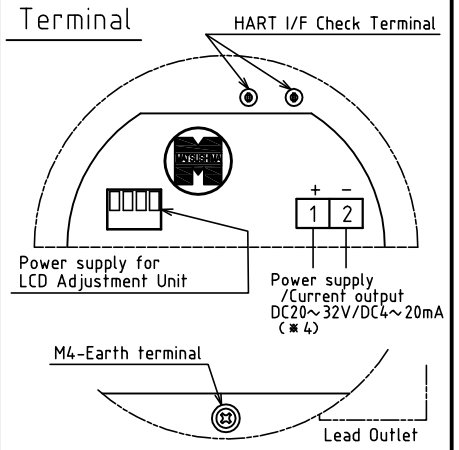
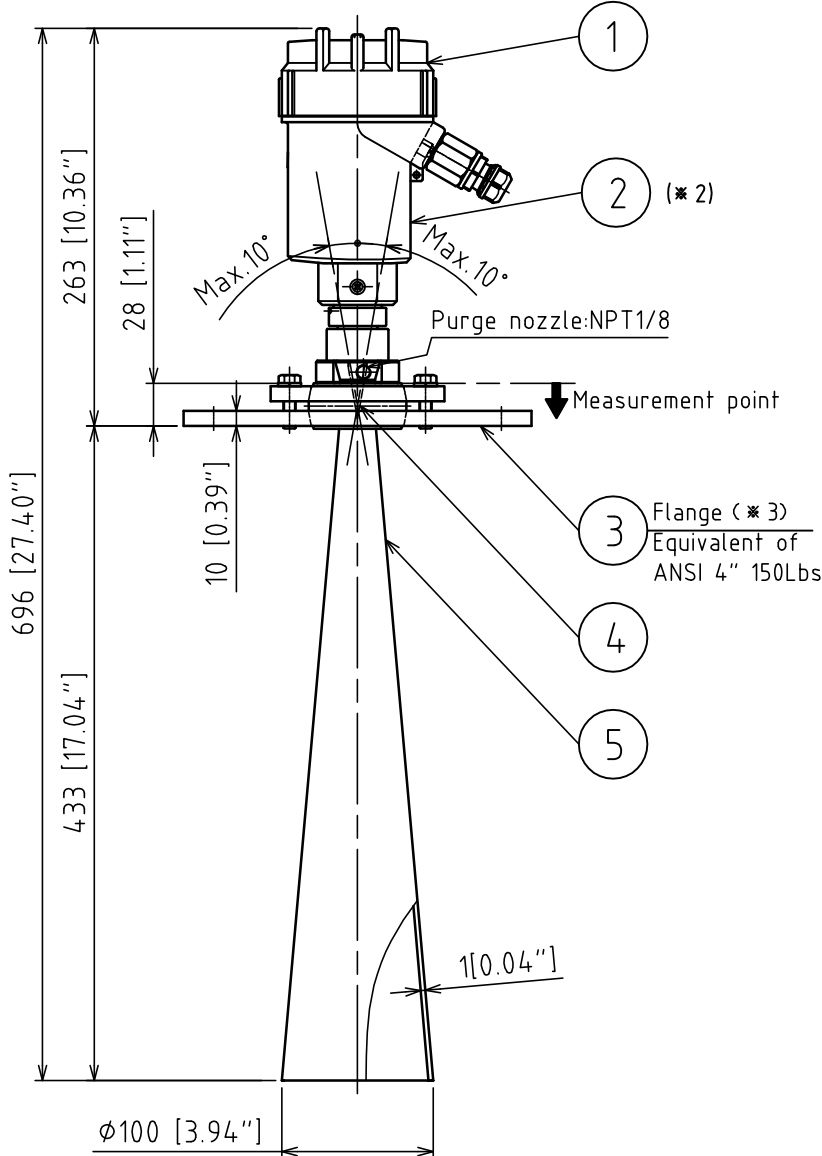
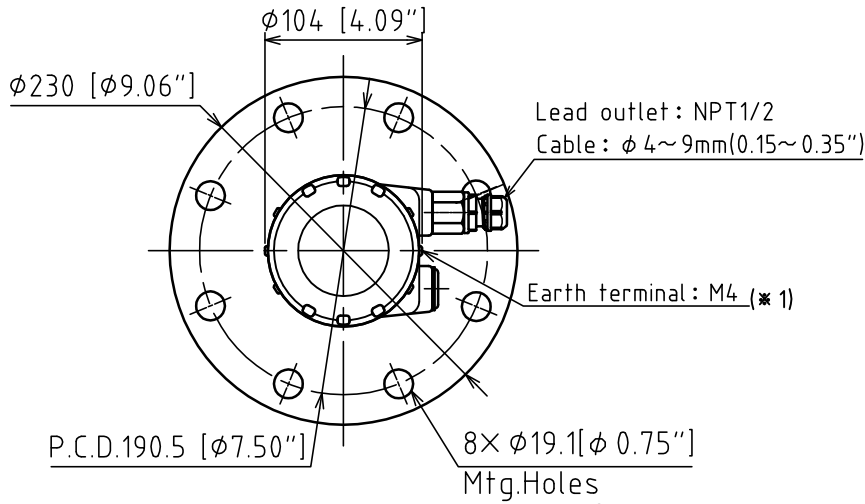
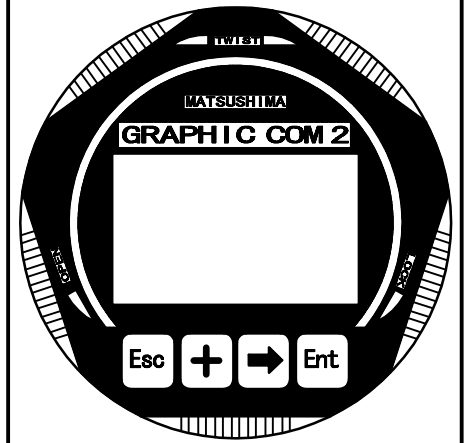


