

## SERVICE BULLETIN

### No. SB-300-1-15

**Compliance recommended**

**Subject:** Throttle Control Cables

**Aircraft affected:**

EA 300/S	(EXTRA 300S)	up to SN 1036 <sup>1</sup>
EA 300/L	(EXTRA 300L)	up to S/N 1326 <sup>2</sup>
EA 300/200	(EXTRA 200)	up to S/N 1046 <sup>1</sup>
EA 300/SC	(EXTRA 300SC)	up to S/N SC054 <sup>1</sup>
EA 300/LT	(EXTRA 300LT)	up to S/N LT030 <sup>2</sup>
EA 300/LC	(EXTRA 330LX)	up to S/N LC043 <sup>2</sup>

<sup>1</sup>) if not equipped with Cablecraft 580-540-502 throttle control cable

<sup>2</sup>) if not equipped with Cablecraft 580-540-501 throttle control cable

**Reason:** It has been reported that throttle control cables installed on the above listed aircraft have failed in service.

**Safety Intent:** The safety intent of this SB is to prevent throttle control cable failure, which can cause a loss of engine control function to some degree, by replacing the throttle control cable by a more rigid one.

**Configuration Description:** Incorporating this SB results in installing a new throttle control cable Cablecraft 580-540-501 (P/N 33589) on EA 300/L, EA 300/LT and EA 300/LC aircraft respectively  
Cablecraft 580-540-502 (P/N 34375) on EA 300/S, EA 300/200 and EA 300/SC aircraft.

**Approval:** The technical content of this document is approved under the authority of DOA Nr. EASA.21J.073.

**Compliance Time:** At owner's option.  
Recommendation: Should be accomplished whenever the throttle control cable requires replacement or earlier if desired.

**Working time required:** ~4 manhours

**Material needed:**

**Cablecraft 580-540-501** (EXTRA P/N 33589) or  
**Cablecraft 580-540-502** (EXTRA P/N 34375)  
order from:  
EXTRA Flugzeugproduktions- und Vertriebs-GmbH  
Flugplatz Dinslaken  
Schwarze Heide 21  
46569 Hünxe/Germany

**PR-812**

Manufacturer:  
PRC-DeSoto International, Inc.  
12780 San Fernando Road  
Sylmar, CA 91342, USA

**Cable ties**  
commercial

**Accomplishment Instructions:**

Refer to the latest revision of the following documents depending on the aircraft model:

EA 300/SC:  
EXTRA 300/SC Maintenance Manual Doc. N.: EA-0C702  
Chapter 73-20-11 for throttle control cable replacement

EA 300/LT:  
EXTRA 300LT Maintenance Manual Doc. N.: EA-0D702  
Chapter 73-20-11 for throttle control cable replacement

EA 300/LC:  
EXTRA 330LX Maintenance Manual Doc. N.: EA-0E702  
Chapter 73-20-11 for throttle control cable replacement

For EA 300/S, EA 300/L and EA 300/200 models refer to the following information and procedure:

**General Information about Control Cables**

Consider the following information when working on engine control cables, refer to Figure 1:

Hard and abrupt power control inputs may impose high dynamic peak loads on the related sliding parts when reaching the travel stops of the engine fuel injector servo. Repeating peak loads may result in unacceptable additional wear and free play at the pivot

points. Once the free play of the pivot point would increase, the swivel angle of the sleeve might increase beyond limits. An increased swivel angle in combination with an unacceptable high friction of sliding parts may result in a kink occurring at the pivot point and the end of the swivel sleeve while pushing the control lever forward from idle to full throttle position. Finally the solid wire might be forced to bend at the pivot point and at its terminal connection, which would result in a failure because it is not designed to withstand a significant bending load.

A bent nickel-plated brass swivel sleeve as well as wear and excessive free play at the pivot (swivel) points and sliding parts are an indication of misalignment and/or hard and abrupt control inputs. Those signs should be found early within regular maintenance. This is a clear indication of an unacceptable control cable condition, which might result in a malfunction.

