



Report No. HDD98-17
Revision A
Bell 212,412, 412EP
Series Helicopters

INSTALLATION/ MAINTENANCE INSTRUCTIONS

FOR

**RAPPEL SYSTEM LEFT/RIGHT
EGRESS CAPABILITIES**

**P/N HD412-62-1001-01
P/N HD412-62-1001-02**

FOR

BELL MODEL 212, 412, 412EP SERIES HELICOPTERS

Report No. HDD98-17
Revision A

16 January 2001

ORIGINAL

RAPPEL KIT Installation Instructions

LOG OF REVISIONS

<u>Rev. -</u>	<u>Date</u>	<u>Description</u>	<u>Effected Pages</u>
A	16 Jan. 2001	Rewritten	All

Approved by: 
Gabriel Krikorian
Engineering Manager

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RAPPEL KIT Installation Instructions

These instructions provide the information necessary to install and maintain the Heli-Dyne Systems, Inc., Rappel kit on Bell Model 412 series helicopters. These installation/maintenance instructions are intended to support the installation and maintenance of FAA approved STC No. SH3886SW. In the event, the reader detects conflict between this document and the approved STC documents, information provided in the STC approved documents override this document.

Address all questions regarding the Rappel Kit Installation to:

Heli-Dyne Systems Inc.
9000 Trinity Blvd.
Hurst, TX 76053
Bus. Phone (817) 282-9804
Fax No. (817) 282-8329

NOTICE

The following additional documents/drawings are required for this installation.

<u>Document No.</u>	<u>Description</u>
Dwg HD412-62-1001	Instl- Rappel Bar
HDD87-34	FMS Rappel Sys. With Left/Right Egress Capabilities
SH3886SW	STC copy
HDD98-17	Installation/Maintenance Instructions

1.0 INSTALLATION

1.1 HD412-62-1001 Installation Rappel Kit

- 1.1.1 Remove cabin center headliner.
- 1.1.2 Remove stanchion fitting housing at STA 100, BL 11.0 left and right side. For aircraft equipped with a terminal block and/or temperature control unit on the left side, remove the units and install the units on HD412-15-6047-01 (item 11 Relay Bracket).
- 1.1.3 Install HD412-62-3001-09 (item 7 Spacer) left and right side and item 11 as applicable in accordance with HD412-62-1001 detail A.
- 1.1.4 Install cabin headliner.

- 1.1.5 The rappel bars are preset to fit the roof fittings at (STA 100, BL11.0), (STA 105.1, BL 39.5) and (STA129.2, BL 39.5). If the rappel bars fit with difficulty or not at all, to make necessary adjustment to the outboard fittings, remove the safety wires, loosen the nuts and adjust the fittings.
- 1.1.6 Tighten the nuts and safety wire in accordance per MS33540. Refer to drawing HD412-62-3001 for details.
- 1.1.7 Install the rappel bars and secure all the fittings, making sure that the pin in each fitting is protruding to prevent the fitting ring from moving.
- 1.1.8 Inspect the installation and the make sure that the **340 LBS LIMIT** decal is installed on each bar.

2.0 MAINTENANCE/ INSTRUCTION FOR CONTINUED AIRWORTHINESS

2.1 Airworthiness limitations:

No airworthiness limitations associated with the rappelling kit installation.

2.2 Inspection requirements and overhaul

2.2.1 Component Overhaul Schedule

Not applicable to this STC.

2.2.2 Scheduled Inspection

THREE (3) MONTH INSPECTION			
Model	Data Reference	Inspection Task Description	Initial
BELL 212, 412, 412EP Series	HDD98-17, SECTION 2.2.4	1. Remove Rappel Bars and visually inspect for cracks, loose fasteners, for corrosion and attachment fittings	

2.2.3 Documentation of Rappel Kit Installation Inspection

Aircraft mechanics, owners, or operators are required to keep records of the aircraft system inspections and repairs. This includes, but not limited to, airworthiness directives, service notices, scheduled inspections, records and life limited components.

