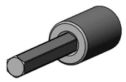
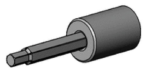
REV	DESCRIPTION	DATE	APPROVED
B.01	CN601345	2024-02-12	CLC

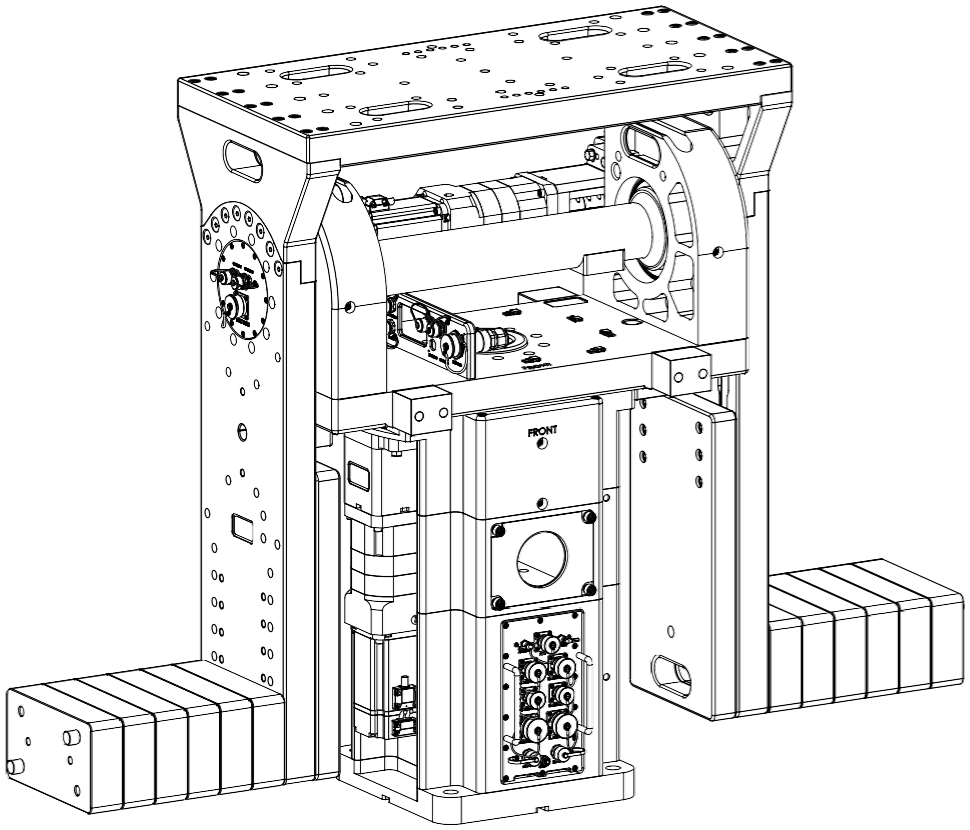
NOTES: UNLESS OTHERWISE SPECIFIED

1. WIRES AND CABLES NOT SHOWN THROUGHOUT DRAWING

TABLE I

SUGGESTED TOOL LIST

TOOL ITEM NO.	DESCRIPTION	IMAGE (NOT TO SCALE)
T01	3/8" DRIVE RATCHET WRENCH	
T02	0-100 FT-LBS - 3/8" DRIVE TORQUE WRENCH	
T03	12" LONG - 3/8" DRIVE EXTENSION	
T04	3/8" DRIVE SWIVEL-JOINT ADAPTER	
T05	1/2" 6 POINT - 3/8" DRIVE STANDARD SOCKET	
T06	5/16" - 3/8" DRIVE HEX BIT SOCKET	
T07	3/16" - 3/8" DRIVE HEX BIT SOCKET	
T08	7/16" COMBINATION WRENCH	
T09	NO. 3 PHILLIPS SCREWDRIVER	



ITEM NO.	QTY	PART NUMBER	DESCRIPTION	WEIGHT (LBS)	DRAWING	REV
1	1	MPT90-N901471-XX	AZIMUTH ASSEMBLY, MPT-90	125	ICDN901471	A
2	1	MPT90-N901472-XX	ELEVATION ASSEMBLY, MPT-90	112	ICDN901472	B
3	2	MPT90-N901470-1	ELEVATION ARM ASSEMBLY, MPT-90	75	ICDN901470	A
4	1	MPT90-N901474-1	ELEVATION MOUNTING PLATE, MPT-90	56	ICDN901474	A
5	1	MPT90-N901497-XX	ELECTRONICS BOX, MPT90	18	ICDN901497	A
6	2	MPT90-N901466-XX-XXX	MOTOR/GEARBOX ASSEMBLY, MPT-90	28	ICDN901466	A
7	1	MPT90-N901478-1	HARDWARE KIT, MPT-90 (QTY. 50 - SOCKET HEAD SCREWS, ZINC PLATED ALLOY STEEL, 3/8-16 X 1.75" LONG)	4		
8	1	MPT90-N901477-1	COUNTERWEIGHT KIT, MPT-90, 300 LBS (QTY 12 - 25 LB COUNTERWEIGHTS)	300		

SYMBOL KEY

NOTE ◯ PL ITEMS

QPAR ANTENNAS USA, LLC
SAN DIEGO, CA 92020
www.qparusa.com

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGLE ± .5 DEGREES
TWO PLACE DECIMAL ±.030
THREE PLACE DECIMAL ±.010
INTERPRET DIM AND TOL PER ASME Y14.5M - 1994

THIRD ANGLE PROJECTION

DO NOT SCALE DRAWING

DRAWN	C. CHEYNE	2024-01-16
CHECKED	S. CHEYNE	2024-01-16
ME APPR.	C. CHEYNE	2024-01-16
EE APPR.		

