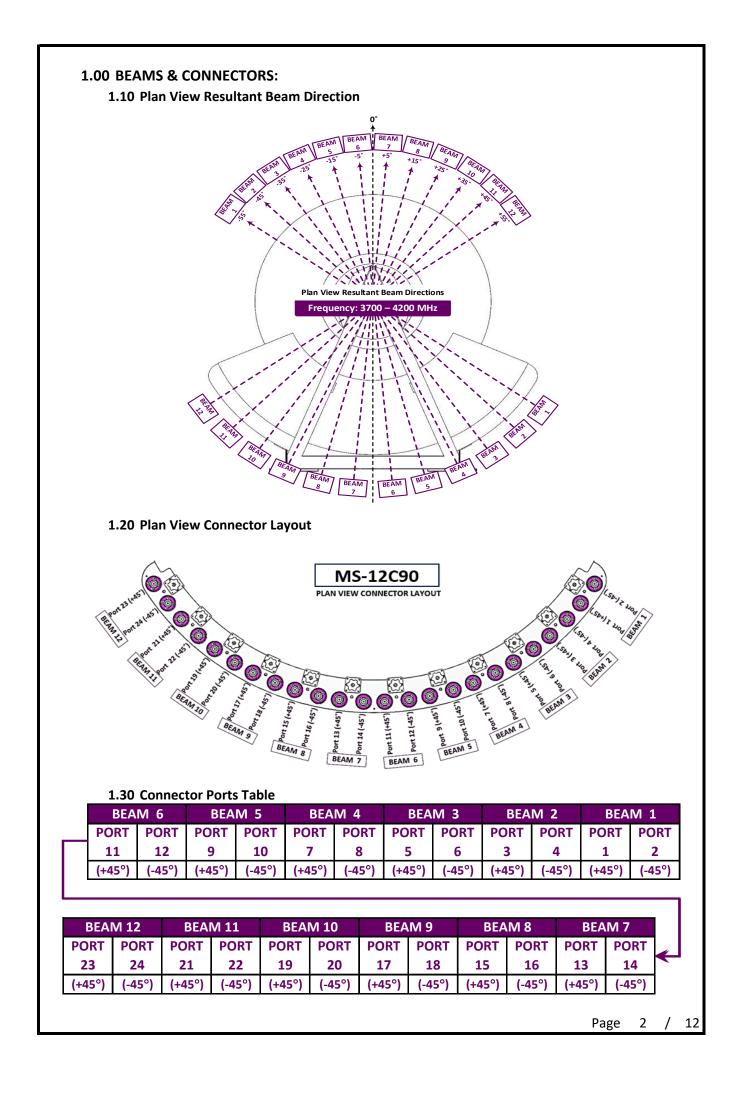
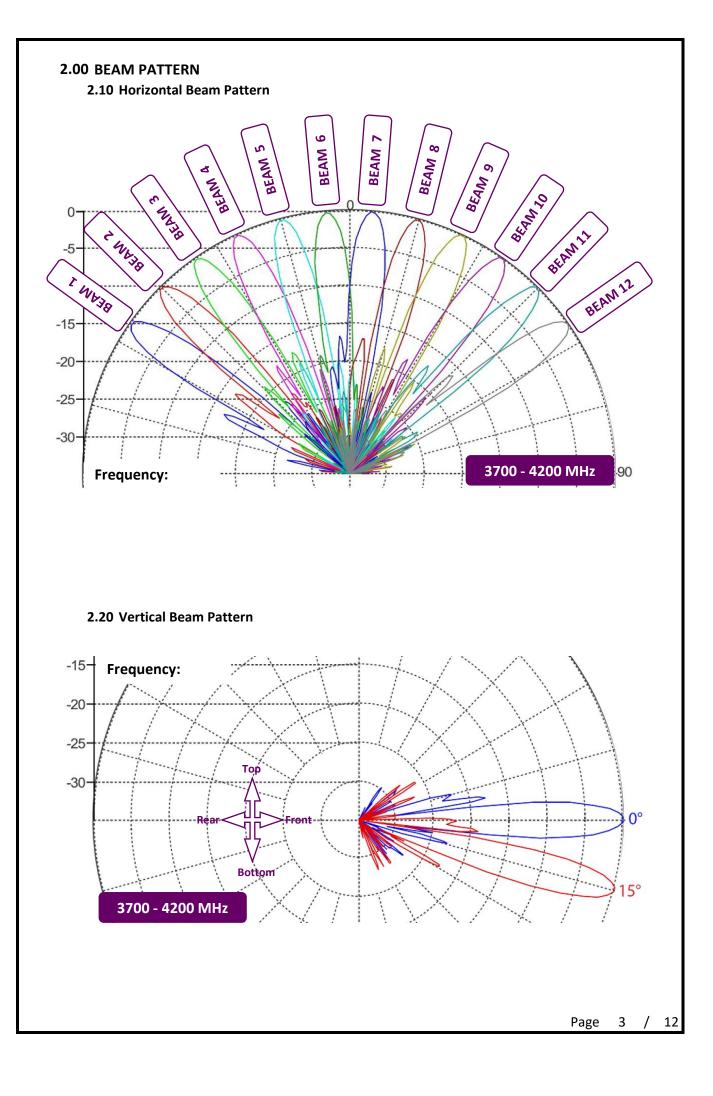
	MS-12C90		Instruction Manual				
LENS TECHNOL	OGY ENABLED	Date	Prepared by	Approved by	Document nos	Revisio	
		13 May 2024	Ray Ling	Pavel	MS-12C90-IM-001	3	
				NUAL MS-12	2090		
TA	BLE OF	CONTENTS:					
		ONNECTORS:					
		w Resultant Bea	m Direction	1.20 Plan Viev	w Connector Layout		
1.30	Connect	or Ports Table					
2.00 BEA							
2.10	Horizon	tal Beam Patterr	1	2.20 Vertical	Beam Pattern		
3.00 MA	NUAL T	ILT ADJUSTME	NT				
4.00 "S"	RET AC	TUATOR INSTA	LLATIONS/REP	LACEMNT PROC	CESS (Optional)		
4.10	"S" RET	Actuator Materi	als & Tools				
4.20	Installat	ion / Replaceme	nt Process (Reve	erse Process for U	ninstallation)		
			IECTION & OPE				
				(2 Group of 6 Mo	otors)		
		& S/N Reference					
			e (Group 1)		Port Nos Display (Gr	• •	
5.50	Display	Info & Reference	e (Group 2)	5.60 Beam &	Port Nos Display (Gr	oup 2)	
		TATION / INST					
		rtation (From Po	-	6.20 Bracket	-		
		ion using a crane	2	6.31 Lifting th			
		Installation		6.41 Antenna	0		
6.42	Digital L	evel Gauge Calib	ration	6.43 Adjustm	ent Requirement		
Revision His	tory:						
Date			Descriptio	on	Rev b	y Rev nos	
25-Sep-23	Include	RET Controller D	isplay		Ray	1	
10-Nov-23	Add RET	Replacement /	Installation Caut	ion Point	Ray	2	
10-Nov-23 Add RET Replacement / Installation Cau				nce Ray			

