SCHWEIZER SERVICE NOTICE

NOTICE NO. N-226
DATE: 03 July 1989

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SUBJECT:

IDENTIFICATION OF BELT DRIVE CLUTCH SPRING ASSEMBLY, INSPECTION OF BELT DRIVE CLUTCH ENGAGEMENT CABLE, FIELD RETROFIT OF 269A5483-1 AND 269A5483-3 BELT DRIVE CLUTCH SPRING ASSEMBLIES WITH NEW CABLE SUB-ASSEMBLY.

MODELS AFFECTED:

PART I
- All 269 Series Helicopters.

PART II
- All 269 Series Helicopters.

PART III
- All 269 Serie Helicopters equipped with 269A5483-1 or 269A5483-3 belt drive clutch spring assemblies.

TIME OF COMPLIANCE:

PART I
- Shall be accomplished prior to initial compliance with Part II of this notice.

PART II
- Shall be accomplished within next 50 hours of helicopter operation if teardown inspection (Basic HMI, Paragraph 10-26, Step C) of clutch cable was not accomplished within preceding 400 hours of helicopter operation.
- Shall be accomplished at each 200 hour inspection Interval for helicopters equipped with 269A5483-1 or 269A5483-3 belt drive clutch control spring assemblies not retrofitted with improved cable sub-assembly in accordance with Part III of this notice.
- Shall be accomplished at each 400 hour inspection interval for helicopters equipped with 269A5483-1 or 269A5483-3 belt drive clutch spring assemblies which have been retrofitted with improved cable sub-assembly in accordance with Part III of this notice.
- Shall be accomplished at each 400 hour inspection interval for helicopters equipped with 269A5590-1 clutch spring assemblies.

PART III
- Shall be accomplished as required by Part II of this notice.
- Shall be accomplished at owner's or operator's discretion.

REFERENCE:

- 269 SERIES - Basic HMI, Reissued 15 March 1982
- 269 SERIES - HMI Appendix B, Reissued 15 August 1982

PREFACE:

A reported incident of belt drive clutch cable failure has revealed a need to decrease the inspection interval for early style engagement cable assemblies (those used as original equipment with 269A5483-1 and 269A5483-3 belt drive spring assemblies). In addition, it has become apparent that some operators are not complying with the periodic inspection of the clutch cable listed in HMI Appendix B.

Part I of this Service Information Notice lists instructions to identify the type of belt drive clutch spring assembly installed. Early style spring assemblies incorporate an inner spring guide which retains the cable end terminal at the upper portion of the guide. Later style spring assemblies incorporate an improved inner spring guide which allows the cable end terminal to seat at the bottom of the guide. (Refer to Figure 1.) The possibility of chafing and cable wear due to contact with the inner spring guide is significantly reduced when later style clutch spring assemblies are installed.

Part II of this Service Information Notice lists instructions for a required periodic inspection of the belt drive clutch engagement cable. This periodic inspection is required at closer intervals for helicopters which are equipped with early style spring assemblies until the spring assembly is retrofitted with a new cable sub-assembly in accordance with Part III of this notice.

Part III of this Service Information Notice provides a procedure to field retrofit early style spring assemblies (269A5483-1 or 269A5483-3) with a new cable sub-assembly. This new cable sub-assembly incorporates an inner spring guide which is similar to the guide used in later style spring assemblies. This redesigned guide allows the cable end terminal to seat at the bottom of the guide and thus reduces chafing and cable wear. Although not required until cable replacement is necessary, compliance with Part III of this notice increases the required inspection interval.

Failure to comply with inspections specified in this notice could lead to failure of the belt drive clutch engagement cable, which could result in loss of helicopter power and subsequent personal injury or death.

PART I - IDENTIFICATION OF BELT DRIVE CLUTCH SPRING ASSEMBLY.

NOTE

Model 269C Helicopters with Serial Numbers of 0510 and subsequent were delivered with later style clutch spring assemblies.

PROCEDURE:

a. Disassemble belt drive clutch control spring assembly (Figure 2) as follows:

(1) Actuate clutch control to fully RELEASE position.
(2) Remove cotter pin, washer, and small clevis pin securing dual attachment strap to fitting.
(3) Remove cotter pin, washer, and large clevis pin from spring housing.
(4) Remove large cotter pin and washer from ears of spring washer.

CAUTION

BEFORE PERFORMING STEP (5), BE CERTAIN NOT TO INDUCE SIDE LOADS ON PULLEY AND PULLEY BRACKETS. SIDE LOADS CAN BREAK PULLEY EDGES AND/OR BEND THE BRACKETS.

