

EUROCOPTER CANADA LIMITED

SUBJECT: SX-16 SEARCHLIGHT INSTALLATION WITH PILOT'S CYCLIC CONTROL (P/N 120-901234-01 and 120-901234-03)

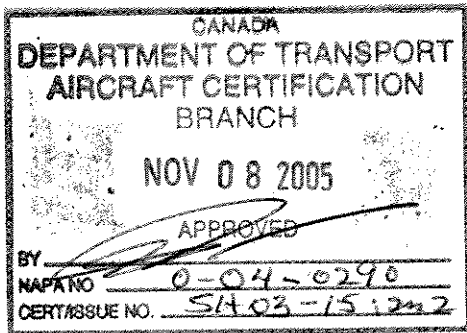
The Spectrolab SX-16 Nightsun Searchlight is a high powered light mounted on the LHS of the helicopter. It can be operated by the pilot using the cyclic or by a trained operator using an operator hand control.

APPLICABILITY:

This Flight Manual Supplement shall be used when the Spectrolab SX-16 Nightsun Searchlight (with pilot's cyclic control) is installed on the helicopter.

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IMPORTANT NOTE



THE INFORMATION AND DATA CONTAINED IN THIS DOCUMENT SUPERSEDE OR SUPPLEMENT THAT CONTAINED IN THE BASIC APPROVED FLIGHT MANUAL FOR THE EC 120 B HELICOPTER IN THOSE AREAS LISTED HEREIN. FOR LIMITATIONS, PROCEDURES AND PERFORMANCE NOT CONTAINED IN THIS DOCUMENT REFER TO THE APPROVED FLIGHT MANUAL AND OTHER APPLICABLE APPROVED FLIGHT MANUAL SUPPLEMENTS.

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SECTIONS 2, 3, 4, AND 5 OF THIS DOCUMENT COMPRISE THE APPROVED FLIGHT MANUAL SUPPLEMENT. COMPLIANCE WITH SECTION 2, LIMITATIONS, IS MANDATORY.

SECTIONS 1 AND 6 ARE UNAPPROVED AND ARE PROVIDED FOR INFORMATION ONLY.

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1. GENERAL (unapproved)

The Spectrolab SX-16 Nightsun Searchlight is a high-intensity (30 million candlepower) searchlight mounted on the LH side of the helicopter. The searchlight is mounted with a dove tail assembly for quick installation and removal. This system is equipped with a pilot's cyclic control.

Flight limitations for the side-mounted searchlight are covered by FAA STC SR01302LA (Transport Canada accepted).

The light can be controlled by any trained crew member excluding the pilot by means of an external control box, or by the pilot using the cyclic stick control switches. This system is equipped with pilot and SX-16 operator directional control, focus, on/off and a start switch. It has a slew capability of approximately 100° in azimuth off of the LHS of the aircraft, and -10° to -70° in elevation from the horizon. The system is equipped with a circuit breaker and a fuse for system protection.

The complete system consists of the following main components:

- airframe mount with dove tail assembly for quick removal
- gimbal assembly with electrical actuators
- searchlight with xenon arc lamp, and cooling fan
- operator's hand control and pilot's cyclic control

Name of Assembly	Part No.
SX-16 Installation (with Pilot's Cyclic Control)	(old P/N) 120-901234-01
SX-16 Installation (with Pilot's Cyclic Control)	(new P/N) 120-901234-03