2.2.4 Three (3) Month Inspection Requirements

Remove rappelling bars and inspect attachment fittings: HD412-62-3001-10. The fittings must be fully functional. The locking pin must operate correctly to secure the ring. The ring securing the claws of the fitting must be free of cracks. Replace fittings with any sign of cracks. Inspect steel parts for rust. Replace bars and shackles with rust crevices deeper than .020 deep. Inspect fasteners, cotter pins and safety wire. Retighten loose fasteners and install new cotter pins and safety wire as required. Inspect decal and replace if the decal lettering is not legible. Protect and paint any bare metal in accordance with ac43.13. Missing paint on the shackles is acceptable and does not require maintenance. If any cracks are found on the square tubing greater than .10 inch in length, replace the square tube.

3.0 OPERATION

- 3.1 The load limit for each rappel bar is 340LBS. For redundant safety it is recommended that the rope is tied to one rappel ring and loosely tied to the ring on the opposite rappel bar.
- 3.2 To install the rappel bars push pin in each fitting and slide the ring towards the bar. Locate in place on the aircraft roof fittings and slide the rings up. The pins must pop out securing the ring from moving. Make sure that each fitting pin has secured the ring in place before service.
- 3.3 Rappelling instructions are beyond the scope of this document.

RAPPEL KIT Installation Instructions

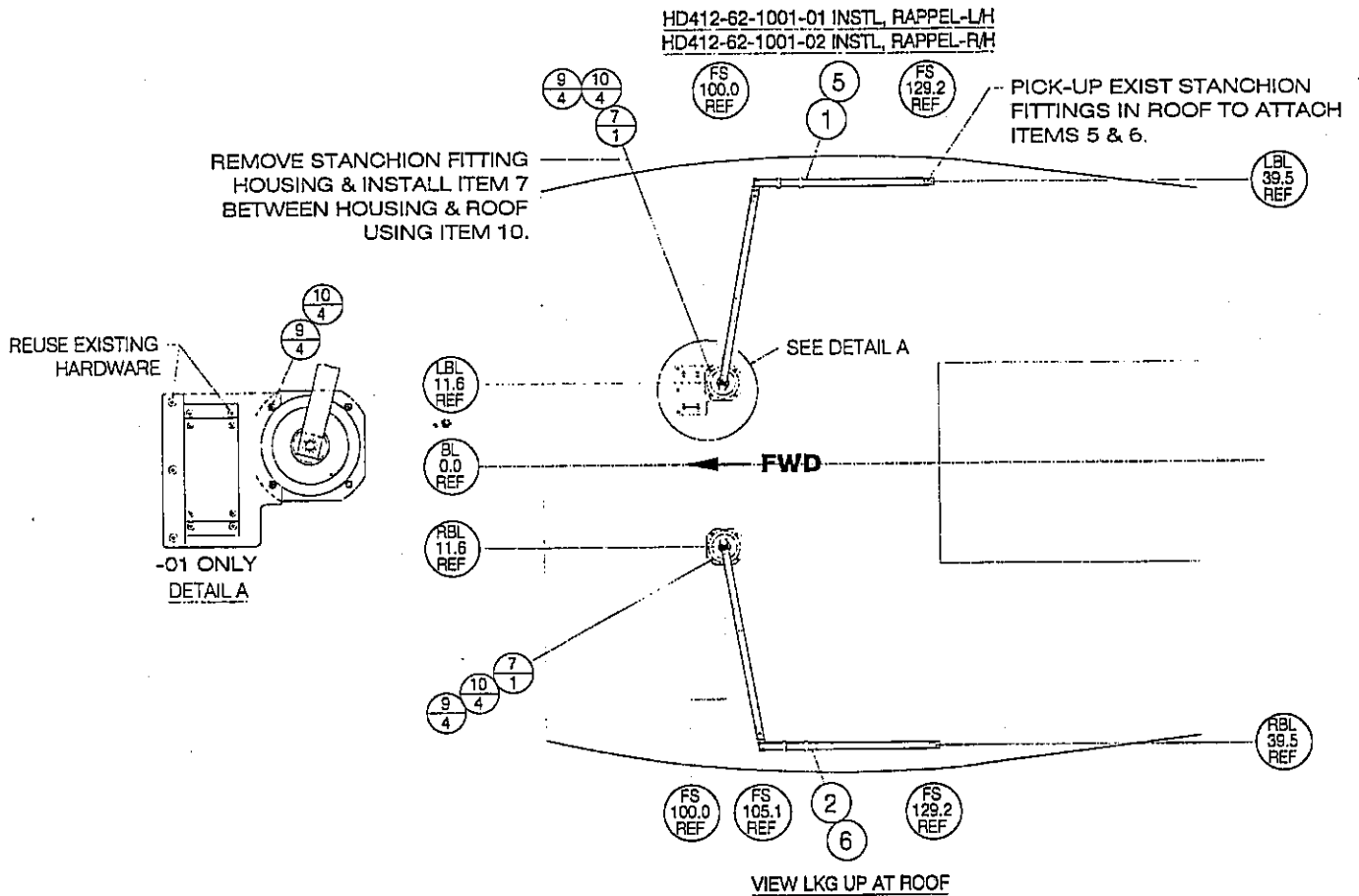
4.0 PARTS LIST

KIT P/N HD412-62-1001-01

<u>-01</u> <u>Qty.</u>	<u>Part Number</u>	<u>Description</u>
___1	HD412-62-3001-01	RAPPEL ASSY, LH
___1	HD412-62-3001-09	SPACER
___4	AN960PD10	WASHER
___4	NAS623-3-21	SCREW
___1	HD412-15-6047-01	RELAY BRACKET

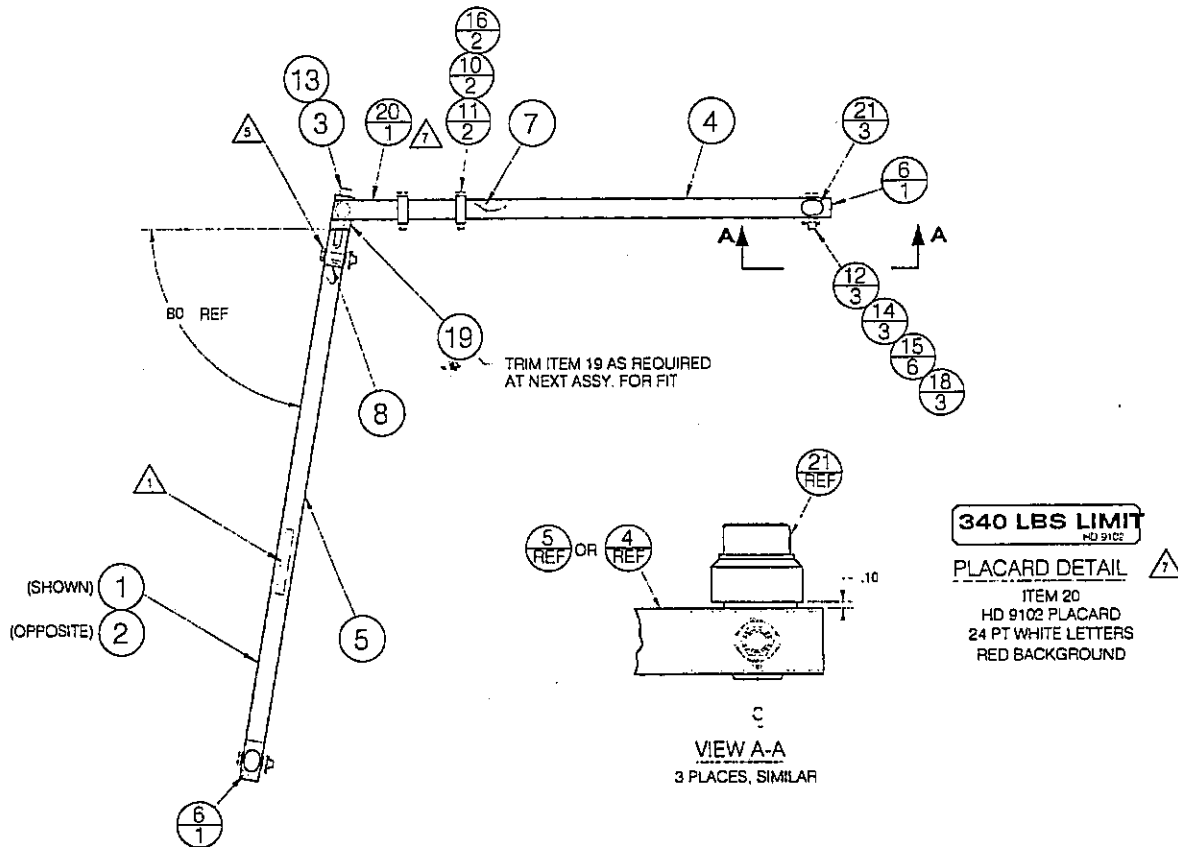
KIT P/N HD412-62-1001-02

<u>-02</u> <u>Qty.</u>	<u>Part Number</u>	<u>Description</u>
___1	HD412-62-3001-02	RAPPEL ASSY, RH
___1	HD412-62-3001-09	SPACER
___4	AN960PD10	WASHER
___4	NAS623-3-21	SCREW



