

MATSING[®]

LENS TECHNOLOGY ENABLED

LSA Tilt Adjustment & "S"RET Motor General Guide

(Large Sphere Antenna)



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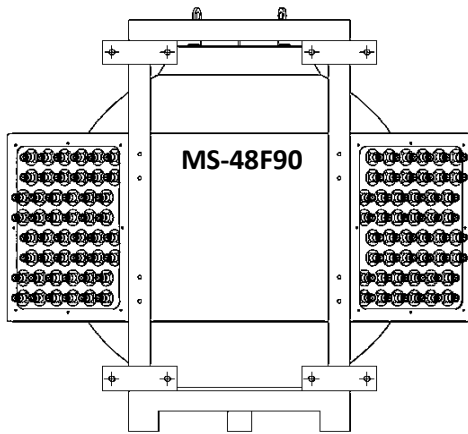
Revision History:

<u>Date</u>	<u>Description</u>	<u>Revised By</u>	<u>Revision Nos</u>
26-Sep-2023	Initial Release	RL	0
07-May-2024	General Update	RL	1
06-Jun-2024	Update Tilt Adjustment/"S" RET Operations	RL	2

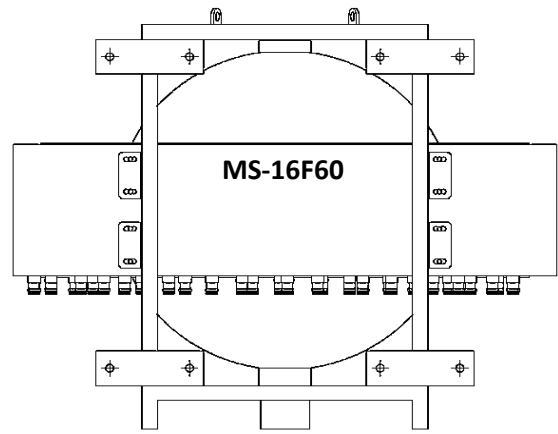
1.00 Large Sphere Antenna's (LSA) Product Overview