As soon as a control cable becomes difficult to operate, the reason should be identified. An increase in no-load (cable free and unattached) friction or an increase in travel length of a control cable are a good indication of pending performance problems and/or control cable failure.

The following notes, cautions and warnings describe application and installation information:

 **WARNING**

**Do not install the control cable with the power on or the engine running. Serious injury or death could result.**

**NOTICES**

**Protect the cable from contaminants such as fuel, oil, water, dirt and chemicals, which may damage the control cable.**

**Protect the control cable from physical damage by paint, kinking, vibration, etc., which may damage the control cable.**

**IMPORTANT**

**A gradual or sudden increase in the no-load (cable free and unattached) friction of a control cable is a good indication of pending performance problems and/or control cable failure. Serious injury or death may result. Replacement is required.**

**A gradual or sudden decrease in the stroke (travel) length of the control cable is a good indication of pending performance problems and/or control cable failure. Serious injury or death may result. Replacement is required.**

**Control cables which have moisture inside of them or have frozen, must be replaced. Do not apply heat to attempt to**

**remove the moisture. Applying heat will not remove the moisture. Serious injury or death may result. Replacement is required.**

## **NOTES**

**Installation should be accomplished by a licensed “A” and/or “P” mechanic.**

**Control cables are designed to be non-repairable. Do not perform any repairs on this control cable.**

**Cables are designed to be contaminant resistant; not contaminant proof.**

**The usable stroke must be centered within the available travel.**

**The swivel angle must be centered within the available swivel angle.**

**The minimum bend radius is 6".**

**Control cables are lubricated for the life of the control cable. Do not remove the seals or lubricate the control cable.**

## **Inspections**

Observe the following hints when performing inspections on the control cables:

A cable must be replaced whenever:

- excessive free play is felt at the control even after all cable connections have been verified as in good working order.
- visual inspection shows chafing, breakage or bent, loose or worn parts.
- evidence of moisture is found inside (or control cable has frozen).
- a gradual or sudden decrease in the stroke (travel) length of the control cable has been detected.
- a gradual or sudden increase in the no-load (cable free and unattached) friction of a control cable has been detected.

Correct routing of the control cable whenever:

- misalignment, unacceptable high internal friction due to bends below minimum radius of 6" or malfunction of sliding elements has been detected.
- the usable stroke is not centered within the available travel.
- the swivel angle is not centered within the available angle.

