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C-A OPERATIONS PROCEDURES MANUAL

15.3.3.23 Siemens MG Set Bolt Torques

(Booster/AGS Ring Power Supply Systems Group Procedure EPS-S-023)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was reviewed by the Technical Supervisor. All approvals and/or issue dates of the original group procedure are maintained for present use.

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: _____ Signature on File _____
Collider-Accelerator Department Chairman Date

M. Bannon

Booster/AGS Ring Power Supply Systems
Group Procedure EPS-S-023
Revision 00

15.3.3.23 Siemens MG Set Bolt Torques

Bolt Size (Thread)	Bolt Size (Hex Head)	Used	Torque (NM) from chart	Torque (NM) from chart less 40%	X .73756=	Torque (ft.lbs)	Pressure (psi)	Tool
M16	14 MM Allen Key	Bearing Cap #3	210	178.5	X .73756=	131 ft lbs	Torque Wrench to 131 ft lbs.	
M36	55mm	Bearing Caps # 1,2 need reaction arm wedge made so tool t can react against the curve of the bearing (For now use slug wrench)	2,481	1,491	X .73756=	1100 ft. lbs	3600 psi	UNEXX-Y3(GOLD)
M36	55mm	Ped #3 Base & Ped.Cap	2,481	1,491	X .73756=	1100 ft. lbs	3600 psi	UNEXX-Y3 (GOLD)
M42	65mm	Lower Ped #2	3,991	2,305	X .73756=	1700 ft. lbs	5800 psi	UNEXX-Y3 (GOLD)
M56	85mm	Pedestal CAPS # 1,2	9,650	5,694	X .73756=	4200 ft. lbs	3200 psi	HY-14XLCT
M64	95mm	Ped # 1,2 Base	14,416	8,541	X .73756=	6300 ft. lbs	4700 psi	HY-14XLCT
M90		Coupling Bolts		20,249	X .73756=	14,500 (min) ft.lbs 16,000 (max) ft.lbs.	6800 psi	HY-30XLCT with Reaction ARM

NOTE 1: ALL COUPLING BOLTS AND PEDESTAL BASE BOLTS ARE TO HAVE ANTI-SIEZE COMPOUND ON THREADS BEFORE INSTALLATION. WHEN DOING THE SWING TEST BOLTS WILL BE TORQUED AT DIFFERENT VALUES TO REDUCE THE SWING AT PEDESTAL #3.

NOTE 2: TIGHTEN ALL COUPLING BOLTS FIRST TO 5000 PSI IN BOLT ORDER 12,6,3,9,1,7,5,11,8,2,10,4, THEN START THE SWING TEST AND DETERMINE HOW TO TORQUE BOLTS TO MINIMIZE SWING SEEN AT PEDESTAL #3.