(5) Compress inner spring by pulling spring housing and restraining cable. Pry inner spring retaining cap from end of spring retainer.

b. Visually inspect inner spring guide to determine whether cable end terminal seats at the top of the guide or at the bottom. (Refer to Figure 1.)
c. If cable end terminal seats at top of guide, record compliance with Part I of this Service Information Notice as "EARLY STYLE SPRING ASSEMBLY INSTALLED".
d. If cable end terminal seats at bottom of guide, record compliance with Part I of this Service Information Notice as "LATE STYLE SPRING ASSEMBLY INSTALLED".
e. Perform Part II of this Service Information Notice.

PART II - INSPECTION OF BELT DRIVE CLUTCH CONTROL ENGAGEMENT CABLE.

PROCEDURE:

a. Perform teardown inspection of clutch control engagement cable in accordance with Basic HMI, paragraph 10-26, step c.
b. If defects are noticed, replace cable sub-assembly. Comply with Part III of this notice if an early style spring assembly (269A5483-1 or 269A5483-3) is installed.
c. Following teardown inspection, reassemble clutch control engagement cable in accordance with Basic HMI, section 10, paragraph 10-26.
d. Record compliance with Part II of this Service Information Notice in compliance record of Helicopter Log Book.

PART III - RETROFIT OF EARLY STYLE SPRING ASSEMBLIES TO INCORPORATE NEW CABLE SUB-ASSEMBLY.

PARTS LIST

NOMENCLATURE	SCHWEIZER PART NO.	SOURCE
Cable Assembly, Clutch Control Spring (Note 1.)	269A5483-19	Schweizer
Cable Assembly, Clutch Control Spring (Note 2.)	269A5483-17	Schweizer

NOTES:

1. 269A5483-19 cable sub-assembly installable on helicopters which incorporate 269A5483-3 clutch control spring assemblies.(Compatible with DL1020M48 and DL1020M70-1 linear actuators.)
2. 269A5483-17 cable sub-assembly installable on helicopters which incorporate 269A5483-1 clutch control spring assemblies. (Compatible with all linear actuators except DL1020M48 and DL1020M70-1.)

TOOLS AND EQUIPMENT

NOMENCLATURE	SPECIFICATION	SOURCE
Drill, portable - Hand		Commercial
Drill Bit	Letter M	Commercial

MATERIALS

NOMENCLATURE	SPECIFICATION	SOURCE
Primer, zinc chromate	TT-P-1757	Commercial

PROCEDURE:

a. Remove and disassemble belt drive clutch spring assembly in accordance with Part I step a.
b. Remove lockwire or locking clip from turnbuckle and disengage end terminal from turnbuckle.
c. Remove (2) guard pins from pulley brackets.
d. Remove cotter pin, nut, washer, and bolt that attach pulley to bracket. Remove pulley.

NOTE

269A5483-1 spring assemblies incorporate lower end retainers with larger diameter cable holes which allows the cable end terminal to slide through the retainer. For these cable assemblies, omit steps e. and g. below, and slide entire cable assembly through spring assembly in accordance with step f. below.

e. If cable lower end terminal will not pass through lower end retainer (269A5483-3 spring assembly installed), cut off end terminal prior to removing cable as directed by next step.

f. Slide cable up through spring assembly and remove lower seat guide, inner spring, and inner spring guide from spring assembly.

g. If lower end retainer has small diameter hole (0.151 to 0.157 dia., countersunk 100 degrees x 0.25 dia.), use a letter M drill bit to ream hole diameter to 0.295 inch. After drilling modification, remove burrs and apply zinc chromate primer.

h. Install new cable sub-assembly by sliding cable lower end terminal down through spring assembly. Firmly pull down on cable lower end terminal in order to properly seat internal components.

NOTE

Installation of 269A5483-19 or 269A5483-17 cable sub-assembly increases mandatory inspection interval of cable assembly to a 400 hour inspection interval.

i. Reassemble and install clutch spring assembly in reverse order of removal and disassembly. DO NOT SAFETY TURNBUCKLE UNTIL TENSION CHECK IS PERFORMED.

j. Place clutch control switch to ENGAGE position and turn on battery switch. After linear actuator stops, turn battery switch OFF.

