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Installation Instructions  
For  
The Installation of Airwolf Aerospace LLC,  
Tension – Torsion [TT] Strap Assemblies,  
P/N AA-ECD-084-280 / -480  
In  
Enstrom F28/280 & TH-28/480 Model  
Series Helicopters

FAA Project: ST07957CH-R

FAA STC Number: SR03465CH

Report Number: AA-ECD-084-280/-480 Installation

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## LOG OF REVISIONS

REVISION	DESCRIPTION OF REVISION	DATE
IR.....	Initial Release .....	01/20/15
A .....	Para. 2.3: AA-28-14279-3 [Was 28-14279-3].....	06/05/15
	Para 4.2: AA28-14385-13 [Was 28-14385-13] AA28-14386-1 [Was 28-14386-1]	
B .....	Para 2.1 Deleted Rotor Blade Removal.....	03/07/16
	Para 2.2 28-14239 [Was 28-14236] Added 28-14240	
	Para 2.3 28-14382-19 [Was 28-14382] Deleted 28-14384-13 Added Note (1)	
	Para 3.1 Totally rewritten with 3.1.1 thru 3.1.10 inclusive	
	Para 3.2 Rewritten. Replaced with 3.2.1 thru 3.2.6 inclusive.	
	Para 4.0 Added (F-28/280 Model Series)	
	Para 4.1 28-14239-5 [Was 28-14235-5] NAS 1611-029 [Was 1811-029]	
	Para 4.2 Deleted 28-14384-5 Added 28-16242-1 & SIL 0184 Added Note (1)	
C .....	Para 2.3 Note (1) .....	10/30/16
	28-14381-903 Spindle Assy [Was 28-14381-902]	
	Para 3.2.5 Added 28-14381-903	
	Para 4.2 Added New Para 4.2	
	Para 4.3 Was prior Para 4.2	

1.0 **Introduction:** The purpose of this report is to provide Owner/Operators guidance on how to install Airwolf Aerospace, LLC Tension-Torsion Strap Assemblies, PIN AA-ECD-084-280 & -480, in Enstrom F-28/280 & TH-28/480 Model Series Helicopters.

2.0 Turbine Models, Lamiflex Bearing Configured Models

2.1 Remove the Retention Assembly in accordance with Sections 9-14 of Enstrom TH- 28/480 Series Maintenance Manual.

2.2 Remove the below listed parts from the Main Rotor Retention Assembly, P/N 28-14234-909 in accordance with Enstrom TH-28/480 Series Maintenance Manual, Section 9-15A:

Part Number	Part Name	Comment
28-14234-901.....	Spindle Assy.	
28-14282-13.....	Spindle	
28-14239.....	Dust Cover	
L-18X.....	Plug	
AN380-4-8.....	Cotter Pin	
28-14335-1.....	Retention Nut	
28-14239-7,-9,-11-,13.....	Shims	
28-14320-15.....	Lamiflex Bearing	
28-14311-1.....	Nylatron Strip	
NAS1611-029.....	O-Ring	
OR		
2-029.....	O-Ring	
28-14279-3.....	Grip Assy	
28-14313-1.....	DU Washer	
RST-200.....	Retaining Ring	
28-14240-1.....	Droop Stop Pad	

2.3 Install the below listed parts, using new parts where necessary (See Enstrom TH28/480 Series Maintenance Manual, Table 9-2 for Serviceable Limits), replacing the Lamiflex Bearing, Enstrom P/N 28-14320-15 ,with Airwolf Aerospace, LLC Tension – Torsion Strap Assy., P/N AA-ECD-084-480 creating Main Rotor Retention Assembly, P/N 28-14381-3 in accordance with Enstrom TH-28/480 Series Maintenance Manual Section 9-188:

