SPX®

> Where Ideas Meet Industry

P350 **flexitrax**™ system

Flexibility and **reliability** in a truly **portable** system.

P350 **flexitrax**™ system

Flexibility and **performance** at your **service**.

The most advanced and complete portable crawler system for the pipeline inspection professional.

RELIABILITY WHERE YOU NEED IT
Weatherproof construction that's designed to withstand the toughest conditions.

OUTSTANDING PICTURE QUALITY
Ultra-bright LEDs and high-resolution cameras built on a powerful digital video platform.

DIGITAL VIDEO
Small and light control unit with advanced video functions and integrated report writer.

Most motorized inspection systems are complex and bulky. Many are difficult to transport and install, prone to weather damage and are complicated to operate.

The P350 flexitrax™ offers inspection professionals the ultimate portable crawler system. This advanced and affordable system features the simplicity and transportability of a pushrod system while delivering the functionality and performance associated with complex and expensive crawler systems.

The P350 is a modular system, designed to meet the tough requirements of most inspection environments.

Outstanding picture quality

The P350 flexitrax features ultra-bright LEDs and high-resolution cameras built on a powerful digital video platform. The P350 flexitrax system supports three interchangeable, high-resolution cameras. Each camera features the latest generation, ultra-bright white LEDs that ensure a clear picture and a long, maintenance-free life. The digital video is displayed on the command module's ultra-bright, 200mm (8") industrial grade TFT screen.

The P350 flexitrax command module allows you to zoom and rotate photos and live or recorded digital video in real-time. The command module also provides Mimic™ display, an intuitive way of controlling pan and tilt.
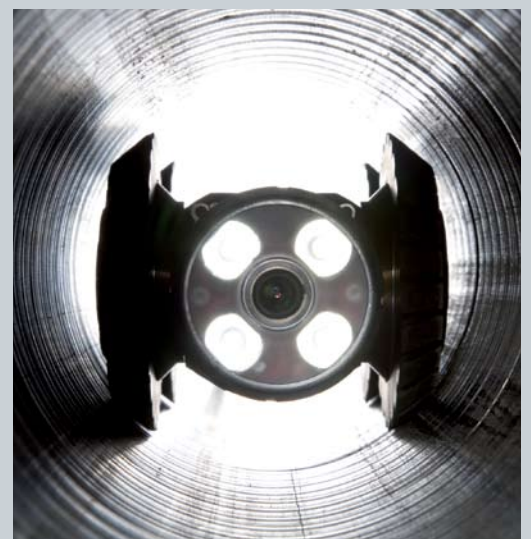
Combined, these features provide outstanding video picture quality and make it easier and quicker to correctly identify problems even in the toughest conditions.

Reliability where you need it

The P350 flexitrax is engineered to operate in almost any environment. The command module and drum have a weatherproof rating of IP53. The tough, yet light-weight controller provides a durable buffer between the elements and your survey data.

The command module stores survey data direct to solid-state Compact Flash cards. Solid-state non-volatile memory means there are no moving parts so your files are secure and less vulnerable to shock damage and power outages.

The system is operable in the most demanding conditions. The crawlers can

operate fully submersed and are water resistant to depths of up to 100m (330'). They are constructed from brass and stainless steel and are built with a single or twin 50W motor configuration, powerful enough to move through almost any pipeline system. The integrated sensitive inclinometer and the multi-frequency sonde allow you to map pipeline topography easily and efficiently.

The ruggedly constructed cameras are designed to transfer any front impact to the crawler body, protecting the cameras from shock damage.

Flexible digital data transfer

The advanced digital platform of the P350 flexitrax means you can transfer survey data from your Compact Flash card to your PC or laptop via fast USB 2.0. Use the included FlexiSight™ Windows-based software to edit video and convert reports to Microsoft® Word format.

With *Bluetooth®* wireless technology you can send your inspection photos from the command module to a compatible cell phone and forward them instantly to your client.

Versatility

The P350 flexitrax is small enough to fit in the trunk of your car. The system can be van or truck mounted and wheeled on site using the ergonomic barrow design, allowing you to reach conduits beyond the range of your vehicle. Once on site, the system is quick and easy to set-up and deploy.

Build the system to meet your inspection requirements. Choose between a practical and inexpensive manual drum system or an advanced, compact, self–contained powered drum with up to 250m (825') of cable. Choose from three interchangeable cameras

and two powerful, yet compact crawlers that are designed to withstand the most challenging sub-surface conditions.