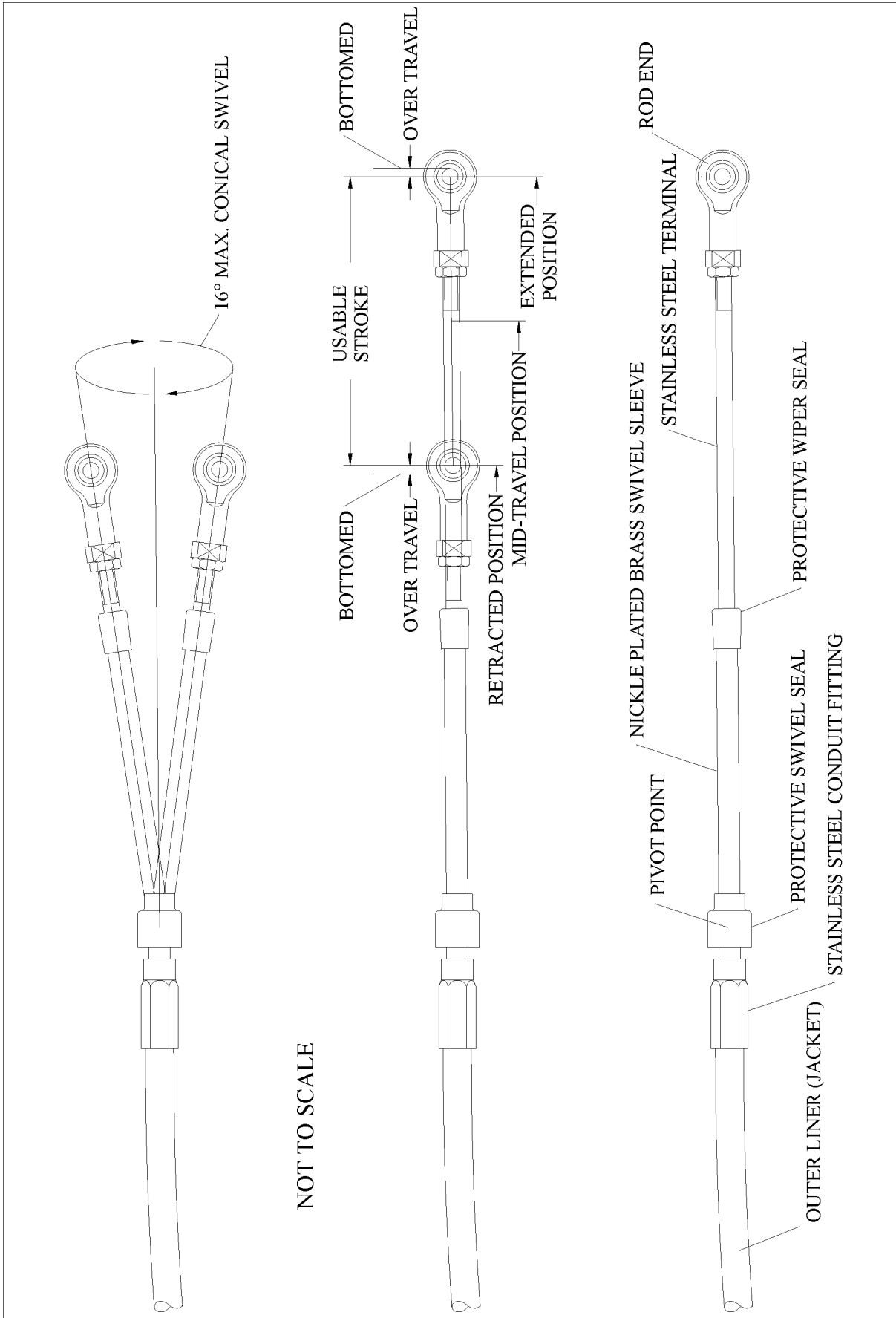


Figure 1: Control Cable

## Throttle Control Cable Replacement

### Removal

Refer to Figures 2 thru 4.

- 1 Ensure master switch is off.
- 2 Remove engine cowling per related Maintenance Manual.
- 3 Remove main fuselage cover per related Maintenance Manual.
- 4 Remove cotter pin, castle nut, washers and bolt from the rod end (2, Figure 2) to throttle actuator (1) attachment.

