

March 20, 2025

NEWS

BREAKING NEWS

21:00

New AI Tool Makes Acoustic Sensors Obsolete

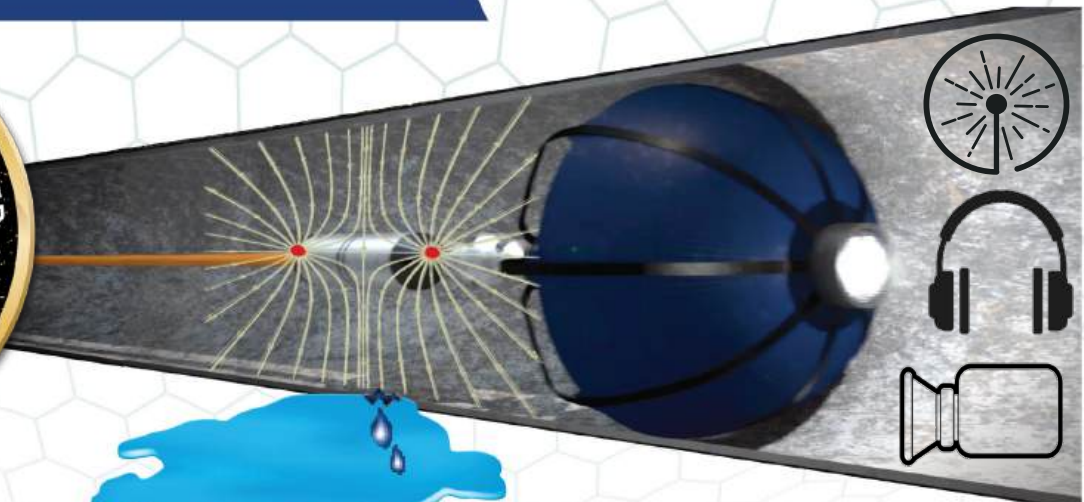
Electro Scan Announces AI Breakthrough in Leak Detection



“The trick is knowing where to STOP the camera. By already detecting the leak using Electro Scan’s FELL, field operators know where to STOP the camera while still inside the pipe.”

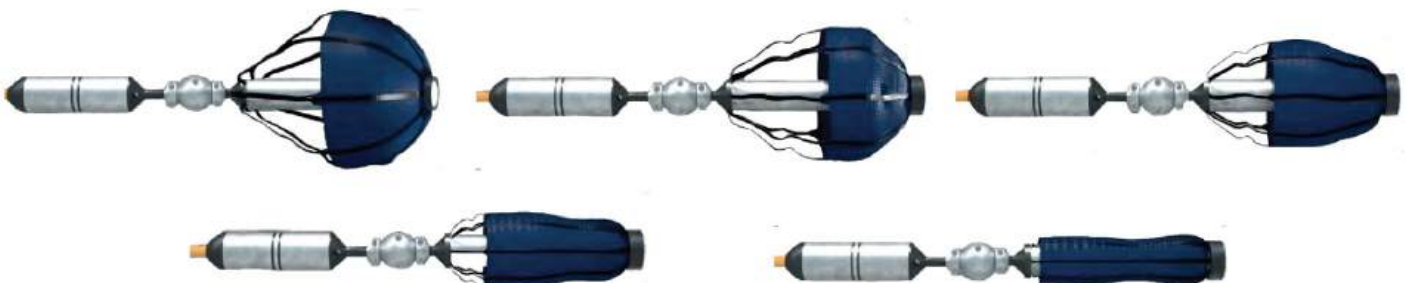
***Mike App,
Executive Vice President
Electro Scan Inc.***

ELECTRO SCAN DELTA



NO IMPACT DUE TO PRESSURE, NOISE, GROUNDWATER, PIPE MATERIAL, OR CUSTOMER USAGE.

Condition	Performance
Features	Low Voltage Conductivity FELL, CCTV, Acoustic Hydrophone, Pressure Sensor
Pipe Diameters	3-60 inches (76-1500mm)
Pressure	ZERO to 12 bar (174 psi)
Temperatures	41-86° F / 5-30° C
Common Launch Points	Air Release Valves, Blow Off Valves, Gate Valves, Hot Taps, Hydrants, and Meters
Flow Rate	Min. Flow Rate for Hydrochute Propulsion is 0.3m/sec. Pull-Through able to handle NO FLOW conditions.
Pricing	Per Day or Per Meter Based on Project Size, Access Difficulty, Insertion Points, Diameters, and Traffic Control
Pipe Lengths Per Survey	1km Recommended for CCTV. Up to 2km with specialised equipment.
Average Production	1-2 Pipe Sections per Day



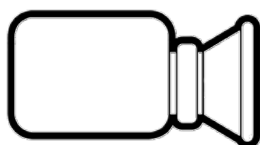
* Integrated Acoustic lets utilities compare results with Conductivity, revealing what they are 'not' hearing

MULTI-SENSOR TRIDENT PROBE

Pressurized Water Main Leak Detection.
Finding & Measuring Leaks in GPM or LPS.



ELECTRO SCAN



CCTV

**NEW
PRODUCT**



Condition	Performance
Probe Sensors	Low Voltage Conductivity FELL and CCTV
Pipe Diameters	4-10 inches (100-255mm)
Pressure	0 to 160 psi (11 bar)
Temperatures	5-30°C, 41-86°F
Flow Rate	Push Cable able to handle flow or no-flow conditions
Pricing	Per Day or Per Meter Based on Total Project Size
Launch Points	Hydrants, Air Release Valves, Blow Off Valves, Gate Valves, Hot Taps, Meters
Pipe Length Per Survey	Up to 400ft (120m) in either direction from access
Construction	High impact ABS & powder-coated, zinc-plated mild steel
Dimensions (Length x Width)	5 inches x 1.6 inches
Camera Features	Display: 10.1", 1280 x 800 HD color TFT Storage: Internal 128Gb, USB flash storage supported Power Options: Mains Input (100-240 VAC), DC Output (16 VDC) or Built-In Battery (4S2P) Focal Range: 10mm to ∞ Active Pixels: 768 x 492 (NTSC) / 765 x 582 (PAL) LED Luminance: ≥ 208 Lumens Resolution: ≥ 460 TVL