PART NO. LA-360MPT-90

QPAR ANTENNAS USA, LLC

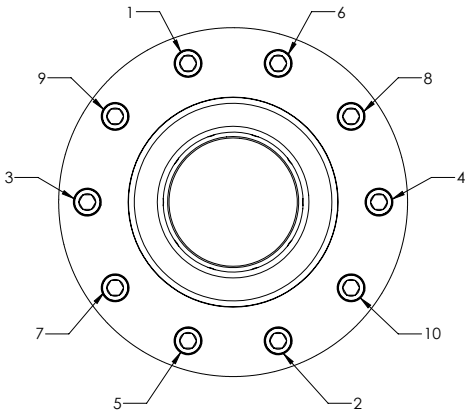
TITLE: LA-360MPT-90, ASSEMBLY GUIDE

SIZE	DWG. NO.	REV
C	AGN901531	B.01

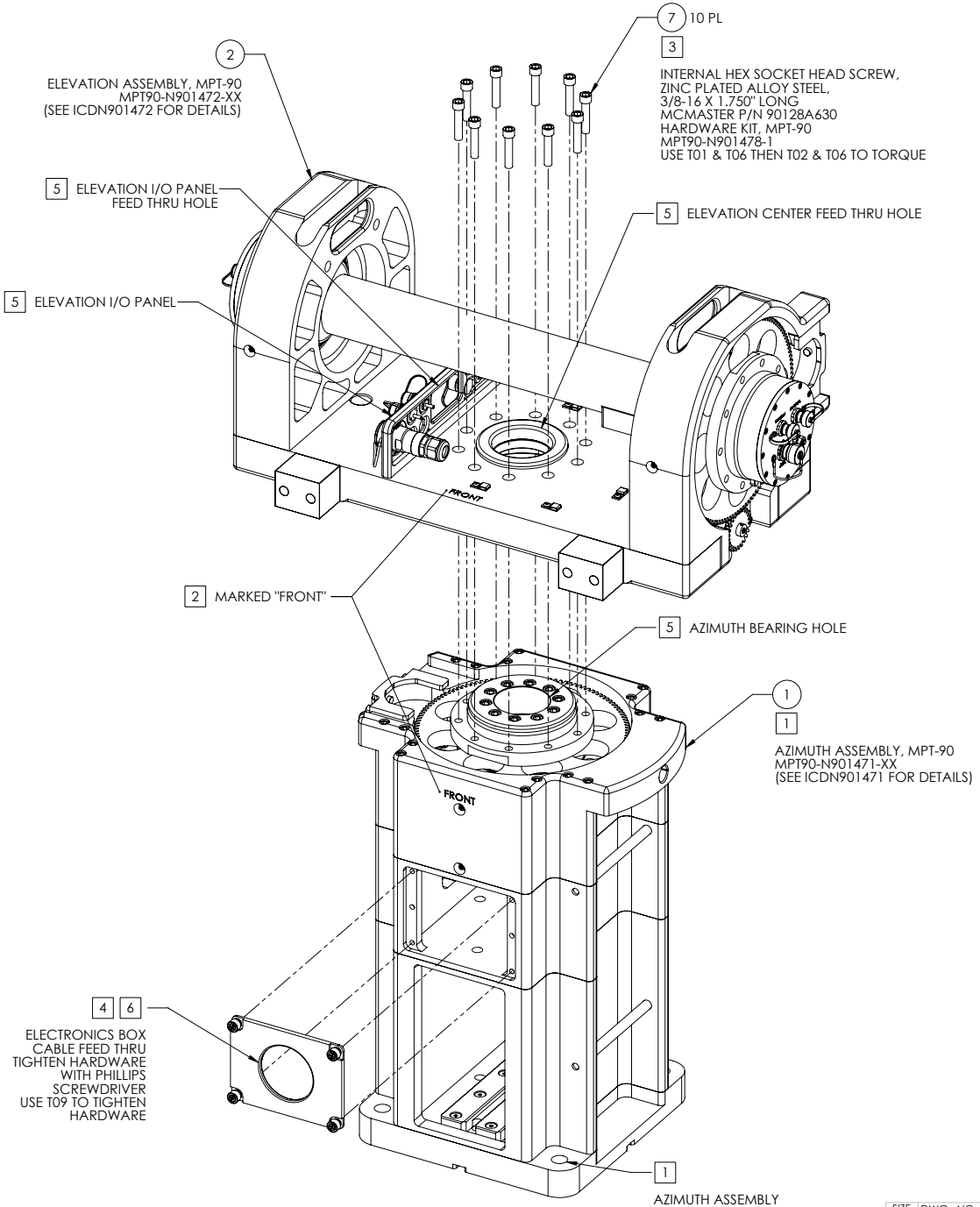
SCALE: 1:5 SHEET 1 OF 10

ASSEMBLY NOTES:

1. ASSEMBLE AZIMUTH ASSEMBLY USING (4) 3/4-10 GRADE 8 OR 9 FASTENERS WITH CORRESPONDING WASHERS AND LOCK WASHERS (NOT INCLUDED) TO A SECURE PLATFORM
2. ASSEMBLE ELEVATION ASSEMBLY ON TOP OF AZIMUTH ASSEMBLY USING LIFTING HANDLES. ENSURE THAT THE FRONT OF EACH ASSEMBLIES ARE BOTH FACING "FRONT", ALLOWING THE AZIMUTH AND ELEVATION LOCATING FEATURES LOCATED IN THE REAR OF THE ASSEMBLY, TO ALIGN
3. APPLY LOCTITE 243 TO THREADS OF SCREW PRIOR TO ASSEMBLING, THEN TORQUE HARDWARE USING RATCHET WRENCH WITH 5/16" HEX BIT TO TIGHEN THEN TORQUE WITH TORQUE WRENCH AND 5/16" HEX BIT SET AT 528 IN-LBS OR 44 FT-LBS FOLLOWING THE TORQUE SEQUENCE SHOWN
4. REMOVE AZIMUTH ELECTRONICS BOX ACCESS PANEL TO ALLOW ACCESS TO AZIMUTH BASE FOR EASE OF MANEUVERING CABLES
5. FEED ALL PASS THRU CABLES, AUX, AZ STOW, EL STOW, EL POT AND GROUND CABLES FROM AZIMUTH ASSEMBLY UP THRU THE AZIMUTH BEARING HOLE, ELEVATION CENTER FEED THRU HOLE AND ELEVATION I/O PANEL FEED THRU HOLE, THEN CONNECT TO ELEVATION I/O PANEL. CABLES SHOULD BE MARKED WITH REFERENCE DESIGNATIONS, SIG THRU 1, SIG THRU 2, RF THRU 1, RF THRU 2, ENET THRU, AUX, AZ STOW, EL STOW, EL POT AND GND
6. FEED CABLES MARKED WITH REFERENCE DESIGNATIONS AUX, AZ STOW, EL STOW, EL POT AND GND FROM ELEVATION ASSEMBLY AS WELL AS AZ POT FROM THE AZIMUTH ASSEMBLY DOWN THRU ELECTRONICS BOX CABLE FEED THRU. USE 7/16" COMBINATION WRENCH TO TIGHTEN GROUND STUD NUT



