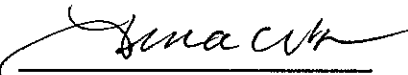




SERVICE LETTER

Service Letter Number	Simplex Model	Issue Date	Revision	Revision Date
SL2009-019	See Table 1	March 17, 2010	I/R	March 17, 2010

Written By: 
 Tina Bliss
 Engineering

Approved By: 
 Stan Franz
 Director of Engineering

Subject: Hydraulic Hover Refill Pump Recommended Maintenance Schedule.

Applicability: This service letter is applicable to Simplex Manufacturing Fire Attack Systems (FAS) as stated in Table 1.

Table 1 Fire Attack Applicability

Hover Pump Assembly	Pump	Fire Attack System Model	Rotorcraft Series
300-704005-001	300-704003-001	304	Bell 205A-1, 205B, 212,412,AB412,412EP and UH-1
		308	Bell 407
		310	Eurocopter AS350 and AS355
		311	Kawasaki BK-117
		323	Agusta A119 Koala

NOTE: *The information contained in this document is for reference only and does not supersede the service instructions contained in the respective Maintenance Manuals (MM) or Instructions for Continued Airworthiness (ICA).*

Purpose: This document was drafted to recommend annual Hover Refill Pump (HRP) maintenance and 1500 hour HRP time in service overhaul to ensure peak performance and reduce unscheduled maintenance during periods of heavy use.



Compliance: Compliance of this service letter is recommended prior to heavy seasonal use on systems that are more than 18 months since new or with more than 300 hours time in service on the hover refill pump and every year or 300 hours thereafter for annual maintenance and complete assembly overhaul every 5 years or 1500 hours of hover pump use, whichever comes first.

Weight and Balance:
No effect.

Electrical Loads:
No effect.

References:

1. Simplex System Manuals ICA or MM. XXX-102005-001 or later (XXX represents specific FAS model number) consult Simplex Manufacturing for latest revision information.

Parts:

The parts required by Fire Attack System to comply with this Service Letter are listed in Table 2 for annual maintenance and Table 3 for pump overhaul. Replacement parts and equipment may be ordered through your local authorized Simplex Representative or directly from Simplex Manufacturing.

Table 2 Parts Required for Annual Pump Maintenance

Hover Pump Part Number 300-704003-001		
Kit Part Number	Description	Quantity per Pump
300-106009-001	Annual Hydraulic Pump maintenance kit and service instructions	1
*000-126390-001	Suction Hose, 3"	A/R
*300-704051-001	Hydraulic Hose Assembly	2
*301-704051-001	Flapper Assembly	1

Table 3: Parts Required for Hover Pump Assembly Overhaul

Hover Refill Assembly Installation 300-704005-001		
Part Number	Description	Quantity
300-106009-001	Annual Hydraulic Pump maintenance kit and service instructions	1
300-704029-001	Impeller	1
301-704031-001	Shaft, Impeller	1
301-704040-001	Cover, Impeller	1
300-704060-001	Seal, Sleeve	1



Hover Refill Assembly Installation 300-704005-001		
Part Number	Description	Quantity
301-704047-001	Bumper	1
000-112480-000	Washer, Lock	7
000-110865-000	Bolt	3
000-139095-000	Key	1
000-110873-000	Bolt	4
000-111139-000	Half Nut, Locking	1
000-112200-000	Washer, Flat	1
*000-127107-000	Hydraulic Motor (Optional) seal kit included with annual maintenance kit.	1
*300-704003-001	Hover Refill Pump and Motor Assembly, complete	1
300-704051-001	Hose Assembly, Suction	1
000-107549-000	Cable Tie	12
000-126400-000	Sleeve	48"
609-781012-000	Hydraulic Hose Assemblies	2

* Replace on condition ** Choose based on model and Amperage rating

Equipment:

1. Typical mechanics tool kit
2. Shop rags
3. Suitable work surface

Consumables:

1. Grease MIL-G-18709 or equivalent
2. Corrosion Inhibitor MIL-C-16173-D grade 4 or equivalent
3. Hydraulic Fluid MIL-H-5606, MIL-H-83282 or equivalent
4. 000-159100-000 732 Sealant

Annual (300 Hour) Procedure:

1. Review rotorcraft log books and determine date of initial installation, hours in service, and time in service of Fire Attack System with hover pump installed.
2. Perform inspection and maintenance as described in Table 4.
3. Alternately the customer may choose to return the hover refill pump to Simplex Manufacturing for servicing.
4. Allow 24 hours for 732 Sealant to dry.



