



**364-38**

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1-1.

가

( ), ×

1-2.

가

가

1-3.

4

1-4.

A. (Measurement)

: 가

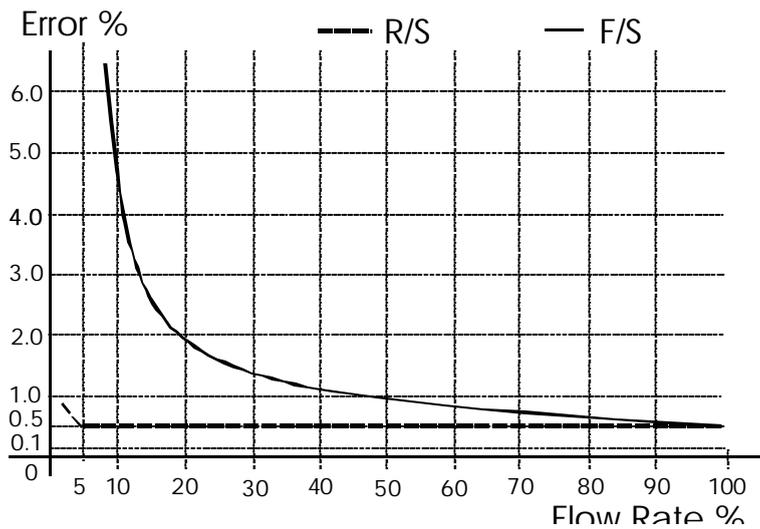
가

B. (Accuracy or Precision)

:- 가

a. R/S - ( )