1.10 LSA with **FIXED TILT** -Factory Set (Sample Models)

1.11 FIXED TILT Model

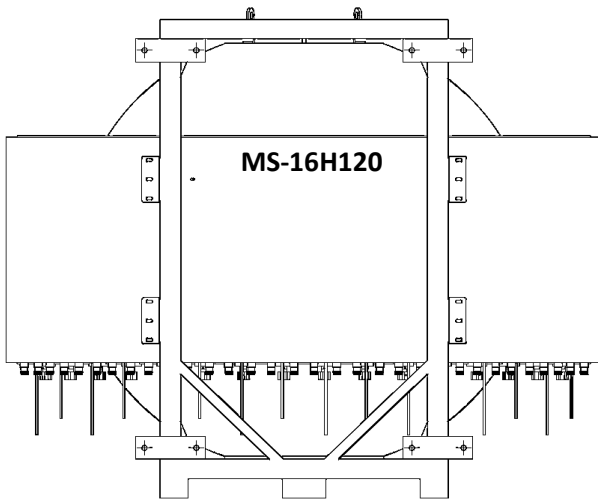


1.12 FIXED TILT Model

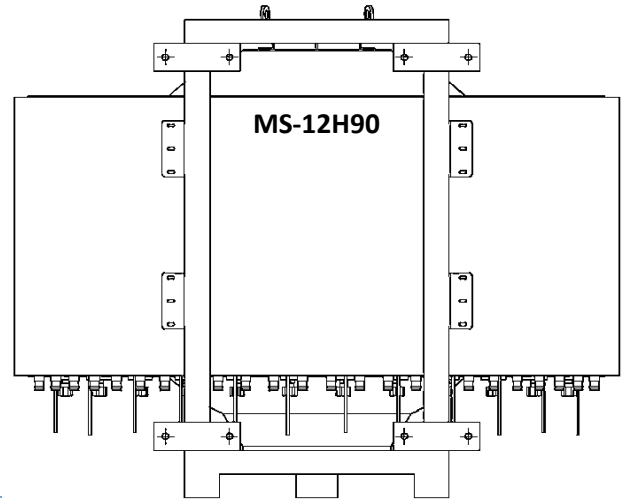


1.20 LSA with **MANUAL TILT** (Sample Models)

1.21 MANUAL TILT Model

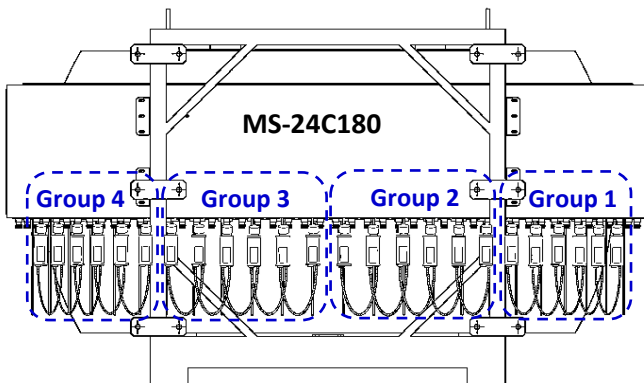


1.22 MANUAL TILT Model

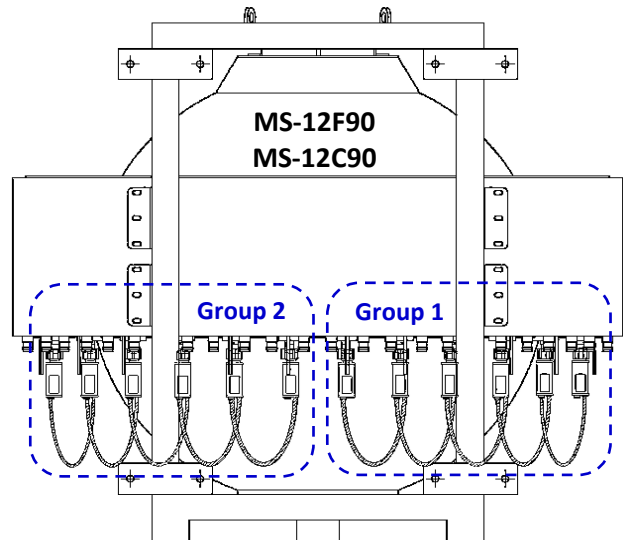


1.30 LSA with **"S RET Motor** (Sample Models)

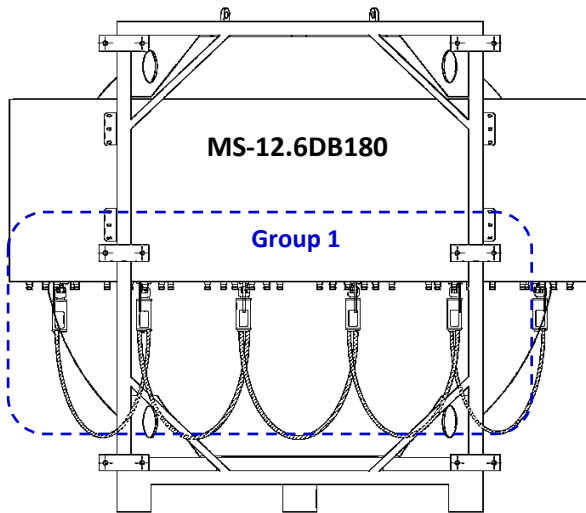
1.31 4 Groups x 6 Motors Model



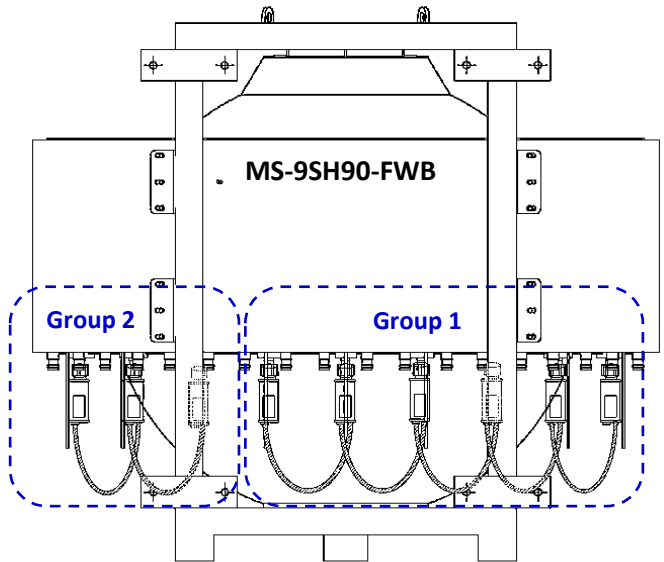
1.32 2 Groups x 6 Motors Model



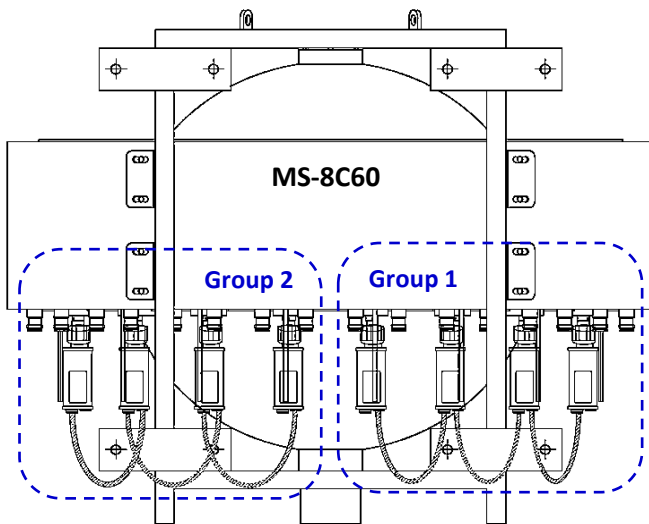
1.33 1 Group x 6 Motor Model



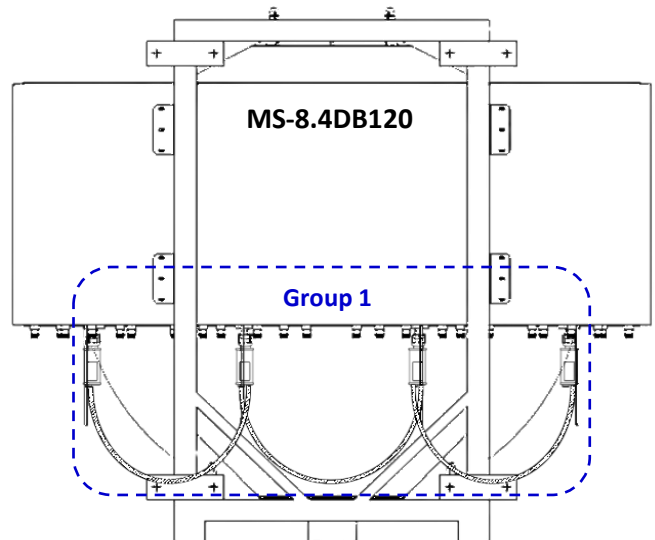
1.34 1 Grp x 6 Motor + 1 Grp x 3 Motor Model