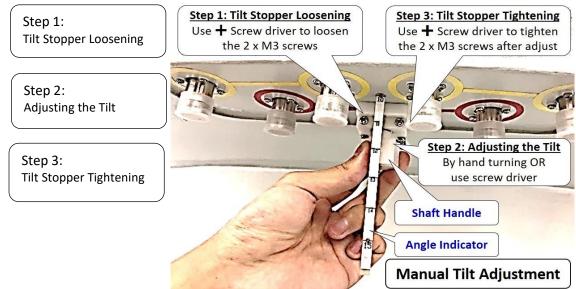
email: info@matsing.com

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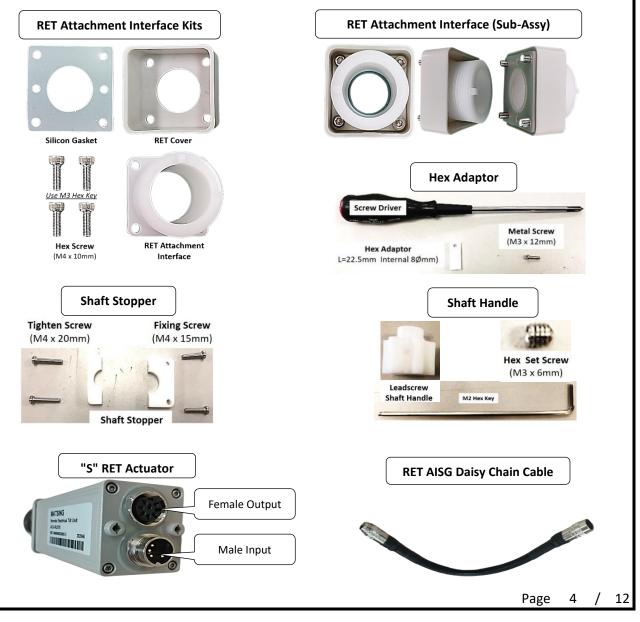




3.00 MANUAL TILT ADJUSTMENT

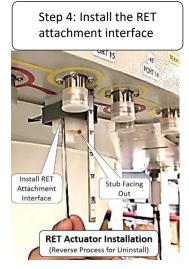


4.00 "S" RET ACTUATOR INSTALLATIONS/REPLACEMNT PROCESS (Optional) 4.10 "S" RET Actuator Materials & Tools