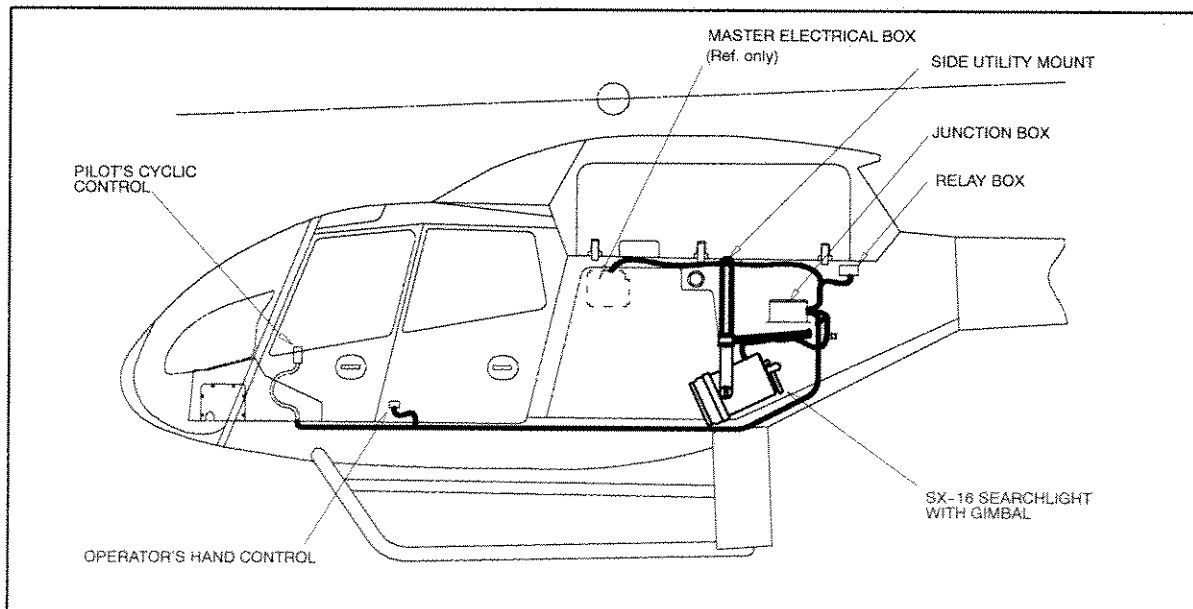


Figure 1 SX-16 Searchlight Installation

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2. LIMITATIONS

a. Operation

The Spectrolab SX-16 Nightsun Searchlight shall be operated by a trained crew member.

Operation of the Spectrolab SX-16 Nightsun Searchlight, in conjunction with emergency or fixed floats, is not authorized without the installation of azimuth-limiting stops to avoid the potential for the light beam burning the float material.

CAUTION THE SEARCHLIGHT PRODUCES EXTREMELY HIGH TEMPERATURES AT CLOSE PROXIMITY TO THE LIGHT. CARE SHALL BE TAKEN DURING LOW HOVERING FLIGHT AND GROUND OPERATION TO AVOID SETTING BRUSH / GRASS FIRES OR BURNING LANDING PAVEMENT.

CAUTION OPERATION OF THE SEARCHLIGHT BELOW 100 FEET SHALL BE AVOIDED BECAUSE OF THE POSSIBILITY OF EXCESSIVE GLARE.

CAUTION THE SEARCHLIGHT SHALL BE SWITCHED OFF FOR FLIGHT INTO CLOUDS OR FOG

b. Airspeed Limitations

For Airspeed Limitations of the Universal Mount refer to STC SR01302 LA "AIR-FILM Camera Systems" Flight Manual Supplement (AF-120-RFM).

c. Placards and Markings

For Placards and Markings of the Universal Mount refer to STC SR01302 LA. For additional Placards and Markings refer to the ECL ICA-ECL-122.

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3. EMERGENCY PROCEDURES

- **Generator Failure**

If system has been powered on using the Operator Hand Controller

Pilot issues a verbal command to Searchlight Operator : Searchlight OFF
(Operator Hand Control SX-16 ST ON/OFF switch)

If system has been powered on using Cyclic Control

Pilot's Cyclic Control SX-16 ON/OFF switch : Pilot presses switch once to turn OFF

Refer to the Basic Aircraft Flight Manual for generator failure emergency procedures.

- **Excessive Glare/Reflection in Cockpit**

If system has been powered on using the Operator Hand Controller

Pilot issues a verbal command to Searchlight Operator : Redirect Searchlight
(Operator Hand Control SX-16 CONT (eight-way) switch)

OR

Pilot issues a verbal command to Searchlight Operator : Searchlight OFF
(Operator Hand Control SX-16 ST ON/OFF switch)

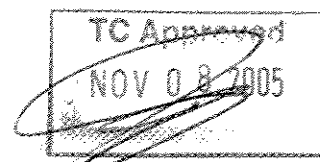
If system has been powered on using Pilot's Cyclic Control

Pilot's Cyclic Control : Pilot moves light so as not to have excessive glare/reflection.
(Pilot's Cyclic Control SX-16 CONT (four-way) switch)

OR

Pilot's Cyclic Control : Searchlight OFF
(Pilot's Cyclic Control SX-16 ST ON/OFF switch)

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4. NORMAL PROCEDURE

a. Pre-Flight Check

The following checks are to be carried out prior to every flight requiring the use of the SX-16 Nightsun Searchlight.

(1) External Check

Mounting Brackets	:	Check for security
Electrical plug connections	:	Check for condition
SX16 Glass, Lamp and Reflector	:	Check for condition
Dove tail assembly	:	Check for security

(2) Circuit Breaker Check

SX-16 Circuit Breaker	:	Check for engagement
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(3) Operational Check

CAUTION DO NOT TURN THE SX-16 ON UNTIL THE ENGINE IS RUNNING AT FLIGHT IDLE, AND THE GENERATOR LOAD IS BELOW 50 AMPS. TURN OFF THE SX-16 IMMEDIATELY AFTER TESTING.

