

MAINTENANCE OF TYPE 211 CONTROLLERS

SCOPE This bulletin outlines our general recommendations on inspection, adjustments, safety precautions, tank handling, and contact maintenance, for the Type 211 Controllers. These controllers are for control of 2300-4160-volt motors or transformers. See Bulletin 211 for controller description and Bulletin 1012 for Renewal Parts List.

INSPECTION An external oil-indicator shows the contactor-oil level. At regular intervals, depending upon frequency of operation and other application conditions, open the controller and make a complete inspection of the oil condition, contactor contacts, isolating switch contacts, fuse clips, high voltage insulation, and other parts. Blackened oil and some carbon accumulation is acceptable, so long as the oil dielectric strength is not reduced by contamination or moisture. When necessary, change the oil (use uninhibited electrical insulating oil), clean all insulation, tighten fasteners, and replace damaged or worn parts.

ADJUSTMENTS Field adjustments are not normally required or recommended. The contact travel and position of the contacts in the main contactor, are factory set and not adjustable. The Overload Relay is factory set at 100% of rating. This may be adjusted over a range of 85%-115% by turning an adjustment knob on the bottom of the relay. Check with us or see Bulletins 9-31660 and 9-32730 for recommended changes in fuse size, current transformers, and overload relay heaters, in case of change HP or KVA application.

SAFETY PRECAUTIONS The controller is equipped with an isolating switch, safety-interlocked to prevent its accidental operation under load. Mechanical interlocks also prevent opening the door before opening the isolating switch or closing the isolating switch with the door open. Open or close the isolating switch only when the control power switch on the front of controller is in the "Stop" position, and the main contactor is open. Don't try to open the door before opening the isolating switch. Don't close the isolating switch with the door open. When working in the controller or on the circuit, consider padlocking open the isolating switch. Also consider grounding load terminals.

TANK HANDLING Each controller has a front-operated, hand-released tanklifter. To ready tank for lowering, make sure tanklifter release rod is in full "down" position, then remove 5/8-in. nuts holding tank to cover. Hold crank firmly on tanklifter shaft, then lift tanklifter release rod. Crank only when holding the release rod in the full "up" position. The tanklifter crank is detachable. After use, store the crank in the toolholder on the cabinet. The tank may be lowered to any position and, when fully lowered, may be detached from the lifter cables, if desirable. When raising the tank, be sure that the tank lifter cables wind evenly.

CONTACT MAINTENANCE The contactor main contacts are copper-tungsten. These contacts will have a slightly blackened and pitted appearance in normal operation. Contact wear is indicated by the thickness of the moving contacts which may be readily checked when the tank is lowered. When contact tip thickness is 3/16" or less, replace complete set of stationary and moving contacts together with arc guides. See sketch below.