4.20 Installation / Replacement Process (Reverse Process for Uninstallation)













1. Do not apply any rotation force to the cable

2. Carefully align same direction to the keyway before insertion.

3. Insert direct (not angular) until well fully seated before turning.

4. Once both thread is fit can start slowly turning.

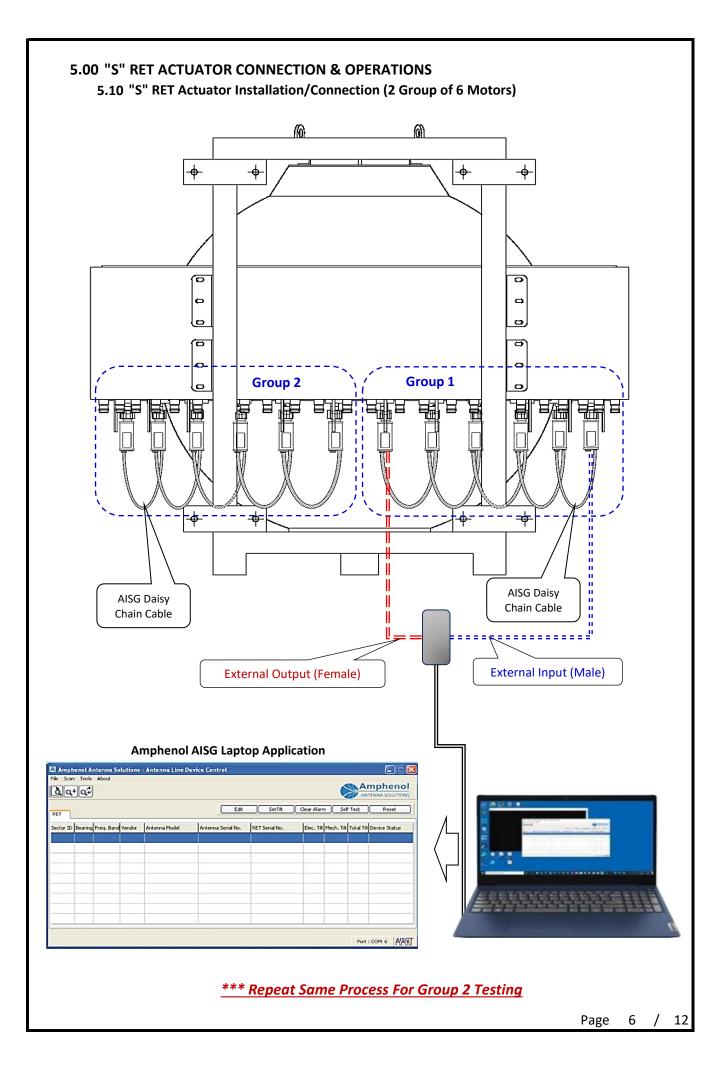
5. Tighten the AISG connector by hand only.

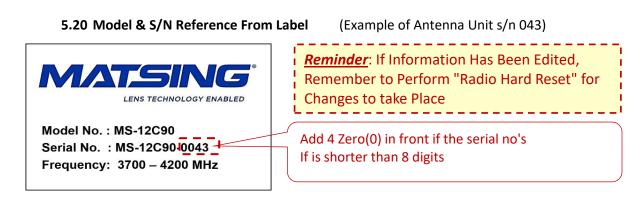
6. If use torque wrench do not exceed 1.1 Nm (0.8 ft if) torque.



Repeat the same process for other actuator installation.

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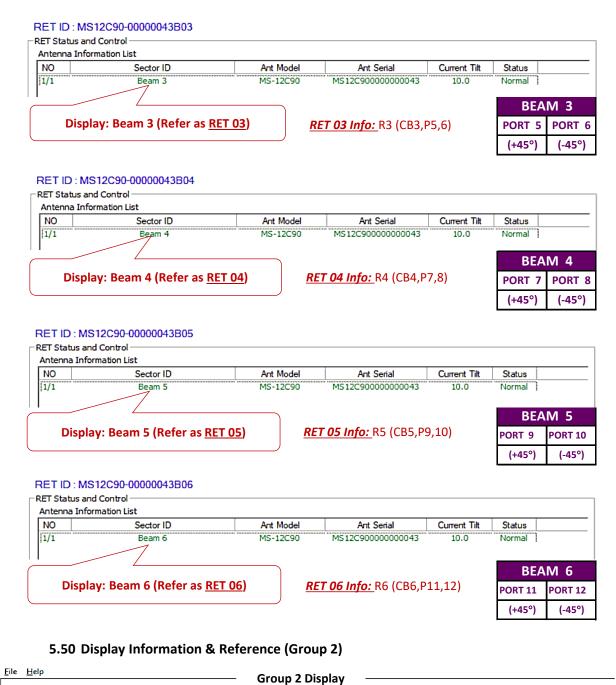