Relying on Hearing Leaks



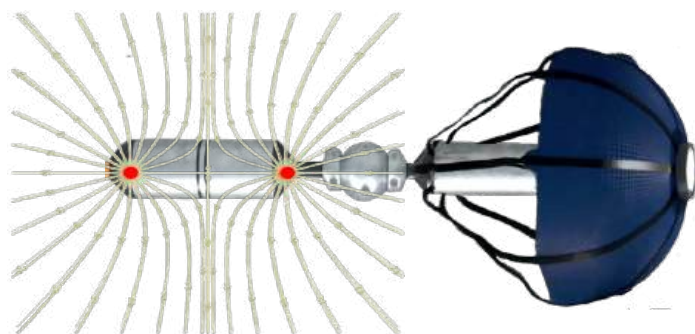
What's Out

What's In

Measuring The Size of Holes



Ohms Law + Orifice Equation



1cm Accuracy, GPM / LPS

Distributed Cracks



Localized Cracks



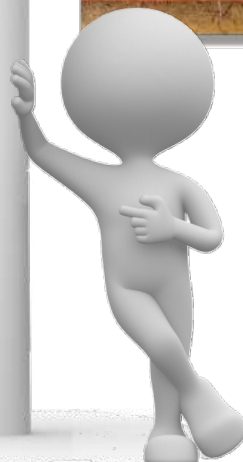
Joint Leakage



Customer Tap Connections



Unambiguous,
Unbiased,
& Repeatable



Water Leak Detection Product Comparison

MULTI-SENSOR DELTA PROBE COMPETITIVE ADVANTAGES

Company	YES ☒	NO ☐	electroscaninc.		Aquam	Xylem/Pure/WRc	Aganova	Ingu	Utilis	
Features / Product			Delta	Trident	JD7	Sahara	SmartBall®	Nautilus	Recon	Satellite
Technology			Acoustic, CCTV, Conductivity	CCTV, Conductivity	Acoustic, CCTV	Acoustic, CCTV	Acoustic	Acoustic	Acoustic	Synthetic Aperture Radar
In-Pipe Connection			Tethered	Tethered	Tethered	Tethered	Free Flowing	Free Flowing	Free Flowing	
Device										
Visual Inspection with Camera			☒	☒	☒	☒	☐	☐	☐	☐
Joint Spacing			☒	☒	☐	☐	☐	☐	☐	☐
Leak Location – Accuracy 1cm			☒	☒	☐	☐	☐	☐	☐	☐
Leakage Severity – Expressed in Gallons per Minute or Litres per Second			☒	☒	☐	☐	☐	☐	☐	☐
Finds & Measures Leaks in Plastic Pipe			☒	☒	☐	☐	☐	☐	☐	☐
Pressurised Water & Gravity Sewers			☒	☒	☐	☐	☐	☐	☐	☐
Wall Thickness for Cement Asbestos			☒	☒	☐	☐	☐	☐	☐	☐
Able to Find Leaks With ‘NO FLOW’			☒	☒	☐	☐	☐	☐	☐	☐
Repeatability of Leak Location +2years			☒	☒	☐	☐	☐	☐	☐	☐

KEY ADVANTAGES

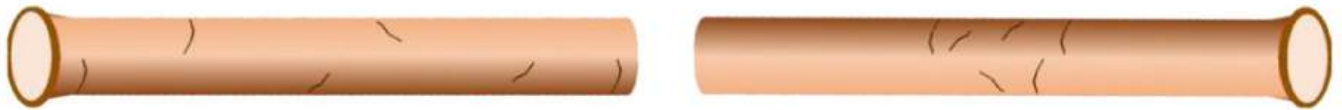
- No Lost Balls or Spheres. **100% Retrieval Since We're Tethered.**
- No False-Positives from 'Hitting' the Pipe Wall like Acoustic. **Not Possible With Ohm's Law.**
- No Missed Leaks. **We Find Them All.**
- No Guessing 'Which Leak is Larger?' **Each Has a Liters per Second or GPM.**
- No High Pressure Needed. **We're Pressure-Independent; Able to Scan 0-175 psi (12 bar).**
- No Long Wait for Reports. **Data is Available in Minutes!**
- No Estimated Locations or Ranges. **Pinpoint Locational Accuracy of 1cm (0.4in).**
- No Late Night / Early Morning Testing. **Ambient Noise & Customer Pipe Usage Is Not a Factor.**
- No Effect from High Groundwater Surrounding Pipes. **Electro Scan Measures Size of Hole.**
- No Need to Increase Pipe Pressure to Hear Leak. **Electro Scan Is Non-Acoustic.**