b. F/S -



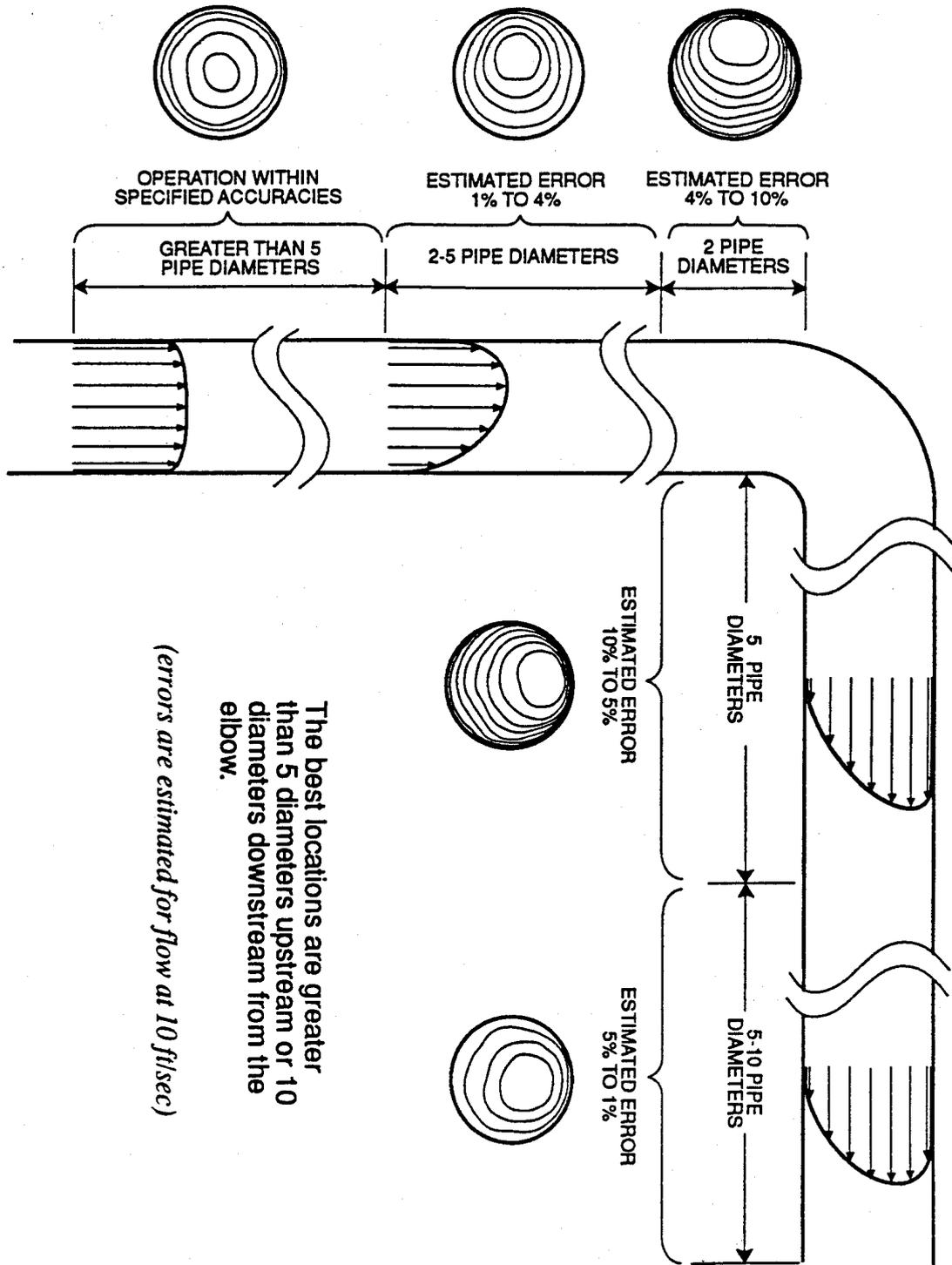


1-5

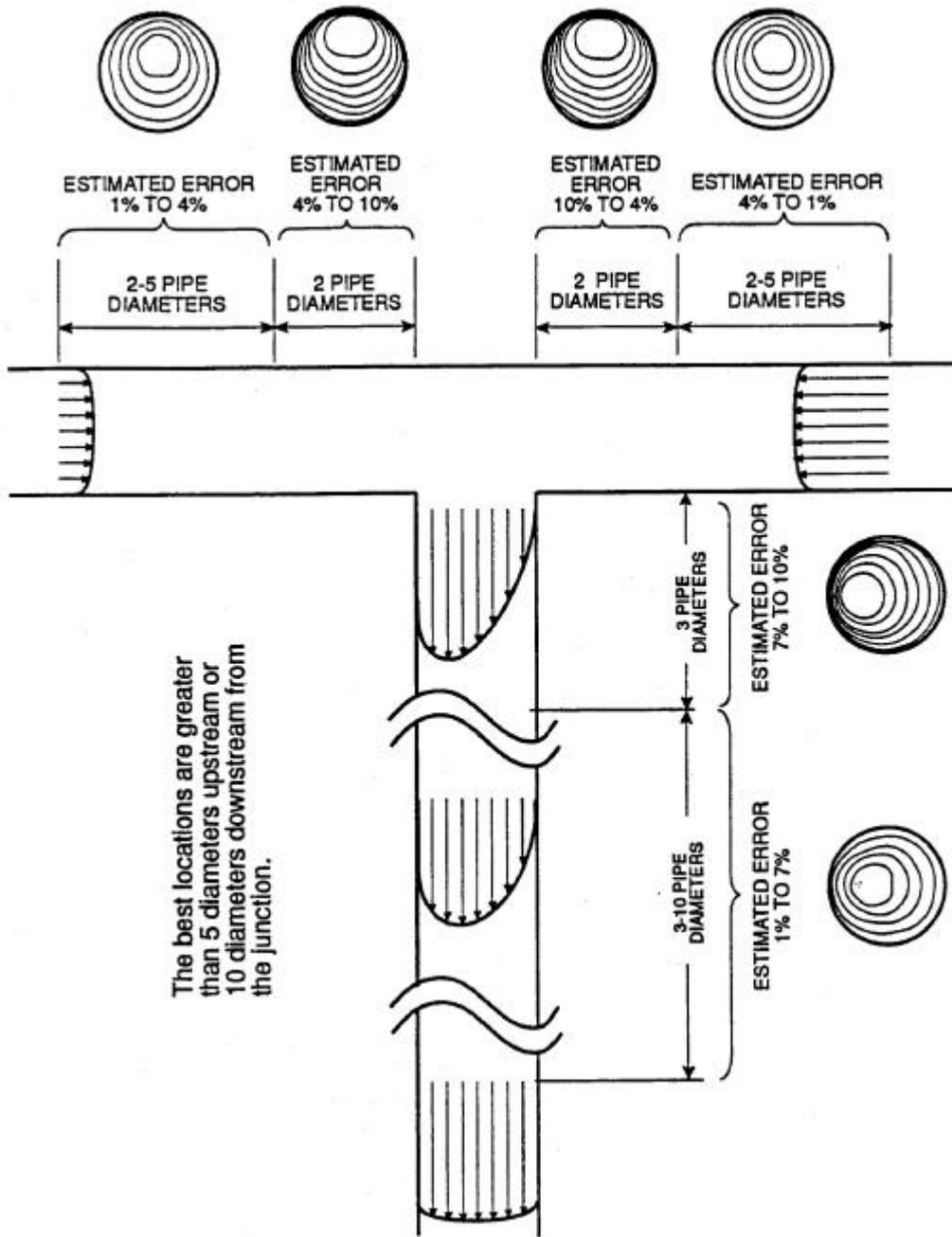
- A. : , , , ,
- B. : , , , , , ,
- C. : READING SCALE or FULL SCALE
- D. : , , , ,
- E. : , , ( , ) ,
- F. : , ,
- G. : , , , , ,
- H. : ,
- I. : ( , ), , , , ,
- J. : , ,
- K. : ,
- L. : , ,