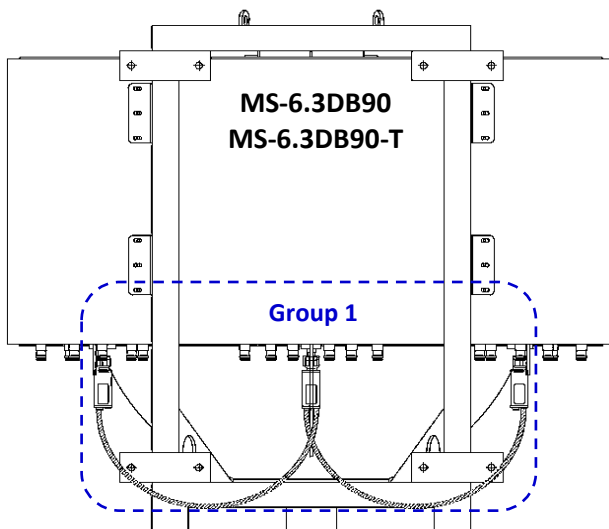
1.35 2 Groups x 4 Motor Model



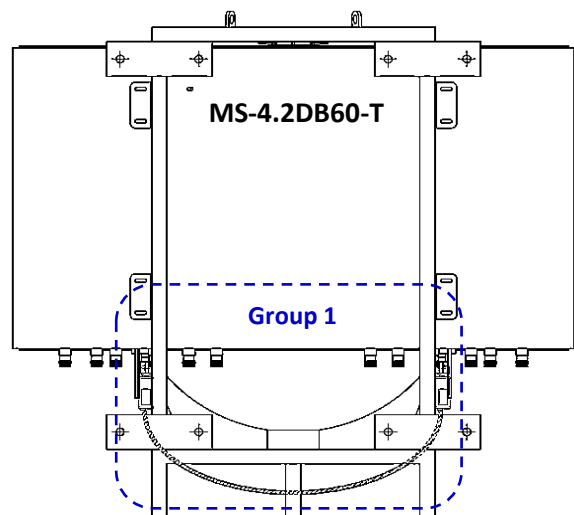
1.36 1 Group x 4 Motor Model



1.37 1 Group x 3 Motor Model

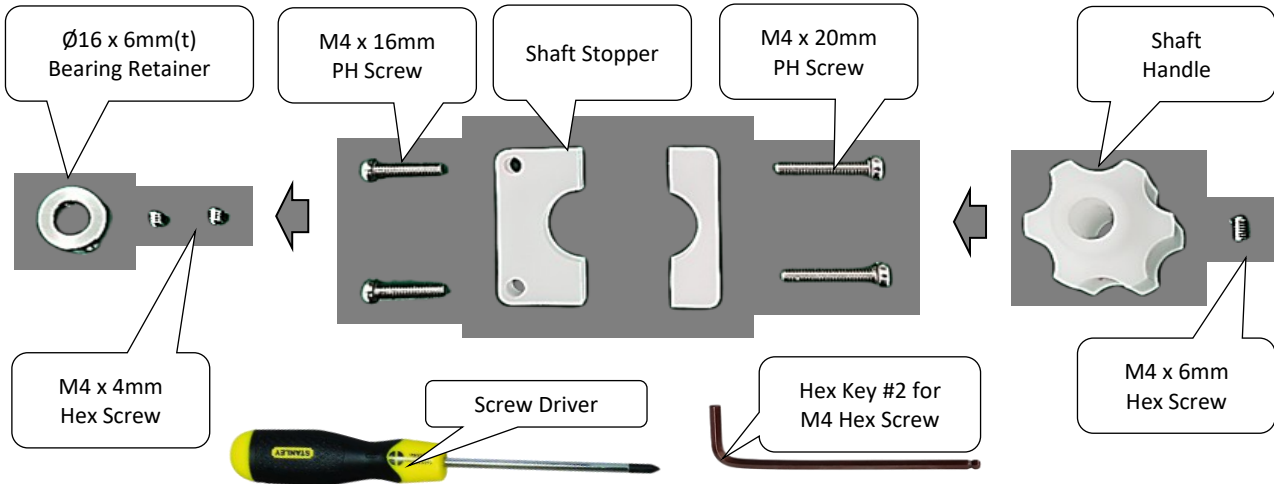


1.38 1 Group x 2 Motor Model

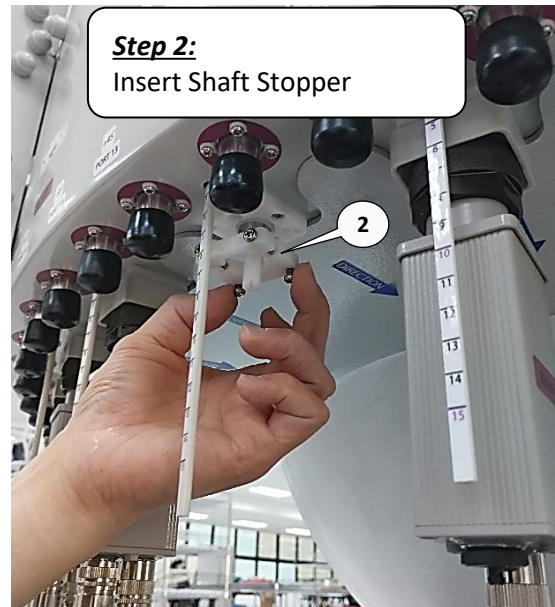
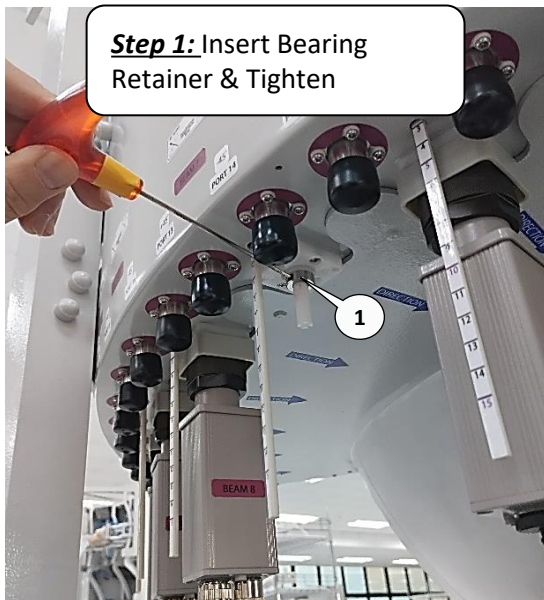


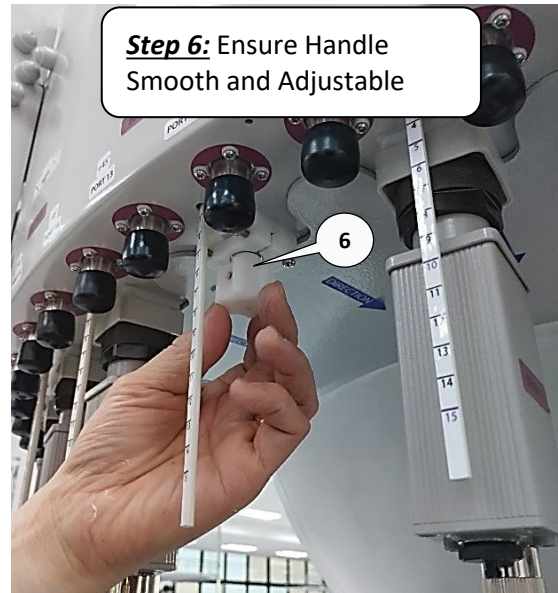
2.00 LSA Manual Tilt & "S" RET Motor Kit Assembly Parts & Tools