NOTE

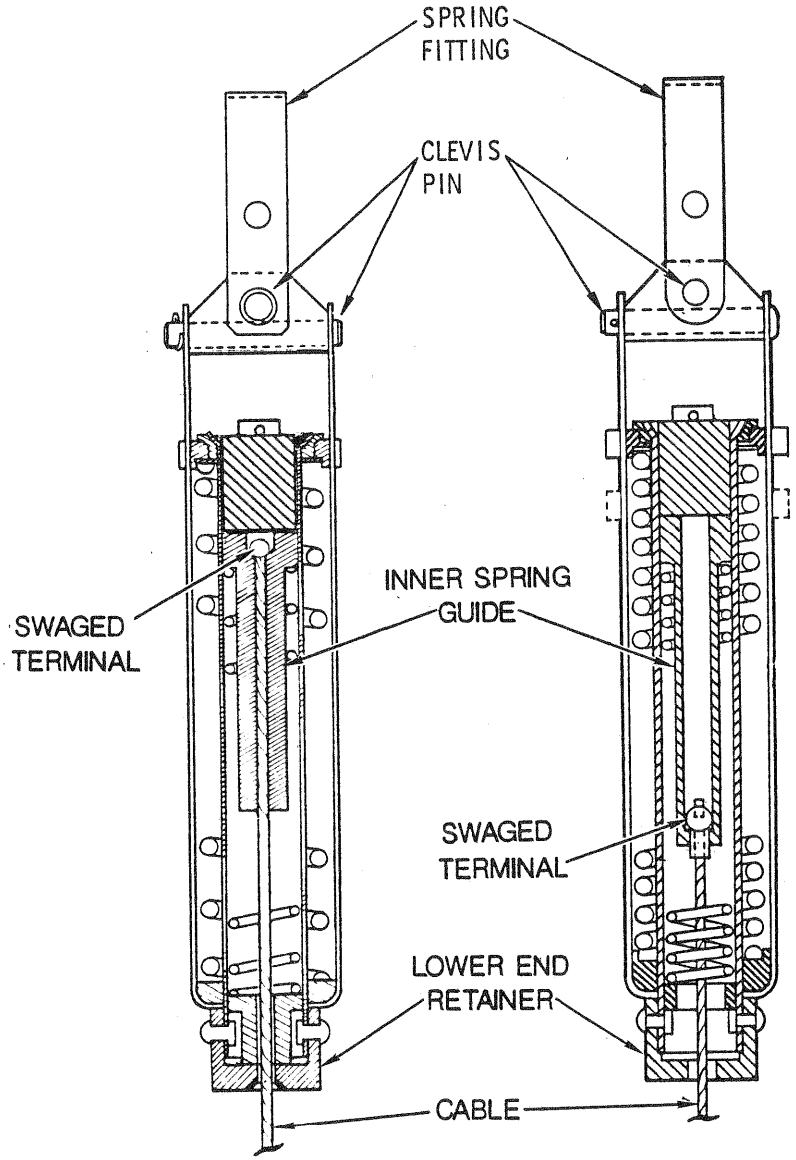
Adjustment of cable tension must be made with the linear actuator retracted and the belts engaged, not operating. Alignment of spring guide with painted black band on housing strap will provide approximately 230 +/- 5 pounds of cable tension.

k. Adjust cable turnbuckle until spring guide is aligned with painted black band on housing strap. Secure turnbuckle with safetywire or locking clips.

l. Record compliance with Part III of this Service Information Notice in compliance record of Helicopter Log Book.

WEIGHT AND BALANCE DATA

Weight and Balance not affected.



EARLY STYLE ⚠1
SPRING ASSEMBLY
(PRIOR TO MODIFICATION)

LATE STYLE ⚠2,⚠4
SPRING ASSEMBLY
(269A5590-1)

NOTES:

