

TECHNICAL INFORMATION



KONGSBERG

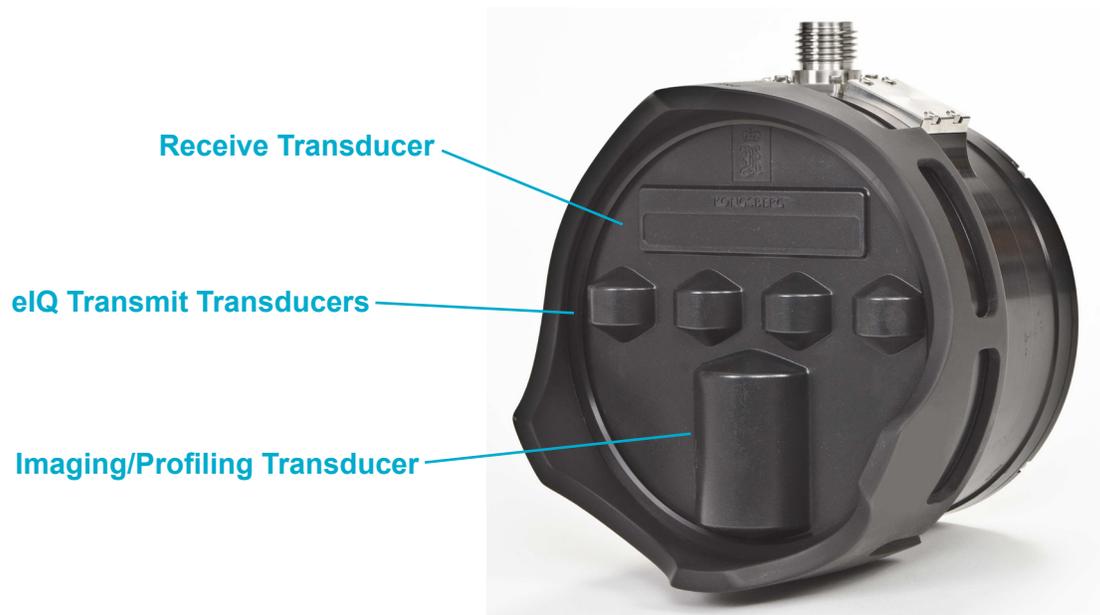
M3 SONAR[®] - 500M

P/N 922-20010000

P/N 922-20050000 (WITH SYNC)

P/N 922-20100000 (WITH VDSL)

P/N 922-20130000 (WITH SYNC + VDSL)



Tel: (604) 464 8144
Fax: (604) 941 5423

Specifications subject to change without notice
922-20017902
KONGSBERG MESOTECH LTD.
1598 Kebet Way, Port Coquitlam B.C. Canada
V3C 5M5



KONGSBERG

KONGSBERG MESOTECH LTD.

WARRANTY STATEMENT

Effective January 1, 2006

Kongsberg Mesotech Ltd. warrants that its products are free from defective materials and/or workmanship for a period of 24 months from the date of receipt of goods by the end user, or 30 months from date of product shipment from the manufacturing facility (whichever occurs first). Kongsberg Mesotech Ltd. will - at no charge - repair or replace (at its option) any part(s) determined to be defective of workmanship or materials, provided the warranty claim is made to either the manufacturing facility or its authorized repair centres within the warranty period.

The purchaser is responsible for the examination of the product upon receipt. The purchaser is required to report any irregularity to received Kongsberg Mesotech Ltd. goods to either the manufacturer, its Sister companies or its Agents, within 15 days of receipt of goods. Proof of date received may be required.

The warranty is void if warranty labels are broken; Kongsberg Mesotech Ltd. will not warrant any product which is physically damaged, abused, altered, subjected to accident or negligence or misuse, or is incorrectly installed or used by the purchaser - or purchaser's representative.

Consumable items (including lamps, fuses, and worn O rings or shaft-seals) are excluded by the warranty.

All Product/Equipment being returned for warranty, repair/replacement shall have freight costs "prepaid". All warranty Product/Equipment being returned to the customer will be freight charges "prepaid" by Kongsberg Mesotech Ltd.

NOTE: Shipping method and carrier for warranty returned items will be at the discretion of Kongsberg Mesotech Ltd.

A Kongsberg Mesotech Ltd. Warranty Claim form must be completed and submitted to KML Service Department prior to warranty claim acceptance.

Kongsberg Mesotech Ltd. cannot warrant that its products are suitable for any particular or intended purpose. No other warranty is expressed or implied; Kongsberg Mesotech Ltd. accepts no liability on consequential damages – these include, but are not limited to: loss of profit, property damage and personal injury.

The maximum liability shall not, in any case, exceed the price of the product claimed to be defective.



KONGSBERG

DESCRIPTION

M3 SONAR® - 500M

THE MULTIMODE MULTIBEAM FOR MULTIPLE APPLICATIONS

- Imaging and profiling capabilities
- GeoTIFF output for image mosaics
- Multiple true-zoom windows
- CHIRP and Doppler modes of operations
- User-friendly interface
- Significant time savings
- Integrated tilt and pan/tilt control

The Kongsberg Mesotech M3 Sonar® is a multibeam system with both imaging and profiling capabilities. The M3 Sonar® provides high-resolution and easy to interpret images by combining the rapid refresh rate of a conventional multibeam sonar with image quality comparable to a single-beam sonar.

Detection of small objects out to 150 meters combined with a 120° to 140° field of view allows the operator to see the complete underwater picture in real-time.

APPLICATIONS

- Marine Engineering
- Shallow Water Bathymetric Surveying
- Site Inspection
- Environmental Monitoring
- Site Clearance
- Defense and Security

MODELS WITH VDSL TELEMETRY

- Alternative to Ethernet which is limited to <100m
- Longer cable connection to sonar head (up to 1000m)

INSTALLATION OPTIONS

- Pole mount on a surface vessel
- Suitable for a wide range of vehicles from large work-class ROVs to small observation class ROVs
- Tripod mounted

M3 SOFTWARE

The M3 Software was developed specifically for the M3 Sonar® to manage communications with the head and operate all beamforming and imaging processing.

Four Pre-Defined Operating Modes:

1. **Imaging:** long range navigation with high speed update rate
2. **Enhanced Image Quality (eIQ):** greatest image quality (0.95° angular resolution) from a short range with a slower update
3. **ROV Navigation:** selects eIQ or imaging based on range
4. **Profiling:** narrow 3° beam used to generate a 3D point cloud

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SPECIFICATIONS

PART NUMBER	COMMUNICATIONS	DATA RATES	SYNCHRONIZATION	CONNECTOR MODELS
922-2001000	ETHERNET	10/100/1000 MBPS	NONE	MINK-10-FCRL
922-2005000	ETHERNET	10/100/1000 MBPS	PRI SYNC	MINK-10-FCRL MIND-4-FCR
922-2010000	ETHERNET & VDSL	10/100 MBPS	NONE	MINK-10-FCRL
922-2013000	ETHERNET & VDSL	10/100 MBPS	PRI SYNC	MINK-10-FCRL MIND-4-FCR

Sonar Specifications

Range:	0.2m to 150m
Range Resolution:	1cm
Frequency:	500 kHz
Pulse Types:	CW, CHIRP
Modes:	Imaging, eIQ Imaging and Profiling

Imaging Mode

Horizontal Field of View:	120°
Vertical Beamwidth:	3°, 7°, 15°, 30°
Angular Resolution:	1.6°
Update Rate:	up to 40 Hz

eIQ Imaging Mode

Horizontal Field of View:	140°
Vertical Beamwidth:	30°
Angular Resolution:	0.95°
Update Rate:	up to 10 Hz

Profiling Mode

Horizontal Field of View:	120°
Vertical Beamwidth:	3°
Number of Beams:	256
Update Rate:	up to 40 Hz

Interface Specifications

Communication:	Ethernet, or Ethernet and VDSL
Data Rates:	10/100/1000 Mbps (Ethernet only) 10/100 Mbps (Ethernet and VDSL)
Input Voltage:	12 to 36 VDC
Input Power:	22W (avg.), peak power < 60W, mode dependant
Operating System:	Windows® 10 Professional Windows® 7 Professional
Synchronization:	PRI Sync (for models with sync)

Environmental Specifications

Temperature

Operation:	-2°C to +38°C
Storage:	-40°C to +55°C

Shock and Vibration

Shock Qualified:	+/-50gs, 3 Axes, 6 shocks per axis
Vibration Qualified:	4g, 30Hz 3 Axes, 2 hours per axis. No resonance below 800Hz

Mechanical Specifications

Dimensions:	(see diagrams below)
Weight in Air:	4.6kg
Weight in Water:	1.7kg
Depth Rating:	500m
Connector Type:	SEA CON®
Connector Model:	MINK-10-FCRL MIND-4-FCR (for models with sync)
Materials:	Hard Anodized Aluminum, Stainless Steel 316, Elastomeric Polyurethane

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DRAWING LIST

DRAWING NUMBER	PART NUMBER	DESCRIPTION
922-20011001	922-20010000	M3 Sonar Head 500m, SEA CON – Outline Drawing
922-20051001	922-20050000	M3 Sonar Head 500m with synchronization, SEA CON – Outline Drawing
922-20131001	922-20130000	M3 Sonar Head 500m with VDSL and synchronization, SEA CON – Outline Drawing
421-21821000	421-21820000	M3 Sonar Head, Power and Telemetry Connector SEA CON – Drawing
421-21981000	421-21980000	M3 Sonar Head, Power and Telemetry Connector SEANET – Drawing
436-02381000	436-02380000	M3 Cable Whip, Ethernet / Power – Drawing
436-02391000	436-02390000-0050	M3 Cable Assembly, Ethernet / Power – Drawing
436-02811000	436-02810000-0004	M3 Cable, Synchronization, SEA CON MIND-4-CCP – Drawing
436-02831000	436-02830000-0020	M3 Cable Whip, Synchronization, SEA CON MIND-4-CCP – Drawing
436-03131000	436-03130000-0015	M3 Cable Assembly, VDSL / Power – Drawing
436-00001210	436-03350000 436-03360000	M3 Cable Connector, MINK-10-CCPL to P/E Breakout Box – Assembly Pinout
436-00001302	436-03350000 436-03360000 436-03370000	M3 Cable Connector, M3 Power/Ethernet Breakout Box – Assembly Drawing
422-44051000	422-44050000	Bracket, M3 Sonar Head to Rotator (OE10-102 / OE10-013) – Assembly Drawing
422-44061000	422-44060000	Bracket, Pole Mount to Rotator (OE10-103) – Assembly Drawing
422-44061001	422-44060000	M3 Sonar Head, SEA CON, with Rotator (OE10-103) – Outline Drawing
422-44071000	422-44070000	Adapter Plate, Pole Mount to Rotator (OE10-102) – Assembly Drawing
422-44071001	422-44070000	M3 Sonar Head with Rotator (OE10-102) – Outline Drawing
422-44121000	422-44120000	Bracket, M3 Sonar Head to Pole Mount – Assembly Drawing
422-44121001	422-44120000	Bracket, M3 Sonar Head to Pole Mount – Outline Drawing
422-44131000	422-44130000	Bracket, M3 Sonar Head to Pole Mount, Downlooking – Assembly Drawing
422-44131001	422-44130000	Bracket, M3 Sonar Head to Pole Mount, Downlooking – Outline Drawing
422-44171000	422-44170000	Adapter Plate, M3 Sonar and Rotator (OE10-102) to Pole Mount – Assembly Dwg
422-44171001	422-44170000	Adapter Plate, M3 Sonar and Rotator (OE10-102) to Pole Mount – Outline Drawing

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KONGSBERG

R5.0 MIN

5.70

2.97

2.13

Ø 7.60

Ø 6.56

Ø 6.65

2.5
(COG EST.)

8.38

MOUNTING HOLES -
4X 1/4-20 UNC - 2B ∇ 0.40
EQUALLY SPACED AT Ø 5.40 PCD

45°

10.42

CONNECTOR
ORIENTATION KEYING

DETAIL A
SCALE 1 : 1

1.5	ECO 5047, ECO 5048	12/10/04
1.4	ECO 4974	12/05/02
1.3	ECO 4858	11/10/04
1.2	ECO 4788	11/05/12
1.1	ECO 4715	11/04/05

ISS	DESCRIPTION	DATE
REVISIONS		

Kongsberg Mesotech Ltd.				
OUTLINE AND INSTALLATION DRAWING				
M3 SONAR				
500m VERSION				
SIZE	NSCM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	922-20011001	1.5
SCALE: 1:2		W.O. NO.		SHEET 1 OF 1

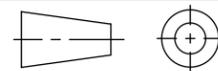
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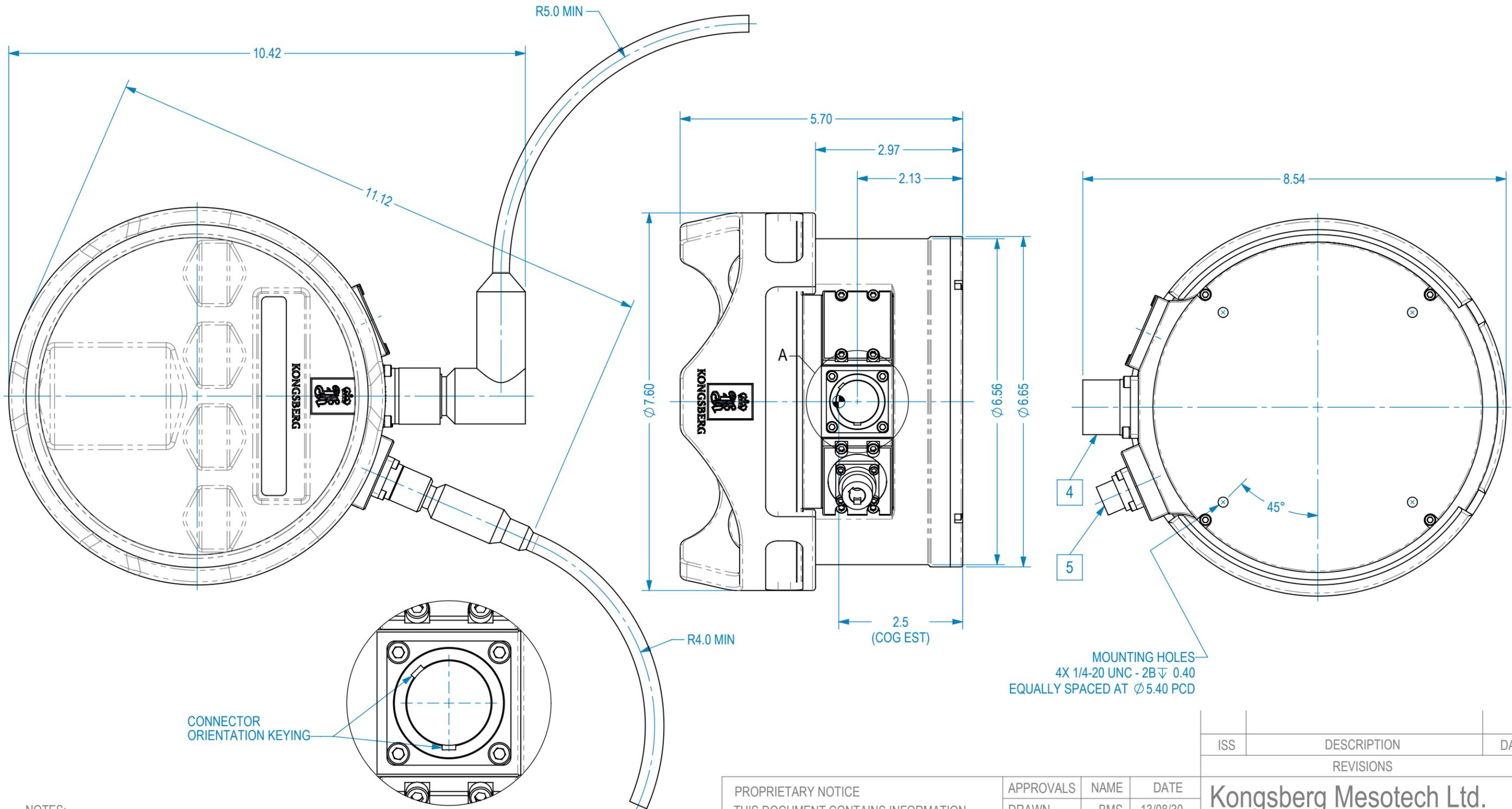
1. MAXIMUM OPERATING DEPTH: 500msw / 1640fsw.
2. WEIGHT IN AIR: 4.6kg [10.1lbs] ESTIMATED
3. WEIGHT IN SEA WATER: 1.7kg [3.7lbs] ESTIMATED
4. STANDARD CONNECTOR: SEACON MINK-10-FCRL (2#14, 8#20).
5. WETTED MATERIALS: 6061-T6 ALUMINIUM, 300 SERIES STAINLESS STEEL, ELASTOMERIC POLYURETHANE.
6. DIMENSIONS ARE NOMINAL, IN INCHES. DO NOT SCALE.

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APPROVALS	NAME	DATE
DRAWN	DL	11/02/16
REVISED	BMS	12/10/04
CHECKED		
ENGR		
ISSUED		





MOUNTING HOLES
 4X 1/4-20 UNC - 2B ∇ 0.40
 EQUALLY SPACED AT ϕ 5.40 PCD

CONNECTOR
 ORIENTATION KEYING

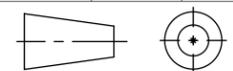
DETAIL A
 POWER/TEL CONNECTOR

- NOTES:
1. MAXIMUM OPERATING DEPTH: 500msw / 1640fsw.
 2. WEIGHT IN AIR: 4.7kg [10.4lbs] ESTIMATED
 3. WEIGHT IN SEA WATER: 1.8kg [4.0lbs] ESTIMATED
 4. POWER/TEL CONNECTOR: SEACON MINK-10-FCRL (2 #14, 8 #20)
 5. SYNC CONNECTOR: SEACON MIND-4-FCR (4 #22)
 6. WETTED MATERIALS: 6061-T6 ALUMINUM, 300 SERIES STAINLESS STEEL, ELASTOMERIC POLYURETHANE.
 7. DIMENSIONS ARE NOMINAL, IN INCHES. DO NOT SCALE.

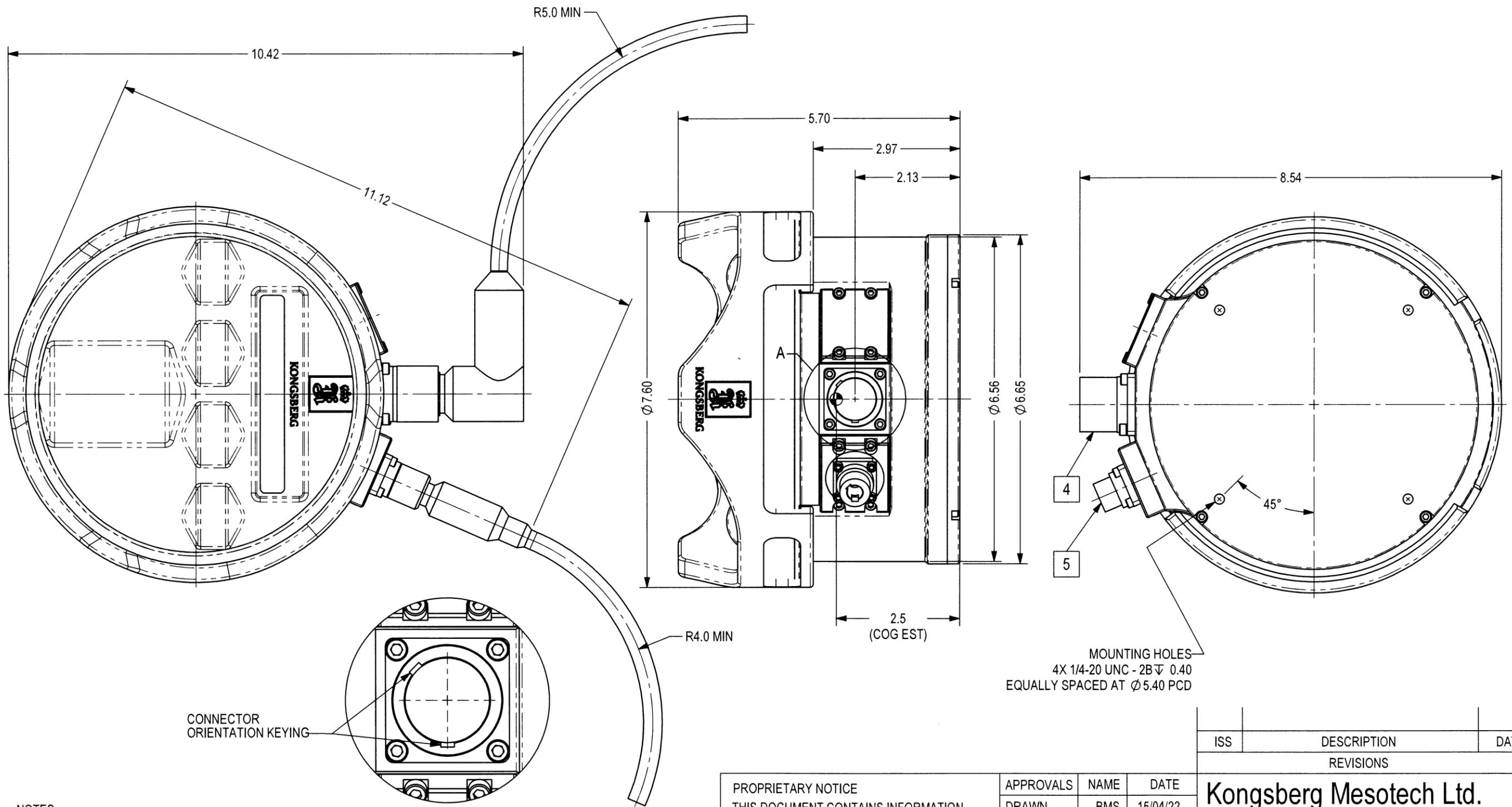
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APPROVALS	NAME	DATE
DRAWN	BMS	13/08/30
REVISED	--	--
CHECKED		
ENGR		
ISSUED		



ISS	DESCRIPTION	DATE
	REVISIONS	
	Kongsberg Mesotech Ltd.	
	OUTLINE AND INSTALLATION DRAWING- M3 SONAR C/W SYNC OPTION 500m VERSION	
SIZE	NCSM NO	TYPE
B	1C965	MD
DWG. NO.	ISS	
922-20051001	1.0	
SCALE: 1:2	W.O. NO.	SHEET 1 OF 1



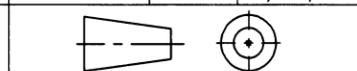
- NOTES:**
1. MAXIMUM OPERATING DEPTH: 500msw / 1640fsw.
 2. WEIGHT IN AIR: 4.7kg [10.4lbs] ESTIMATED
 3. WEIGHT IN SEA WATER: 1.8kg [4.0lbs] ESTIMATED
 4. POWER/TEL (VDSL/ETHERNET) CONNECTOR: SEACON MINK-10-FCRL (2 #14, 8 #20)
 5. SYNC CONNECTOR: SEACON MIND-4-FCR (4 #22)
 6. WETTED MATERIALS: 6061-T6 ALUMINUM, 300 SERIES STAINLESS STEEL, ELASTOMERIC POLYURETHANE.
 7. DIMENSIONS ARE NOMINAL, IN INCHES. DO NOT SCALE.

