

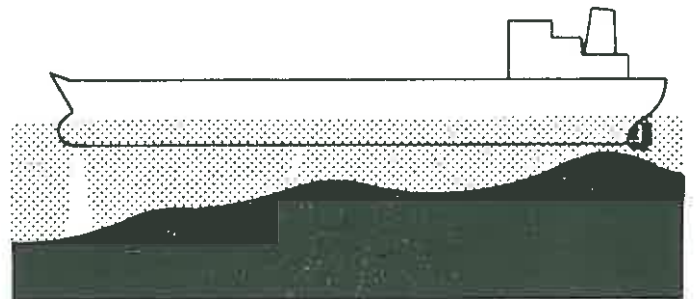
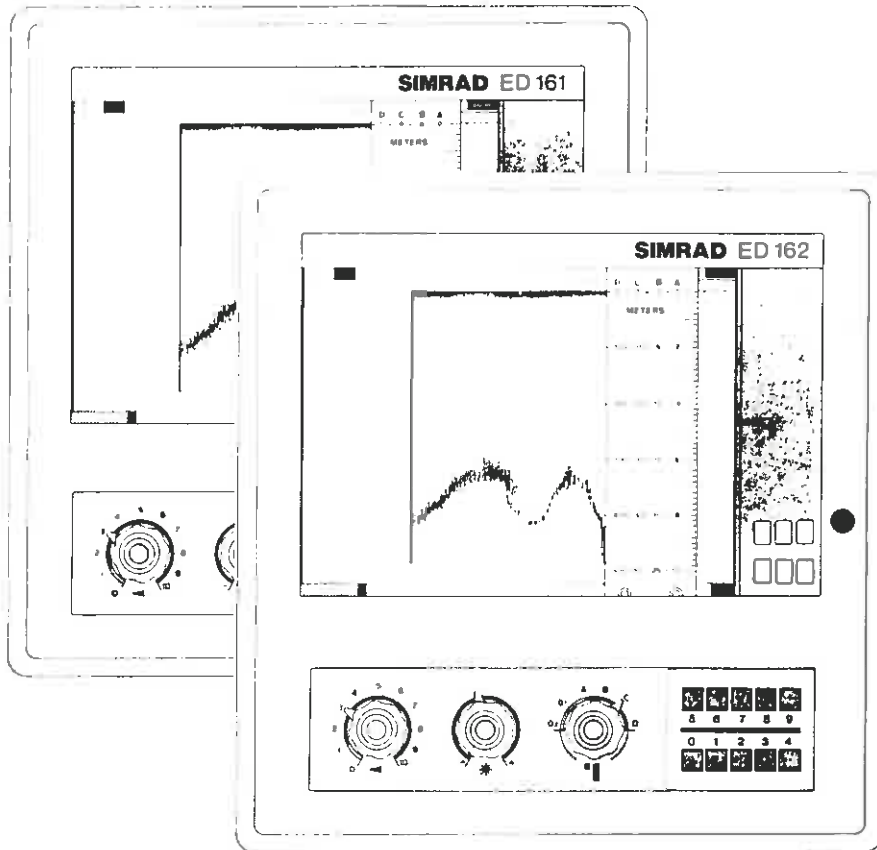
# SIMRAD ED 161 — ED 162

## NAVIGATION SOUNDERS

### INSTALLATION

T 3006 E

JUNE 1981



SIMRAD Trading A/S  
Ensjøveien 18, postboks 6094  
Etterstad Oslo 6

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Telex: 16136 sim n

**SIMRAD**  
Trading



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6	Cabling ..... 3

	Drwg.no.
Transducer tank for ED 161 and ED 162 .....	T2002
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SIMRAD ED 161/ ED 162  
Navigation Echosounders  
Installation Manual

## 1. GENERAL

The SIMRAD ED 161/ED 162 Echosounders consists of the following units:

Control recorder cabinet and transducer with 25 meters cable.

ED 161/50 kHz and ED 162 are delivered with transducer in steel tank approved by Det Norske Veritas and Lloyd's Register of Shipping.

For ED 161/70 kHz the transducer housing is to be made by the shipyard.

If more than one cabinet or one transducer is to be installed, a suitable selector unit is available.

Junction box for transducer cable extension is supplied by SIMRAD free of charge.

## 2. ASSISTANCE

SIMRAD offers free advise for installation planning such as location of transducers, special arrangements etc.

## 3. POWER SUPPLY

SIMRAD ED 161/ED 162 are designed from operation 110/220V AC 50/60 Hz and 11 - 40V DC. The power consumption is approximately 50 Watt.

## 4. LOCATION AND MOUNTING OF THE RECORDER/CONTROL CABINET

The recorder/control cabinet is designed for bulkhead or panel mounting. The position of the cabinet should provide a good view of the echogram, and the digital indicator as well as easy access for operation.

For bulkhead mounting the cabinet is fastened with three bolts supplied by SIMRAD. Hardware for panel mounting is available on special request.

## 5. LOCATION AND MOUNTING OF THE TRANSDUCER

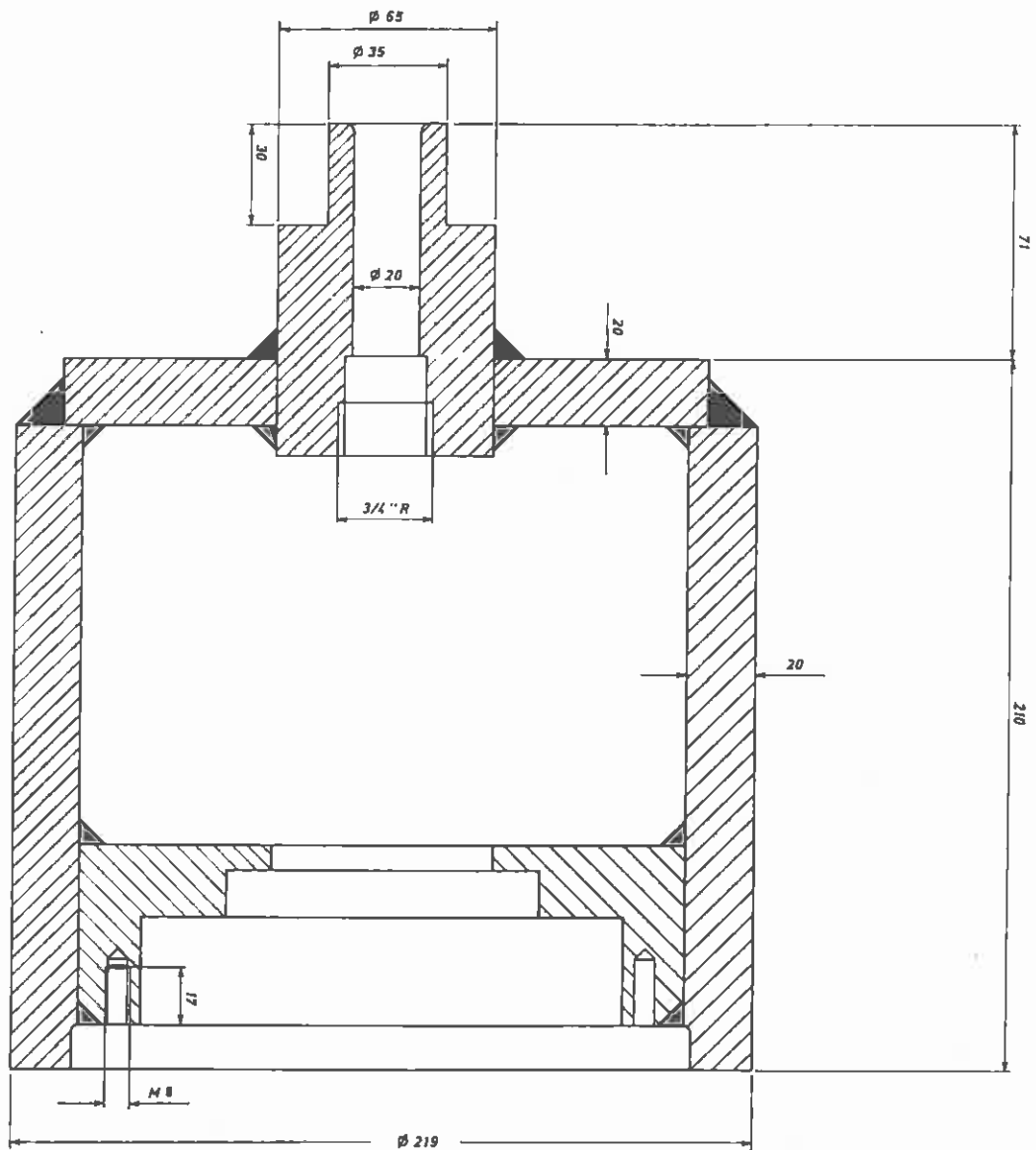
If only one transducer is to be fitted it is recommended to install it in the foreship. Most larger vessels are fitted with two transducers, one forward and one aft. Installation too close to the propellers should be avoided due to risk of propeller noise.

The transducer should not be installed aft of sea vents, bottom plugs etc.

The shell plating 4-5 meters ahead and 2-3 meters aside of the transducer should be free from protruding obstacles and as smooth as possible. It is recommended to install the transducer as close to the keel plate as possible. The active element of the transducer must be treated carefully and must not be painted.