Part Number	Part Name	Comment
28-14381-903.....	Spindle Assy .....	Use w/ 28-14381-3 Retention Assy
28-14240-1.....	Droop Stop Pad	
CR17240.....	Seal	
MS16555-27 .....	Pin	
28-14386-5.....	Grip Assy	
OR		
AA-28-14279-3	Grip Assy .....	Modified by Airwolf per APS-480-2 Required Becoming AA-28-14279-3
AA-ECD-084-480.....	TT Strap Assy	
28-14381-902.....	Cylinder Assy.	
28-18382-21.....	Pin	
28-14381-901.....	Lug Assy	
AN3-12A .....	Bolt	
AN960-10 & 10L.....	Washers	
28-14382-19.....	Pin	
VH-75 .....	Retaining Ring	

**NOTES:**

1. Seal the interface between P/N 28-14381-902 Cylinder Assy and 28-14381-903 Spindle Assy with silicone.
2. Upon Completing, perform a Maintenance Test Flight per Enstrom TH-28/480 Series Maintenance Manual Section 4-61.

### 3.0 Turbine Models, TT Strap Configured

NOTE: TT Strap equipped Turbine Models are configured with either of two (2) Retention Assemblies: P/N 28-14381-1, or 28-14381-3.

- 3.1 Remove the below listed parts from the Main Rotor Retention Assembly .P/N 28- 14381-1 or -3 as follows:
  - 3.1.1 Remove the Retention Assembly in accordance with Section 9-14 of Enstrom TH-28/480 Series Maintenance Manual.
  - 3.1.2 Remove 28-14239-1 Cover Assy.
  - 3.1.3 Remove one (1) VH-75 Retaining Ring
  - 3.1.4 Remove 28-14382-19 Pin & remaining VH-75 Retaining Ring
  - 3.1.5 Remove silicone sealant between 28-14381-902 Cylinder Assembly and 28-14234-901 Spindle Assembly.
  - 3.1.6 Insert a device (1/4" diameter punch or similar) into the outboard TT Strap bore to leverage it out from the inboard end of the Spindle Assy.  
NOTE: It is not necessary to remove the Grip from the Spindle
  - 3.1.7 Remove the ECD-084-1 T-T Strap Assy. from the Spindle Assy.
  - 3.1.8 Remove 28-14-382-21 Pin from 28-14381-902 Cylinder Assy., and remove Cylinder Assy. from the end of ECD-084-1 T-T Strap. Assy.
  - 3.1.9 Inspect the Spindle Assy, Cylinder Assy, Lug Assy. & Pins in accordance with Table 9-2 of Enstrom TH-28/480 Series Maintenance Manual.
  - 3.1.10 Coat the bore of the Spindle Assy. with primer as required.
- 3.2 Reinstall or replace with new parts as necessary (See Enstrom TH-28/480 Series Maintenance Manual, Table 9-2 for Serviceable Limits) , the above listed parts in the Main Rotor Retention Assembly, P/N 28-14381-1 or 28-14381-3 replacing the Enstrom T-T Strap Assy. P/N ECD-084-1, with Airwolf Aerospace, LLC T-T Strap Assy., P/N AA-ECD-084-480 as follows:
  - 3.2.1 Install the Airwolf Aerospace LLC TT Strap Assy, P/N AA-ECD-084-480 Into the Spindle Assy Bore.  
  
NOTES (1) TT Strap Assy should slide freely without binding into the Spindle Assy.  
(2) The orientation of the TT Strap Assy (tag location) is not critical.
  - 3.2.2 Assemble Cylinder Assembly, P/N 28-14381-902 and AA-ECD-084-480, TT Strap Assy. with 28-14382-21, Pin. Ensure that the groove of the Cylinder Assy. will align with MS16555-27 Pin.
  - 3.2.3 Push the T-T Strap Assy. into the Spindle Assy. until firmly seated.
  - 3.2.4 Install 28-14382-21, Pin & VH-75 Retaining Rings.
  - 3.2.5 Seal the interface between 28-14381-902 Cylinder Assembly and 28-14381 903 Spindle Assembly with silicone.
  - 3.2.6 Install the Retention Assembly in accordance with Section 9-19 of Enstrom TH-28/480 Series Maintenance Manual.  
NOTE: Upon completion perform a Maintenance Test Flight per Enstrom TH-28/480 Maintenance Manual Section 4-61.