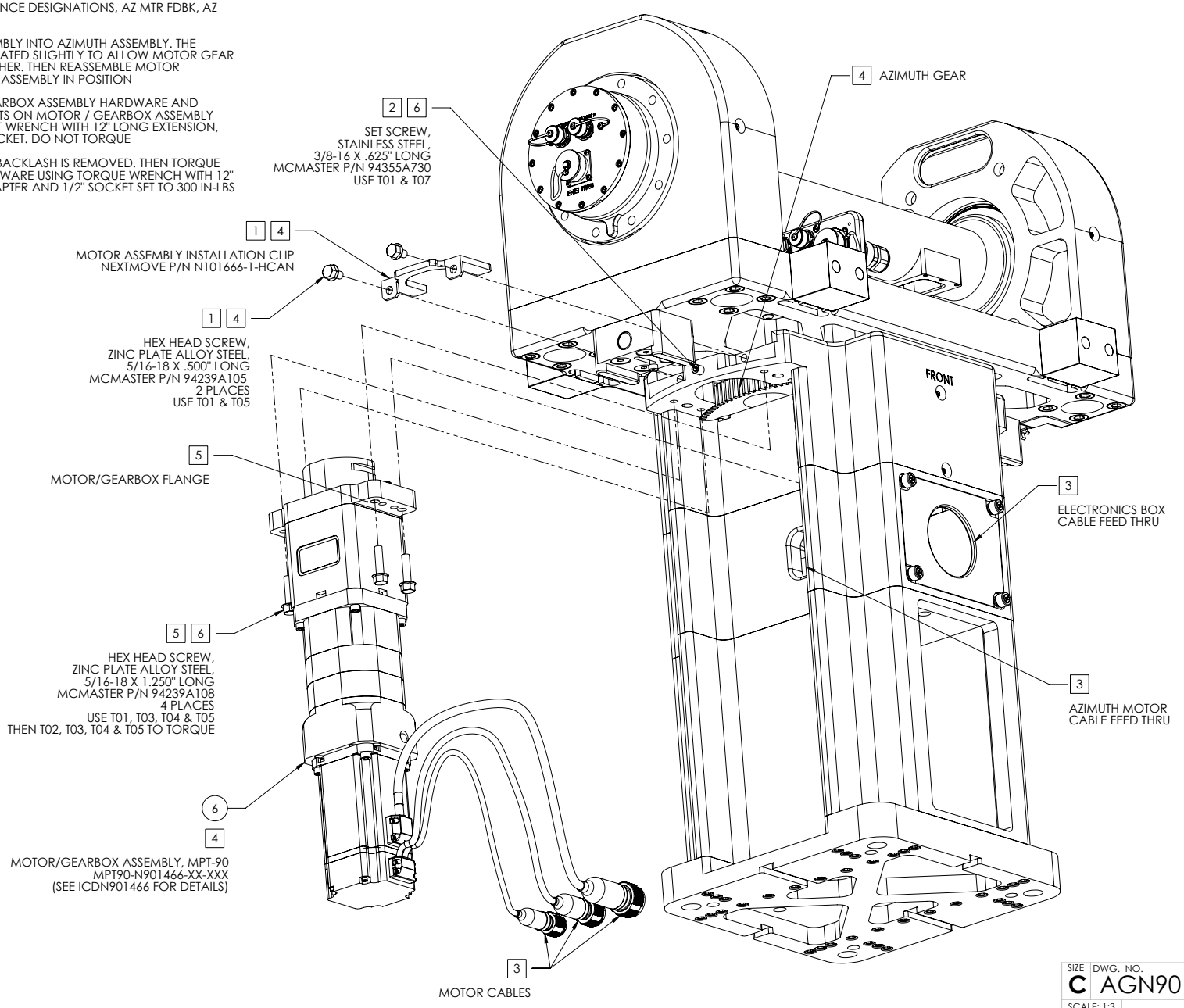
ELEVATION TO AZIMUTH ASSEMBLY TORQUE SEQUENCE [3]



SIZE	DWG. NO.
C	AGN901531
SCALE: 1:4	SHEET 2 OF 10

ASSEMBLY NOTES:

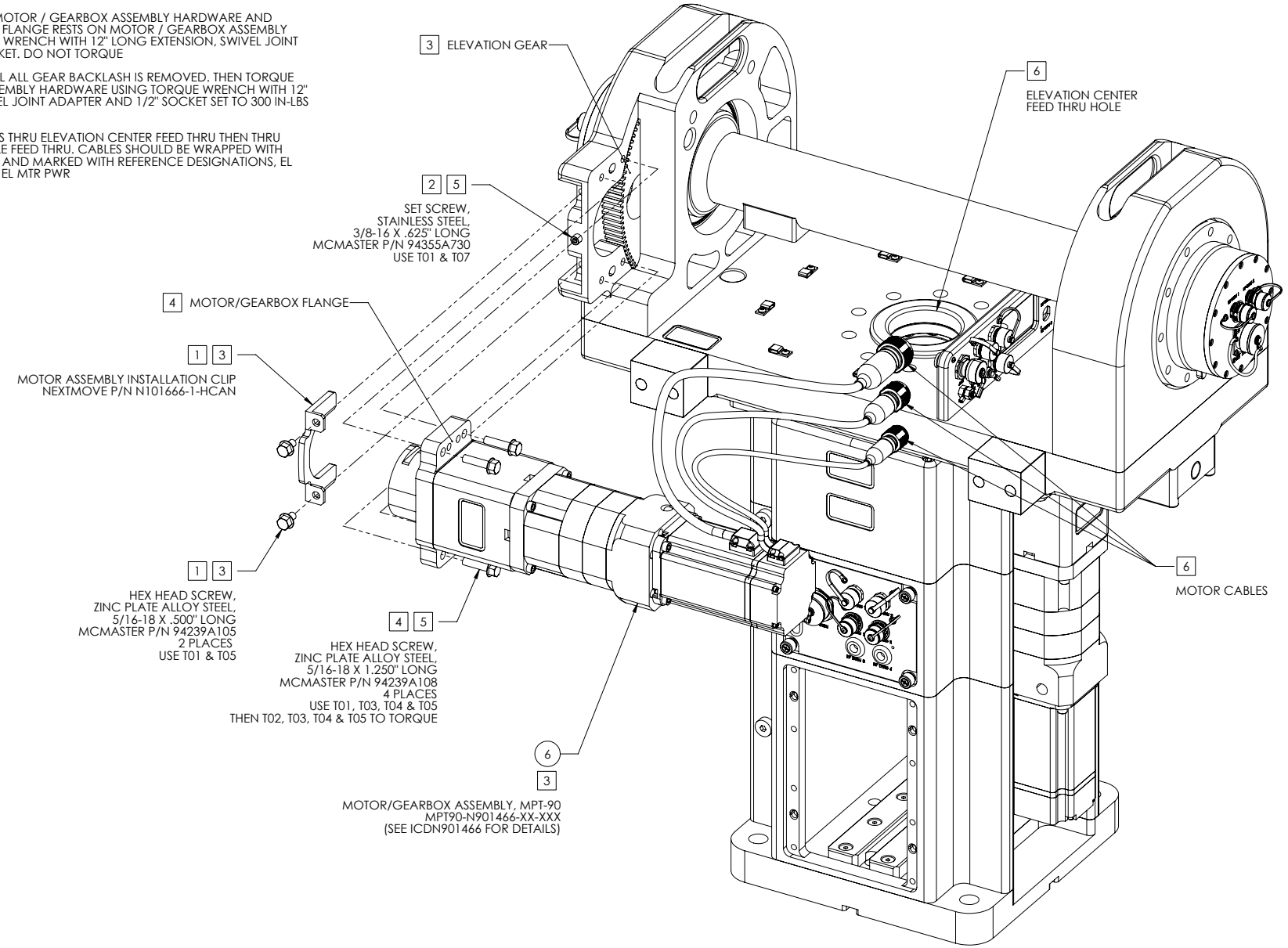
1. REMOVE TWO HEX HEAD SCREWS AND MOTOR ASSEMBLY INSTALLATION CLIP FROM THE AZIMUTH ASSEMBLY USING RATCHET WRENCH AND 1/2" SOCKET AND SET ASIDE
2. LOOSEN SET SCREW ON AZIMUTH ASSEMBLY, USING RATCHET WRENCH AND 3/16" HEX BIT
3. PRIOR TO ASSEMBLING MOTOR/GEARBOX ASSEMBLY FEED ALL MOTOR CABLES THRU AZIMUTH MOTOR CABLE FEED THRU THEN THRU ELECTRONICS BOX CABLE FEED THRU. CABLES SHOULD BE WRAPPED WITH ORANGE SPIRAL SLEEVING AND MARKED WITH REFERENCE DESIGNATIONS, AZ MTR FDBK, AZ MTR BRK & AZ MTR PWR
4. ASSEMBLE MOTOR / GEARBOX ASSEMBLY INTO AZIMUTH ASSEMBLY. THE AZIMUTH GEAR MAY NEED TO BE ROTATED SLIGHTLY TO ALLOW MOTOR GEAR AND AZIMUTH GEAR TO MESH TOGETHER. THEN REASSEMBLE MOTOR INSTALLATION CLIP TO HOLD MOTOR ASSEMBLY IN POSITION
5. APPLY LOCTITE 243 TO MOTOR / GEARBOX ASSEMBLY HARDWARE AND TIGHTEN UNTIL FASTENER FLANGE RESTS ON MOTOR / GEARBOX ASSEMBLY MOUNTING SURFACE USING RATCHET WRENCH WITH 12" LONG EXTENSION, SWIVEL JOINT ADAPTER AND 1/2" SOCKET. DO NOT TORQUE
6. TIGHTEN SET SCREW UNTIL ALL GEAR BACKLASH IS REMOVED. THEN TORQUE MOTOR / GEARBOX ASSEMBLY HARDWARE USING TORQUE WRENCH WITH 12" LONG EXTENSION, SWIVEL JOINT ADAPTER AND 1/2" SOCKET SET TO 300 IN-LBS OR 25 FT-LBS