5.30 Display Information & Reference (Group 1)

1									1		
		Product Number			3GPP	Device	AISG	Connect		Link	-
	MS 12C90-00000043B01 MS 12C90-00000043B02	ACS-RU370 ACS-RU370	1.00	5.12	6	Single RET	-	Connect Connect	-	Link	l
	MS 12C90-00000043802 MS 12C90-00000043803	ACS-RU370	1.00 1.00	5.12 5.12	6 6	Single RET Single RET		Connect Connect		Link Link	
	MS 12C90-00000043804	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	~	Link	
	MS 12C90-00000043B05	ACS-RU370	1.00	5.12	6	Single RET		Connec		Link	
66	MS 12C90-00000043B06	ACS-RU370	1.00	5.12	6	Single RET	2	Connect	t 🥝	Link	
	L2C90-00000 L2C90-00000 L2C90-000000 L2C90-000000 L2C90-000000 Model s/no. (8 D	143803 143804 143805 143806 143806	Display: I	Beam 3 (I Beam 4 (I Beam 5 (I Beam 6 (I	Refer Refer Refer	ence as ence as ence as	<u>RET (</u> RET (RET (0 <u>3)</u> 0 <u>4)</u> 0 <u>5</u>)			
	and Control nformation List Sector ID Beam 1		Ant Model MS-12C90	MS12	Ant Se	rial 0000043		ent Tilt	Status		
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				DET 04 1			1 2)		l l	BEAM	1
Dis	play: Beam 1 (Refe	r as <u>RET 01</u>)		<u>RET 01 Ir</u>	<u>ијо:</u> к.	l (CRI'h	1,2)		POR	T 1 P	ORT
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									(+45	5°)	(-45°
DETIO											
	MS12C90-00000043B]2									
-RET Status	and Control										
	nformation List					1		,			
	Sector ID		Ant Model		Ant Ser			nt Tilt	Status		
NO			MS-12C90	MS12	C90000	0000043	10	0.0	Norma		
	Beam 2										
NO	Beam 2										2
NO	Beam 2								E	BEAM	~
NO 1/1		er as RFT 02)		RET 02 li	nfo: Ri	2 (CB2,P	3,4)				
NO 1/1	Beam 2 splay: Beam 2 (Refe	er as <u>RET 02</u>)		<u>RET 02 li</u>	n <u>fo:</u> R	2 (CB2,P	3,4)		POR	T 3 P	ORT
NO 1/1		er as <u>RET 02</u>)		<u>RET 02 li</u>	n <u>fo:</u> R	2 (CB2,P	3,4)			T 3 P	ORT
NO		er as <u>RET 02</u>)		<u>RET 02 II</u>	n <u>fo:</u> R.	2 (CB2,P	3,4)		POR	T 3 P	ORT (-45°
NO 1/1		er as <u>RET 02</u>)		<u>RET 02 II</u>	n <u>fo:</u> R	2 (CB2,P	3,4)		POR	T 3 P	ORT

12



MS 12C90-0000043807 MS 12C90-0000043808 MS 12C90-0000043808 MS 12C90-0000043810 MS 12C90-0000043811 MS 12C90-00000043812 12C90-00000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-0000000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-000000043812 12C90-00000000000043812 12C90-00000000000000000000000000000000000	ACS-RU370 ACS-RU	isplay: Beam 8 isplay: Beam 9	(Refere (Refere	ence as <u>F</u> ence as <u>F</u>	RET O	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Connect		Link Link Link Link Link Link		
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12090-00000)43B11 <mark>}</mark>)43B12 <mark>}</mark> Di		1 (Refer	rence as	RET	<u>11</u>)					
12		C90+00000043B12}	C90+00000043B12} Display: Beam 1	C90+00000043812 Display: Beam 12 (Refer	C90+00000043B12 Display: Beam 12 (Reference as	C90+00000043812 Display: Beam 12 (Reference as <u>RET</u>	C90+0000043B12) Display: Beam 12 (Reference as <u>RET 12</u>)	C90+00000043812 Display: Beam 12 (Reference as <u>RET 12</u>)	C90+00000043B12} Display: Beam 12 (Reference as <u>RET 12</u>)	C90+00000043B12} Display: Beam 12 (Reference as <u>RET 12</u>)	C90+0000043B12} Display: Beam 12 (Reference as <u>RET 12</u>)