1. Application					
2. TAG No.					
3. Type	MWLM-PR26H7SA				
4. Power supply	DC20 to 32V				
5. Power consumption	Approx. 800mW				
6. Mounting	ANSI 4" 150Lbs flange with Swivelling mechanism				
7. Dead zone	0.3m(0.98ft) below the antenna				
8. Max. measuring distance	70.0m(230.0ft) * from measurement reference zero point				
9. Transmitting frequency	Approx. 26GHz				
10. Transmitting cycle	every 83ms				
11. Beam angle (-3dB)	Approx. 8deg. (16deg including side beam)				
12. Resolution	1mm(0.03in)				
13. Allowable fluctuation rate	10cm(3.93in) / sec				
14. Accuracy	Repeatability	Within 2m(6.56ft) or less : ±30mm(1.18in) , Within 2m(6.56ft) or more : ±20mm(0.78in) or ±0.04% of measurement range (whichever is greater)			
	Temp. error	0.06% / 10K			
15. Ambient temp.	Housing	-40 to +80°C(-40 to +176°F) (with LCD: -20 to +60°C,-4 to +140°F) (1h warm-up operation required under -20°C(-4°F))			
	Antenna	-40 to +150°C(-40 to +302°F)			
16. Allowable pressure	10kPa(1.45psi)				
17. Protection	Housing	IP66 (Housing cover and lead outlet must be closed.)			
	Antenna	IP67			
18. Lead outlet	1-NPT 1/2 (Applicable cable size: φ4 to 9mm(0.15 to 0.35in))				
19. Output signal	DC 4 to 20mA × 1 (Max. 499Ω resistive load at DC24V)				
20. Integration time	0 to 999s				
21. Mass	Approx. 6 kg (13.28lb)/ pc.				
22. Quantity	「 」 pcs				
23. Accessories(Options)	LCD Adjustment unit (GRAPHIC COM2)	<input type="checkbox"/> YES <input type="checkbox"/> NO 「 」 pcs			
	PC data communication cable	<input type="checkbox"/> YES <input type="checkbox"/> NO 「 」 pcs			
	PC Adjustment software (M-DTM)	<input type="checkbox"/> YES <input type="checkbox"/> NO 「 」 pcs			
24. Measuring and Process Condition	Measuring span	「 」ft (100%) to 「 」ft (0%) (※1)			
	Material to measured	「 」			
	Particle size	「 」			
	Level variation speed	「 」in/sec			
	Bulk density	「 」			
	Angle of repose	「 」deg			
	Material temperature	「 」°F			
	Ambient temperature	「 」°F			
	Process temperature	「 」°F			
	Process pressure	「 」psi			
	Fume	YES / NO			
	Moisture content	「 」%			
	Condensation	YES / NO			
	Corrosive gas	YES / NO			
	Foam	YES / NO			
Build-up	YES / NO				
Agitator	YES / NO				
(Remarks) ① Measuring range and accuracy specified above is of standard catalog specification and may change according to measurement conditions. ② Make sure that lead outlet is securely fastened. Otherwise, it may cause malfunction due to ingress of water. ③ No noise/surge and Ripple (P-P) 10% or below is required at instrumentation power applied. ④ Such installation that tip of the antenna protrudes in vessel from edge of nozzle is recommended. ⑤ Such protective measures to keep no freezing/condensation in electronics part is required. ⑥ Note that some kind of gas or fume may penetrate PTFE cone part and cause malfunction. Please take special note especially for corrosive gas such as H2S, HCl, HF, etc. (※1) It shows factory setting parameters and may change at the site according to the actual measurement conditions.					
DIMENSION DIAGRAM :C41B0374 REFERENCE MATERIAL FOR INSTALLATION :C47B0080					
MESSRS	E.S.T.No.	△			
ORDER.No.	ACCEPT.No.	△			
Matsushima Matsushima Measure Tech	TITLE	△			
	Specification of Microwave Level Meter MWLM-PR26H7SA		May.22.2014	T.Iwamoto	T.Shigeeda
		No.	DATE	CHECK'D	APP'D

