

How to Avoid Damaging Phillips Head Screws

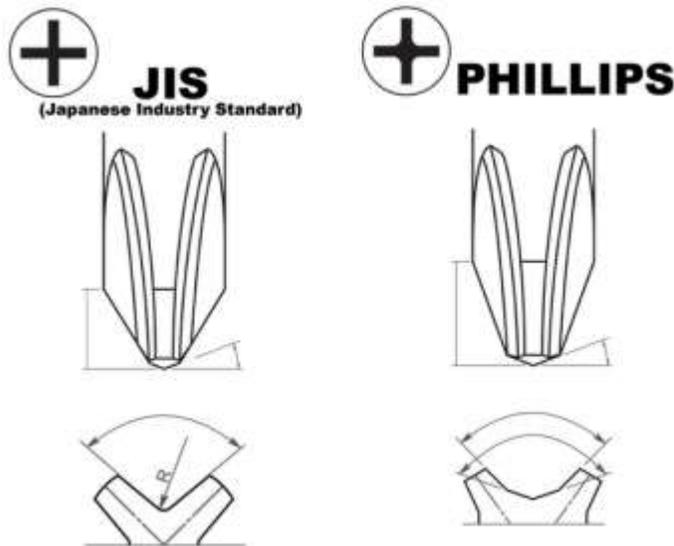
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We all have at least one, and likely several, Phillips head screwdrivers in our tool boxes and field boxes. It is pretty much impossible to be a Do-It-Yourself kind of person without them. But, if you own anything manufactured of Asian origin, chances are, the cross-slotted screws on it are not "standard" Phillips head. So, if you find that your Phillips head screwdrivers are ruining your fasteners, it very well might be because you're using the wrong tool for the job.

Lesser known is the Japanese Industrial Standard (JIS). Bottom-line; a standard Phillips driver will not go all the way into a JIS screw because the corner radius of the screw is smaller than that of a standard Phillips driver. As a result, it leads to what is referred to as "cam-out". In fact, the standard Phillips was created to allow this "cam-out" so that you know when maximum torque has been reached, avoiding over tightening or worse, snapping fasteners.

Fortunately most of the RC engines we use come with SHCS (Socket Head Cap Screw) screws and bolts for the main assemblies such as crankcase and cylinder heads, but cross-slotted screws are still used for almost everything else attached to the engines. Also, many of our accessory items and especially electronic items are assembled with cross-slotted screws which likely are JIS.

The differences between Phillips and JIS are not easily seen, so this illustration should help:



Sometimes JIS screws will be identified with a dimple or dot on its head:



Having this dot isn't always the case, but chances are, if you're working on an Asian made item, RC or otherwise, the screws with cross-slots will be JIS and not Phillips.

JIS screwdrivers are not hard to find, ranging in price from the mid to high \$20.00 for the budget stuff, on up to 3 times that (or more) for the good stuff. Good tools, if taken care of can last a lifetime and the right tool for the job saves time and money in the long run.

JIS screwdrivers and screwdriver sets can be found here:

Goggle search: <https://www.google.com/search?btnG=1&pws=0&q=JIS+Screw+Driver+Set>

McMaster-Carr, individual JIS screwdrivers:

[http://www.mcmaster.com/#jis-\(japanese-industrial-standard\)-screwdrivers/=s8lzwg](http://www.mcmaster.com/#jis-(japanese-industrial-standard)-screwdrivers/=s8lzwg)

RJR Cool Tools, JIS screwdriver sets:

http://www.rjrcooltools.com/shop_item_detail.cfm?subcat_ID=138

Here's a Tip (pun-intended):

If you find that even when using the correct screwdriver, sometimes the tip still cams out and causes the driver to slip, and/or if you know that the screw has been in the part for a long period of time, just dip the tip of the screwdriver into some valve grinding compound. This will help eliminate tip slippage, especially when removing screws from engines that have endured many heat cycles.

Bob Mosley

credits: some information and images obtained from Thumpertalk.