4.0 Piston Models (F28/280 Model Series)

- 4.1 Remove the below listed parts from the Main Rotor Retention Assembly P/N 28-14234-9 in accordance with Enstrom F-28F and 280F Series Maintenance Manual Section 9-2A:

Part Number	Part Name	Comment
28-14234-9.....	Retention Assy	
28-14234-901.....	Spindle Assy	
28-14282-11.....	Spindle	
OR		
28-14282-13.....	Spindle	
28-14240-1.....	Droop Stop Pad	
28-14239-5.....	Dust Cover	
L-18X.....	Plug	
28-14311-1.....	Nylatron Strip	
28-14313-1.....	DU Washer	
2-029.....	O-Ring	
OR		
NAS1611-029.....	O-Ring	
28-14279-1.....	Grip Assy	
or		
28-14279-3.....	Grip Assy	
28-14320-15.....	Lamiflex Thrust Bearing	
28-14293-7, -9, -11, -13.....	Shims	
28-14335-1.....	Retention Nut	
AN380-4-8.....	Cotter Pin	

- 4.2 Remove the below listed parts from the Throttle Correlator Assembly, if so equipped (Refer to Enstrom F-28/280 Series Illustrated Parts Catalog (IPC) Figure 3-11)

Part Number	Part Name	Comment
MS24586C234.....	Spring.....	Qty 2, Item 480. [The inside Springs in the inboard And outboard spring sets.]

- 4.3 Install the below listed parts using new parts where necessary (See Enstrom TH- 28/480 Maintenance Manual Table 9-2 for Serviceable Limits), replacing the Enstrom Lamiflex Thrust Bearing, P/N 28-14320-15, with Airwolf Aerospace , LLC Tension- Torsion Strap Assy., P/N AA-ECD-084-280 creating Main Rotor Retention Assembly, P/N 28-14381-3. Perform installation in accordance with Enstrom TH-28/480 Maintenance Manual Section 9-18C:

Part Number	Part Name	Comment
AA-28-14385-13.....	Spindle .....	28-14282-11 or 28-14282-13, Modified by Airwolf per APS-480-2 to AA-28-14385-13
OR		
28-14385-13.....	Spindle	
28-14385-15.....	Spindle	
28-16242-1.....	Collective Trim-Rod .....	For all "F" Models and any Throttle Correlator configured model. Install per Service Information Letter SIL 0184.
	Capsule Assy	
28-14280-1.....	Droop Stop Pad	
CR17240.....	Seal	
MS16555-27.....	Pin	
28-14386-5.....	Grip Assy	

Part Number.....	Part Name	Comment
OR		
AA-28-14386-1.....	Grip Assy .....	Grip 28-14279-1 or 28-14279-3 Modified by Airwolf per APS-480-1\ to AA-28-14386-1.

AA-ECD-084-280.....TT Strap Assy  
28-14381-902.....Cylinder Assy  
28-14382-21.....Pin  
28-14381-901.....Lug Assy  
AN3-12A .....Bolt  
AN960-10 & 10L.....Washers  
28-14382-19.....Pin  
VH-75 .....Retaining Ring

NOTES:

- (1) Seal the interface between 28-14381-902, Cylinder Assy. & 28-14381- 903 Spindle Assy. with silicone before proceeding to Section 19, Installation.
- (2) Upon completion perform Maintenance Test Flight per Enstrom TH-28/480 Series Maintenance Manual Section 4-61.

5.0 Weight & Balance Effect

- 5.1 Piston Models: Installation of the Airwolf Aerospace, LLC Tension-Torsion Strap Assemblies , P/N AA-ECD-084-280 and replacing the Enstrom Lamiflex Bearings, P/N 28-14320-15 & their associated hardware have no effect on rotorcraft weight and balance.
- 5.2 Turbine Models: Installation of the Airwolf Aerospace LLC Tension-Torsion Strap Assemblies, P/N AA-ECD-084-480 replacing Enstrom Lamiflex Bearing, P/N 28-14320-15 have no effect on rotorcraft weight & balance.

6.0 Log Book Entry: Make a Log Book entry documenting the completion of this installation