1-6 Flow Profile

A. 90° Elbow

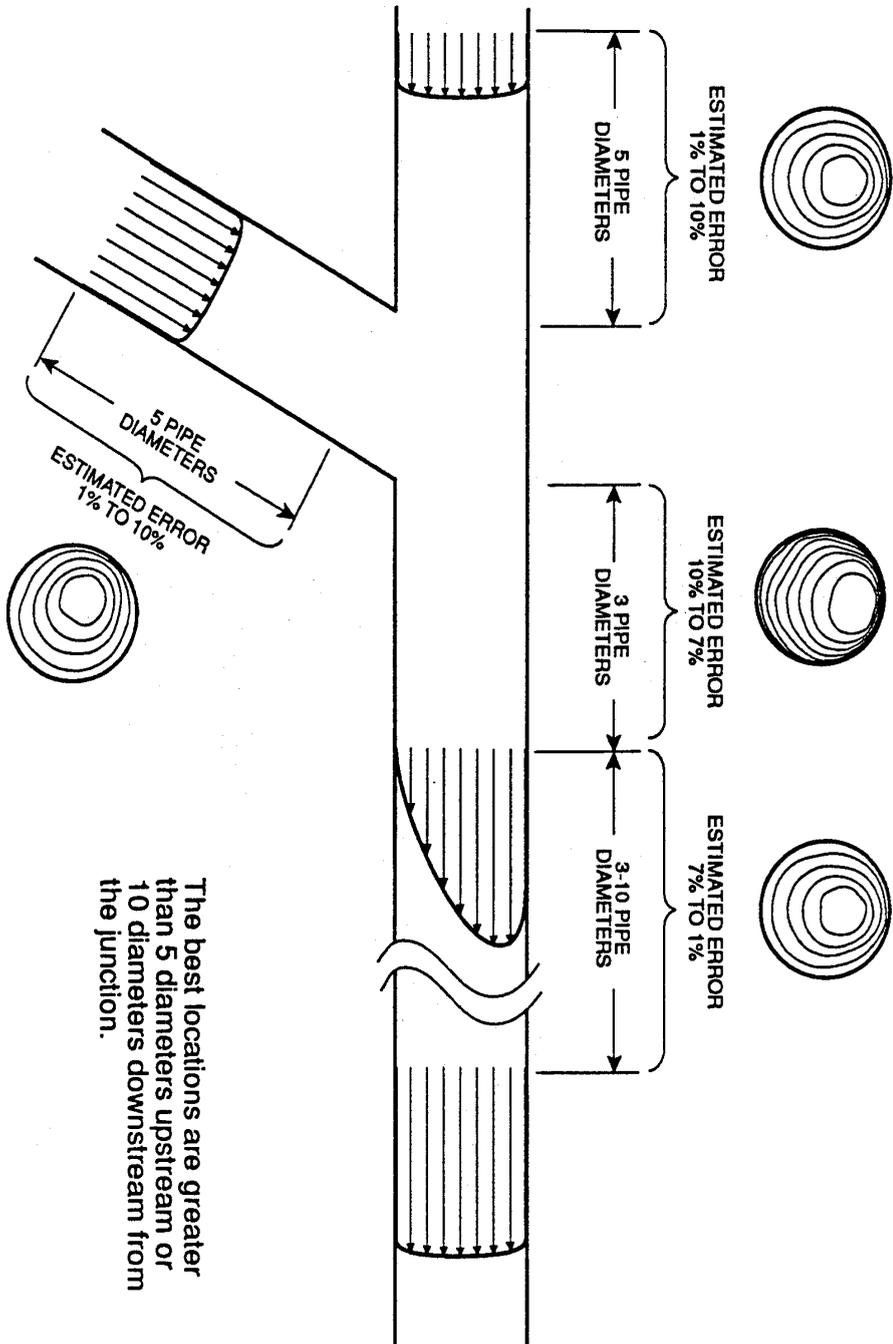


B. T - Junction



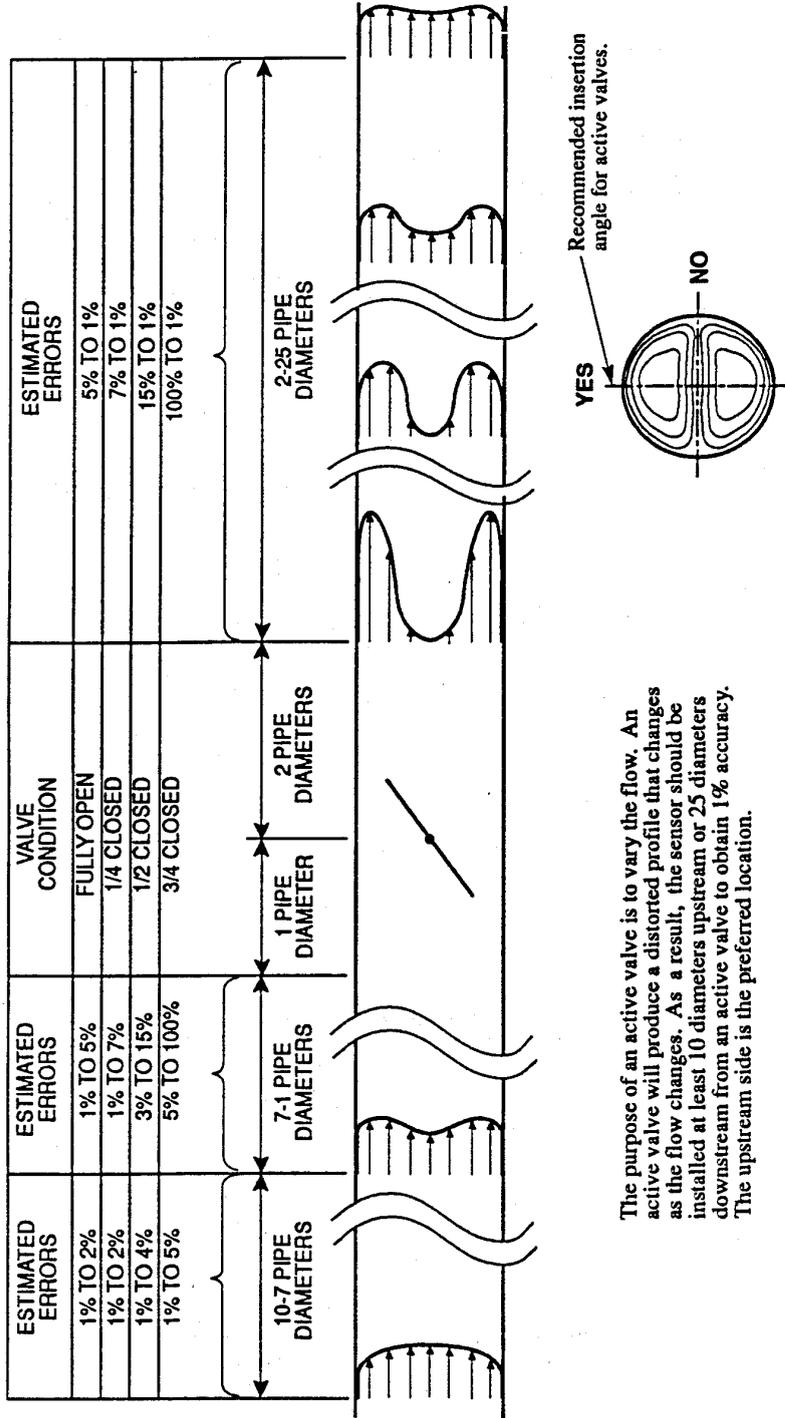
*(errors are estimated for flow at 10 ft/sec)*