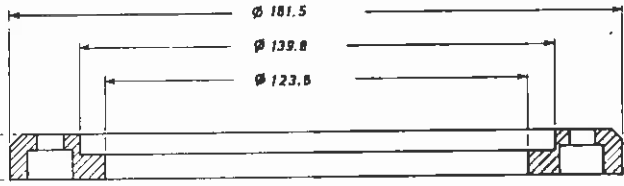
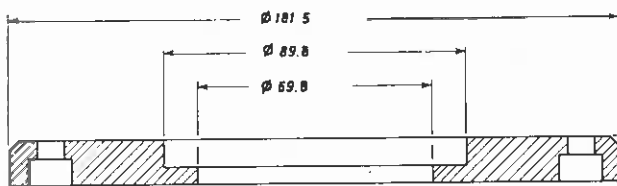
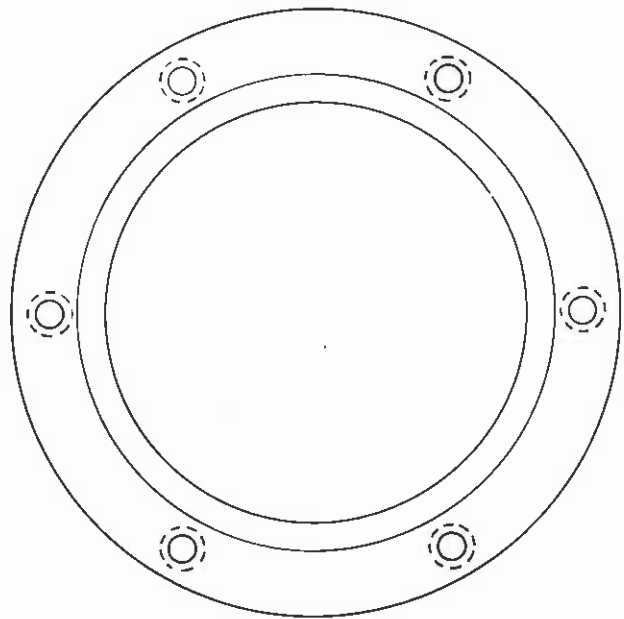
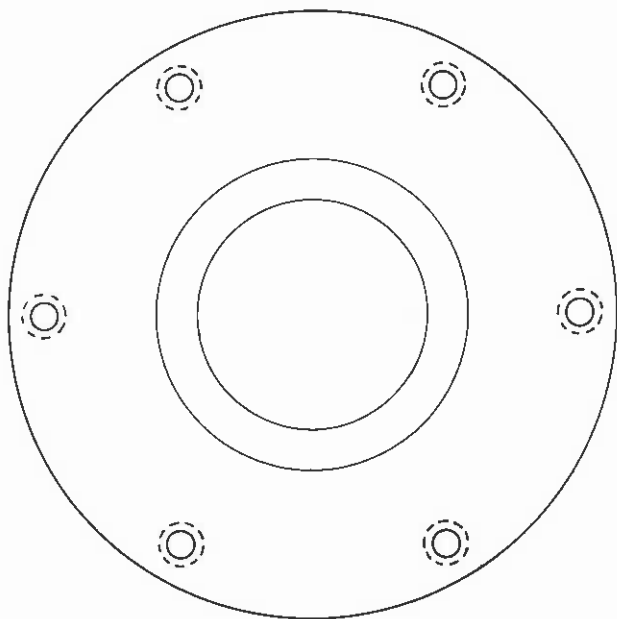
#### 6. CABLING

The transducer elements are fitted with 25 meters cable. It is recommended to run this cable in a steel protecting pipe. The cable may be shortened or extended. In the latter case a water tight junction box should be used. The screens of the transducer cables are to be connected, but must not be grounded in the junction box.



ALL DIMENSIONS IN MILLIMETERS

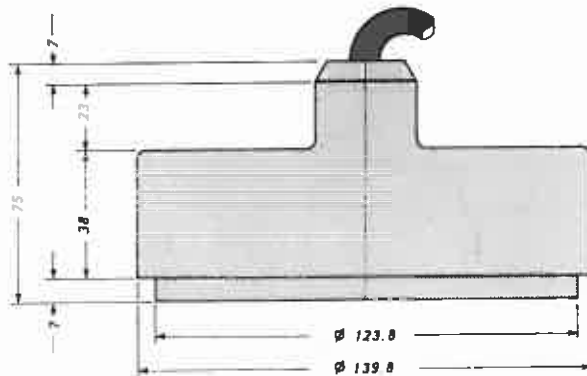
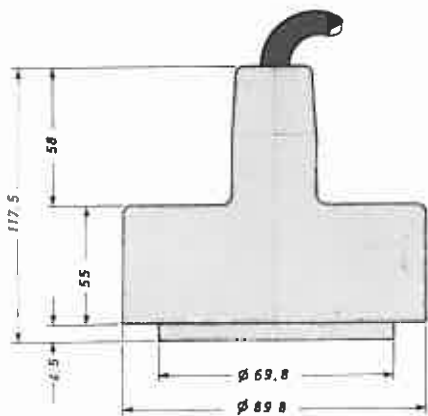
PROJ. METODE		TOLFRANSE FOR HÅKE SPÆSSEL TOLFRANSE SATTE MÅL MODEL S 45 14 30	<b>SIMRAD</b> Trading A/s
MÅLEST.		TRANSDUCER TANK FOR ED 161 AND ED 162 ECHO SOUNDERS' 50 AND 200 KHZ.	
TEGNER	B. I. 01 30	K. H.	T 2002
KONTROLLER	B. I. 02 06	J. B. 27	
GODKJØRT	B. I. 02 06	J. B. 27	ARKIV 162



M 8 x 16  
ALLEN SCREW



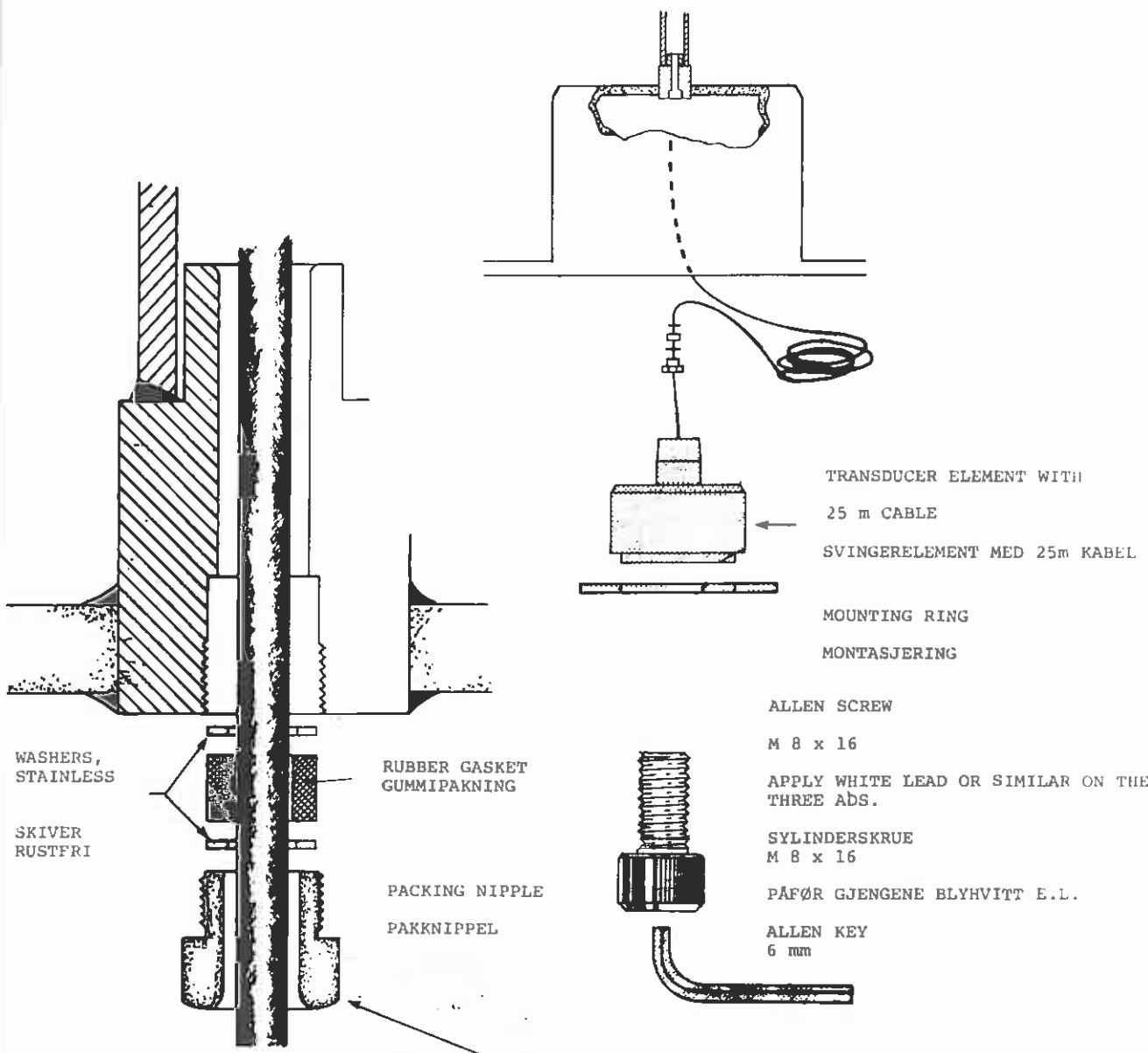
M 8 x 16  
ALLEN SCREW



ALL DIMENSIONS IN MILLIMETERS

PROJ METODE		TOLERANSER FOR IKKE SPECIELT TOLERANSE- SATTE MÅL. MIDDELS NB 14B	<b>SIMRAD</b> Trading A/s
MÅLEST		<b>MOUNTING RINGS AND TRANSDUCER ELEMENTS FOR ED 181 / 50 kHz AND ED 162 / 200 kHz</b>	
TEGN	B1.01.30	K. M.	T 2001
KONTR	B1.01.30		ARKIV NR.
GODKJ	B1.01.30		





PROVIDE APPROX. 3/4 m OF CABLE BETWEEN CABLE LEAD IN AND THE TRANSDUCER ELEMENT

SØRG FOR AT KABELLENGDEN MELLOM KABELGJENNOMFØRINGEN OG SVINGERELEMENTET ER CA. 3/4 m.

