

GFC 500

Autopilot with Electronic Stability
and Protection

Part 23 AML STC Installation Manual

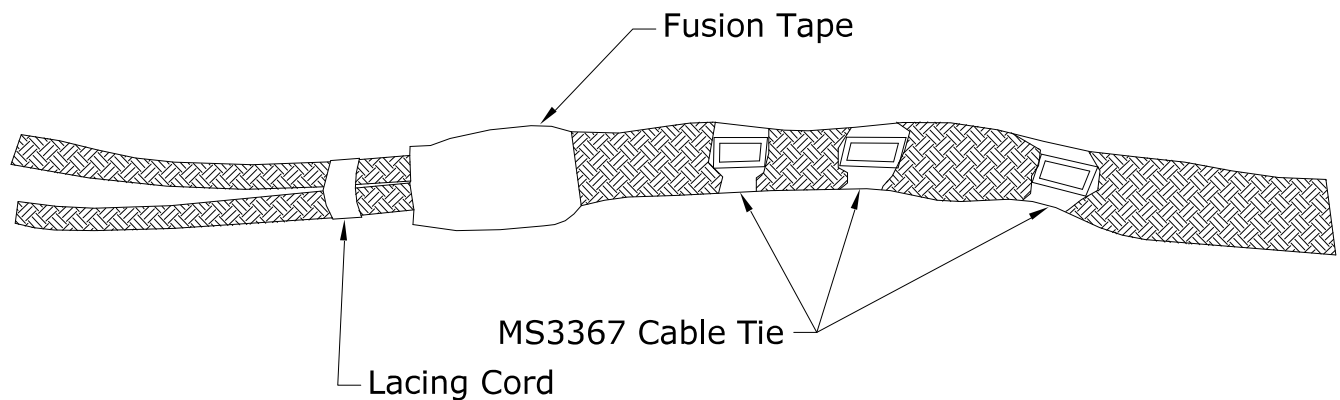


Figure 4-9 – Overbraid Branching Example

4.2 Equipment Installation

CAUTION: *Applying more than 20 in lbs of torque using the hex drive tool can damage the equipment retention mechanisms.*

4.2.1 GSA 28 Servos

Ensure that the main flight control cables are rigged and tensioned as outlined in the aircraft maintenance manual.

Ensure that the main flight control cables have adequate clearance from structure and feed-thru holes.

Refer to the appropriate model-specific installation manual addendum (190-02291-XX) for detailed electrical, structural, and mechanical installation data for the GSA 28 servos.

After the servos are installed and the servo cables are tensioned, move the flight controls through the full range of travel several times.

Ensure that the flight control surfaces move freely from stop to stop.

Ensure that there is no binding or restriction of the flight controls caused by the servo installation.

Ensure the servo cables, cable clamps, and main flight control cables have adequate clearance from adjacent structure and feed-thru holes throughout the full range of motion.

Recheck the servo cable tension and reset if necessary.