2.10 Manual Tilt Assembly Parts & Tools (Example Type 1)




2.11 Manual Tilt Kit Assembly Process (Reverse for Dis-Assembly)





2.12 Manual Tilt Adjustment


Step 1: Tilt Stopper Loosening

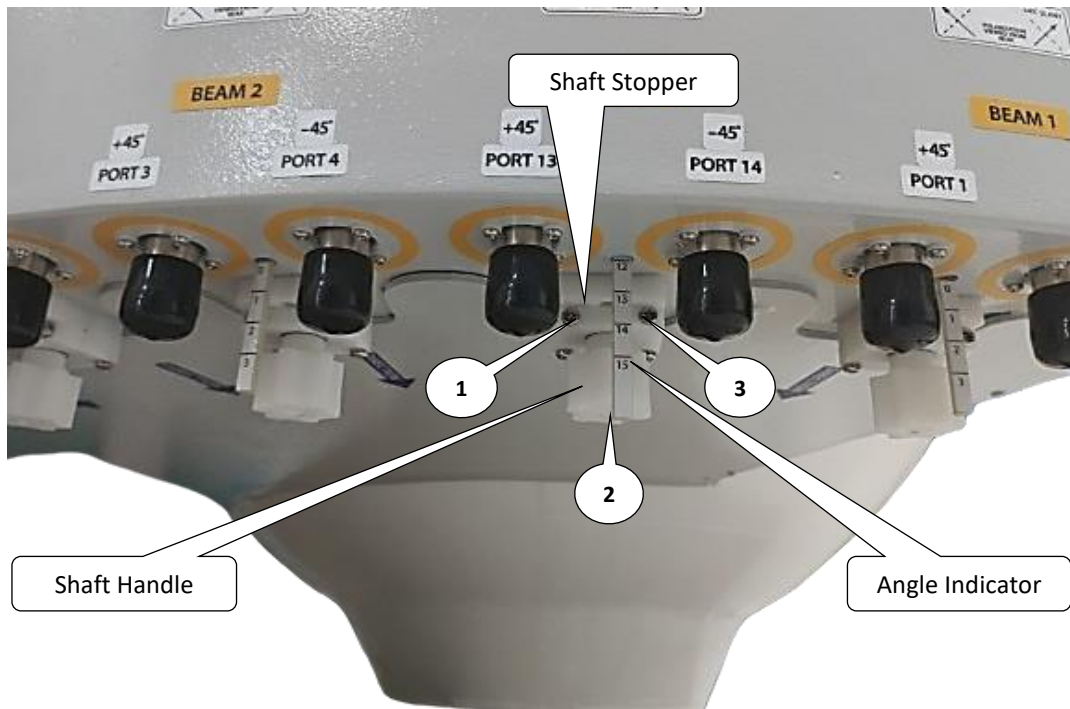
Use  Screw Driver to loosen the shaft stopper 2 x M3 screws

Step 2: Adjusting the Tilt

By hand or use screw driver to turn the shaft handle for adjustment

Step 3: Tilt Stopper Tightening

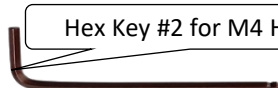
Use  Screw Driver to Tighten Back the shaft stopper 2 x M3 screws



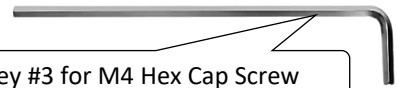
2.20 "S" RET Motor Kit without RET Gasket Adaptor Assembly Parts & Tools (Example Type 2)



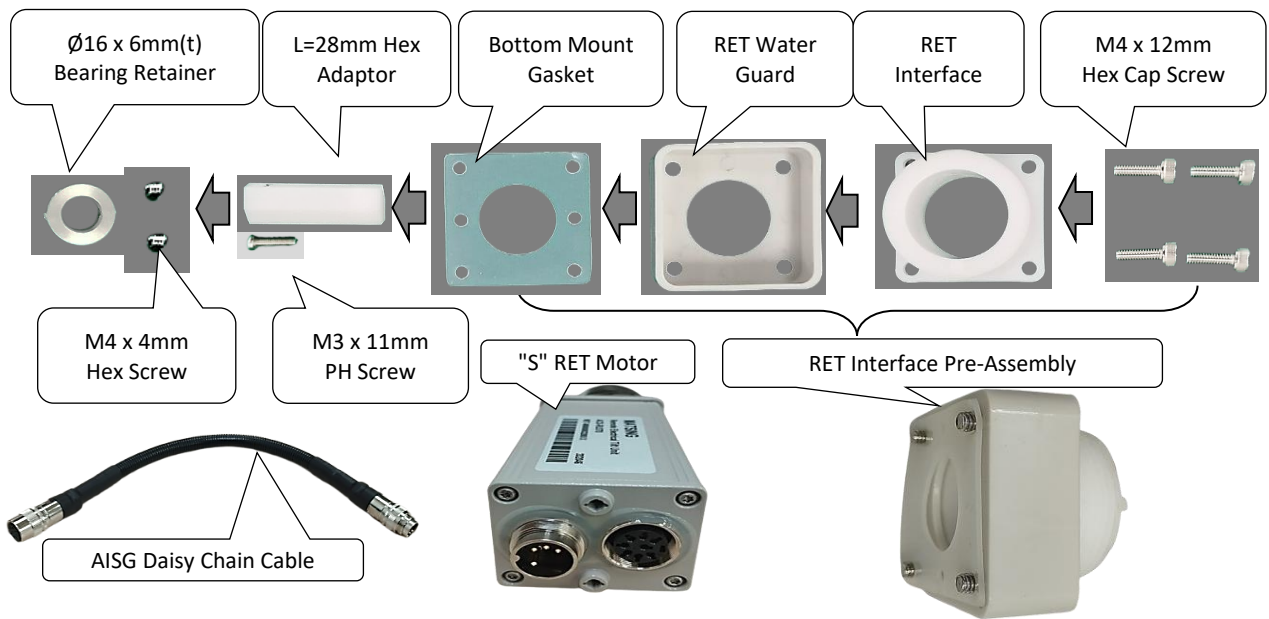
Screw Driver



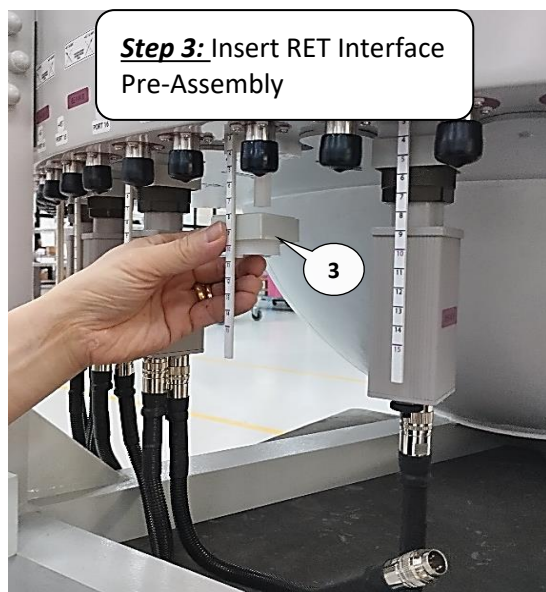
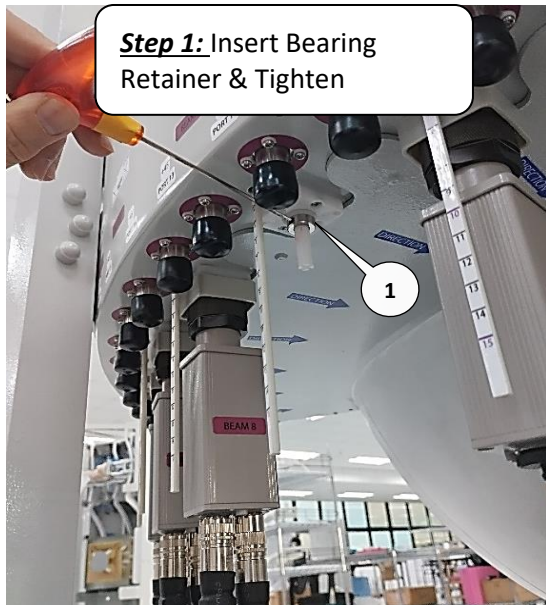
Hex Key #2 for M4 Hex Screw

