

# UOE

## Highly Efficient Automatic Ultrasonic Inspection System for Weld Seam of UOE Pipe

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*NKK has developed a new automatic ultrasonic inspection system for weld seam of UOE pipe. The features of the system are two manipulators that can be used max.20ch probes, a high sensitivity detection technique for center minute defect and a high accurate seam-tracking sensor. We believe the specification of the system will perfectly meet various and strict customer's inspection needs.*

1. (1) 20  
(2)  
(3)  
(4) S/N>10dB  
UOE Photo 1 Fig.1  
UOE Table 1  
2 2 100  
S/N (Signal to Noise  
ratio)

1)-4)

2  
2 1

SNUP

SNUP

Seam  
sor Sen

OB

Process  
Com

Configuration of the system

Fig.1

Item	Specification
Pipe size	Diameter 19mm, 50.422mm Length 56.40mm Table 1
Inspection method	10MHz/-3dB Max. gain : 100dB PRF 1kHz/ch
Pulser & receiver (Krautkramer)	0.5MHz
Number of channel	L&T : max. 16ch OB : max. 4ch
1.6mm drilled hole Detectability	
Coupling method	L,T : Water gap(0.5mm) OB : Water column (40mm)

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2 6

4)

2 7

PC

Fig.5 Example of the auto-correlation of a chirp pulse and a conventional spike pulse

3 2

60,, 70,,  
Skip 0.25 0.75

Fig.6

3)

S/N  
(2)  
(3)  
.....(2)  
.....(3)

D Diameter t Thickness  
(2) t /D 6%  
70,, 1% 82,,  
70,, 70,,  
S/N

“

Fig.7