Table 4: Annual (300 Hour) Inspection Procedure

ANNUAL INSPECTION and MAINTENANCE (1-year or 300 hours) Initial each item after accomplishment. Record all findings and attach a copy of this inspection form to maintenance records. Sign off inspection when complete							
Serial No.	_____ (FAS) _____ (HRP)	Total System Time	_____	HRP Time	_____	Date	_____
1	PRE INSPECTION REQUIREMENTS						INITIAL
	Review maintenance records and determine time in service and hours of operation of the Hover Refill Pump.						
2	HOVER PUMP ASSEMBLY (HYDRAULIC)						INITIAL
	ACCESS REQUIREMENTS: Remove Hover Refill Pump Assembly (HRP) from rotorcraft. Leave off for duration of maintenance and inspections. Clean and flush HRP with fresh water. Drain hydraulic lines and motor into a suitable container.						
	INSPECTION: Inspect all attachment fittings and connections for proper operation and condition. Check for signs of stress or corrosion. See Figure 1. Check condition of lines and hoses.						
	MAINTENANCE: Hydraulic hoses must be replaced if worn through 25% of wall. Water hose must be replaced if worn through 50% of wall. Replace electric harnesses that contain burnt or broken wires. Replace damaged protective sleeve.						
3	WATER HOSE ASSEMBLY						INITIAL
	ACCESS REQUIREMENTS: Remove hose assembly from pump. Disconnect hydraulic lines from pump.						
	INSPECTION: Inspect internal flapper assembly for condition and proper operation. Flapper act as a check valve to prevent tank contents from back flowing overboard. Inspect hose where hydraulic lines attach for wear or damage.						
	MAINTENANCE: Coat aluminum fittings with corrosion inhibitor MIL-C- 16173-D Grade 4. Replace damaged or missing cable ties and hose clamps. Replace flapper if missing or damaged. Replace protective sleeve on hydraulic lines if worn or damaged.						



ANNUAL INSPECTION and MAINTENANCE (1-year or 300 hours)						
Initial each item after accomplishment.						
Record all findings and attach a copy of this inspection form to maintenance records.						
Sign off inspection when complete						
4	WATER PUMP	INITIAL				
	ACCESS REQUIREMENTS: Most be removed from rotorcraft Disassemble as shown in Figure 2 to gain access to impeller and screen.					
	INSPECTION: Inspect attachment hardware for condition Inspect condition of pump and housing. Inspect Impeller, pump housing (volute) and impeller cover for condition, replace if pitted, cracked or worn. Measure impeller and cover. Replace if out of limits as defined below.					
	LIMIT (acceptable range)					
	<table border="1"> <tr> <td>Impeller</td> <td>4.0 – 4.193 inches in diameter</td> </tr> <tr> <td>Impeller cover</td> <td>4.508-4.580 inches inner diameter at base, impeller side</td> </tr> </table>	Impeller	4.0 – 4.193 inches in diameter	Impeller cover	4.508-4.580 inches inner diameter at base, impeller side	
Impeller	4.0 – 4.193 inches in diameter					
Impeller cover	4.508-4.580 inches inner diameter at base, impeller side					
	MAINTENANCE: Thoroughly clean all components. Replace any damaged or missing hardware or components. Clean screen. Replace impeller shims, seals and bearings as described in the instructions included with the maintenance kit. Reassemble. Treat exposed metallic parts with corrosion inhibitor MIL-C- 16173-D Grade 4					
5	HYDRAULIC MOTOR	INITIAL				
	ACCESS REQUIREMENTS: Pump assembly must be removed from rotorcraft.					
	INSPECTION: Inspect housing for cracks, corrosion and general condition. Inspect condition of hydraulic ports. Open motor as described in instructions included with rebuild kit.					
	MAINTENANCE: Replace any corroded or damaged fittings. Replace all damaged hardware. Replace seals as describe in rebuild instructions. Reassemble					



ANNUAL INSPECTION and MAINTENANCE (1-year or 300 hours)

Initial each item after accomplishment.

Record all findings and attach a copy of this inspection form to maintenance records.

Sign off inspection when complete

6	RETURN TO SERVICE	INITIAL
	ASSEMBLE Verify all hardware is intact and torqued as required in ICA or MM. Ensure hydraulic lines are installed and secure. Ensure all secondary locks are installed correctly (cotter pins and safety wire) Seal all seams with 732 Sealant. Allow 24-hours for 732 Sealant to dry. Check for water tightness and reseal as required.	
	POST INSPECTION: Install HRP assembly as desired. Top off MIL-H-5606 hydraulic fluid in accordance with ICA or MM. Verify pump operation Make the appropriate logbook entries	
Performed By: _____ Signature: _____ No.: _____		
Inspected By: _____ Signature: _____ No.: _____		



1500 Hour (5-year) Procedure:

1. Review rotorcraft log books and determine date of initial installation, hours in service, and time in service of Fire Attack System with hover pump installed.
2. Perform inspection and maintenance as described in Table 5.
3. Alternately the customer may choose to return the hover refill pump to Simplex Manufacturing for servicing.
4. Allow 24-hours for 732 Sealant to dry.

