PA Crawler for Small Pipe Welds

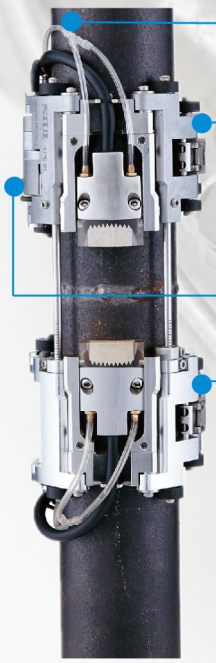
LPS-01/02

The low profile crawlers LPS-01 and LPS-02 are used to perform circumferential weld inspection on small diameter pipes, with OD ranging from 20.32-114.3mm (0.84-4.5 inch).

LPS-01



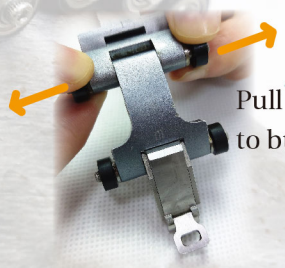
LPS-02



- Pipe Divider PI-05
- Chain LPS-01-EN
  0.34kg (with all links)
- Encoder EN-05
- Chain LPS-01-SP
  0.34kg (with all links)

Simple Buckle Design

Quick change links with no need to disassemble the whole crawler.



Pull the wheels outward to buckle/ unbuckle the link.



- Encoder EN-05
  IP68, 0.08kg
  Precision: 32.6 step/mm
  with 14-core connector



- Urethane Wheels
  Provide smooth radial movement along the pipe and reduce axial drift.

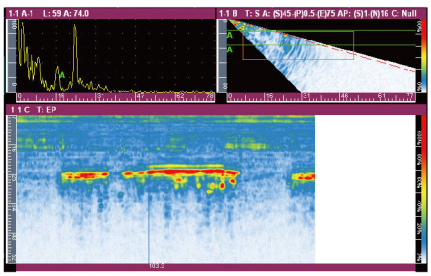
Superior Features

- Compact, lightweight and portable.
- IP68, waterproof, rust-free and CE-compliant.
- Operates within 15mm clearance with 16 elements PA probe, 20mm clearance with 32 elements PA probe, perfect for hard-to-reach area inspection.
- The probes spacing can be adjusted in the range of 0-55 mm.
- Probes and wedges can be quickly and easily changed.
- Provide stable and constant pressure around the pipe full circumference.
- Positive and reverse inspection with high reproducibility and good coupling.
- Two inspection methods: one-side and dual-side inspection.

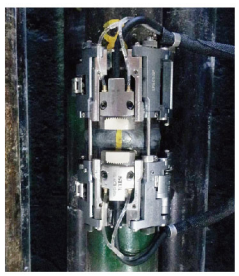


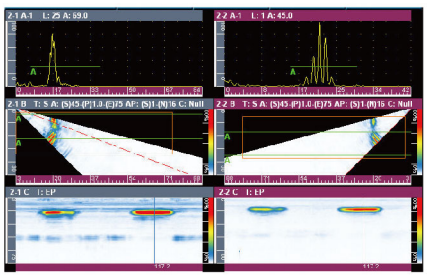
LPS with 32 elements PA probe





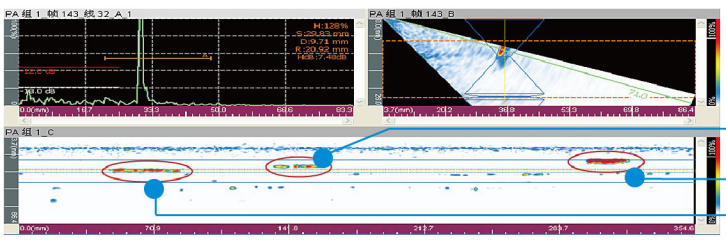
√ One-side inspection is suitable for elbow, pipe tee and pipe-to-component inspection.

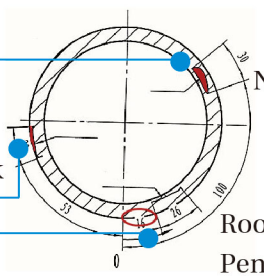




√ Dual-side inspection with 2 PA probes for covering the whole welds at one time of pipe-to-pipe inspection.

