



CLASS 6170 TYPE AG NO. 5 YOUNGSTOWN LIMIT SWITCH SERIES A

INSTALLATION

The #5 Youngstown Limit Switch for crane hoist service must be mounted in the horizontal position. The weight arm can be bolted to the operating shaft in any of two positions, 180° apart. The limit switch is normally assembled for right hand operation with horizontal mounting. It is desirable to so mount the limit switch that the suspended weight is directly over the hook block with one of the hoisting idler cables passing through the J bolts of the suspended weight. A bracket or platform should be attached to the hook block for the purpose of lifting the weight.

If the limit switch cannot be so mounted that the suspended weight hangs directly over the hook block, it may be necessary to pass the cable over auxiliary sheaves. Since the steel cable is 1/4" in diameter, it is recommended that the sheaves be at least 6" in diameter. The bearings of these sheaves should be as free from friction as possible at all times. When sheaves are employed, a special weight arm of bell-crank design may be optionally supplied.

- The weight hangs down a maximum of 112" when the standard amount of cable is used. The limit switch trips when this weight is lifted approximately 5-5/16" and resets when the weight is lowered to a point approximately 2-15/16" above the normal position.

CAUTION should be taken in mounting the limit switch to keep the space clear under the heavy end of the weight arm, otherwise obstructions may interfere with the switch operation. When the switch is floor mounted, it is recommended that an opening be cut in the floor at this point.

FOR LEFT HAND OPERATION, turn the weight arm 180° about the vertical line through the shaft center and change wiring connections in accordance with the wiring diagram.

Since no special connections are required between the limit switch and the hoist controller, no additional trolley bars are required along the crane girders.

MAINTENANCE

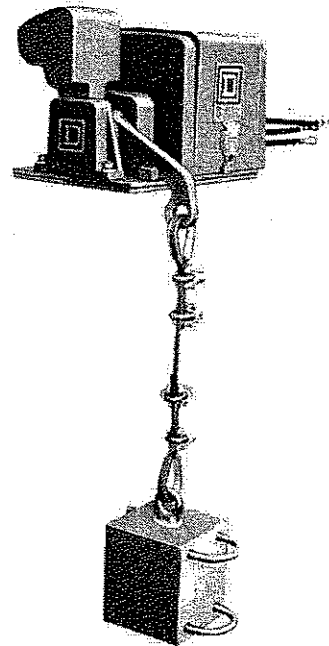
Contacts should be checked periodically for contact wear allowance (follow-up). The contacts should be replaced when the wear allowance approaches zero. No adjustment of contacts is necessary beyond proper alignment. Be sure the cover is always replaced after inspection.

LUBRICATION

- No lubrication is required as bearings are sealed cartridge ball bearings.

OPERATION DC

The #5 Youngstown Limit Switch dc is rated 25 HP 230 volts, 25 HP 550 volts. It has double pole, double throw contacts. When the switch is "tripped" by over-travel of the hoist, two normally closed contacts are opened to remove power from the motor and two normally open contacts are closed to provide a dynamic braking circuit. In order to reset the limit switch, the hook block



must be lowered by the controller until the suspended weight has traveled to the reset position.

Wiring diagram A5-1064-041 shows the proper connection when the limit switch is used with reversing and dynamic lowering controllers.

OPERATION AC

The #5 Youngstown Limit Switch is rated 25 HP, 220 volts and 50 HP, 440 and 550 volts. It has double pole, single throw contacts. Tripping the limit switch opens two leads to the motor and brake removing power and allowing the brake to set.

