



Morris Line Engineering

Manufacturers of High Voltage Disconnectors & Switches

Catalogue No. IH/15



LOADMASTER INTERRUPTER HEADS UP TO 36kV

Equipment Overview

All types of disconnector manufactured by MLE can be converted to switch disconnectors by the addition of MLE Loadmaster interrupter heads.

Interrupter heads are available in two sizes; 12kV and 24/36kV.

Arc interruption within the Loadmaster is achieved by a hard gas generated at high pressure in the space occupied by the arc column. The hydrogen and carbon dioxide gases which are generated by thermal action on the acrylic liner acts to de-ionise the gas produced by the arc and improve its electric strength.



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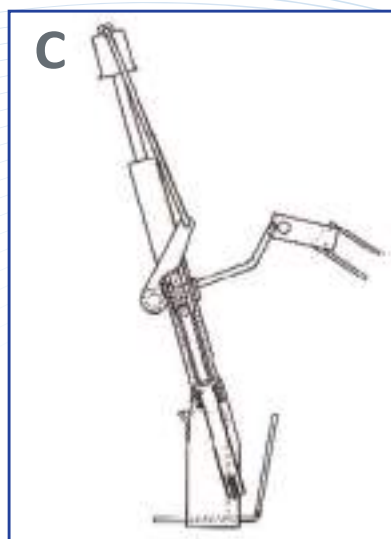
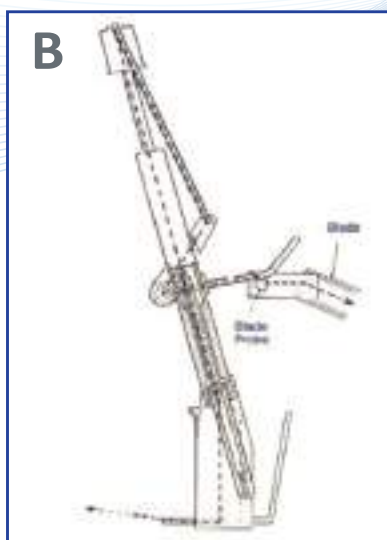
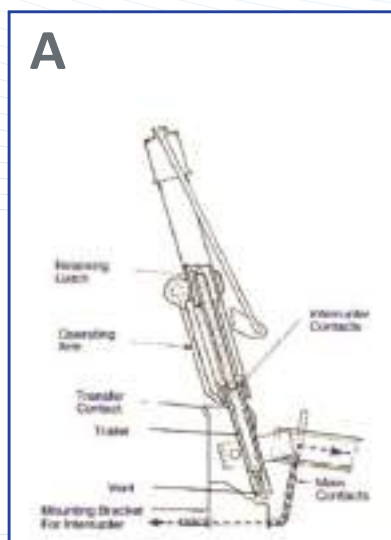
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LOAD BREAK SWITCHES

The fitting of MLE interrupter heads converts the basic MLE disconnector into a load break switch. The principle of operation is shown diagrammatically and explained below. Please note that the maximum service voltage is 36kV.



OPERATION

(Refer to diagrams)

- A. Switch closed.
Blue line indicates current flow through main contacts. Interrupter does not carry current.
- B. Start of opening sequence.
Main contacts have parted. All current now flows through the interrupter. Transfer contact maintains a continuous circuit between main contacts parting and the blade probe engaging with the operating arm. During the movement from 'A' to 'B' opening and resetting springs are charged.
- C. Further movement of the blade from that shown by position 'B' causes retaining catch to be released. The interrupter moving contact including trailer, due to the action of the opening spring, shoots upwards at high speed to create a separation from the interrupter fixed contacts.
The separation of the interrupter contacts is maintained through to 'C' when subsequent movement of the blade causes blade probe to part company with the operating arm, which falls back, by the action of the resetting spring, to a closed position of the interrupter.
- D. Shows the position taken by the interrupter with a switch in the open position.