TYPE MWLM-PR26H7SA



(※ 4) Recommended cable: Two wire shield cable



LCD Adjustment unit (Option)

- (※ 1) Please insure connection to earth. The size of a grounding wire must be used larger than 1.25sq.
- (※ 2) The housing can be rotated by 310° without the use of any tools.
- (※ 3) The swivelling holder with flange. (Approx. ± 10°)

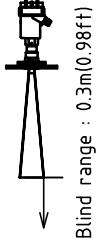
5	Antenna	SUS316L	1
4	Cone	PTFE	1
3	Flange	SUS304	1
2	Housing	ADC12	1
1	Cover	ADC12	1
No.	DESCRIPTION	MATERIAL	Q'TY
REV. No.	△	REV. DATE	
REVISED		APPROVED	
REMARKS			

SCALE 1:5	DATE May. 22. 2014	APPROVED H. Shigeeda	TITLE DIMENSION DIAGRAM OF MICROWAVE LEVEL METER
UNITS mm (in)	DRAWN T. Iwamoto	CHECKED T. Shigeeda	
Matsushima Matsushima Measure Tech			DRAWING NO. C41B0374
			REV. No.

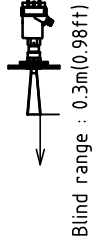
- Short-pipe for lifting
When the material may come into the blind range of sensor, mount a lifting short-pipe so that the material doesn't come into the blind range of sensor.
Note:It's not necessary to mount a lifting short-pipe when material doesn't come into the blind range.

- Blind range of Microwave transmitter
The blind range is within 0.3m(0.95ft) from antenna side. Within these ranges, measurement is impossible.