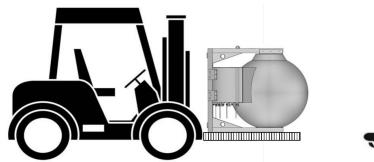
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Display: Beam 8 (Refer as RET 08) RET 08 Info: R8 (CB8,P15,16) PORT 15 PORT 16 (r45°) RET 10 RET 10 Info: R10 (CB10, P19, 20) PORT 19 PORT 20 (r45°) RET 10 Info: R11 (CB11, P21, P20) RET 11 PORT 21 PORT 22 (r45°) RET 11 PORT 22 RET 12 PORT 22								
Display: Beam 8 (Refer as RET 08) RET 08 Info: R8 (CB8,P15,16) PORT 15 PORT 16 (r45°) RET 10 RET 10 Info: R10 (CB10, P19, 20) PORT 19 PORT 20 (r45°) RET 10 Info: R11 (CB11, P21, P20) RET 11 PORT 21 PORT 22 (r45°) RET 11 PORT 22 RET 12 PORT 22								
PORT 13 PORT 13 (r45°) (r45°) (r45°) (r45°) RET ID : MS12C90-00000043B09 EFT Status and Control No Sector ID No Sector ID MS-12C90 MS12C90000000043 Display: Beam 9 MS-12C90 MS12C90-00000043B10 RET 09 Info: R9 (CB9,P17,18) RET ID : MS12C90-00000043B10 RET 09 Info: R9 (CB9,P17,18) RET Status and Control Art Model Antenna Information List NO NO Sector ID MS12C90-000000043B10 RET 10 Info: R10 (CB10,P19,20) BEAM 10 PORT 12 PORT 19 PORT 20 (r45°) (r45°) RET ID : MS12C90-000000043B11 ET Status and Control Art Model Art Serial Current TR NO Sector ID Art Model Art Serial Info: Scotor ID Art Model MS12C90000000043 10.0 Normal Beam 11 MS12C900-000000043B12 MS12C900000000043		·					BEA	M 8
Interime Interim Interim	Displa	iy: Beam 8 (Refer as <u>R</u>	ET 08)	<u> </u>	<u>RET 08 Info:</u> R8 (CB8,F	215,16)	PORT 15	PORT 16
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BEET Status and Control Art Model Art Senial Current Tit Status IV1 Beam 9 MS-12C90 MS 12C90000000043 10.0 Normal Display: Beam 9 (Refer as RET 09) RET 09 Info:: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (+45°) (-45°) RET ID : MS12C90-00000043B10 RET 209 Info:: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (+45°) (-45°) IV1 Beam 10 MS-12C90 MS12C9000000043 Normal IV1 Beam 10 MS-12C90 MS12C90000000043 Normal Display: Beam 10 (Refer as RET 10) RET 10 Info:: R10 (CB10,P19,20) BEAM 10 PORT 19 PORT 20 (+45°) (+45°) IV1 Beam 11 MS-12C90 MS12C9000000043 10.0 NO Sector ID Art Model Art Senial Current Tit Status IV1 Beam 11 MS-12C90 MS12C9000000043 10.0 Normal IV1 Beam 11 RET 11 Info:: R11 (CB11,P21,22) RET 12 Norm							(+45°)	(-45°)
Ber Status and Control Ant Model Ant Serial Current Tit Status IV1 Beam 9 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 9 (Refer as RET 09) RET 09 Info:: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (+45°) (-45°) (-45°) (-45°) (-45°) RET ID : MS12C90-00000043B10 Ant Model Ant Senial Current Tit Status NO Sector ID Ant Model Ant Senial Current Tit Status IV1 Beam 10 MS-12C90 MS12C90000000043 10.0 Normal IV1 Beam 10 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 10 (Refer as RET 10) RET 10 Info:: R10 (CB10,P19,20) BEAM 10 PORT 20 RET ID : MS12C90-00000043B11 EET Status and Control Ant Model Ant Senial Current Tit Status NO Sector ID Ant Model Ant Senial Current Tit Status IV1 Beam 11 MS-12C90 MS12C90000000043 10.0								
Ber Status and Control Ant Model Ant Serial Current Tit Status IV1 Beam 9 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 9 (Refer as RET 09) RET 09 Info:: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (+45°) (-45°) (-45°) (-45°) (-45°) RET ID : MS12C90-00000043B10 Ant Model Ant Senial Current Tit Status NO Sector ID Ant Model Ant Senial Current Tit Status IV1 Beam 10 MS-12C90 MS12C90000000043 10.0 Normal IV1 Beam 10 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 10 (Refer as RET 10) RET 10 Info:: R10 (CB10,P19,20) BEAM 10 PORT 20 RET ID : MS12C90-00000043B11 EET Status and Control Ant Model Ant Senial Current Tit Status NO Sector ID Ant Model Ant Senial Current Tit Status IV1 Beam 11 MS-12C90 MS12C90000000043 10.0		12C90-00000043B09						
Antenna Information List Model Ant Serial Current Tit Status I/I Beam 9 MS-12C90 MS12C9000000043 10.0 Normal Display: Beam 9 (Refer as RET 09) RET 09 Infor: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (+45°) (-45°) RET ID : MS12C90-00000043810 RET 30 Infor: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (+45°) (-45°) RET ID : MS12C90-00000043810 RET 10 Infor: R10 (CB10,P19,20) Normal BEAM 10 PORT 19 PORT 20 (+45°) (-45°) (-45°) Display: Beam 10 (Refer as RET 10) RET 10 Infor: R10 (CB10,P19,20) BEAM 10 PORT 20 RET ID : MS12C90-00000043B11 Antenna Information List Normal Normal Normal NO Sector ID Ant Model Ant Senial Current Tit Status NO Sector ID Ant Model Ant Senial Current Tit Status NO Sector ID Ant Model Ant Senial Current Tit Status NO<								
