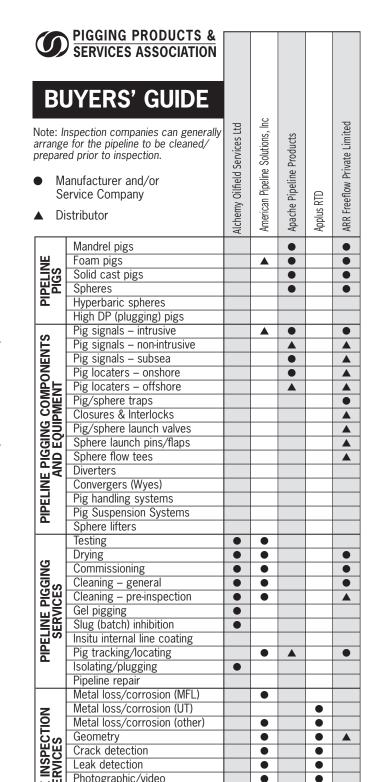
THE PPSA BUYERS' GUIDE

A breakdown of the products and services provided by the Members will be found in the following chart. The following is an explanation of some of the less well known terms and items which are listed:

- 1. "Utility pigs" are used for a variety of purposes such as internal pipe wall cleaning, condensate removal, water fill for pressure testing, gauging, dewatering, drying, commissioning etc. There are many different types available for use in uni-directional, bi-directional and multidiameter pipelines. Utility pigs have been divided into the four different forms in which they are made:
 - a) "Mandrel pigs" are assembled from a number of component parts, and spare parts are available.
 - b) "Foam pigs" are moulded from polyurethane foam with various configurations of solid polyurethane strips and/ or wire bristles, studs etc. permanently bonded to them.
 - c) "Solid cast pigs" are moulded in one piece usually from polyurethane.
 - d) "Spheres" are hollow balls, usually made from polyurethane and inflated to the optimum diameter with water/
- 2. "Hyperbaric spheres" and "High DP pigs" are used mainly on subsea pipelines as a temporary plug while the two ends of the line are welded together.
- 3. "Pig signals" indicate the passage of a pig. Intrusive types are mechanically actuated via a trigger or plunger which protrudes into the line. Non-intrusive and subsea signals may employ magnetic, ultrasonic or radioactive techniques.
- 4. "Pig locators" are used to locate a pig which may or may not be in motion.
- 5. "Sphere flow tees" are specially designed to allow a sphere to pass an offtake without stalling. They may be called simply "Sphere tees" or "Flow tees".
- 6. "Sphere lifters" are usually in the form of tongs or suction devices.
- 7. "Pig suspension systems" are designed to keep a pig in the centre of a pipeline. They usually comprise spring-loaded skids or wheels and are used for inline inspection tools, or other relatively heavy pigs, and in multi-diameter pipelines.
- 8. There are two main methods of finding metal loss (corrosion): Magnetic flux leakage (MFL) and ultrasonics (UT). Another emerging technology involves the use of eddy currents.

Further, more detailed information on pigs and pigging will be found in the PPSA book entitled: "An Introduction to Pipeline Pigging". Contact ppsa@ppsa-online.com for details.