C. Y - Junction



*(errors are estimated for flow at 10 ft/sec)*

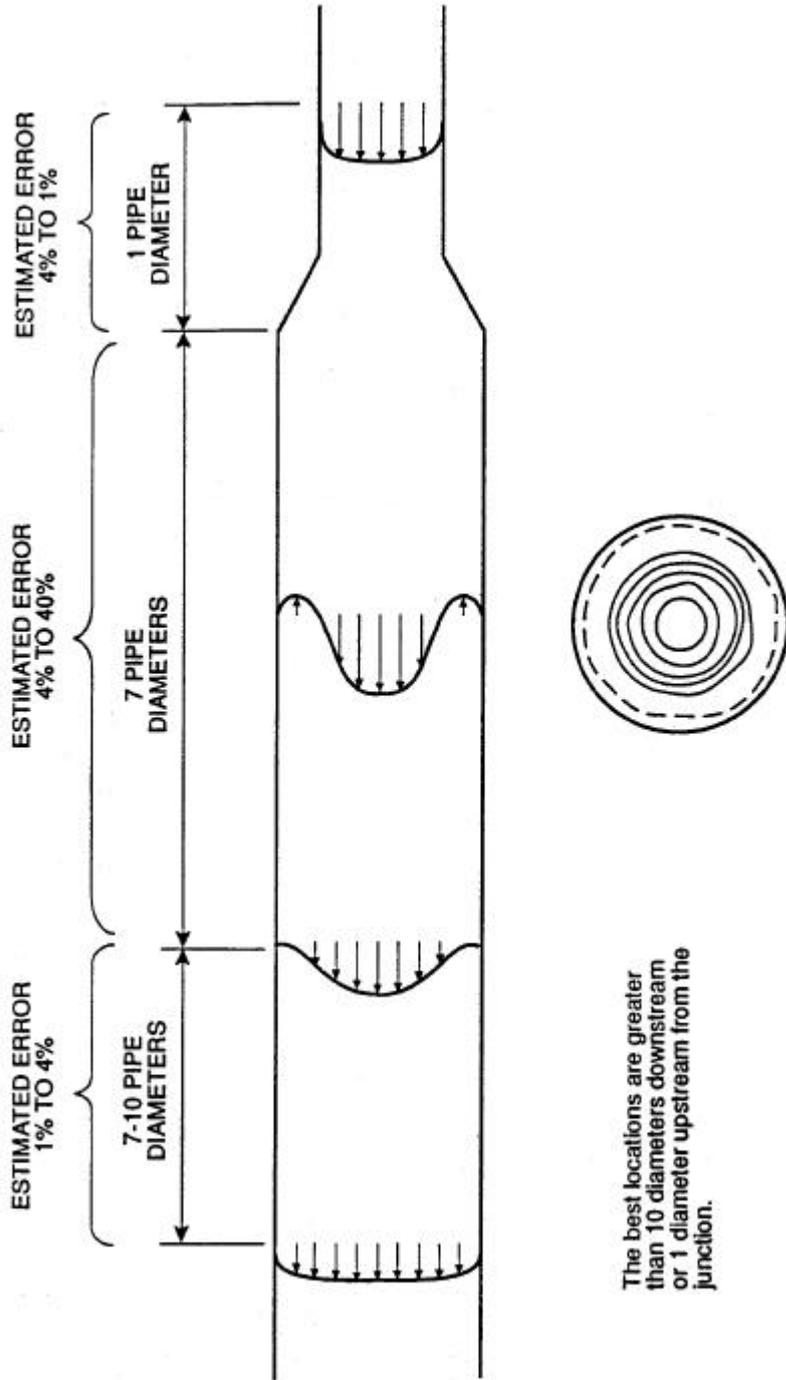
D. Active Valves.



The purpose of an active valve is to vary the flow. An active valve will produce a distorted profile that changes as the flow changes. As a result, the sensor should be installed at least 10 diameters upstream or 25 diameters downstream from an active valve to obtain 1% accuracy. The upstream side is the preferred location.

*(errors are estimated for flow at 10 ft/sec)*

E. Small & Large Pipe Junction



The best locations are greater than 10 diameters downstream or 1 diameter upstream from the junction.

*(errors are estimated for flow at 10 ft/sec)*

2.1

1. (Time Transit)

(1)

$t = \frac{D}{V} \cdot \cos \theta$  ( 8.2.2 )

Q  $k \cdot t \cdot A$

$k :$

$t :$

$$t = \frac{2D \cos \theta}{C} \cdot V$$

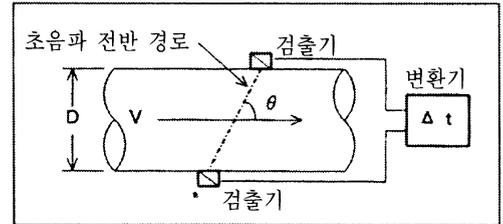


그림 8.2.2 전파시간차법

(2)

가

가 100A

(JEC-4002-1992)

2. (doppler)

(1)

$f_d = \frac{2V \cos \theta}{C} \cdot f_t$  ( 8.2.3 )

Q  $k_p \cdot f_d \cdot A$

$k_p :$

$f_d :$

$f_t :$

$$f_d = \frac{2V \cos \theta}{C} \cdot f_t$$

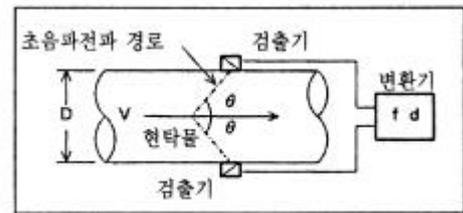
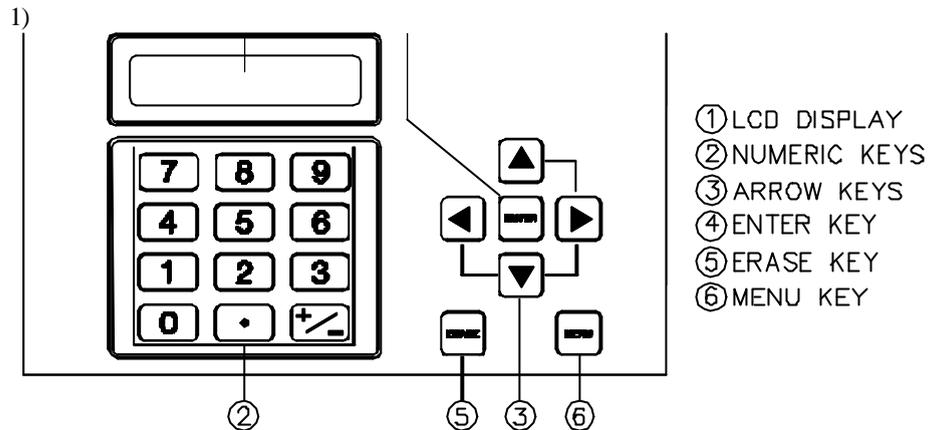