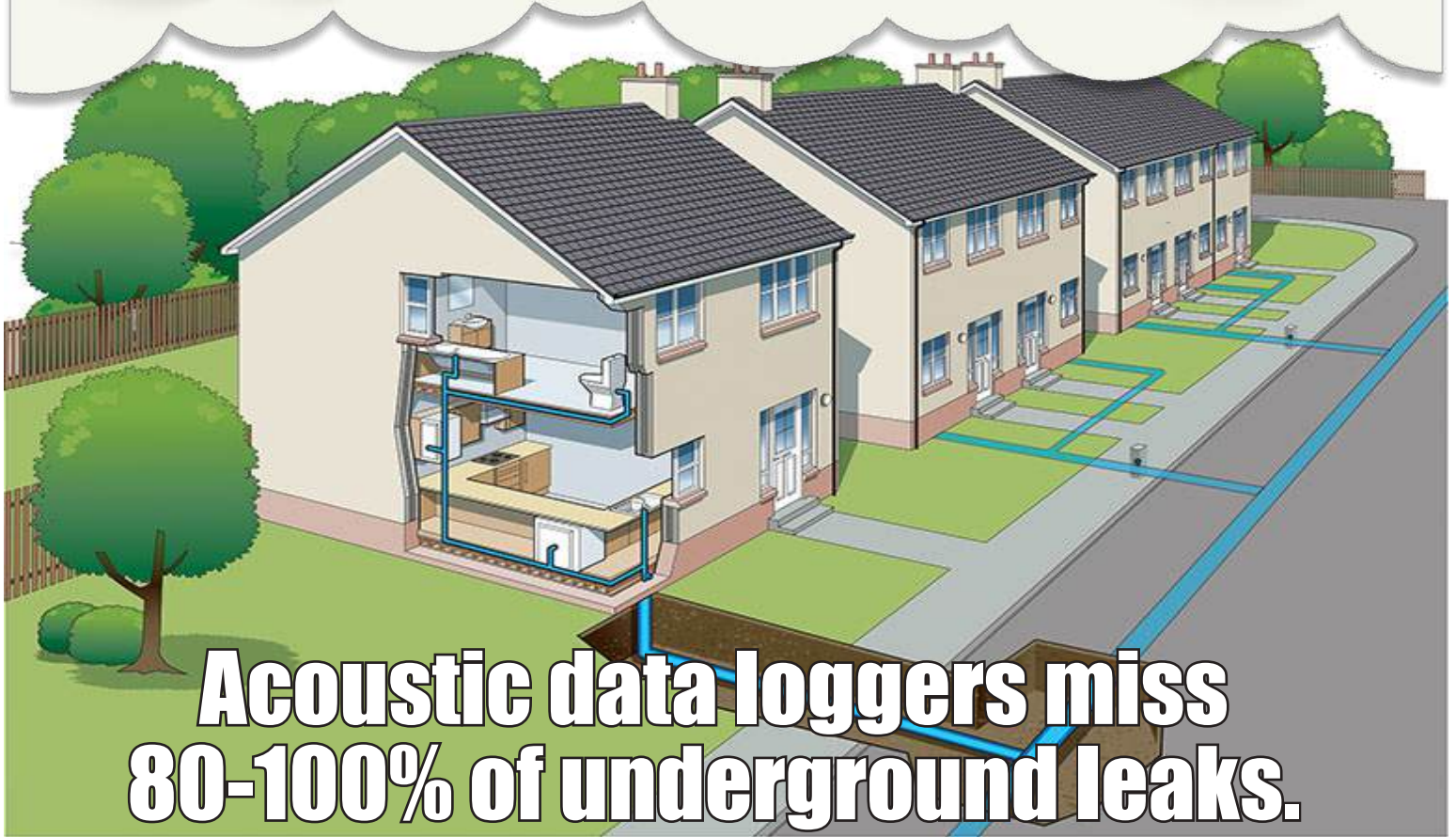
You Can't Manage! What You Don't Measure!

ELECTRO SCAN	COMPETITION
GPM	NO GPM
½ INCH ACCURACY REPEATABLE RESULTS	QUESTIONABLE ACCURACY INCONSISTENT RESULTS
 CONDUCTIVITY	

Next Generation in Leak Detection



Water Leakage





electro^{scan}inc.