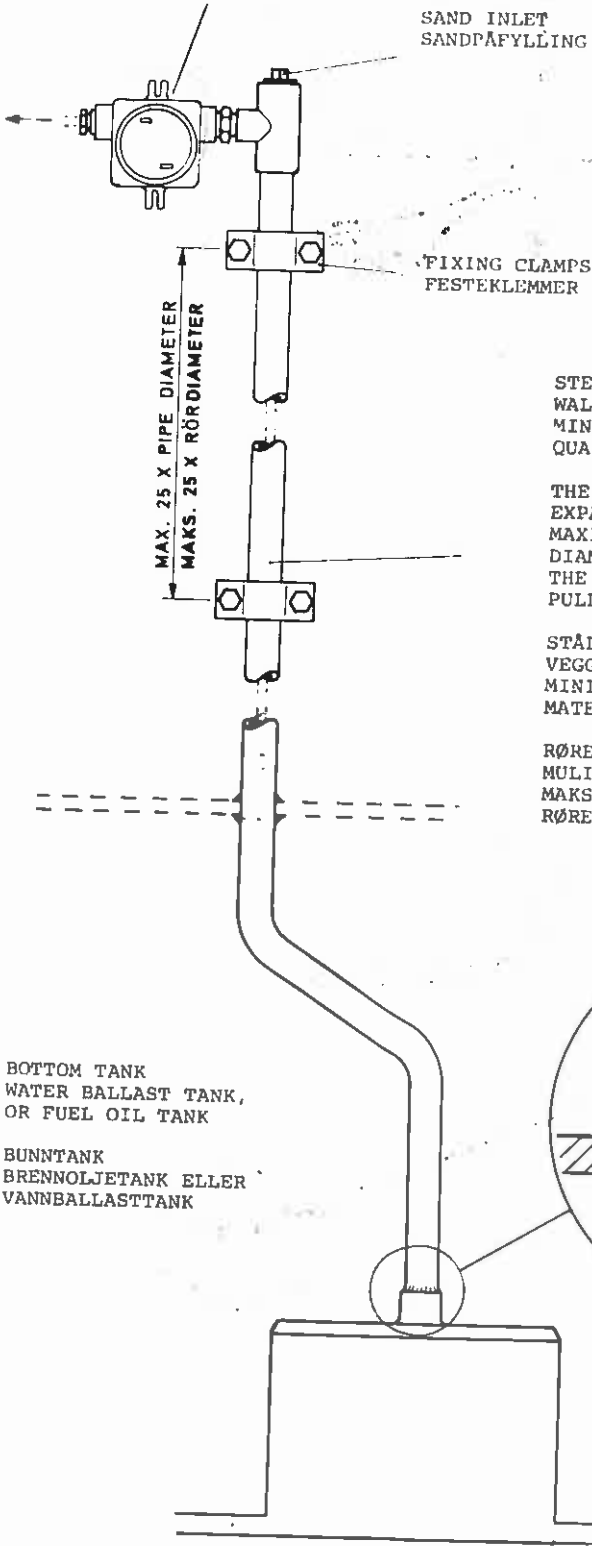
SPECIAL WRENCH FOR TIGHTENING OF PACKING NIPPLE

SPESIALNØKKEL FOR PAKKNIPPEL

PROJ. METODE		TOLERANSER FOR IKKE SPESIELT TOLERANSE-SATTE MÅL: MIDDELS NØ 1430	<b>SIMRAD</b> Trading A/S
MÅLEST.		<b>MOUNTING OF TRANSDUCER IN STEEL TANK.</b>	
TEGN.	81.02.05 K.M.	<b>MONTASJE AV SVINGER I STÅLTANK.</b>	TB 3003
KONTR.	— — ABH		
GODKJ.	— — ABH		ARKIV NR

WATERTIGHT JUNCTION BOX (SUPPLIED BY SIMRAD)  
MUST BE SITED FOR EASY ACCESS IN AN  
EXPLOSION-SAFE PLACE.

VANNTETT KOPLINGSBOKS (LEVERES AV SIMRAD)  
PLASSERES PÅ IKKE EKSPLOSJONSFARLIG,  
LETT TILGJENGELIG STED



STEEL PIPE, MINIMUM 35mm DIAMETER INSIDE.  
WALL THICKNESS: ON GALVANIZED PIPE ON BLACK PIPE  
MINIMUM: 8mm 10mm

QUALITY OF MATERIAL: STATED IN VERITAS CAP. X  
PARA. 7A TYPE III.

THE PIPE TO BE WELDED BEFORE PULLING THE CABLE  
EXPANDING POSSIBILITIES MUST BE ARRANGED.  
MAXIMUM DISTANCE BETWEEN PIPE CLAMPS, 25 x PIPE  
DIAMETER.

THE PIPE MUST BE FILLED WITH SAND AFTER CABLE IS  
PULLED.

STÅLRØR, INNVENDIG DIAMETER MINIMUM 35mm  
VEGGTYKKELSE: PÅ GALVANISERTE RØR PÅ SORTE RØR  
MINIMUM: 8 mm 10mm

MATERIALKVALITET: SE VERITAS REGLER KAP. X  
PARA 7A, TYPE III

RØRET SVEISES INN MED TILSTREKkelig EKSPANSJONS-  
MULIGHET, FØR KABELN TREKKES.

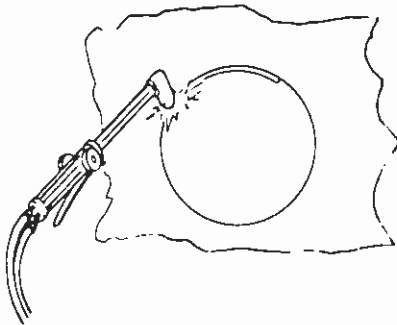
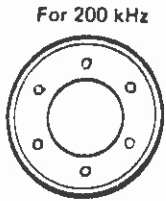
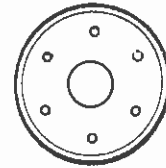
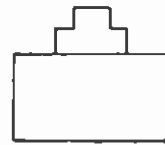
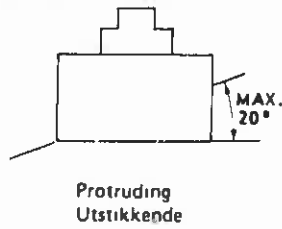
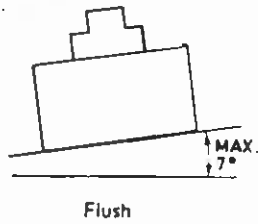
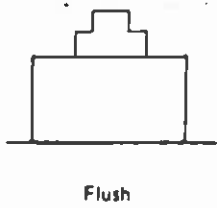
MAKSIMUM KLAMMEAVSTAND PÅ RØRET 25 x RØRDIAMETER.  
RØRET FYLLES MED SAND ETTER AT KABELN ER TRUKKET.

BOTTOM TANK  
WATER BALLAST TANK,  
OR FUEL OIL TANK

BUNNTANK  
BRENNOLJETANK ELLER  
VANNBALLASTTANK

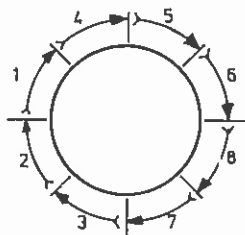
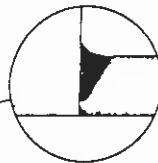
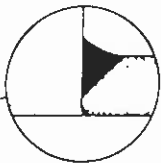
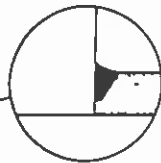
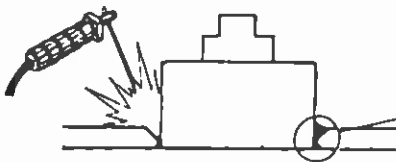
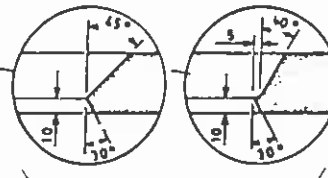
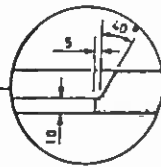
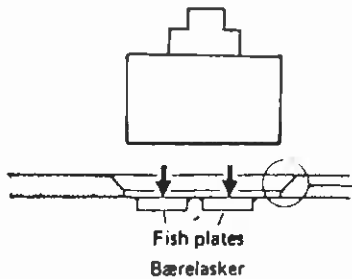
PROJ. METODE		TOLERANSER FOR IKKE SPESIET TOLERANSESATTE MÅL: MIDDELS NS 1430	<b>SIMRAD</b> Trading A/s
MÅLEST.		GASTIGHT CABLE PIPE FOR TRANSDUCER TANK	
TEGN.	81.02.06 K M.	GASSTETT KABELRØR FOR SVINGERTANK	TA 3004
KONTR.	— " — ABH		
GODKJ.	— " — ABH		ARKIV NR.