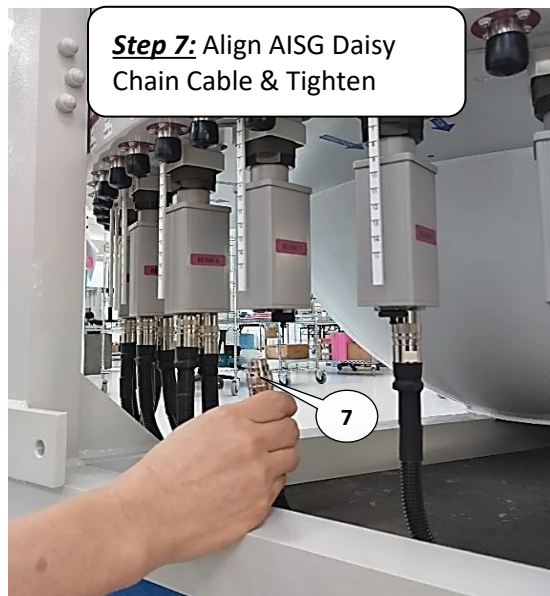
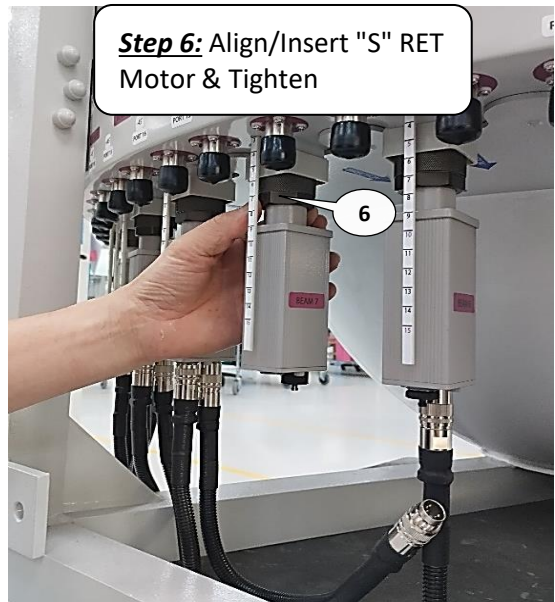
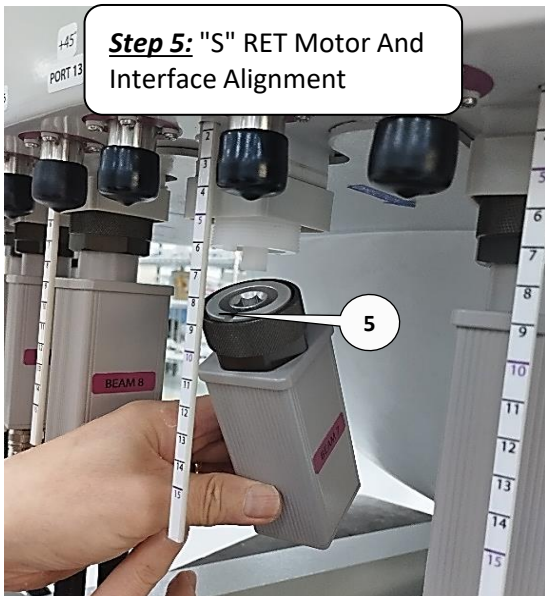