Ways That Electro Scan Overcomes Drawbacks of Acoustic Listening Devices

Common Challenges

10 Household Usage



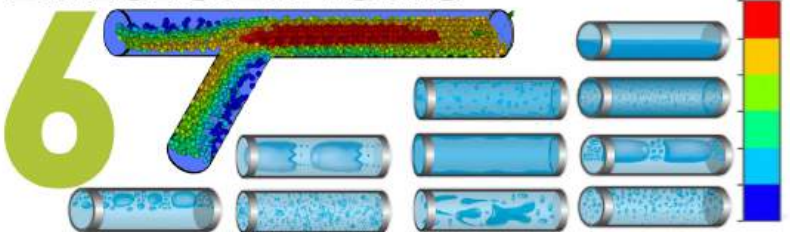
9 Groundwater



7 Coupling & Repairs



Different Flows



8 Pipe Size & Material



5 Street Noise



4 Trenching & Bedding



3 Air Pockets

Air Bubbles



Air Pocket



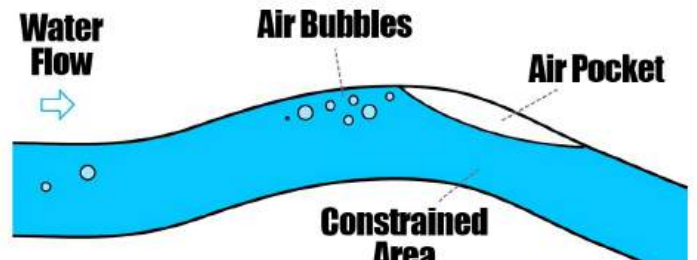
Water Flow



Air Bubbles

Air Pocket

Constrained Area



2 Judgment



**“Electro Scan
Said What?”**

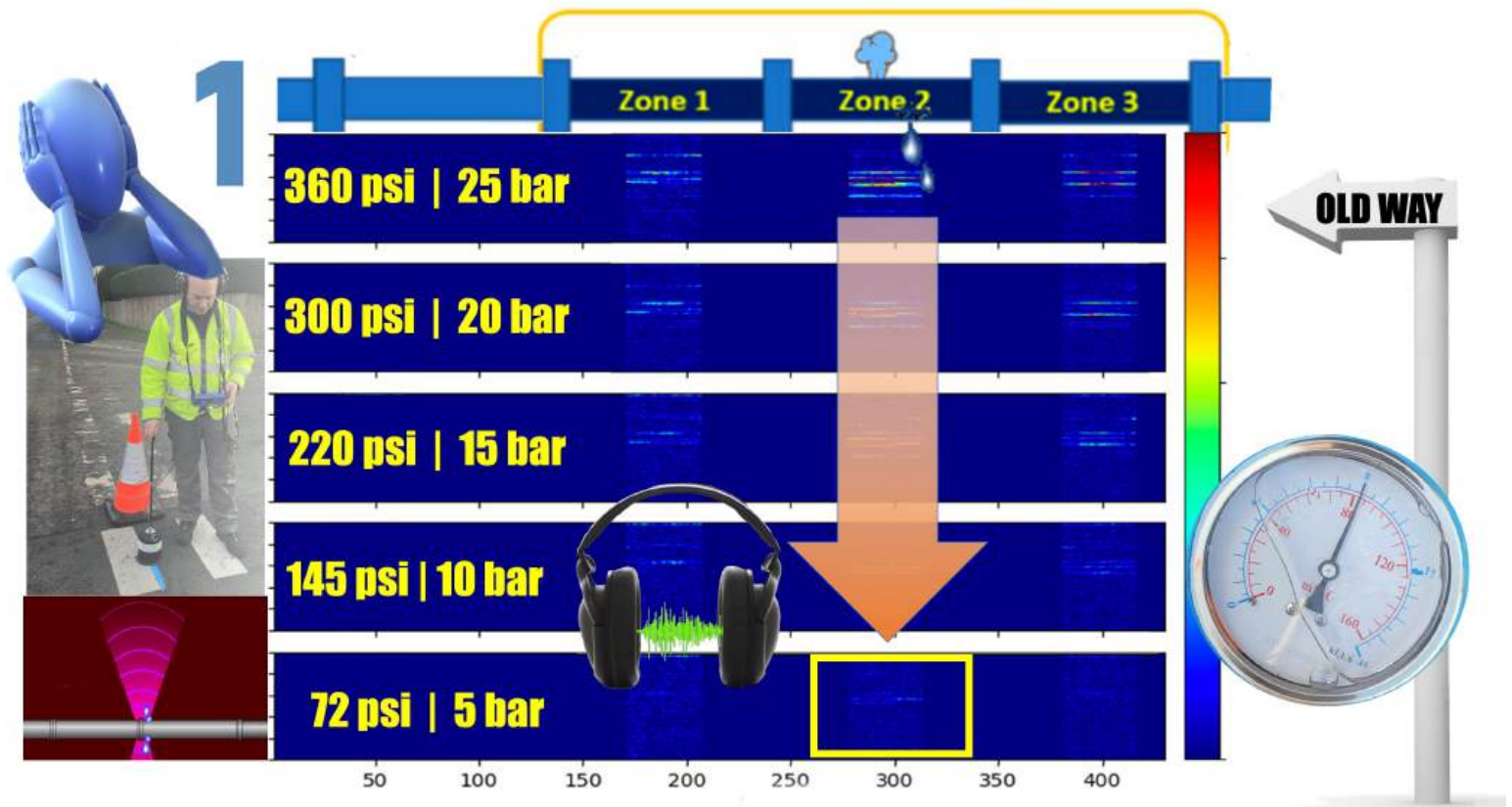
**“That Acoustic
Data Loggers
Miss 90-100%
of All Leaks?”**

**“But, That’s Our
Whole Buiness!”**



**Acoustic
Misses
80% of
Leaks.**

The Biggest Reason That Acoustic Sensors Can't Find or Measure Leaks?

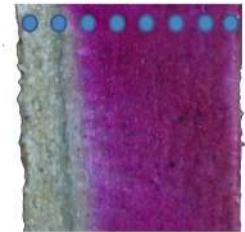
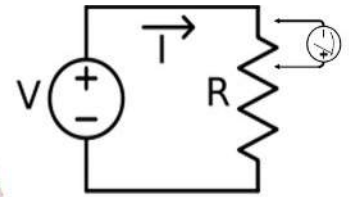
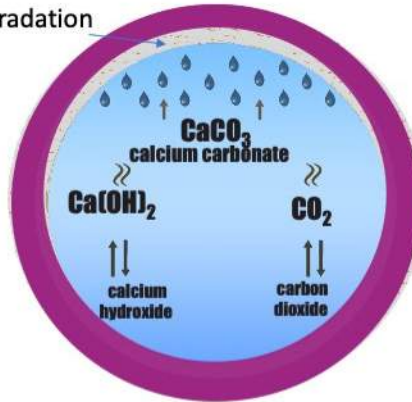


COMPETITIVE ADVANTAGE

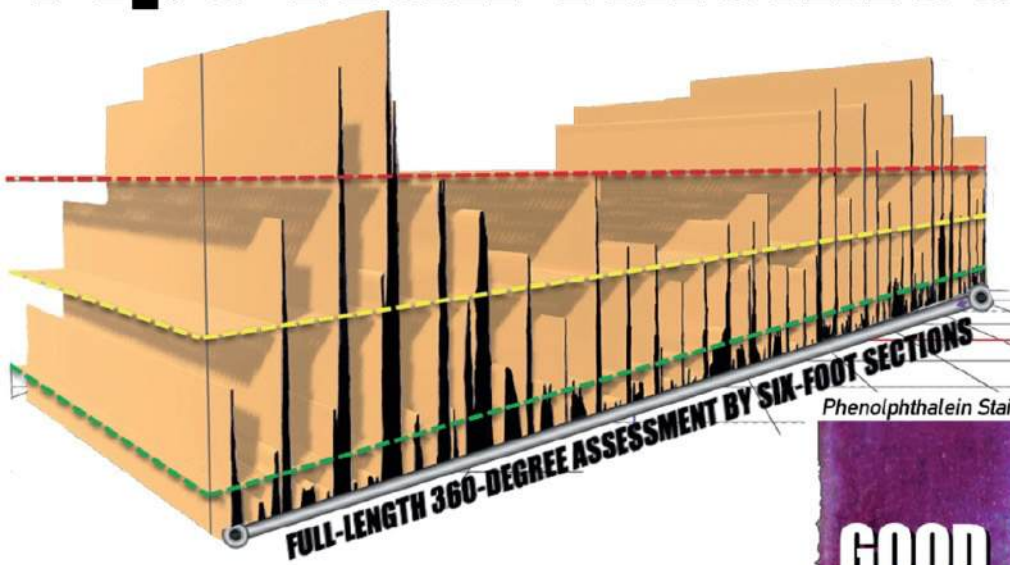
Electro Scan Measures Full-Length 360-Degree Pipe Wall Thickness



AC Pipe Degradation



Pipe Wall Thickness

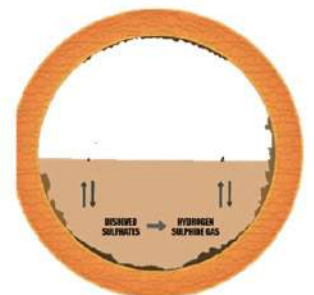
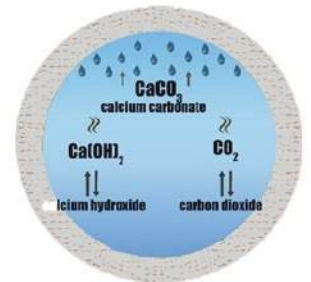
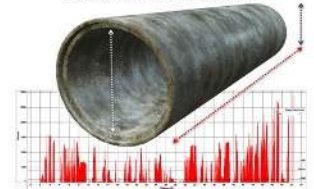


Phenolphthalein Stain Testing



Wall Thickness Measured By Electro Scan.
Missed By Acoustic Sensors & CCTV Cameras.

