

APPENDIX 3 - SAFETY WIRING REQUIREMENTS

Safety Wire – The following must be drilled and fitted with safety wire:

- Sump Plugs – All motorcycles must be fitted with a drilled and safety wired oil drain plug that must be lock wired in place.
- Oil Filler Caps – All Competitor motorcycles must be fitted with a drilled oil filler cap that must be lock wired in place.
- Fluid Carrying Lines - all other fluid carrying bolts and fittings will have “tamper proof indicator paste” applied.
- Caliper Bolts - all caliper bolts on the disc brake systems must be drilled and fitted with safety wire or “tamper proof indicator paste” applied.
- Radiator Cap - cap should be drilled and wired along with all the fluid carrying lines complete.
- R Clips may be used in lieu of cotter pins for securing the rear/front axle nut.
- Axel Pinch Bolts - to be fitted with safety wire or “tamper proof indicator paste”.
- Muffler Bracket Bolts - all muffler bracket mounting bolts fitted with safety wire or “tamper proof indicator paste”
- Exhaust Baffle - to be secured and fitted with safety wire or “tamper proof indicator paste”
- Oil and Fuel Fittings- oil lines and fuel fittings and clamps to be fitted with safety wire or “tamper proof indicator paste”.

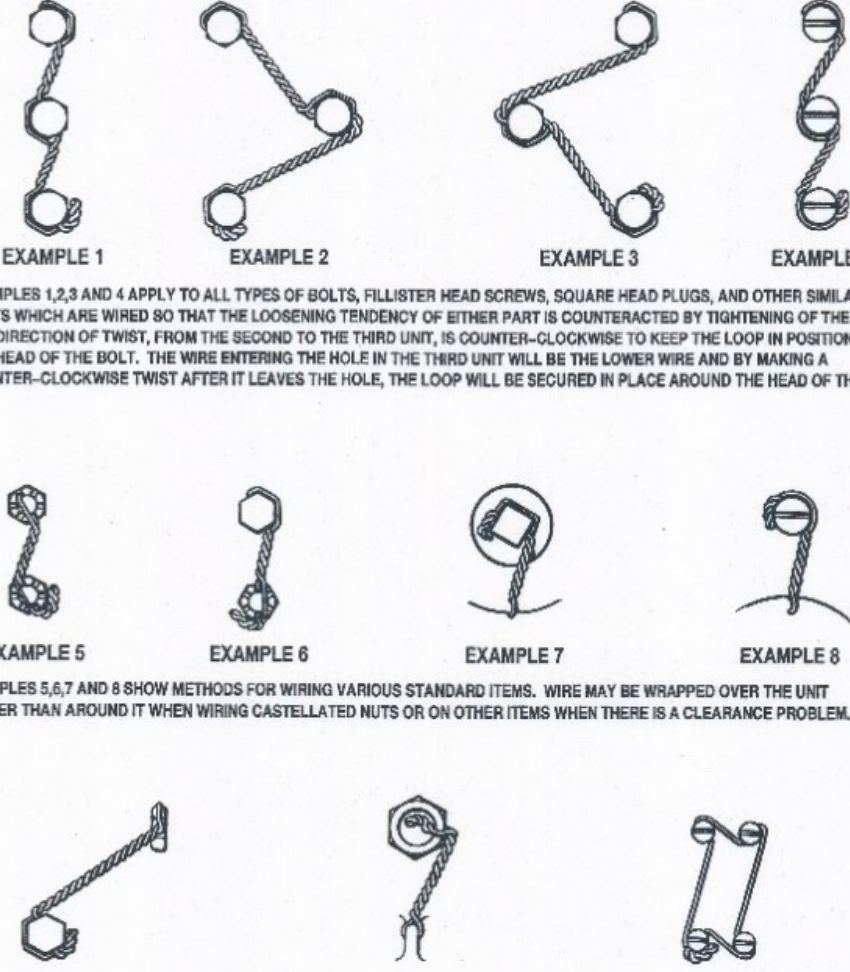
A3.2 The maximum span of lock wire between two tension points shall be 15.24 cm (6 inches)

A3.3 Lock wire shall not be installed in such a manner as to cause the wire to be subjected to chafing, fatigue through vibration, or additional tension other than the tension imposed on the wire to prevent loosening.