DETAIL A
POWER/TEL (VDSL/ETHERNET) CONNECTOR

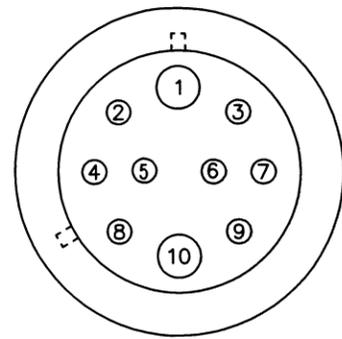
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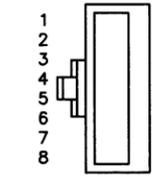
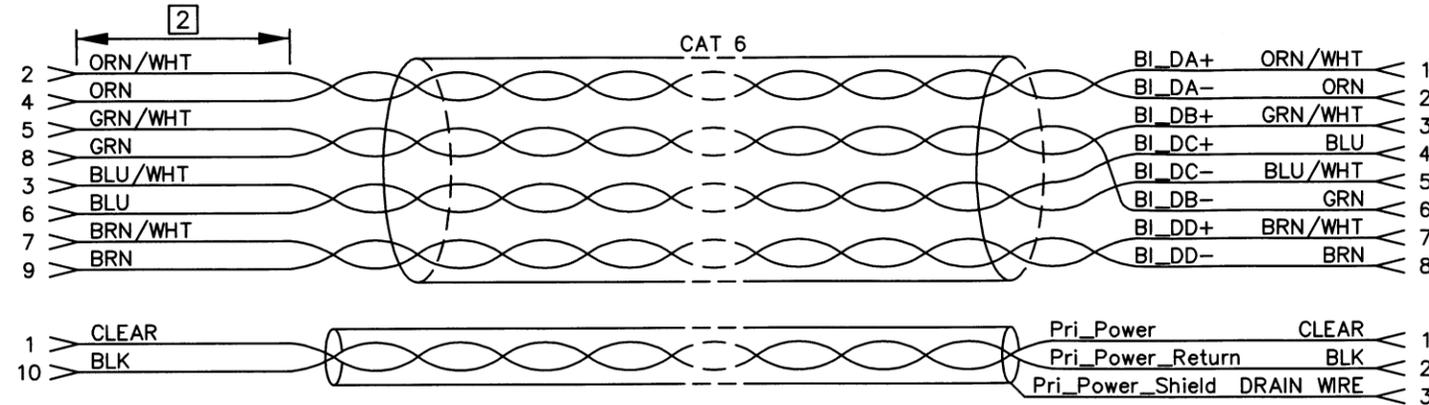
APPROVALS	NAME	DATE
DRAWN	BMS	15/04/22
REVISED	--	--
CHECKED	<i>DL</i>	15/06/03
ENGR	<i>[Signature]</i>	15/06/04
ISSUED	<i>R.C.H.</i>	15/06/09



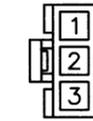
ISS	DESCRIPTION	DATE
REVISIONS		
Kongsberg Mesotech Ltd.		
OUTLINE AND INSTALLATION DRAWING-		
M3 SONAR HEAD 500M SEACON		
C/W VDSL/ETH TEL & SYNC OPTION		
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG. NO.	922-20131001	
ISS	1.0	
SCALE: 1:2	W.O. NO.	SHEET 1 OF 1



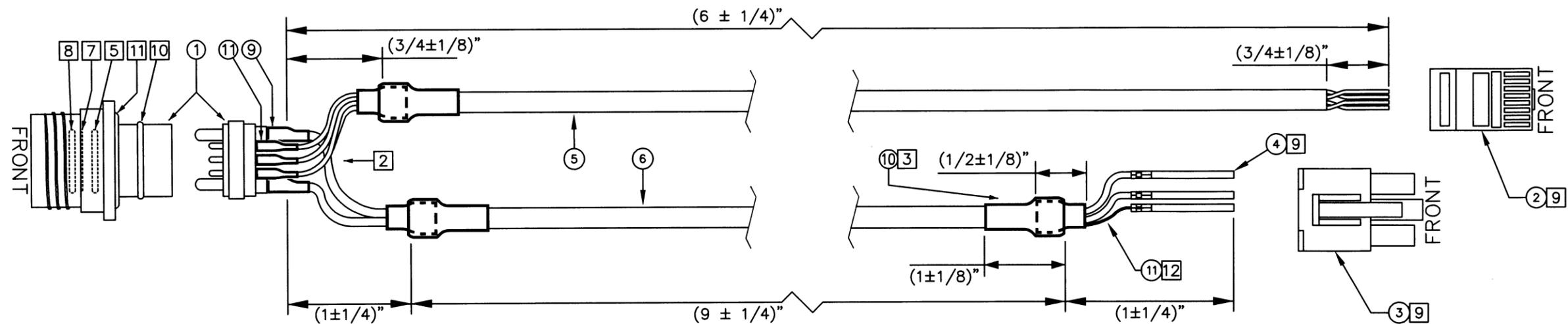
REAR VIEW



REAR VIEW



REAR VIEW



NOTES:

- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
- 2 MAXIMUM 1/2" UNTWISTED.
- 3 3PLACES: INSTALL HEATSHRINK AS SHOWN (OVERLAPPING).
- 4 SOLDER AND HEATSHRINK WIRES.
- 5 INSTALL 1st O-RING.
- 6 INSERT CONNECTOR INTO HOUSING FROM FRONT.
- 7 INSTALL SPRING CLIP.
- 8 INSTALL 2nd O-RING.
- 9 ADD RJ45 CONNECTOR, CRIMPS, AND MOLEX HOUSING.
- 10 INSTALL 3rd O-RING.
- 11 PUT 4th O-RING IN A PLASTIC BAG AND KEEP WITH ASSEMBLY.
- 12 HEATSHRINK DRAIN WIRE.

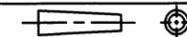
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APPROVALS	DATE
DRAWN BH	2011/06/29
REVISED BH	2015/02/27
CHECKED <i>Sm</i>	2015/3/5
ENGR <i>I.B</i>	2015/03/05
ISSUED <i>R.C.H.</i>	2015/03/05
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ISS	DESCRIPTION	DATE
1.2	SEE ECO 5407	2015 FEB 27
1.1	SEE ECO 4934	2012 MAR 02
REVISIONS		

Kongsberg Mesotech Ltd.					
M3 POWER/TELEMETRY HEAD CONNECTOR WIRING ASSEMBLY					
SIZE	NSCM NO	TYPE	DWG NO.	ISS	
B	1C965	MD	421-21821000	1.2	

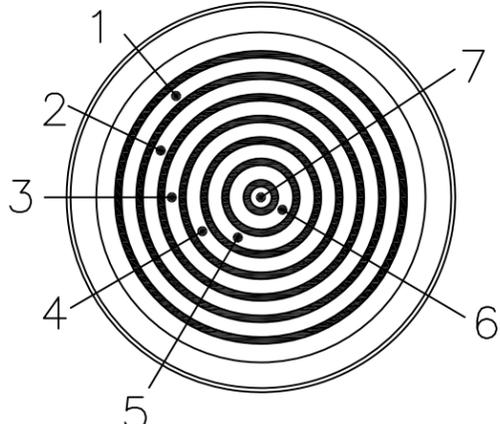
DO NOT SCALE DRAWING



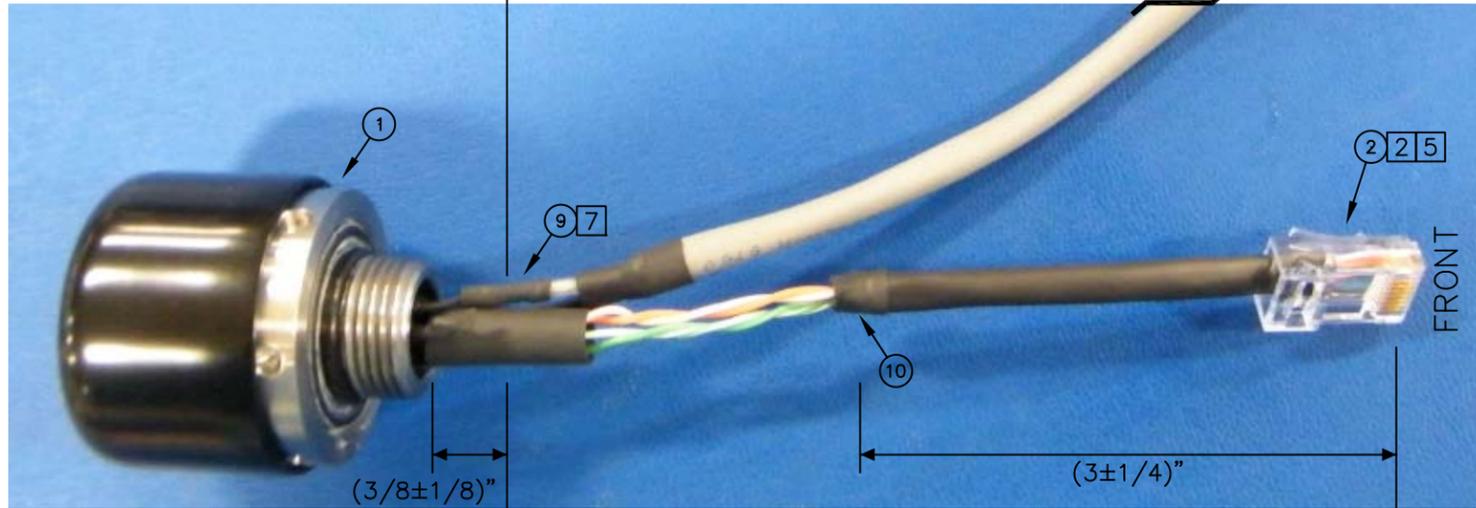
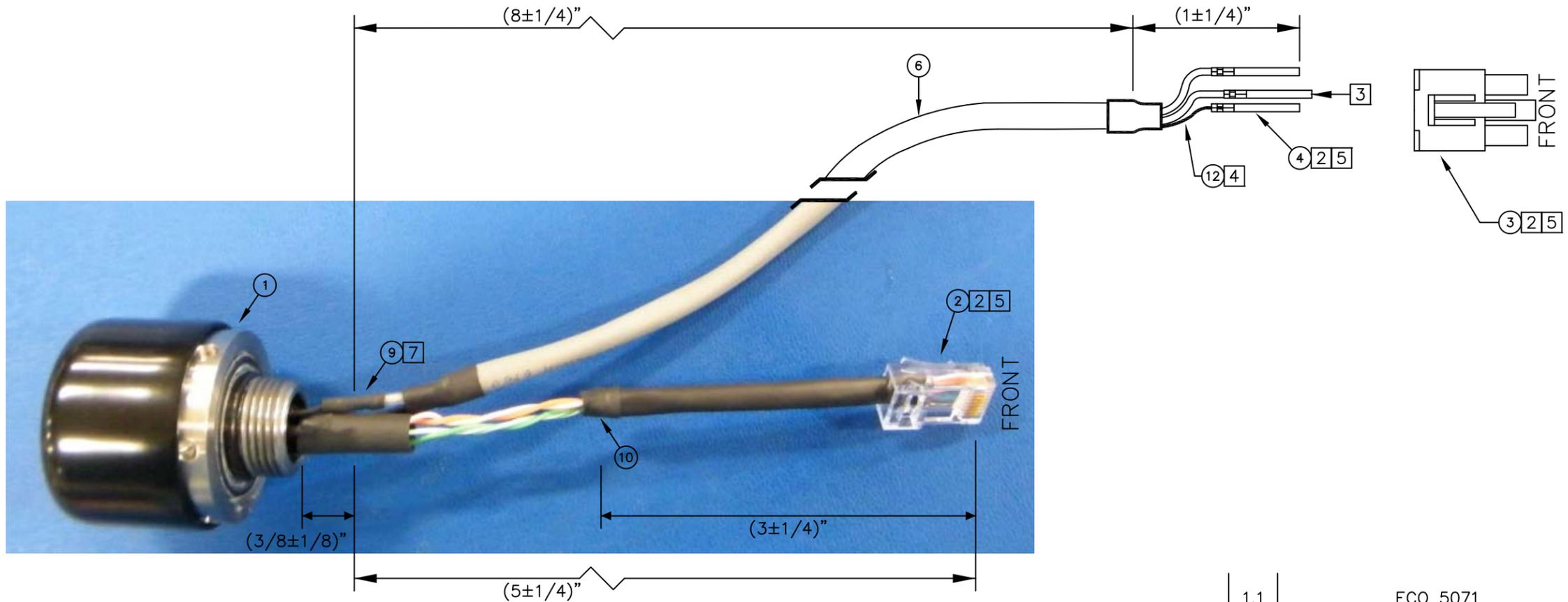
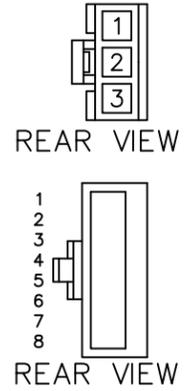
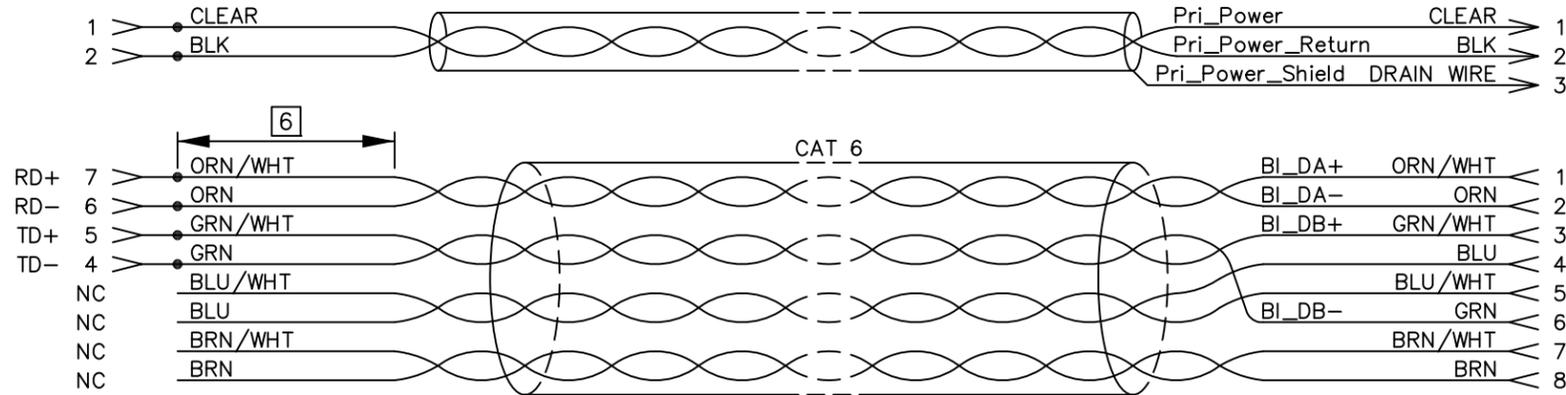
SCALE: -

W.O. NO.

SHEET 1 OF 1



SEANET 101-5260
FRONT VIEW



NOTES:

- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
- 2 ADD RJ45 AND MOLEX CONNECTORS BEFORE SOLDERING.
- 3 MAKE WIRE TO THE CENTER (PIN 2) 1/8" LONGER THAN THE OTHER ONES.
- 4 HEATSHRINK DRAIN WIRE.
- 5 ADD RJ45 CONNECTOR, CRIMPS, AND MOLEX HOUSING.
- 6 MAXIMUM 1/2" UNTWISTED.
- 7 SOLDER AND HEATSHRINK WIRES.

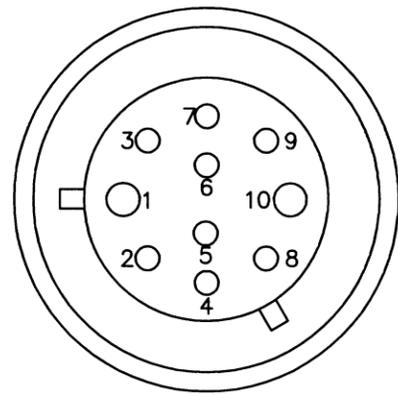
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APPROVALS	DATE
DRAWN BH	2012/11/22
REVISED BH	2012/12/10
CHECKED	
ENGR	
ISSUED	
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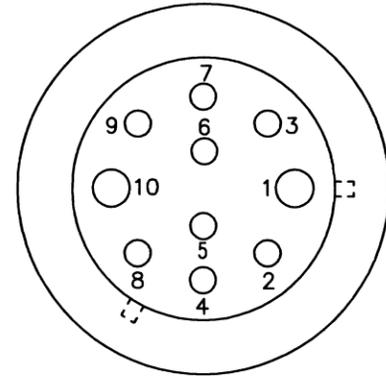
ISS	DESCRIPTION	DATE
1.1	ECO 5071	2012/12/10

Kongsberg Mesotech Ltd.				
M3 POWER/TELEMETRY HEAD CONNECTOR WIRING ASSEMBLY				
SIZE	NSCM NO	TYPE	DWG NO.	ISS
B	1C965	MD	421-21981000	1.1
SCALE: -		W.O. NO.	SHEET 1 OF 1	

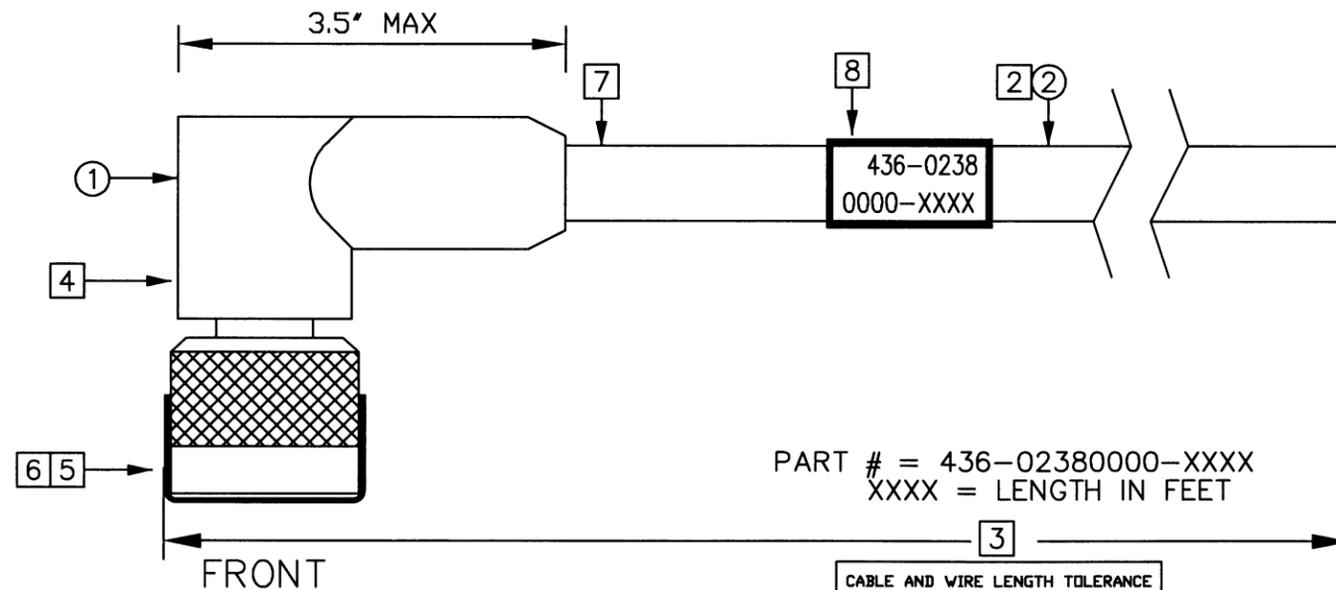
DO NOT SCALE DRAWING



PIN VIEW/
FACE VIEW



SOLDER LUG/
REAR VIEW



PART # = 436-02380000-XXXX
XXXX = LENGTH IN FEET

CABLE AND WIRE LENGTH TOLERANCE	
≤1 FT	+1 IN -0 IN
>1 FT-5 FT	+2 IN -0 IN
>5 FT-10 FT	+4 IN -0 IN
>10 FT- 25 FT	+6 IN -0 IN
>25 FT	+5% -0%

MINK-10-CCP R/A WHIP		
MINK-10-CCPL	FALMAT FM022208-10	
PIN NUMBER	COLOR	DESC
1	RED	18AWG
	WHT	19AWG
10	BLK	18AWG
	GRN	18AWG
2	WHT/ORG	TWISTED PAIR
4	WHT	
5	WHT/GRN	TWISTED PAIR
8	WHT	
3	WHT/BLU	TWISTED PAIR
6	WHT	
7	WHT/BRN	TWISTED PAIR
9	WHT	

NOTES:

- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
- 2 CABLE MINIMUM BEND RADIUS = 5".
- 3 THE LAST 4 DIGITS OF THE PART NUMBER STATES THE LENGTH OF THE CABLE IN FEET.
- 4 MINK-10-CCPL MOLDED R/A.
- 5 INSTALL PUSH-ON PROTECTIVE CAP (SUPPLIED WITH CONNECTOR).
- 6 O-RINGS MUST BE INSTALLED ON CONNECTOR IF APPLICABLE.
- 7 MAXIMUM 1/2" UNTWISTED FOR ALL TP.
- 8 PRINT PART NUMBER USING 1/8" BLACK TEXT ON WHITE, THEN INSTALL CLEAR HEATSHRINK OVER.