NO Sector ID Art Model Art Senal Current Tit Status 1/1 Beam 9 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 9 (Refer as RET 09) RET 09 Info: R9 (CB9,P17,18) BEAM 9 PORT 17 PORT 18 (r45°) (r45°) RET ID : MS12C90-00000043B10 RET status and Control Antenna Information List NO Sector ID Art Model Art Senal Current Tit Status Display: Beam 10 (Refer as RET 10) MS-12C90 RET 10 Info: R10 (CB10,P19,20) BEAM 10 PORT 20 (r45°) (r45°) KET Status and Control Art Model Antenna Information List Normal NO Sector ID Art Model No Sector ID Art Model Normal Normal Normal I/1 Beam 11 (Refer as RET 11) MS12C90000000043 Normal Normal Normal RET 1D : MS12C90-000000043B12								
Beam 9 MS-12C90 MS12C9000000043 10.0 Normal Display: Beam 9 (Refer as RET 09) RET 09 Info: R9 (CB9,P17,18) PORT 17 PORT 18 (+45°) (+45°) (+45°) (+45°) (+45°) RET 1D : MS12C90-00000043B10 Art Model Art Setial Current Tit Status NO Sector ID Art Model Art Setial Current Tit Status I1/1 Beam 10 MS-12C90 MS12C9000000043 10.0 Normal Display: Beam 10 (Refer as RET 10) RET 10 Info: R10 (CB10,P19,20) BEAM 10 PORT 20 (+45°) (+45°) (+45°) NO Sector ID Art Model Art Setial Current Tit Status Normal I1/1 Beam 11 MS-12C90 MS12C90000000043 10.0 Normal Normal Display: Beam 11 (Refer as RET 11) RET 11 Info: R11 (CB11,P21,22) RET 12 PORT 22 (+45°) (+45°) RET 1D : MS12C90-00000043B12 MS12C90000000043 10.0 Normal Normal RET 11 Info: R11 (CB11,P21,22) RET			Ant M	odel	Ant Serial	Current Tilt	Status	
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Torr 1/ 1011 1/2 Torr 1/2 Art Model Art Serial Display: Beam 10 (Refer as RET 10) BEAM 10 PORT 20 (445°) Art Model Art Serial Current Tit Status Normal BEAM 11 PORT 22 (445°) Art Model Art Serial Current Tit Status		<u>/</u>					BEA	M 9
Torr 1/ 1011 1/2 Torr 1/2 Art Model Art Serial Display: Beam 10 (Refer as RET 10) BEAM 10 PORT 20 (445°) Art Model Art Serial Current Tit Status Normal BEAM 11 PORT 22 (445°) Art Model Art Serial Current Tit Status	Displa	y: Beam 9 (Refer as R	ET 09)	R	ET 09 Info: R9 (CB9.P	17,18)		
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11/1 Beam 10 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 10 (Refer as RET 10) RET 10 Info: R10 (CB10,P19,20) BEAM 10 PORT 19 PORT 20 (+45°) (-45°) RET ID : MS12C90-00000043B11 KET 10 Info: R10 (CB10,P19,20) RET 10 RET ID : MS12C90-00000043B11 KET 10 MS-12C90 MS12C9000000043 NO Sector ID Ant Model Ant Serial Current Tilt Status NO Sector ID Ant Model MS12C90000000043 Normal MS12C90000000043 I/1 Beam 11 MS-12C90 MS12C90000000043 Normal MS12C90000000043 Normal Display: Beam 11 (Refer as RET 11) RET 11 Info: R11 (CB11,P21,22) BEAM 11 PORT 22 RET 1D : MS12C90-00000043B12 KET 512 MS12C90-000000043B12 KET 512 PORT 23 PORT 22 I1/1 Beam 12 MS-12C90 MS12C90000000043 10.0 Normal I1/1 Beam 12 MS-12C90 MS12C90000000043 10.0 Normal II/1 Beam 12 MS-12C90 MS12C900000000043 10.0 </th <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>(1457</th> <th>(45)</th>							(1457	(45)
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Antenna Information List NO Sector ID Ant Model Ant Serial Current Tilt Status 1/1 Beam 12 MS-12C90 MS12C90000000043 10.0 Normal BEAM 12 Display: Beam 12 (Refer as <u>RET 12</u>) RET 12 Info: R12 (CB12,P23,24)	RET Status and Antenna Infor NO 1/1 Display RET ID : MS RET Status and Antenna Infor NO 1/1	d Control rmation List Sector ID Beam 10 y: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F	MS-12 <u>RET 10)</u> Ant Ma MS-12	C90	MS12C90000000043 <u>RET 10 Info:</u> R10 (CB1) Ant Serial MS12C90000000043	10.0 0,P19,20) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21	Λ 10 PORT 20 (-45°) Λ 11 PORT 22
NO Sector ID Ant Model Ant Serial Current Tilt Status 1/1 Beam 12 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 12 (Refer as <u>RET 12</u>)	RET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor NO II/I Display	d Control rmation List Sector ID Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 (Refer as F 12C90-00000043B12	MS-12 <u>RET 10)</u> Ant Ma MS-12	C90	MS12C90000000043 <u>RET 10 Info:</u> R10 (CB1) Ant Serial MS12C90000000043	10.0 0,P19,20) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21	Λ 10 PORT 20 (-45°) Λ 11 PORT 22
I/1 Beam 12 MS-12C90 MS12C90000000043 10.0 Normal Display: Beam 12 (Refer as <u>RET 12</u>) <u>RET 12 Info:</u> R12 (CB12,P23,24) BEAM 12	RET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor NO II/I Display RET ID : MS RET ID : MS	d Control rmation List Sector ID Beam 10 (2): Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 (Refer as F 12C90-00000043B12 d Control	MS-12 <u>RET 10)</u> Ant Ma MS-12	C90	MS12C90000000043 <u>RET 10 Info:</u> R10 (CB1) Ant Serial MS12C90000000043	10.0 0,P19,20) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21	Λ 10 PORT 20 (-45°) Λ 11 PORT 22
Display: Beam 12 (Refer as <u>RET 12</u>) RET 12 Info: R12 (CB12,P23,24) BEAM 12 PORT 23 PORT 24	RET Status and Antenna Infor NO II/I Display RET ID : MS ET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor	d Control rmation List Sector ID Beam 10 (: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 (Refer as F 12C90-00000043B12 d Control mation List	MS-12 <u>RET 10)</u> Ant Ma MS-12 <u>RET 11)</u>	C90 <u>F</u> Odel C90 <u>F</u>	MS12C90000000043 <u>RET 10 Info:</u> R10 (CB10 Ant Serial MS12C90000000043 <u>RET 11 Info:</u> R11 (CB1:	10.0 0,P19,20) Current Tilt 10.0 1,P21,22)	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21 (+45°)	Λ 10 PORT 20 (-45°) Λ 11 PORT 22
