

SECTION/OPERATION

26

INSPECTION OF A

NEW AIRCRAFT

The following inspection checklist is required to meet the FARS and keep the aircraft airworthy certificate valid.

ROTORWAY

TOOLS REQUIRED FOR OPERATION 26:

Adjustable wrench 10"
Allen wrench
Drift punch
Level
Mallet
Photo tach
Pliers
Protractor level
Ratchet with sockets of the following sizes: 1/4"
5/16"
3/8"
7/16"
1/2"
9/16"
11/16"
3/4"
7/8"

Spring Scale
Tape Measure
Torque wrench
Tracking stick
Wrenches of the following sizes: 1/4"
5/16"
3/8"
7/16"
1/2"
9/16"
11/16"
3/4"
7/8"

PRE-FLIGHT CHECKLIST

- _____ Remove the covers that are held in place with dzus buttons and nut plates.
- _____ Use a set of wrenches and check the security and length of all bolts.
- _____ Check the safety wire on the tail boom support brace attachment bolts.
- _____ Check the safety wire on the cyclic control attachment bolts.
- _____ Check the safety wire on the collective control attachment bolts.
- _____ Check the safety wire on the anti-torque pedal control attachment bolts.
- _____ Check the safety wire on tail rotor rod end attachment bolts on the pitch horns and slider.
- _____ Check the safety wire on the exhaust pipe to head attachment bolts.
- _____ Check the safety wire on the three bolts holding the sprocket hub to the main shaft. (BOTH ENDS OF THE BOLTS)
- _____ Check the safety wire on the four bolts holding the main sprocket to the sprocket hub. (BOTH ENDS OF THE BOLTS)
- _____ Check the safety wire that holds the sides of the fan shroud together.
- _____ Check that the cyclic control attachment bolts are loctited.
- _____ Check that the collective control attachment bolts are loctited.
- _____ Check that the anti-torque pedal control attachment bolts are loctited.
- _____ Check that the bolts on the top and bottom of the main drive idler pulley yoke are loctited.
- _____ Check that the lower main shaft bearing is loctited to the shaft.
- _____ Check that the lower secondary shaft bearing is loctited to the shaft.
- _____ Check that the pulleys and the bearings are loctited to the fan drive shaft.

PRE-FLIGHT CHECKLIST CONT'D.

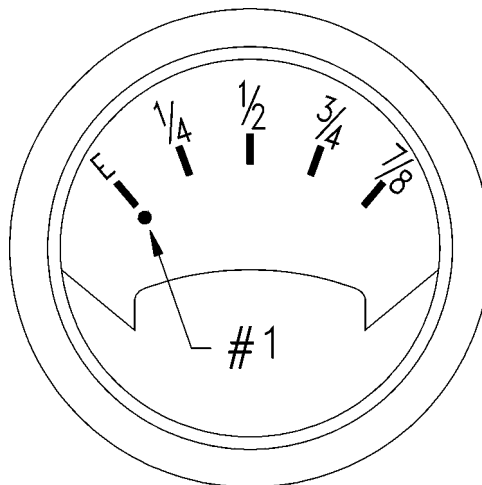
- _____ Check that the fan drive bearing is loctited to the secondary shaft.
- _____ Check that the tail rotor shaft bearings are loctited to the shaft.
- _____ Check that the engine pulley attachment bolts are loctited.
- _____ Check that the tail rotor counter weight bolts are loctited.
- _____ Check that the oil pressure adjustment housing is loctited to the engine case.
- _____ Check that the throttle cable housing adjusting nuts are loctited.
- _____ Check that the 1/2" nut on the main drive idler pulley is loctited.
- _____ Check the travel of the tail rotor cable at the pedal location.
Spec: 1-3/4" to 3" Actual: _____".
- _____ Check the angle of the tail rotor blades at each end of travel.
Spec: 8 degrees negative, 24 degrees positive.
Actual: _____ degrees negative _____ degrees positive
- _____ Check the degrees of travel of the cyclic control.
Spec: 52 degrees fore/aft and lateral from stop to stop.
Actual: _____ degrees fore/aft _____ degrees lateral
- _____ Check the bias adjustment of the cyclic control cables.
Spec: 4 lbs. pull to align the rod end with the slot in casting.
- _____ Check the travel of the swash plate and the angle of the swash plate in reference to the main shaft.
Spec: 5 to 5-1/2 degrees fore; 5 to 5-1/2 degrees aft;
5 to 5-1/2 degrees left; 5 to 5-1/2 degrees right.
Actual: _____ degrees fore _____ degrees aft
 _____ degrees left _____ degrees right
- _____ Check the travel of the collective control.
Spec: bottom of the pocket when full down; making contact with the mounting bracket when full up.
- _____ Check the angle of the main rotor blades.
Spec: 1/2 to 2 degrees negative; 9-1/2 to 10 degrees positive.
Actual: _____ degrees negative _____ degrees positive
- _____ Check the total teeter travel of the rotor hub.
Spec: 7-1/4 degrees each way from the main rotor shaft.
Actual: _____ degrees fore _____ degrees aft