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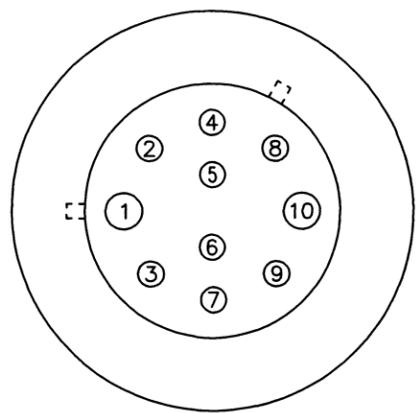


APPROVALS	DATE
DRAWN DM	2016-NOV-28
REVISED	
ENGR <i>DM</i>	DEC 2/2016
CHECKED <i>JH</i>	DEC 5/2016
PROD <i>Mc</i>	DEC 6/16
QA <i>KA</i>	6-DEC-16
ISSUED <i>R.C.H.</i>	6 DEC 16

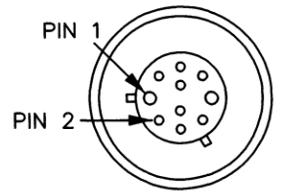
1.5	ECO 6036	2016 NOV 28
1.4	ECO 5189	2013 OCT 3
1.3	ECO 5020	2012 AUG 14
1.2	ECO 4870	2011 OCT 4
1.1	ECO 4829	2011 AUG 10
1.0	ECO 4796	2011 MAY 31

ISS	DESCRIPTION	DATE
REVISIONS		

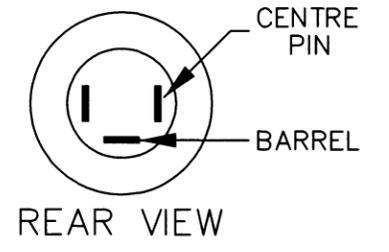
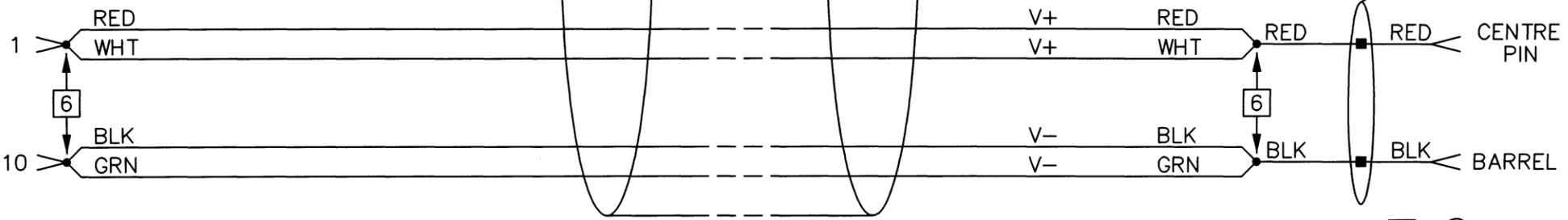
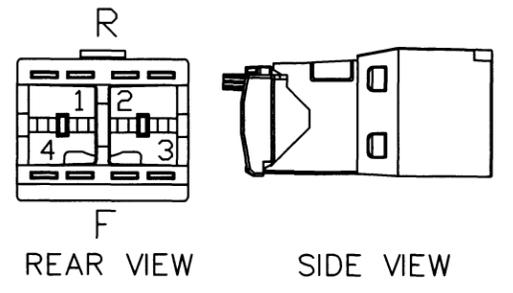
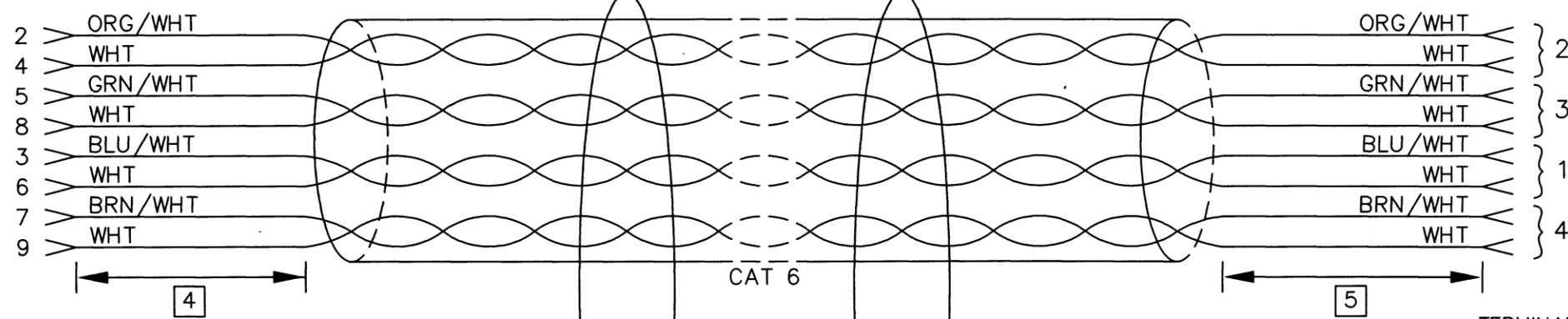
Kongsberg Mesotech Ltd.			
M3 SONAR CABLE POWER/TELEMETRY WHIP SEACON MINK-10-CCPL MOLDED R/A			
SIZE	NSCM NO	TYPE	DWG NO.
B	1C965	MD	436-02381000
ISS	1.5		
SCALE: NTS	W.O. NO.	SHEET 1 OF 1	



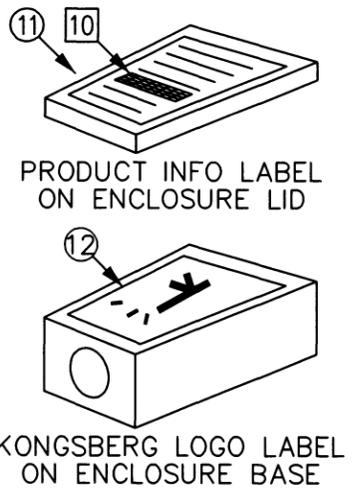
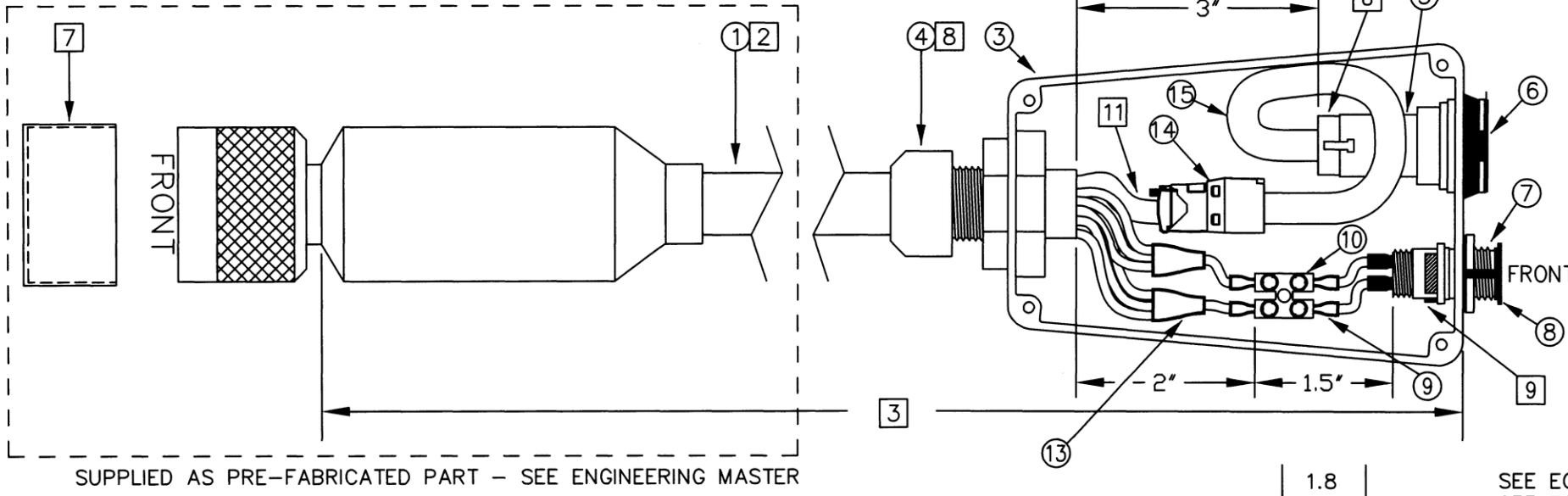
PIN VIEW



FRONT VIEW



- NOTES:**
- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
 - 2 CABLE MINIMUM BEND RADIUS = 5".
 - 3 LENGTH (IN FT., ± 2%)= XXXX IN PART# 436-0PPP0000-XXXX.
 - 4 STRIP CABLE BY 1.5" +/- 0.10". MAXIMUM 0.5" UNTWISTED.
 - 5 STRIP CABLE BY 3.5" +/- 0.25". MAXIMUM 0.5" UNTWISTED.
 - 6 SPLICE 2x20AWG WIRES TO 1x18AWG WIRE, COVER SPLICE WITH HEATSHRINK.
 - 7 INSTALL CAP (SUPPLIED WITH CONNECTOR).
 - 8 INSTALL CABLE GLAND.
INSTALL RJ45 JACK:
a - REMOVE JACK PLUG FROM RJ45 JACK (5), THEN INSTALL OUTER PIECE AND HAND-TIGHTEN WITH 24MM SOCKET (COVER BEND ON TOP).
b - INSTALL WIRES AS PER T568B ETHERNET STANDARD.
c - TEST WITH 1 Gbps ETHERNET TESTER (FLUKE CABLE IQ TESTER OR EQUIVALENT).
 - 9 INSTALL POWER JACK CONNECTOR:
a - INSTALL O-RING, THEN INSTALL CONNECTOR THRU THE HOLE IN THE BOX.
b - INSTALL COVER (WITH THE BEND ON TOP), WASHER, THEN THE NUT.
c - INSTALL WIRES AS PER WIRING DIAGRAM.
 - 10 INSTALL A STICKER WITH CABLE P/N ON ENCLOSURE LID. LABEL SIZE 45mm x 10MM, BROTHER LABEL MAKER SETTINGS; FONT: HEL, WIDTH x1, SIZE: 12PT, STYLE: BOLD
 - 11 INSTALL WIRES AS PER T568B ETHERNET STANDARD
INSTALL RJ45 JACK



SUPPLIED AS PRE-FABRICATED PART - SEE ENGINEERING MASTER

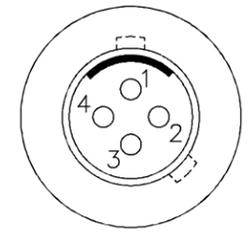
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APPROVALS	DATE
DRAWN BH	2014 SEP 26
REVISED BH	2015 JUL 13
CHECKED <i>J.B.</i>	7/13/2015
ENGR <i>DM</i>	July 13/2015
ISSUED <i>R.H.</i>	2015 JUL 13
CONFIDENTIAL DO NOT COPY	

ISS	DESCRIPTION	DATE
1.8	SEE ECO 5537	2015/07/13
1.7	SEE ECO 5465	2015/03/09
1.6	ECO 5395/5431 AFTER ENG. CHANGES	2014/12/02
1.5	SEE ECO 5312	2014/06/11
1.4	SEE ECO 5127	2013/05/15

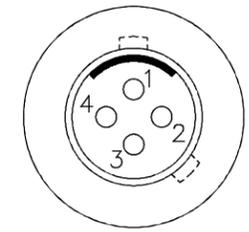
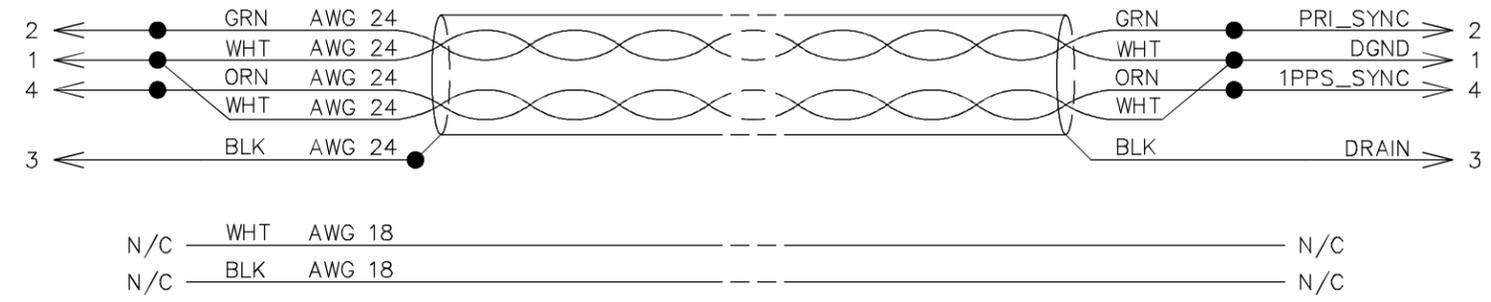
REVISIONS

Kongsberg Mesotech Ltd.				
DWG ASSY				
M3 TEST CABLE				
SEACON MINK				
SIZE	NSCM NO	TYPE	DWG NO.	ISS
B	1C965	MD	436-02391000	1.8
SCALE: NTS		W.O. NO.		SHEET 1 OF 1



SEACON
MIND-CCP
4#22

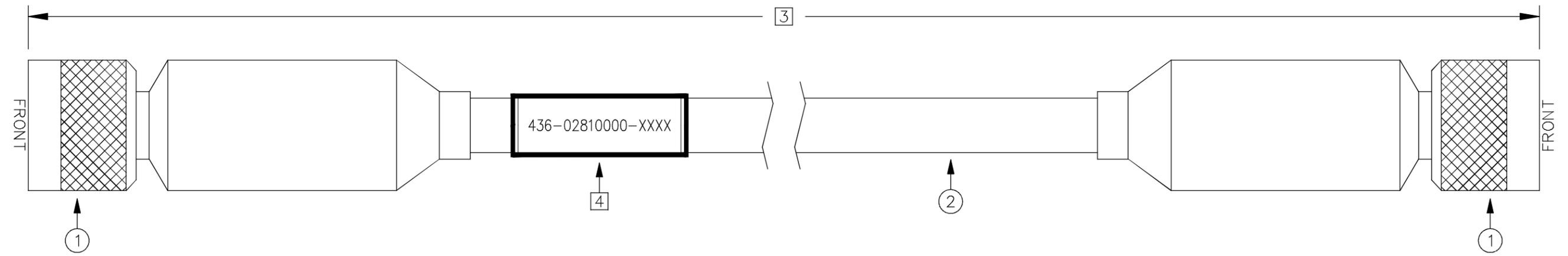
REAR VIEW



SEACON
MIND-CCP
4#22

REAR VIEW

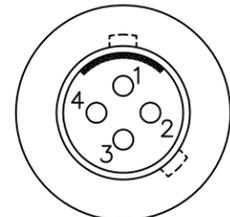
FALMAT FM022208-03



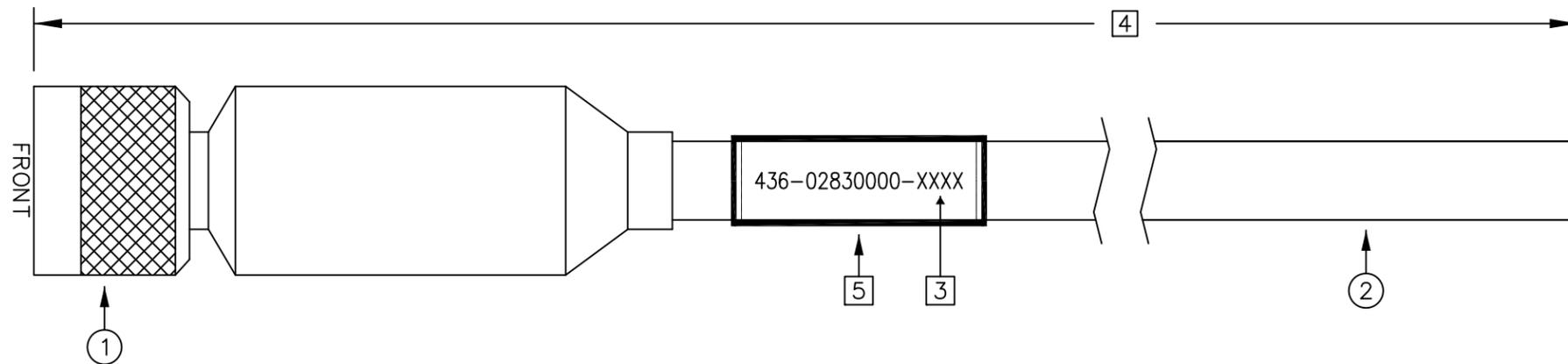
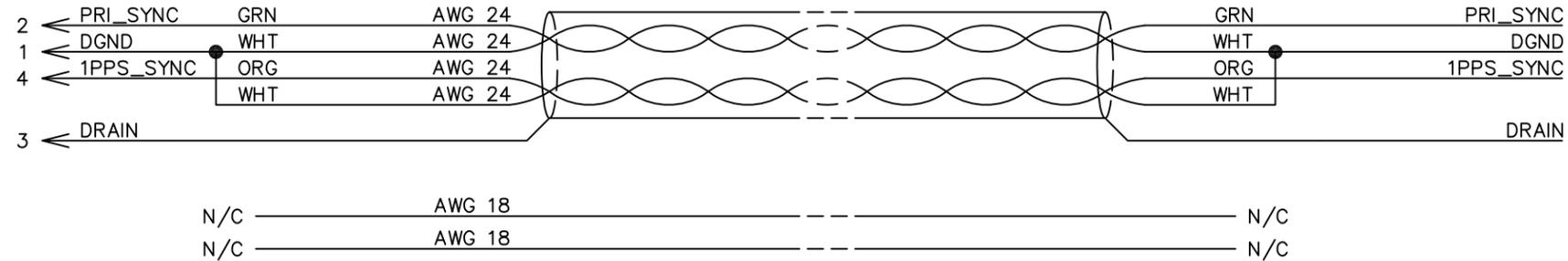
- NOTES:
- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
 - 2 SOLDER AND HEATSHRINK WIRES.
 - 3 LENGTH (IN FT, ± 0.1 FT.) = XXXX IN PART# nnn-nnnn0000-XXXX.
 - 4 PRINT PART# USING 1/8" BLACK TEXT ON WHITE, THEN COVER WITH CLEAR HEATSHRINK.

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DO NOT SCALE DRAWING		DRAWN	BH 2013/07/20
		REVISED	IB 2013/08/15
		CHECKED	
		ENGR	
		ISSUED	
		CONFIDENTIAL DO NOT COPY	

1.1	ECO# 5174	2013/08/15
ISS	DESCRIPTION	DATE
REVISIONS		
Kongsberg Mesotech Ltd.		
M3 DUAL HEAD SYNC CABLE ASSEMBLY		
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG NO.	436-02811000	ISS 1.1
SCALE: -	W.O. NO.	SHEET 1 OF 1



4#22
REAR VIEW



NOTES:

- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
- 2 SOLDER AND HEATSHRINK WIRES.
- 3 XXXX INDICATES LENGTH + COMPLETE PART NUMBER.
- 4 LENGTH (IN FT, ± 0.1 FT.).
- 5 PRINT PART# USING 1/8" BLACK TEXT ON WHITE, THEN COVER WITH CLEAR HEATSHRINK.

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APPROVALS	DATE
DRAWN BH	2013 JUL 20
REVISED BH	2014 MAY 13
CHECKED	
ENGR	
ISSUED	
CONFIDENTIAL DO NOT COPY	

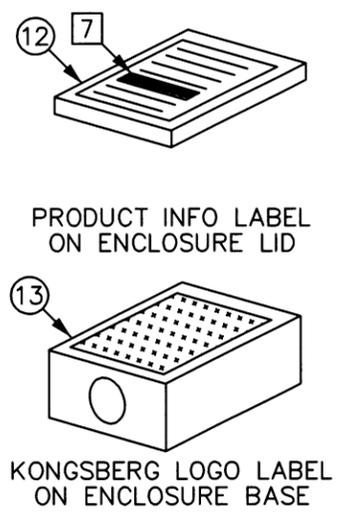
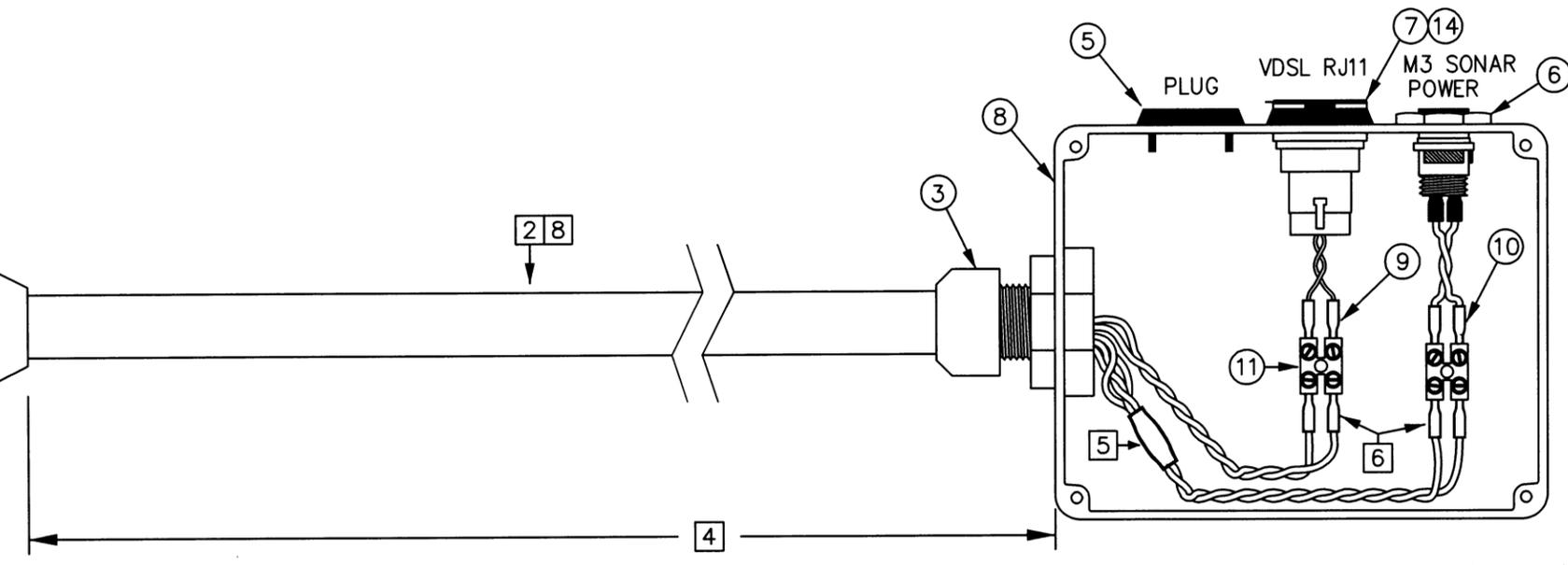
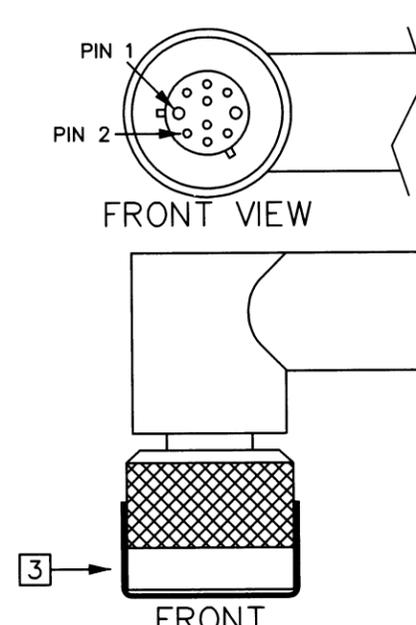
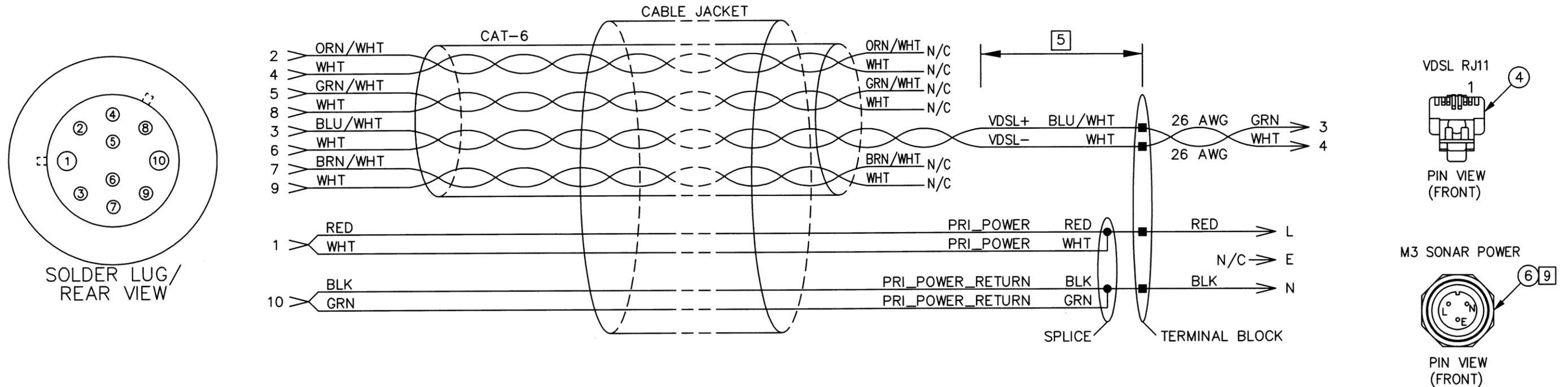
1.1	ECO 5289	2014 MAY 13
ISS	DESCRIPTION	DATE

REVISIONS		
Kongsberg Mesotech Ltd.		
DWG CABLE WHIP M3 HEAD SYNC		

SIZE	NSCM NO	TYPE	DWG NO.	ISS
B	1C965	MD	436-02831000	1.1
SCALE: -		W.O. NO.		SHEET 1 OF 1

DO NOT SCALE DRAWING





NOTES:

- 1 ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
- 2 CABLE MINIMUM BEND RADIUS = 5".
- 3 INSTALL PUSH-ON PROTECTIVE CAP (SUPPLIED WITH CONNECTOR).
- 4 REFER TO BILL OF MATERIALS FOR LENGTH (IN FT. ± 0.1 FT.)
- 5 SPLICE CABLE BY 3.5" ± 0.25". MAXIMUM 0.5" UNTWISTED.
- 6 CRIMP FERRULES.
- 7 INSTALL A STICKER WITH CABLE P/N ON ENCLOSURE LID. LABEL SIZE 56mm x 10mm, BROTHER LABEL MAKER SETTINGS: FONT: HEL, SIZE:12PT, WIDTH: x1, STYLE: BOLD
- 8 REMOVE LABEL THAT IS ON THE CABLE WHIP.
- 9 INSERT EXTRA PIN INTO LOCATION MARKED AS "E".