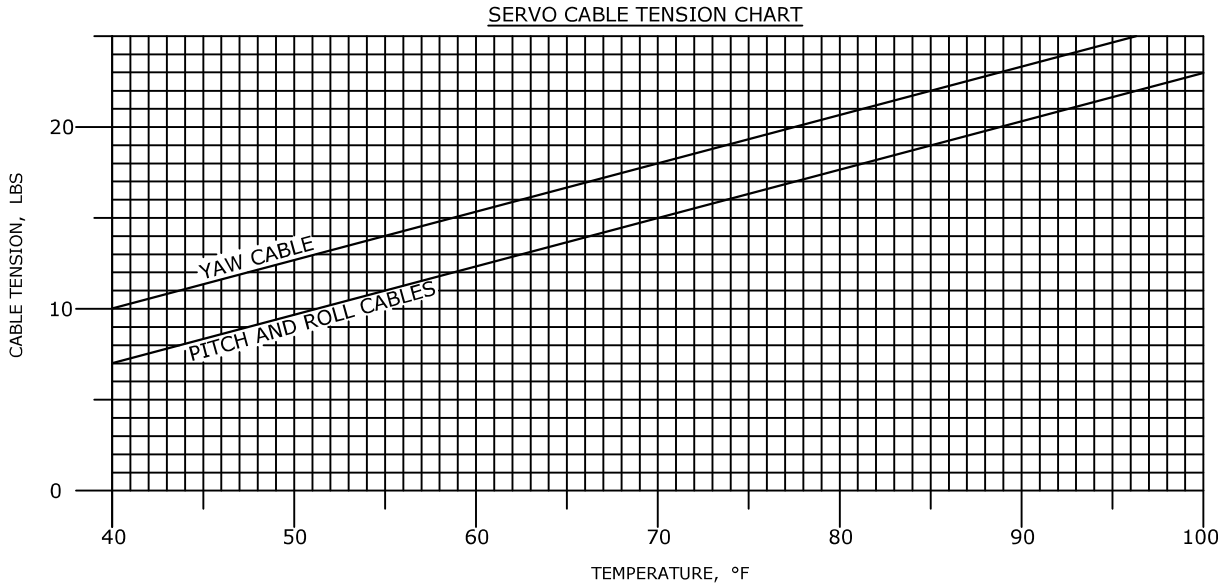
4.2.1.1 Servo Cable Clamps

GFC 500 autopilot installations that use servo cable clamps must be installed on a corresponding cable of appropriate size. This section contains instructions for identifying servo cable clamps and how to confirm a proper fit on aircraft cables after installation.

A proper fit of the installed servo cable clamps is indicated by a minimum .005-inch gap (shown in Figure 4-10 using 2X 117-009XX-00 or 2X 117-02030-XX as reference) between each 117-part after the specified torque per the applicable STC installation manual addendum has been applied. This minimum gap ensures the clamps make proper contact with the aircraft cables.

NOTES (CONTINUED):

23. MS21044-XXX SELF-LOCKING NUTS ARE FOR ONE TIME USE ONLY AND MUST BE REPLACED IF REMOVED.
24. COTTER PINS ARE FOR ONE TIME USE ONLY AND MUST BE REPLACED IF REMOVED.
- 25➤ ADJUST BRIDLE CABLE ROLLER FORE OR AFT TO PROHIBIT THE ROLL BRIDLE CABLE FROM CONTACTING THE AIRCRAFT STRUCTURE AS IT PENETRATES THE FUSELAGE.
- 26➤ POSITION CABLE CLAMP SUCH THAT THERE IS NO INTERFERENCE WITH THE CLAMP OR CABLE END AND THE PULLEY/BACKET ON THE CENTER OF THE WING SPAR.
- 27➤ OUTBOARD END OF ROLL BRIDLE CABLE AND CABLE CLAMP ARE LOCATED IN LEFT WHEEL WELL.
- 28➤ PLACE SERVO ASSEMBLY IN POSITION SHOWN. ADJUST SERVO VERTICALLY TO ENSURE THE ELEVATOR CABLE DOES NOT CONTACT THE SERVO CAPSTAN THROUGH OUT THE ELEVATOR TRAVEL, TIGHTEN SERVO TO BRACKETS.
- 29➤ WITH ELEVATOR FULL UP, POSITION THE CABLE CLAMP .5 - 1.0 INCH FROM AFT SIDE OF F.S. 179.
- 30➤ MATCH DRILL F.S. 207 BULKHEAD AS SHOWN WITH 2X Ø.177 HOLES. ASSEMBLE PITCH CABLE ROLLER WITH LOWER ELEVATOR CABLE UNDER 147-00139-00 ROLLER.
- 31➤ ADJUST YAW DAMPER SERVO VERTICALLY TO OBTAIN .125 - .5 INCH OF CLEARANCE FROM RUDDER CABLE AND LOWER CABLE GUARD PIN.
- 32➤ COUNTERSINK BRACKETS AS NEEDED TO ACCEPT THE DIMPLED STRINGER MATERIAL AND ALLOW THE BRACKET TO SIT FLAT ON THE STRINGER. IT IS ACCEPTABLE TO USE MS20470AD4 OR MS20470AD5 IF NEEDED.
- 33➤ SERIAL NUMBERS D-9962 AND UP REQUIRE 011-04888-02. ALL OTHER SERIAL NUMBERS REQUIRE 011-04888-01.
- 34➤ TURNBUCKLE IS NOT PRESENT ON SERIAL NUMBERS D-9962 AND UP.
- 35➤ USE OF EITHER THE 115-03032-00 BRACKET (RECOMMENDED) OR A MS21919WDG8 CLAMP (SEE SHT 9) TO SECURE THE FORWARD, INBOARD PORTION OF THE 115-02901-00 BRACKET IS ACCEPTABLE.
- 36➤ NEW INSTALLATIONS TO USE 011-02951-19. PREVIOUS INSTALLATIONS MAY HAVE 011-02951-11 INSTALLED AS SHOWN.



