

SUPPLEMENT No. 11

TRIM SERVO OF LONGITUDINAL CONTROL

This Supplement must be included in the Z 143 L - Z 143 LSi Airplane Maintenance Manual (Doc. No. 005.022.2), Chapter 95 with Supplement No. 10 in case that trim servo P/N 0106-T12 is installed into the aircraft.

The information contained herein supplements or supersedes the information in Z 143 L - Z 143 LSi Airplane Maintenance Manual (Doc. No. 005.022.2).

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EFFECTIVITY: ALL

LIST OF EFFECTIVE PAGES

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S-TEC SYSTEM 55 AUTOPILOT

GENERAL

Electric control of longitudinal trimming can operate in automatic mode with autopilot, if the pitch servo channel is in operation or in manual mode by means of switches on left and right control lever grip.

DESCRIPTION AND OPERATION

Servo, fitted with a moment clutch, is connected by means of the winch to the rope of mechanical control of elevator trim tab. The clutch insures, in case of autopilot failure or mechanical locking of gears, the possibility of direct control of trimming by control wheel with increased force when the moment clutch is slipping.

In mode when the autopilot is out of operation, the servo controls the trim tab by means of switches on left and right control lever grip. Left and right halves of switch are in serial connection from security purposes. In mode when autopilot and manual electric control are switched-off, there is a possibility to control longitudinal trimming manually by standard trim control.

The servo is located under the floor of baggage compartment and is accessible after removing of cover in the floor. Rope on the winch of servo is connected with clamps to the rope of longitudinal trimming control. Electric installation is connected to servo through connector. Power supply is lined through EL. TRIM switch in the middle panel, EL. TRIM circuit breaker from COMM/NAV bus, switched by COMM/NAV 2 switch.

Functions and modes are specified in detail in SYSTEM 55 AUTOPILOT or 55 X Pilot's Operating Handbook (last valid Revision).

EFFECTIVITY: ALL

MAINTENANCE

REMOVAL AND INSTALLATION

REMOVAL OF TRIM SERVO FROM THE AIRCRAFT Fig. 1

Remove cover above the servo on the baggage compartment floor. Set by manual wheel to central position. Disconnect the connector of electric installation from servo. Disconnect clamps (2) of servo rope connection to trim rope. Remove screws (3) of attachment on the flange. Take off the servo from the aircraft.

INSTALLATION OF TRIM SERVO INTO THE AIRCRAFT

CAUTION

BEFORE SERVO INSTALLING INTO THE AIRCRAFT, THE TORQUE MOMENT ON SERVO MOMENT CLUTCH SHALL BE ADJUSTED ACCORDING TO TABLE No. 1 ($48 \pm 2 \text{ lb.in} = 5.53 \pm 0.23 \text{ Nm}$, SEE SUPPLEMENT No. 10).

Set the manual wheel of longitudinal trimming control to the central position.

Set the servo winch in such a way that both the ends of the rope (4) have the same number of turns on both sides from the centre. Fasten the servo with screws (3) to hinges. Connect rope (4) to trim rope (5) with clamps (2). strain the rope (4) by means of clamps (2).

Check longitudinal trim control by turning the wheel to both the extreme positions whether there doesn't touch clamps (2) with guides of longitudinal trimming rope on the aircraft frame. The distance of clamps (2) from the guides of longitudinal trimming rope shall be in extreme positions approximately the same and must not wind up on the winch.

Connect the servo connector of electric installation.

Check tensing of trimming rope to $13 \div 17 \text{ lbs}$ (60-80 N) with dynamometer IN-11 or something similar.

Check electric control of trimming according to SYSTEM 55 AUTOPILOT or 55 X Pilots Operating Handbook (last valid Revision).

After executing function test and system check, attach the servo cover to the floor of baggage compartment.