Display: Beam 12 (Refer as <u>RET 12</u>) <u>RET 12 Info:</u> R12 (CB12,P23,24) PORT 23 PORT 24	RET Status and Antenna Infor NO II/I Display RET ID : MS ET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor NO	d Control mation List Sector ID Beam 10 /: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F 12C90-00000043B12 d Control mation List Sector ID	MS-12 <u>RET 10)</u> Ant Ma MS-12 <u>Ant Ma</u> <u>Ant Ma</u>	C90 <u>F</u> odel C90 <u>F</u> odel	MS12C90000000043 <u>RET 10 Info:</u> R10 (CB10 Ant Serial MS12C90000000043 <u>RET 11 Info:</u> R11 (CB1: Ant Serial Ant Serial	10.0 0,P19,20) Current Tilt 10.0 1,P21,22) Current Tilt	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21 (+45°)	Λ 10 PORT 20 (-45°) Λ 11 PORT 22
Display: Beam 12 (Refer as <u>RET 12</u>) <u>RET 12 Info:</u> R12 (CB12,P23,24) PORT 23 PORT 24	RET Status and Antenna Infor NO II/I Display RET ID : MS ET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor NO	d Control mation List Sector ID Beam 10 /: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F 12C90-00000043B12 d Control mation List Sector ID	MS-12 <u>RET 10)</u> Ant Ma MS-12 <u>Ant Ma</u> <u>Ant Ma</u>	C90 <u>F</u> odel C90 <u>F</u> odel	MS12C90000000043 <u>RET 10 Info:</u> R10 (CB10 Ant Serial MS12C90000000043 <u>RET 11 Info:</u> R11 (CB1: Ant Serial Ant Serial	10.0 0,P19,20) Current Tilt 10.0 1,P21,22) Current Tilt	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21 (+45°)	Λ 10 PORT 20 (-45°) Λ 11 PORT 22
PORT 23 PORT 24	RET Status and Antenna Infor NO II/I Display RET ID : MS ET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor NO	d Control mation List Sector ID Beam 10 /: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F 12C90-00000043B12 d Control mation List Sector ID	MS-12 <u>RET 10)</u> Ant Ma MS-12 <u>Ant Ma</u> <u>Ant Ma</u>	C90 <u>F</u> odel C90 <u>F</u> odel	MS 12C 90000000043 RET 10 Info: R10 (CB10 Ant Serial MS 12C 90000000043 RET 11 Info: R11 (CB1: Ant Serial MS 12C 90000000043	10.0 0,P19,20) Current Tilt 10.0 1,P21,22) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) Status Normal Status Normal Normal	Λ 10 PORT 20 (-45°) Λ 11 PORT 22 (-45°)
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	RET Status and Antenna Infor NO II/I Display RET ID : MS RET Status and Antenna Infor NO II/I RET ID : MS RET Status and Antenna Infor NO II/I	d Control mation List Sector ID Beam 10 /: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F 12C90-00000043B12 d Control mation List Sector ID Beam 12	MS-12 RET 10) Ant Ma MS-12a Ant Ma RET 11) Ant Ma MS-12a Ant Ma	C90 <u>F</u> odel C90 <u>F</u> odel	MS 12C 90000000043 RET 10 Info: R10 (CB10 Ant Serial MS 12C 90000000043 RET 11 Info: R11 (CB1: Ant Serial MS 12C 90000000043	10.0 0,P19,20) Current Tilt 10.0 1,P21,22) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) Status Normal BEAN PORT 21 (+45°) Status Status Normal BEAN	Λ 10 PORT 20 (-45°) Λ 11 PORT 22 (-45°) Λ 12
	RET Status and Antenna Infor NO II/I Display RET ID : MS ET Status and Antenna Infor NO II/I RET ID : MS ET Status and Antenna Infor NO II/I	d Control mation List Sector ID Beam 10 /: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F 12C90-00000043B12 d Control mation List Sector ID Beam 12	MS-12 RET 10) Ant Ma MS-12a Ant Ma RET 11) Ant Ma MS-12a Ant Ma	C90 <u>F</u> odel C90 <u>F</u> odel	MS 12C 90000000043 RET 10 Info: R10 (CB10 Ant Serial MS 12C 90000000043 RET 11 Info: R11 (CB1: Ant Serial MS 12C 90000000043	10.0 0,P19,20) Current Tilt 10.0 1,P21,22) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) (+45°) Status Normal Status Normal BEAN PORT 21 (+45°) Status Normal	A 10 PORT 20 (-45°) (-45°) A 11 PORT 22 (-45°) A 12 PORT 24 (-45°)
Page 9	ET Status and Antenna Infor NO 1/1 Display ET ID : MS ET Status and Intenna Infor NO 1/1 ET ID : MS ET Status and Interna Infor NO 1/1	d Control mation List Sector ID Beam 10 /: Beam 10 (Refer as F 12C90-00000043B11 d Control mation List Sector ID Beam 11 y: Beam 11 (Refer as F 12C90-00000043B12 d Control mation List Sector ID Beam 12	MS-12 RET 10) Ant Ma MS-12a Ant Ma RET 11) Ant Ma MS-12a Ant Ma	C90 <u>F</u> odel C90 <u>F</u> odel	MS 12C 90000000043 RET 10 Info: R10 (CB10 Ant Serial MS 12C 90000000043 RET 11 Info: R11 (CB1: Ant Serial MS 12C 90000000043	10.0 0,P19,20) Current Tilt 10.0 1,P21,22) Current Tilt 10.0	Status Normal BEAN PORT 19 (+45°) (+45°) Status Normal Status Normal BEAN PORT 21 (+45°) Status Normal	A 10 PORT 20 (-45°) (-45°) A 11 PORT 22 (-45°) A 12 PORT 24 (-45°)