The command module is also fully compatible with the P330+ flexiprobe™, giving you access to its comprehensive range of pushrod reels, cameras and accessories. Switch from crawler to pushrod inspection without carrying a second system.

The system is easy to use, thanks to its intuitive user interface and simple, one-touch control over video and photo capturing. The tough and durable keypad gives you direct access to advanced digital features and lets you drive any drum, crawler and camera combination.

The command module and the drum also feature RCA video outputs, meaning you can record your video to an external device or display video on an external monitor.

Choose between a wide choice of different wheels, elevators and tires to suit the pipe you are surveying. The small wheel set is the optimal configuration for deploying the P354 crawler in 100mm (4") pipes* and the P356 crawler in 150mm (6") pipes*.

Serviceability

The P350 flexitrax system is designed and built for continuous operation and easy maintenance. Each crawler is designed for quick repair. The powered drum features a removable drum and cable cassette that's fast and easy to replace in the workshop or even in the field. The optional re-termination kit makes it easy and affordable to replace and repair damaged cables.

The P350 flexitrax system is the obvious choice when you need cost-effective and flexible solutions.

*Minimum specified diameter must be maintained along the whole length of the survey.

FLEXIBLE DIGITAL DATA TRANSFER
Access your survey data with Compact Flash cards, USB 2.0 or *Bluetooth®* wireless technology.

RUGGED AND WEATHERPROOF
Surface equipment is IP53 rated whilst crawler and cameras are rated IP68.

VERSATILITY
Build the ultimate, compact system to suit your inspection needs.

SERVICEABILITY
Designed for continuous operation and easy maintenance on and off site.

Digital control

- Compact and tough controller can be left on the drum or fitted where convenient
- Ultra-bright 200mm (8") industrial grade TFT screen with anti-reflective protection offers the best picture in any light condition
- Tough and durable keypad to control all the system functions and movements
- Splash-proof keyboard for text entry and report writing
- Digital zoom and picture navigation functions to explore, in real-time, the live video picture
- Record full SVGA video and snapshots onto solid-state Compact Flash (CF) card
- *Bluetooth®* wireless technology to send photos world-wide instantly (using a compatible cell phone and service provider)
- USB 2.0 port to transfer all the files quickly to a PC or laptop
- Compatible with P330+ flexiprobe pushrod system

Rugged and flexible

- IP53 and IP68 rated system
- Self-contained power drum allows for van fit or portable use
- Cable lengths from 100m (330') to 250m (825') with a cable-end protection system
- Automatic or manual retrieval mode
- Manual drum available
- Crawlers rated IP68 to 100m (330'), with inbuilt inclinometers and multi-frequency sondes
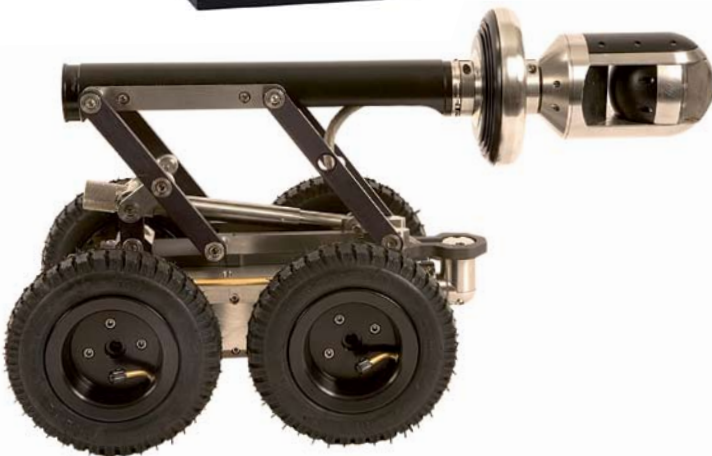
Power and agility

- Non-steerable P354 crawler allows access in a typical 300mm manhole and pipe surveys from 100mm to 300mm (4" to 12")
- Steerable P356 crawler for pipes from 150mm (6") to 600mm (24")
- 50W (P354) and dual 50W (P356) crawler motors
- Quick release wheels and choice of hard or soft tires for all pipe conditions

Light and vision

- Latest generation, ultra-bright LEDs for a long, maintenance-free life and exceptional light performance
- Choice of three high-definition cameras: forward view, pan & tilt or pan & tilt with 10x optical zoom
- P350-CMOD Mimic display control and auto survey mode for easy pan & tilt operation

Flexibility

The P350 flexitrax system is a modular system and all its main components are fully interchangeable.