SIZE	DWG. NO.
C	AGN901531
SCALE: 1:3	SHEET 3 OF 10

ASSEMBLY NOTES:

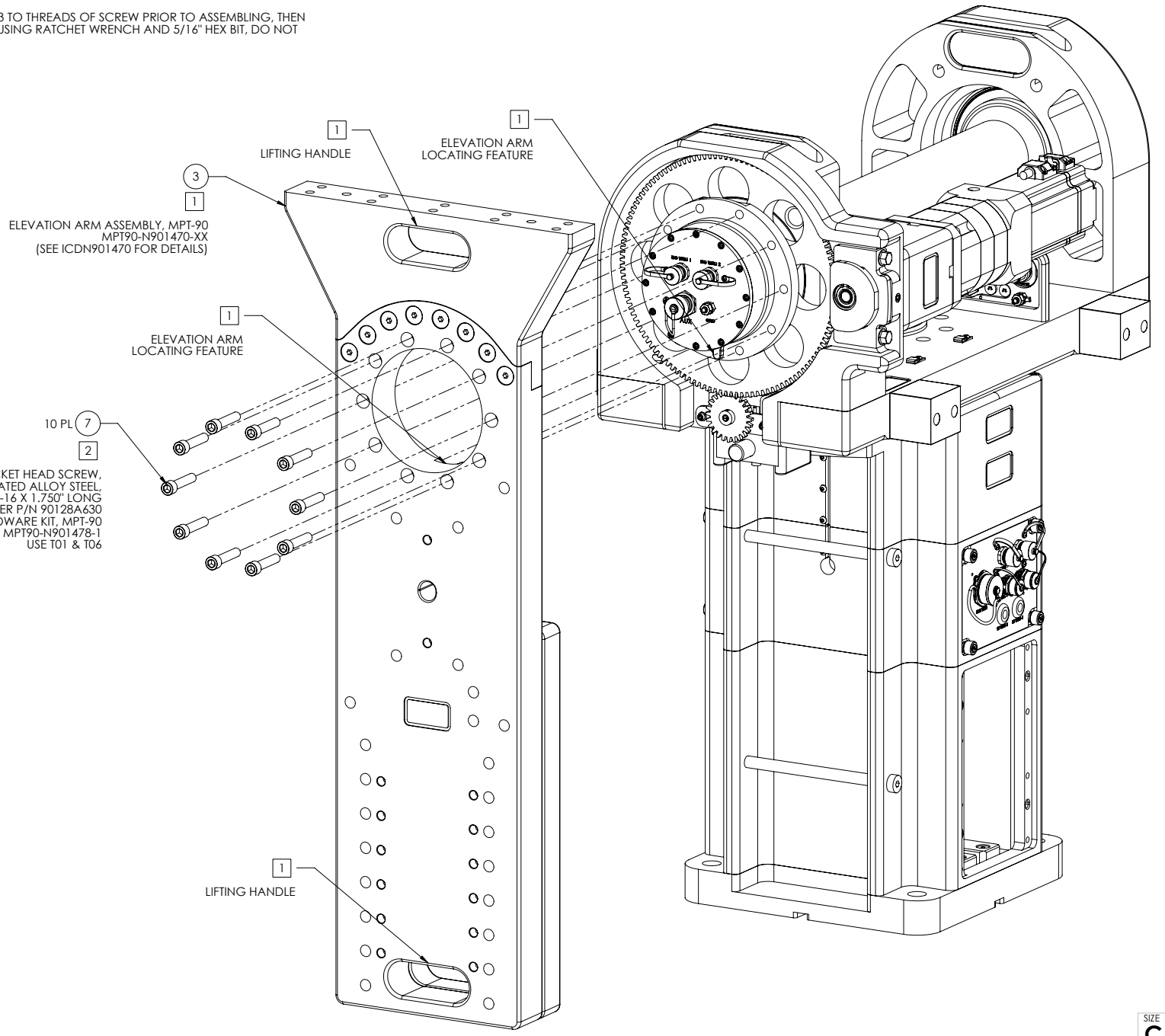
1. REMOVE TWO HEX HEAD SCREW AND MOTOR ASSEMBLY INSTALLATION CLIP FROM THE ELEVATION ASSEMBLY USING RATCHET WRENCH AND 1/2" SOCKET AND SET ASIDE
2. LOOSEN SET SCREW ON ELEVATION ASSEMBLY, USING RATCHET WRENCH AND 3/16" HEX BIT
3. ASSEMBLE MOTOR / GEARBOX ASSEMBLY INTO ELEVATION ASSEMBLY. THE ELEVATION GEAR MAY NEED TO BE ROTATED SLIGHTLY TO ALLOW MOTOR GEAR AND AZIMUTH GEAR TO MESH TOGETHER. THEN REASSEMBLE MOTOR INSTALLATION CLIP TO HOLD MOTOR ASSEMBLY IN POSITION
4. APPLY LOCTITE 243 TO MOTOR / GEARBOX ASSEMBLY HARDWARE AND TIGHTEN UNTIL FASTENER FLANGE RESTS ON MOTOR / GEARBOX ASSEMBLY FLANGE USING RATCHET WRENCH WITH 12" LONG EXTENSION, SWIVEL JOINT ADAPTER AND 1/2" SOCKET. DO NOT TORQUE
5. TIGHTEN SET SCREW UNTIL ALL GEAR BACKLASH IS REMOVED. THEN TORQUE MOTOR / GEARBOX ASSEMBLY HARDWARE USING TORQUE WRENCH WITH 12" LONG EXTENSION, SWIVEL JOINT ADAPTER AND 1/2" SOCKET SET TO 300 IN-LBS OR 25 FT-LBS
6. FEED ALL MOTOR CABLES THRU ELEVATION CENTER FEED THRU THEN THRU ELECTRONICS BOX CABLE FEED THRU. CABLES SHOULD BE WRAPPED WITH GREEN SPIRAL SLEEVING AND MARKED WITH REFERENCE DESIGNATIONS, EL MTR FDBK, EL MTR BRK & EL MTR PWR