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PRINCIPLE OF INTERRUPTION

The duration of separation of the interrupter contacts is sufficient to interrupt all currents within the specified range, before the contacts reclose to position 'D'. Arcing times of currents up to 400A are about 1/50th of a second.

Interruption is caused by a self-generated gas at high pressure in the space occupied by the arc column. As the interrupter contacts part an arc is drawn in the plastic-lined bore of the interrupter body. The arc is squeezed into the annular space between the clearance of the trailer and the bore. During arcing, energy in the form of gas is released from the trailer which is moulded from a compound of acrylic and cellulose powders which, under arcing conditions, release sufficient proportion of gases and have a low carbonisation rate since carbon atoms in the molecular structure are protected by hydrogen atoms, the build-up of the dielectric strength of the gas is greater than the breakdown strength of the rate of rise of the recovery voltage and an interruption occurs.

CLOSING OF SWITCH

The circuit is energised by the blade probe first touching the transfer contact, which also acts as a making contact. Further movement of the blade causes the blade probe to get behind the operating arm and main contact to be established.

FIELD APPLICATION OF MLE LOAD BREAK SWITCHES

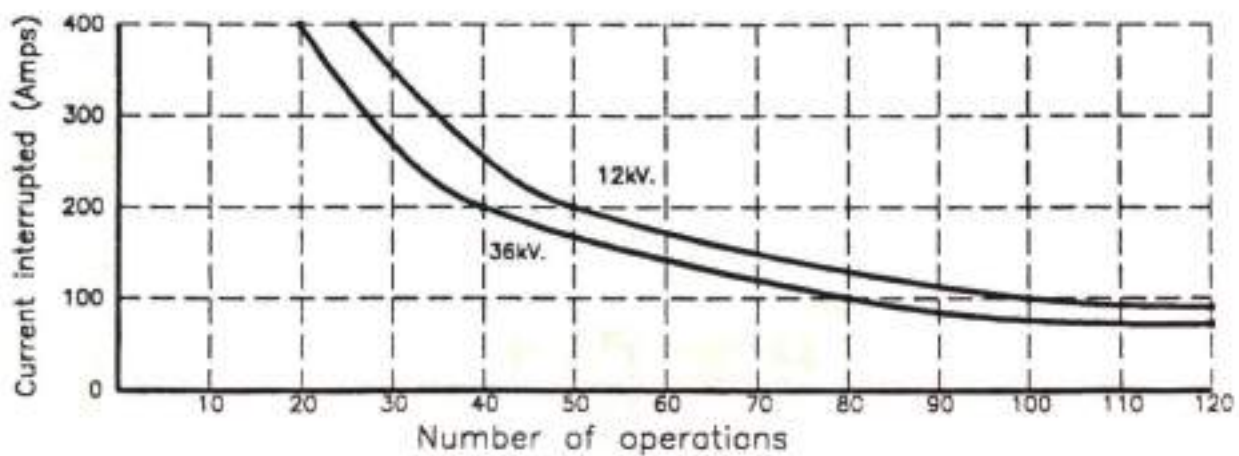
Service Voltage	Breaking Capacities		
	Transformer Off Load	Transformer Full Load	Line Charging
12kV	25A	400A	30A
24kV	20A	400A	25A
36kV	10A	400A	16A





LOADMASTER INTERRUPTER HEADS UP TO 36kV

LIFE CURVES OF MLE LOADMASTER INTERRUPTER HEADS



TYPICAL TYPE RXL LOAD BREAK SWITCH COMPLETE WITH LOADMASTER INTERRUPTER HEADS



ORDERING INFORMATION

Loadmaster interrupter heads can be installed during switch production or added later as a field retrofit or

upgrade. Please provide the maximum possible information at the time of placing your order.

Morris Line Engineering reserves the right to amend specifications and designs without notice. All information contained in this catalogue is for guidance only.