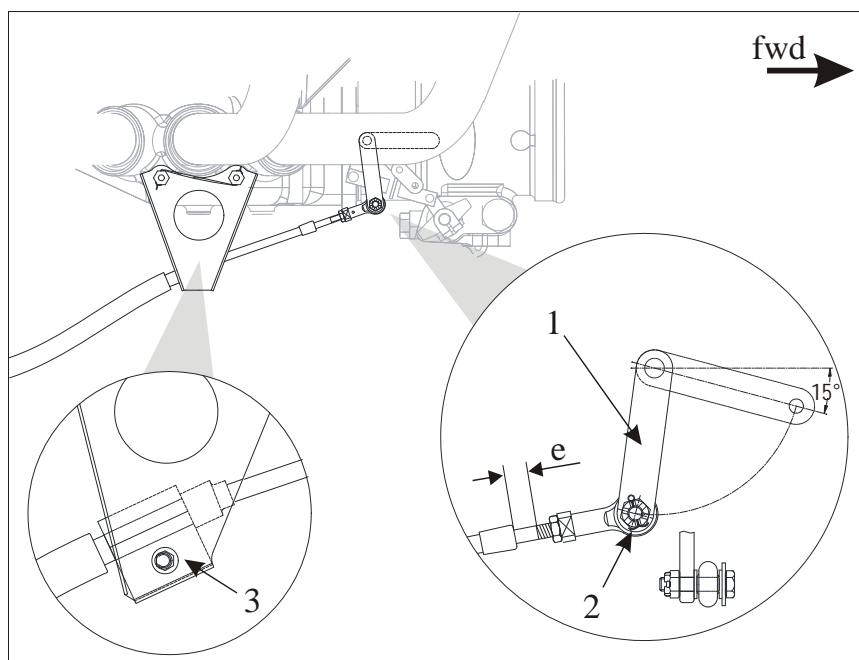
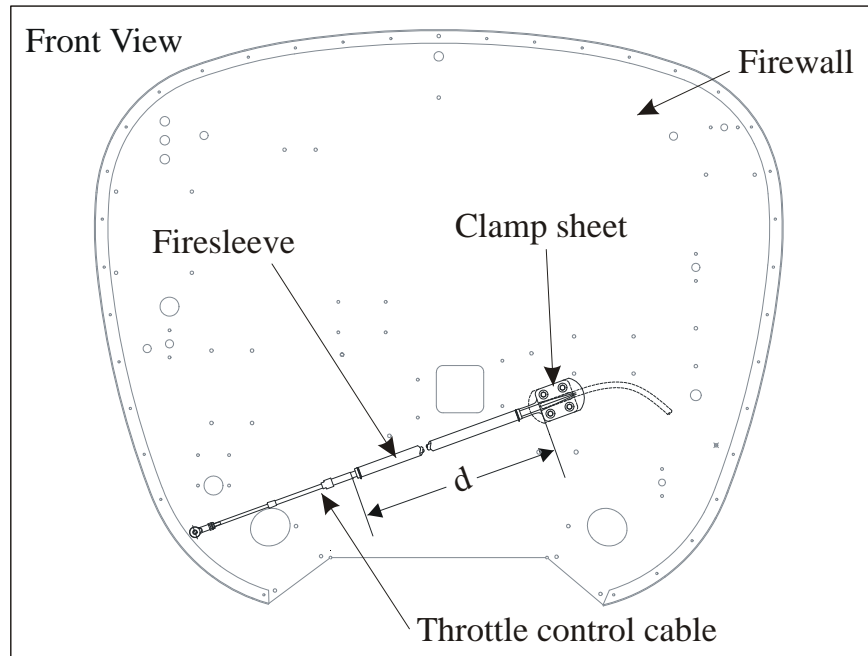


Figure 2 Throttle Actuator Side

- 5 Loosen counter nut and remove the rod end from the throttle control cable.
- 6 Remove rod end counter nut and throttle control cable protective swivel and wiper seal.
- 7 Remove clamp block (3, Figure 2) attachment bolt.
- 8 Remove clamp block from the throttle control cable.
- 9 Mark throttle control cable routing and positions of the cable attachment (cable tie or cushioned clamp) in the engine area.
- 10 Remove control cable attachment.