SIZE	DWG. NO.	
C	AGN901531	
SCALE: 1:3		SHEET 4 OF 10

ASSEMBLY NOTES:

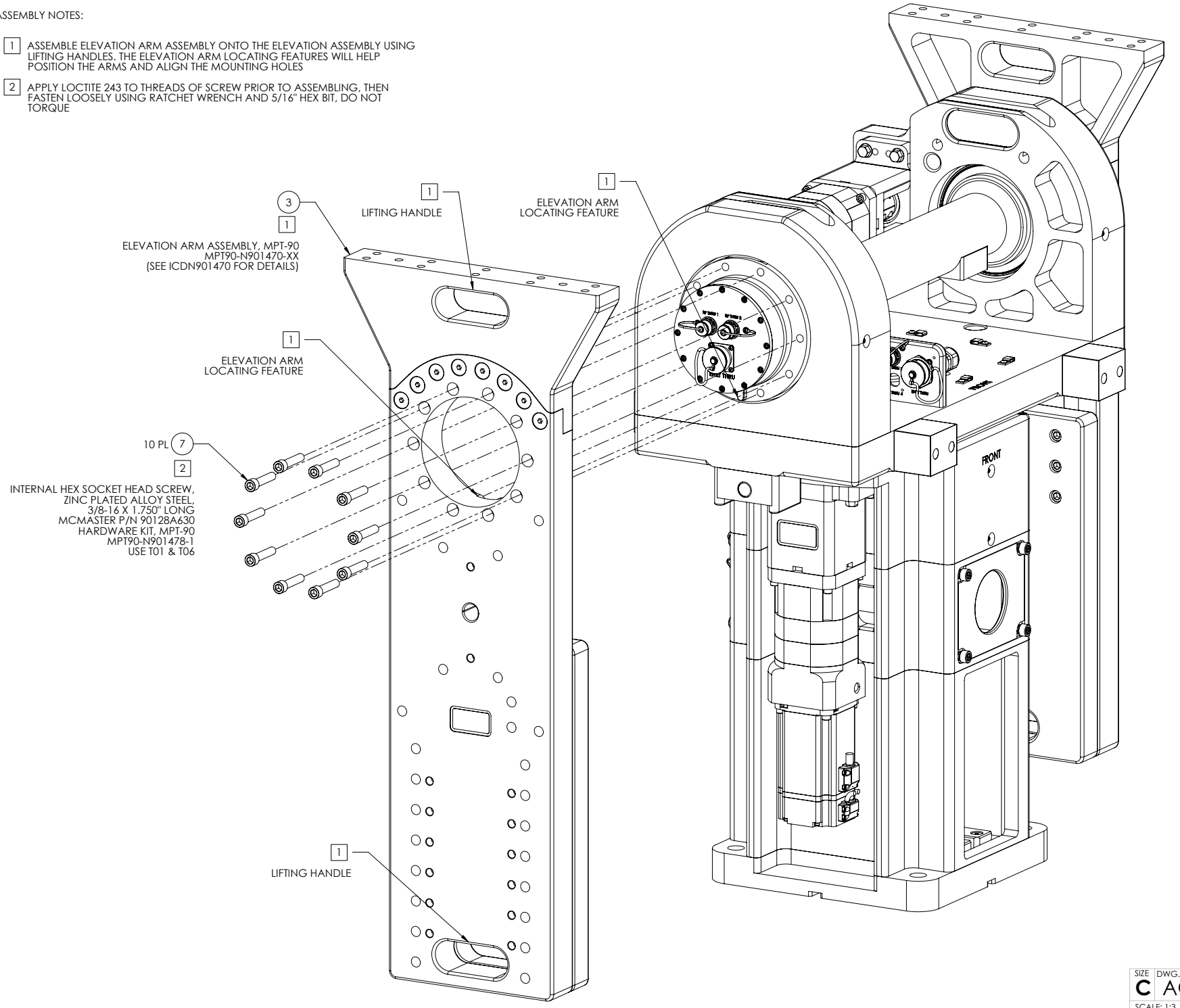
1. ASSEMBLE ELEVATION ARM ASSEMBLY ONTO THE ELEVATION ASSEMBLY USING LIFTING HANDLES. THE ELEVATION ARM LOCATING FEATURES WILL HELP POSITION THE ARMS AND ALIGN THE MOUNTING HOLES
2. APPLY LOCTITE 243 TO THREADS OF SCREW PRIOR TO ASSEMBLING, THEN FASTEN LOOSELY USING RATCHET WRENCH AND 5/16" HEX BIT, DO NOT TORQUE



SIZE	DWG. NO.
C	AGN901531
SCALE: 1:3	SHEET 5 OF 10

ASSEMBLY NOTES:

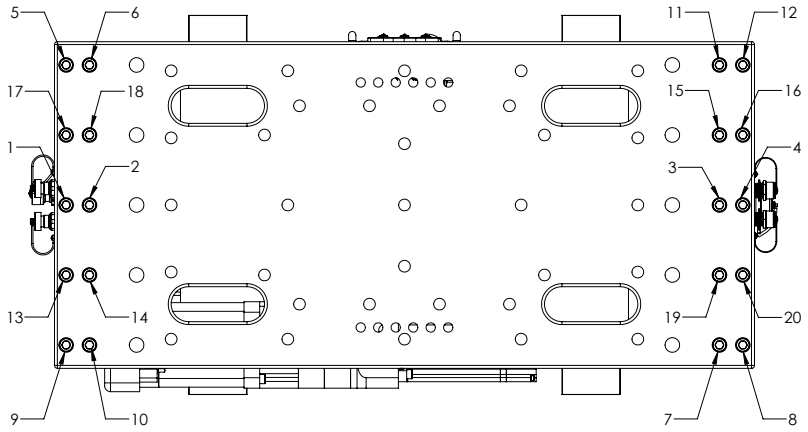
1. ASSEMBLE ELEVATION ARM ASSEMBLY ONTO THE ELEVATION ASSEMBLY USING LIFTING HANDLES. THE ELEVATION ARM LOCATING FEATURES WILL HELP POSITION THE ARMS AND ALIGN THE MOUNTING HOLES
2. APPLY LOCTITE 243 TO THREADS OF SCREW PRIOR TO ASSEMBLING, THEN FASTEN LOOSELY USING RATCHET WRENCH AND 5/16" HEX BIT, DO NOT TORQUE



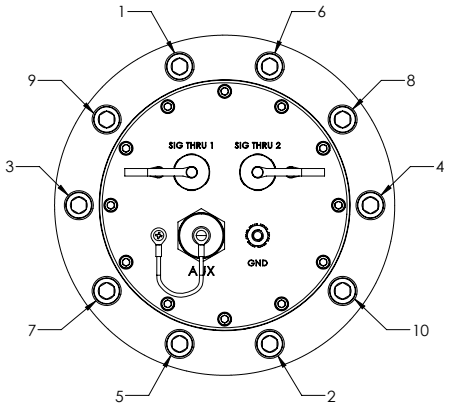
SIZE	DWG. NO.
C	AGN901531
SCALE: 1:3	SHEET 6 OF 10