Hex Key #3 for M4 Hex Cap Screw

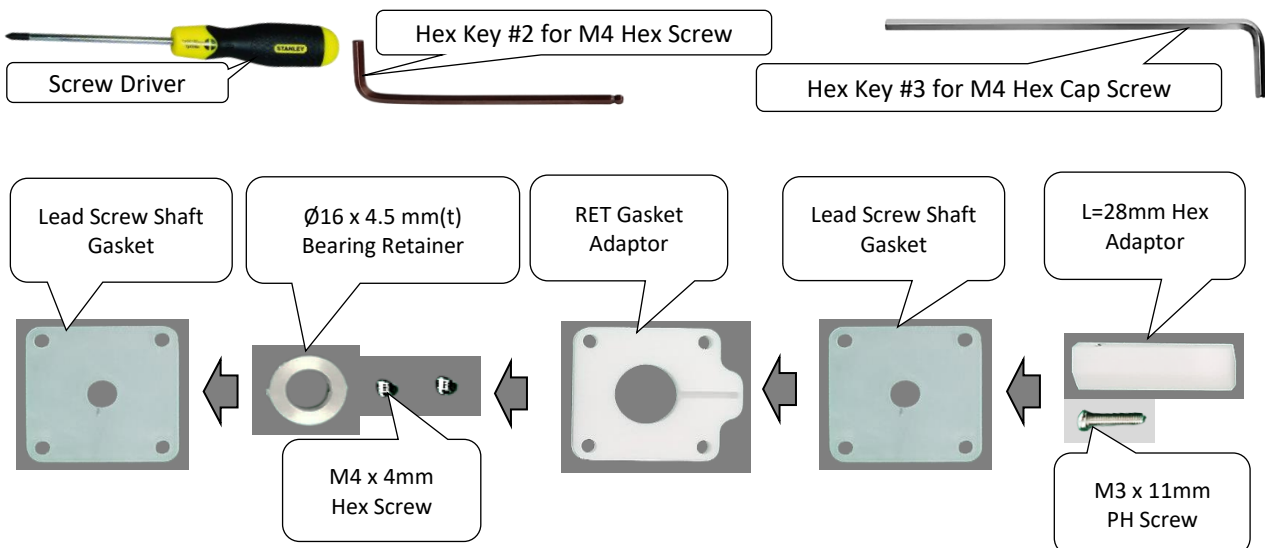


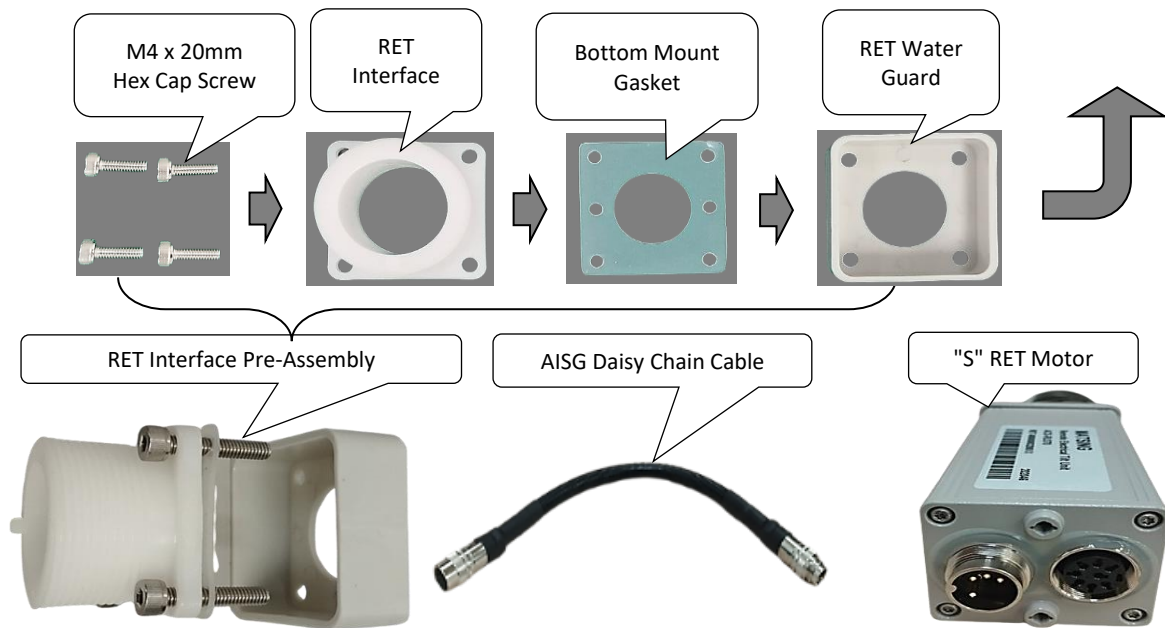
2.21 S RET Motor Kit without RET Gasket Adaptor Assembly Process (Reverse for Dis-Assembly)



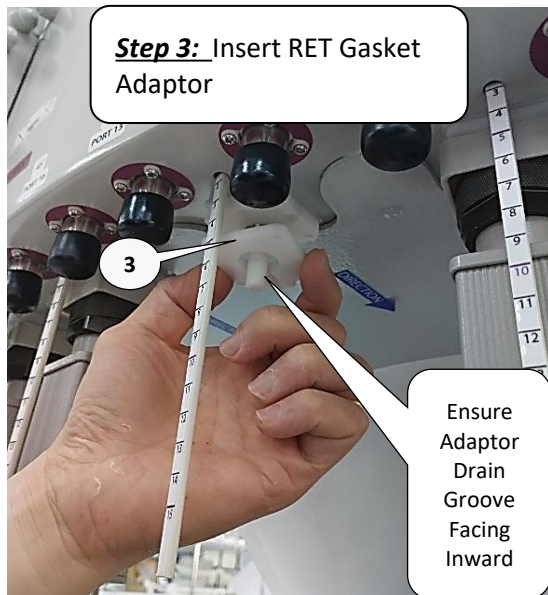
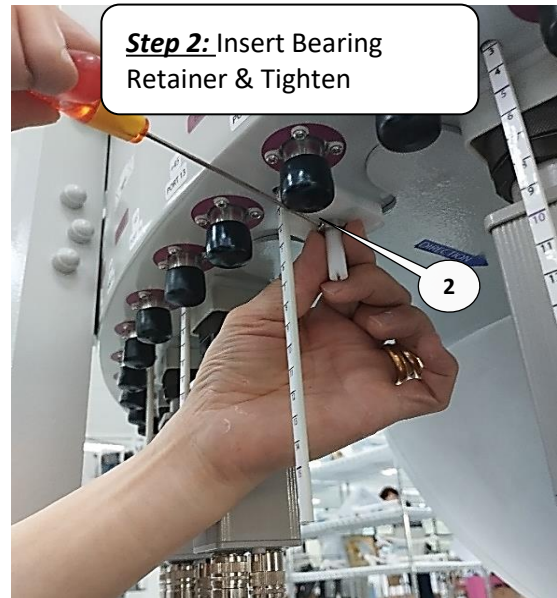


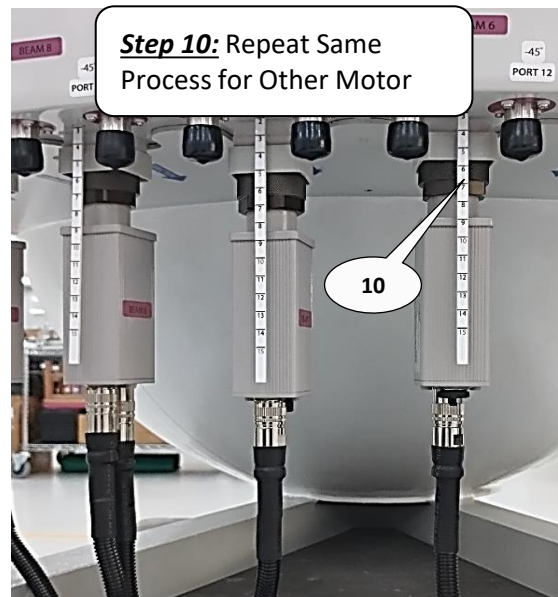
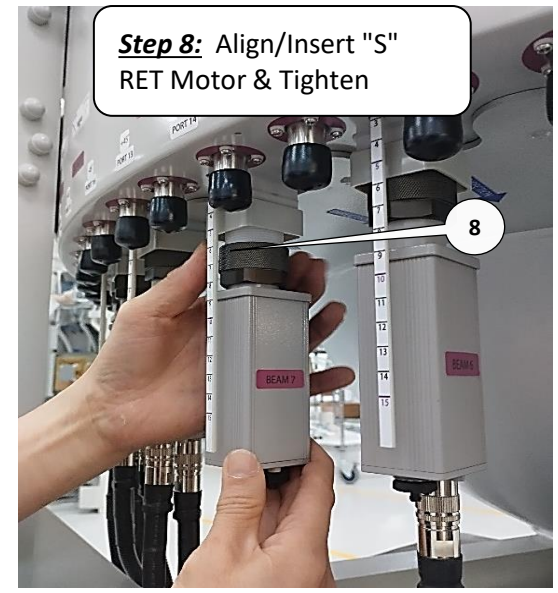
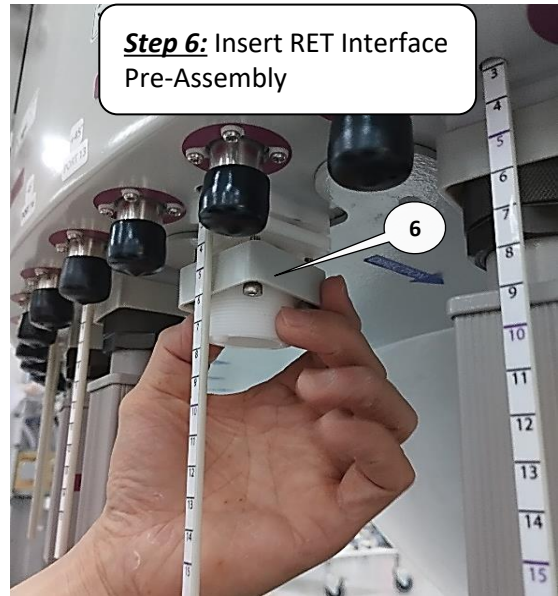
2.30 "S" RET Motor Kit with RET Gasket Adaptor Assembly Parts & Tools (Example Type 3)





