

# UT-180

## TITLE : TRANSDUCER SPECIFICATION

## 防水超声波传感器 (兼容)

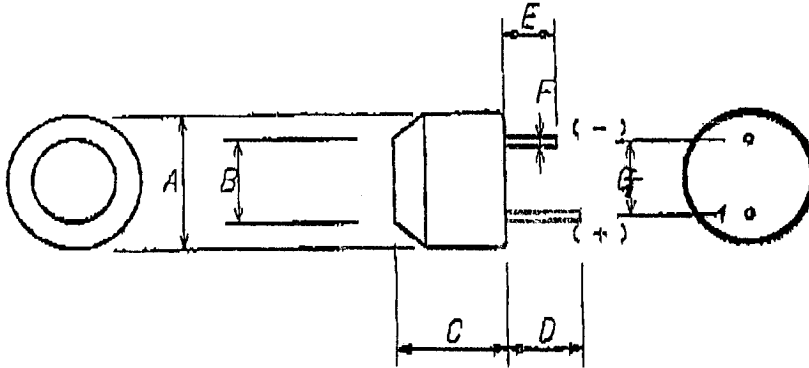
### 1. GENERAL

THESE SPECIFICATIONS DESCRIBE THE ULTRASONIC TRANSDUCERS

COMPATIBLE WITH TRANSMITTING AND RECEIVING

发射 接收兼容

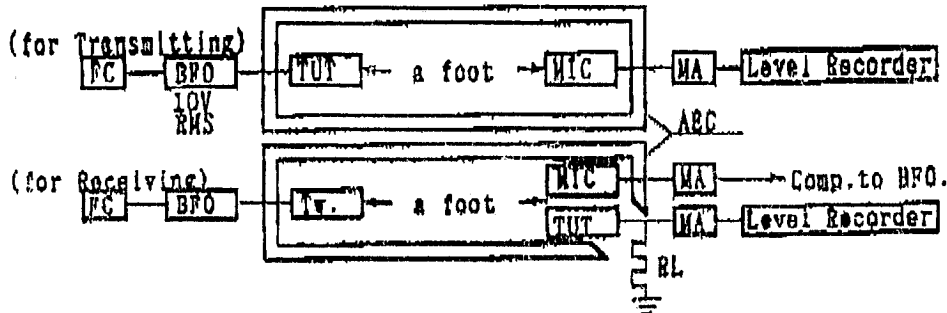
### 2. PACKAGE OUTLINE



- A= 18.0±0.5
- B= 10.8±0.5
- C= 12.0±0.5
- D= 9.0±1.0
- E= 8.0±1.0
- F= 1.0±0.1
- G= 10.0±1.0

(UNIT:mm)

### 3. TEST CIRCUIT



FC :Frequency Counter  
 BFO:Beat Freq. Osc.  
 TUT:Transducer Under Test  
 MA :Measuring Amplifier  
 TW. :Tweeter  
 RL :3.9 kΩ  
 MIC.:Microphone  
 AEC :Anechoic Chamber

..... Fig.2 .....

### 4. CHARACTERISTICS 特性

	Transmitting	Receiving
Nominal Frequency 一般频率	40.0 kHz	
Sound Pressure Level 声压标准 0 dB=0.0002 μbar	40.0 kHz = 100 dB Min.	*****
Sensitivity at 40.0 kHz 灵敏度	*****	-80.0 dB/V/μbar Min.
Band Width 声带宽	1kHz Min./ 100 dB	2kHz Min./-80 dB/V/μbar
Maximum Input Voltage 最大输入电压	60 Vp-p	