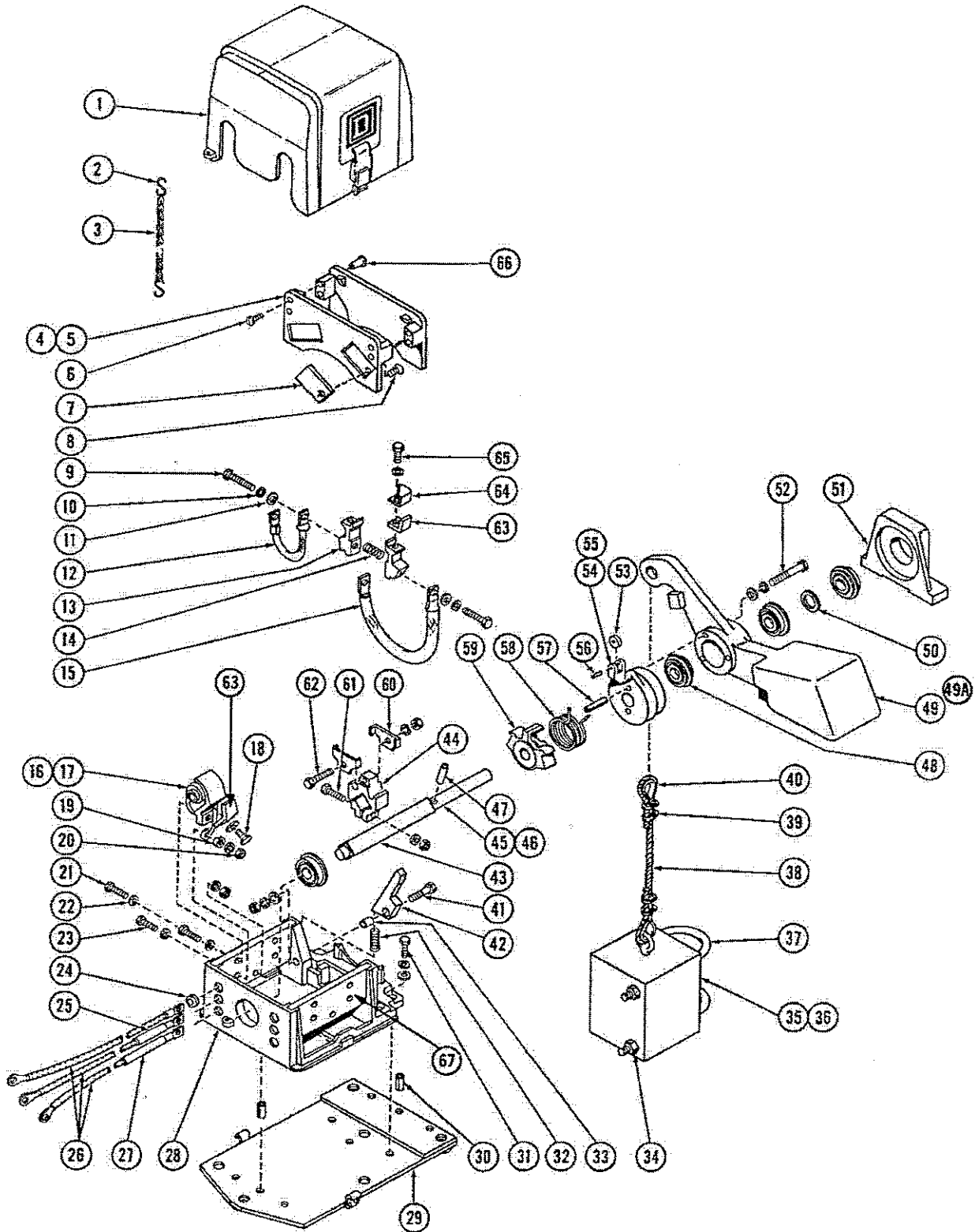
Wiring Diagram A5-1064-041 shows the proper connection for STATA hoist controller and for manual or magnetic controller which requires that the two unused lugs Y2 and Y3 be insulated whether used for left or right hand operation.

CAUTION

The Youngstown Limit Switch is intended primarily as an emergency equipment which can be depended upon to prevent the crane operator from running the hook block into the hoisting drum. It is not intended to take the place of the off-point on the controller. The operator should aim to stop hoisting before the final limit is reached. Repeated unnecessary operation of the switch because of carelessness in this regard with result in excessive burning and wear on the contact tips.