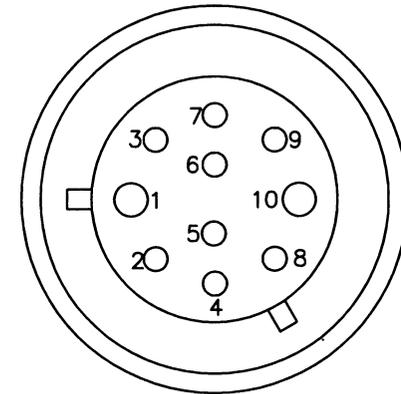
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DO NOT SCALE DRAWING

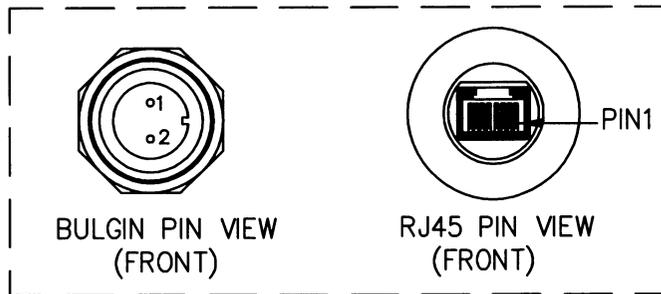
APPROVALS		DATE
DRAWN	BH	2015 APR 2
REVISED		
CHECKED	<i>[Signature]</i>	June 26/15
ENGR	<i>I.B.</i>	June 26/15
ISSUED	<i>R.C.H.</i>	JUNE 26/15
CONFIDENTIAL DO NOT COPY		

ISS	DESCRIPTION	DATE
REVISIONS		
Kongsberg Mesotech Ltd.		
CABLE ASSY M3 VDSL/POWER		
SEACON MINK-10-CCPL TO VDSL BREAKOUT BOX		
FALMAT FM022208-10 (R/A MOLDED)		
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG NO.	436-03131000	
ISS	1.0	
SCALE: NTS	W.O. NO.	SHEET 1 OF 1

MINK-10-CCP TO M3 BOX CONNECTION			
MINK-10		BULGIN	RJ45(T568B)
PIN NUMBER	SIGNAL	PIN NUMBER	PIN NUMBER
1	V+	1	N/A
2	BI_DA+	N/C	1
3	BI_DC-	N/C	5
4	BI_DA-	N/C	2
5	BI_DB+	N/C	3
6	BI_DC+	N/C	4
7	BI_DD+	N/C	7
8	BI_DB-	N/C	6
9	BI_DD-	N/C	8
10	V-	2	N/A



FRONT VIEW

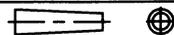


NOTES:

ALL PARTS AND PROCESSES USED ON THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE

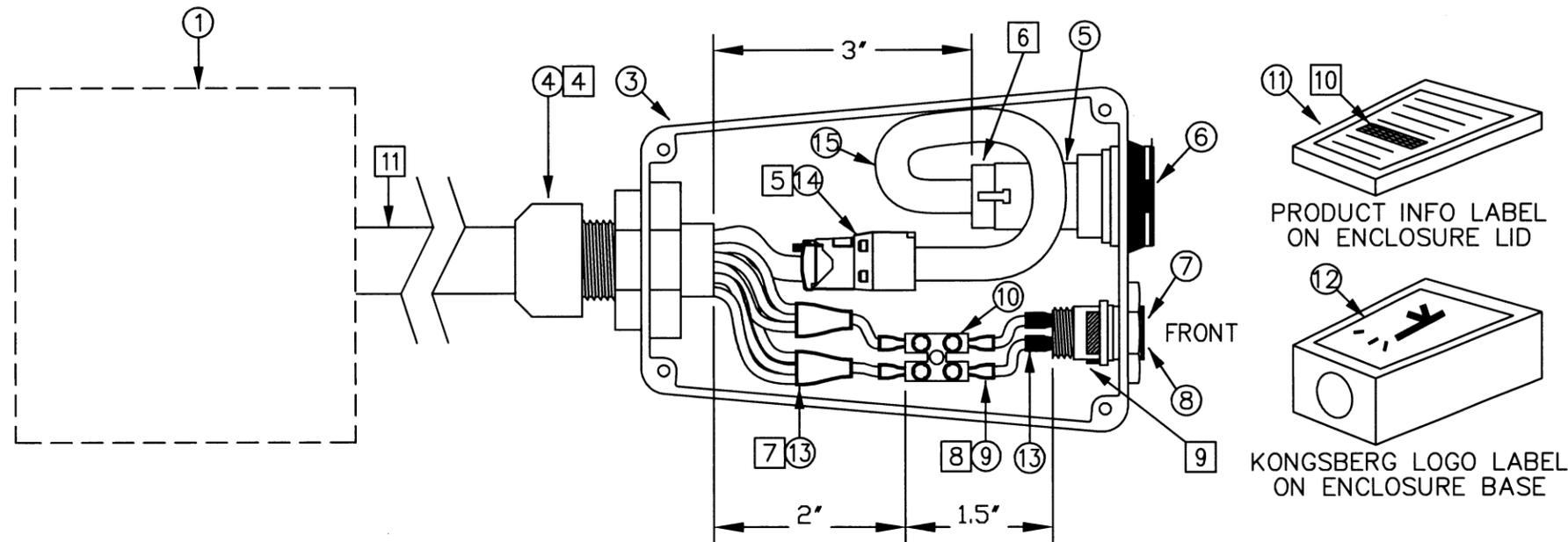
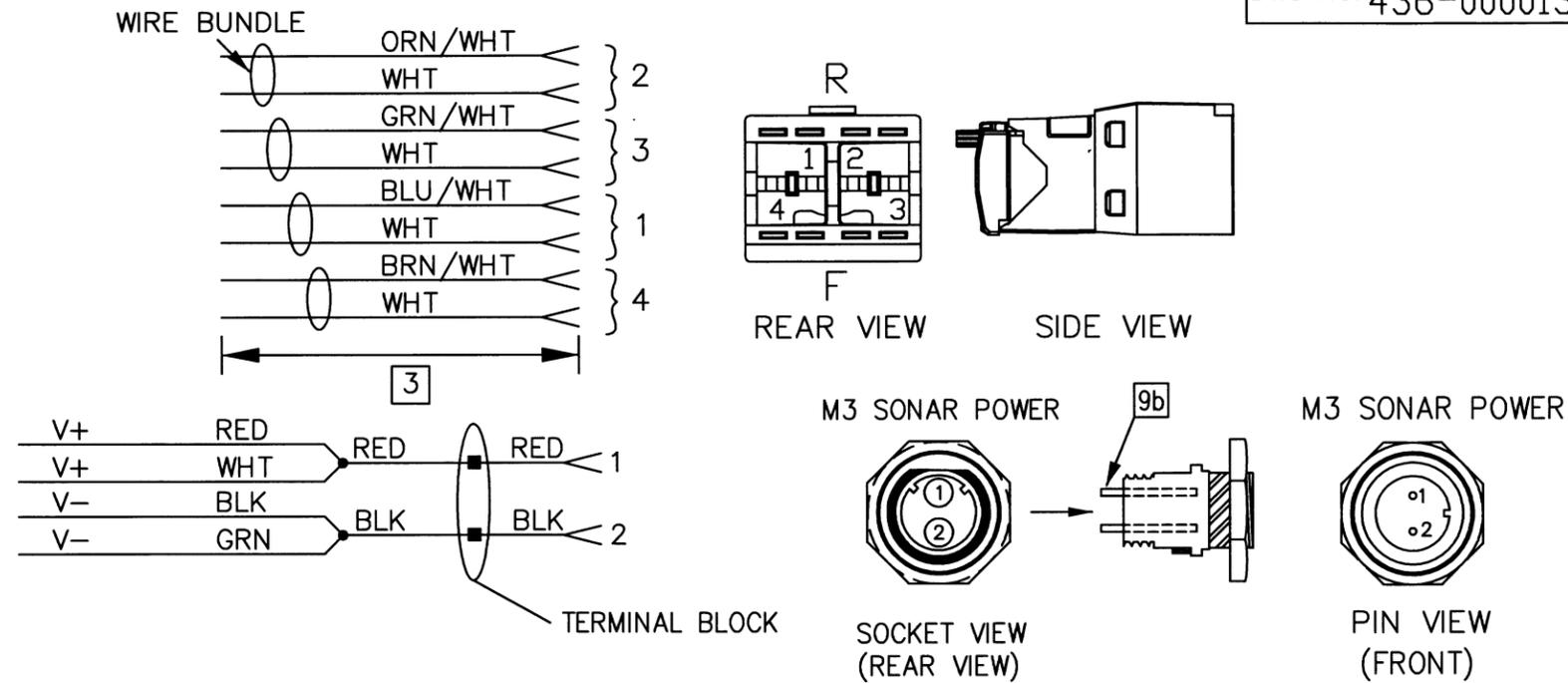
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DO NOT SCALE DRAWING



APPROVALS	DATE
DRAWN DM	2016-DEC-08
REVISED	
ENGR <i>J.M.</i>	Jan 10/2017
CHECKED <i>J.H.</i>	Jan 18/2017
PROD <i>R.C.</i>	Jan 18/2017
QA <i>K.A.</i>	18 JAN 17
ISSUED <i>R.C.H.</i>	18 JAN 17

ISS	DESCRIPTION	DATE
	REVISIONS	
	Kongsberg Mesotech Ltd.	
	ASSEMBLY PINOUT MINK-10-CCPL TO POWER/ETHERNET BREAKOUT BOX	
SIZE	NSCM NO	TYPE
A	1C965	MD
DWG NO. 436-00001210		ISS 1.0
SCALE: NTS	W.O. NO.	SHEET 1 OF 1



- NOTES:**
- ALL PARTS AND PROCESSES USED IN THIS ASSEMBLY MUST COMPLY WITH THE RoHS DIRECTIVE.
 - REFER TO THE TABLE FOR TOLERANCES
 - STRIP CABLE BY 3.5" (+1" -0"). MAXIMUM 0.5" UNTWISTED.
 - INSTALL CABLE GLAND.
 - INSTALL RJ45 JACK
 - INSTALL RJ45 COUPLER
 - a- REMOVE JACK PLUG FROM RJ45 COUPLER (5), THEN INSTALL OUTER PIECE AND HAND-TIGHTEN WITH 24MM SOCKET (COVER BEND ON TOP).
 - b- TEST WITH ETHERNET TESTER (FLUKE CABLE IQ TESTER OR EQUIVALENT).
 - SPLICE CABLE BY 3.5" (+1" -0"). HEATSHRINK OVERLAPS THE WIRE INSULATION ON BOTH ENDS OF THE SPLICED AREA BY A MINIMUM OF 1 WIRE GROUP (LARGEST GROUP) DIAMETER.
 - CRIMP FERRULES.
 - INSTALL POWER JACK CONNECTOR:
 - a- INSTALL CONNECTOR, WASHER, THEN THE NUT.
 - b- INSTALL PINS WITH SOLDERED WIRES TO THE CONNECTOR.
 - c- INSTALL CAP (SUPPLIED WITH CONNECTOR).
 - INSTALL A STICKER WITH CABLE P/N ON ENCLOSURE LID. LABEL SIZE 45mm x 10MM, BROTHER LABEL MAKER SETTINGS; FONT: HEL, WIDTH x1, SIZE: 12PT, STYLE: BOLD
 - REMOVE LABEL THAT IS ON THE CABLE WHIP.

2

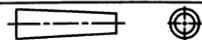
≤1 FT	+1 IN -0 IN
>1 FT-5 FT	+2 IN -0 IN
>5 FT-10 FT	+4 IN -0 IN
>10 FT- 25 FT	+6 IN -0 IN
>25 FT	+5% -0%

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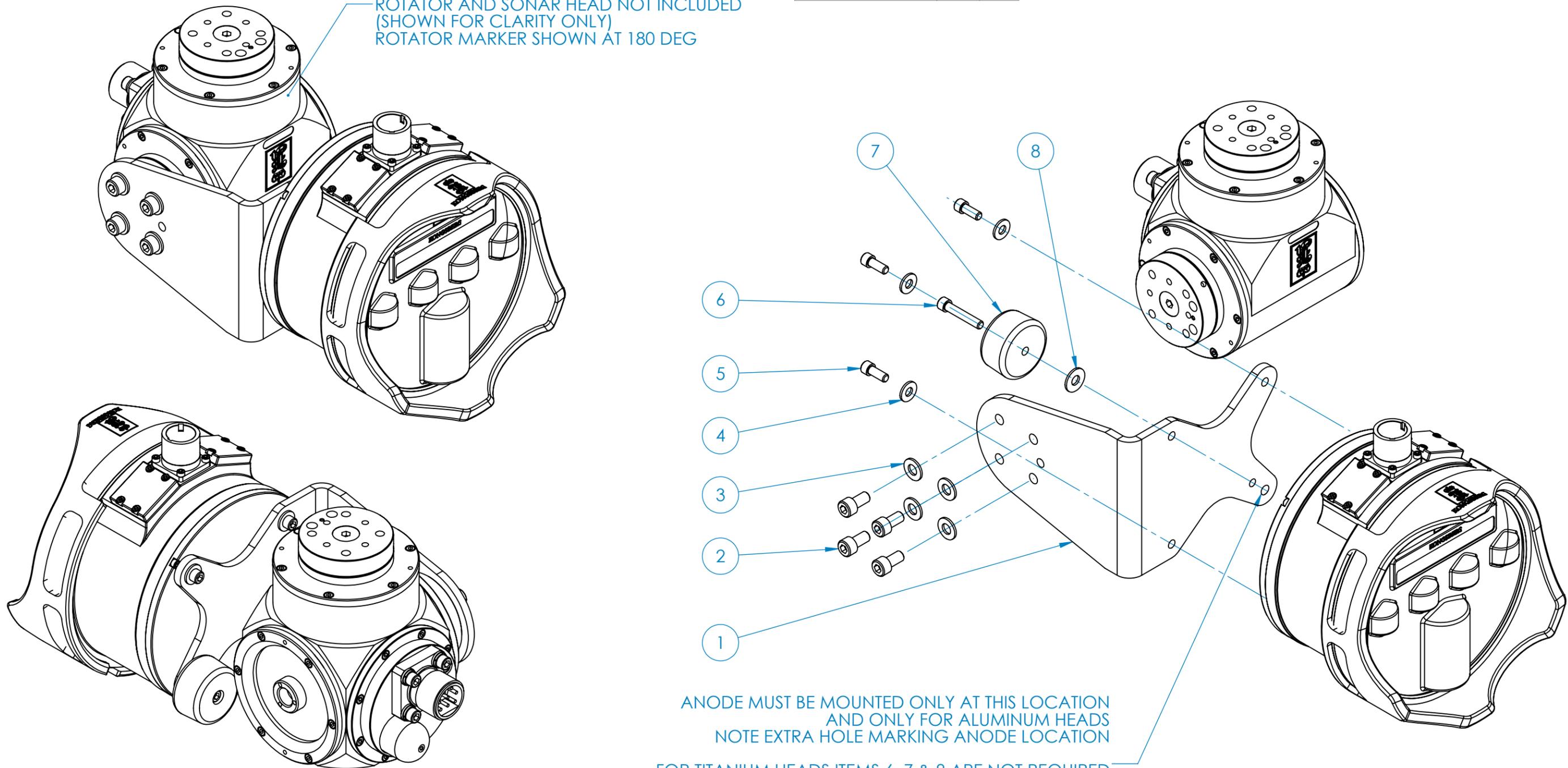
APPROVALS	DATE
DRAWN DM	2016-DEC-08
REVISED	
ENGR <i>DM</i>	<i>Jan 18/2017</i>
CHECKED <i>JH</i>	<i>Jan 18/2017</i>
PROD <i>HC</i>	<i>Jan 18/2017</i>
QA <i>KA</i>	<i>18-JAN-17</i>
ISSUED <i>RCH</i>	<i>14 JAN 17</i>

ISS	DESCRIPTION	DATE
REVISIONS		
	Kongsberg Mesotech Ltd.	
	ASSY DWG	
	M3 POWER/ETHERNET BREAKOUT BOX	
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG NO.	436-00001302	ISS 1.0
SCALE: NTS	W.O. NO.	SHEET 1 OF 1

DO NOT SCALE DRAWING



ROTATOR AND SONAR HEAD NOT INCLUDED
(SHOWN FOR CLARITY ONLY)
ROTATOR MARKER SHOWN AT 180 DEG



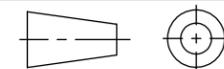
ANODE MUST BE MOUNTED ONLY AT THIS LOCATION
AND ONLY FOR ALUMINUM HEADS
NOTE EXTRA HOLE MARKING ANODE LOCATION

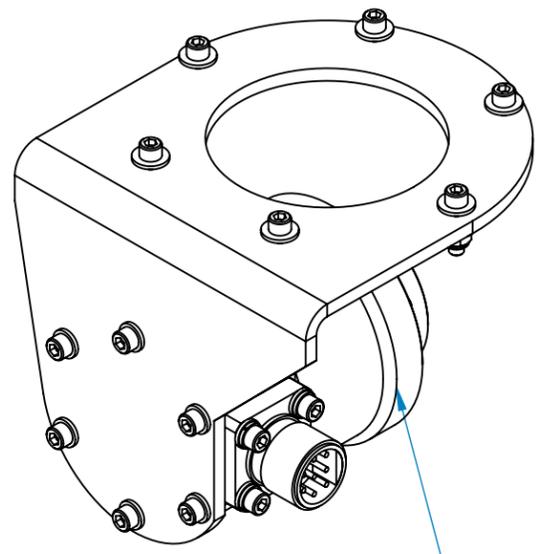
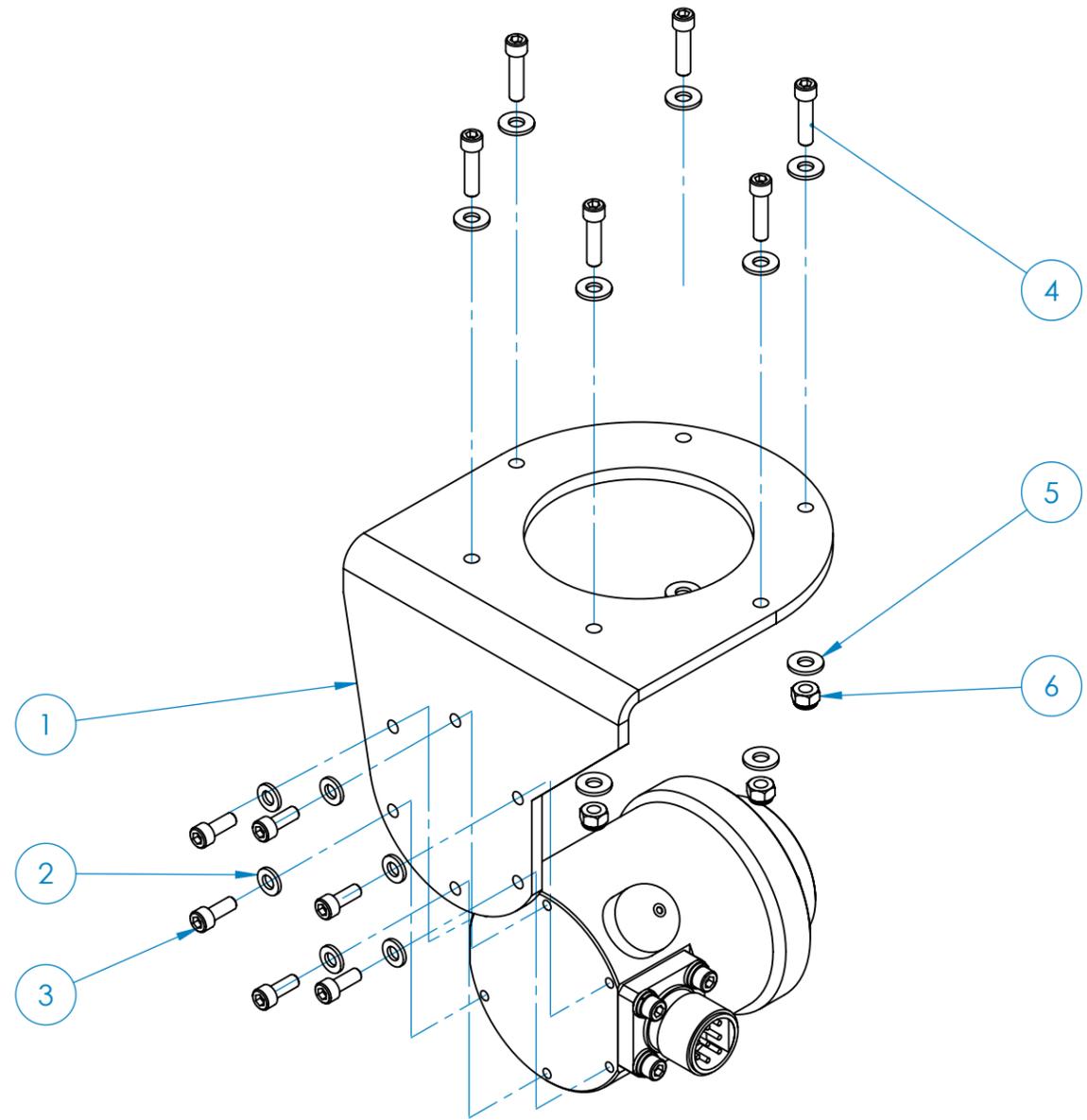
FOR TITANIUM HEADS ITEMS 6, 7 & 8 ARE NOT REQUIRED
USE INSTEAD ONE MORE EACH OF ITEMS 4 & 5

NOTE:
- LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT
- LUBRICATE BASE OF ANODE WITH WATER RESISTANT GREASE

ISS	DESCRIPTION	DATE
REVISIONS		
Kongsberg Mesotech Ltd.		
ASSEMBLY DRAWING BRACKET - M3 SONAR TO ROTATOR (OE10-102 / OE10-103)		
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG. NO.	ISS	
422-44051000	1.0	
SCALE: 1:3	W.O. NO.	SHEET 1 OF 1

