

## 12 Hoist Limit Switch - Standard Setting

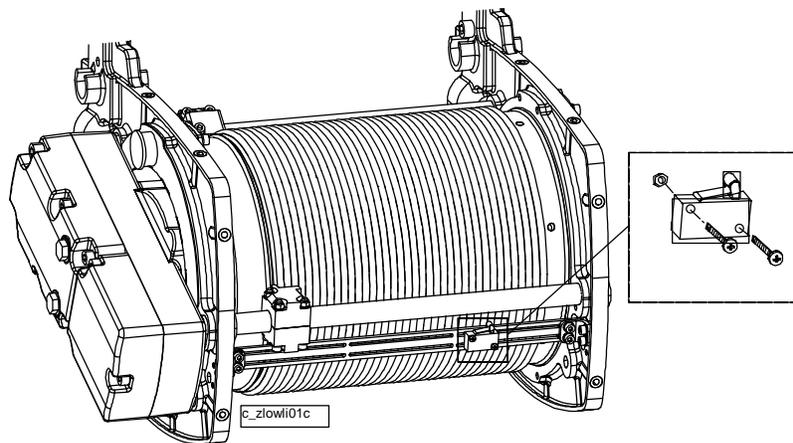
The hoist limit switch is a safety device that is provided to allow the setting of the hoist travel within a prescribed travel range.

### 12.1 SX1 Hoist

The upper limit of hoist travel is achieved through a hook operated type limit switch and the lower limit of hoist travel is achieved through a drum-activated limit switch.

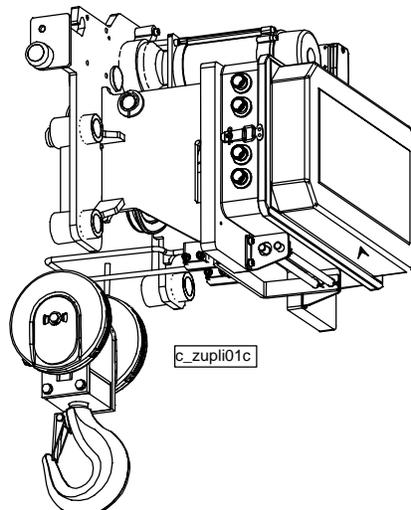
#### Lower Limit Switch

The lower limit switch on the SX1 hoist is drum-activated. A trip block, which is driven by the rotating drum, moves laterally and parallel to the drum. The trip block approaches a stationary limit switch when the drum is lowering. The switch is fastened to a bracket. The lower limit switch setting is adjustable by repositioning the switch on the bracket.



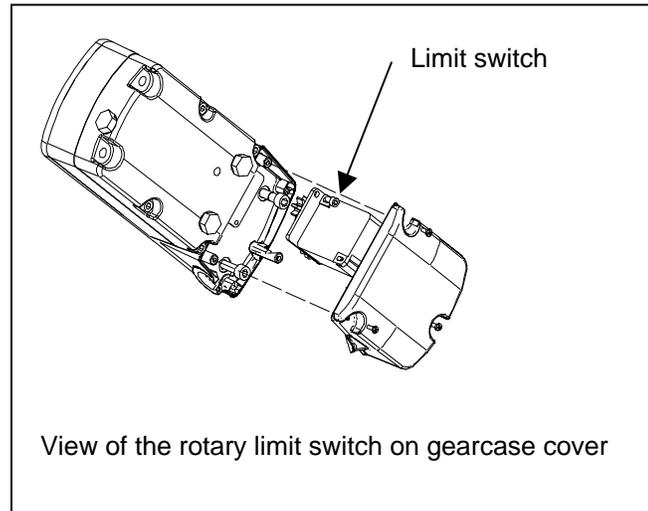
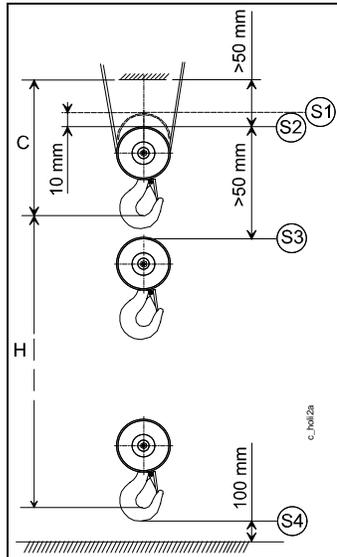
#### Upper Limit Switch

The upper limit switch on the SX1 hoist is a hook operated limit switch, which has two switches to give two different trip positions. The first position is for normal operation and the second position is for extra degree of safety. If the normal operation switch has been tripped, the operator can lower the load block. But if the extra safety switch has also been tripped, the main power is cut and the hoist cannot be operated until the switch is manually reset to the operating position. The upper limit setting is fixed and is not adjustable.



## 12.2 SX2-SX7 Hoists

The hoist limit switch on the SX2 through SX7 hoists is a rotary-type limit switch. The switch is mounted on the hoist gearbox and the drum gear turns the switch. The limit switch is a rotary cam type and is equipped with 4 micro-switches where each of these micro-switches has a specific function.



Headroom is dimension C and lift is dimension H. Total reach is headroom + lift (C+H).

| Position of micro-switch from shaft | Micro-switch Identification | Function of micro-switch            |
|-------------------------------------|-----------------------------|-------------------------------------|
| 1                                   | S1                          | Phase sequence supervision          |
| 2                                   | S2                          | Extreme upper limit of hoist travel |
| 3                                   | S3                          | Slow-down limit                     |
| 4                                   | S4                          | Extreme lower limit of hoist travel |

The function of the phase sequence supervision, S1 is to prevent the bottom block from two blocking when the power phase is accidentally reversed. Two blocking is the condition under which the bottom block or load suspended from the hook becomes jammed against the crane structure preventing further winding up of the hoist drum.

The function of the extreme upper limit of travel, S2 is to stop the lifting when the wire rope has attained the maximum number of windings on the drum and when the hook block is at its upper limit of travel as determined by the rated headroom. This switch is an over-travel protection device and it is not to be used as an automatic stop.

The function of the slow down limit, S3 is to deactivate hoist high speed and to changeover to slow speed through this zone when nearing the upper limit of travel.

The function of the lower limit of travel, S4 is to stop the lowering when the hook is at its lower limit of travel as determined by rated lift where no less than two wraps of rope shall remain on each anchorage of the hoist rope drum.