Asbestos Cement Pipe
Pipe Wall Thickness Measurement



Electro Scan Inc. Adds Line Location to Leak Detection

Leaks Expressed in Gallons Per Minute or Litres Per Second, And Now GPS Location.



Finally, Actionable 'Leak Location' Results Without Ever Leaving The Field!

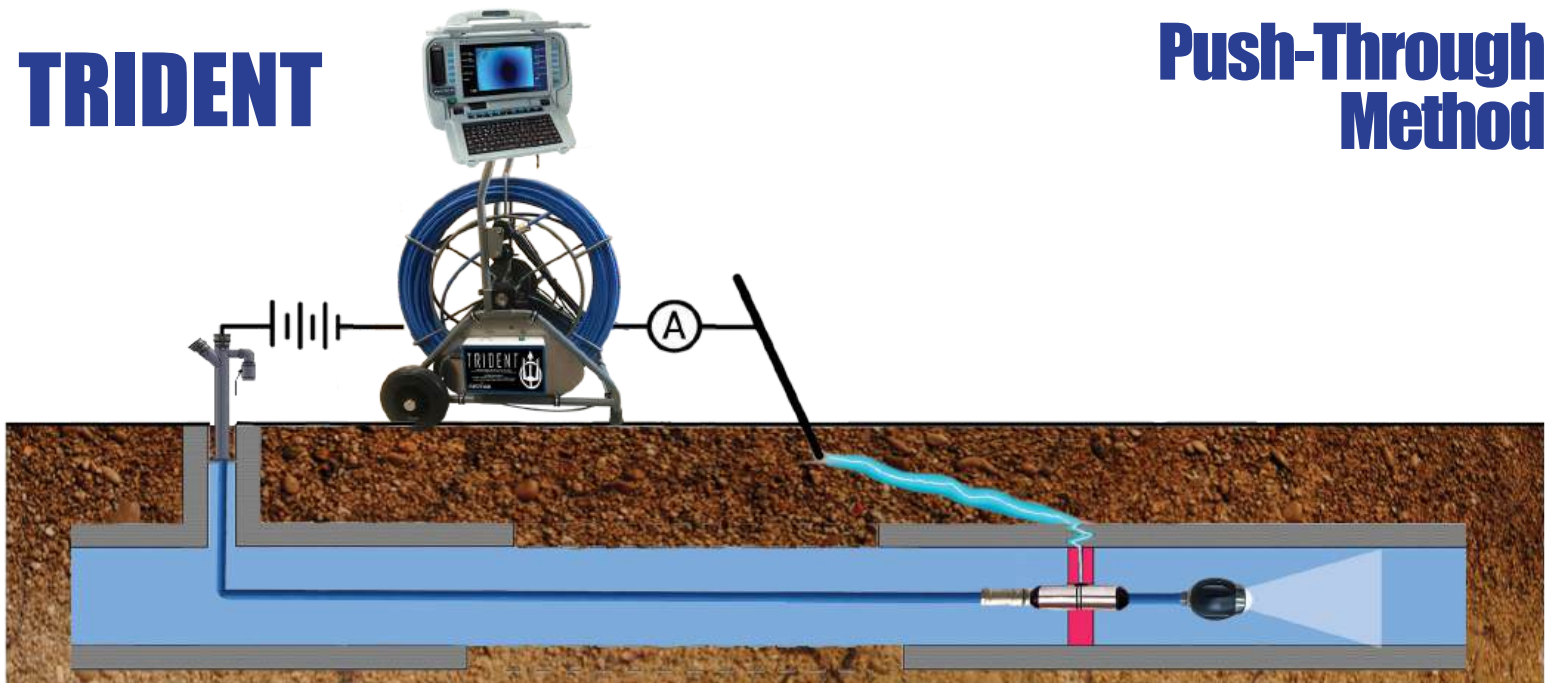
A wine glass filled with water, with two electrodes (one blue, one green) submerged. A bright blue arc of light is visible between the electrodes, suggesting a high-voltage discharge or a chemical reaction.



And, Field Operations.