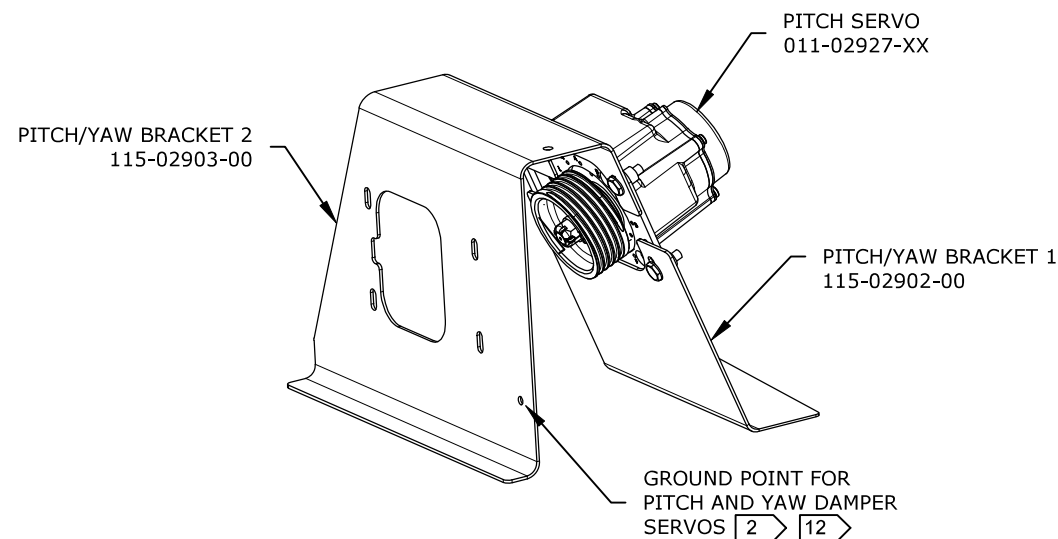
MODEL SPECIFIC INFORMATION	
EQUIPMENT	
TRIM SYSTEM RUN TIME (STOP TO STOP)	21-25 SECONDS
FLIGHT DIRECTOR COMMAND BAR GO AROUND PITCH UP ATTITUDE	7°
ESP ROLL INDICES	45° LEFT AND RIGHT
SEE INSTALLATION MANUAL, 190-02291-00 FOR POST-INSTALL CHECKOUT	
SEE ADDENDUM 005-01470-08 FOR GFC 500 CONFIGURATION SETTINGS	