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CONSULTANCY SERVICS

INDUSTRIAL PIGGING

Crack detection

Photographic/video

Spanning/line cover

Smart Utility Pigging

Feasibility studies

Pig development

Pig testing/trials

Safety

Controls

Installation

Pigs

Defect assessment

Components/fittings

System Design

Fitness for purpose assess

Pig/system design

Leak detection

Bend detection

Profile/Mapping

Picsinic Products & Services Association BUYERS' GUIDE Note: imperion companies can generally prepared prof to inspection. Manufacture and/or Service Company A Distributor Manufacture and/or Service Company Manufacture and/or Service Company A Distributor Manufacture and/or Service Company A Distributor Manufacture and/or Service Company Manufacture and																				
Mandrel pigs								ion Tech. Co Ltd	ited Company PLC									rvices Limited	H & Co KG	
Mandrel pigs	Note: In arrange prepare	espection companies can generally for the pipeline to be cleaned/ d prior to inspection.	es Ltd					^o ipeline Inspect	ogy Public Lim	ucts	SAS	Services, Inc			ı Bhd			nd Pipeline Se	Detection Gmb	dn Bhd
Mandrel pigs			: Oil Servic	Iughes	chnical		s.	etroleum F	1 Technolo	ater Prod	neros PVM	Pipeline	ch Ltd	SA.	Efektif Sdr	ineering	ndustries	Process a	SERG Leak	Avenue S
Foam pigs	▲ Di	stributor	Athantic	Baker	B.G. Te	ē	CEPS a	China P	DEXON	Drinkw	Elaston	Endurc	Enerme	ENTEG	Eureka	GD Eng	Girard I	Global	GOTTSI	Growth
High DP (plugging) pigs				_	•			•	•		•	_			_		_			
High DP (plugging) pigs	屋の				_				_		_						_			
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High DP (plugging) pigs	邑				_															
Pig. signals - non-intrusive A					_						•									
Sphere litters	(0	Pig signals – intrusive		A	A			•	A	A	•	•			A	•	A			
Sphere litters	Ĕ	Pig signals – non-intrusive			A	_			A			•			A	•	_		•	
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Sphere litters					_	_		•	_		_						_		•	
Sphere litters					_		•	•	_											
Sphere litters	გგ	Closures & Interlocks		A	_							_				•	A			
Sphere litters	95				A			•				A				•	A		A	
Sphere litters	<u>Sen</u>	Sphere launch pins/flaps														•				
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Sphere litters	Ne Ne																			
Sphere litters		Pig handling systems		•	A			•				•			A		A		•	
Sphere litters	<u> </u>	Pig Suspension Systems																	•	
Drying	<u> </u>			A						A		A					A			
Commissioning				_					-		_		-						•	
Slug (batch) inhibition	<u>5</u>		_		_				_		•									
Slug (batch) inhibition			_	_	_		_				•	•			•					_
Slug (batch) inhibition			•	•	•		•	•	•		•	•	•	A	•			•		•
Solating/plugging	EFE	Gel pigging	•	•	•		•		•				•					•		
Solating/plugging	SEN	Slug (batch) inhibition		•	•		•		•			A	•					•		
Solating/plugging	핕							_		A				A						
Netal loss/corrosion (MFL)	<u> </u>			-							_							•	_	
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Metal loss/corrosion (other)		Metal loss/corrosion (MFL)		_	_		_	•	_			•		•						•
Smart Utility Pigging	N			_	•		A													
Smart Utility Pigging	ΙĔ		_	_			A						-							_
Smart Utility Pigging) ES	Crack detection		_					_		_				_					_
Smart Utility Pigging	VSF VIC	Leak detection		_	•			_	_										•	
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Smart Utility Pigging	<u> </u> S			_	•				_					•	_			•	_	_
Smart Utility Pigging	Z			_	<u> </u>			•	•			•	<u> </u>	•	_					•
Feasibility studies Pig/system design Pig development Pig testing/trials Defect assessment Fitness for purpose assess Safety Feasibility studies A A A A A A A A A A A A A	-			_					•						A					
Pig/system design • • • • • • • • • • • • • • • • • • •			<u> </u>	_	_		•	•	<u> </u>	A			•	•	_			•		
	\S_*	Pig/system design		•	_			•	•		•	•		•	•				•	•