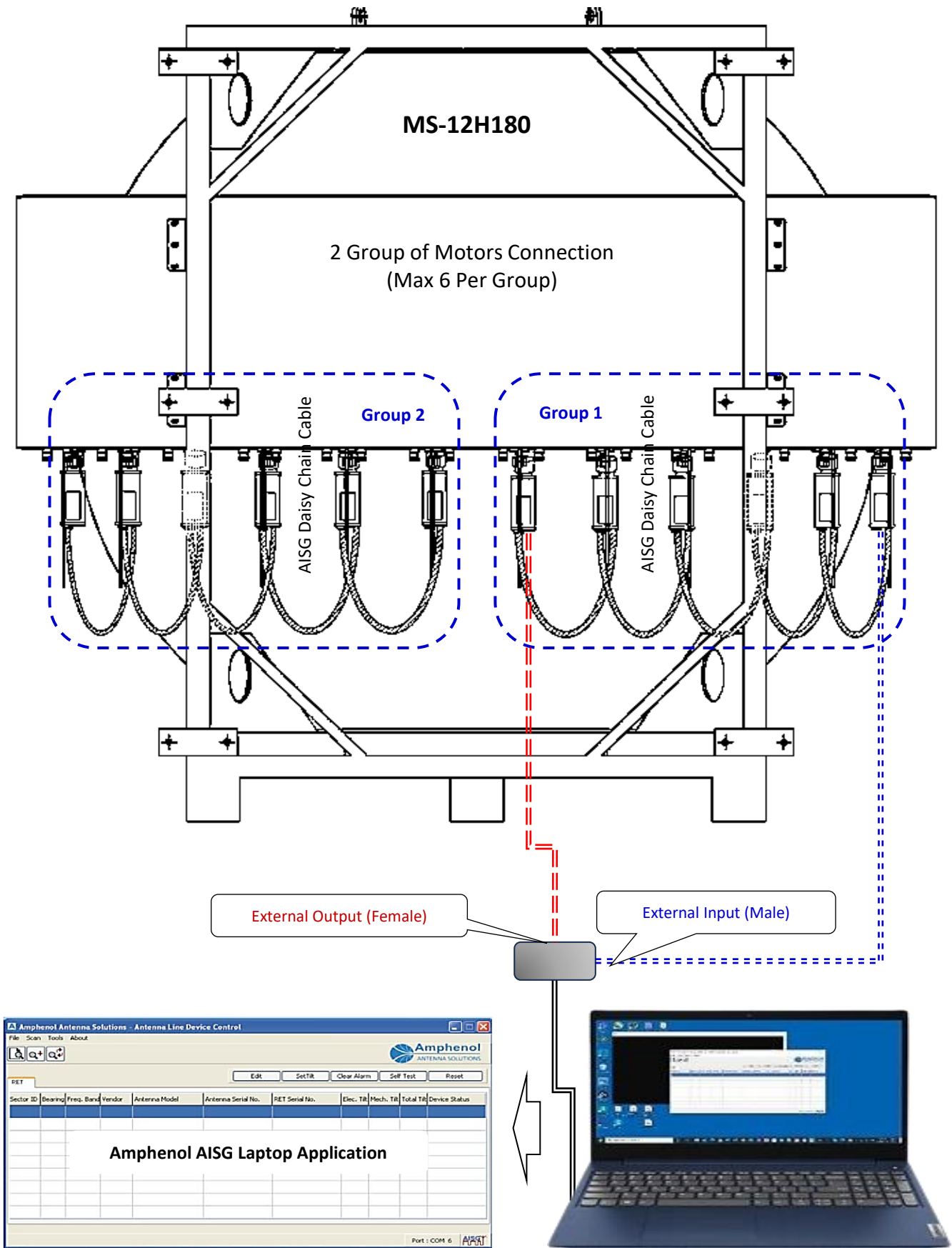
2.31 "S" RET Motor Kit with RET Gasket Adaptor Assembly Process (Reverse for Dis-Assembly)





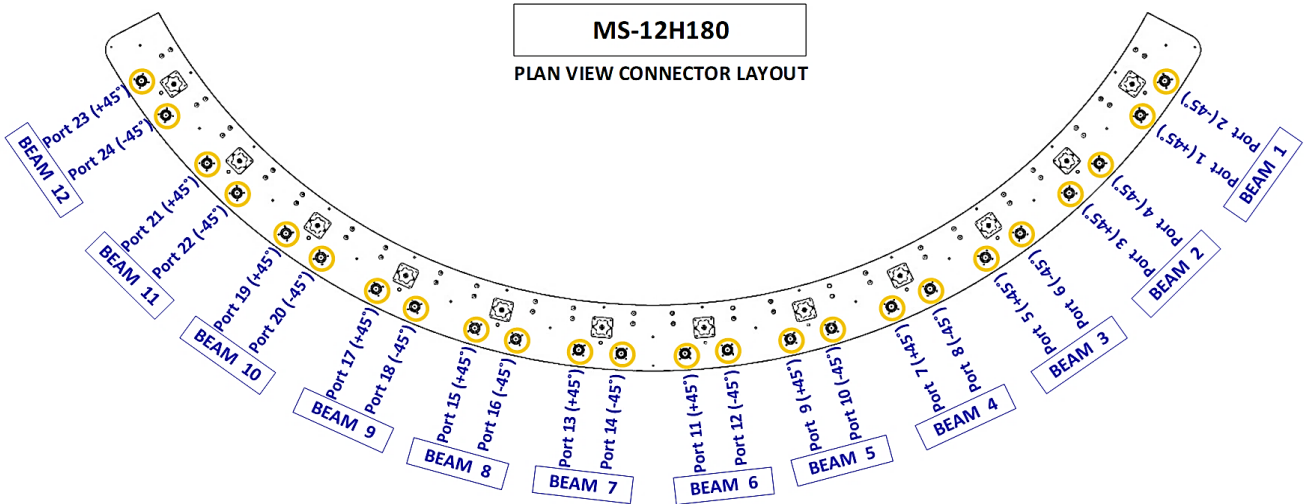
3.00 LSA "S" RET Installation & Controller Display

3.10 "S" RET Installation/Connection *(Example of MS-12H180 sn: #10)*



***** Repeat Same Process For Group 2 Testing**

3.20 Antenna Connector Layout



3.30 Antenna Connector Port Table

BEAM 6		BEAM 5		BEAM 4		BEAM 3		BEAM 2		BEAM 1	
PORT 11	PORT 12	PORT 9	PORT 10	PORT 7	PORT 8	PORT 5	PORT 6	PORT 3	PORT 4	PORT 1	PORT 2
(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)

BEAM 12		BEAM 11		BEAM 10		BEAM 9		BEAM 8		BEAM 7	
PORT 23	PORT 24	PORT 21	PORT 22	PORT 19	PORT 20	PORT 17	PORT 18	PORT 15	PORT 16	PORT 13	PORT 14
(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)	(+45°)	(-45°)

3.40 LSA RET Operations / Information

A standard AISG 2.0 compliant cable (not included) is used to connect the MDCU to the AISG interface control. Once connected, use an AISG 2.0 compliant Control software to perform a Sub Unit SCAN to identify the RET Elements.