ITEM	Part Number	Nomenclature	-01	-02
1	HD412-62-1001-01	Instl - Rappel, L/H	-	-
2	HD412-62-1001-02	Instl - Rappel, R/H	-	-
5	HD412-62-3001-01	RAPPEL ASSY, L/H	1	-
6	HD412-62-3001-02	RAPPEL ASSY, R/H	-	1
7	HD412-62-3001-09	SPACER	1	1
9	AN960PD10	WASHER	4	4
10	NAS623-3-21	SCREW	4	4
11	HD412-15-6047-01	RELAY BRKT	1	-

-01 ASSY-RAPPELL, L/H (SHOWN)
-02 ASSY-RAPPELL, R/H (OPP)



NOTES:

- 1 MARK PART NUMBER APPROXIMATELY WHERE INDICATED. USE BLACK OR WHITE NON-ETCHING AND OIL RESISTANT INK. LETTER SIZE AT LEAST 12 POINT.
- 2 SHEET METAL FORMING PRACTICES AND INSTALLATION OF ALL FASTENERS SHALL BE I/AAW/ FAA ADVISORY CIRCULAR AC43.13-1A PARA 97a FOR SHEET METAL FORMING, PARA 99 FOR RIVETS, PARA 227 FOR BOLTS, PARA 228a FOR SCREWS, PARA 230a FOR LOCKING NUTS AND PARA 233j FOR BLIND RIVETS, AS APPLICABLE.
- 3 ALL UNSPECIFIED ANGLES ARE TO BE 90 DEGREES.
- 4 HEAT TREAT TO 160-180 KSI UTS PER MIL-H-6875.
- 5 SAFETY WIRE PER MS33540.
- 6 ALTERNATE P/N 40851-17 OR 40851-16 (ANCRA).
- 7 PLACARD MATL: LETRASET IMAGING SYSTEMS, 3M DYNAMARK 8011 RED ON WHITE. SEE DETAIL 'A' FOR LETTERING.
- 8 MAGNETIC PARTICAL INSPECT PER MIL-I-6868 AND MIL-STD-1949.
- 9 ZINC PHOSPHATE ALL STEEL PARTS PER DOD-16232, TYPE 2, CLASS 3. PRIME USING EPOXY POLYAMIDE PER MIL-P-23377.
- 10 ALTERNATE ITEM: HDSTD-62-6001-01 SHACKLE.

ITEM	Part Number	Nomenclature	-01	-02
1	HD412-62-3001-01	Assy-Rappel, L/H	-	
2	HD412-62-3001-02	Assy-Rappel, R/H		-
3	HD412-62-3001-03	WASHER	1	1
4	HD412-62-3001-04	BAR	1	1
5	HD412-62-3001-05	BAR	1	1
6	HD412-62-3001-06	PLUG	2	2
7	HD412-62-3001-07	PLUG	1	1
8	HD412-62-3001-08	PLUG	1	1
10	AN5-22A	BOLT	2	2
11	204-031-393-1	SHACKLE	2	2
12	NAS1306-16DH	BOLT	3	3
13	MS20006-H22	BOLT	1	1
14	AN310-6	NUT	3	3
15	AN960PD-616	WASHER	6	6
16	MS21042L5	NUT	2	2
18	MS24665-300	COTTER PIN	3	3
19	HD412-62-3001-19	SPACER	1	1
20	HD9102	PLACARD	1	1
21	HD412-62-3001-10	FITTING	3	3

7.0 WEIGHT AND BALANCE:

ITEM	WEIGHT (LBS)	LATERAL		LONGITUDINAL	
		ARM	MOMENT	ARM	MOMENT
		(IN)	(IN-LB)	(IN)	(IN-LB)
LEFT BAR	7.4	-34.0	-252	109.3	809..
RIGHT BAR	7.4	34.0	252	109.3	809
PERMANENT INSTL	1.4	-11.6	-16.2	100	140