	ICS			•				•	•	A	•	•		•	•				•	•
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Components/fittings Controls System Design Installation Components/fittings A A • • • • • • • • • • • • • • • • •				•	_			_	<u> </u>	A	•	•					•		•	
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System Design	IST IGI	Controls							A		•									
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Note: In arrange prepare	SERVICES ASSOCIATION JYERS' GUIDE Inspection companies can generally a for the pipeline to be cleaned/ and prior to inspection. anufacturer and/or ervice Company stributor	Gulf Petrochemical Services & Trading LLC	syra Industrial Technology (Dongguan) Co., Ltd.	Halliburton (Pipeline & Process Services)	KM Testing AS	Inline Services LLC.	INPIPE PRODUCTS™	ntero Integrity Services BV	Italmatch Chemicals GB Ltd	Jee Ltd	Kleiss & Co. bv	Knapp Polly Pig Inc	Limpro Nacional, SA de CV	Middle East Manufacture of Pipe Cleaning Equipment	Morken Group	NAFTOSERWIS Sp. z 0.0.	NDT Global	Online Electronics Ltd	3P Services GmbH & Co. KG
	Mandrel pigs	<u>.</u>	<u> </u>	<u> </u>			.=	-			•	• ~	•				_		c
PIPELINE PIGS	Foam pigs	<u> </u>	<u> </u>	<u> </u>		•	•				•	•	•	•	_				
<u> </u>	Solid cast pigs	_	A	A	<u> </u>	•	•				•	•	•	•	A				
	Spheres Hyperbaric spheres	A	A	A	A	•	•				•	•	•	•	A				
"	High DP (plugging) pigs		A	A	A	•	•				•	•		•	A				
	Pig signals – intrusive	A		_			•				<u> </u>	A	A	•	_				
	Pig signals – non-intrusive	A		A	A	•	A				A	A	A	A	A			•	•
	Pig signals – subsea			A		A	•				A							•	•
6 .	Pig locaters – onshore	A		A	<u> </u>	_	•				A	A	A	A	A	•		•	•
FE	Pig locaters – offshore	_		A	A	A	•				A	A		A	•			•	•
│윉翼	Pig/sphere traps Closures & Interlocks	A		A		A	•				A			A	A				
효류	Pig/sphere launch valves			_							_			_					
	Sphere launch pins/flaps	A		A	A	A	•				A			A					
등	Sphere flow tees	A		A		A	•				A			A					
PIPELINE PIGGING COMPONENTS AND EQUIPMENT	Diverters			A	<u> </u>	<u> </u>	•				A								
	Convergers (Wyes) Pig handling systems	A		A	A	A	•				A			•					
	Pig Suspension Systems					_													
_ □	Sphere lifters	_		_	_	A	•				_								
	Testing	•		•	•			•					•						
(5	Drying	•		•	•			•	•				•		•				
	Commissioning	•		•	•			•	•				•						
LINE PIGGING SERVICES	Cleaning – general Cleaning – pre-inspection	•	•	•	•	•		•	•				•		•				•
트	Gel pigging		•	•					•						•				
	Slug (batch) inhibition	•	•	•	•			•	•				•		•				
급	Insitu internal line coating	•	•	A	•														
PIPEL	Pig tracking/locating	•	•	•	•	A	•	•					•		•	•		•	•
	Isolating/plugging	•	•	•	•		•		•						•				
	Pipeline repair Metal loss/corrosion (MFL)	•	•	A	A			•	•		•				•				•
_	Metal loss/corrosion (UT)										_					•	•		•
<u> </u>	Metal loss/corrosion (other)	<u> </u>		_	_			•			_				•		•		•
ြုပ္ပ	Geometry		•	A	A	•		•			A		•		•	•	•		•
IN LINE INSPECTION SERVICES	Crack detection	_	•	A	<u> </u>	_		•							•	•	•		
Į≅≅	Leak detection Photographic/video	A	•	A	•	•	•	•			A				•		•		•
빌딩	Bend detection		•	A		•		•			A					•	•		
	Profile/Mapping		•	_	A	•		•			_		•		•	•	•		•
=	Spanning/line cover		•	<u> </u>	<u> </u>						_				•				•
	Smart Utility Pigging	A	•	A	A	•		•			A				•		•		
≽	Feasibility studies		•	•	•		•	•		•	•			•	_		•		•
CONSULTANCY SERVICS	Pig/system design Pig development		•	•	•	•	•	•		•	•			•	•	•	•		•
\frac{1}{2}	Pig development Pig testing/trials			•		•		•		•	•	•	•	•			•		•
SU	Defect assessment		•	•				•		•		•		•	•	•	•		
ON	Fitness for purpose assess		•	•	•			•		•		•		•	•	•	•		
၁	Safety	A	•	•	•			•		•				•					
A.	Pigs	A		A	<u> </u>	•	•		•		•	•	•	•	A			A	
	Components/fittings	•		•	A		•						A	•	A				
INDUSTRIAL PIGGING	Controls System Design	•		•	•	•		•											
원교	Installation			•			•	•											
										I				<u> </u>				ı	