CAUTION HOLD THE APPLICABLE CONTROLLER TOGGLE SWITCH IN THE START POSITION FOR APPROXIMATELY 5 SECONDS, UNTIL SEARCH LIGHT ILLUMINATES, AND THEN RELEASE SWITCH IMMEDIATELY. HOLDING THE SWITCH IN THE START POSITION ANY LONGER THAN NECESSARY WILL CAUSE CONSIDERABLE DAMAGE TO THE LAMP.

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(a) Operator Hand Controller - (refer to Figure 2)

- | | | |
|--|---|--|
| SX-16 ST ON/OFF switch | : | Position to START then release to ON. |
| SX-16 CONT (eight-way) switch (UP, DOWN, LEFT, RT) | : | Verify correct light movement in the direction selected (UP, DOWN, LEFT, RIGHT). |
| SX-16 FOC switch | : | Verify focus adjustment movement. |
| VEMD Ammeter Indicator | : | Verify current consumption under 150A |
| SX-16 ST ON/OFF switch | : | Switch OFF |

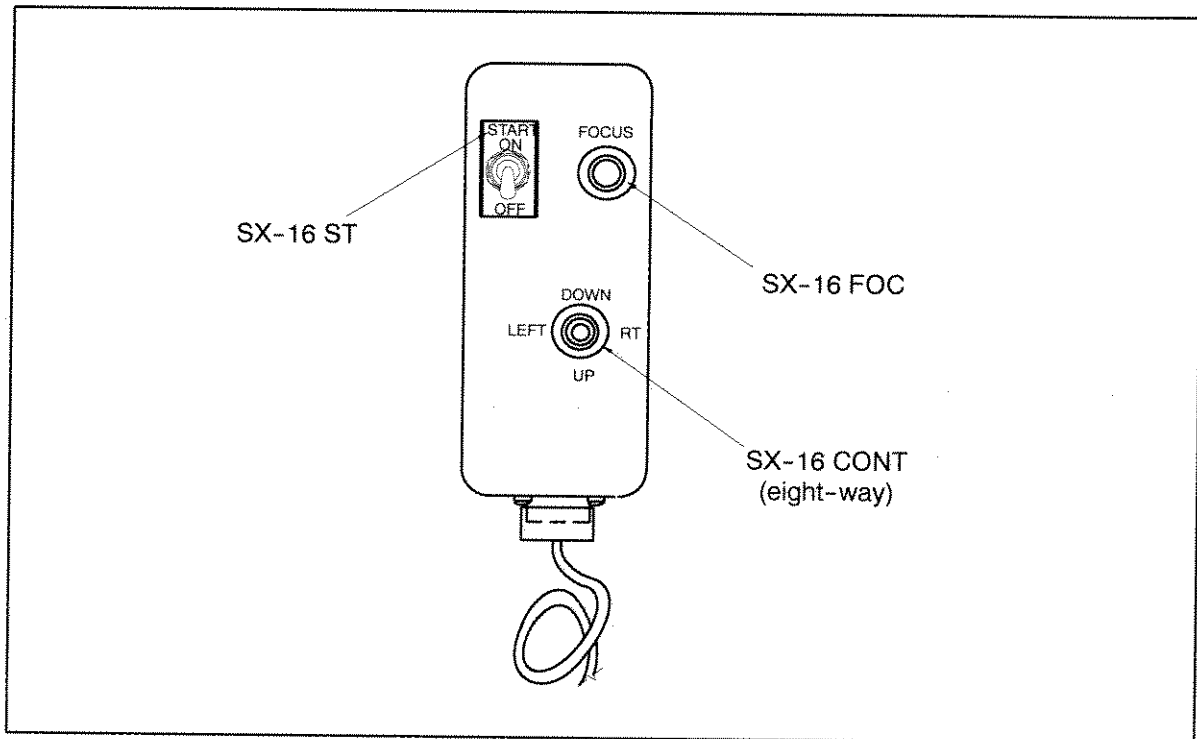


Figure 2 Operator Hand Control

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(b) Pilot's Cyclic Control – (refer to Figure 3)

- | | | |
|------------------------------|---|--|
| SX-16 ON/OFF switch | : | Press switch once to turn ON. |
| SX-16 ST switch | : | Press and hold until light illuminates |
| SX-16 CONT (four-way) switch | : | Verify correct light movement in the direction selected (UP, DOWN, LEFT, RIGHT). |
| SX-16 FOC switch | : | Verify focus adjustment movement. |
| VEMD Ammeter Indicator | : | Verify current consumption under 150A |
| SX-16 ON/OFF switch | : | Press switch once to turn OFF |

