

PIG PASSAGE INDICATORS



pigPRO™ Info

Pg. 1-2 & 1-3



pigPRO™

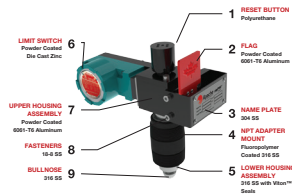
*Series 67 and
Series 67 Flanged*
Pg. 1-9 & 1-10

Material List

Pg. 1-4

pigPRO™

*Series 67 Extraction
Kit*
Pg. 1-11



Part # Selection

Pg. 1-5

SERIES	INDICATOR	SEAL MATERIAL
5 - Intrinsic	1 - Visual/Manual	1 - Viton™ P/MS
6 - Intrinsic Band Station	2 - Electrical	1 - Viton™ EPDM
	3 - Visual	2 - Viton™ AED
	4 - Electrical	3 - EPDM

53-0000-00

CONNECTION TYPE	CONNECTION MATERIAL	EXTENSION	WALL THICKNESS
0 - 1" API Regula (for 6000 TIC)	0 - None	0 - None	00 - 0.1880"
1 - 2" API Regula (for 6000 TIC)	0 - 316L	2 - 2-foot	01 - 0.485" to 1.125"
2 - 1500 RF Flange	1 - 316L LFL	4 - 4-foot	02 - 1.125" to 1.625"
3 - 2000 RF Flange	1 - AISI 316	6 - 6-foot	03 - 1.625" to 2.125"
4 - 4000 RF Flange	1 - Duplex Stainless	8 - 8-foot	
5 - 1500 RF Flange	1 - Inconel 625		
6 - 6000 RTJ Flange			
7 - 151000 RTJ Flange			
8 - 6000 RTJ Flange			
9 - Retract			



pigPRO™
*Flange Mount &
Extension Pole*
Pg. 1-12



pigPRO™

Series 53
Pg. 1-6



Non-Intrusive
Bandit
Pg. 1-13



pigPRO™

Series 55
Pg. 1-7



Non-Intrusive
Full Stainless
Pg. 1-14



pigPRO™

Series 57
Pg. 1-8



Non-Intrusive
Portable Bandit
Pg. 1-15

Pig Passage Indicators

pigPRO™ Series

The Intrusive Pig Signaler

The Apache pigPRO™ are manufactured in our Edmonton, Alberta, Canada facility. From Canadian workmanship to the patented fluid seal design, our pigPRO™ are depended upon by pipeline operators the world over.

**When you see the pigPRO™ name,
we guarantee it will indicate more than just quality.**

Detecting cleaning pigs, accurately and reliably.

At Apache, we want to make certain that when a customer is pigging a pipeline, they will always know when the pig has passed a critical point in the pipeline.

To achieve that, we designed the pigPRO™ Series, a patented line of intrusive pig passage indicators that reliably detect the precise location of a cleaning pig as it travels within the pipeline network.

How does it work?

The pigPRO™ indicator is permanently installed on pig launchers and receivers, or very close to a pump station. By doing so, operators are notified the instant that the pig has left the launcher or arrived in the receiver.

The system is fitted with a plunger that is then inserted into the pipe, physically penetrating the pipe bore. When a pipeline cleaning pig passes, it actuates the plunger, which activates either a visual or electrical indicator, or both. The instant that the indicator is displayed, the pipeline cleaner's precise location is revealed.

The Apache pigPRO™ are an INTRUSIVE model as the plunger penetrates the pipe bore. The protruding PLUNGER is actuated by the passage of a pipeline cleaner thereby activating an indicator.

- Bi-directional activation is a standard feature of all our indicator types
- All indicators are manufactured for a specific operating pressure and wall thickness
- Can be flange mounted or mounted using a 2" NPT thread-o-let
- All pigPRO™ can be modified to mount into most competitor's T.O.L.

Components:

Apache's unique patented FLUID SEAL DESIGN does not allow paraffin or other debris to obstruct the operational mechanisms thus ensuring positive indication of the pig's passage. There are no gears in the trigger mechanism and all materials conform to NACE standard MR0175 / ISO 15156.

Pig Passage Indicators

pigPRO™ Series

The Intrusive Pig Signaler

Easily installed without disrupting production

Every model in the pigPRO™ series is easily installed, even while the pipeline is on-stream. So preparing for critical pipeline cleaning doesn't disrupt critical production.

Reduces operational risk

The pigPRO™ features fewer moving parts for ease of installation. The hemispherical design of the pigPRO™ helps eliminate these issues, saving you time and money. To ensure that the indicator is properly adjusted for the individual pipeline, hemispherical plunger sensitivity adjustment and penetration adjustment are standard features.