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	DRAWN	DV	2012-05-30
	REVISED	--	--
	CHECKED		
	ENGR		
	ISSUED		





ROTATOR NOT INCLUDED
SHOWN FOR CLARITY ONLY

NOTE:
- LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT

1.1	ECO 5148	2013-07-03
ISS	DESCRIPTION	DATE

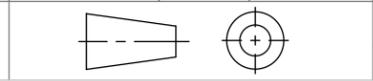
REVISIONS

PROPRIETARY NOTICE
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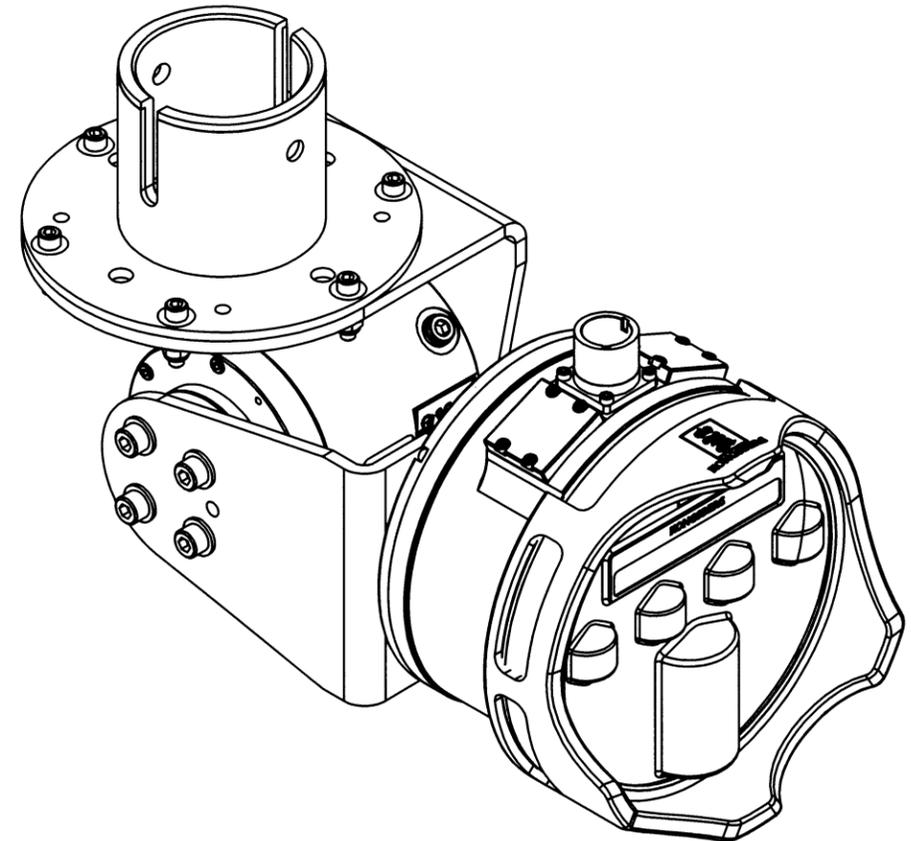
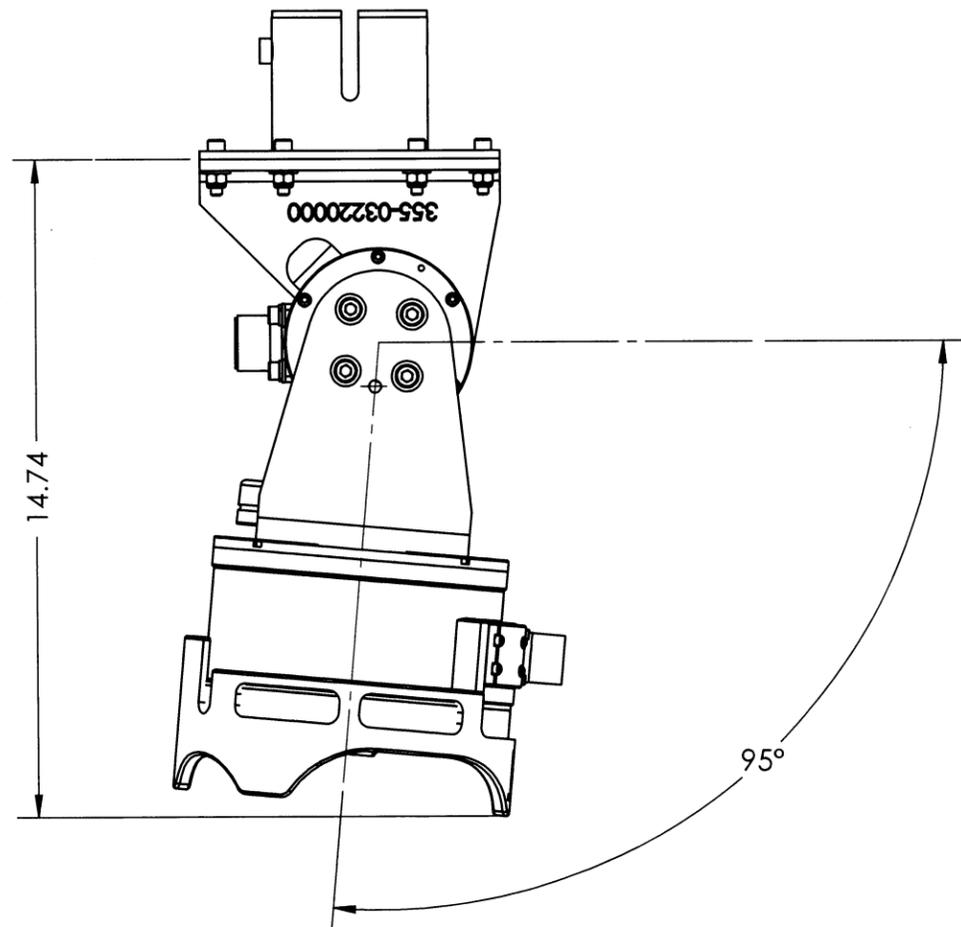
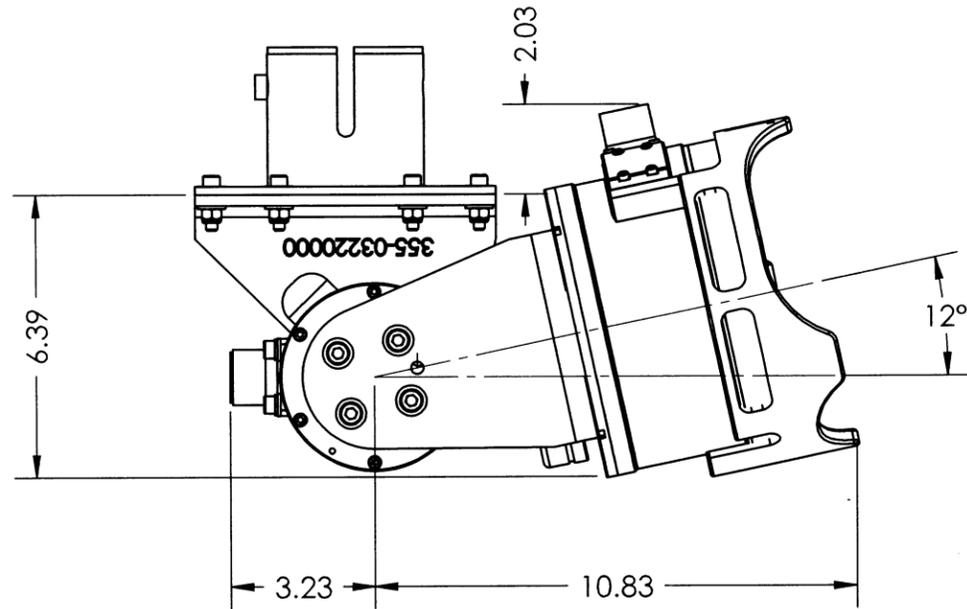
APPROVALS	NAME	DATE
DRAWN	DV	2012-05-30
REVISED	BMS	2013-07-03
CHECKED		
ENGR		
ISSUED		

Kongsberg Mesotech Ltd.
ASSEMBLY DRAWING
BRACKET - POLE MOUNT TO
ROTATOR (OE10-103)

DO NOT SCALE DRAWING.
CONFIDENTIAL. DO NOT COPY.



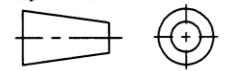
SIZE	NSCM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	422-44061000	1.1
SCALE: 1:3	W.O. NO.		SHEET 1 OF 1	

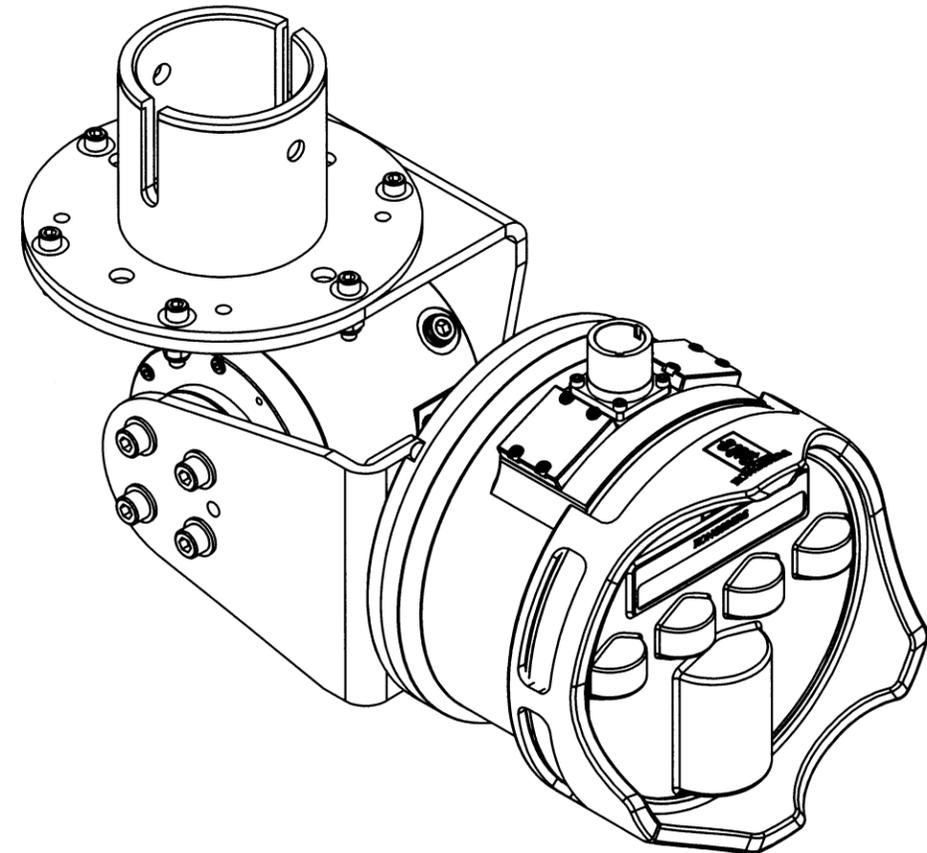
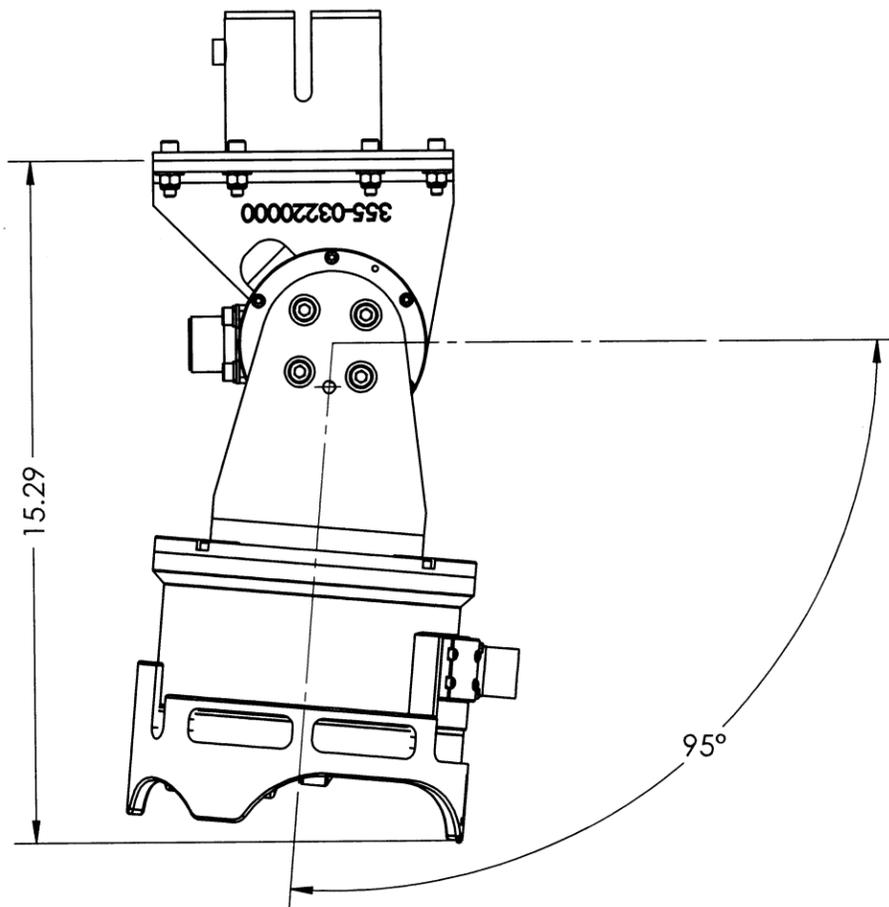
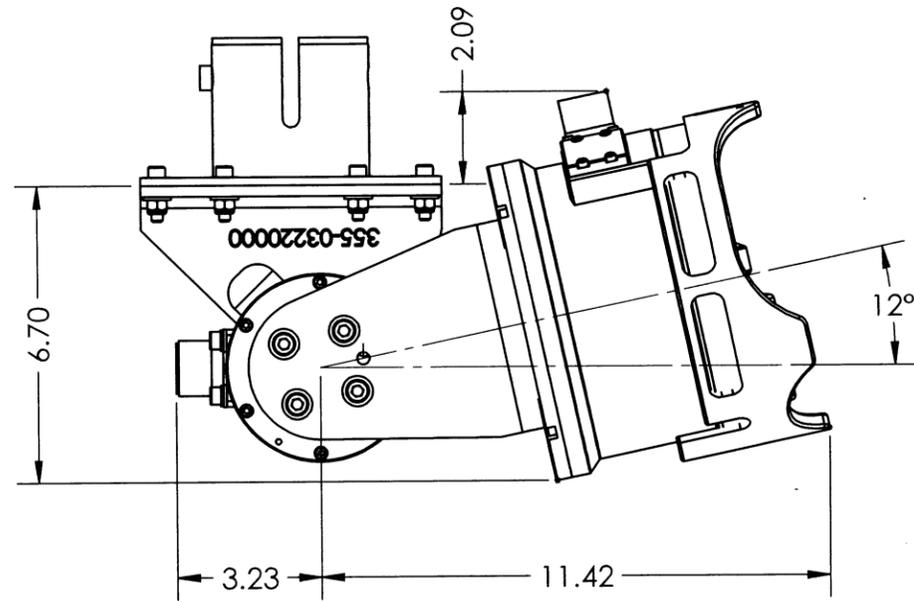


NOTE: DIMENSIONS IN INCHES

1.2	ECO 5549	2015/07/31
1.1	ECO 5401	2014/12/04
ISS	DESCRIPTION	DATE
REVISIONS		

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	DRAWN	DV	2012-07-24		
	REVISED	DRC	2015-07-31		
	CHECKED	<i>DW</i>	<i>2015/08/13</i>		
	ENGR	<i>WU</i>	<i>2015 ALX 28</i>		
ISSUED	<i>R.C.H.</i>	<i>2015 SEP 2</i>			
	SIZE	NSCM NO	TYPE	DWG. NO.	ISS
	B	1C965	MD	422-44061001	1.2
	SCALE: 1:3	W.O. NO. 281-1150	SHEET 1 OF 2		

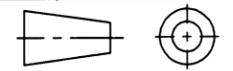


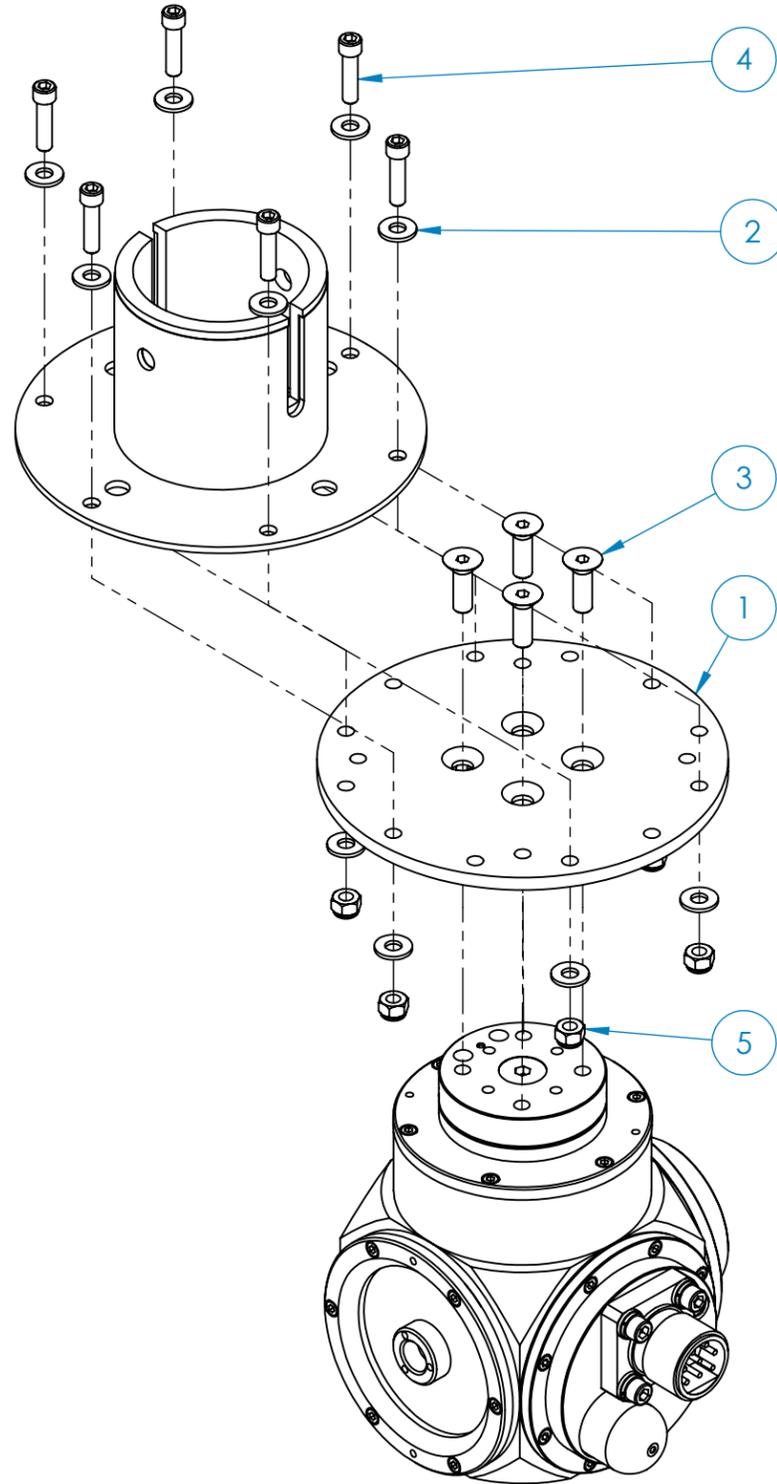


NOTE: DIMENSIONS IN INCHES

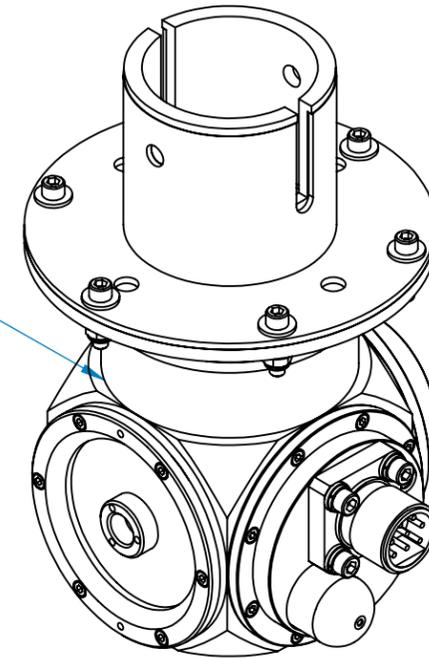
1.2	ECO 5549	2015/07/31
1.1	ECO 5401	2014/12/04
ISS	DESCRIPTION	DATE
REVISIONS		

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	DRAWN	DV	2012-07-24	
	REVISED	DRC	2015-07-31	
	CHECKED	<i>DL</i>	<i>2015/08/13</i>	
	ENGR	<i>[Signature]</i>	<i>2015 AUG 28</i>	
ISSUED	<i>R.C.H.</i>	<i>2015 SEP 2</i>		
SIZE	NSCM NO	TYPE	DWG. NO.	ISS
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SCALE: 1:3		W.O. NO. 281-1150		SHEET 2 OF 2