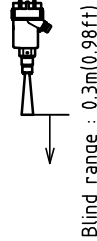
For powder
MWLM-PR26H7SA



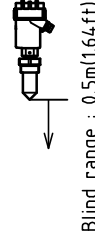
For powder
MWLM-PR26H3SA



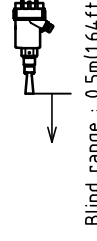
For liquid
MWLM-PR26H2GA



For liquid
MWLM-PR26C1GA



For liquid
MWLM-PR26H1GA



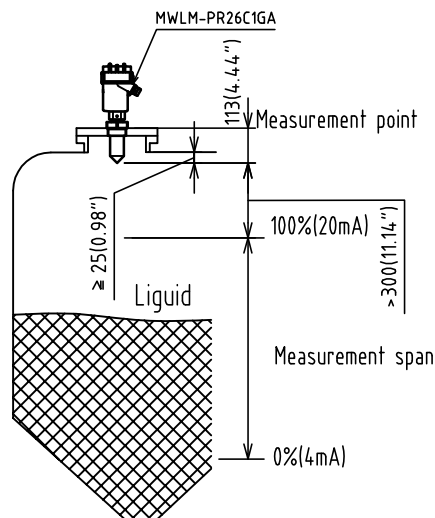
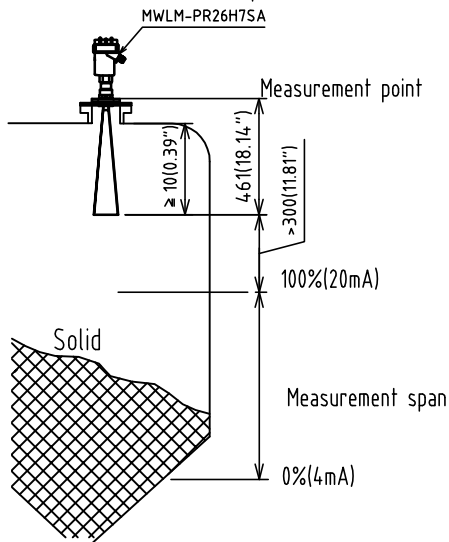
- Recommended size of short-pipe

TYPE	Solids	Liquids
Inside dia (φ) of short-pipe	Max. length of short-pipe	
≥ 65(2.55")	—	Max.65(2.55")
≥ 100(3.93")	Max.100(3.93")	
≥ 150(5.90")	Max.200(7.87")	
≥ 200(7.87")	Max.300(11.81")	

Note:Do not make the short-pipe unnecessarily longer.

Otherwise it may cause malfunction of measurement due to echo attenuation by noise generation.

- Measurement span and reference point



* Refer to external dimensions for measurement reference point.
Basically upper part of mounting compartment is measurement reference point.