Bi-directional activation

Every pigPRO™ indicator is bi-directional, so it is triggered by a pig traveling in either direction. Although a pig is rarely required to travel in the opposite direction of the flow in a pipeline while it is on-stream, this capability can be useful when servicing offline pipelines.

Debris or no debris, pigPRO™ performs

Most pig indicators simply cannot operate accurately to indicate pig passage when wax or debris are present in a pipeline. That's not the case with the pigPRO™, which operates reliably regardless of wax or debris. It's specially designed to prevent debris from obstructing its operational mechanisms, so a passing pig is always indicated.

Universal, adaptable

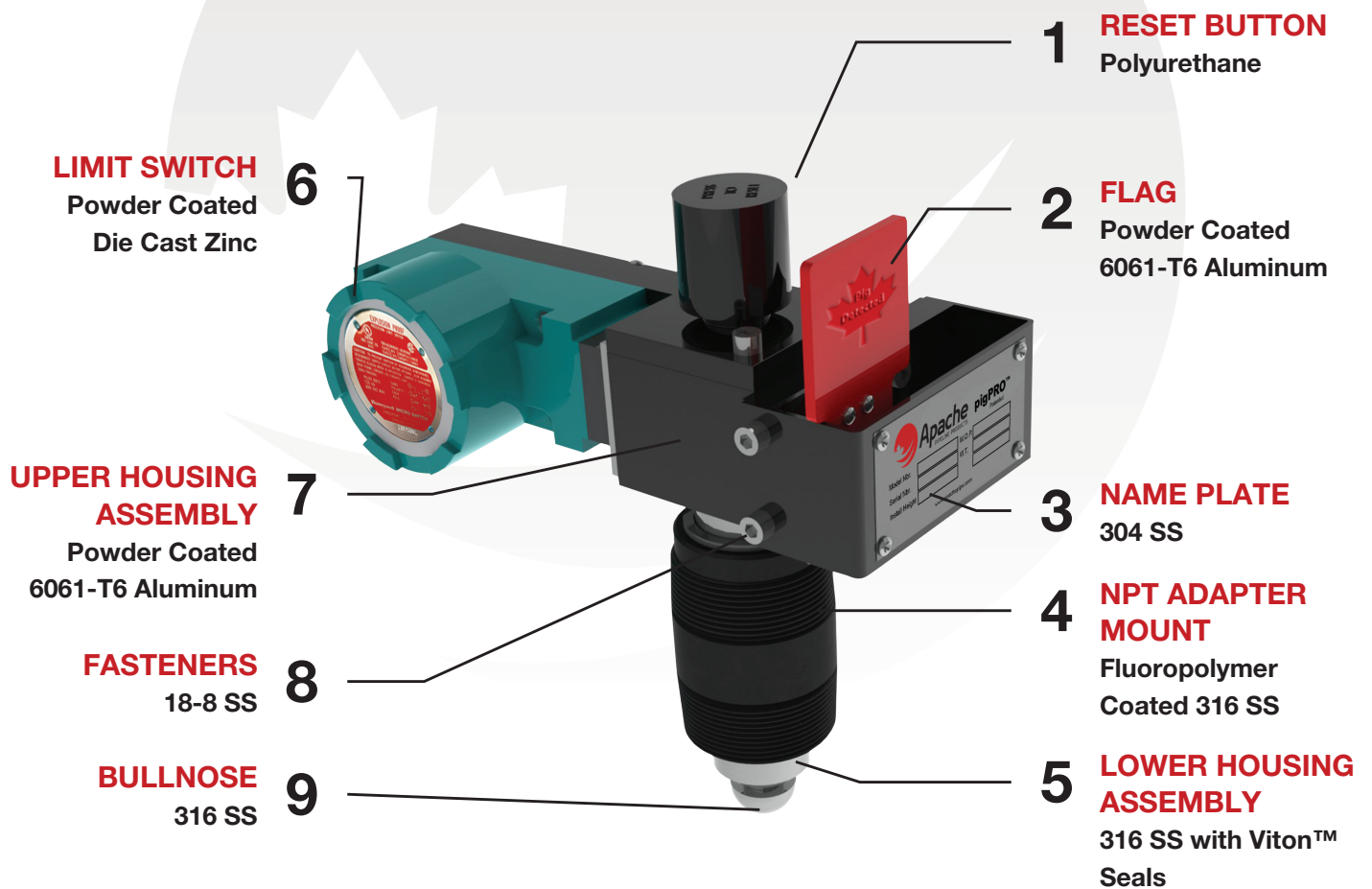
Our ability to retrofit to most mounts makes the Apache pigPRO™ completely versatile.

Primary system components

Every Apache pigPRO™ pig passage indicator includes a thread-mounting nipple, standard lower housing with fluorocarbon O-rings, and a hemispherical plunger with a flag assembly.