Table 5: Overhaul 5-year (1500 hour) Procedure

OVERHAUL or 5-YEAR PROCEDURE (5-years or1500-Hours) Initial each item after accomplishment. Record all findings and attach a copy of this inspection form to maintenance records. Sign off inspection when complete.							
Serial No.	_____ (FAS) _____ (HRP)	Total System Time	_____	HRP Time	_____	Date	_____
1	PRE INSPECTION REQUIREMENTS						INITIAL
	Review maintenance records and determine time in service and hours of operation of the Hover Refill Pump.						
2	HOVER PUMP ASSEMBLY (HYDRAULIC)						INITIAL
	ACCESS REQUIREMENTS: Remove Hover Refill Pump Assembly (HRP) from rotorcraft. Clean and flush HRP assembly with fresh water. Drain hydraulic fluid from lines.						
	INSPECTION: Inspect all attachment fittings and connections for proper operation and condition. Check for signs of stress or corrosion. See Figure 1.						
	MAINTENANCE: Replace electric harnesses that contain burnt or broken wires. Replace any damaged protective sleeve.						
3	WATER HOSE ASSEMBLY						INITIAL
	ACCESS REQUIREMENTS: Remove from pump assembly						
	MAINTENANCE: Clean all fittings with mild solvent. Replace water hose assembly. Replace hydraulic hoses.						



OVERHAUL or 5-YEAR PROCEDURE (5-years or1500-Hours) Initial each item after accomplishment. Record all findings and attach a copy of this inspection form to maintenance records. Sign off inspection when complete.		
4	WATER PUMP	INITIAL
	ACCESS REQUIREMENTS: Disassemble as shown in Figure 2.	
	INSPECTION: Check for cracks, pitting, corrosion or other signs of damage. If pump housing is cracked or damaged, STOP and replace entire pump assembly, which includes a new hydraulic motor.	
	MAINTENANCE: Thoroughly clean all components Clean or replace screen Replace all components listed in Table 3. Reassemble.	
5	HYDRAULIC MOTOR	INITIAL
	ACCESS REQUIREMENTS: Pump assembly must be removed from rotorcraft.	
	INSPECTION: Inspect housing for condition. If the housing is cracked, STOP and replace motor.	
6	RETURN TO SERVICE	INITIAL
	ASSEMBLE Connect cam-lock fittings at hose end and secure with safety wire or wire ties. Verify all hardware is intact and torqued as required in ICA or MM. Ensure all secondary locks are installed correctly (cotter pins and safety wire). Allow 24-hours for 732 Sealant to dry. Check for water-tightness and reseal as required.	
	INSTALL: Install HRP assembly per ICA or MM	
	POST INSPECTION: Top of hydraulic fluid with MIL-H-5606 as stated in ICA or MM. Verify operation of pump Make the appropriate logbook entries.	
Performed By: _____ Signature: _____ No.: _____		
Inspected By: _____ Signature: _____ No.: _____		