Flaw Sketch

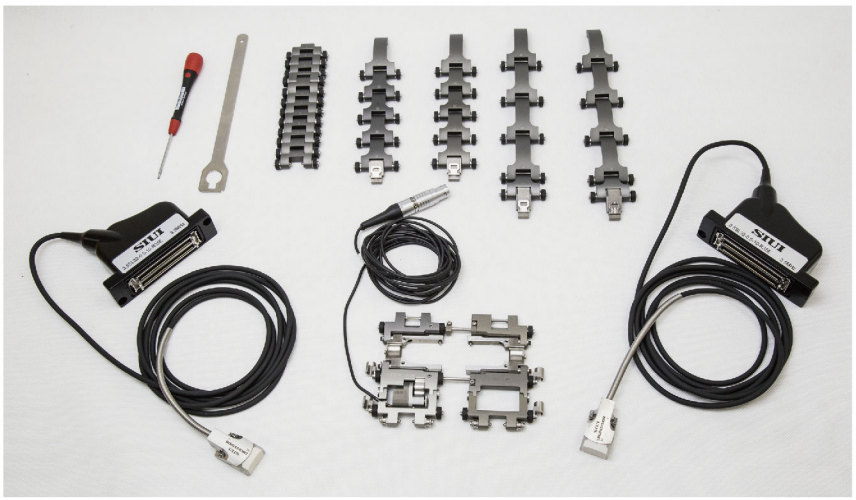




- LPS are compatible with instruments from Olympus/ Sonatest/ GE/ M2M/ TD/ Sonotron, etc.

PA Crawler for Small Pipe Welds





Technical Specification

	LPS-01	LPS-02
Dimension	Height: 15mm Width: 68mm Max. length: 375mm (for pipe with OD 114.3mm)	Height: 15mm Min. width: 136mm (for wedges flank distance 0mm) Max. width: 191mm (for wedges flank distance 55mm) Max. length: 375mm (for pipe with OD 114.3mm)
Weight	0.42kg	0.8kg
Scan Method	Manual, single axis scanning	
Suitable Tested Workpiece (pipe)	OD: 20.32-114.3mm(0.84-4.5inch) Pipe min. clearance: 15mm with 16 elements PA probe; 20mm with 32 elements PA probes	
Operation Temperature	0℃~40℃	
Storage Temperature	-20℃~60℃	

Recommended Accessories

	LPS-01	LPS-02
Probes	Low-profile PA probe (1 pc)	Low-profile PA probe (2 pcs)
Wedges	PA wedges (11 pcs)	PA wedges (22 pcs)
Y Splitter	N/ A	For 2 PA probes to work simultaneously. TQ-A006 for SyncScan TQ-A020 for SyncScan 2
Manual Irrigation Device IH-02	● 0.35kg ● Capacity: 1 L ● With pipe: 4×2.5mm (OD×ID), 3m length ● Manually pressurized, with adjustable flow valve	