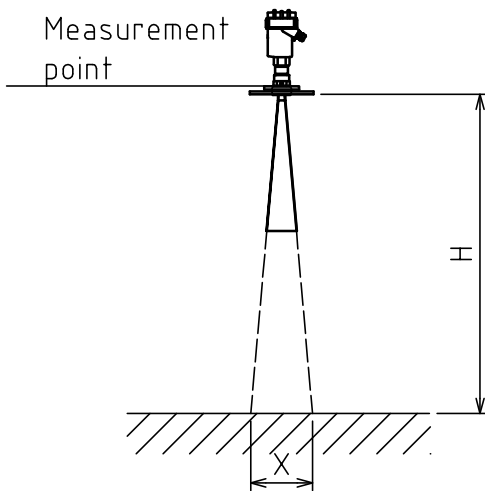
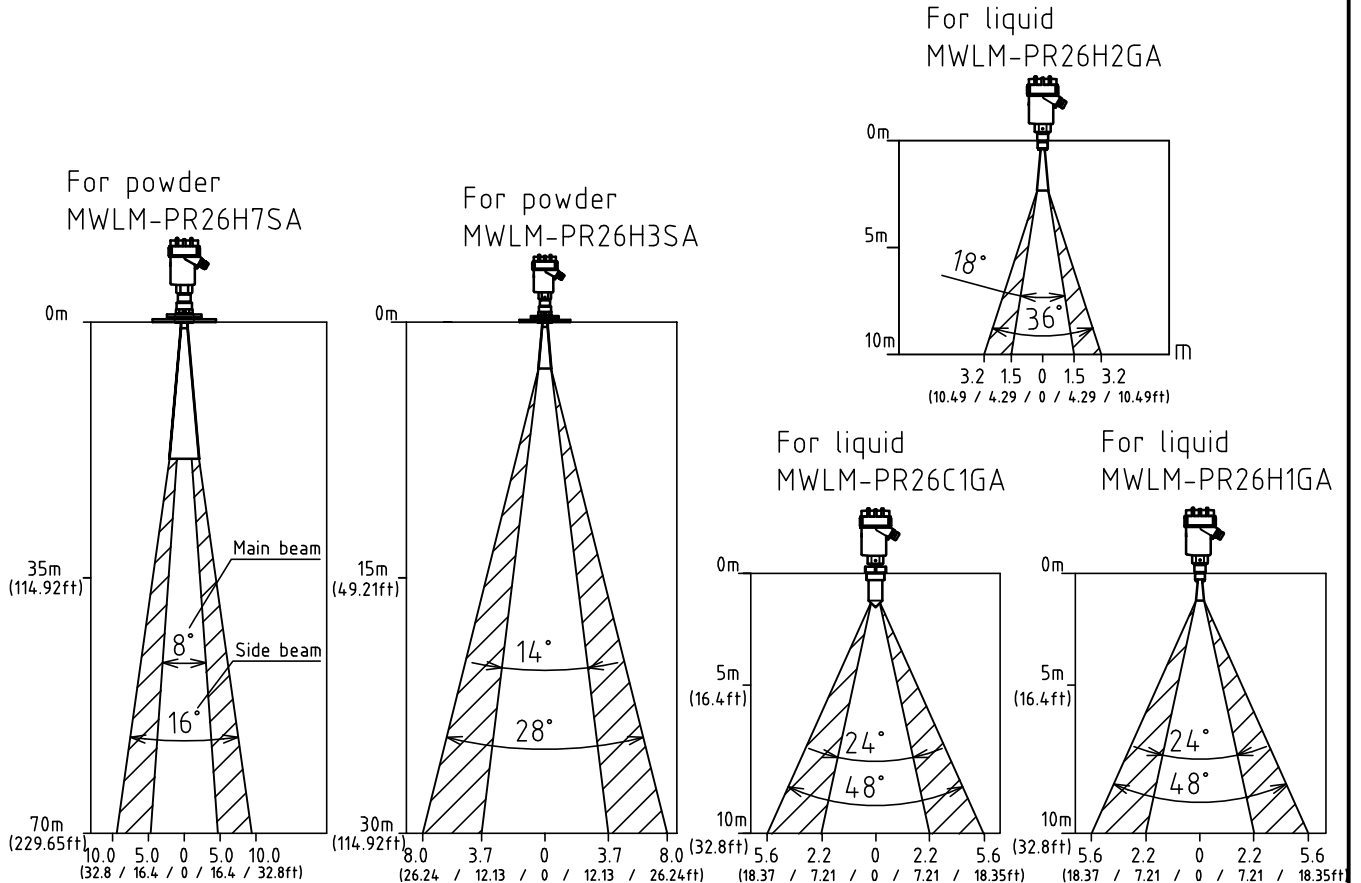
REV. No.	REV. DATE May. 22. 2014
REVISED T. Iwamoto	APPROVED T. Shigeeda
REMARKS	

SCALE (in,ft)	DATE Mar. 4. 2013	APPROVED H. Shigeeda	TITLE REFERENCE MATERIAL FOR INSTALLATION OF MICROWAVE LEVEL METER
UNITS mm	DRAWN T. Iwamoto	CHECKED T. Shigeeda	
			DRAWING NO. C47B0080
			REV. No. 1

5. Spreading of sound wave

Type	MWLM-PR26H7GA/FA/SA	MWLM-PR26H3GA/FA/SA	MWLM-PR26H2GA/FA	MWLM-PR26C1GA	MWLM-PR26H1GA
Applications	For powder	For powder	For liquid	For liquid	For liquid
Width of antenna surface	98(3.85")	56(2.2")	49(1.92")	45(1.77")	24(0.94")
Radiation angle	8°	14°	18°	24°	24°
$\tan \theta$	0.14	0.25	0.32	0.46	0.46
Spreading of sound wave including side beam	16°	28°	36°	48°	48°

* Mount the sensor so that any obstacle generating jamming noise doesn't encroaches in the Spreading of sound wave including side beam.