Installasjon alternatives  
Installasjons-muligheter



Material thickness Top and sides 20mm,

Godstykkelese: Topp og sider 20mm,



Weld the tank according to procedure as shown. Use low hydrogen electrodes, e.g. OK4800. In order to avoid contraction strain, hammer each welding seam before applying the next. Allow the tank to cool down during welding.

Sveis tanken i henhold til viste prosedyre. Bruk lavhydrogen-elektroder, f. eks. OK4800. For mest mulig å unngå krympespenninger, hamres hver sveisestreg før neste legges, og tanken holdes så kald som mulig under sveisingen.

Do not hammer the last welding seam!

Siste sveisestreg må ikke hamres!

Grind flush all weldings within 5 m in front of, and 3 m to the side of transducer.

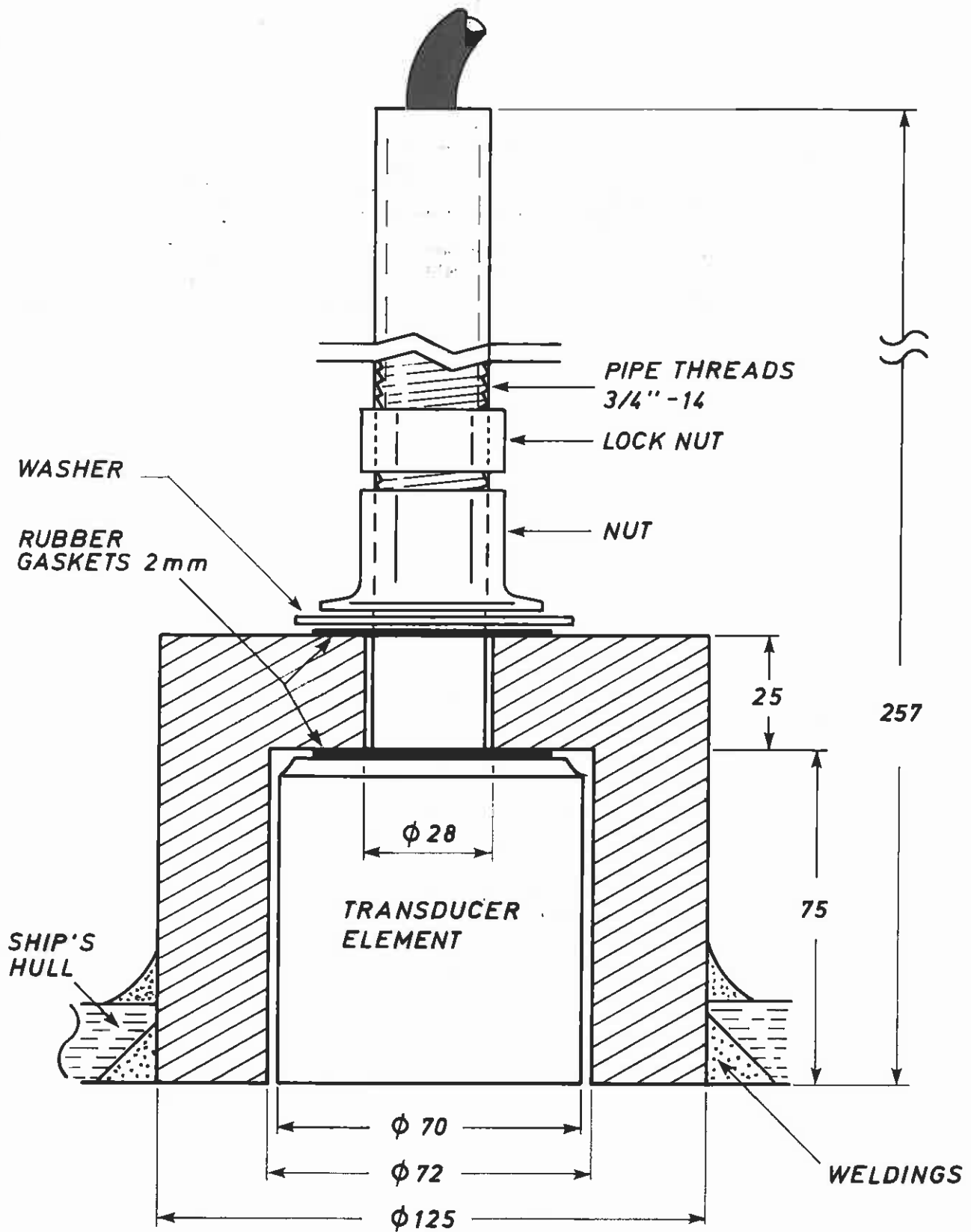
Planslip alle sveisesømmer innen et areale av 5 m i front av, og 3 m til hver side for svingeren.

Finally, paint the transducer tank inside and outside with a non-corrosive coating.


Til slutt males svingertanken innvendig og utvendig med korrosjonshindrende maling.

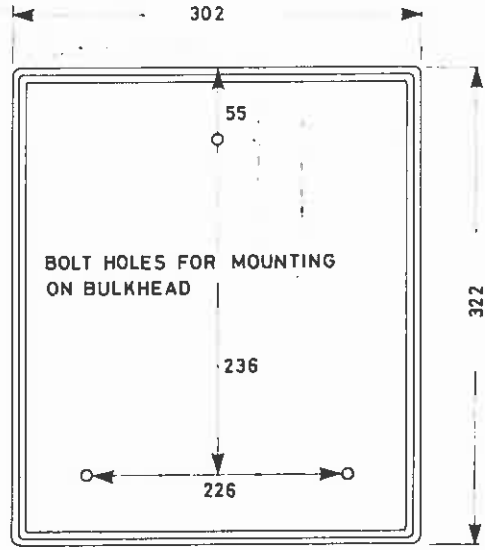
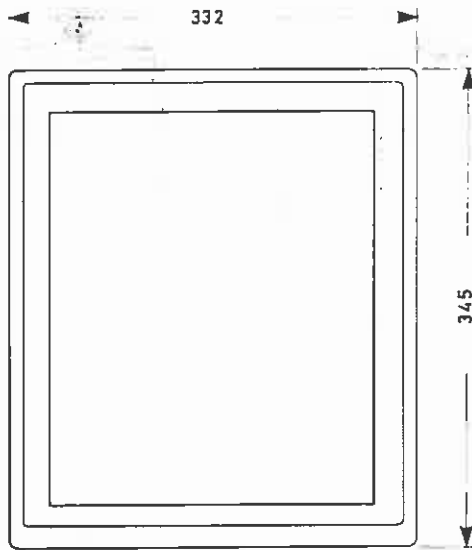
NR.	SIGN
ENDRINGS-MELDING	

PROJ. METODE		TOLERANSER FOR IKKE SPESIELT TOLERANSE-SATTE MÅL: MIDDELS NS 1430	<b>SIMRAD</b> Trading A/S
MÅLEST		INSTALLATION OF TRANSDUCER ED 161 AND ED 162/50 AND 200 kHz	
TEGN.	81.01.13 K.M.		TB 3001
KONTR	— ABH		ARKIV NR
GODKJ	— ABH		

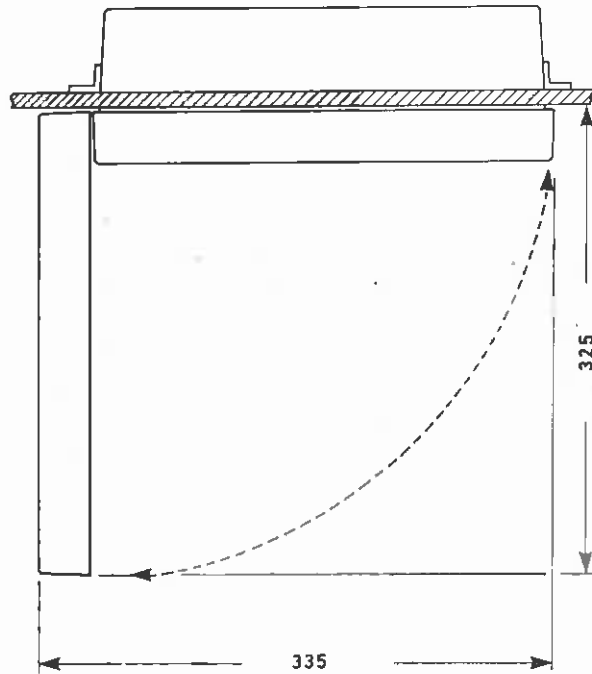
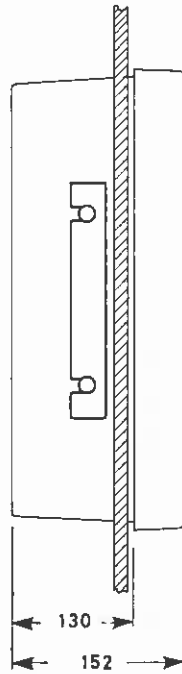


DIMENSIONS IN MILLIMETERS

PROJ. METODE 		TOLERANSER FOR IKKE SPESIELT TOLERANSESATTE MÅL: MIDDELS NS 1430		<h1>SIMRAD</h1>	
MÅLEST.		<b>TRANSDUCER FOR SIMRAD</b> <b>ED 161/70 KHz</b>		ERST.	
TEGN.	81.06.25 K.M.			<b>TB 4013</b>	
KONTR.	81.06.28 ABH				
GODKJ.	81.06.28 ABH				
				ARKIV NR.	