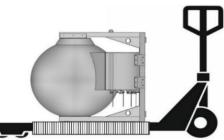
6.00 TRANSPORTATION / INSTALLATION

6.10 Transportation (From Point to Point)

Strictly comply to the Local authority and regulatory on Workplace Safety and Health Control and Measure when moving and transportation of large or heavy equipment, appropriate material handling machine should be use.

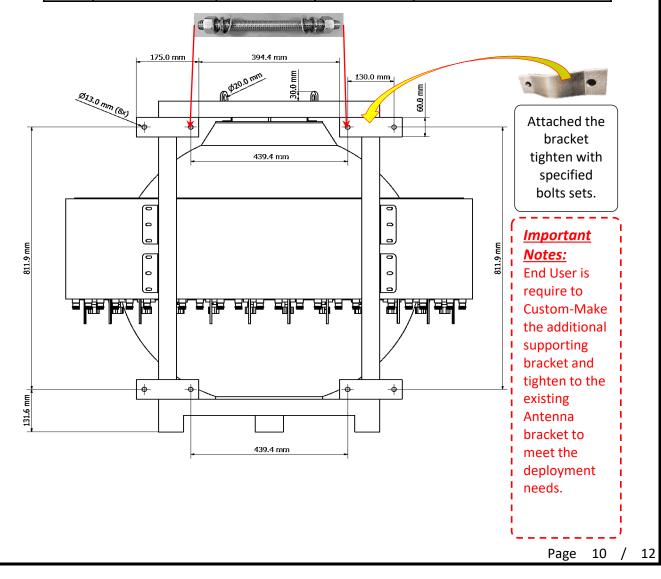
(Risk Assessment apply for Forklift or Pallet Truck Lifting)





6.20 Bracket Mounting

ltem	Lens/Types	Holes Size	Bracket Qty	Bolt & nuts sets
1	30cm to 120cm	Ø13mm x 8	4	M12 x 15cm=8sets



6.30 Installation using a crane

Strictly comply to the local authority and regulatory on Workplace Safety and Health Control and Measure when performing lifting of large or heavy equipment, appropriate material handling machine should be used and only certified personnel should perform the task. (Risk Assessment requirement applies for both Up-Lifting and Down-Lifting.)

6.31 Lifting the Antenna

The antenna has 2 hook points installed on the top frame (located slightly behind the center of the sphere). These hooks are designed at the center of gravity point of the antenna. A cable, rope can be securely fastened to the hooks and the antenna can be lifted using a crane as pictured below.

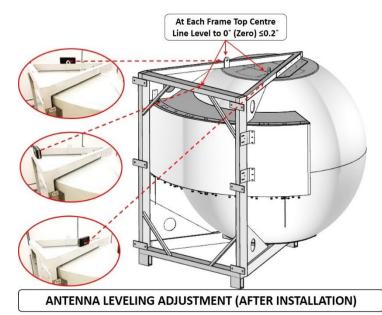


6.40 Antenna Installation

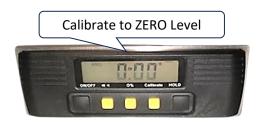
With reference to "<u>Bracket Mounting" Procedure</u>, End user is required to Custom-Make the additional supporting bracket and tighten it to the existing Antenna bracket to meet the deployment needs.

6.41 Antenna Levelling

After the Antenna is mounted to the bracket, it is required to be adjusted to 0° (Zero Degree) with <u> $\leq 0.2^{\circ}$ </u> on 3 sides of the frame top level.(Rear, Right & Left=As shown in picture)



6.42 Digital Level Gauge Calibration



6.43 Adjustment Requirement

