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Network and Systems Automation Technology

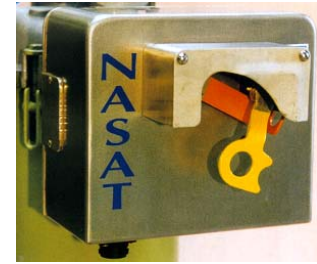


- What is the NASAT MC Recloser Actuator....?
- A Mechanical Bolt-On Device That Gives You The Ability to Convert Existing Manual Single and Three Phase Reclosers with Remote Automated Capability Via Integration into The SCADA System.
- SCADA- Supervisory Control And Data Acquisition



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- What's its history...?
- Developed in New Zealand for Dulmison...Division Sold to Tyco...Subsequently sold to Preformed Line Products...NASAT Line bought by Telescada December 2010
- First US Installation August 1999
- Approximately 500 units in service at 10 Utilities in North America
- US Patent 6,628,095 (2003) "Actuator for Remote Operation of A Circuit Breaker"


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•What kind of Reclosers can be automated...?

- Single Phase Hydraulic
- Type H
- Type E
- Type L
- Type D




Three-Phase Hydraulic
Type 6H
Type W

Cooper Recloser Types

Single-Phase Hydraulic - Types E, 4E, V4E, H, 4H, V4H, L, V4L, D, DV

Single-Phase Electronic - Types VXE, NOVA

Three-Phase Hydraulic - Types 6H, V6H, W, VW, WV, VWV

Three-Phase Electronic - Air Insulated - Type VSA

Three-Phase Electronic - Oil Insulated - Types WE, WVE, VWE, VWVE, VSO

Three-Phase Electronic - Solid Insulation - NOVA

Triple-Single Recloser - NOVA-TS, NOVA STS

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Why Remotely Control Reclosers?

- ***Restore Power Supply Faster***
- ***Save Time Outage Minutes (CAIDI)***
Customer Average Interruption Duration Index
- ***Know When Recloser Has Tripped***
- ***Use Fault Crews More Efficiently***
- ***Use The Recloser As An Open Point (Switch) or Sectionalizer***

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NASAT Actuator Control Functions



- 1 Reset (Close)
- 2 Trip (Lockout)
- 3 Non-Reclose ON
- 4 Non-Reclose OFF

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NASAT Actuator Indication



- 1 Tripped (lockout)
- 2 Reset (Closed)
- 3 Non-Reclose ON
- 4 Non-Reclose OFF
- 5 Counter



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How Do You Remotely Control the NASAT?

- A Standard Remote Terminal Unit (or the NeXGen NASAT RTU from Telescada) with Remote Communications
 - A Total of 4 Dry Contact Control Outputs
 - A Total of 5 Dry Contact Status Inputs
- DC Power Supply -12 or 24 VDC From Battery

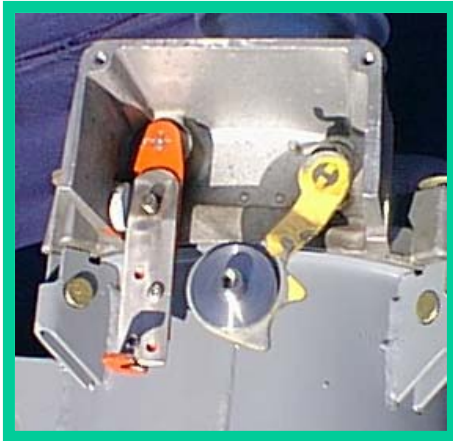


NASAT Installation

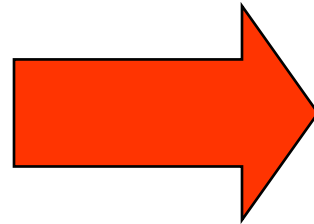


- User Friendly
- Installation in less than “ONE HOUR”
- Can be installed in the shop or in the field
- All mounting hardware supplied

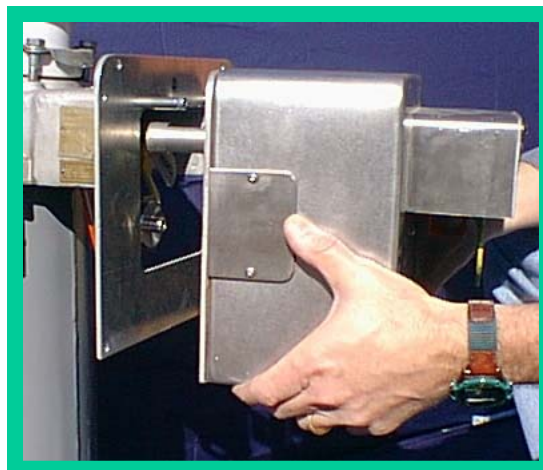
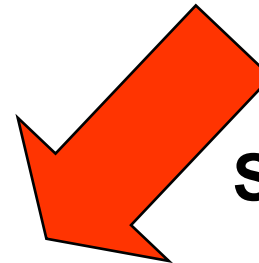
NASAT Installation