ASSEMBLY NOTES:

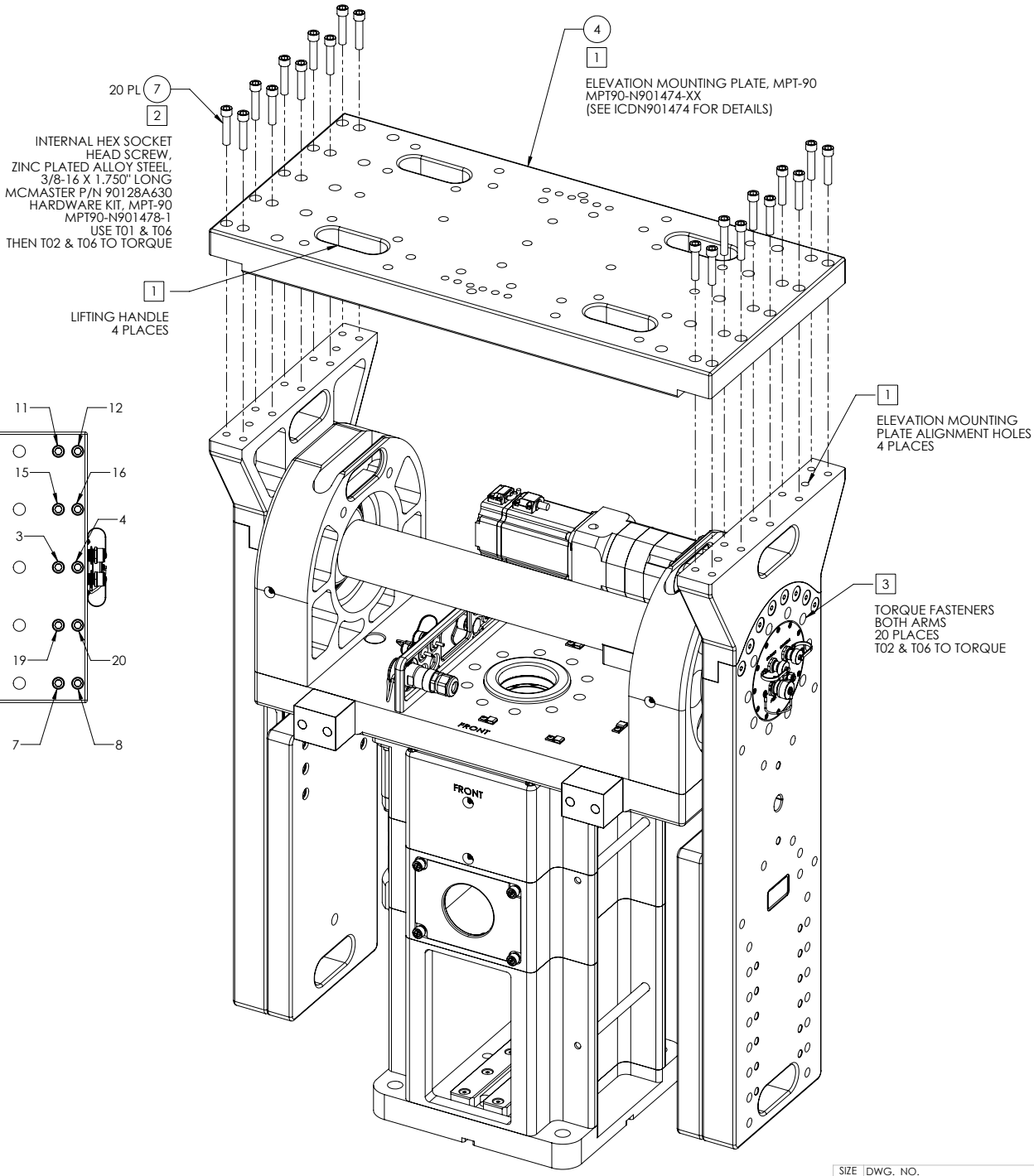
1. ASSEMBLE ELEVATION MOUNTING PLATE ONTO THE ELEVATION ARM ASSEMBLY USING LIFTING HANDLES. THE ELEVATION MOUNTING PLATE ALIGNMENT PINS WILL HELP POSITION THE PLATE AND ALIGN THE MOUNTING HOLES
2. APPLY LOCTITE 243 TO THREADS OF SCREW PRIOR TO ASSEMBLING, INSTALL ALL FASTENERS LOOSELY USING RATCHET WRENCH AND 5/16" HEX BIT, THEN TORQUE HARDWARE USING TORQUE WRENCH AND 5/16" HEX BIT SET AT 528 IN-LBS OR 44 FT-LBS FOLLOWING THE TORQUE SEQUENCE SHOWN
3. TORQUE HARDWARE ON ELEVATION ARMS USING TORQUE WRENCH AND 5/16" HEX BIT SET AT 528 IN-LBS OR 44 FT-LBS FOLLOWING THE TORQUE SEQUENCE SHOWN



