the same switching mechanism. The parts manuals for these models also state that the switch is common to the C-81/C-81 and LS-18/2. It is reasonable to assume that other models from the 1960s also employ this switch, and there are undoubtedly earlier models with this feature, though I have not checked.

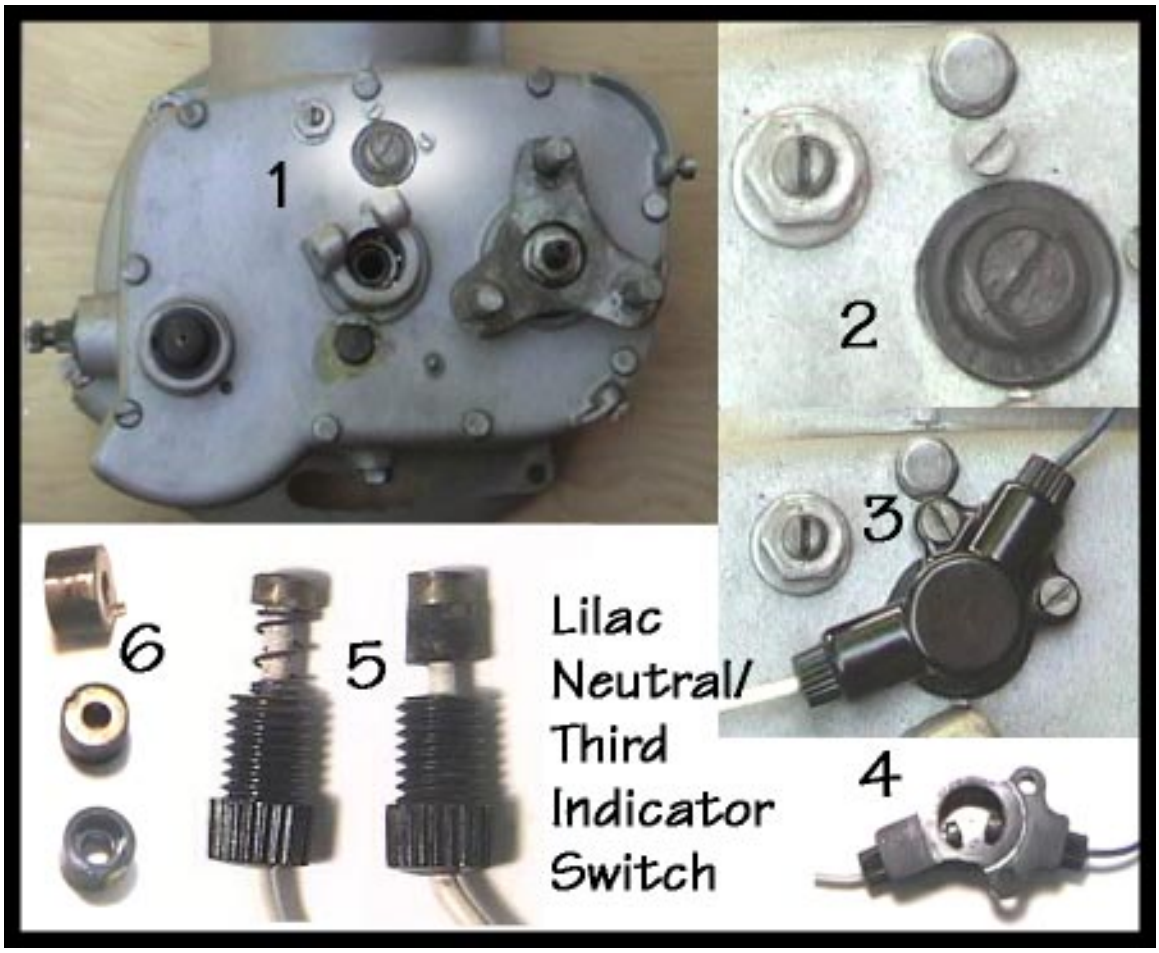

Figure 1 shows the back of the transmission, in this case a Marusho ST. The lightened area, enlarged in Figure 2, shows the two 4x10 slotted cheesehead mounting screws for the neutral switch. Below and to the left of these two screws you can see a rotating plastic-and-brass cylinder, which is held in place by a large slotted screw (size unknown). The outside circumference of the brass cylinder is clad in black plastic in all but one area. When the transmission is shifted into neutral the exposed area of the cylinder is rotated to the 8 o-clock position, allowing a spring-loaded contact in the switch to ground the white wire through the transmission. When the ignition is on the indicator bulb is hot. Similarly, when the transmission is in third gear the exposed section is at 1 o'clock, grounding the blue wire.

Figure 5 shows (2) variants of the spring-loaded brush contacts, one using a steel spring and the other a piece of rubber. The spring is apparently the better arrangement as the rubber can harden, whereas the spring is unlikely to rust in this protected position. The (2) variants are interchangeable.

Figure 4 shows the back of the switch, with the contacts in their extended position. When installing the switch they should be retracted by unscrewing them.

Part numbers for the switch:

500cc models:	R2-361
CF-40:	C0-386
LS-18/1:	E1-362
LS-18/2:	L8-361

In conclusion, there are 5 components to this simple switch assembly: switch body, white lead with contact attached, blue lead with contact attached, rotating brass cylinder and fixing screw. One should take care to protect these items as there are few spares.