

Russian Generators and Alternators (01/2011)

I've noticed that we seem to spend a fair amount of time simply identifying motorcycles and the parts on the motorcycles. Interestingly even the parts can be used to identify the exact model of motorcycle, except for those cases where folks upgrade their bikes to form a combination of components, new and old.

What I've tried to do here is gather together bits-and-pieces to see if I could make sense out of the generators and alternators used in Urals and Dneprs over the past 70 years. We do see a pattern, as we migrate from 6-Volts to 12-Volts with KMZ's MT-10 and IMZ's M-67, and as we increase the current output from 7-Amperes, first with the Г-11 generator to the 55-Amp output of the current Nippon-Denso alternator. It's both a potential and a current issue (electrical levity).

We also looked at the difference between "generators" (Г-11, Г-11А, Г-414) and "alternators" (Г-424, 14.3771, Nippon Denso). We have seen a clear path to greater reliability as we migrated from generators, which required periodic cleaning of the split-ring commutator and replacement of the brushes, to the appearance of alternators which used slip-rings and brushes to handle the lower-current magnetic fields in the rotor.

We do not answer the question, "Should I upgrade to 12-Volts, or should I upgrade to the Nippon-Denso alternator?" That question is very involved, depending on the vintage of the motorcycle, on the need for extra current (i.e. electric-start, heated gloves or extra lights), or the need for reliability (i.e. the Russian Grenade) and on the skill of the mechanic.

We've included a few wiring diagrams because folks are always asking about the connections to the regulators.

BTW, here are a few sites which give a good explanation for those folks upgrading to the Nippon Denso alternator;

–<http://www.dwightrahl.com/NipponDenso3.html>

–<http://myural.com/alternator.htm>

–<http://www.crawfordsales.info/ural/articles/upgradingToDenso.html>

Because the graphic files were large, I decided to break it into four parts;

Part I: Introduction

Part II: General and Generator G-11

Part III: G-414 Generator

Part IV: G-424 Alternator

Part V: 14.3771 and Nippon Denso Alternators

I hope this clears up a little of the confusion among the Russian generators and alternators. Now I'm starting to make sense of their corresponding regulators, flasher circuits and even horns.

Enjoy, Ernie

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