그림 8.2.3 도플러법

(2)

2-2. DCT-7088

- A. 40 2 .
- B. 19 .
- C. 5 .
- D. .
- E. Clamp on type 가 가 .
- F. - 15 m/sec 15 m/sec .
- G. : 25A 5000A
- H. .
- I. 40,000 Data point 1 .
- J. RS232 Serial Interface가 PC .
- K. NEMA 6(IP67) , NEMA7 가 .
- L. -40 ~60 가 , -40 ~150 ,  
가 .(-40 ~243 )
- M. Signal Strength가 .
- N. , .
- O. 8 가 , 16 가 .



2)

**PRIMARY DISPLAYS:**

Flow/Net Totalizer (Menu 00)  
Flow/Velocity (Menu 01)  
Flow/Positive Totalizer (Menu 02)  
Flow/Negative Totalizer (Menu 03)  
Signal Strength/Low Signal Cutoff (Menu 04)

**PIPE:**

Pipe OD (Menu 10)  
Pipe Wall Thickness (Menu 11)  
Pipe ID (Menu 12)  
Pipe Material (Menu 13)  
Pipe Sound Speed (Menu 14)  
Pipe Inside Roughness (Menu 15)

**LINER:**

Liner Material (Menu 16)  
Liner Thickness (Menu 17)  
Liner Sound Speed (Menu 18)  
Liner Inside Roughness (Menu 19)

**FLUID:**

Fluid Type (Menu 20)  
Fluid Sound Speed (Menu 21)  
Fluid Viscosity (Menu 22)

Measurement Units (Menu 42)  
Site Parameters (Menu 43)  
RS232 Configuration (Menu 46)  
Change System Password (Menu 47)

**TRANSDUCER:**

Transducer Type (Menu 23)  
Transducer Mounting (Menu 24)  
Transducer Spacing (Menu 25)

**FLOW:**

Flow Units (Menu 30)  
Max Flow Range (Menu 31)  
Min Flow Range (Menu 32)  
Damping (Menu 33)  
Low Flow Cutoff (Menu 34)  
Low Signal Cutoff (Menu 35)

**TOTALIZER:**

Totalizer Units (Menu 36)  
Totalizer Multiplier (Menu 37)  
Net Totalizer (Menu 38)  
Positive Totalizer (Menu 39)  
Negative Totalizer (Menu 40)  
Totalizer Reset (Menu 41)

Program Relays (Menu 71)

View Relays (Menu 72)

Test Relays (Menu 73)

Change Scale Factor Password (Menu 48)  
Unit ID (Menu 49)

**CALIBRATION (Menu 50):**

Zero Set (Menu 51)  
Scale Factor (Menu 52)  
Sound Speed Compensation (Menu 53)  
Date and Time (Menu 54)

**CURRENT LOOP (Menu 56):**

Current Loop Span (Menu 57)  
Current Loop Calibration (Menu 58)  
Current Loop Test (Menu 59)

**DATA LOG (Menu 80)**

Data Log Interval (Menu 81)

**DIAGNOSTICS:**

Signal Strength/Margin (Menu 90)  
Delta Time/Fluid Sound Speed (Menu 91)  
Reynolds #/Profile Factor (Menu 92)  
Current Loop Output (Menu 93)  
Software/Firmware Rev. Level (Menu 94)