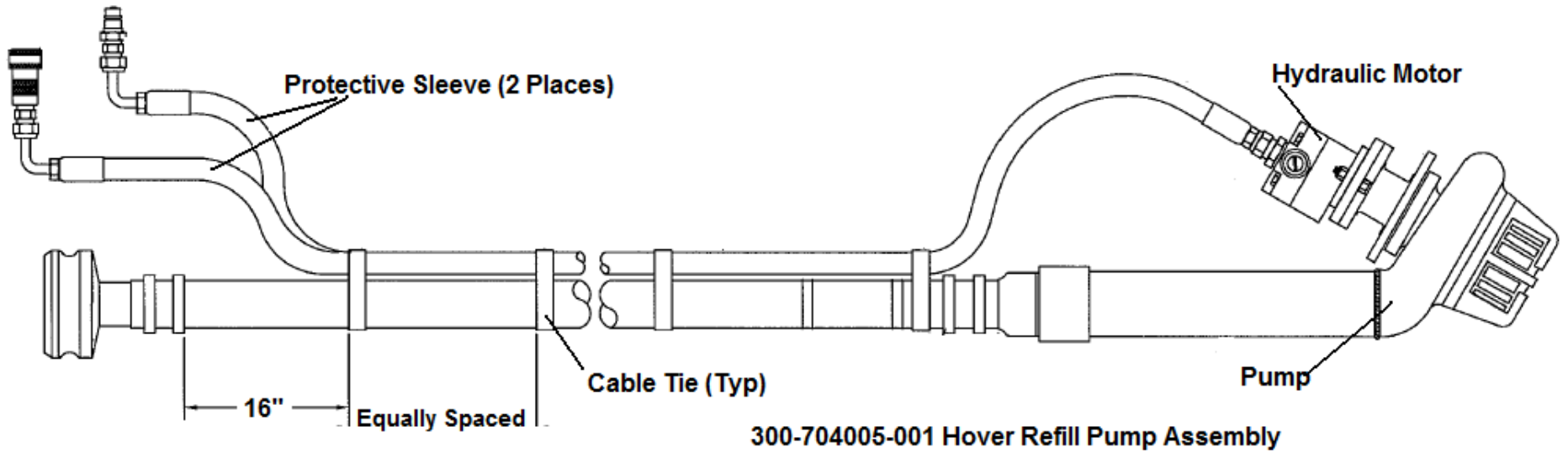


Figure 1: Hover Refill Pump Assembly

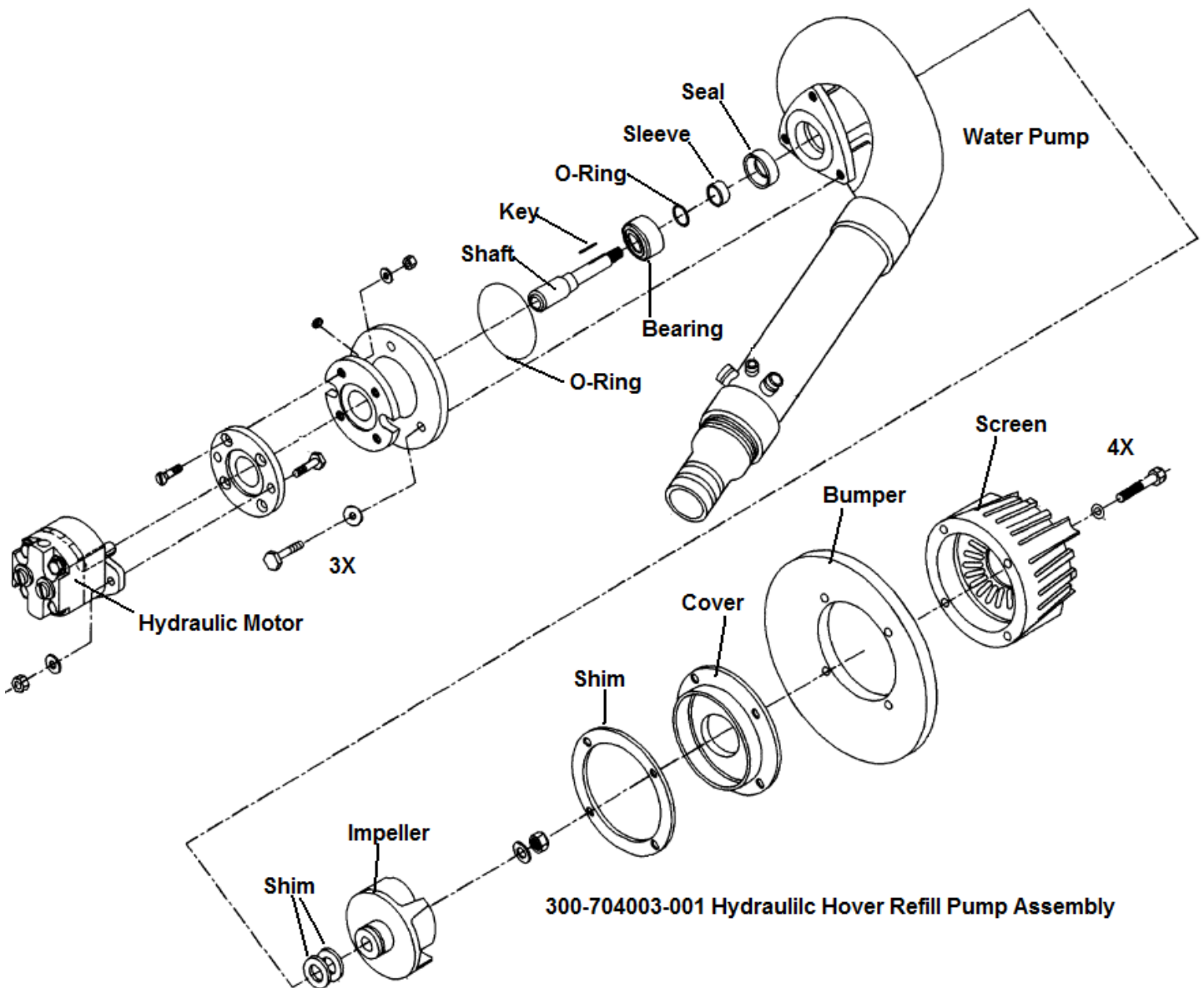


Figure 2: Hover Refill Pump – Exploded