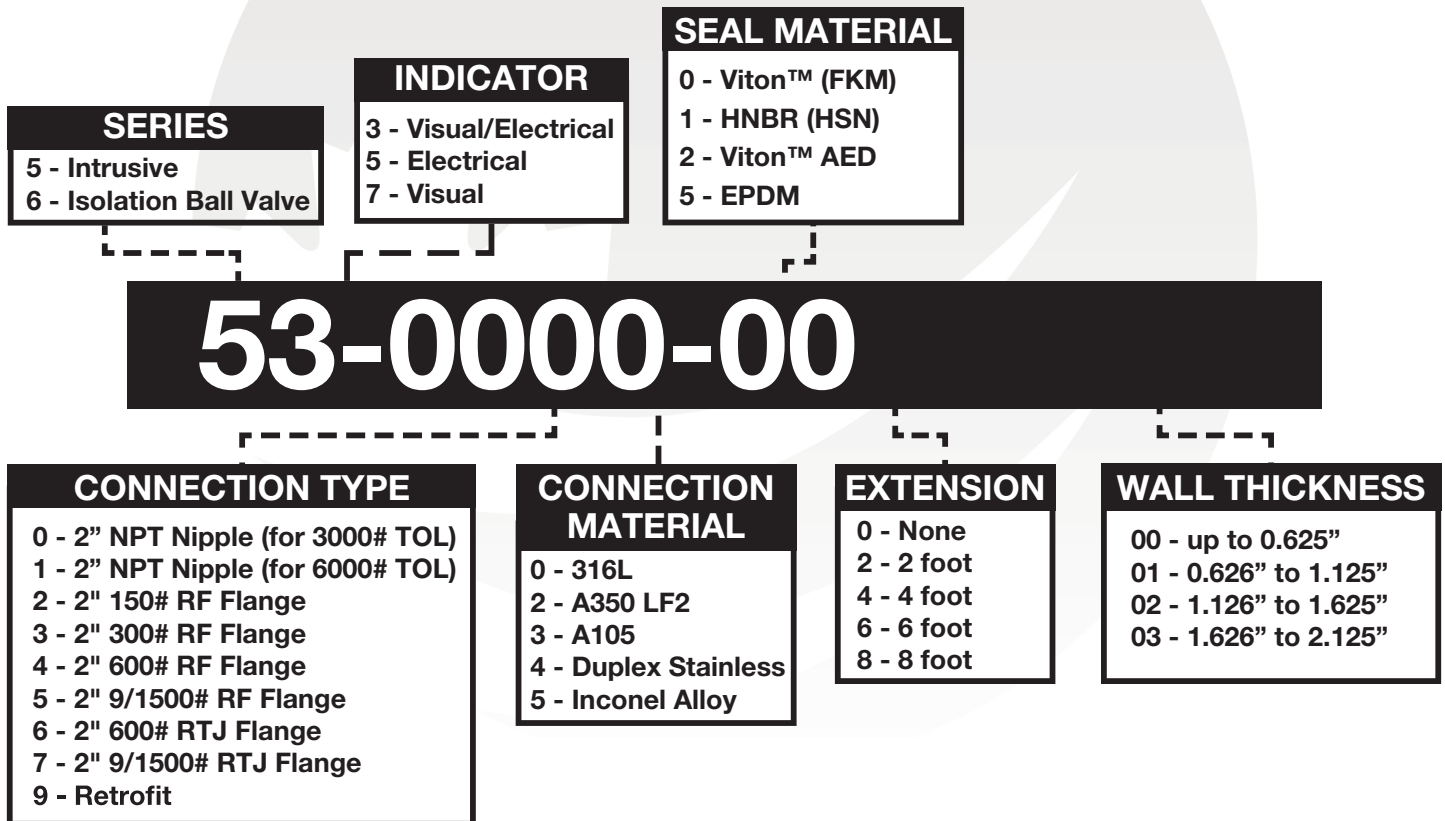
Designed for easy adjustment onsite, even while on-stream.

Material List



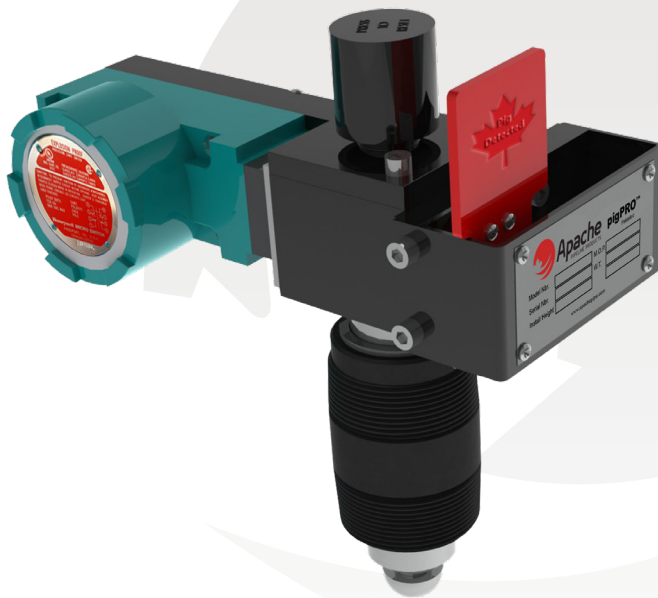
Optional Materials Available

Part Number Selection



Series 53

Visual/Electrical Indication, Manual/Auto Reset



The Series 53 is a combination visual and electrical indicator with manual and automatic reset.