3.41 Model & S/N Reference From Label



Reminder: If Information Has Been Edited, Remember to Perform "Radio Hard Reset" for Changes to take Place

Add 3 Zero(0) in front if the serial nos If is shorter than 7 digits

3.50 Group 1 - Information & Display

NO	HDLC	Vendor	Serial Number	Product Number	H/W Version	S/W Version	3GPP	Device	AISG	Connect	Link
1	1	MS	12H180-0000010B01	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
2	2	MS	12H180-0000010B02	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
3	3	MS	12H180-0000010B03	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
4	4	MS	12H180-0000010B04	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
5	5	MS	12H180-0000010B05	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
6	6	MS	12H180-0000010B06	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link

12H180-0000010B01 } Display: Beam 1 (Reference as RET 01)
 12H180-0000010B02 } Display: Beam 2 (Reference as RET 02)
 12H180-0000010B03 } Display: Beam 3 (Reference as RET 03)
 12H180-0000010B04 } Display: Beam 4 (Reference as RET 04)
 12H180-0000010B05 } Display: Beam 5 (Reference as RET 05)
 12H180-0000010B06 } Display: Beam 6 (Reference as RET 06)

Model s/no. (7 Digits)

3.51 Beam Nos & Port Nos Display

RET ID : MS12H180-0000010B01

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 1	MS-12H180	MS12H180-00000010	10.0

Display: Beam 1 (Refer as RET 01) RET 01 Info: R1 (HB1,P1,2)

BEAM 1	
PORT 1	PORT 2
(+45°)	(-45°)

RET ID : MS12H180-0000010B02

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 2	MS-12H180	MS12H180-00000010	10.0

Display: Beam 2 (Refer as RET 02) RET 02 Info: R2 (HB2,P3,4)

BEAM 2	
PORT 3	PORT 4
(+45°)	(-45°)

RET ID : MS12H180-0000010B03

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 3	MS-12H180	MS12H180-00000010	10.0

Display: Beam 3 (Refer as RET 03) RET 03 Info: R3 (HB3,P5,6)

BEAM 3	
PORT 5	PORT 6
(+45°)	(-45°)

RET ID : MS12H180-0000010B04

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 4	MS-12H180	MS12H180-00000010	10.0

Display: Beam 4 (Refer as RET 04) RET 04 Info: R4 (HB4,P7,8)

BEAM 4	
PORT 7	PORT 8
(+45°)	(-45°)

RET ID : MS12H180-0000010B05

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 5	MS-12H180	MS12H180-00000010	10.0

BEAM 5

PORT 9	PORT 10
(+45°)	(-45°)

Display: Beam 5 (Refer as RET 05) **RET 05 Info:** R5 (HB5,P9,10)

RET ID : MS12H180-0000010B06

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 6	MS-12H180	MS12H180-00000010	10.0

BEAM 6

PORT 11	PORT 12
(+45°)	(-45°)

Display: Beam 6 (Refer as RET 06) **RET 06 Info:** R6 (HB6,P11,12)

3.60 Group 2 - Information & Display

File Help

ALD List

NO	HDLC	Vendor	Serial Number	Product Number	H/W Version	S/W Version	3GPP	Device	AISG	Connect	Link
1	1	MS	12H180-0000010B07	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
2	2	MS	12H180-0000010B08	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
3	3	MS	12H180-0000010B09	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
4	4	MS	12H180-0000010B10	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
5	5	MS	12H180-0000010B11	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link
6	6	MS	12H180-0000010B12	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	Link

12H180-0000010B07 } **Display: Beam 7 (Reference as RET 07)**

12H180-0000010B08 } **Display: Beam 8 (Reference as RET 08)**

12H180-0000010B09 } **Display: Beam 9 (Reference as RET 09)**

12H180-0000010B10 } **Display: Beam 10 (Reference as RET 10)**

12H180-0000010B11 } **Display: Beam 11 (Reference as RET 11)**

12H180-0000010B12 } **Display: Beam 12 (Reference as RET 12)**

Model s/no. (7 Digits)

3.61 Beam Nos & Port Nos Display

RET ID : MS12H180-0000010B07

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 7	MS-12H180	MS12H180-00000010	10.0

BEAM 7

PORT 13	PORT 14
(+45°)	(-45°)

Display: Beam 7 (Refer as RET 07) **RET 07 Info:** R7 (HB7,P13,14)

RET ID : MS12H180-0000010B08

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 8	MS-12H180	MS12H180-00000010	10.0

BEAM 8

PORT 15	PORT 16
(+45°)	(-45°)

Display: Beam 8 (Refer as RET 08) **RET 08 Info:** R8 (HB8,P15,16)

RET ID : MS12H180-0000010B09

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 9	MS-12H180	MS12H180-00000010	10.0

Display: Beam 9 (Refer as RET 09)

RET 09 Info: R9 (HB9,P17,18)

BEAM 9	
PORT 17	PORT 18
(+45°)	(-45°)

RET ID : MS12H180-0000010B10

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 10	MS-12H180	MS12H180-00000010	10.0

Display: Beam 10 (Refer as RET 10)

RET 10 Info: R10 (HB10,P19,20)

BEAM 10	
PORT 19	PORT 20
(+45°)	(-45°)

RET ID : MS12H180-0000010B11

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 11	MS-12H180	MS12H180-00000010	10.0

Display: Beam 11 (Refer as RET 11)

RET 11 Info: R11 (HB11,P21,22)

BEAM 11	
PORT 21	PORT 22
(+45°)	(-45°)

RET ID : MS12H180-0000010B12

RET Status and Control

Antenna Information List

NO	Sector ID	Ant Model	Ant Serial	Current Tilt
1/1	Beam 12	MS-12H180	MS12H180-00000010	10.0

Display: Beam 12 (Refer as RET 12)

RET 12 Info: R12 (HB12,P23,24)

BEAM 12	
PORT 23	PORT 24
(+45°)	(-45°)