ELEVATION MOUNTING PLATE TORQUE SEQUENCE 2



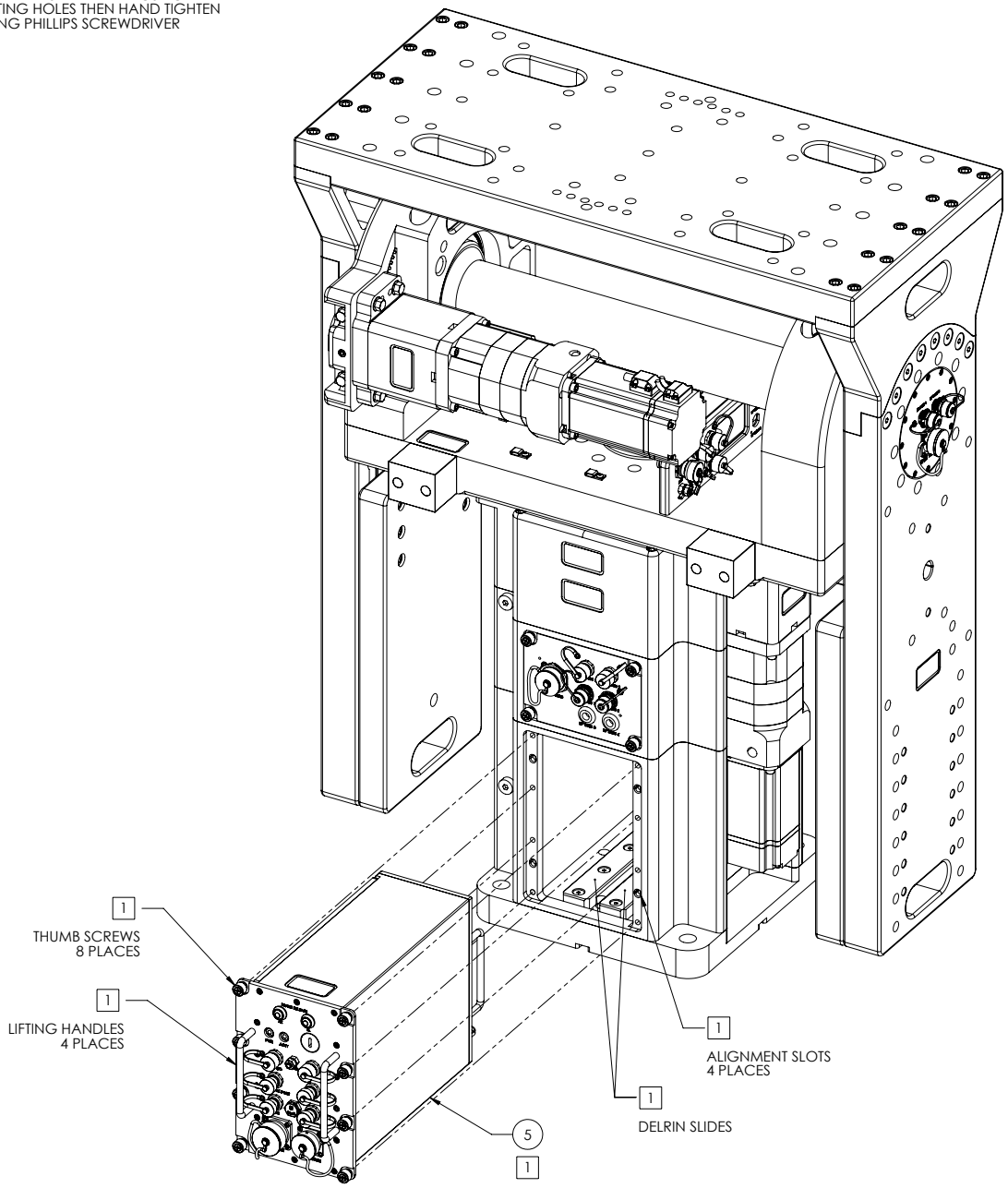
ELEVATION ARMS TORQUE SEQUENCE 3
BOTH ARMS



SIZE	DWG. NO.
C	AGN901531
SCALE: 1:4	SHEET 7 OF 10

ASSEMBLY NOTES:

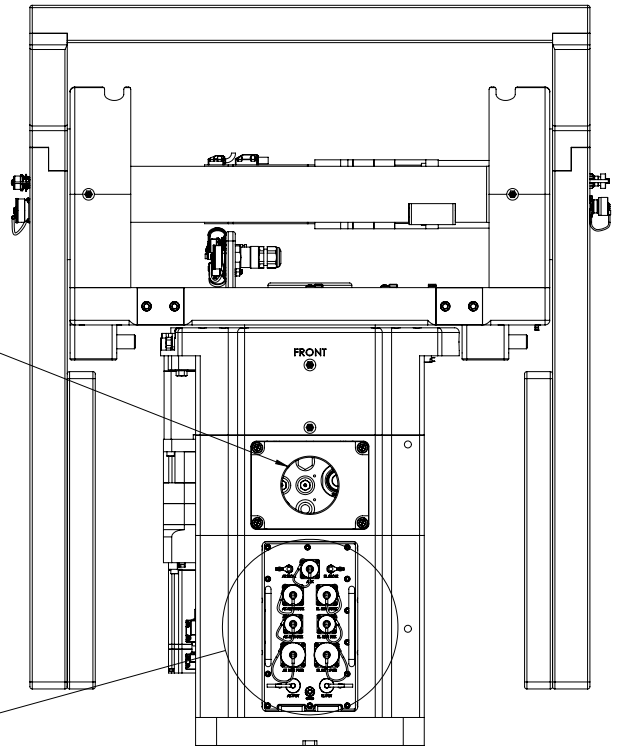
1. ASSEMBLE ELECTRONICS BOX INTO THE AZIMUTH ASSEMBLY USING LIFTING HANDLES. THE DELRIN SLIDES AND ALIGNMENT PINS WILL HELP POSITION THE ELECTRONICS BOX AND ALIGN THE MOUNTING HOLES THEN HAND TIGHTEN THUMB SCREWS ON ELECTRONICS BOX USING PHILLIPS SCREWDRIVER



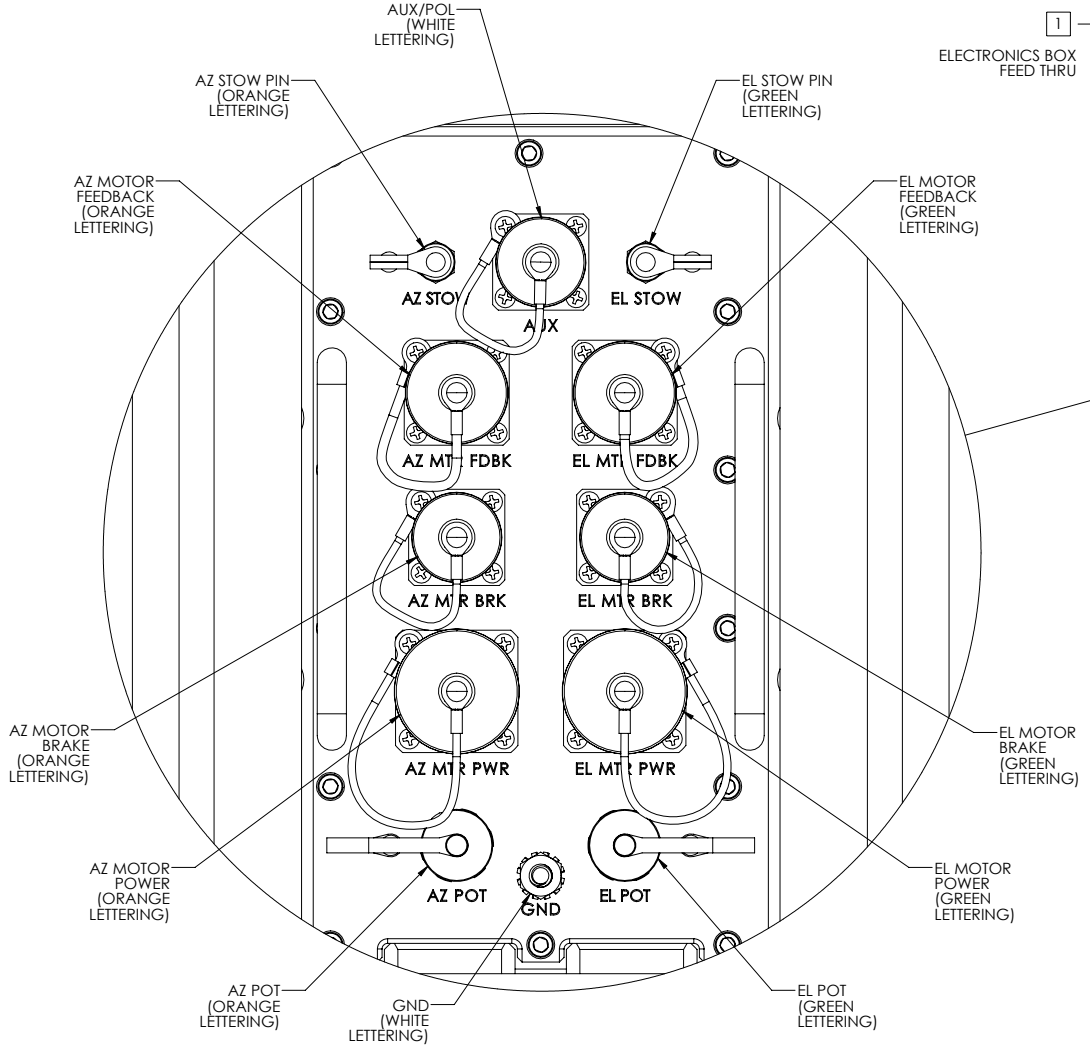
SIZE	DWG. NO.
C	AGN901531
SCALE: 1:4	SHEET 8 OF 10