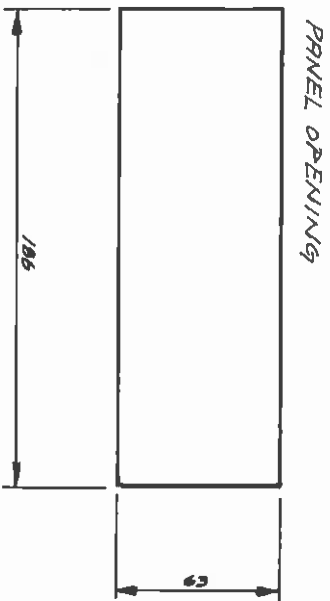
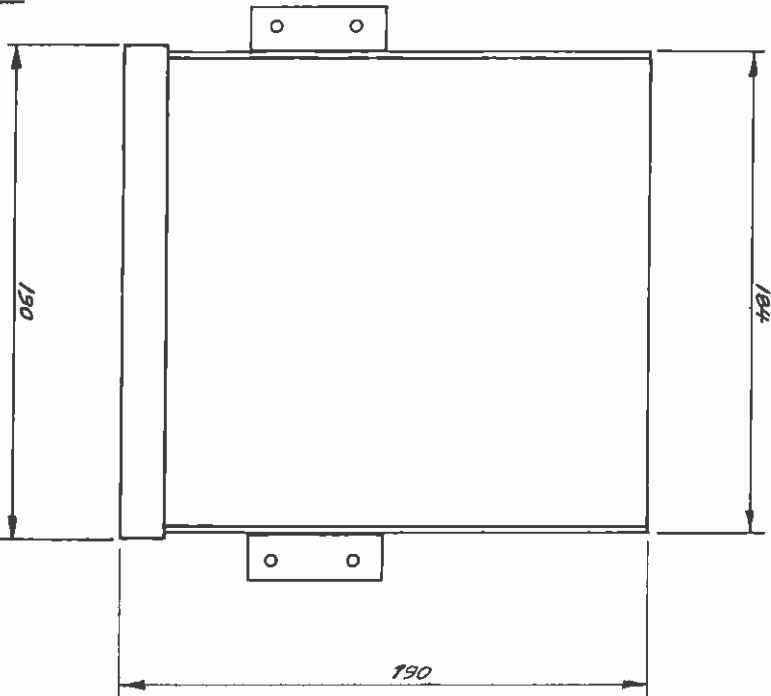
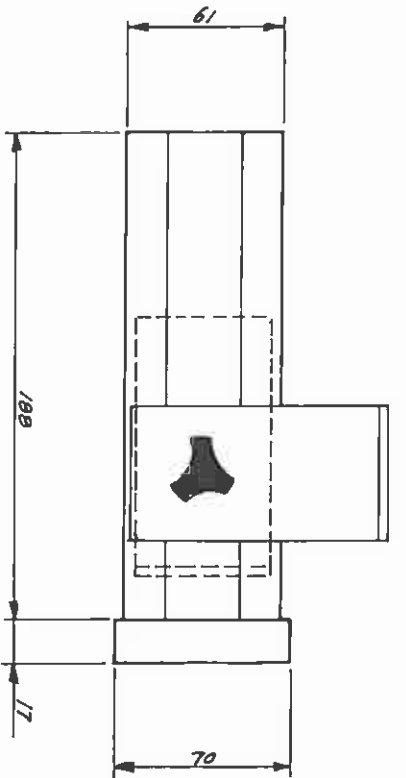
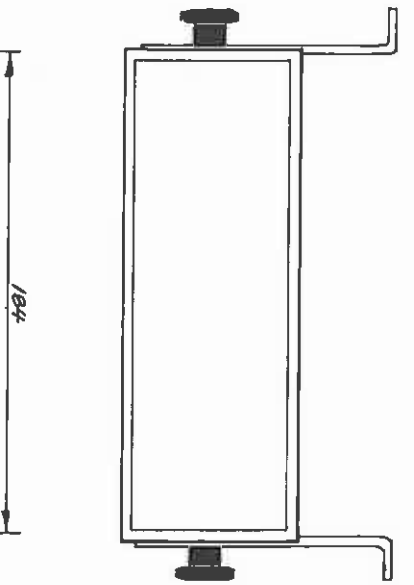
PANEL OPENING 322 x 302, R4



DIMENSIONS IN MILLIMETERS

PROJ METODE		TOLERANSER TOLERANSER TOLERANSER	<b>SIMRAD</b>
MALEST			Trading A/S
TEGN	B1.02.13	K.M.	TC 2004
KONTR	— 4 —	AK4	
GOOKJ	— 1 —	— 1 —	ARKIV NR