(Example
When H=3000 of MWLM-PR26H7FA/SA(ϕ 98(3.85") antenna).
 $\theta = 8^\circ$ (Main beam) $\theta = 16^\circ$ (Side beam)

$$X = \tan \theta \times 3000(118.11") + 98(3.85")$$

$$X = 0.14 \times 3000(118.11") + 98(3.85")$$

$$= \text{Approx.} 520(20.47")$$

$$X = \tan \theta \times 3000(118.11") + 98(3.85")$$

$$X = 0.29 \times 3000(118.11") + 98(3.85")$$

$$= \text{Approx.} 960(37.79")$$

i.e. The spreading of Main beam approx. 520mm(20.47in) and a spreading of Side beam approx. 960mm(37.79in).

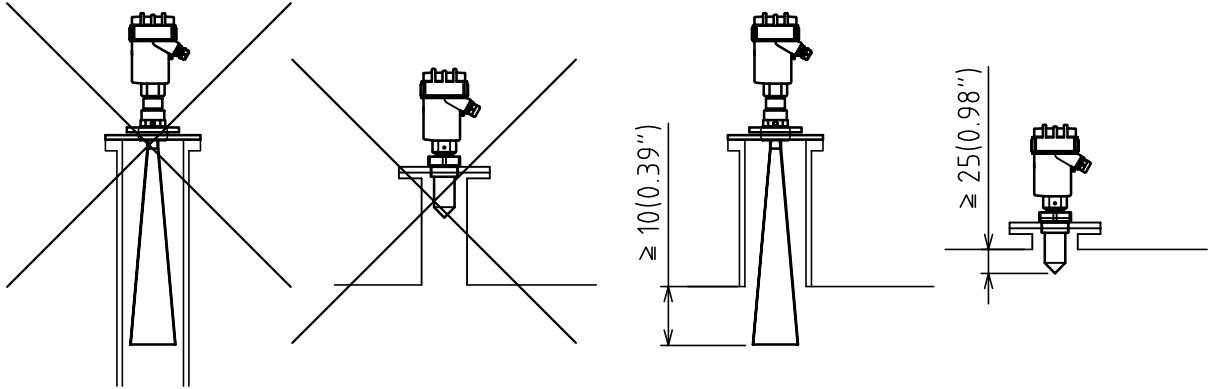
REV. No.	REV. DATE May. 22. 2014
REVISED T. Iwamoto	APPROVED T. Shigeeda
REMARKS	

SCALE (in,ft)	DATE Mar. 4. 2013	APPROVED H. Shigeeda	TITLE REFERENCE MATERIAL FOR INSTALLATION OF MICROWAVE LEVEL METER
UNITS mm	DRAWN T. Iwamoto	CHECKED T. Shigeeda	
			DRAWING NO. C47B0080
			REV. No. 1