2-4

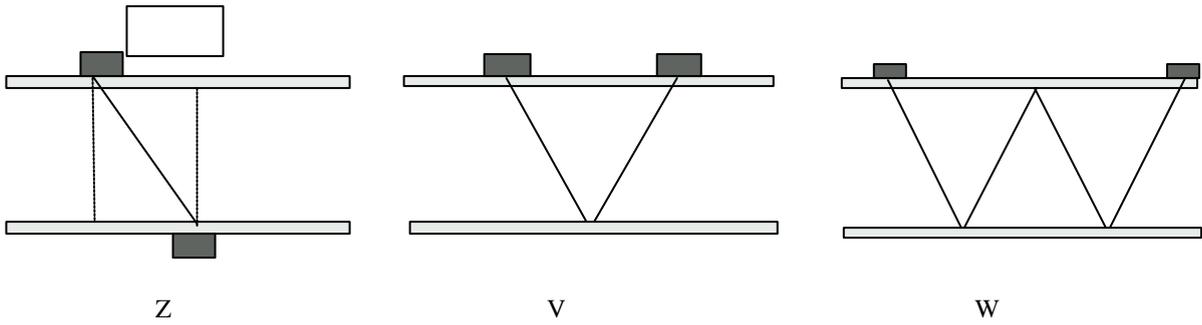
A.	42	.
B.	10	.
C.	12	.
D.	13	.
E.	16	( )
F.	17	.( " )
G.	20	.
H.	23	.( , )
I.	24	.(V , Z , W )
J.	25	.
K.	30	.

, Range mA .( )

2-5.

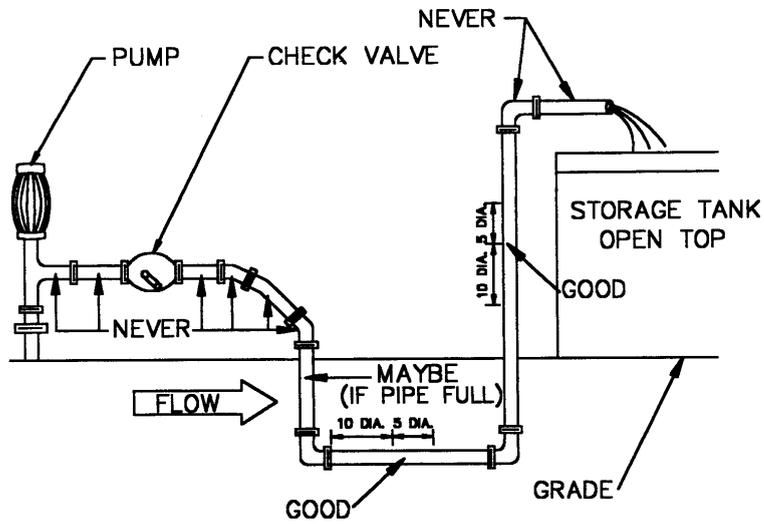
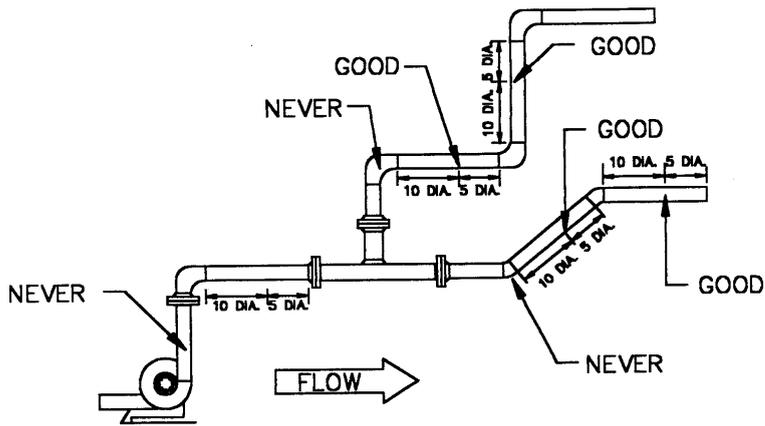
- A. 42 .
  - B. 10 .
  - C. 12 .
  - D. 13 .
  - E. 16 ( )
  - F. 17 .( “ )
  - G. 20 .
  - H. 23 .( , )
  - I. 24 .(V , Z , W )
  - J. 25 .
- 04  
100%가
- K. 30 .
  - L. 30 31 .
  - M. 33 Damping 34 , 35 .
- N. 36 Totalizer ( 30 )
  - O. 37 .
  - P. 38 ~ 40 .  
Positive Totalizer :  
Negative Totalizer :  
Net Totalizer :
  - Q. 57 (4 mA, 20 mA)
  - R. Erase Display .
  - S. Display , .

2-6



Z : V 가  
 V ( ) : Z  
 W : (2 )

2-6



## 2-7 DCT7088 Software

1. Time Gate Windows 가 .

2. Polylink Dos Data Download .

### Time Gate

1. Software PC .

2. . ( PC .)

( )

? ?

MENU46 가 RS232 Configuration MENU Time Gate 가 ,  
( 가 , 가 ) .

? PC

- - . 가 .

3. TIME GATE .

: - -Peek-Time Gate Click .

