November 21, 2017

WESTINGHOUSE UTT UPGRADE SERIES

Upgrading to the RMT-1 Style Reversing Switch

Did you know that many affordable upgrades are available for your Westinghouse UTT Series load tap changer (LTC) that can be installed during your next maintenance rotation? These upgrades are designed to extend maintenance intervals while improving reliability of the unit. This is the first in a three-part series intended to introduce you to upgrades currently available for the Westinghouse UTT series. This installment will focus on upgrading to the RMT-1 style reversing switch.

Upgrading to the RMT-1 style reversing switch is highly recommended since the RMT-1 style is a self-aligning design that offers a higher current (amps) capacity than any other UTT design. Table 1 below contains a summary of the designations and ratings of Westinghouse UTT LTCs:

DATE	MODEL	AMP RATING
1966	UTT	1000A
1968	UTT-A	500/1000A
1970	UTT-A	500/1000A
1972	UTT-B	500/1000A
1989	RMT-1	1320A

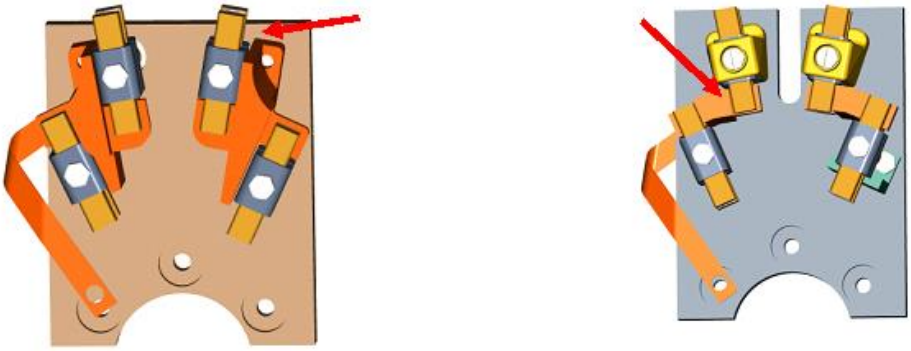
Table 1

To quickly identify what type of tap changer model you have, use the following guidelines:

- UTT: Two windows into cam switch compartment front and side; position indicator from "ON POS" indication side
- UTT-A: One window through swinging door; position indicator front "ON-POS" indication, open door
- UTT-A70: One window through swinging door; side position indicator tilted down 30 degrees, "ON-POS" indication can only be seen when the cam switch compartment door is open
- UTT-B: No window through swinging door; side position indicator tilted down 30 degrees, "ON-POS" indication can only be seen when the cam switch compartment door is open
- RMT-1: No window through swinging door; side position indicator boss round

Below are 3-D models of phase panels for each of the different UTT Series LTC models. Red arrows indicate areas where overheating and coking typically occur. These arrows also help visually identify differences between the UTT models.

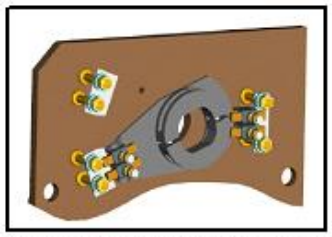
Below is a different view of the moving selector switches for the UTT-A/A70 and UTT. Red arrows again point out common areas most affected by overheating and coking.



UTTA/A70 **UTT**

Now that we have shown the different model types with their amperage ratings and how to identify them, we will describe the benefits of upgrading your standard reversing switch to the RMT-1 style.

The purpose of the reversing switch is to select raise or lower connection of a tapped winding section. Each phase will contain a reversing switch on a 3-phase LTC. The figures below show a side-by-side comparison of the standard reversing switch designs and the RMT-1.


UTT-A std reversing switch


UTT-B std reversing switch


RMT-1 reversing switch

Form, fit and function are exactly the same between the different designs, but the RMT-1 offers the following benefits:

- Offers increased current rating of 1320 amps vs 1000 amps
- Operates at lower temperatures for a given load current
- Self-aligns for better mechanical operation and smoother transition when
- passing through neutral
- Moving contact utilizes six pair of contact fingers with high spring pressure vs two pair for the UTT-B model and four pair for the UTT/UTT-A/UTT-A70 models, allowing more current paths with oil between them for better thermal performance
- Eliminates static, spring-loaded mating contact surfaces and replaces with moving contact surfaces that help ensure contact filming and heating are less likely to occur

AUTHOR:
Damon Jones
General Manager – Components Group

Damon Jones joined Prolec GE Waukesha in April 2017 as General Manager for the Components business in Dallas, Texas. Damon started his career with Siemens in 1999 and spent 15 years serving the domestic and international power generation/transmission/distribution markets. During that time, he held positions of increasing responsibility in sales, product development, project management and general management, both domestically and abroad. Damon holds a Bachelor of Science Degree in Mechanical Engineering from Clemson University and a Masters of International Business Studies from the University of South Carolina.

Each upgrade kit from Waukesha® Components comes with detailed instructions for installing the upgraded designs. We also offer standard and customized component kit cases. These cases offer the following unique set of benefits:

- Parts are easier to pull from inventory and issue to the maintenance jobs
- All key parts are included for easy and safe transport to the work location
- No need for field personnel to keep lists of components consumed during maintenance
- Cases provide a better means of protection and storage for the components
- Quick and easy to replenish after completion of field maintenance

To learn more about all upgrades available for the UTT Series LTC, visit our website at www.waukeshatransformers.com or contact a member of our sales team at 1-800-338-5526. Also, don't forget about our library of easy-to-navigate, 3D catalogs designed to help you quickly identify and locate hard-to-find components for LTCs and oil circuit breakers, while also including one for the Waukesha® Components' line of Transformer Health Products®.

Our 30-year history of providing replacement parts for the majority of OEM LTCs has allowed us to develop the capability to confidently engineer, manufacture and support a myriad of design-enhanced replacement parts. We welcome calls from customers seeking technical support on LTCs.