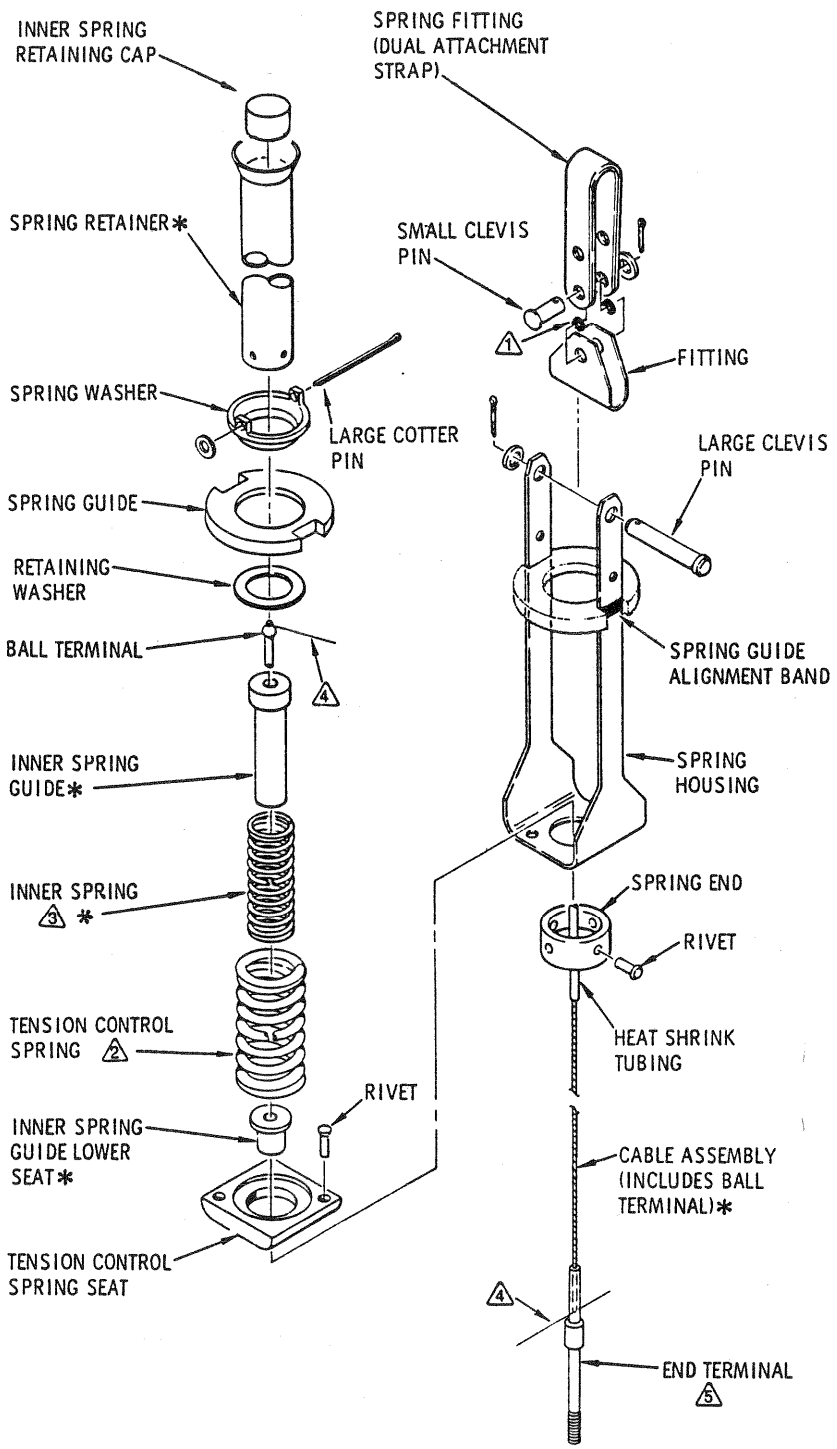
⚠1 PART NUMBER 269A5483-3 CLUTCH SPRING ASSEMBLY COMPATIBLE WITH P/N DL 1020M48 OR M70-1 LINEAR ACTUATOR. PART NUMBER 269A5483-1 CLUTCH SPRING ASSEMBLY COMPATIBLE WITH ANY OTHER ACTUATOR.

⚠2 23.59 IN. LENGTH CABLE ASSEMBLY REQUIRED. LATE STYLE SPRING ASSEMBLY NOT COMPATIBLE WITH P/N DL 1020M48 OR M70-1 ACTUATORS.

3. REFER TO FIGURE 2 FOR CABLE MEASUREMENT LOCATIONS.

⚠4 STANDARD EQUIPMENT ON MODEL 269C HELICOPTERS HAVING A SERIAL NUMBER OF 0510 AND SUBSEQUENT.

FIGURE 1. CLUTCH CONTROL SPRING ASSEMBLY - CROSS SECTIONAL VIEW



NOTES:

1. CEMENT TO INNER FACES OF STRAP.
2. APPROX. FREE LENGTH
   = 7.74 IN. (269A5480 SPRING)
   =6.79 IN. (269A5476 SPRING)
3. APPROX. FREE LENGTH = 10.5 IN.
4. CABLE LENGTH MEASURED TO THIS POINT.
5. SWAGED AFTER INSTALLATION ON EARLY STYLE CABLE ASSEMBLY.

PARTS IDENTIFIED BY AN ASTERISK (*) AVAILABLE AS AN ASSEMBLY WHEN REPLACING CABLE ON EARLY TYPE SPRING ASSEMBLY.

FIGURE 2. CLUTCH CONTROL SPRING ASSEMBLY - EXPLODED VIEW