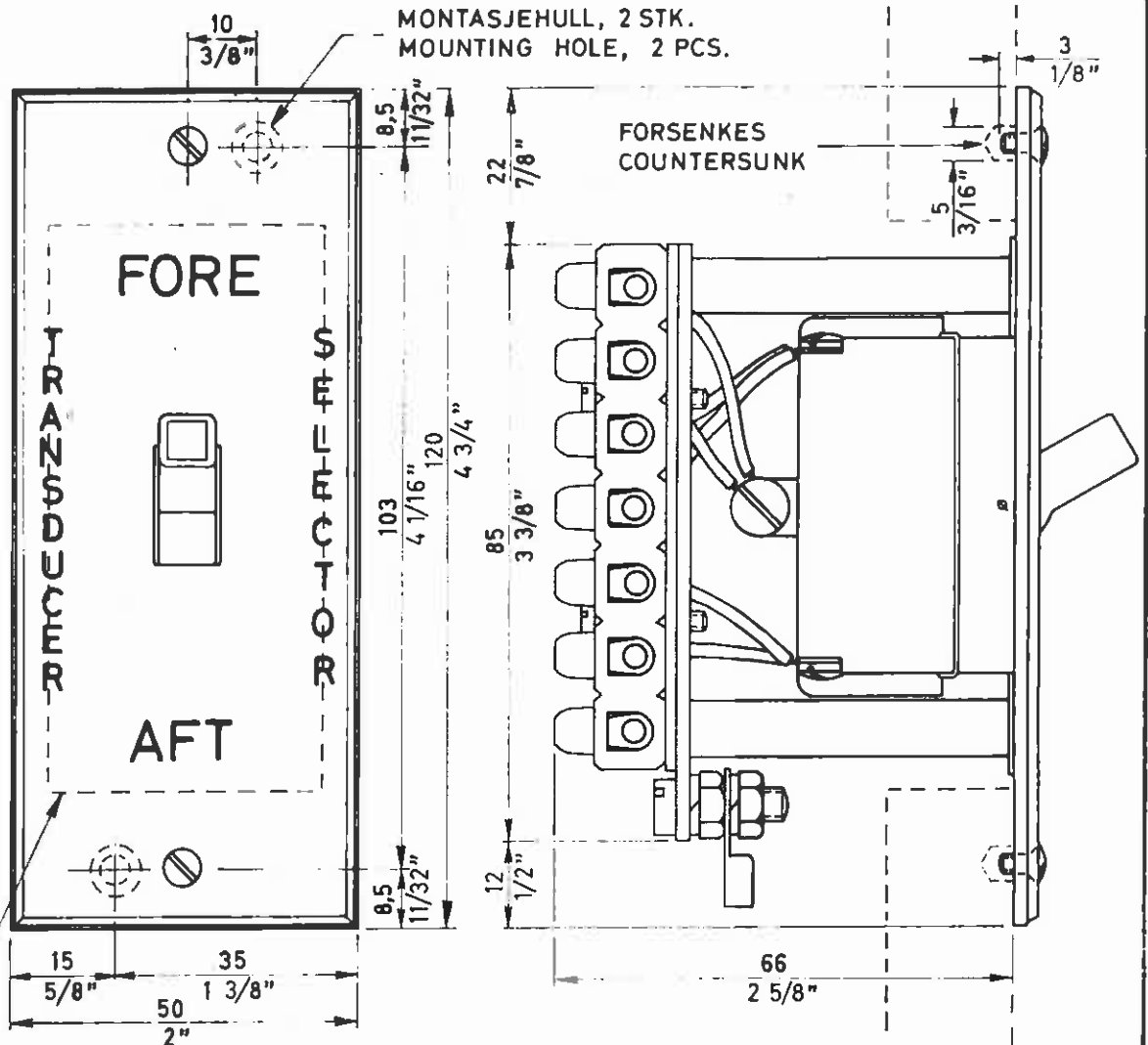
OUTLINE DIMENSIONS  
OF SIMRAD ED 161 AND  
ED 162 ECHO SOUNDERS



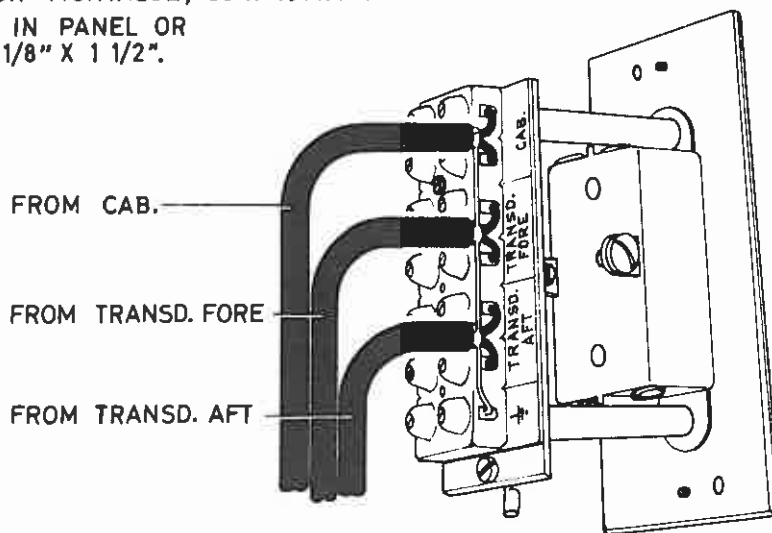
DIMENSIONS IN MILLIMETERS

NR.	SIGN.
ENDRINGS-	
MELDING	

PROJ. METODE		TOLERANSER FOR IKKE SPECIELT TOLERANSESAITTE MÅL: MIDDELS NS 1430	<b>SIMRAD</b>
MÅLEST.			ERST
TEGN.	8106 201 K/M		TC 4014
KONTR.	" " " " ABH		
GODKJ.	" " " " ABH		
OUTLINE DIMENSIONS OF SIMRAD TS 101 TRANSDUCER SELECTOR			ARKIV NR.



LYSÅPNING FOR MONTASJE, 80 X 40 MM I PANEL ELLER SKOTT.  
 CLEAR WIDTH IN PANEL OR BULKHEAD, 3 1/8" X 1 1/2".



nr. datum

Forandring

**SIMRAD**

Skala

~

Tegn.

18/4-66 *JH*

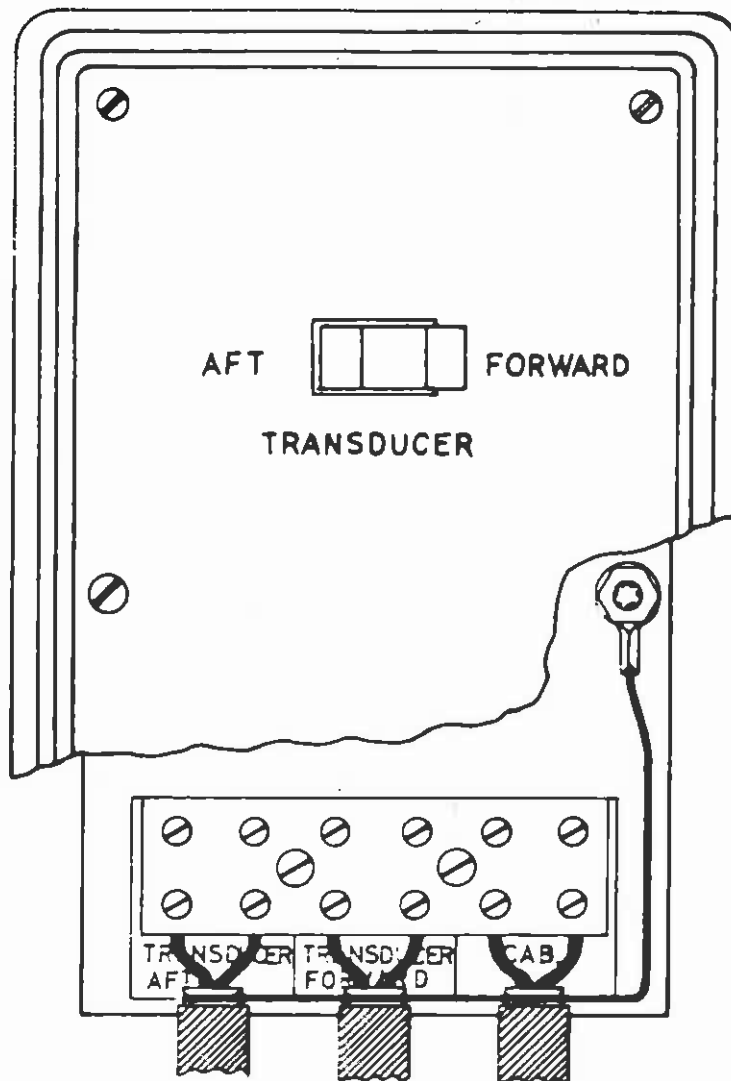
Kontr.

2/4-66 *JL*

Godkj.

MÅLSKISSE OG KABELTILKOPL.  
 TRANSDUCER SELECTOR 517-43  
 OUTLINE DIMENSIONS AND  
 CABLE CONNECTION

519-674



1 KABINETT, 2 SVINGERE.  
1 CABINET, 2 TRANSDUCERS.

UTVENDIGE DIMENSJONER:  
OUTWARD DIMENSIONS:

HÖYDE (HEIGHT) 160 mm (6,3")  
BREDDE (WIDTH) 98 mm (3,86")  
DYBDE (DEPTH) 84 mm (3,31")

1	10/8-72
nr.	datum
Forandring	

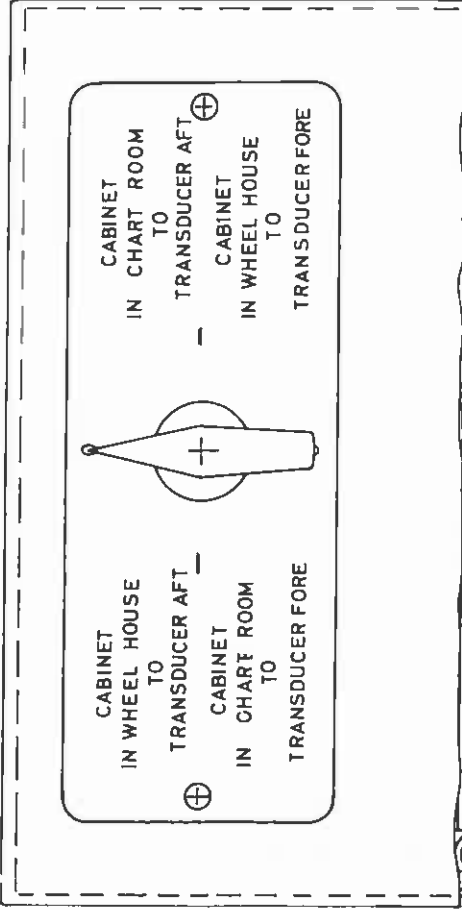
**SIMRAD**

Skala		
Tegn.	8-9-62	Vik
Kontr.	10/9-62	78
Godkj.		

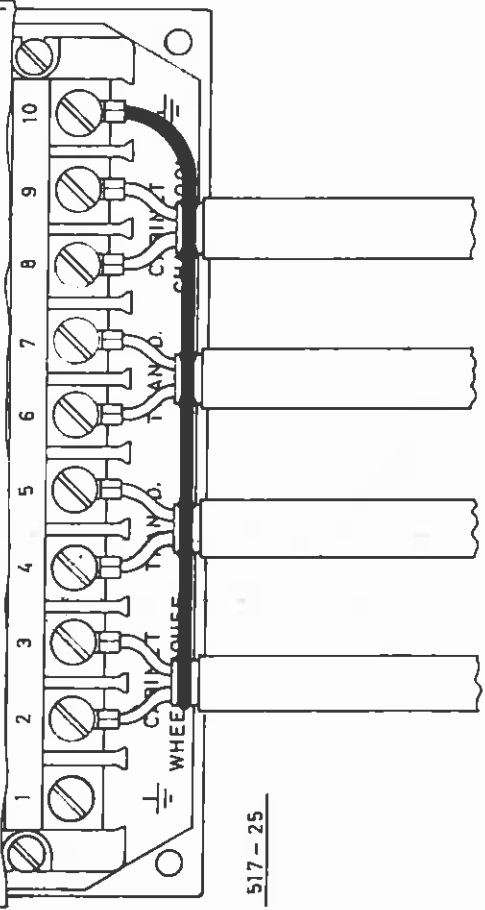
KABELTILKOPLING I  
VENDERBOKS TYPE 517-24.  
CABLE CONNECTIONS TO  
TRANSDUCER SELECTOR 517-24