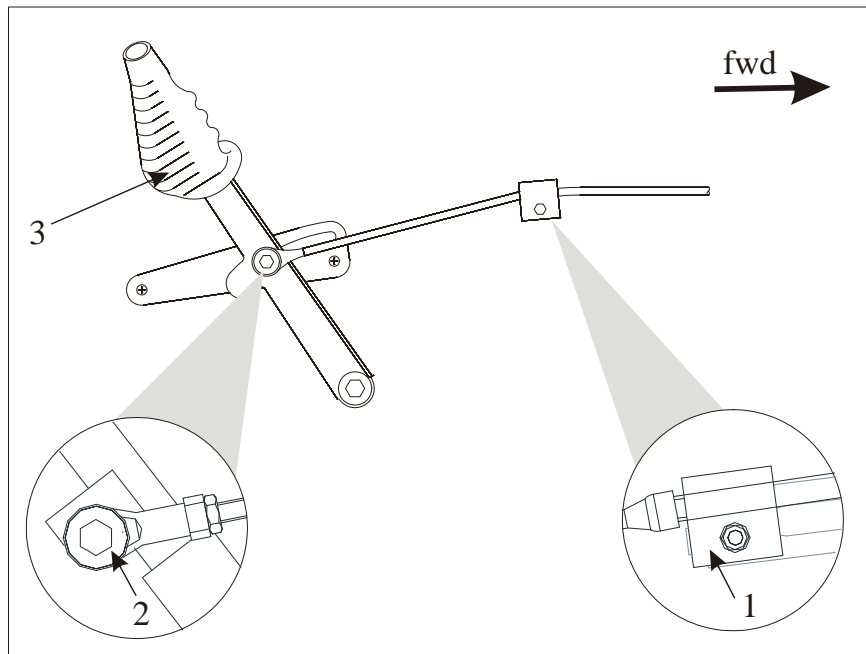
- 11 Cut safety wires and remove fire sleeve from the throttle control cable.
- 12 Measure and note distance “d” between clamp sheet at the firewall and clamp block on the throttle control actuator side.



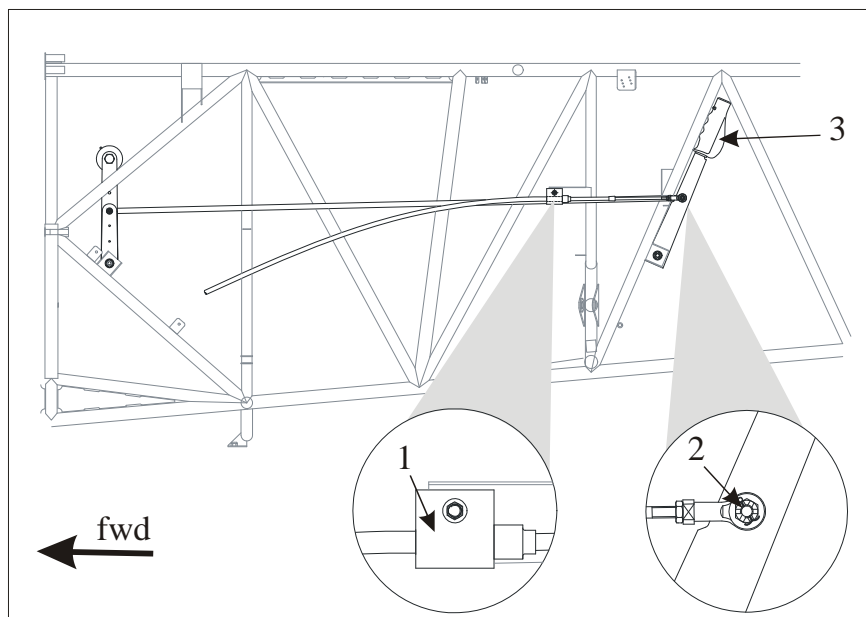
**Figure 3** *Firesleeve Length*

- 13 Remove 4 bolts and firewall sealant of the clamp sheets (Figure 3) positioned at the firewall breakthrough.
- 14 Mark throttle control cable routing and positions of the cable ties.
- 15 Remove the cable ties in the cabin area.

- 16 Remove cotter pin, castle nut, washers and bolt and remove the rod end (2, Figure 4) from the throttle control lever (4).



**Figure 4a** EA 300/S  
Throttle Control Lever Side



**Figure 4b** EA 300/L and EA 300/200 (similar)  
Throttle Control Lever Side

- 17 Loosen counter nut and remove the rod end from the throttle control cable.
- 18 Remove rod end counter nut and throttle control cable protective swivel and wiper seal.
- 19 Remove clamp block (1, Figure 3) attachment bolt.