## 5.ENVIRONMENTAL CHARACTERISTIC

- 5-1 Sound Pressure Level and Sensitivity shall not change by more than 15 dB in the temperature range of -20°C to +60°C, at a relative humidity of 30%.
- 5-2 Sound Pressure Level and Sensitivity shall not change by more than 6 dB in the humidity range of 10% to 90% at the temperature of 25°C.
- 5-3 Stress : All Sensitivity or Sound Pressure Level shall be within 3 dB of the specified values after the device is subjected to any or all of the belows.
- 5-3-1 Operation at 95% relative humidity and 40°C for 100 hours, followed by a normalization period of 24 hours at 30% and 25°C.
- 5-3-2 Storage at -40°C to +100°C for 24 hours followed by a normalization period of an hour at 25°C.
- 5-3-3 Vibration at 10 to 55Hz, 1.5mm amplitude, 1 minute sweep.  
X,Y,Z, 3 each axis for 3 hours.
- 5-3-4 Shock : After impact of 50G is applied following  
X,Y,Z, 3 axis/3 cycle/ each direction.

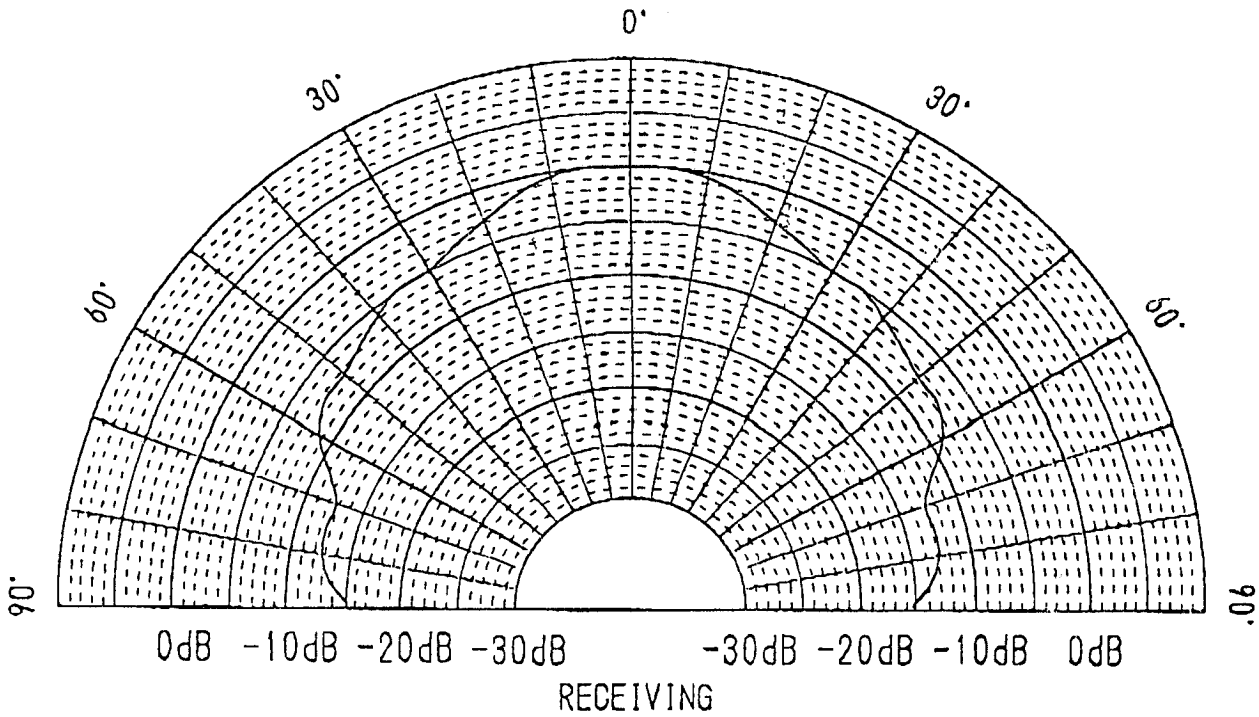
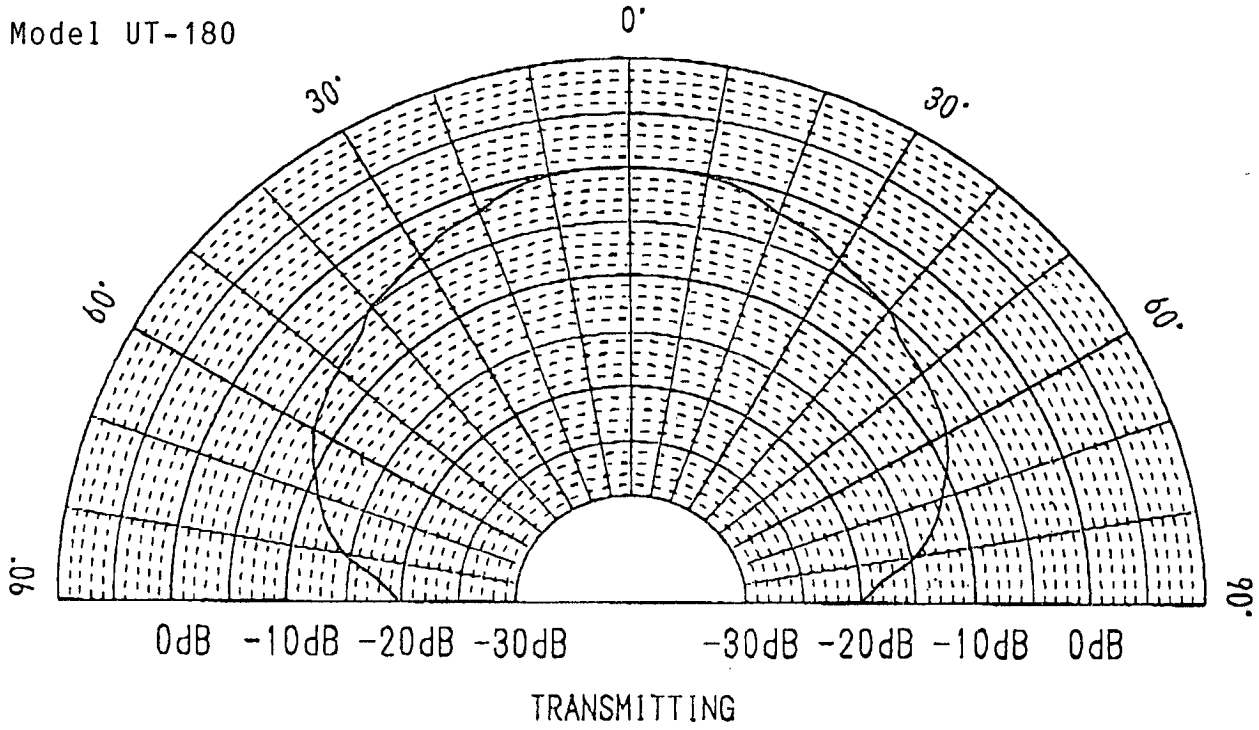
## 6.MECHANICAL CHARACTERISTICS