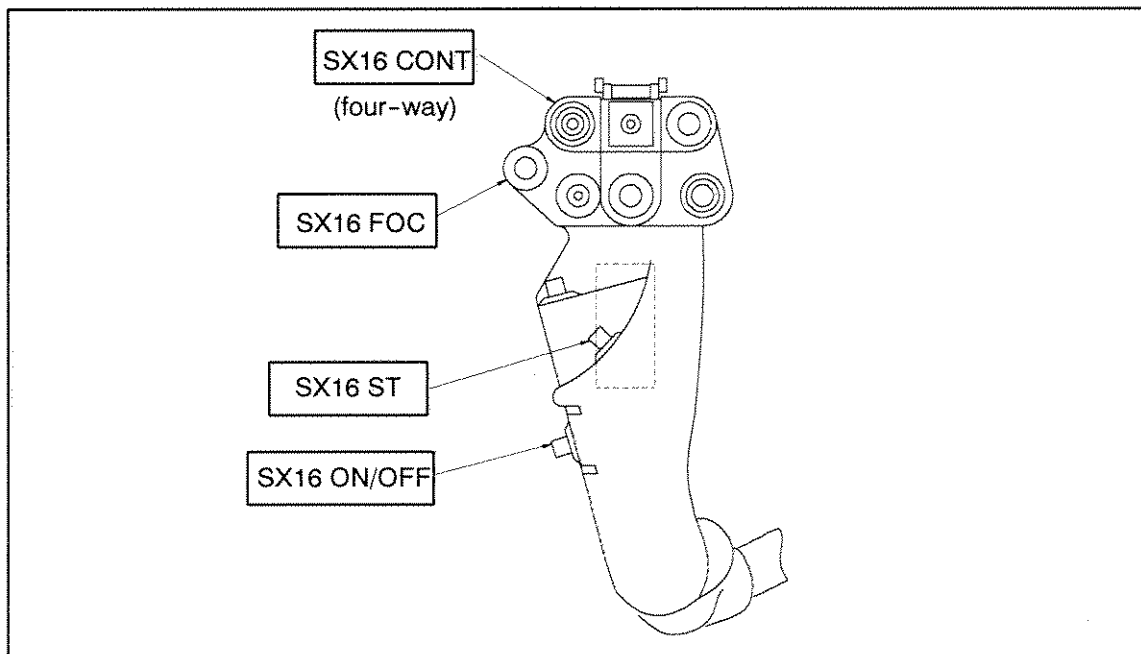


Figure 3 Pilot's Cyclic Control

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b. Operation

The SX-16 can be operated separately or simultaneously by either the Operator Hand Controller or the Pilot's Cyclic Controller. This system is equipped with pilot and SX-16 operator directional, focus, on/off and start switch. The directional control priority is to the pilot, whereas the focus control, on/off and start switch have no override priority.

NOTE The SX-16 is controlled through a relay panel.

(1) Switching System ON

- (a) Operator Hand Control - (refer to Figure 2)
- SX-16 ST ON/OFF switch - Position to START, then release to ON
 - VEMD Ammeter Indicator - Verify current consumption under 150A

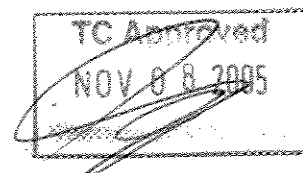
- (b) Pilot's Cyclic Control - (refer to Figure 3)
- SX-16 ON/OFF switch - Press switch once to turn ON
 - SX-16 ST switch - Press and hold until light illuminates.
 - VEMD Ammeter Indicator - Verify current consumption under 150A

(2) Focus and Position

- (a) Operator Hand Control - (refer to Figure 2)
- SX-16 FOC switch - Press switch until desired beam aperture is achieved.
 - SX-16 CONT (eight-way) switch (UP, DOWN, LEFT, RT) - Operate as required to position light (UP, DOWN, LEFT, RIGHT)

- (b) Pilot's Cyclic Control - (refer to Figure 3)
- SX16 FOC switch - Press switch until desired beam aperture is achieved.
 - SX16 CONT (four-way) switch (UP, DOWN, LEFT, RT) - Operate as required to position light (UP, DOWN, LEFT, RIGHT)

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(3) Switching System OFF

(a) Operator Hand Control - (refer to Figure 2)

SX-16 ST ON/OFF switch - Switch to OFF

(b) Pilot's Cyclic Control - (refer to Figure 3)

SX16 ON/OFF switch - Press switch once to turn OFF

5. PERFORMANCE DATA

For Performance Limitations refer to STC SR01302LA - "AIRFILM Camera Systems" Flight Manual Supplement (AF-120-RFM).

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6. WEIGHT AND BALANCE (Removeable items) (unapproved)

DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lb	m	in	m kg	in lb
SX-16 Assembly (P/N 120-901234-01)	19.20	42.3	4.66	183.5	89.47	7762.1
Utility Mount (P/N AF 120)	9.77	21.5	4.66	183.5	45.53	3945.3
Hand Control (P/N 120-901304)	0.28	0.6	2.80	110.2	0.78	66.1

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