519-511



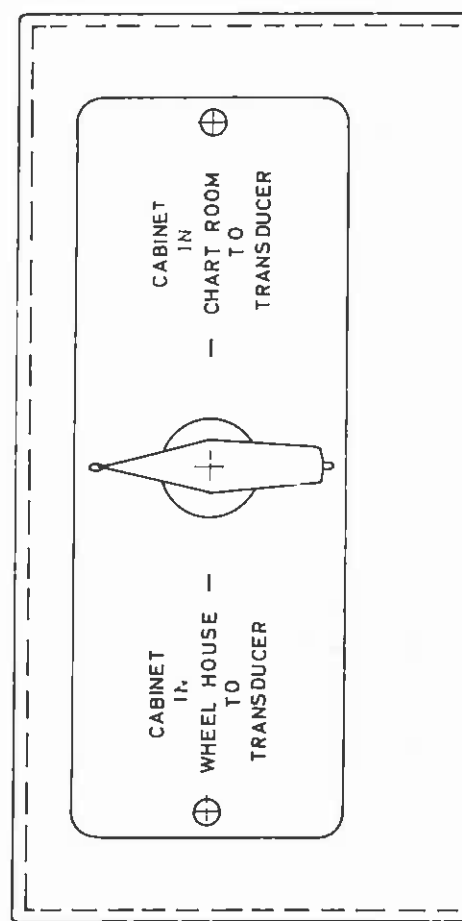


⊕ CABINET IN WHEEL HOUSE TO TRANSDUCER AFT  
 - CABINET IN CHART ROOM TO TRANSDUCER AFT  
 ⊕ CABINET IN WHEEL HOUSE TO TRANSDUCER FORE  
 - CABINET IN CHART ROOM TO TRANSDUCER FORE

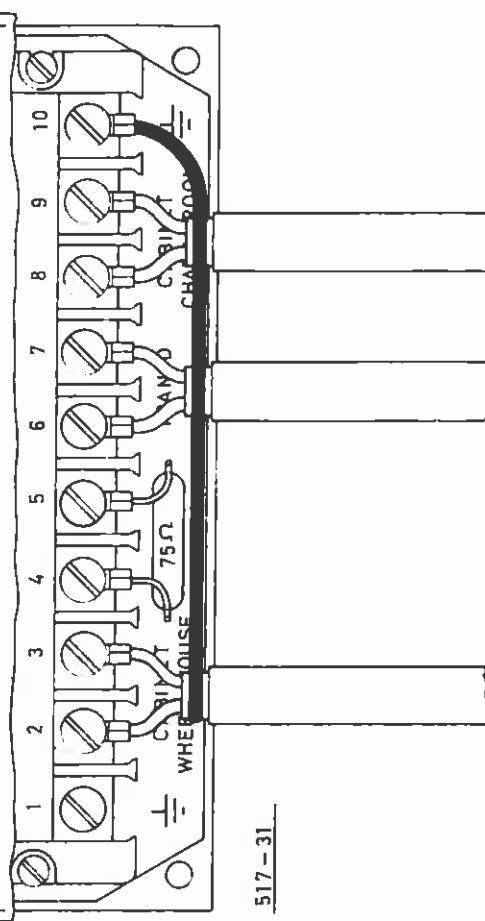


517 - 25

2 KABINETTER OG 2 SVINGERE.  
 2 CABINETS AND 2 TRANSDUCERS.



⊕ CABINET IN WHEEL HOUSE TO TRANSDUCER  
 - CABINET IN CHART ROOM TO TRANSDUCER  
 ⊕ CABINET IN WHEEL HOUSE TO TRANSDUCER  
 - CABINET IN CHART ROOM TO TRANSDUCER



517 - 31

2 KABINETTER OG 1 SVINGER.  
 2 CABINETS AND 1 TRANSDUCER.

UTVENDIGE DIMENSJONER:  
 OUTWARD DIMENSIONS:  
 HOYDE. (HEIGHT) 137mm (5,39")  
 BREYDE. (WIDTH) 184mm (7,25")  
 DYBDE. (DEPTH) 90mm (3,55")

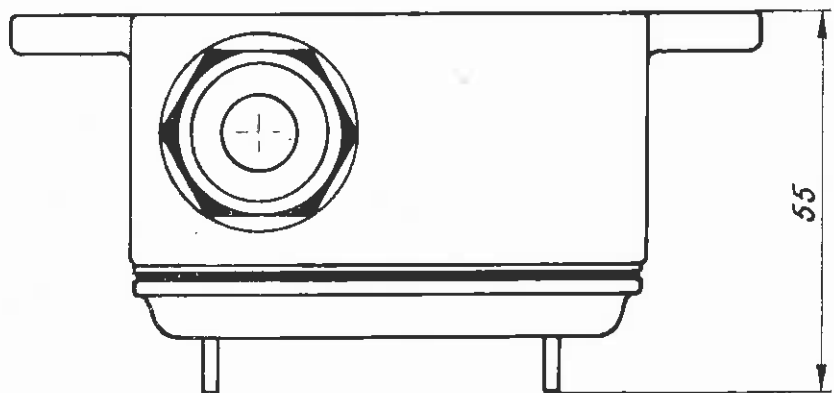
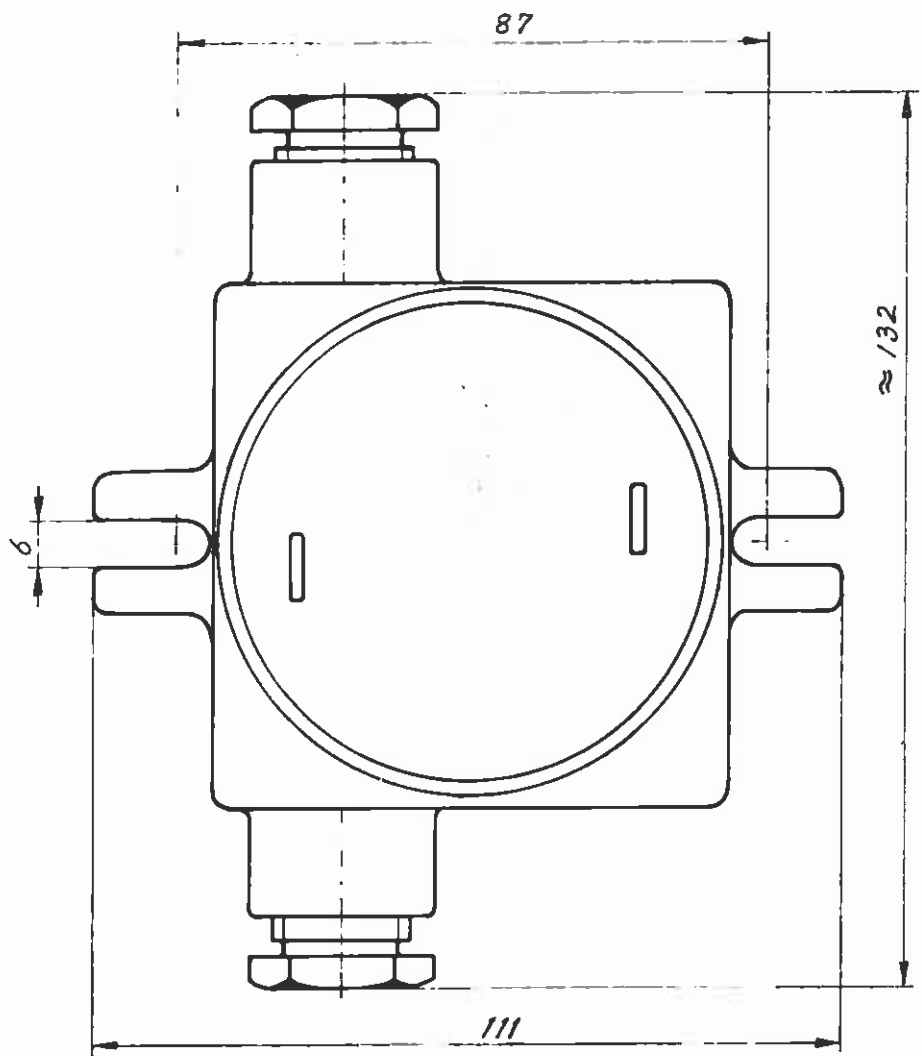
KABEL-TILKOPLING  
 I VENDERBOKS  
 TYPE 517-25 OG 517-31  
 CABLE CONNECTION  
 IN VENDERBOKS  
 SWITCH BOX  
 MODEL 517-25 and 517-31

Skala	
Tegn.	26-4
Kontr.	
Godtj.	