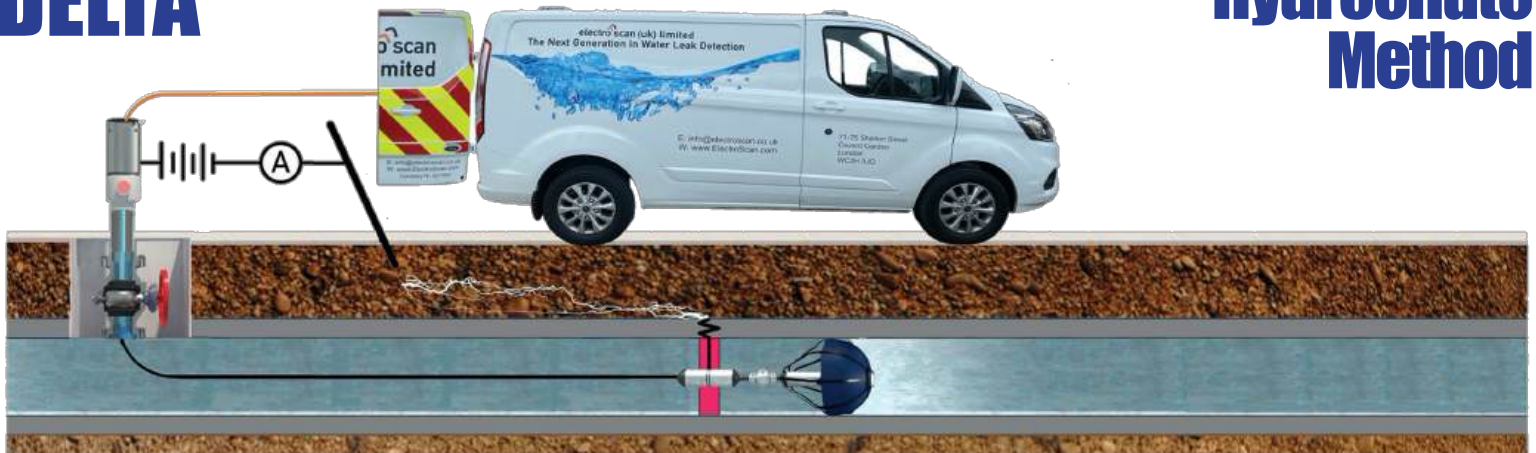
TRIDENT

**Push-Through
Method**



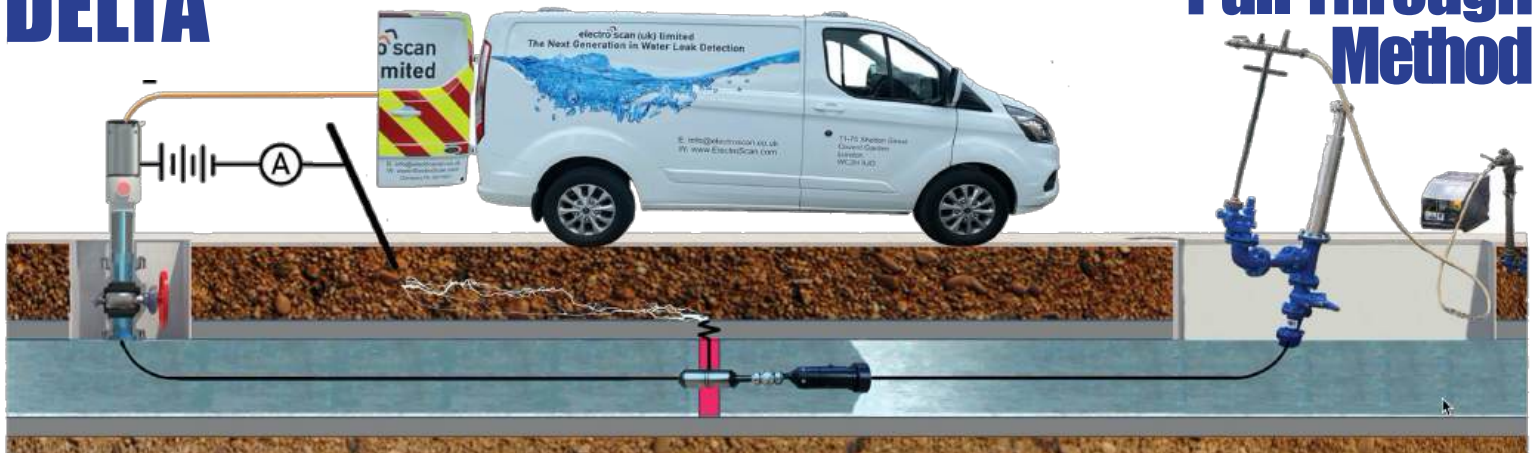
DELTA

**Hydrochute
Method**



DELTA

**Pull Through
Method**



TRAINING CENTER

Sacramento, Calif.

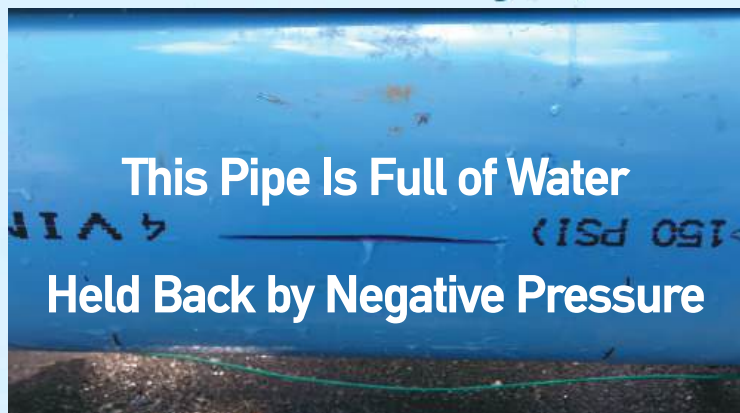




Automatic Reporting



Acoustic Sensors Miss Leaks That Low Pressure Conceals



This Pipe Is Full of Water
Held Back by Negative Pressure



Electro Scan Electrifies Leak to Activate Hole in Pipe, Without Dependence on Pressure.



Slight
Change...

...Starts
Leak.



**Follow
Electro Scan
on LinkedIn!**



Chuck Hansen



Untethered Acoustic Ball Missed in Sewer Force Main Causing Over \$200,000 Damage to Pump Station



Acoustic Ball Missed Being Caught By Supplier's Crews Causing Major Damage.

Socal Water Utility Tests Over 200-Miles Using Acoustic Ball Finding ZERO LEAKS.