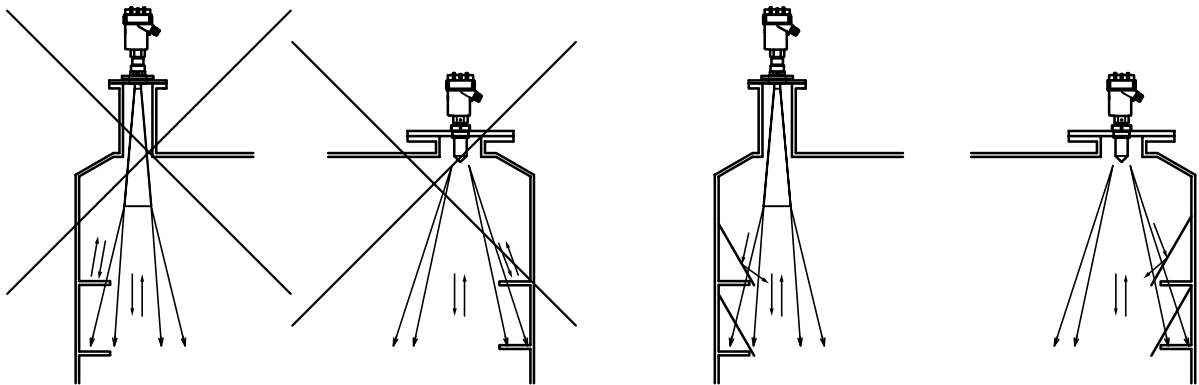
6. Notes for installation

6-1. For the liquid : Installation to which antenna tip goes out of roller end face of short pipe by 25mm(0.98") or more.

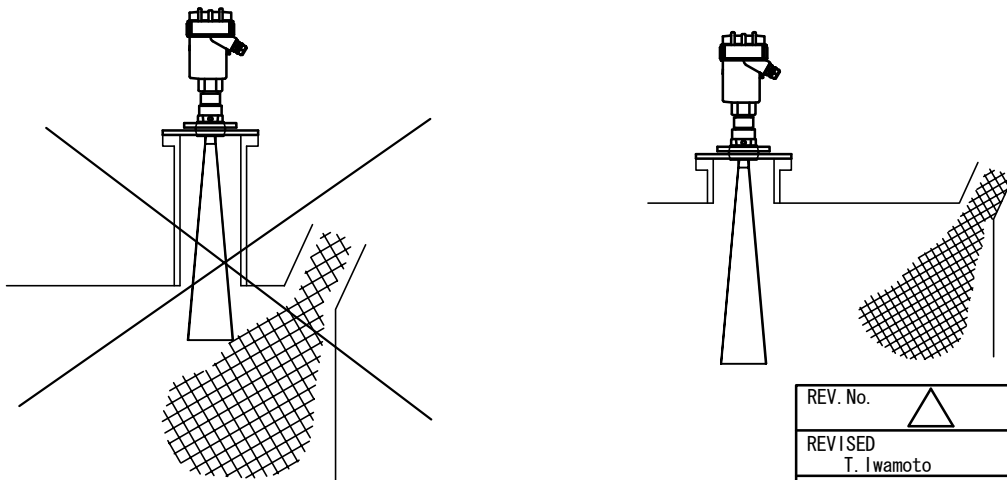
For the solid : Installation to which tip of horn antenna goes out of roller end face of short pipe by 10mm(0.39") or more.



6-2. When crossbeams or supports are installed inside the tank, provide shielding to minimize Noise (false reflections).



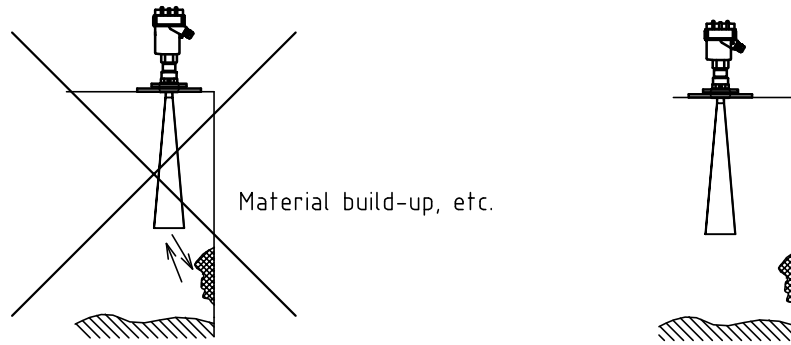
6-3. Do not mount the sensor near the material charging inlet.



