A. Maintenance Requirement Description:

Initial assembly and verification of inspection robot.

B. Location: Capacitor Bay
   System: Remote Inspection Robot
   Sub-System: N/A
   Component: N/A

C. Safety Precautions:

Do not perform work on energized equipment. Ensure charging
station is not powered and emergency stop is engaged.

Never let batteries exceed 140 F

D. Tools, Parts, Materials, Test Equipment:

NAME	QTY	PC #	STEP(S)
Battery Charger	As Req'd	1	F.1
BMS	1	2	F.2
DC-DC Converter	1	3	F.3
Soldering Iron	1	–	
Solder	As Req'd	–	
10 AWG Lug	3	4	
12 AWG Lug			
Wire Strippers	1	–	
Crimper	1	–	
Chassis Side Walls	4	6-9	
Chassis Plates	3	10-12	
Inspection Cameras	1		
Navigation Cameras	2		
Motor Controllers	2		
NEO Motors	2		
¼ inch Nylon Lock Nuts			
¼ inch Flat Washers			
¼ inch Hex Bolt			
36:1 Gearbox	2		
Through Bore Encoder	2		
Voltage Regulator Module	2		
Gearbox Motor Kit	2		
Bearings	4		
10/32 Socket Head Cap Screw			
40 Amp Snap Action Breaker	2		
20 Amp Snap Action Breaker	1		
10 Amp Snap Action Breaker	1		

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E. References

Ref	Description	Rev
1	Joint Fleet Maintenance Manual, Volume 5	C
2		

F. Enclosures

E	Description	Rev
1	Chassis panel fabrication	0
2	Strain gauge fabrication	0

G. Drawings

Drawing	Description	Rev
DWG. 1	Chassis Assembly	0
DWG. 2	Strain Gauge	0
DWG. 3	Motor Support Mount	0
DWG. 4	Power Distribution Panel Support Mount	0
DWG. 5	Real Sense Camera Support Mount	

H. Procedure:

Step		1st	2nd
1.	**Record serial numbers in material history.**		
1.a	**Battery Charger** S/N:		
1.b	**Battery Monitoring System** S/N:		
1.c	**Battery-A** S/N:		
1.d	**Battery-B** S/N:		
1.e	**Motor Controller-A** S/N:		
1.f	**Motor Controller-B** S/N:		

0.g	**Motor-A**	S/N:		
0.h	**Motor-B**	S/N:		
0.i	**Power Distribution Panel**	S/N:		
0.j	**Robot Chassis**	S/N:		
0.k	**Motor-A**	S/N:		
0.l	**Gearbox-A**	S/N:		
0.m	**Gearbox-B**	S/N:		
0.n	**Navigation Camera D435i**	S/N:		
0.o	**Navigation Camera T265**	S/N:		
0.p	**Inspection Camera ArduCam**	S/N:		
0.q	**Voltage Regulator Module-A**	S/N:		
0.r	**Voltage Regulator Module-A**	S/N:		
0.s	**NVIDIA Jetson Xavier NX**	S/N:		
1.0	**Assemble the chassis**			
1.a	Connect chassis side walls (pc.6-9) to chassis base (pc.10)			
1.b	Install (4) corner brackets (pc. #$#) using (24) hex bolts, nylon lock nuts, and flat washers (pc. #$#) per DWG #$#.			

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1.c	Install (2) L-brackets (pc. #$#) using (4) hex bolts, nylon lock nuts, and flat washers (pc. #$#) per DWG #$#.		
2.0	**Mount the motor-gearbox assemblies.**		
2.a	Install (2) motor mounts (pc. #$#) using (#$#) (#$#) #$ bolts, nylon lock nuts, and flat washers (pc. #$#) per DWG #$#.		
2.b	Install (4) bearings (pc. #$#) per DWG #$#. *NOTE: Bearings are compression fit and will require suitable force to insert.*		
2.c	Insert the motor-gearbox shaft through bearing and place NEO motor on top of mounting bracket.		
3.0	**Connect the Gearbox and Motor Controllers**		
3.a	**Prepare motor controller.**		
3.a.1	Use wire strippers IAW with reference E.2 to prepare wires for tinning.		
3.a.2	Tin the prepared wires IAW with reference E.3.		
3.a.3	Insert tinned wired into 12 AWG lugs and crimp IAW reference E.2.		
3.b	**Prepare NEO motors.**		
3.b.1	Use wire strippers IAW with reference E.2 to prepare wires for tinning.		
3.b.2	Tin the prepared wires IAW with reference E.3.		
3.b.3	Insert tinned wired into 12 AWG lugs and crimp IAW reference E.2.		
3.c	Connect the motor and controllers together with the Anderson pole connectors (6).		
4.0	**Prepare DC-DC Converter**		
4.a	Use wire strippers IAW with reference E.2 to prepare wires for tinning.		
4.b	Tin the prepared wires IAW with reference E.3.		
4.c	Insert tinned wired into 10 AWG lugs and crimp IAW reference E.2.		

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Performance Verification Signature

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Performance Verification Signature