Untethered Acoustic Ball Misses Leaks And, Catastrophic Failures Follow

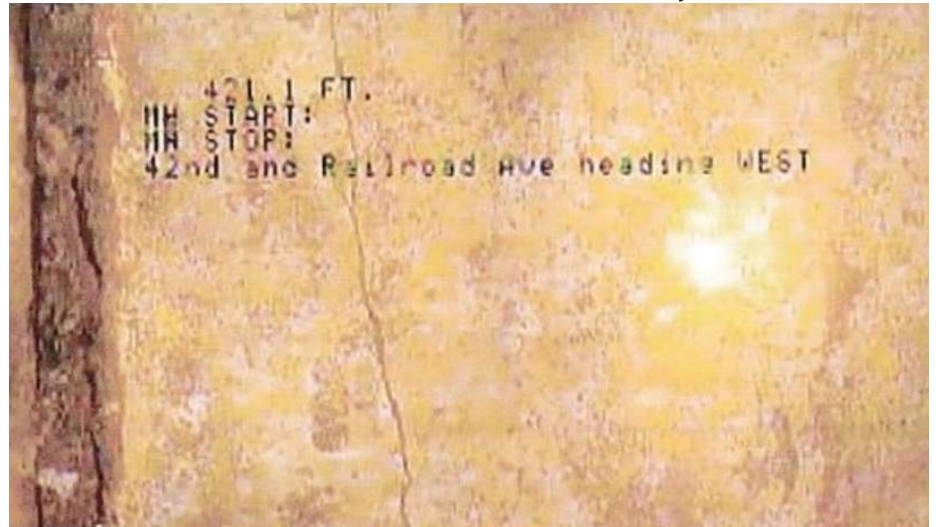


Rupture #1 & #2 – After Acoustic Ball Found No Leaks





Ruptures Cost Over \$2 Million, Each



CCTV of dewatered pipe showed major radial cracks that were not identified as 'LEAKS' using Untethered Acoustic Ball.

Electro Scan automatically identifies & quantifies leaks from cracks, without dependence on pipe pressure or noise.

Electro Scan – By Pipe Material

ABS
ACP
BRK
CMLSP
CON
CIPP
DIP
FRP
FRPM
GRP
HDPE
ORP
PB

Acrylonitrile-butadiene-styrene
Asbestos Cement Pipe
Brick
Cement Mortar Lined Steel
Concrete
Cured-In-Place Pipe
Ductile Iron (w/Protector 401)
Fiberglass Reinforced Pipe
Fiberglass Reinforced Polymer
Glass Reinforced Pipe
High Density Polyethylene
Orangeburg Pipe
Polybutylene

PCCP
PE
PEP
PP
PVC
RCP
RPM
RTR
SIPP
SPR
TC
VCP

Prestressed Concrete Cylinder Pipe
Polyethylene
Pitch Fiber Pipe
Plastic Pipe
Polyvinyl Chloride
Reinforced Concrete Pipe
Reinforced Plastic Mortar
Reinforced Thermosetting Resin
Spray-in-Place Pipe
Spiral Wound Pipe
Terracotta or Clay Pipe
Vitrified Clay Pipe



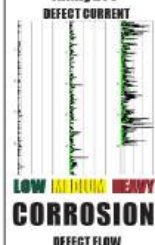
PRE-REHABILITATION



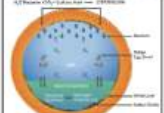
Asbestos Cement Pipe

Electro Scan FELL is unique in its ability to geometrically map the remaining wall, i.e. corrosion of ACP.

Finding & Measuring Pipe Corrosion Using Electro Scan's Patented Data Analytics

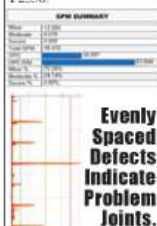


As demonstrated by independent benchmarks, since acoustic and transient pressure sensors are unable to provide detail geometric assessments of pipe walls, and therefore unable to estimate remaining pipe walls, Electro Scan represents a game changing solution to assess & prioritize ACP.

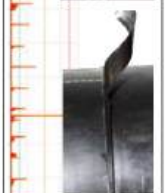
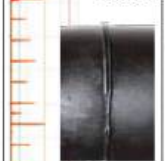


High Density Polyethylene Pipe

Poor mechanical or fused joints are the Achilles heel of HDPE, and not seen by CCTV cameras or heard by acoustic data loggers or sensors. But, found & quantified by FELL in accordance with ASTM F2550.

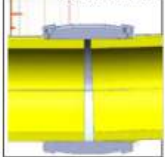


Evenly Spaced Defects Indicate Problem Joints.



What Electro Scan Finds Most?

Inadequate Clamping or Restraint during Fusion (Below)



Prestressed Concrete Cylinder Pipe

Electro Scan represents the only technology able to reliably & consistently find & measure leaks in GPM.

While other devices may attempt to locate corroded wire mesh that may or may not indicate a weakness in the pipe wall, Low Voltage Conductivity represents a game-changing solution to provide unbiased leak locations & severity for each defect.



Superior to acoustic and electromagnetic sensors, Electro Scan's Low Voltage Conductivity detects leaks other technologies miss.

How PCCP Fails?

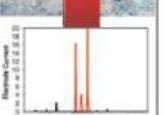


Vitrified Clay Pipe

It doesn't matter whether you evaluate VCP from the outside or inside of a pipe, CCTV, Laser, LIDAR, Sonar, GPR, or Acoustic, are not able to detect or measure defect flows.



Electro Scan's FELL is the only technology, representing a Non-Destructive Test (NDT) able to follow a 90° pipe bend to locate a pathway for water to enter or exit a pipe.



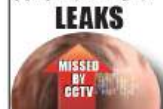
Open trench evaluation of FELL located defects, missed by CCTV, exactly showed three matching leaks due to fittings that were never tightened. Just one of over a dozen tests proving FELL superiority.

POST-REHABILITATION



Cured-In-Place Pipe

CIPP liners may not be watertight and defects not seen by certified operators using CCTV cameras. As a result, ASTM F2550 should be added to CIPP specifications to ensure pipe quality & integrity.



LEAKS



PINHOLES



SOAKAGE



RECOMMENDED USE:
To find & quantify leakage from:
• Accelerant Burns
• Accidental Cuts
• Bad Service Reconnect
• Bad Lateral Liners
• Blisters
• Delamination
• Defective Epoxy
• Equipment Damage
• Foreign Objects
• Pinholes
• Poor Curing
• Overcooking
• Stretching
• Top-Hat Defects
• Wet-Out Failures
• Wrinkles, including: Buckling, Fins, Folds, Lifts, and Ridges



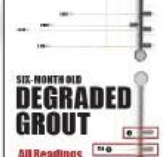
Grout

FELL is now preferred over using traditional packers to test joints for water tightness, due to FELL's Non-Destructive Testing (NDT) of joints, laterals, and cracks.