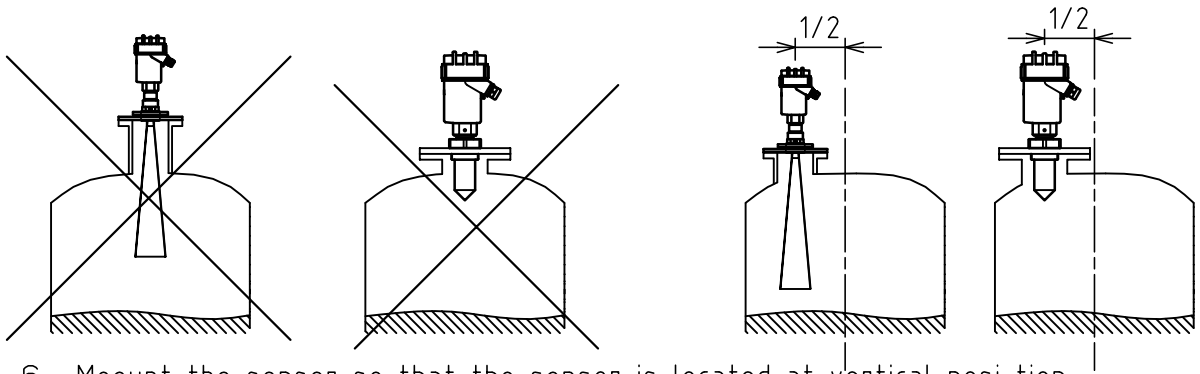
REV. No.	△	REV. DATE	May. 22. 2014
REVISED	T. Iwamoto	APPROVED	T. Shigeeda
REMARKS			

SCALE (in,ft)	DATE Mar. 4. 2013	APPROVED H. Shigeeda	TITLE REFERENCE MATERIAL FOR INSTALLATION OF MICROWAVE LEVEL METER	
UNITS mm	DRAWN T. Iwamoto	CHECKED T. Shigeeda		
			DRAWING NO.	REV. No.
			C47B0080	3/4 △ 1

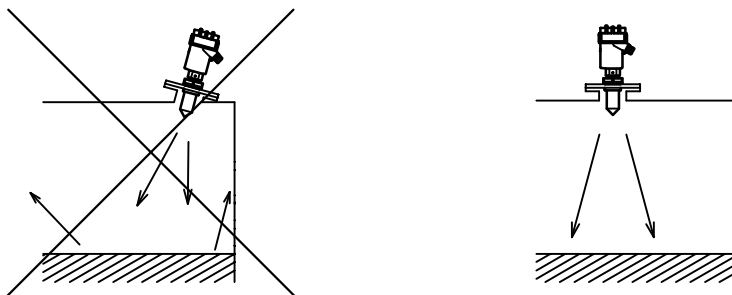
6 - 4. Ensure that any object generating noise doesn't encroach in the range of microwave spreading.



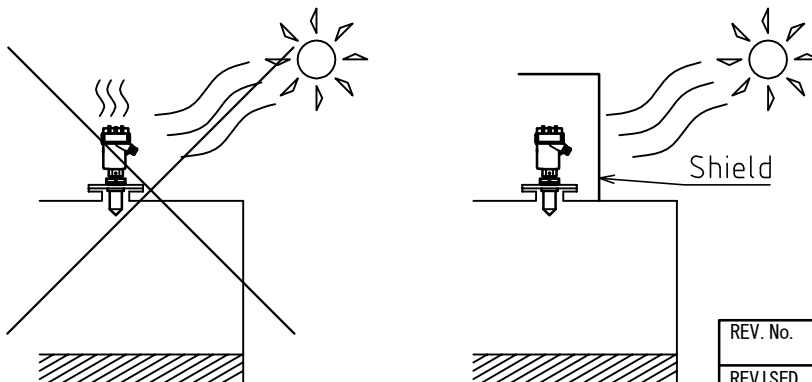
6 - 5. Do not mount the sensor at the center of tank.





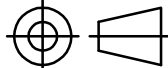
6 - 6. Mount the sensor so that the sensor is located at vertical position against the surface to be measured.



6 - 7. Strong heat fluctuations, e.g. due to the sun cause measuring errors. Provide a shield.



REV. No. 	REV. DATE May. 22. 2014
REVISED T. Iwamoto	APPROVED T. Shigeeda
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UNITS mm	DRAWN T. Iwamoto	CHECKED T. Shigeeda	
			DRAWING NO. C47B0080
			REV. No. 4/4 