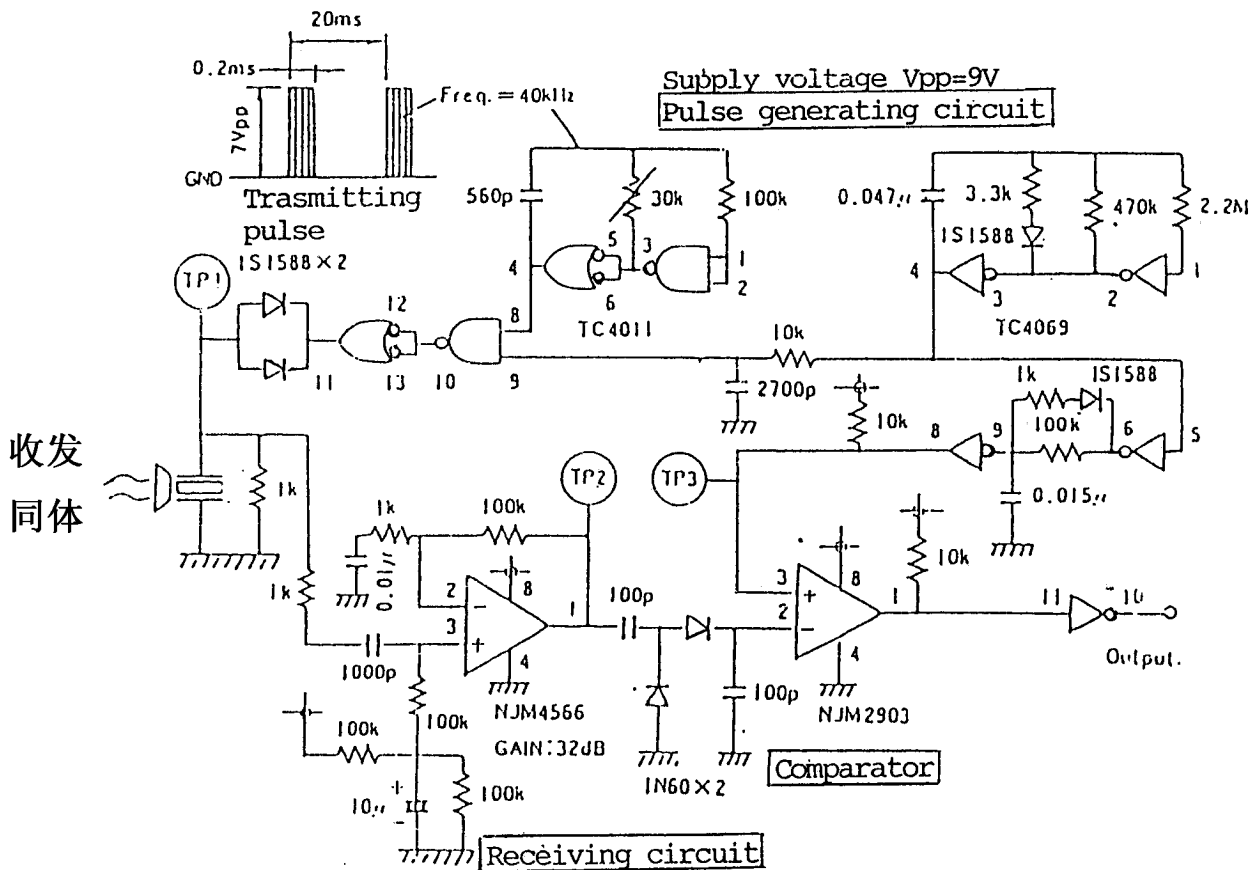
### LEAD STRENGTH

- To pull longitudinally 1.0 kgf min,  
To push longitudinally 1.0 kgf min.

# Directivity

Model UT-180





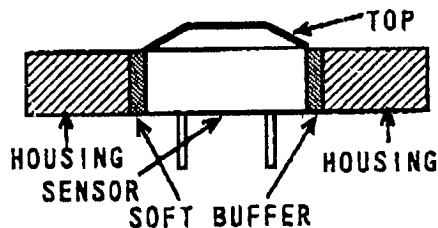
Example circuit for measuring distance (Combined type)

[DRIP PROOF TYPE]

※ NOTES

1. DESIGN RESTRICTIONS/PRECAUTIONS

- This sensor is designed for use in air. Do not use this sensor in fluid.
- In case where secondary accidents due to operation failure or malfunctions can be anticipated, add a fail safe function to the design.
- In case where this sensor is to be hold in housing, use soft buffer between sensor and housing. The front convex part of this sensor vibrates in large.



If this part is hold, its characteristics will vary. The top must be free to vibrate.

2. USAGE RESTRICTIONS/PRECAUTIONS

To prevent sensor malfunctions, operational failure or any deterioration of its characteristics, do not use this sensor in the following, or similar conditions.

- A. In strong shock or vibration.
- B. In high temperature and humidity for a long time.
- C. In corrosive gases or sea breeze.
- D. In an atmosphere of organic solvents.
- E. In dirty and dusty environments that may contaminate the sensor front.

- Do not solder adding stress on outer lead, also do not apply stress like spin or pressure just after soldering.

In case you form the leads, support the root firmly and form.

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