**SIMRAD**

nr. datum  
Forendring

519 - 426



MÅL I MM  
DIMENSIONS IN MM

nr. datum
Forandring

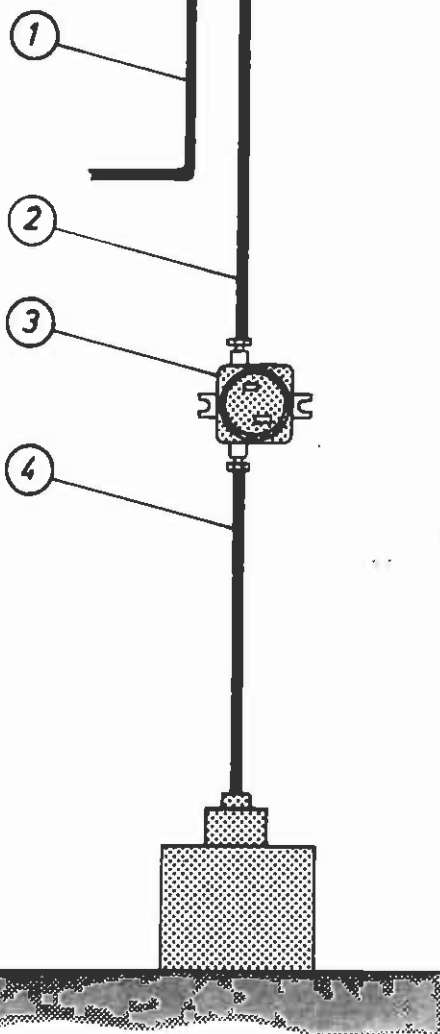
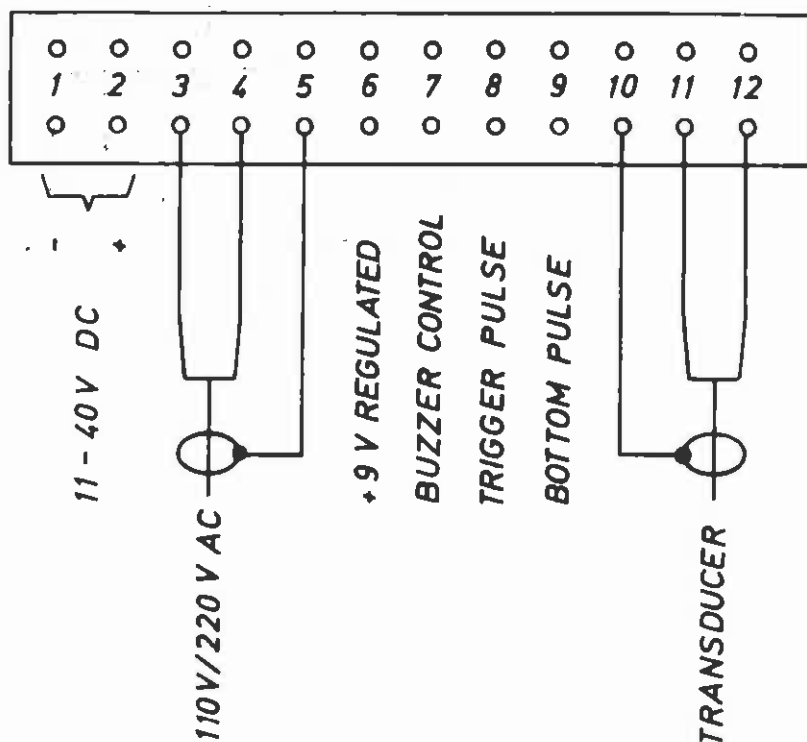
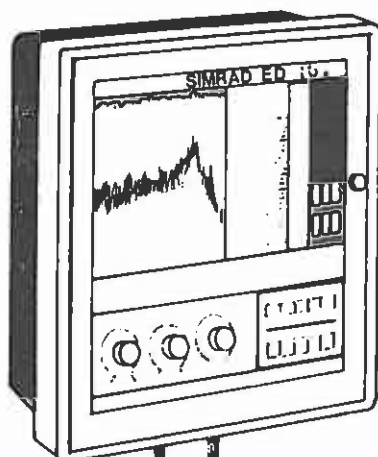
**SIMRAD**

Skala	
Tegn.	74.01.03 JH
Kontr.	74.01.09 BS
Godkj.	74.01.09 JH

MÅLSKISSE AV KOPLINGS-  
BOKS TEF 2079.

OUTLINE DIMENSIONS OF  
JUNCTION BOX TEF 2079.

519 - 1045



1. MAINS CABLE,  $2 \times 1.5 \text{ mm}^2$  WITH SCREEN. POWER CONSUMPTION 50 WATTS.
2. TRANSDUCER CABLE,  $2 \times 1.5 \text{ mm}^2$  WITH SCREEN.
3. JUNCTION BOX, SUPPLIED BY SIMRAD. SCREENS OF TRANSDUCER CABLE TO BE CONNECTED - MUST NOT BE GROUNDED.
4. TRANSDUCER CABLE. 25meter SUPPLIED WITH TRANSDUCER. SHOULD BE RUN IN A STEEL PROTECTING PIPE.

PROJ. METODE	
MÅLEST.	
TEGN.	81.02.24 K.M.
KONTR.	— " — ABH
GODKJ.	— " — ABH

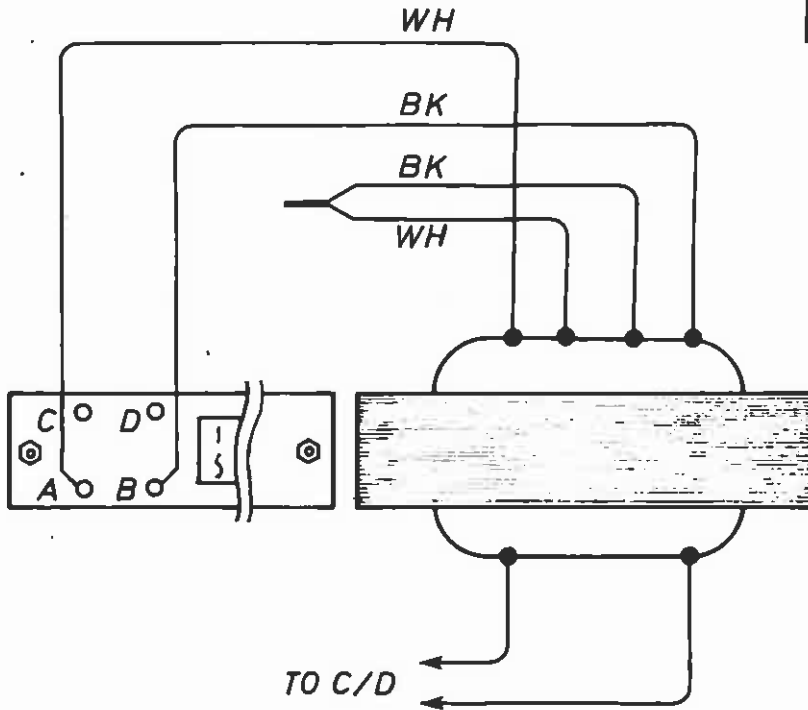
TOLERANSER FOR IKKE SPESIELT TOLERANSE-SATTE MÅL: MIDDELS NS 1430

CABLE PLAN FOR  
SIMRAD ED 161 AND  
ED 162

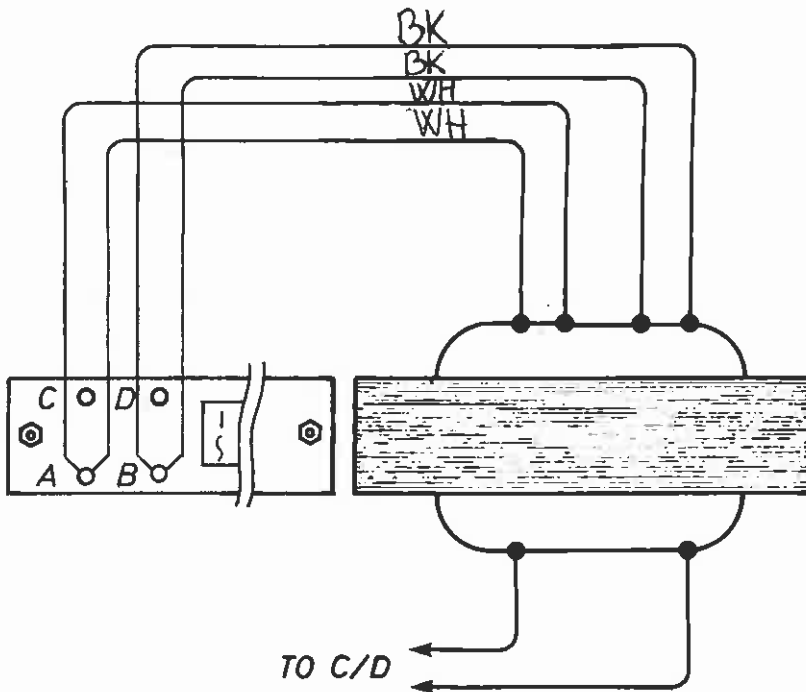
**SIMRAD**  
Trading A/S

TD 4001

ARKIV NR.



FOR 220V AC CONNECTION



FOR 110V AC CONNECTION

PROJ.  
METODE



TOLERANSER FOR IKKE SPESIELT  
TOLERANSESATTE MÅL MIDDELS NS 1430

**SIMRAD**

MÅLEST.

TEGN. 81.06.22 K.M.

KONTR. — " — ABH

GODKJ. — " — ABH

WIRING DIAGRAM  
FOR 110 V AC AND  
220 V AC

ERST.

TD 4012

ARKIV NR.