PIGGING PRODUCTS & SERVICES ASSOCIATION
SERVICES ASSOCIATION

	SERVICES ASSOCIATION													& Co KG				_	
Note: Ir arrange prepare	JYERS' GUIDE Inspection companies can generally a for the pipeline to be cleaned/ and prior to inspection. anufacturer and/or	4Pipe Hidropig Engenharia Industrial LTDA	Pigs Unlimited International LLC		dn	Pipeline Engineering (Part of Nylacast Group)	pment, Inc	ations Ltd	Pipeline Pigging Products Inc	ses LLC (PLS)	enharia	ernational CV	>	- Pipeline Services International GmbH & Co KG	PT. Farrel Internusa Pratama	is Indonesia	Semilang	RAS Rohrleitungs- und AnlagenService GmbH	Reinhart Hydrocleaning SA
Se	ervice Company estributor	4Pipe Hidropig	Pigs Unlimite	Pigtek Limited	Pipecare Group	Pipeline Engin	Pipeline Equipment, Inc	Pipeline Innovations Ltd	Pipeline Pigg	Pipeline Services LLC (PLS)	PipeWay Engenharia	Pipesurvey International CV	PolyEurope bv	PSI – Pipeline	PT. Farrel Inte	PT. Titian Servis Indonesia	PT Tri Mulya Gemilang	RAS Rohrleitur	Reinhart Hyd
	Mandrel pigs	•	•	•	•	•	•		A	A	A	•	•	A	•	•	A	•	
PIPELINE PIGS	Foam pigs	•	•	A	•	•	•		•	<u> </u>	<u> </u>		•	A	A	A	<u> </u>	A	
급흥	Solid cast pigs	•	•		•	•	•		<u> </u>	A	A		•		<u> </u>	A	<u> </u>		
들	Spheres Hyperbaric spheres	•	•		•	•	•		A	A	A		•		A	A	A		
-	High DP (plugging) pigs				•	•						•	•						
	Pig signals – intrusive		A				•		_	_		A	<u> </u>		•	_	A		
TS	Pig signals – non-intrusive	A	_						_	_	_	_	_		Ā	_		A	
	Pig signals – subsea	_								_	_	_				<u> </u>			
N	Pig locaters – onshore	A	A	•	•	A			A	A	A	A	A		A	A		A	
	Pig locaters – offshore	A			•	A				A		A	A			A		A	
	Pig/sphere traps	•	A		•		•			A	A				•	A	A	•	
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Closures & Interlocks		A		•		•			A	A				•	A	A		
IN	Pig/sphere launch valves	A	A							A					A	A			
PIPELINE PIGGING COMPONENTS AND EQUIPMENT	Sphere launch pins/flaps Sphere flow tees				•					A						A			
	Diverters									A									
	Convergers (Wyes)				•					_						_			
	Pig handling systems	•		•	•	•	•			_			•		•	<u> </u>		•	
르	Pig Suspension Systems			•		•				A						A			
	Sphere lifters					•	•									A			
	Testing	•	A							•			A	•	•	•	•	•	•
5	Drying	•	A		_				•	•			A	•	•	•	•	•	•
Ž	Classing	•	A		•				•	•			A	•	•	•	•		•
LINE PIGGING SERVICES	Cleaning – general Cleaning – pre-inspection	•	A	•	•	•				•		•		•	•	•	•	•	•
<u>교</u> 일	Gel pigging																		
	Slug (batch) inhibition				•				•	•		•		•		•		•	
급공	Insitu internal line coating		A									•				•			
PIPEL	Pig tracking/locating	•		•	•	•			•	•		•	A	•	•	•	•	•	
	Isolating/plugging					•				•		•			•	•			
	Pipeline repair					•				•					•	•	•		
	Metal loss/corrosion (MFL) Metal loss/corrosion (UT)		A		•					•	•	•	A		A	A	A		
IN LINE INSPECTION SERVICES	Metal loss/corrosion (other)		A		•					•		•	A		A	A	A		
Ē.	Geometry							•		•				•	_		_	•	
	Crack detection	A			•							A		_	_	_	_		
NS N	Leak detection		A		•					•				•	A	A		•	
	Photographic/video				•							•			A	A			
≧°	Bend detection		A		•			•		•	•	•			A	A			
Z	Profile/Mapping		A		•			•		•	•	•			A	A	A		
=	Spanning/line cover Smart Utility Pigging				•							•			A	A			
	Feasibility studies	•	A	•	•	•		•		•		•			•	•		•	•
 	Pig/system design	•											•		•	•			
CONSULTANCY SERVICS	Pig development	•	•	•	•	•	•	•	•	•	•	•	•		•	•		•	•
	Pig testing/trials	•	A	•	•	•		•	•	•	•	•			•	•			•
る説	Defect assessment				•					•	•	•			•	•			
Į,	Fitness for purpose assess				•	•				•	•	•			•	•			
	Safety	_				_						•				•			
₽ B	Pigs Components (fittings	•	A	•	•	•	•		•	A		•	•		•	•	A	•	
INDUSTRIAL PIGGING	Components/fittings Controls				•		•			A		-				•	A	A	
US GG	System Design			•	•					•		-			•	•			
N N	Installation			<u> </u>	•					•						•			
											-								