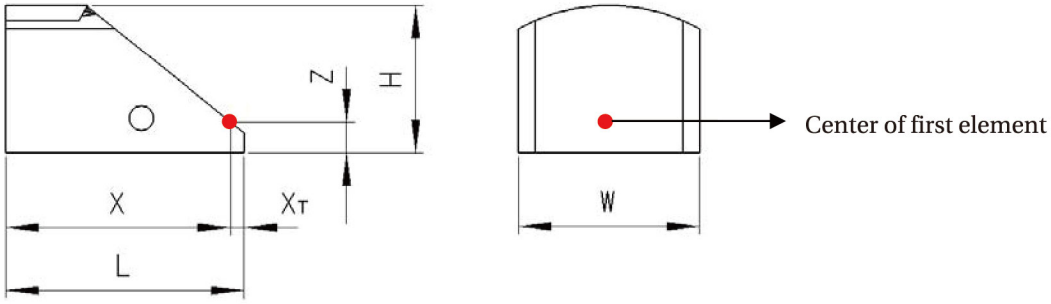


Low-profile PA Probe

Probe Model	Frequency	Elements No.	Pitch	Elevation	Elevation Curvature Radius	Active Aperture	Corresponding Wedge
	MHz		mm	mm	mm	mm	
3.5SL16-0.5-10-R35E	3.5	16	0.5	10	35	8	8R(35)60S4-I-AOD-XX
5.0SL16-0.5-10-R35E	5	16	0.5	10	35	8	
7.5SL16-0.5-10-R35E	7.5	16	0.5	10	35	8	
10SL16-0.5-10-R35E	10	16	0.5	10	35	8	
3.5SL32-0.5-10-R35E	3.5	32	0.5	10	35	16	16R(35)60S4-I-AOD-XX
5.0SL32-0.5-10-R35E	5	32	0.5	10	35	16	
7.5SL32-0.5-10-R35E	7.5	32	0.5	10	35	16	
10.0SL32-0.5-10-R35E	10	32	0.5	10	35	16	

● 3.5SL16-0.5-10-R35E has larger size than other16 elements PA probes.

PA Wedge



Wedge Model	Description	X	X_T	Z	Velocity	Refracted Angle in Steel	L	W	H	Fixed Aperture Diameter
		mm	mm	mm	m/s		mm	mm	mm	mm
8R(35)60S4-I-AOD-21	40°-70°shear wave angle block	17.8	0.2	2.5	2360	60°	18	22	15.5	ϕ3
8R(35)60S4-I-AOD-26									15.2	
8R(35)60S4-I-AOD-33									15	
8R(35)60S4-I-AOD-42									14.2	
8R(35)60S4-I-AOD-48									13.9	
8R(35)60S4-I-AOD-60									13.4	
8R(35)60S4-I-AOD-73									13	
8R(35)60S4-I-AOD-88									12.9	
8R(35)60S4-I-AOD-101									12.6	
8R(35)60S4-I-AOD-114									12.7	
8R(35)60S4-I									11.7	

Wedge Model	Description	X	X_T	Z	Velocity	Refracted Angle in Steel	L	W	H	Fixed Aperture Diameter
		mm	mm	mm	m/s		mm	mm	mm	mm
16R(35)60S4-I-AOD-21	40°-70°shear wave angle block	26.7	2.3	4.6	2360	60°	29	22	21.7	ϕ3
16R(35)60S4-I-AOD-26									21.5	
16R(35)60S4-I-AOD-33									21.1	
16R(35)60S4-I-AOD-42									20.4	
16R(35)60S4-I-AOD-48									20	
16R(35)60S4-I-AOD-60									19.6	
16R(35)60S4-I-AOD-73									19.3	
16R(35)60S4-I-AOD-88									19	
16R(35)60S4-I-AOD-101									18.9	
16R(35)60S4-I-AOD-114									18.8	
16R(35)60S4-I									17.9	

● Low-profile probes and wedges are compatible with Cobra from Olympus and Circ-it from Jireh.

On-site Application



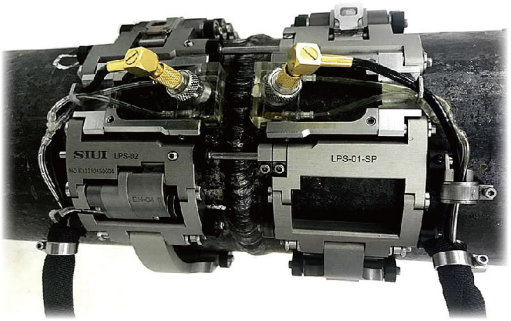




TOFD Crawler for Small Pipe Welds

LPS-02

The crawler LPS-02, with TOFD probes and wedges are also available for TOFD inspection for small pipe welds, with OD ranging from 20.32-114.3mm (0.84-4.5 inch).