- 20 Remove clamp block from the throttle control cable.
- 21 Pull complete throttle control cable aft to remove from aircraft. Secure clamp sheets.

## Installation

Refer to Figures 2 thru 4.

- 1 Install throttle control cable according to the previously marked routing. Ensure distance "d" (Figure 3) between clamp sheet at the firewall and clamp block is as measured before.
- 2 Renew the sealing of the firewall breakthrough at the engine side of the firewall. Use PR-812 (Products Research & Chemical Corp., USA) firewall sealant as outlined in the PR-812 Paragraph below.
- 3 Let the sealant slightly cure before tightening the clamp sheet attachment bolts. This will strengthen the clamping.
- 4 Install clamp sheets.
- 5 Install cable ties in the cockpit area on positions as marked before.
- 6 Install fire sleeve to the throttle control cable and secure with safety wires at both ends (refer to Figure 3).
- 7 Install control cable attachment (cable tie or the cushioned clamp) in the engine compartment.
- 8 Install the throttle control cable to the respective brackets by installing the clamp blocks (3, Figure 2 and 1, Figure 4) to the conduit fitting of the control cable.
- 9 Push throttle actuator (1, Figure 2) to full idle travel stop position.
- 10 Adjust control cable terminal to the distance "e" (refer to Figure 2) between protective wiper seal end and the beginning of the terminal thread to 12 mm.

### NOTE

**It is essential that the rod end is screwed onto the threaded terminal until the inspection hole of the rod end is completely filled with thread (mimumum 8 turns).**

- 11 Screw the rod end onto the threaded terminal to match the full idle travel stop throttle actuator position.
- 12 Tighten the counternut to prevent rod end from loosening.

- 13 Install rod end to throttle actuator with bolt, washers, castle nut and cotter pin (2, Figure 2). Tighten the castle nut slightly. Ensure movability of actuator.

**NOTE**

**It is essential that the rod end is screwed onto the threaded terminal until the inspection hole of the rod end is completely filled with thread (mimimum 8 turns).**

- 14 Screw the rod end onto the threaded terminal on the throttle control lever side.
- 15 Tighten the counternut to prevent rod end from loosening.
- 16 Install the rod end to the throttle control lever with bolt, washers, castle nut and cotter pin (2, Figure 4). Tighten the castle nut slightly.
- 17 Ensure movability of throttle control lever.
- 18 Perform Throttle Control Lever Rigging as outlined in the Thottle Lever Rigging Paragraph below.

## PR-812 Application

Also refer to PR-812 Technical Data Sheet available from PGG Aerospace.

**IMPORTANT**

**Proper mixing and correct proportions are extremely important to obtain required results.**

- 1 Prepare PR-812 firewall sealant by mixing brown part A with black part B with weight ratio 2.5:100.
- 2 Clean the surfaces to be sealed with solvents.
- 3 Immediately thereafter, dry these areas with a new dry cloth.
- 4 Seal the gap between the firewall and the respective component with PR-812 firewall sealant. Minimum sealant thickness on firewall side is 3 mm (1/8 inch).

Cure time @ 25°C (77°F), 50% RH for a fillet 3 mm (1/8 inch) thick:

- tack free: approx. 24 hours
- to tough rubber: approx. 72 hours
- to performance properties: approx. 14 days

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## Throttle Control Lever Rigging

- 1 Move the throttle control lever (3, Figure 4) in full idle position.
- 2 Check throttle actuator (1, Figure 2) of the fuel injector servo reached travel stop for full idle position.
- 3 Check distance "e" (refer to Figure 2) between protective wiper seal end and the beginning of the terminal thread is 12 mm (1/2 inch). Adjust rod end if value is out of limit.
- 4 Move the throttle control lever (3, Figure 4) in full WOT position.
- 5 Check throttle actuator (1, Figure 2) of the fuel injector servo reaches travel stop for full WOT position. If it doesn't, contact EXTRA Flugzeugproduktions- und Vertriebs-GmbH