Tailor the system to suit your business needs:

- Choose between the manual or self-contained powered drum systems,
- Determine the cable length and crawler size to meet your typical pipe requirements,
- Choose any high-resolution (Forward View, Pan & Tilt or Pan & Tilt with 10x Optical Zoom) camera; each with the latest generation ultra bright, white LED technology,
- Choose from a wide range and size of wheels, tires and accessories to suit any inspection environment,
- Use the P350 controller with the comprehensive P330+ flexiprobe range.

P350 flexitrax system options

CONTROLLER	Command Module		
DRUM	Manual Drum + Portable PSU	Power Drum with Integral PSU	
CRAWLERS	P354 Crawler	P356 Crawler	
CAMERAS	Forward View	Pan & Tilt	Pan & Tilt with Zoom
CABLE LENGTH	100m/150m/250m	100m/150m/250m	100/150m/250m
TIRES	Small (hard and soft)	Medium (hard and soft)	Large (Not suitable for P354 Crawler)

Accessories

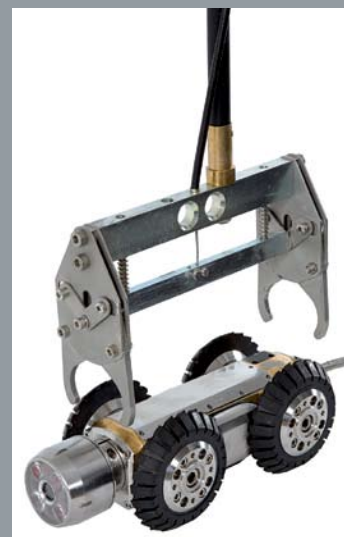| WALL-MOUNT	To mount the controller on an adjustable arm to the side of your van
CRAWLER WEIGHT	2kg weight plate to boost the P354 crawler traction performance
ELEVATOR	Fixed length or adjustable elevators to center the camera position in the pipe
CRAWLER GRAB	Choice of crawler grab tools for P354 and P356 to ensure a safe and quick crawler deployment or retrieval
LIGHTHEAD	850lm auxiliary lighthead
VAN/TRUCK MOUNTING KIT	To mount the system to your van or truck
PENDANT CONTROLLER	To control the system remotely

CHOICE OF TIRES
Hard or soft, the flexitrax tires ensure traction in the most demanding pipes.

EASY TERMINATION
Terminating the drum cable is quick and easy with the re-termination kit.

GRAB TOOL
The crawler grab tool ensures the safest and quickest crawler deployment or retrieval.

FlexiSight™ SOFTWARE
Edit your full SVGA videos on a PC or laptop. Convert the reports into Microsoft® Word™ format.

Specifications

P350 flexitrax system specification

COMMAND MODULE	P350-CMOD
Screen	200mm / 8" Industrial TFT, SVGA
Storage	High Speed Compact Flash
Recording Time (hrs)*	1:45 (HQ) - 3:45 (MQ) - 9:00 (LQ)
Connectivity	USB 2.0, Video/Audio In/Out, Ethernet, Bluetooth®
Dimensions	300 x 360 x 200mm / 14" x 14" x 8"
Weight	5.5kg /12lbs
Environmental	IP55 (closed) IP53 (open)

*Based on a 2GB Compact Flash card

AUXILIARY LIGHTHEAD	P350-LH-8
Dimension (L x Diameter)	63 x 136mm / 2.5" x 5.4"
Weight	1.8kg / 4.0lbs
Construction	Stainless Steel and Aluminum
LED Luminance	≥ 850lm

PENDANT CONTROLLER	P350-PENDANT
Dimension (L x Diameter)	250 x 80 x 40mm / 9.8" x 3.1" x 1.6"
Weight	0.7kg / 1.5lbs
Construction	Linear Medium Density Polyethylene (LMDPE) and mild steel
Environmental	IP64

- **Environmental*:** IP53 (Surface Equipment); IP68 to 100m/11bar (Downhole Equipment)
- **Temperature (Storage):** -20 to 80°C (-4 to 176°F)
- **Temperature (Operating):** -10 to 50°C (14 to 122°F)