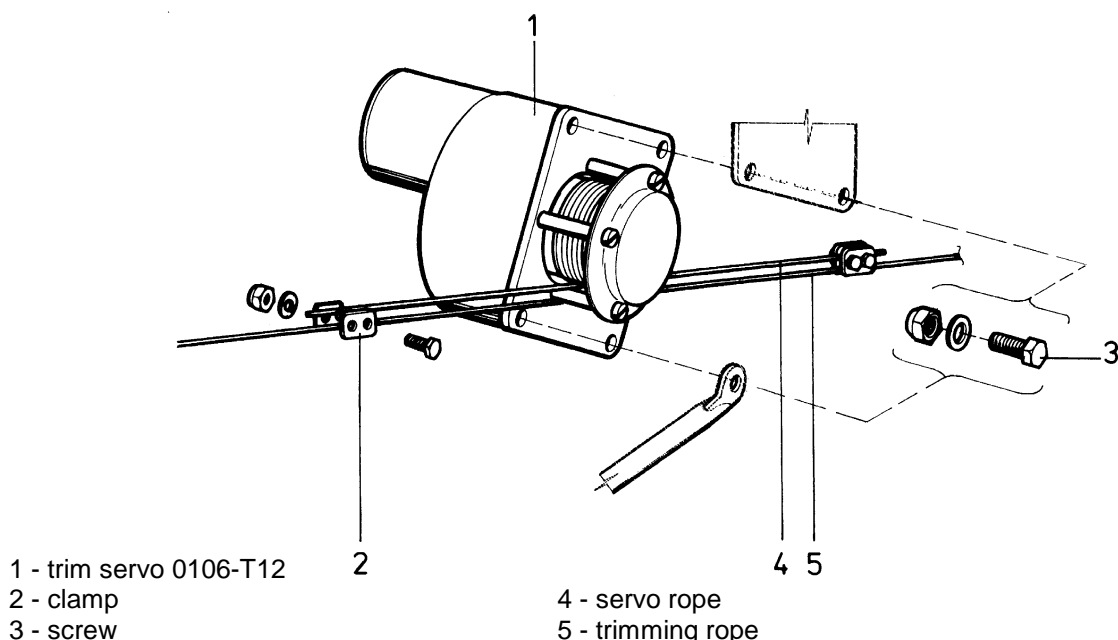


Fig. 1 Installation of trim servo

EFFECTIVITY: ALL

INSPECTION AND CHECK

CHECK OF FUNCTION AND CONDITION OF TRIM SERVO

After 100 flight hours or 1 year (what comes first):

1. SERVO – condition, locking of nuts, running easy, check of rope stretching of 13 ÷ 17 lbs (60-80 N)
2. CHECK OF FORCE FOR OVERCOMING OF MOMENT CLUTCH

Procedure at check

Switch on the EL. TRIM switch on the central panel. On the left or right control lever, press TRIM alternately to position DOWN and UP. Adjust manual control wheel of trimming to central position. Locate jig Drwg No. L 143.9250-06.00 onto the control wheel and measure with dynamometer (by tension or pressure) alternately in direction „NOSE HEAVY“ and „TAIL HEAVY“ a force needed for overcoming the servo moment clutch. The value of measured force shall be between 9 ± 3 lbs (40 ± 15 N).

If necessary remove servo from the aircraft and adjust moment clutch according to procedure given in Supplement No. 10.

3. CHECK OF SERVO DISCONNECTION

Procedure at check

Switch on the switches:

MASTER SWITCH, BATTERY (or EXTERNAL SOURCE), FLIGHT INSTRUMENTS, COMM/NAV, AUTOPILOT, EL. TRIM.

Check function of trimming servo on the control wheel (it shall put up a resistance).

Push AP-DIS buttons alternately on left or right control lever. Check disconnection of servo on the control wheel.

Switch off EL. TRIM switch on the central panel. Check on the trim control wheel whether the servo is disconnected.

4. CHECK OF ELECTRIC INSTALLATION

Check condition of electric conductors and connectors.

NOTE:

In case that operational regulation of the country in which the aircraft is registered specifies different periodicity and way of autopilot test execution, observe this regulation.

APPROVED REPAIRS

REPAIRS OF TRIM SERVO

Defect	Repair
1) Damaged electric conductors.	Replace electric conductors.
2) Damaged or non-functional servo.	Replace the servo, the defective one send to licensed repair service.

EFFECTIVITY: ALL

PLACARDS

(1) Placard is located on the central panel.

EL. TRIM

(2) Placard is located in the pilot cabin.

**WHEN USING FLAPS WITH ACTIVE AUTOPILOT,
AUTOMATIC TRIM MUST BE ON.
PITCH TRIM TEST HAS TO BE PERFORMED
PRIOR TO EACH FLIGHT.**