PRE-FLIGHT CHECKLIST CONT'D.

- _____ Check for no interference between the cyclic and collective when they are at each end of travel.
- _____ Check the setting of the throttle.
Spec: With collective at the position required to leave the ground, you must be able to achieve full open butterfly on the carburetor at operating RPM, yet be able to idle when the main rotor blades have 8 degrees positive pitch.
- _____ Check the alignment of the engine and secondary pulley.
- _____ Check the freedom of the main drive idler pulley assembly.
- _____ Check the tension of the main drive belts.
Spec: 7 lbs. pull moves the belt 1/2".
Actual: _____ lbs. pull moves the belt _____".
- _____ Check the alignment of the fan drive belts.
- _____ Check the alignment of the water pump drive belt.
- _____ Check the alignment of the alternator drive belt.
- _____ Check the tension of the tail rotor drive belts.
Spec: 10 lbs. pull with 1" movement.
Actual: _____ lbs. pull with _____" movement.
- _____ Check the routing and security of all water and oil lines.
- _____ Check the routing and security of all electrical wires.
- _____ Check the security and clearance of all heat shielding.
- _____ Check the rocker clearance in the engine.
Spec: .006" when cold on both intake and exhaust.
Actual: _____".
- _____ Check the fuel flow as per the engine manual.
- _____ Check the angle of the horizontal trim fin.
Spec: the chord line of the fin is parallel to top of tail boom.
Actual: _____ degrees in reference to top of tail boom.
- _____ Check the angle of the vertical trim fin.
Spec: the chord line of the fin aligns with a point 15-1/2" to the pilot side of the main shaft.
Actual: _____" from the _____ side of the shaft.
- _____ Check the distance between the #1 bulkhead and the rear square drive tube.
Spec: 22-1/2" to 23". Actual: _____".

Make a dip hose to check fuel level. Use the dip hose in the passenger side tank. Add a measured amount of fuel to the tanks. Mark the fuel levels on the hose by using safety wire securely tied to the hose. Mark the corresponding fuel gauge readings on the gauge drawing and chart below.

Mark#	Amount (unit of measure)
1	= 2 Gal. U.S.
2	=
3	=
4	=
5	=
6	=
7	=



<u>Manifold Pressure</u>	<u>Fuel Used</u>
<u>Gauge Reading</u>	<u>Per Hour</u>
_____ In. Manifold Press.	_____
_____ In. Manifold Press.	_____
_____ In. Manifold Press.	_____
_____ In. Manifold Press.	_____
_____ In. Manifold Press.	_____

Pre-flight briefing notes to be covered before the engine is started.

Safety:

1. Only essential personnel should be around the helicopter when the rotor is turning.
2. When approaching the helicopter in operation, always approach from the front quadrant in view of the pilot and be sure the pilot is aware of your approach before getting close to the boundary agreed upon.
3. Be aware of the tail rotor dangers when moving around the helicopter for inspections and other tasks.
4. The pilot should be sure that all personnel are clear of the helicopter before proceeding to the next maneuver and if any danger exists.

The dynamic test cannot be done until all the items covered in the static condition have been checked off. The purpose of doing the dynamic test is to prove that the helicopter will perform and react as stated in the manuals. You should be prepared for everything to go wrong when doing these tests and if it does, you will react quickly and correctly.