*Unless otherwise stated

DRUMS	P350-DRUM-M	P350-DRUM-P
Dimensions (L x W x H) Drum	445 x 270 x 570mm / 17.5" x 10.6" x 22.4"	633 x 412 x 740mm / 24.9" x 16.2" x 29.1"
Dimensions manual power pack	418 x 195 x 420mm / 16.5" x 7.7" x 16.5"	Integral
Weight	18kg to 29kg / 39.7lbs to 64lbs depending on cable length	59kg to 70kg / 130lbs to 154lbs depending on cable length
Construction	Powder-coated tubular steel frame with steel and aluminum power pack enclosure. Stainless steel and aluminum manual cable management mechanism	Powder-coated steel chassis with steel and aluminum enclosure. Interchangeable alloy cable drum. Stainless steel and aluminum automatic cable management mechanism
Power	110-240V 50-60Hz or 1.2kW rated generator	110-240V 50-60Hz or 1.2kW rated generator

CRAWLERS	P354	P356
Pipe diameter	100mm to 300mm / 4" to 12"*	150mm to 600mm / 6" to 24"*
Dimensions (L x W x H)	250 x 82 x 69mm / 9.8" x 3.2" x 2.7"	345 x 128 x 84 / 13.6" x 5" x 3.3"
Weight	5.4kg / 12lbs	14.3kg / 31.5lbs
Motors	1 x 50W	2 x 50W
Construction	Brass and Stainless Steel	Brass and Stainless Steel
Sonde frequency	512/640/8192/32768 Hz	512/640/8192/32768 Hz
Inclinometer accuracy	+/- 0.2º	+/- 0.2º

*Minimum specified diameter must be maintained along the whole length of the survey

CAMERAS	P350-CAM-FW	P350-CAM-PT	P350-CAM-PTZ
Dimensions (L x Diameter)	62 x 68mm / 2.4" x 2.7"	134 x 68mm / 5.3" x 2.7"	158 x 90mm / 6.2" x 3.5"
Weight	600g / 1.3lbs	1.8kg / 4.0lbs	2.9kg / 6.4lbs
Construction	Stainless Steel	Stainless Steel	Stainless Steel
Focal Range	10mm to ∞	10mm to ∞	10mm (WIDE) to ∞
Horizontal Resolution	≥ 460TVL	≥ 460TVL	≥460 TVL
Sensitivity	< 1.0 Lux	< 1.0 Lux	1.0 Lux @ f1.8
LED luminance	≥ 120lm	≥ 210lm	≥ 420lm

ELEVATORS	P350-ELV-F (Fixed Elevator)	P350-ELV-A (Adjustable Elevator)	P350-ELV-LAM (Large Manual Elevator)
Weight	0.4kg / 0.9lbs	0.7kg / 1.5lbs	4.5kg / 9.9lbs
Construction	Stainless Steel and Aluminum	Stainless Steel	Stainless Steel and Aluminum
Pipe Range (P354)	up to 300mm / 12"	up to 380mm / 15"	Not available
Pipe Range (P356)	up to 380mm / 15"	up to 458mm / 18"	300mm to 600mm / 12" to 24"

- **Approvals:** CE (LVD 2006/95/EC, MD 98/37/EC, EMC 2004/108/EC, R+TTE 99/5/EC) / FCC 47 CFR part 15. RoHS Compliant. EN61010-1:2001, IEC61010-1:2001, UL61010-1.

The **flexiprobe**™ range

Sonde and Locator package

The sonde and locator package is the essential tool to pinpoint pipe location and depth. Locate the sonde with the RD7000DL locator.

Rods and Reels

	P331 REEL	P332 REEL	P333 REEL
Dimensions	570 x 440 x 256mm 22.4" x 17.3" x 10.1"	850 x 750 x 420mm 33.5" x 29.5" x 16.5"	813 x 1168 x 475mm 32.0" x 46.0" x 18.7"
Weight	11kg/24lbs	18.2kg/40lbs or 24.9kg/55lbs	37kg/74.2lbs
Construction	Powder-coated tubular steel frame		
Rod	35m (115')	60m (200') or 120m (400')	150m (500')

Cameras

	25mm (1") CAMERA	50mm (2") CAMERA
Dimensions	24 x 39mm 0.94" x 1.54"	48 x 80mm 1.89" x 3.15"
Weight	0.06kg/0.13lbs	0.38kg/0.84lbs
Construction	Stainless Steel	Stainless Steel
Power	0.75W	1.90W (max)
Operating Temperature Range	-10°C to +50°C 14°F to 122°F	-10°C to +50°C 14°F to 122°F
Focal Range	20mm to ∞	170mm
Focus	Adjustable	Fixed
Lighting	Maintenance-free LEDs	Maintenance-free LEDs
Image Resolution	628 x 582 PAL 510 x 492 NTSC	752 x 582 PAL 500 x 582 NTSC
S/N ratio	>46dB	>45dB

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