4. System Identification 가 Main .  
( Main 가 Main Communication Setup 가  
Baud Rate .)

5. Configuration .  
PC .

6. Graph , 가 .

7. Manufacturing Software  
Serial Number .

## Polylink

: 가 Download Excel

1. MENU80 DATA LOG SETUP 가 DATA LOG

MENU 81 Data Interval 가 Data  
( Data )

2. Time Gate MENU 46 RS232 Configuration MENU Polylink  
( Time Gate )

3. PC 가

4. Polylink pl.exe File Press any key to continue  
가 가  
( Windows pl.exe file error 가  
Dos File )

5. Baud Rate Display  
F2 Key Connecting? Wait 가 Setup  
Main

6. PC Main Data가 , , File 가  
File Main 가 가 F4 Key PC  
File 가 가 File PC  
( PC 가 F10 Key )

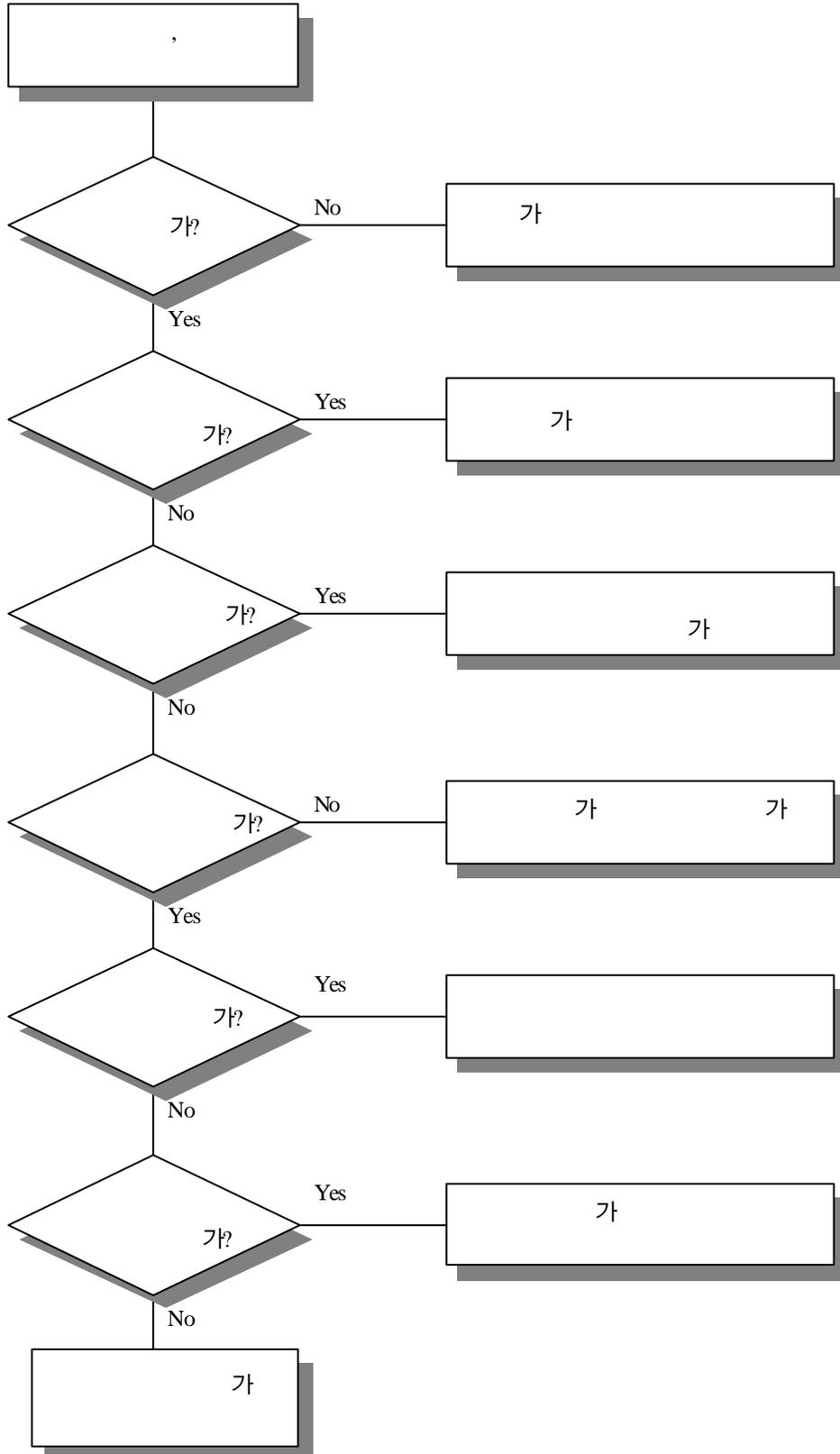
7. Data F5 Key





# Trouble Shooting Guide(Ultrasonic flowmeter 2)

## ? Hunting



### Trouble Shooting Guide(Ultrasonic flowmeter 3)

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