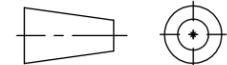


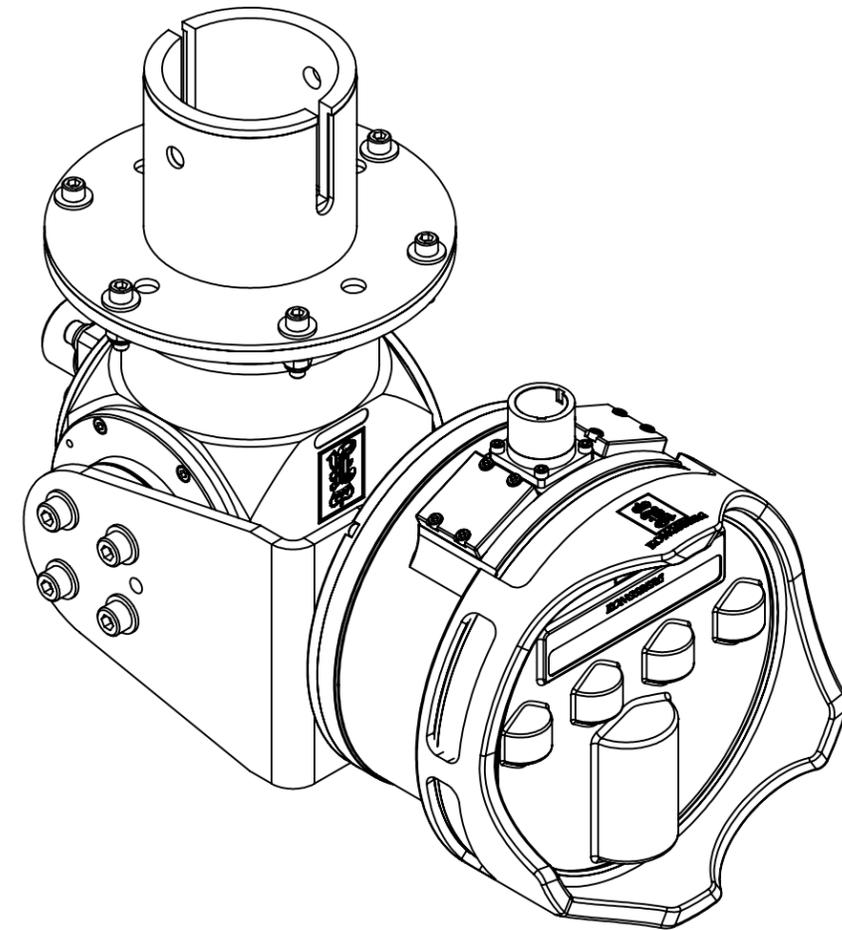
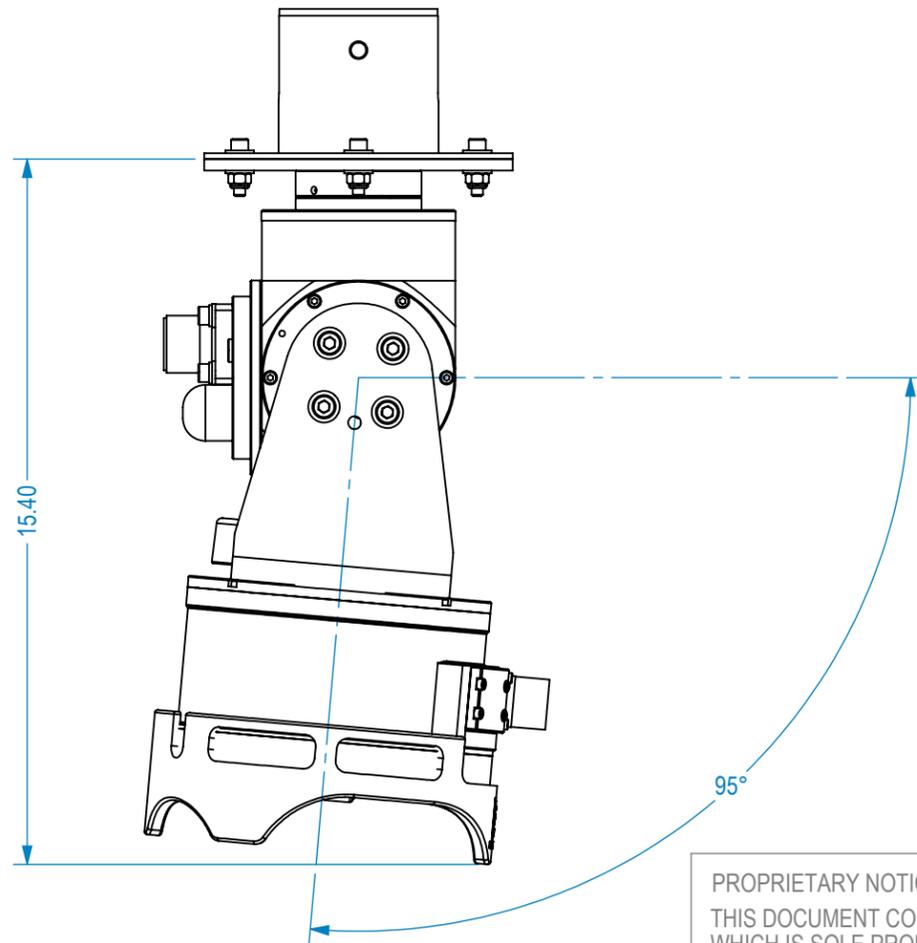
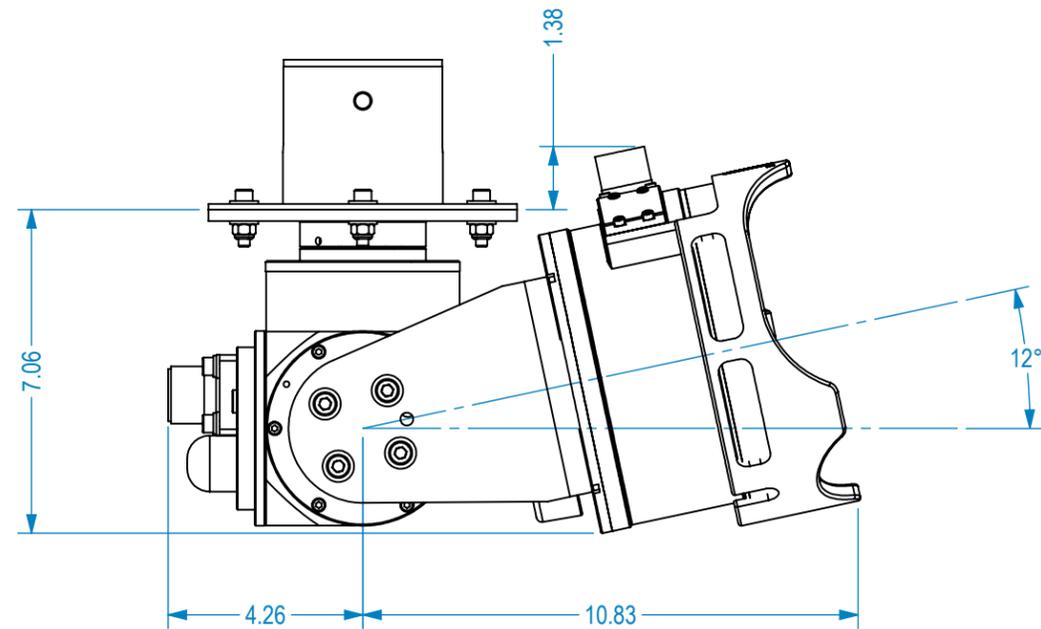
ROTATOR AND POLE MOUNT FLANGE
NOT INCLUDED
SHOWN FOR CLARITY ONLY



NOTES:
1. LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT

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		DECIMALS	FRACTIONAL	ANGULAR											
X.XX ±0.006	±1/32	MACH ±30'													
X.XXX ±0.003		BEND ±1°													
DRAWN	DV	2012-07-24	REVISI ONS	1.1	ECO 5170-1	2013-08-21									
CONFIDENTIAL. DO NOT COPY.	DO NOT SCALE DRAWING	REVISI ON	DRC	2013-08-21	ISS	DESCRIPTION	DATE								
		ENGR			ISS	REVISIONS									
		ISSUED			<table border="1"> <tr> <td>SIZE</td> <td>NSCM NO</td> <td>TYPE</td> <td>DWG. NO.</td> <td>ISS</td> </tr> <tr> <td>B</td> <td>1C965</td> <td>MD</td> <td>422-44071000</td> <td>1.1</td> </tr> </table>	SIZE	NSCM NO	TYPE	DWG. NO.	ISS	B	1C965	MD	422-44071000	1.1
SIZE	NSCM NO	TYPE	DWG. NO.	ISS											
B	1C965	MD	422-44071000	1.1											
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SCALE: 1:3	W.O. NO.	SHEET 1 OF 1													





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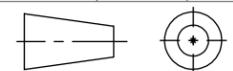
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X.XX ±0.006	±1/32	MACH ±30'
X.XXX ±0.003		BEND ±1°

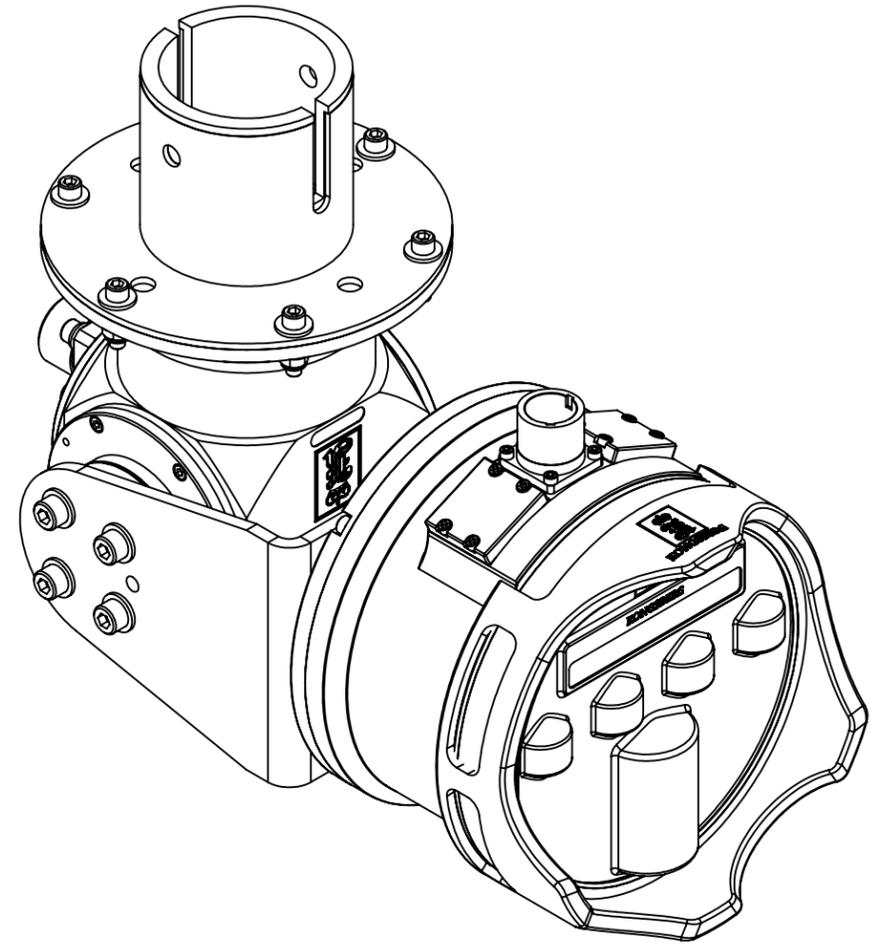
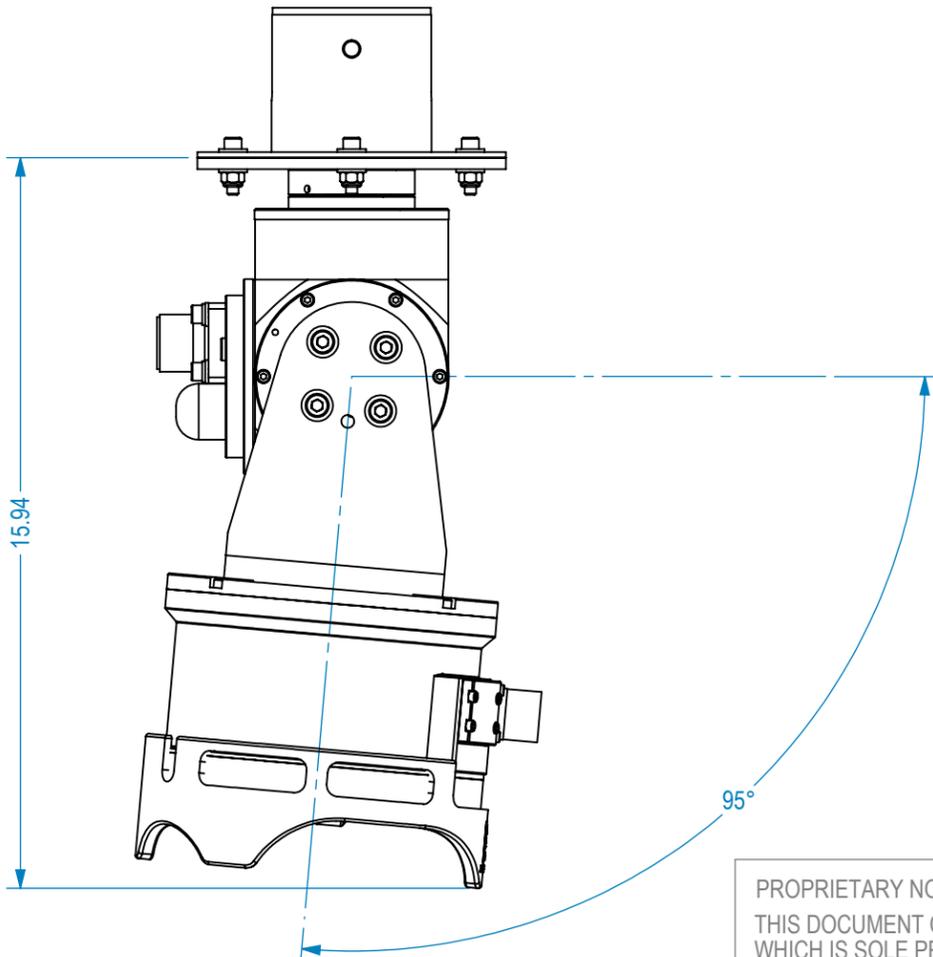
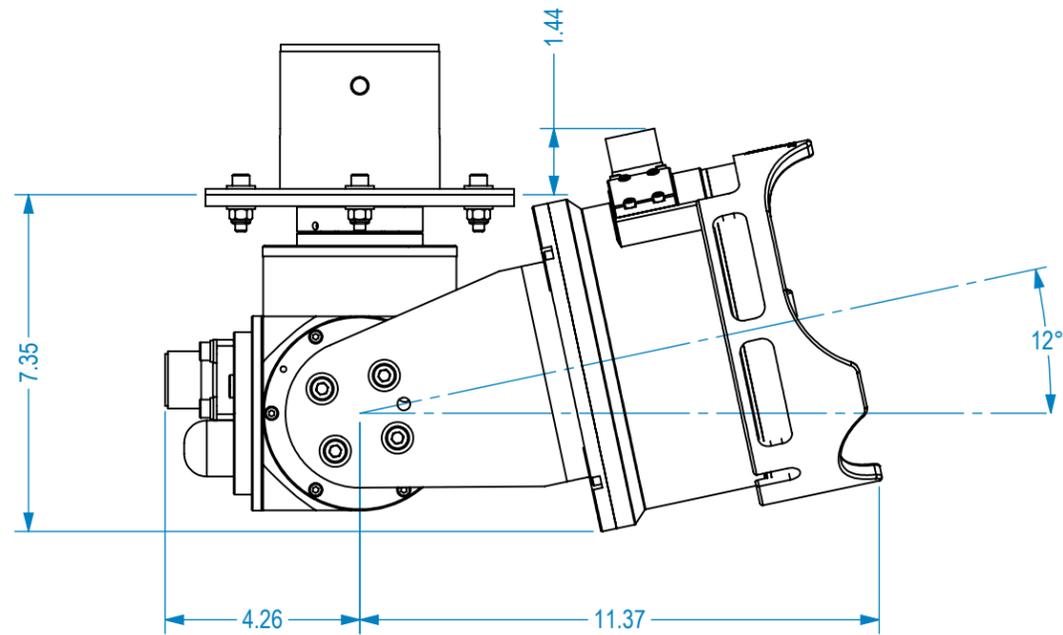
 SURFACE FINISH 125 Ra, DE-BURR HOLES
BREAK SHARP EDGES 0.010

DO NOT SCALE DRAWING

APPROVALS	NAME	DATE
DRAWN	DV	2012-07-24
REVISED	DRC	2013-08-21
CHECKED		
ENGR		
ISSUED		



ISS	DESCRIPTION	DATE
REVISIONS		
Kongsberg Mesotech Ltd.		
OUTLINE AND INSTALLATION DRAWING		
M3 SONAR 500M		
WITH ROTATOR (OE10-102)		
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG. NO.	422-44071001	
ISS	1.0	
SCALE: 1:4	W.O. NO.	SHEET 1 OF 2



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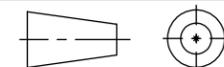
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:

DECIMALS	FRACTIONAL	ANGULAR
X.XX ±0.006	±1/32	MACH ±30'
X.XXX ±0.003		BEND ±1°

 SURFACE FINISH 125 Ra, DE-BURR HOLES
BREAK SHARP EDGES 0.010

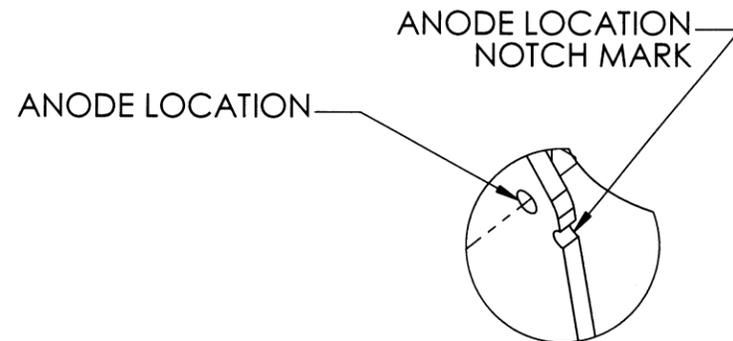
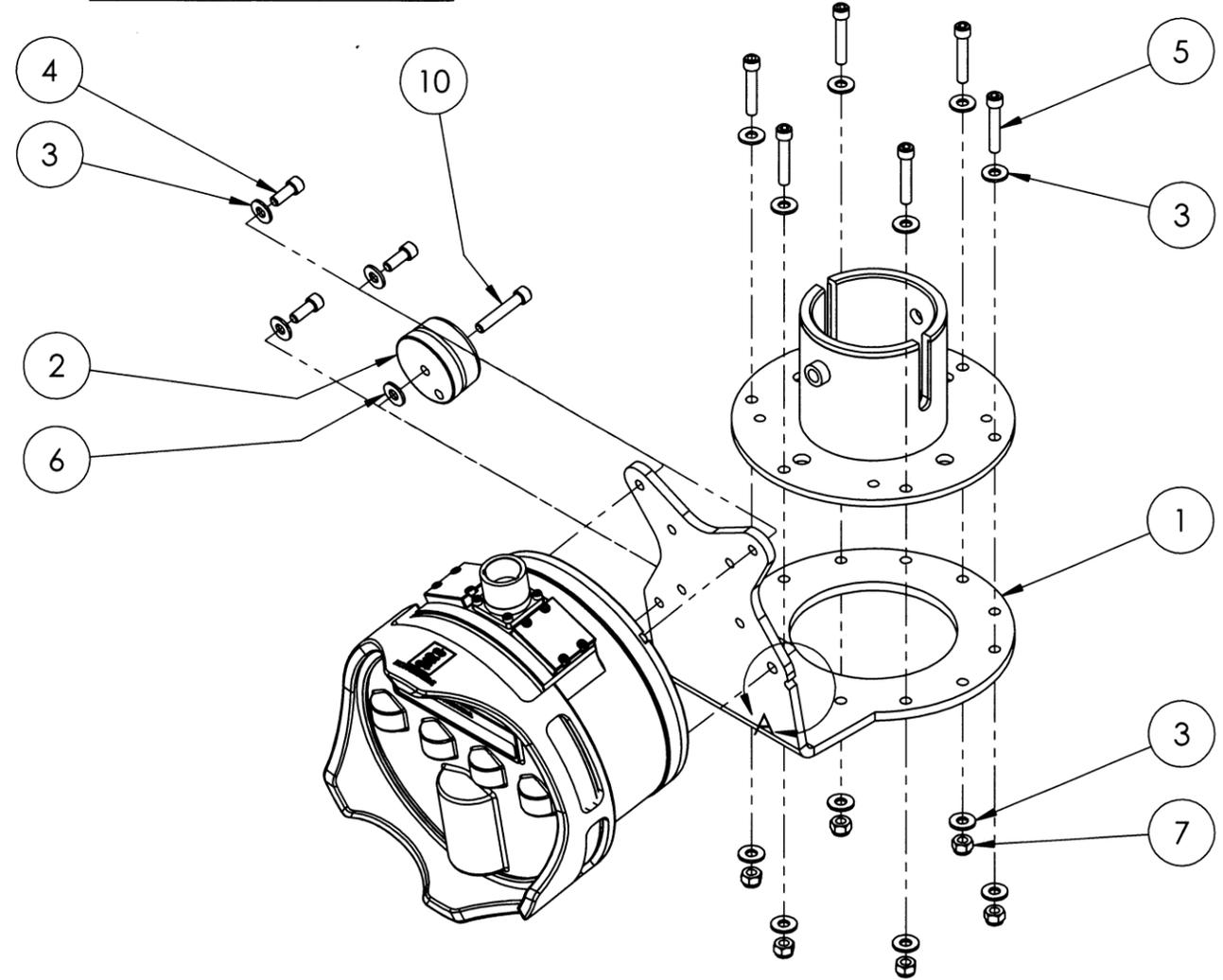
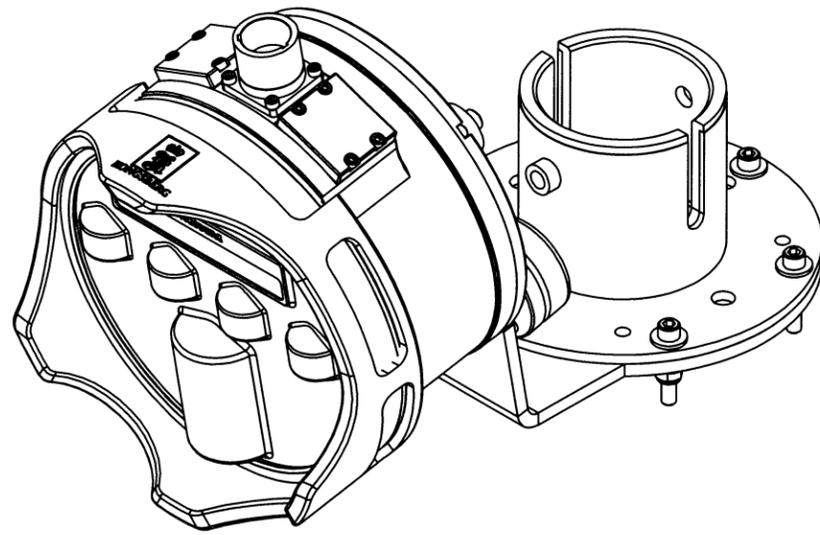
DO NOT SCALE DRAWING

APPROVALS	NAME	DATE
DRAWN	DV	2012-07-24
REVISED	DRC	2013-08-21
CHECKED		
ENGR		
ISSUED		



ISS	DESCRIPTION	DATE
REVISIONS		
Kongsberg Mesotech Ltd.		
OUTLINE AND INSTALLATION DRAWING		
M3 SONAR 4000M		
WITH ROTATOR (OE10-102)		
SIZE	NSCM NO	TYPE
B	1C965	MD
DWG. NO.	ISS	
422-44071001	1.0	
SCALE: 1:4	W.O. NO.	SHEET 2 OF 2

DWG. NO. 422-44121000	SHT 1	ISS 1.2
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DETAIL A
SCALE 1 : 2