Step 1
Attach adapter bracket

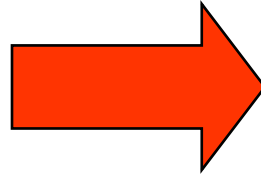
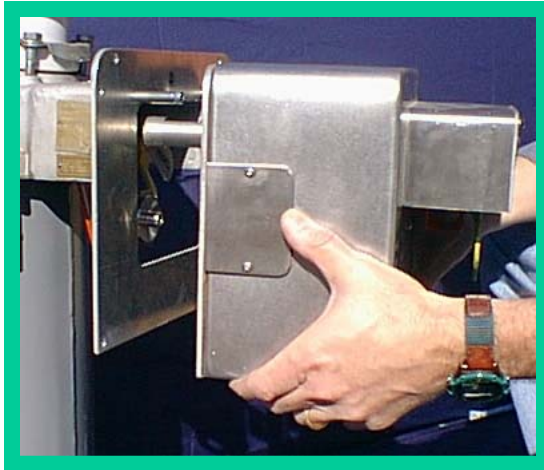


Step 2
Secure Face Plate



Step 3
Mount
Actuator

NASAT Installation



**Step 4
Adjust Limit Switches**

Installation Completed





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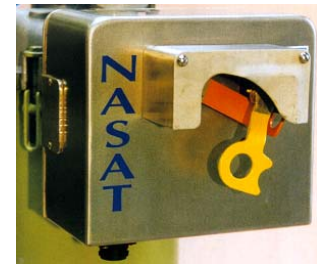
NASAT Advantages.....

- Adaptable to Most Recloser Manufacturers
- Installed in Less than “ONE HOUR”
- Duplicate Set of Levers on Front of the Actuator
- Uses your Existing Recloser
- Closed, Tripped, Non-Reclose On/OFF & Counter Remote Indication
- **Tested and RECOMMENDED by the NRECA for REA use!**



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NASAT Bottom Line.....Cost

- Option 1: Replace 3 Existing Units with a Fully Automated Three Phase Recloser:

\$15,500 Plus the Loss of 3 Existing Reclosers



- The NASAT Option: Retrofit 3 Existing Reclosers With NASAT Actuators

3 X \$1,500 each: \$4,500



SAVINGS - \$11,000



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NASAT Bottom Line.....Safety & Access

- Operator Safety
 - Low Mounted Substation Recloser can be Operated From a Safe Distances by Simple Push Button Control or Remotely via SCADA
- Operator Access Problems
 - Reset Remote Reclosers from a Distance
 - Reset Hard to Reach Reclosers from a Distance Without a Hot Stick
 - Push Button Control at the Base of the Utility Pole Without the Need to Call in a Bucket Truck

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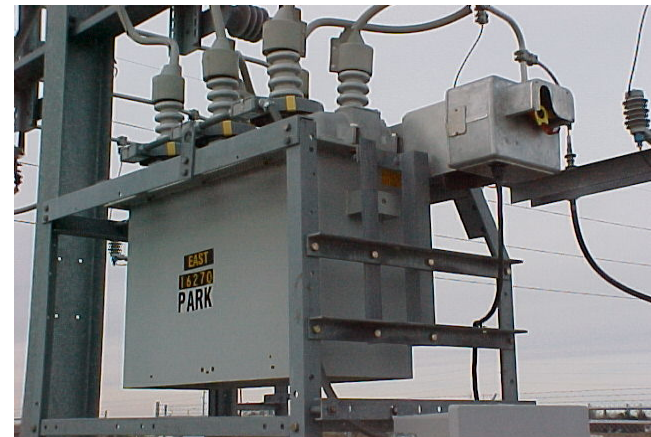
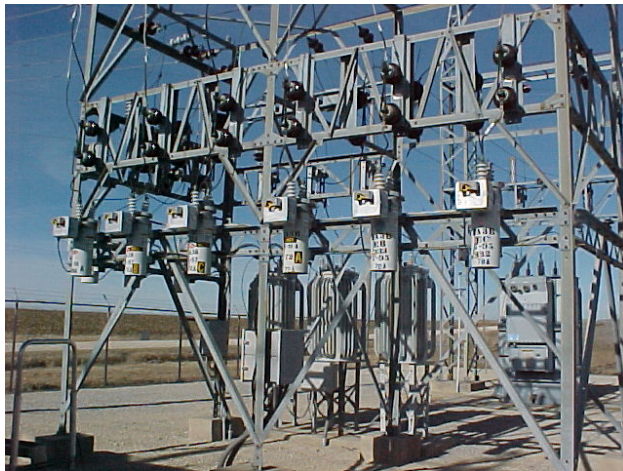
NASAT Bottom Line.....Testing

- Per ANSI C37.60
 - Tested 2,000 cycles at ambient temperature to determine mechanical reliability
 - Temperature Test: -40C to +70C
 - Cycled 5 times at 1 minute intervals with every 5 degree temperature
- NRECA-CRN Project 98-14 Evaluation of Recloser Actuators – *Only Design Recommended!*

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Pole Mounted
Installations



Substation Installations



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NASAT Part Number Specification

Selection Information