ASSEMBLY NOTES:

1. CONNECT CABLES THAT WERE PASSED THRU ELECTRONICS BOX CABLE FEED THRU TO ELECTRONICS BOX MARKED WITH REFERENCE DESIGNATIONS, AUX, AZ STOW, EL STOW, AZ POT, EL POT, GND, AZ MTR FDBK, AZ MTR BRK, AZ MTR PWR, EL MTR FDBK, EL MTR BRK & EL MTR PWR TO CORRESPONDING CONNECTORS ON ELECTRONICS BOX MOTOR POWER/FEEDBACK PANEL



1 ELECTRONICS BOX FEED THRU



ELECTRONICS BOX MOTOR POWER/FEEDBACK PANEL

1

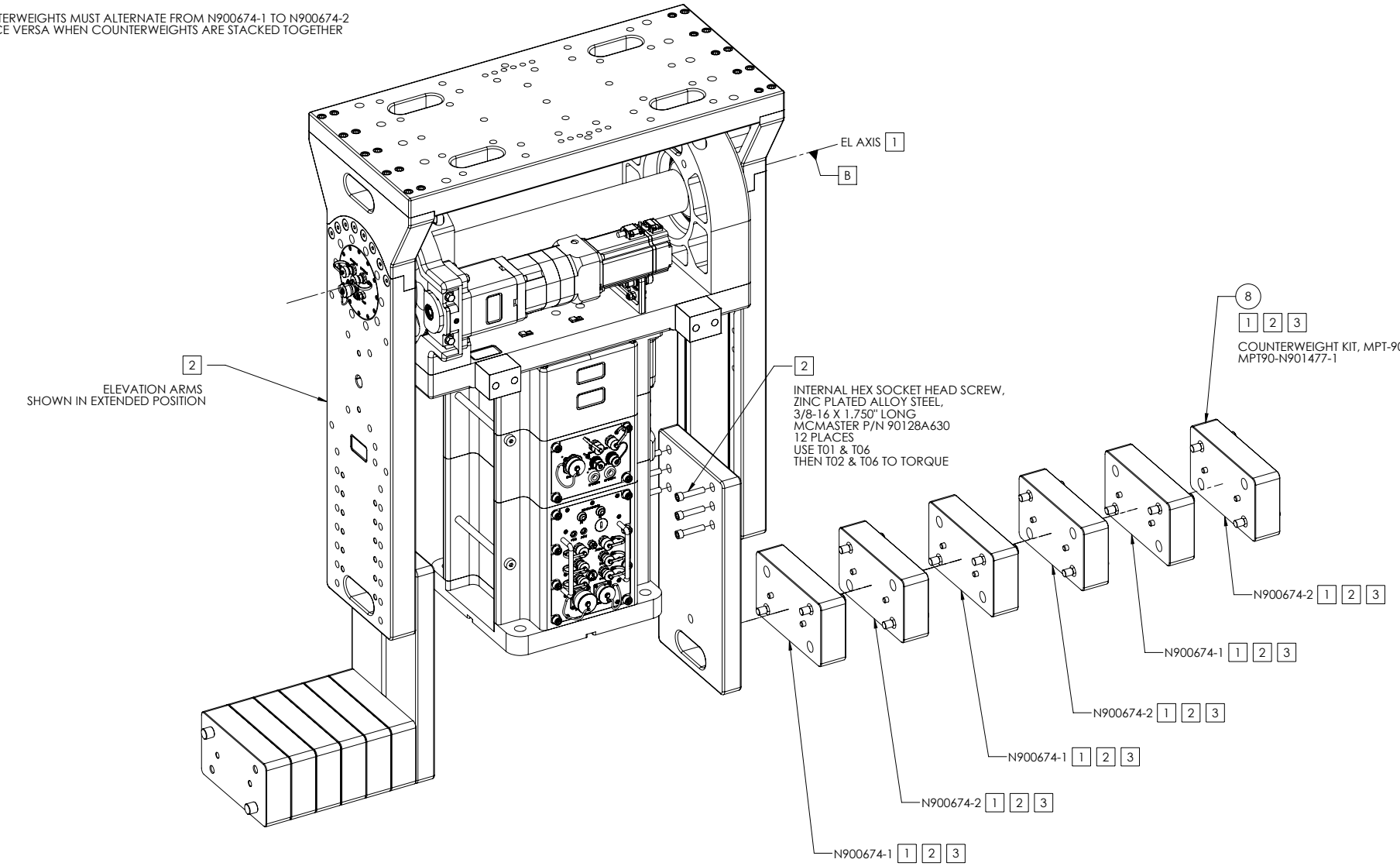
SIZE	DWG. NO.
C	AGN901531
SCALE: 1:5	SHEET 9 OF 10

ASSEMBLY NOTES:

1. EFFORT SHOULD BE MADE TO BALANCE ELEVATION PAYLOAD AS MUCH AS POSSIBLE BY USING THE (12) 25 LB COUNTERWEIGHTS PROVIDED. TO CALCULATE TORQUE TAKE THE DISTANCE FROM THE PAYLOAD CENTER OF GRAVITY TO DATUM -B- (ELEVATION AXIS) IN FEET AND MULTIPLY BY THE PAYLOAD WEIGHT. SEE ICDN901531 AND ICDN901470

2. TO ACHIEVE MAXIMUM TORQUE FROM COUNTERWEIGHTS EXTEND THE ELEVATION ARMS BY REMOVING (6) FASTENERS ON EACH ARM THEN SLIDE ARMS TO EXTENDED POSITION AND REASSEMBLE (6) FASTENERS TO NEW EXTENDED LOCATION POSITION. APPLY LOCTITE 243 TO THREADS OF SCREW PRIOR TO ASSEMBLING, FIRST TIGHTEN WITH RATCHET WRENCH AND 5/16" HEX BIT, THEN TORQUE HARDWARE USING TORQUE WRENCH AND 5/16" HEX BIT SET AT 408 IN-LBS OR 34 FT-LBS

3. COUNTERWEIGHTS MUST ALTERNATE FROM N900674-1 TO N900674-2 OR VICE VERSA WHEN COUNTERWEIGHTS ARE STACKED TOGETHER



SIZE	DWG. NO.
C	AGN901531
SCALE: 1:5	SHEET 10 OF 10