Superior Features

- IP68
- Precise 32.6 step/mm encoder
- Narrow pulse TOFD probe with small crystal to reduce blind zone.
- 10 pairs of curved wedges with short flank for good coupling
- No requirement on defect orientation, high detection rate

Recommended Accessories

	LPS-02
Probes	TOFD probe (1 pair)
Cables	L5V-LEMO 00-3M (1 pair)
Wedges	TOFD wedges (10 pairs)
Manual Irrigation Device IH-02	● 0.35kg ● Capacity: 1 L ● With pipe: 4×2.5mm (OD×ID), 3m length ● Manually pressurized, with adjustable flow valve



Technical Specification

	LPS-02
Dimension	Height: 15mm Min. width: 136mm Max. width: 191mm Max. length: 375mm (for pipe with OD 114.3mm) Dual probe wedges flank distance: 6-61mm
Weight	0.8kg
Scan Method	Manual, single axis scanning
Suitable Tested Workpiece (pipe)	OD: 20.32-114.3mm(0.84-4.5inch) Pipe min. clearance: 25mm
Operation Temperature	0℃~40℃
Storage Temperature	-20℃~60℃

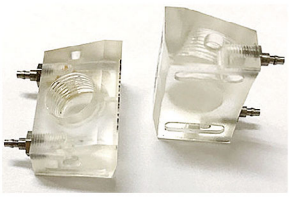
TOFD Probe

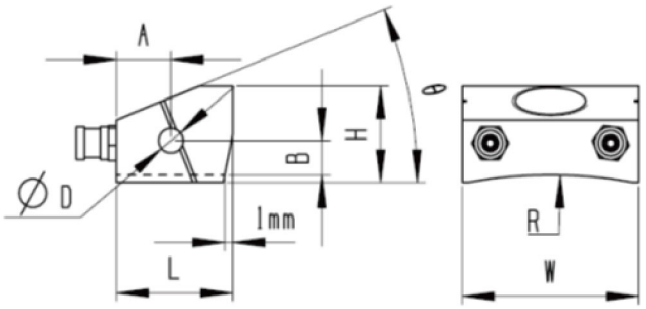


Probe	Frequency	Crystal Diameter	Max. Pulse Voltage	Screw Thread Unit	Compatible Wedge
	MHz	mm	V		
T5-3MD-UN	5	3	-350	UN:3/8-32UNEF	TFJ-45/60/70/80-UN-I-AOD-XX
T5-6MD-UN	5	6	-350		
T7.5-3MD-UN	7.5	3	-200		
T7.5-6MD-UN	7.5	6	-200		
T10-3MD-UN	10	3	-200		TFK-45/60/70/80-UN-I-AOD-XX
T10-6MD-UN	10	6	-200		
T15-3MD-UN	15	3	-150		

TOFD Crawler for Small Pipe Welds

TOFD Wedge





Wedge Model	Type	Velocity m/s	Refracted Angle in Steel	L mm	W mm	H mm	ϕD mm	R	Screw Thread Unit
TFJ-60-UN-I-AOD-21	Resins Longitudinal Wave Wedge	2730	60	14.5	22	14.7	3x2	11	UN:3/8-32UNEF
TFJ-60-UN-I-AOD-26						14.4		13.5	
TFJ-60-UN-I-AOD-33						14.2		16.95	
TFJ-60-UN-I-AOD-42						13.4		21.25	
TFJ-60-UN-I-AOD-48						13.1		24.25	
TFJ-60-UN-I-AOD-60						12.6		30.25	
TFJ-60-UN-I-AOD-73						12.3		36.75	
TFJ-60-UN-I-AOD-88						12		44.75	
TFJ-60-UN-I-AOD-101						11.9		51	
TFJ-60-UN-I-AOD-114						11.8		57.5	

Wedge Model	Type	Velocity m/s	Refracted Angle in Steel	L mm	W mm	H mm	ϕD mm	R	Screw Thread Unit
TFK-60-UN-I-AOD-21	Resins Longitudinal Wave Wedge	2360	60	14.5	22	14.7	3x2	11	UN:3/8-32UNEF
TFK-60-UN-I-AOD-26						14.4		13.5	
TFK-60-UN-I-AOD-33						14.2		16.95	
TFK-60-UN-I-AOD-42						13.4		21.25	
TFK-60-UN-I-AOD-48						13.1		24.25	
TFK-60-UN-I-AOD-60						12.6		30.25	
TFK-60-UN-I-AOD-73						12.3		36.75	
TFK-60-UN-I-AOD-88						12		44.75	
TFK-60-UN-I-AOD-101						11.9		51	
TFK-60-UN-I-AOD-114						11.8		57.5	

● 45/ 60/ 70/ 80 degree for selection.

SIUI

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CE

Specifications and appearance are subject to change without prior notice.

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