

What should you look for in a molded commutator replacement?

First of all, be sure it has really been replaced.

How can you tell?

If replaced in the aftermarket, a molded commutator is typically converted to a v-ring commutator. You will see bolts or a nut instead of black molding compound, and the new commutator will be refillable, not a throw-away unit. Alternatively, you may buy a new molded unit, which the OEM may have on the shelf as part of a large earlier run.

Can you re-use any parts of a molded commutator?

Not if you want a quality replacement.

When converting a molded, throw-away comm to a refillable style, the commutator is completely redesigned to match the external dimensions and mechanical specifications. On the interior, though, the commutator will look completely different from the original molded unit.

A commutator has to remain tight in operation. Lifting bars cause serious problems, and evidence of a poor design can show up this way. If a commutator builder re-uses the steel shell from a molded unit, he's not saving you money. A molded comm shell is designed for a molded comm, and doesn't leave enough room for v-ring clamping hubs to hold the bars tight. The comm may arrive looking fine, but will usually soon fail in operation.

Are there clues?

Yes. If your "replacement" comm arrives with a hub that has signs of being a casting (i.e. relief, rough surfaces), the chances are that it wasn't machined specifically for your replacement comm. Also, most molded comm manufacturers stamp their names into the steel shells (i.e. Cupex), so if you get a v-ring comm with the Cupex name stamped in the hub, the molded comm's steel core has been re-used. These clues can be important when tracing a failure, and potentially assigning warranty responsibility.

What if your budget is really tight?

You'd be safer to buy a molded comm from the OEM if it's available, than to sacrifice quality. If you ever have a question about a comm you've received, call an ICC representative. ICC uses all new materials in all molded commutator conversions.

Sample of a comm which failed as a result of a poor design re-using a steel shell from a molded comm.

A well designed v-ring commutator will typically use 1/3 of the bar for each dovetail, unlike the one shown here.

It will also have enough material designed into the interior angle to ensure that the bars will stay tightly compressed in operation.

In this example of a poor design, since re-using the molded comm's steel core left little room for a v-ring design, strength was sacrificed. The flimsy caps bent outward in operation, the bars loosened, and the comm failed.