NO. 5 YOUNGSTOWN LIMIT SWITCH, SERIES A



ADVISE NAMEPLATE MARKING WHEN ORDERING PARTS



The Electric Controller and
Manufacturing Company, LLC

NO. 5 YOUNGSTOWN LIMIT SWITCH, SERIES A

Item No.	Part No.	Description	Item No.	Part No.	Description
1	B5-1064-007-50	Cover Assembly, Complete with Catch	34		3/4"-16 Lock Nut, 2 req'd.
* 2	X-2151	"S" Hook, 2 req'd.	35	A5-1064-016-50	Weight Assembly, Complete with "J" Bolts
3	X2052	Sash Chain	36	A5-1064-039-01	Weight
4	A5-1064-010-50	Arc Chute Assembly, Complete with Blowout Ears and Binding posts, 2 req'd.	†37	A5-1064-040-01	"J" Bolt, 2 req'd.
5	A5-1064-028-01	Arc Chute, 4 req'd.	38	A5-1064-017-50	Wire Rope, Complete with Fittings
6	22999-14320	Binding Screw, 8 req'd.	*39		1/4" Wire Rope Clamp, 4 req'd.
7	A5-1064-029-01	Blowout Ear, 8 req'd.	40		1/4" Oval Wire Rope Thimble, 2 req'd.
8		1/4"-20 x 3/4" Flat Head Machine Screw	41		1/4"-20 x 1 1/2" Hex Head Cap Screw, 2 req'd.
9		1/4"-20 x 3/4" Hex Head Cap Screw, 4 req'd.	42	A5-1064-036-50	Latch, 2 req'd.
10		1/4" Plain Washer, 11 req'd.	43	B5-0512-251-17	Shaft Insulator
11		1/4" Plain Lock Washer, 23 req'd.	44	A5-1064-030-01	Moving Contact Bracket
†12	A5-1064-033-50	Flexible Connector Assembly, 2 req'd.	45	A5-1064-009-50	Operating Shaft Assembly, Complete with Rocker Arm and Shaft Insulator
13	A5-1064-025-51	Auxiliary Arm, 2 req'd.	46	A5-1064-024-01	Operating Shaft
†14	B5-0502-601-20	Contact Spring	47		Roll Pin
†15	A5-1064-043-50	Flexible Connector Assembly, 2 req'd.	48	29002-33800	Bearing, 4 req'd.
16	A5-1064-008-50	Blowout Coil Assembly, Complete with Core Insulator, Coil Assembly, Contact Tip, Contact Board and Flexible Connector, 2 req'd.	49	B5-1064-012-01	Standard Weight Arm with Bearings
17	A5-1064-034-50	Blowout Coil Assembly, 4 req'd.	49A	B5-1064-015-50	90° Weight Arm (not shown) with Bearings
18		1/4"-20 x 1/2" Hex Head Cap Screw, 4 req'd.	50		3/4" SAE Aircraft Washer
19	Z0-2098	Cup Washer, 4 req'd.	51	A5-1064-014-01	Bearing Bracket
20		1/4"-20 Hex Steel Nut, 8 req'd.	52		1/4"-20 x 2" Hex Head Cap Screw, 3 req'd.
21		1/4"-20 x 3/4" Hex Head Cap Screw, 4 req'd.	53	B5-0512-051-42	Roller
22		1/4" SAE Washer, 12 req'd.	54	A5-1064-022-50	Operating Arm Assembly, Complete with Roller and Pins
23		1/4"-20 x 1" Hex Head Cap Screw, 6 req'd.	55	A5-1064-022-01	Operating Arm
24	29202-24160	Grommet, 6 req'd.	56	24209-10200	Roll Pin
25		3/8" I.D. x 2 1/4" Lg. Fiberglass Tube, 2 req'd.	57	24209-12360	Roll Pin, 2 req'd.
26	A5-1063-013-50	Lead Assembly, 6 req'd.	†58	A5-1064-023-01	Operating Spring
27		3/8" I.D. x 3 3/4" Lg. Fiberglass Tube, 2 req'd.	59	A5-1064-021-01	Rocker Arm
28	D5-1064-006-50	Base Assembly	60	A5-1064-026-01	Contact Retainer, 4 req'd.
29	A5-1064-038-50	Mounting Plate Assembly, Complete with Strikes and Roll Pins	61		1/4"-20 x 1 1/4" Hex Head Cap Screw, 2 req'd.
30		1/4" x 3/4" Roll Pin, 3 req'd.	62		1/4"-20 x 1" Hex Head Cap Screw, 2 req'd.
31		1/4"-20 x 3/4" Hex Head Tapite Screw, 4 req'd.	†63	A5-0005-040-02	Contact Tip, 8 req'd.
†32	B5-0502-601-21	Latch Spring, 2 req'd.	64	A5-1064-027-01	Arc Horn, 4 req'd.
33	FP-24J-16	Latch Bushing, 2 req'd.	65		1/4"-20 x 1 1/2" Hex Head Cap Screw, 4 req'd.
			66	29418-14400	Binding Post, 8 req'd.
			67	A5-1064-020-01	Contact Board, 2 req'd.

■ Standard hardware listed without an EC&M part number, should be obtained from a local hardware supplier.

† Essential Parts for General Maintenance.

* Minor revision since previous issue.

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