	PIGGING PRODUCTS & SERVICES ASSOCIATION															
Note: li arrange prepare	JYERS' GUIDE Inspection companies can generally a for the pipeline to be cleaned/ and prior to inspection.			Shenyang Emt Piping Technology Co., Itd	Shenyang University of Technology	Sofield Analytic Pipe Asia SDN BHD		П	pa			Iranspipe Integrity Solutions Middle East, FZE		ram & Co. LLP		Services b.v.
S	anufacturer and/or ervice Company istributor	ROSEN Group	Sanccus Ltd	Shenyang Emt	Shenyang Uni	Sofield Analytic	STATS Group	T. D. Williamson	Topline Limited	Tracerco Ltd	Trans Asia	Transpipe Integ	TRAPIL	Vee Kay Vikram & Co.	VP Engineers	WSG Industrial Services b.v.
Note: Inspecarated by Services	Mandrel pigs	•		•	•	•		•	A		A			•	•	A
当	Foam pigs	A		•	•	A		•	A		A			•	•	A
<u></u>	Solid cast pigs	•		•	•	•		•	A		A			•	•	A
문문	Spheres	A		•	•	A		•	A					•	•	A
□	Hyperbaric spheres	A		A	•			•							•	A
	High DP (plugging) pigs	A		A	•									•	•	A
40	Pig signals – intrusive			•	•	A		•						•	•	A
IIS	Pig signals – non-intrusive	A		•	•	A		•						•		A
EN	Pig signals – subsea	A		•	•	A		•						•		A
Z	Pig locaters – onshore	A		•	•	A		•	A					A		A
Iĕ⊨	Pig locaters – offshore	A		•	•	A		•	A					A		A
	Pig/sphere traps	A		A	•	•							•	•		•
∣ઇ≧	Closures & Interlocks	A		•				•						•		A
95	Pig/sphere launch valves	A		A										•		
들다	Sphere launch pins/flaps	A												•		
20	Sphere flow tees	A						•						•		
₽N	Diverters	A												•		
Z	Convergers (Wyes)	A												•		
	Pig handling systems	•						•						•		•
♣	Pig Suspension Systems	•						•						•		•
1-	Sphere lifters	A						•						•		
	Testing	•						•	•		•			•		•
1	Drying	•						•	•		•			•		•
18	Commissioning	•						•	•		•			•		•
SG	Cleaning – general	•			•			•	•		•	•		•		•
운명	Cleaning – pre-inspection	•			•			•	•		•	•	•	•		•
I⊞Ž	Gel pigging	A	•						•		•			•		•
	Slug (batch) inhibition	A						•	•		•			•		•
Ä _∞	Insitu internal line coating	A												•		•
 	Pig tracking/locating	•			•			•	•	•	•	•	•	•		•
	Isolating/plugging	A					•	•			•			•		•
	Pipeline repair	•					•	•	•		_		•	•		•
	Metal loss/corrosion (MFL)	•			•	•		•	A		•	•				A
N N	Metal loss/corrosion (UT)	•				•			A		•	•	•			A
<u>≓</u>	Metal loss/corrosion (other) Geometry	•				•		•	_	•	•	•				•
	Crack detection	•				_		•	A	•		•	•			
무용	Leak detection				•	A				•	•			•		•
I≧≩	Photographic/video	•				•										
빌뱅	Bend detection	•						•			•	•	•	•		
=	Profile/Mapping	•				•					•	•				A
Z	Spanning/line cover	•														_
	Smart Utility Pigging	•			•			•	A		•	•	•			_
	Feasibility studies	•			•		•	•	•		•	Ť	•			-
<u>[</u>	Pig/system design	•			•	•		•					•	•		•
SAN	Pig development	•			•	•	•	•			•			•		•
	Pig testing/trials	•			•	•	•	•			•					•
区語	Defect assessment	•			•	A		•					•			•
16°S	Fitness for purpose assess	•			•	A		•	•				•			•
	Safety	•			•			•	•				•			•
7	Pigs	•		•	•	•		•			A			•		A
NGN NGN	Components/fittings	A		•	•	•		•						•		A
	Controls	•			•			•						•		
INDUSTRIAL PIGGING				1	•	I		•		l						
	System Design Installation	•														-