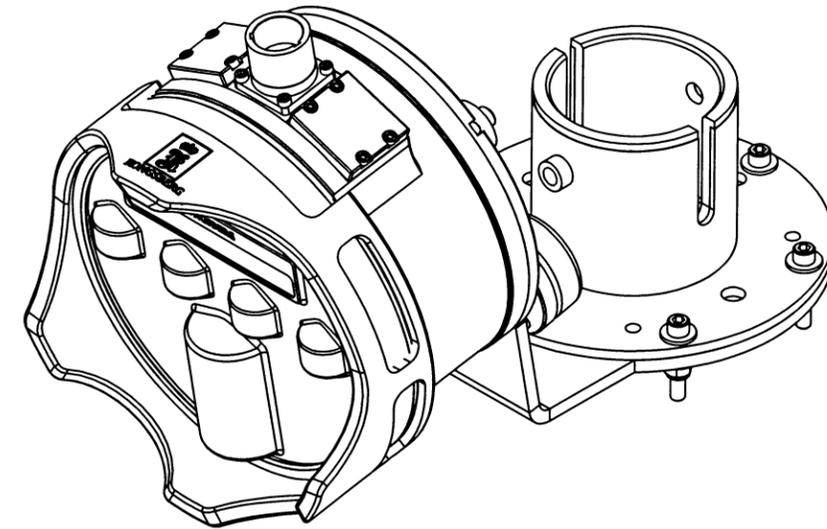
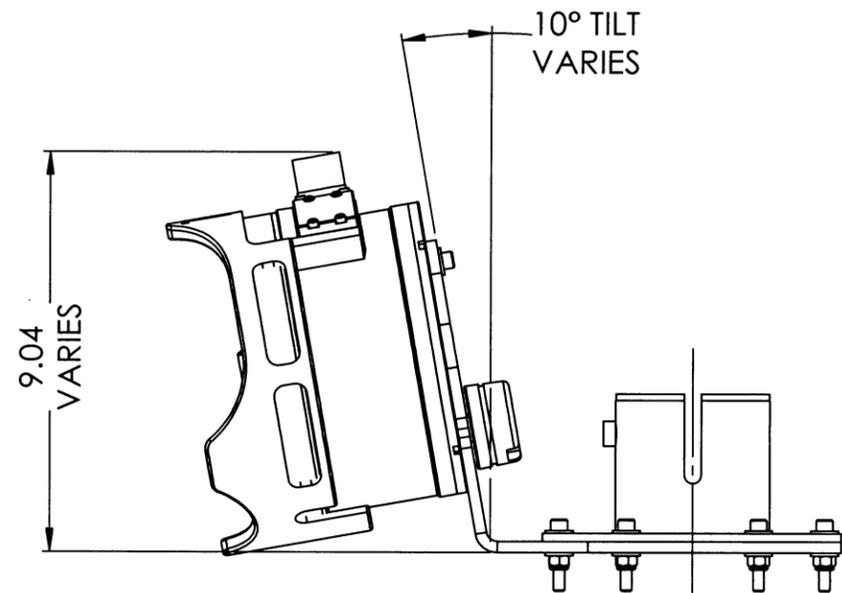
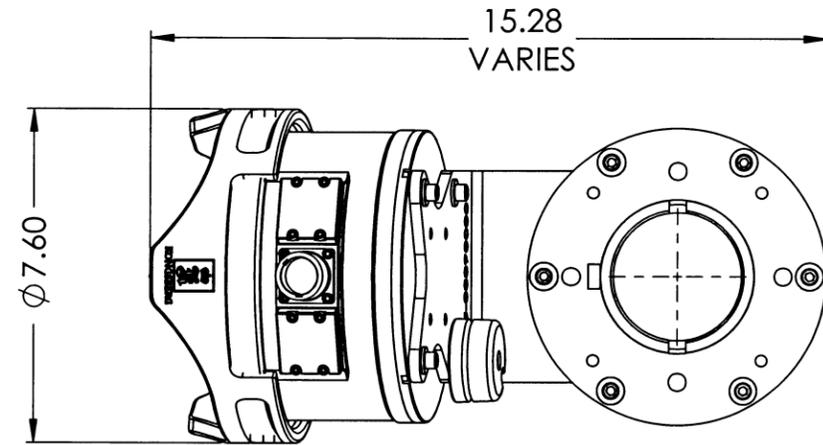
NOTES:

1. ANODE TO BE USED ONLY WITH ALUMINUM HEAD AT LOCATION MARKED WITH NOTCH - SEE DETAIL
2. FOR TITANIUM HEAD, ITEMS 2, 5 AND 6 NOT USED; USE INSTEAD ONE MORE EACH OF ITEM 3 AND 4
3. LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT
4. LUBRICATE BASE OF ANODE WITH WATER RESISTANT GREASE

1.2	ECO 5549	2015-08-24
1.1	ECO 5271	2014-03-14
ISS	DESCRIPTION	DATE

REVISIONS

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			REVISED	DL	2015-08-24	TILT BRACKET				
			CHECKED	<i>[Signature]</i>	2015 AUG 31	POLE MOUNT TO M3 SONAR				
			ENGR	<i>[Signature]</i>	2015 AUG 31	SIZE	NSCM NO	TYPE	DWG. NO.	ISS
			ISSUED	R.C.H.	2015 SEP 2	B	1C965	MD	422-44121000	1.2
DO NOT SCALE DRAWING. CONFIDENTIAL. DO NOT COPY.						SCALE: 1:4	W.O. NO.		SHEET 1 OF 1	



NOTE:
SONAR HEAD, FLANGE AND MRU NOT INCLUDED;
SHOWN ONLY FOR CLARITY

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TOLERANCES ARE:
DECIMALS FRACTIONAL ANGULAR
X.XX ±0.006 ±1/32 MACH ±30'
X.XXX ±0.003 BEND ±1°
SURFACE FINISH 125 Ra, DE-BURR HOLES
BREAK SHARP EDGES 0.010

DO NOT SCALE DRAWING

APPROVALS	NAME	DATE
DRAWN	DRC	2013-08-07
REVISED	DL	2015-08-24
CHECKED	<i>[Signature]</i>	2015 AUG 31
ENGR	<i>[Signature]</i>	2015 AUG 31
ISSUED	R.C.H.	2015 SEP 2

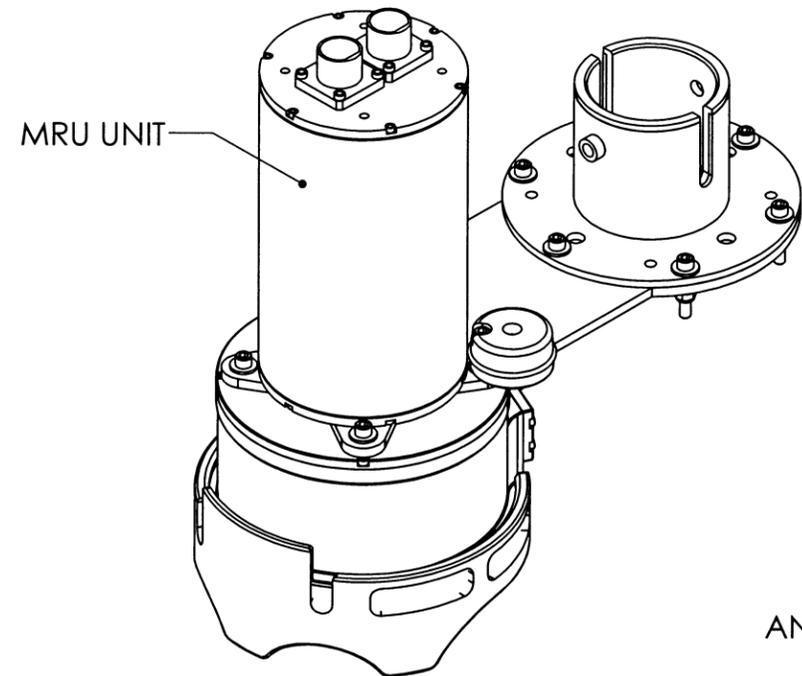


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1.1	ECO 5271	2014-03-14
ISS	DESCRIPTION	DATE

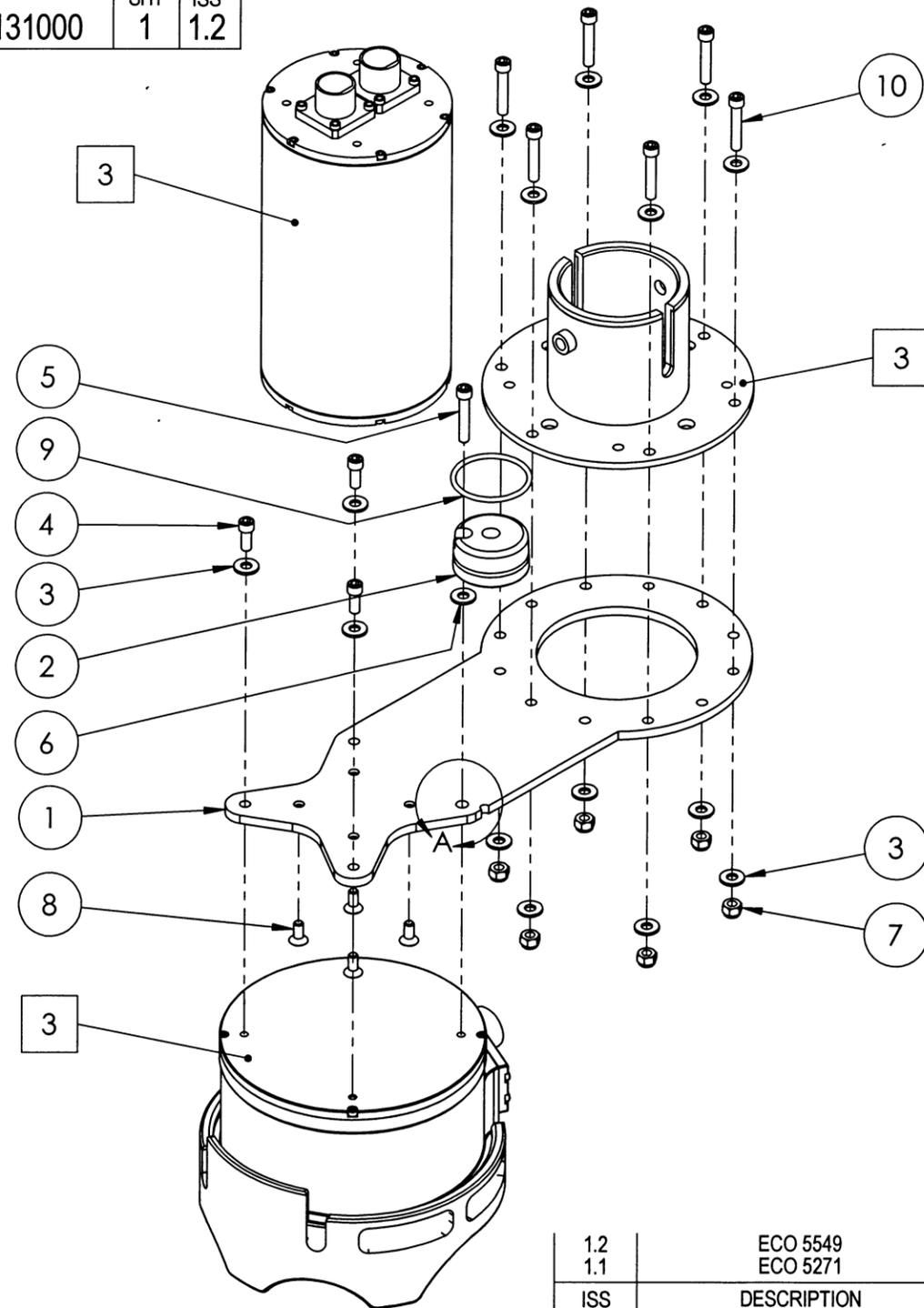
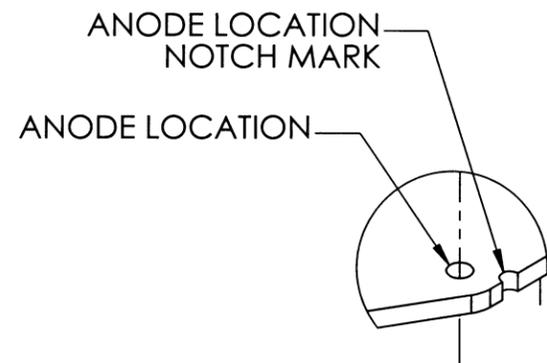
REVISIONS

Kongsberg Mesotech Ltd.
OUTLINE AND INSTALLATION DRAWING
M3 SONAR 500M
WITH TILT BRACKET

SIZE	NSCM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	422-44121001	1.2
SCALE: 1:4		W.O. NO.		SHEET 1 OF 1



SHOWN WITH BOTH HEAD AND MRU UNIT INSTALLED



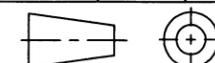
NOTES:

1. ANODE TO BE USED ONLY WITH ALUMINUM HEAD AT LOCATION MARKED WITH NOTCH - SEE DETAIL
2. FOR TITANIUM HEAD, ITEMS 2, 5, 6 AND 9 NOT USED; USE INSTEAD ONE MORE EACH OF ITEM 3 AND 4
3. HEAD, FLANGE AND MRU NOT INCLUDED; SHOWN ONLY FOR CLARITY
4. IF NOT USING MRU DO NOT USE ITEMS 8 AND 9 AND USE CENTER HOLE OF ITEM 2 FOR INSTALLATION
5. LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT
6. LUBRICATE BASE OF ANODE WITH WATER RESISTANT GREASE

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APPROVALS	NAME	DATE
DRAWN	DRC	2013-08-07
REVISED	DL	2014-07-31
CHECKED	<i>[Signature]</i>	2015 AUG 31
ENGR	<i>[Signature]</i>	2015 AUG 31
ISSUED	R.G.H.	2015 SEP 2



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1.1	ECO 5271	2014-03-14
ISS	DESCRIPTION	DATE

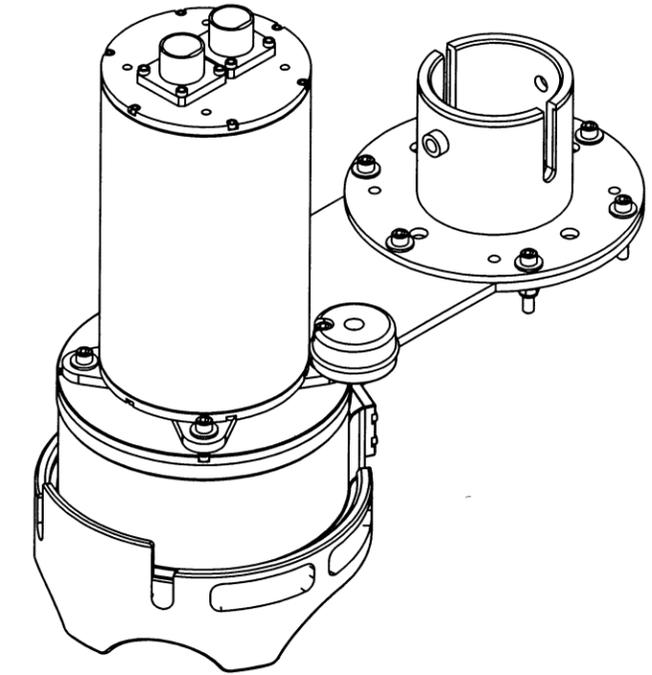
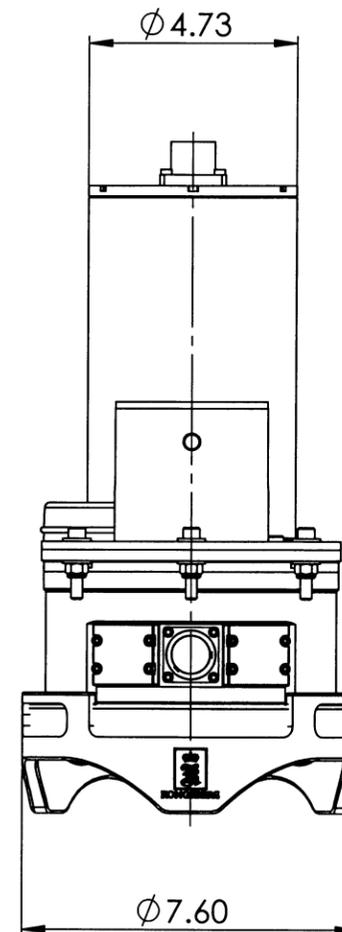
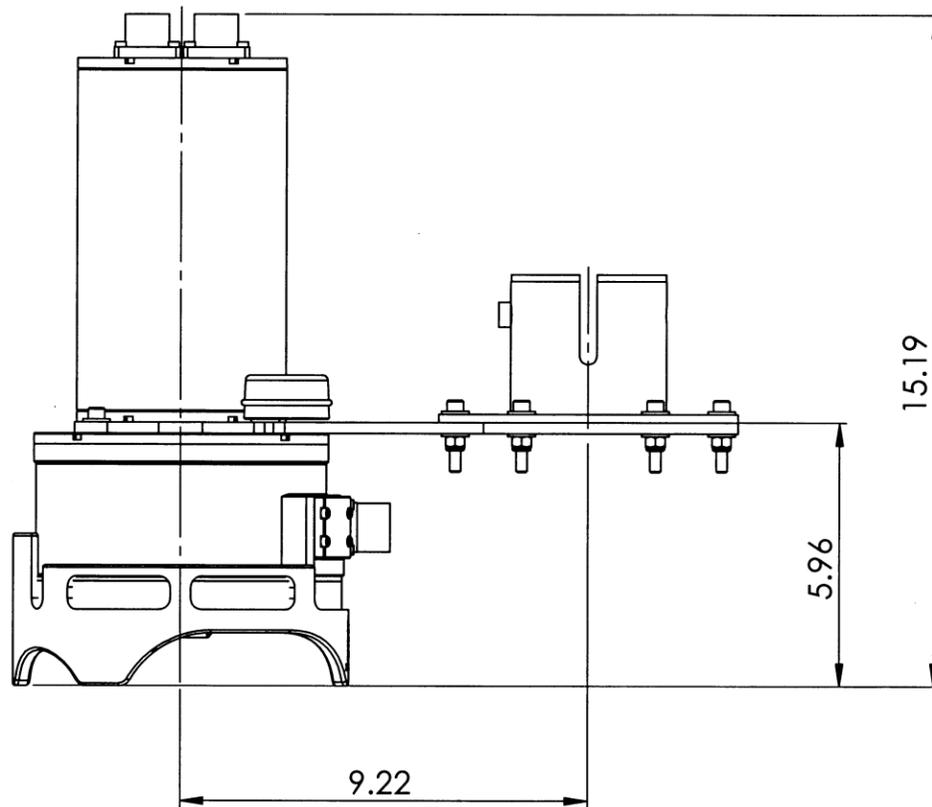
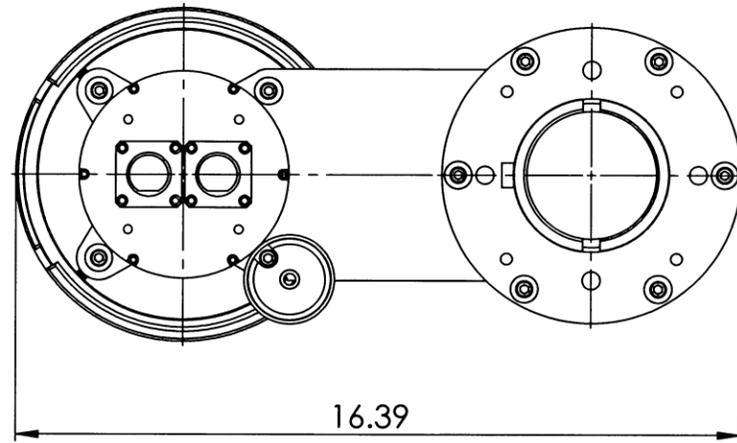
REVISIONS

Kongsberg Mesotech Ltd.

**ASSEMBLY DRAWING
 DOWNLOOKING BRACKET
 POLE MOUNT TO M3 SONAR**

SIZE	NCSM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	422-44131000	1.2
SCALE: 1:4			W.O. NO.	SHEET 1 OF 1

DWG. NO. 422-44131001	SHT 1	ISS 1.2
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SHOWN WITH BOTH HEAD AND MRU UNIT INSTALLED

1.2	ECO 5549	2014-07-31
1.1	ECO 5271	2014-03-14
ISS	DESCRIPTION	DATE

REVISIONS

Kongsberg Mesotech Ltd.
OUTLINE AND INSTALLATION DRAWING
M3 SONAR 500M
WITH DOWNLOOKING BRACKET

SIZE	NSCM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	422-44131001	1.2
SCALE: 1:4	W.O. NO.		SHEET 1 OF 1	

NOTE:
 SONAR HEAD, FLANGE AND MRU NOT INCLUDED;
 SHOWN ONLY FOR CLARITY

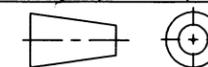
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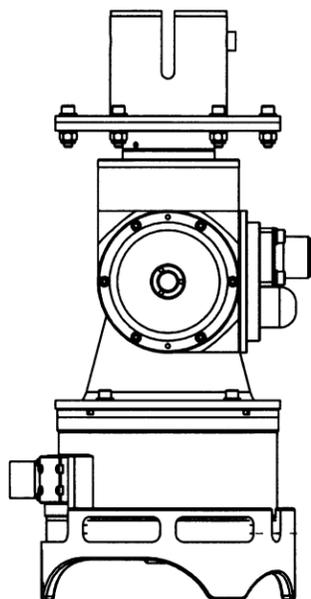
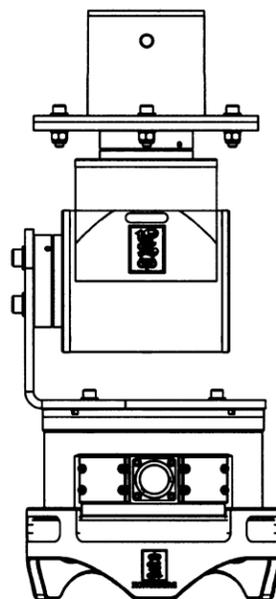
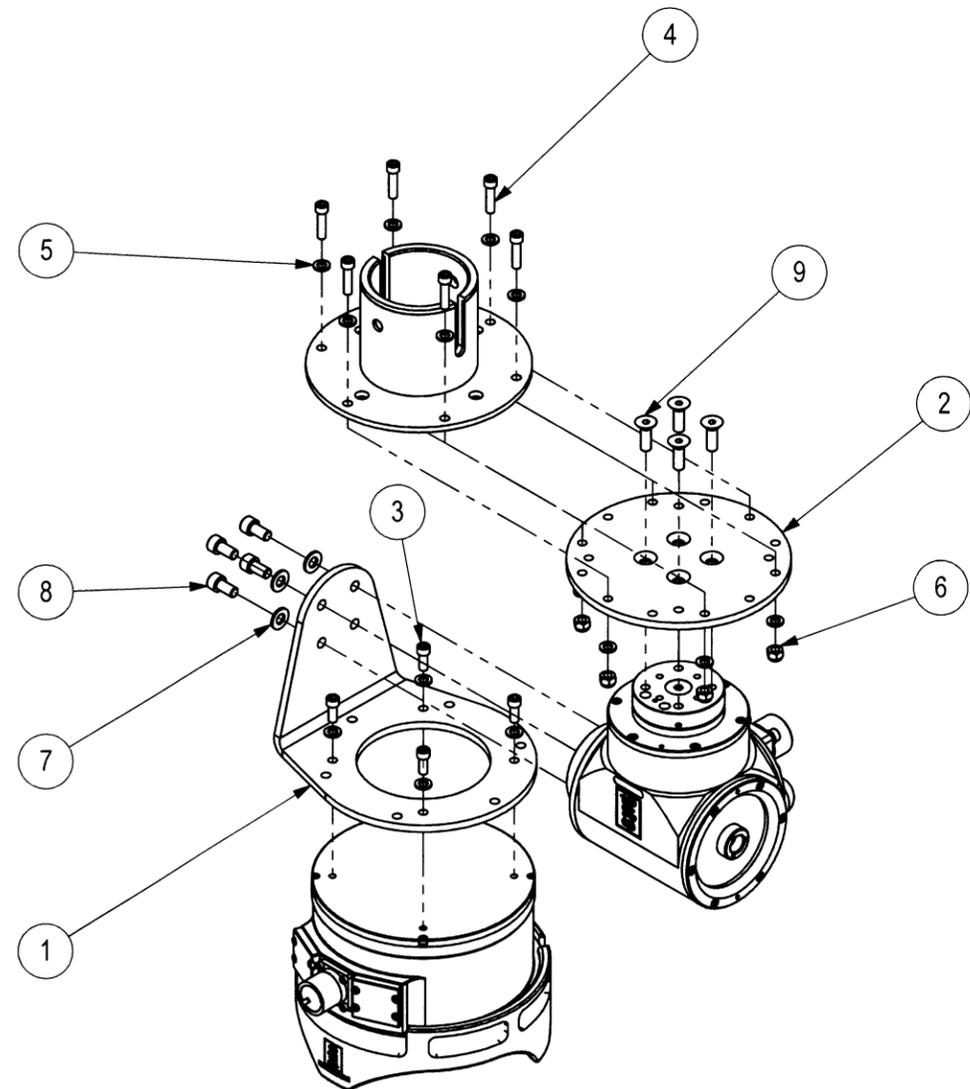
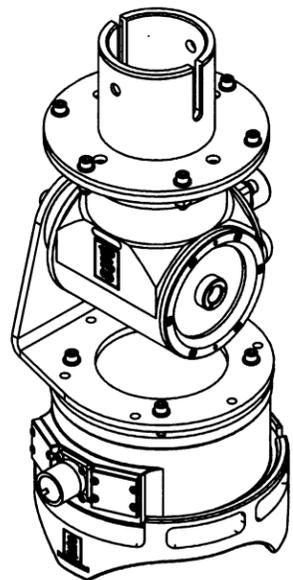
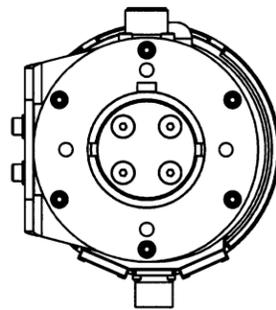
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 DECIMALS FRACTIONAL ANGULAR
 X.XX ±0.006 ±1/32 MACH ±30'
 X.XXX ±0.003 BEND ±1°
 SURFACE FINISH 125 Ra, DE-BURR HOLES
 BREAK SHARP EDGES 0.010