EQUIPMENT LOCATION	
EQUIPMENT	ARM
GMC 507	68
ROLL SERVO	114
PITCH SERVO	194
YAW SERVO	193
PITCH TRIM SERVO	228

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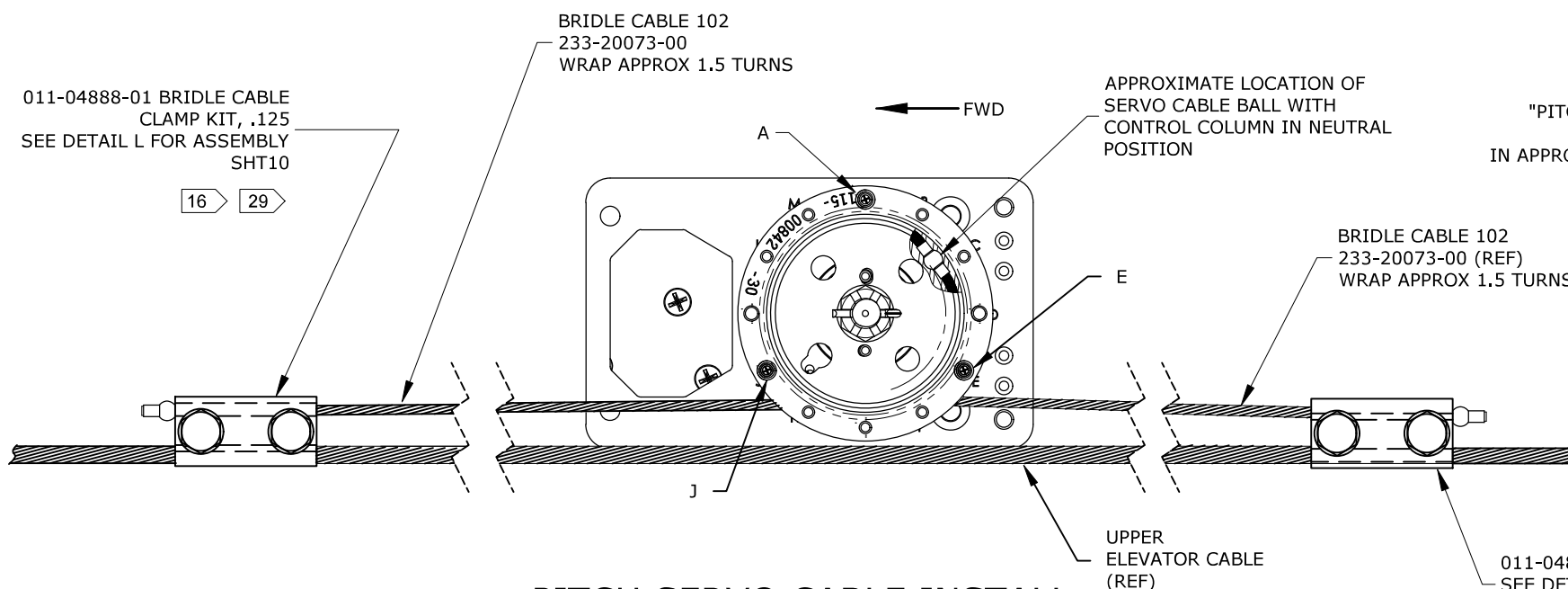
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Olathe, Kansas 66062 U.S.A.

SIZE B	DWG. NO. 190-02291-08	REV. 10
	SCALE: NONE	SHT. 3 OF 17



PITCH SERVO INSTALLATION

LOOSELY ATTACH THE PITCH SERVO TO PITCH/YAW BRACKETS 1 & 2 USING HARDWARE CALLED OUT IN DETAIL E, SHT 7.