A3.4 Abrasions caused by the wire twisting pliers on install is acceptable but nicks, kinks and other damage to the wire is not.

A3.5 Before installing safety wire the parts must be properly torqued to OEM specs as per the motorcycles shop manual. Bolts and nuts should not be under-torqued or over-torqued to obtain proper alignment. Completed safety wiring should not interfere with the operation of any parts on the motorcycle.

A3.6 Examples of acceptable types of safety wiring for right-hand thread bolts:



EXAMPLE 1 **EXAMPLE 2** **EXAMPLE 3** **EXAMPLE 4**

EXAMPLES 1,2,3 AND 4 APPLY TO ALL TYPES OF BOLTS, FILLISTER HEAD SCREWS, SQUARE HEAD PLUGS, AND OTHER SIMILAR PARTS WHICH ARE WIRED SO THAT THE LOOSENING TENDENCY OF EITHER PART IS COUNTERACTED BY TIGHTENING OF THE OTHER PART. THE DIRECTION OF TWIST, FROM THE SECOND TO THE THIRD UNIT, IS COUNTER-CLOCKWISE TO KEEP THE LOOP IN POSITION AGAINST THE HEAD OF THE BOLT. THE WIRE ENTERING THE HOLE IN THE THIRD UNIT WILL BE THE LOWER WIRE AND BY MAKING A COUNTER-CLOCKWISE TWIST AFTER IT LEAVES THE HOLE, THE LOOP WILL BE SECURED IN PLACE AROUND THE HEAD OF THAT BOLT.

EXAMPLE 5 **EXAMPLE 6** **EXAMPLE 7** **EXAMPLE 8**

EXAMPLES 5,6,7 AND 8 SHOW METHODS FOR WIRING VARIOUS STANDARD ITEMS. WIRE MAY BE WRAPPED OVER THE UNIT RATHER THAN AROUND IT WHEN WIRING CASTELLATED NUTS OR ON OTHER ITEMS WHEN THERE IS A CLEARANCE PROBLEM.

EXAMPLE 9 **EXAMPLE 10** **EXAMPLE 11**

EXAMPLE 9 SHOWS THE METHOD FOR WIRING BOLTS IN DIFFERENT PLANES. NOTE THAT WIRE SHOULD ALWAYS BE APPLIED SO THAT TENSION IS IN THE TIGHTENING DIRECTION.

EXAMPLE 10 SHOWS HOLLOW HEAD PLUGS WIRED WITH THE TAB BENT INSIDE THE HOLE TO AVOID SNAGS AND POSSIBLE INJURY TO PERSONNEL WORKING ON THE ENGINE.

EXAMPLE 11 SHOWS CORRECT APPLICATION OF SINGLE WIRE TO CLOSELY SPACED MULTIPLE GROUP.

A3-7 Safety Wire Instructions - How to Safety Wire Your Bike:

You will need the following:

- a pair of safety wire pliers
 - safety wire (Wire diameter .032, .025 or .020 inches)
 - a minimum of 6 drill bits for metal - size 1/16
 - work bench vise (with plastic or aluminum jaw inserts)
 - power drill or drill press
 - patience
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- a) Remove all the items from your bike that need to be drilled.
 - b) Choke the drill bit up as far as possible in the drill for rigidity.
 - c) Go slow and steady, speeding up slightly when the drill bit is about to break through to avoid snagging.
 - d) Install all the units back on the bike.
 - e) Use the factory OEM torque specs to tighten.
 - f) Cut a length of wire double the length of the distance you need plus a bit extra for a finish pig tail.
 - g) Make a wiring plan using the diagrams shown as reference (righty tighty / lefty loosey).
 - h) Thread the wire into the hole, clamp on the safety wire pliers estimating the next point you will need to thread the wire.
 - i) Twist the wire using the spiral action of the pliers, keeping tension, then release, thread the next point and repeat twist.
 - j) Cut the excess then using the pliers curl the pigtail to eliminate a sharp end. Finish by using the nose of the pliers to push the curled pigtail tucking it down into desired spot.
 - k) ALWAYS, hold onto the remnant wire you are cutting off and dispose of it. Good practise in the shop, and absolutely necessary at the track. If left lying around, these discarded wires end up in our race tires!