APPROVALS	NAME	DATE
DRAWN	DRC	2013-08-07
REVISED	DL	2015-07-31
CHECKED	<i>[Signature]</i>	2015 AUG 28
ENGR	<i>[Signature]</i>	2015 AUG 28
ISSUED	R.T.H.	2015 SEP 2

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NOTES:

1. FLANGE, ROTATOR, AND SONAR HEAD NOT INCLUDED; SHOWN ONLY FOR CLARITY
2. LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT
3. BRACKET AND ADAPTOR CAN BE ASSEMBLED AS SHOWN ON EITHER PAGE

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:

DECIMALS	FRACTIONAL	ANGULAR
X.XX ±0.006	±1/32	MACH ±30'
X.XXX ±0.003		BEND ±1°

 SURFACE FINISH 125 Ra, DE-BURR HOLES
 BREAK SHARP EDGES 0.010

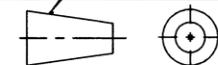
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1.1	ECO 5549	2015-07-31
ISS	DESCRIPTION	DATE
REVISIONS		

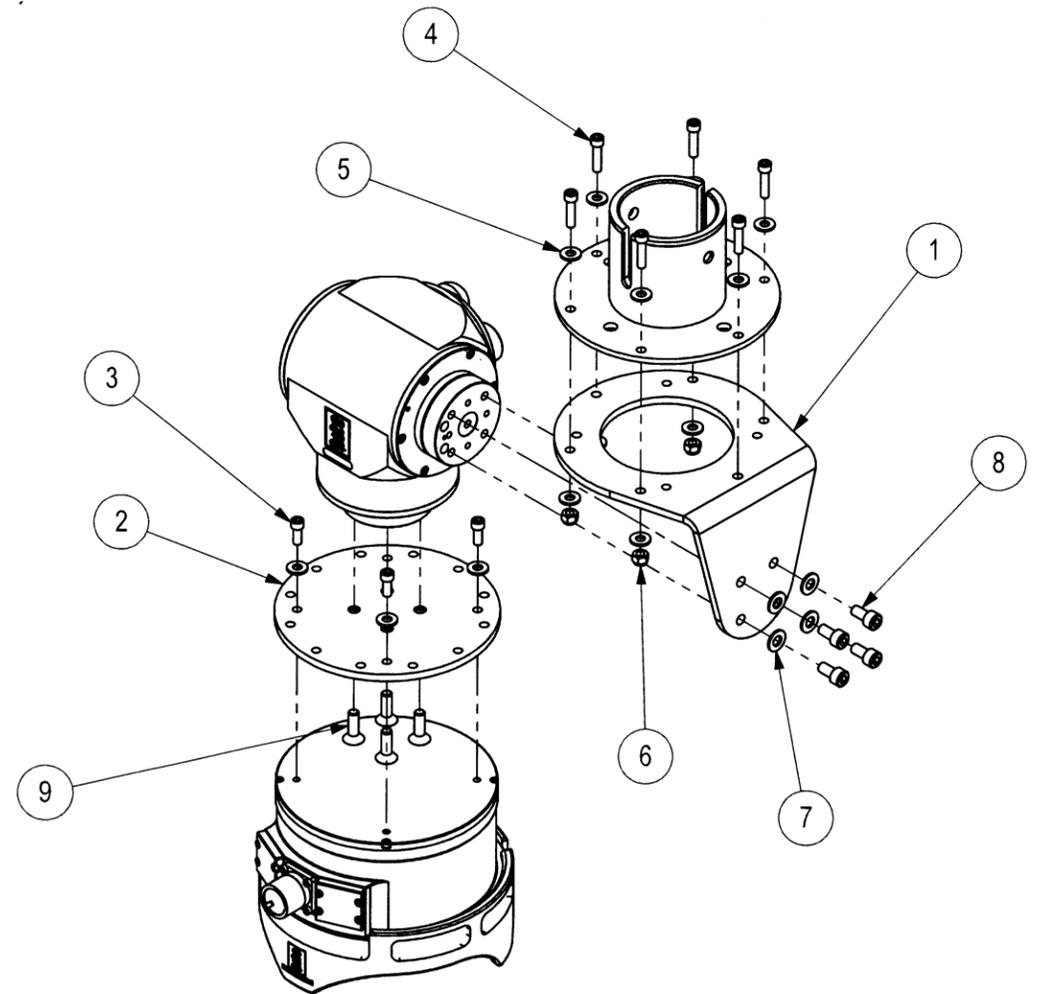
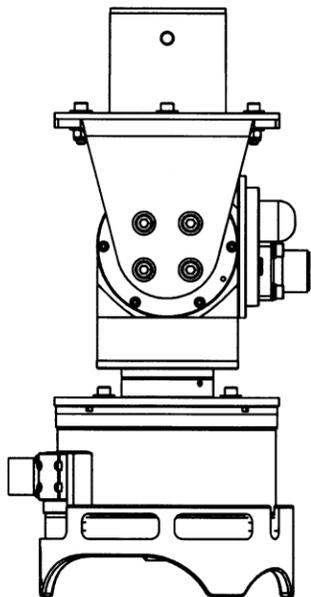
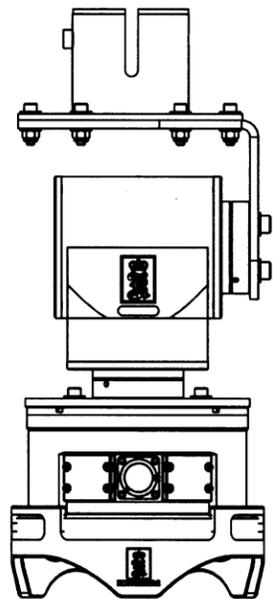
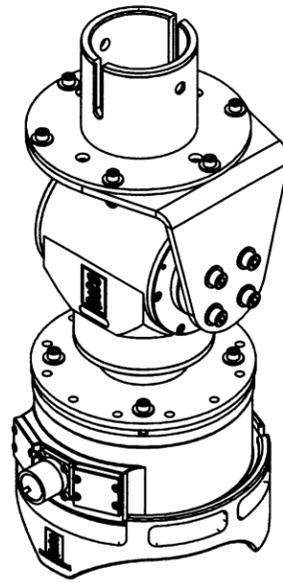
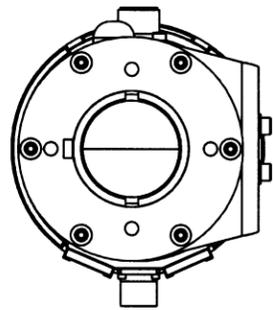
Kongsberg Mesotech Ltd.
 ASSEMBLY DRAWING
 ADAPTOR PLATE AND BRACKET - M3 SONAR
 AND ROTATOR (OE10-102) TO POLE MOUNT

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DO NOT SCALE DRAWING



SIZE	NCSM NO	TYPE	DWG. NO.	ISS
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SCALE: 3:16		W.O. NO. 281-1150		SHEET 1 OF 2



NOTES:

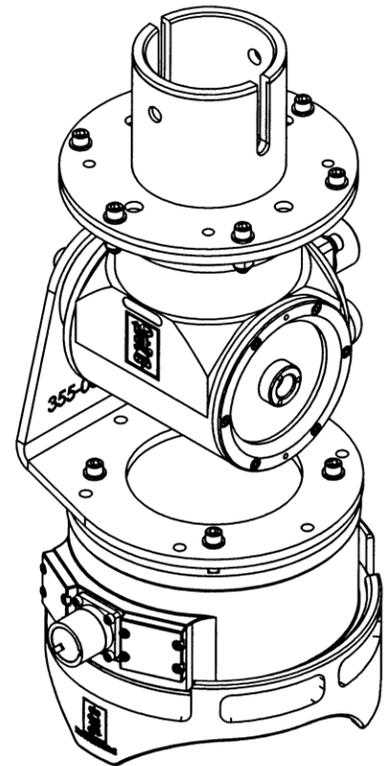
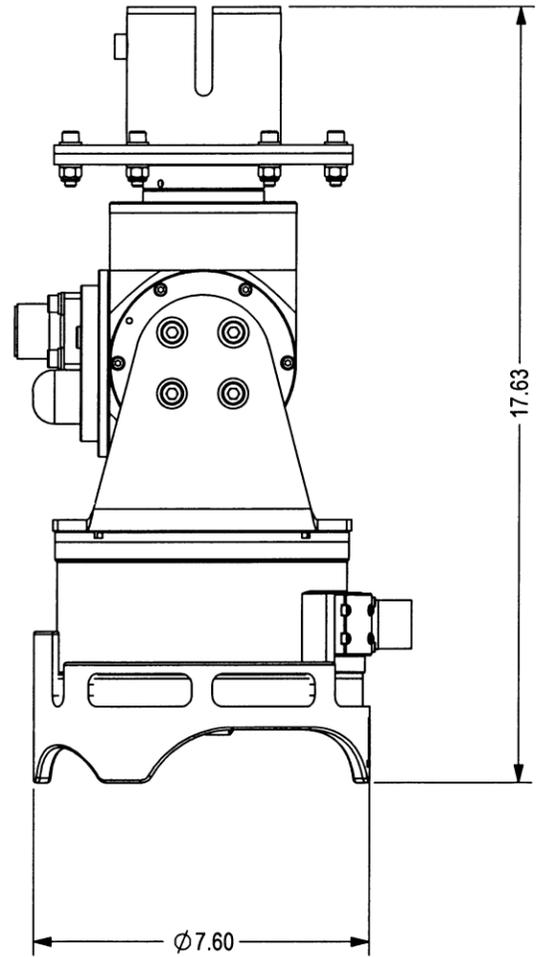
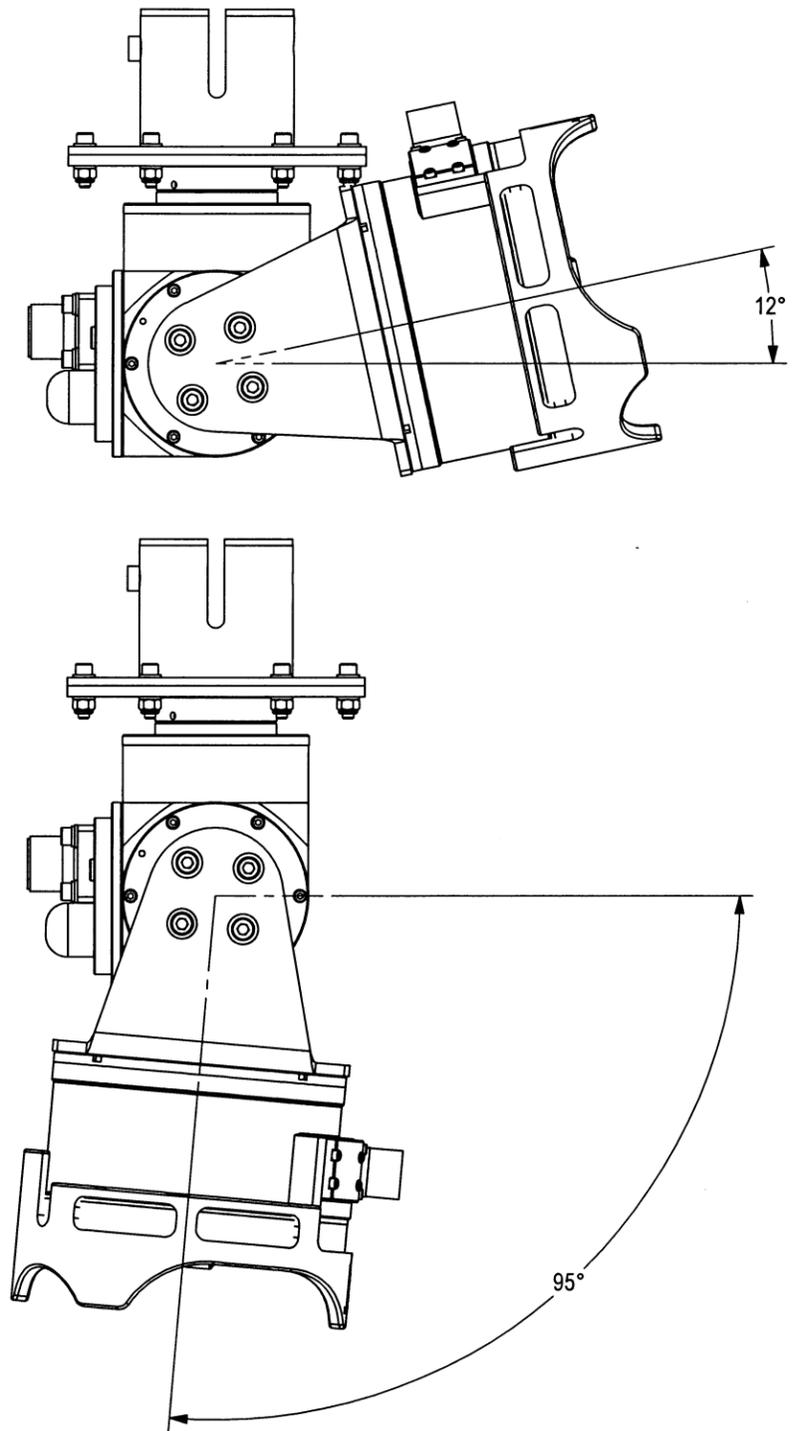
1. FLANGE, ROTATOR, AND SONAR HEAD NOT INCLUDED; SHOWN ONLY FOR CLARITY
2. LUBRICATE FASTENERS WITH ANTI-SEIZE LUBRICANT
3. BRACKET AND ADAPTOR CAN BE ASSEMBLED AS SHOWN ON EITHER PAGE

1.1	ECO 5549	2015-07-31
ISS	DESCRIPTION	DATE
REVISIONS		

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		DECIMALS	FRACTIONAL	ANGULAR								
X.XX ±0.006	±1/32	MACH ±30'										
X.XXX ±0.003		BEND ±1°										
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Kongsberg Mesotech Ltd.				
ASSEMBLY DRAWING				
ADAPTOR PLATE AND BRACKET - M3 SONAR AND ROTATOR (OE10-102) TO POLE MOUNT				
SIZE	NSCM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	422-44171000	1.1
SCALE: 3:16		W.O. NO. 281-1150		SHEET 2 OF 2

DWG. NO.	SHT	ISS
422-44171001	1	1.1



1.1	ECO 5549	2015/08/24
ISS	DESCRIPTION	DATE
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OUTLINE AND INSTALLATION DRAWING
ADAPTOR PLATE AND BRACKET - M3 SONAR
AND ROTATOR (OE10-102) TO POLE MOUNT

SIZE	NSCM NO	TYPE	DWG. NO.	ISS
B	1C965	MD	422-44171001	1.1
SCALE: 1:4		W.O. NO. 281-1150		SHEET 1 OF 2

NOTES:
1. FLANGE, ROTATOR, AND SONAR HEAD NOT INCLUDED;
SHOWN ONLY FOR CLARITY

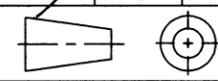
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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
DECIMALS | FRACTIONAL | ANGULAR
X.XX ±0.006 | ±1/32 | MACH ±30'
X.XXX ±0.003 | | BEND ±1°
SURFACE FINISH 125 Ra, DE-BURR HOLES
BREAK SHARP EDGES 0.010

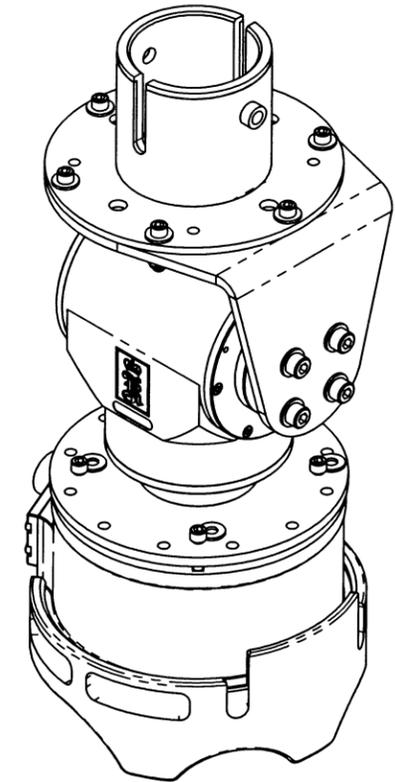
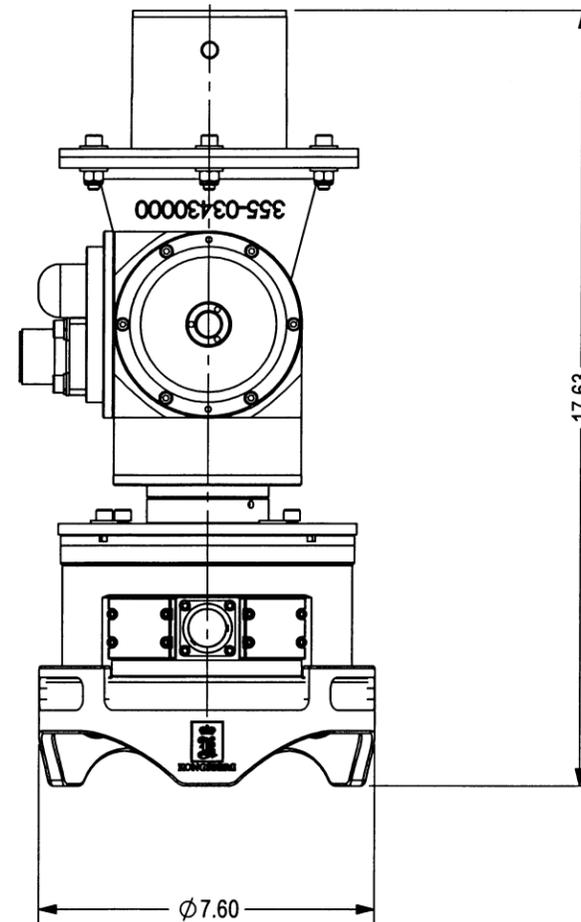
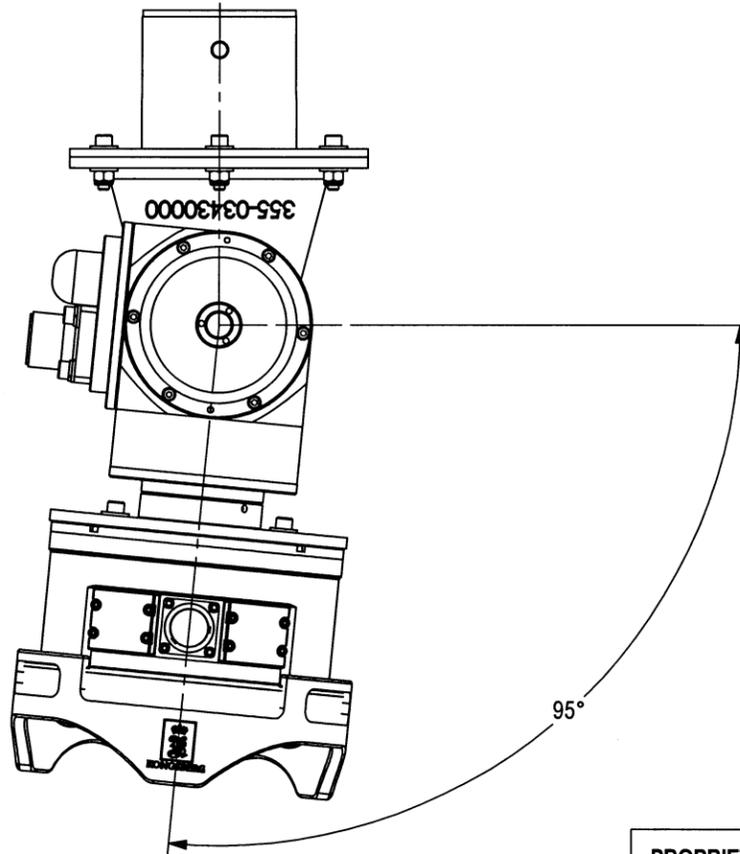
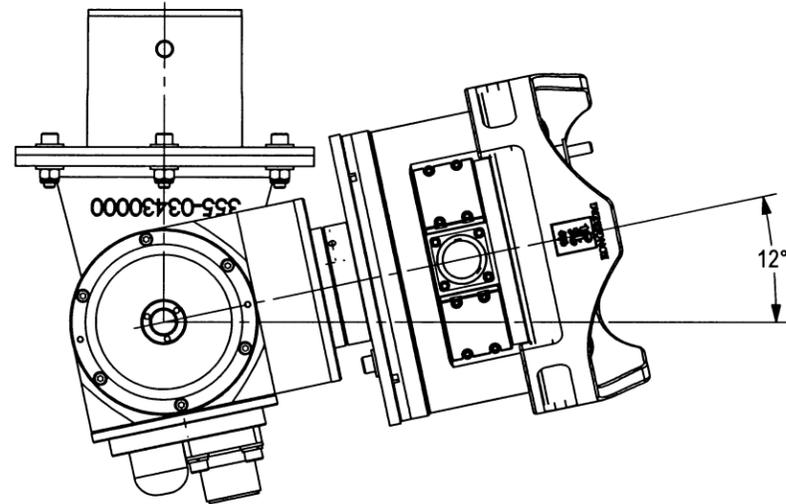
APPROVALS	NAME	DATE
DRAWN	DRC	2013/08/15
REVISED	DL	2015/08/24
CHECKED	<i>[Signature]</i>	2015 AUG 28
ENGR	<i>[Signature]</i>	2015 AUG 28
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 ADAPTOR PLATE AND BRACKET - M3 SONAR
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