PITCH SERVO CABLE INSTALL

INSTALL CABLE GUARD PINS IN LOCATIONS A, J & E

13 18

REMOVE 6X EXISTING RIVETS, MATCH DRILL Ø.128 115-02902-00, INSTALL 6X MS20470AD4-X RIVETS 9 32

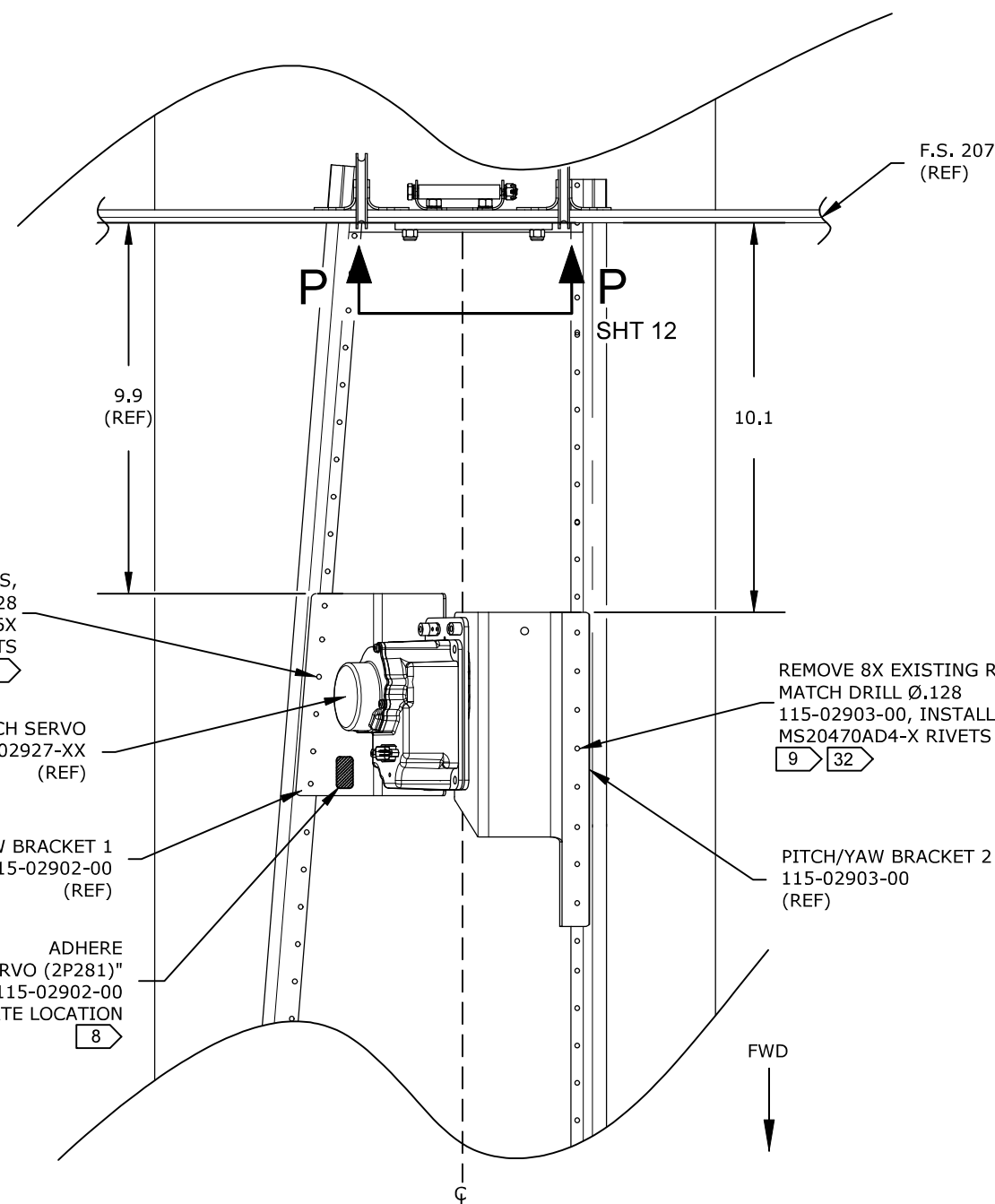
PITCH SERVO 011-02927-XX (REF)

PITCH/YAW BRACKET 1 115-02902-00 (REF)

ADHERE "PITCH SERVO (2P281)" TO 115-02902-00 IN APPROXIMATE LOCATION 8

REMOVE 8X EXISTING RIVETS, MATCH DRILL Ø.128 115-02903-00, INSTALL 8X MS20470AD4-X RIVETS 9 32

PITCH/YAW BRACKET 2 115-02903-00 (REF)



PITCH SERVO INSTALLATION

LOOKING DOWN BETWEEN F.S. 179 & 207

18 28

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NONE

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