- _____ Select a test area that will allow the square drive tubes to be level laterally and 3 degrees forward
- _____ Secure the helicopter to the ground as per the drawing (See next page).
- _____ Check the records of the hang test to ensure that the main shaft angles are within the allowable limits (See Exec 90 Flight Manual).
- _____ Work out the weight and balance to have center of gravity in the middle of the chart for the first flight test (See Exec 90 Flight Manual).

First start up:

Oil pressure in _____ seconds _____ PSI

Idle RPM: _____ rotor _____ engine

Water pump primed? yes/no _____

Number of times had to bleed the pump to achieve a good prime: _____

Any noise in the drive train that was not expected? yes/no _____

Any feedback in the controls? yes/no cyclic _____ pedals _____
collective _____

Any leaks? yes/no water _____ oil _____ gas _____

Stable temperature? water _____ oil _____ minutes to achieve _____

Track on the main rotor blades are within _____ inches

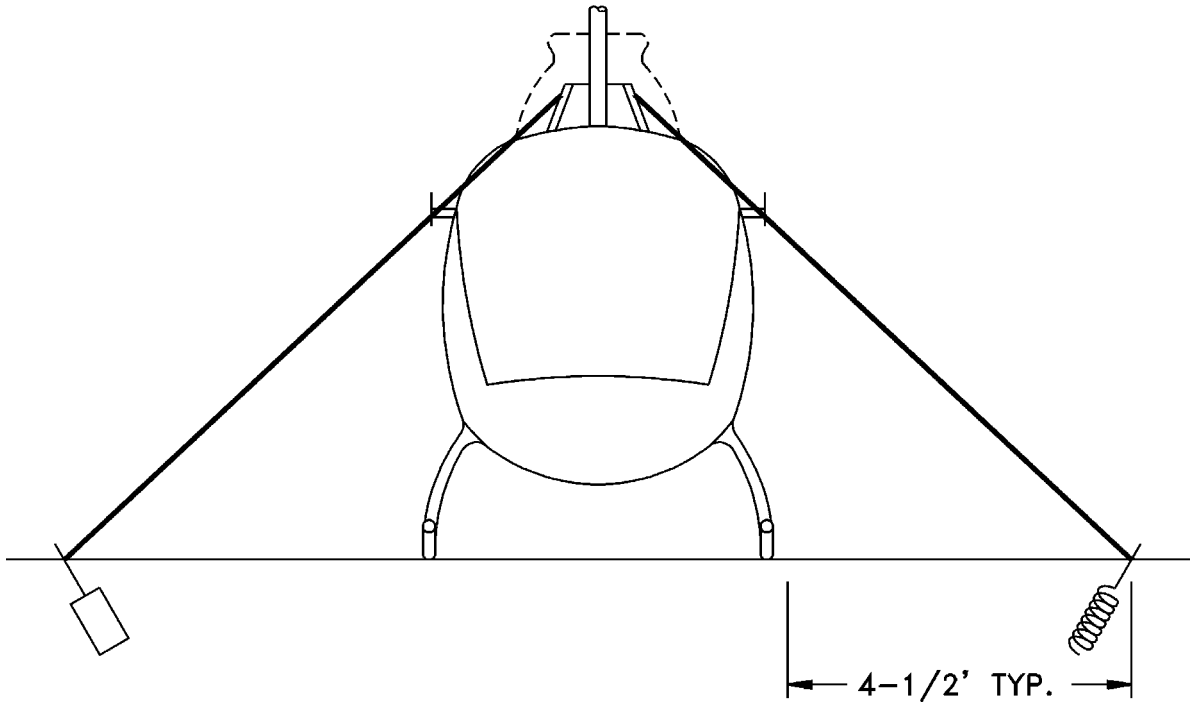
Do all the instruments work? yes/no _____

Do the controls respond correctly? yes/no cyclic _____ pedal _____
collective _____ throttle _____

Timing check on number one ign. _____ number two ign. _____

List the procedure used to obtain the best starting results.

**TIE DOWN PROCEDURES
FOR FIRST RUN-UPS**



1. Remove doghouse.
2. Fasten 3/8" Nylon rope to hood bracket through lightening holes.
3. Use a firm, deeply buried anchor that will withstand 700 to 800 pounds of pull (dead man or long spiral anchor).
4. Allow very little slack in the tie down ropes for first run-ups. Later use no more than 6 to 9 inches of slack.