Unlike air testing, FELL does not force any added pressure on joints or laterals. Since air testing can open joints, shift pipes, and even temporarily correct out-of-round conditions in plastic pipes as areas around joints are inflated, packers are no longer recommended for testing the quality of joints or laterals.

GOOD GROUT



SIX MONTH OLD DEGRADED GROUT



RECOMMENDED USE:
1. All Pre-Grouted Pipes.
2. Post-Grouted Pipes, 6-12 Months After Grout to Detect Drying or Shrinkage.
3. Prior to Warranty Acceptance.



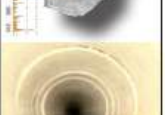
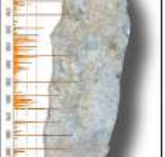
Spray-In-Place Pipe

Locking individual wraps is key to any successful Spiral Wrap Pipe project, with problems not identified by CCTV.



DEFECTIVE (NEW) SIPP

Defects OK'd By CCTV Found By FELL



RECOMMENDED USE:
1. Pre-SIPP.
2. Post-SIPP All Liners.
3. Prior to Warranty Acceptance.



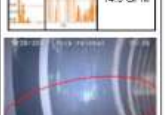
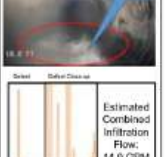
Spiral Wrap Pipe

Locking individual wraps is key to any successful Spiral Wrap Pipe project, with problems not identified by CCTV.



Defects OK'd By CCTV Found By FELL

Estimated Combined Infiltration Flow: 14.9 GPM

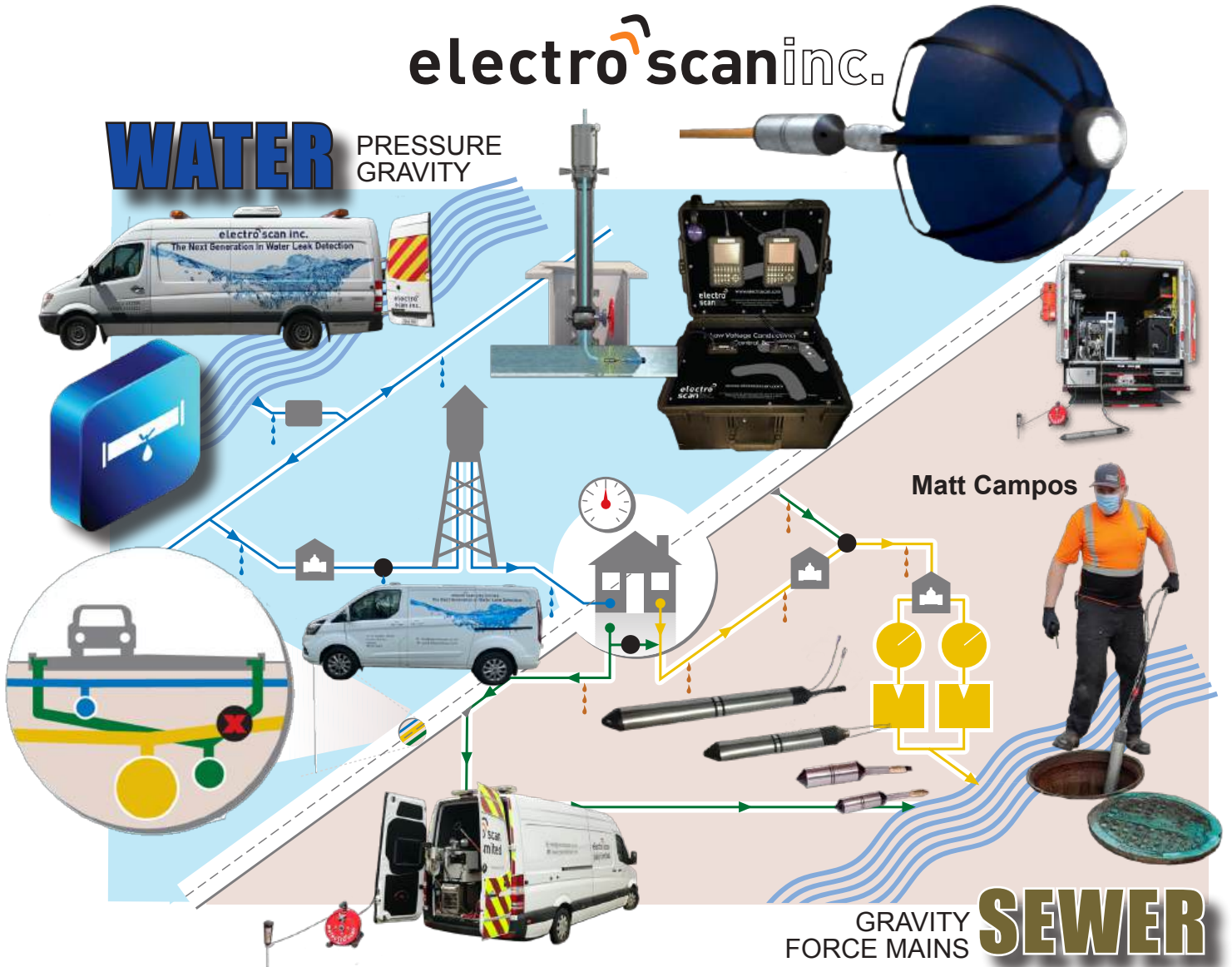


RECOMMENDED USE:
1. Pre-Spiral Wrap.
2. Post-Spiral Wrap.
3. Prior to Warranty Acceptance.

electro scan inc.

WATER

PRESSURE
GRAVITY



**BEST
IN
CLASS**



CONTACTS



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Since August 2014

WATER

DELTA



TRIDENT



SWORDFISH



SEWER

ES-38



ES-400



ES-620



International Patents

AU 2015238903, AU 2017329037, CA 2864503, CA 2874808, CA 2905492, EP 2748576, EP 3516359, EP 13275131.4, JP 6062541, JP 6193893, JP 6514284, NZ 713053, US 9143740, US 9304055, US 9933329, US 10451515, US 10557772, US 10816431.

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