Offering both visual and electrical indicator capabilities and manual and automatic reset features, the Series 53 is the most versatile member of Apache's pigPRO™ Series, a patented line of intrusive pig passage indicators that reliably detect the precise location of a cleaning pig as it travels within the pipeline network. When a cleaning pig passes the system's intruding plunger, it activates the plunger and triggers a visual flag indicator, signaling the pig's location.

Features & Benefits:

The Series 53 includes a thread mounting nipple, standard lower housing with fluorocarbon O-Rings, hemispherical plunger with a flag assembly and weather sealed & explosion proof limit switch. The switch employed on this model is NEMA rated, UL listed and CSA certified to suit most applications.

Options:

Flange Mount models are designed to connect to existing flanged connections and are available in ANSI Class 150, 300, 600 or 900/1500 flanges.

Extension Pole:

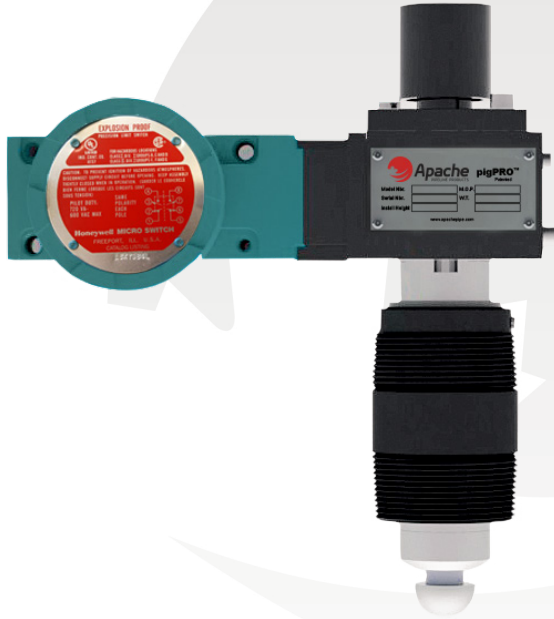
Aluminum extensions can be attached to enable detection of the pigs passage on buried pipelines. All pressure sealing components remain below the extension module. Available in lengths 2' to 10'.

Check
out our
videos!



Series 55

Electrical Indication, Auto Reset



The Series 55 is an electrical indicator with automatic reset.

With its optional manual and automatic reset capabilities, the Series 55 is a highly sought after member of Apache's pigPRO™ Series, a patented line of intrusive pig passage indicators that reliably detect the precise location of a cleaning pig as it travels within the pipeline network. When a cleaning pig passes the system's intruding plunger, it activates the plunger and triggers a visual flag indicator, signaling the pig's location.

Features & Benefits:

The Series 55 includes a thread mounting nipple, standard lower housing with fluorocarbon O-Rings, hemispherical plunger and weather sealed & explosion proof limit switch. The switch employed on this model is NEMA rated, UL listed and CSA certified to suit most applications.

Options:

Flange Mount models are designed to connect to existing flanged connections and are available in ANSI Class 150, 300, 600 or 900/1500 flanges.

Extension Pole:

Aluminum extensions can be attached to enable detection of the pigs passage on buried pipelines. All pressure sealing components remain below the extension module. Available in lengths 2' to 10'.

Check
out our
videos!



Series 57

Visual Indication, Manual Reset



The base model Series 57 is a visual flag indicator with manual reset.

It is a popular member of Apache's pigPRO™ Series, a patented line of intrusive pig passage indicators that reliably detect the precise location of a cleaning pig as it travels within the pipeline network. When a cleaning pig passes the system's intruding plunger, it activates the plunger and triggers a visual flag indicator, signaling the pig's location.

Features & Benefits:

Our most popular pigPRO™, the base model Series 57 includes a thread mounting nipple, standard lower housing with fluorocarbon O-Rings, hemispherical plunger with a flag assembly.

Options:

Flange Mount models are designed to connect to existing flanged connections and are available in ANSI Class 150, 300, 600 or 900/1500 flanges.

Extension Pole:

Aluminum extensions can be attached to enable detection of the pigs passage on buried pipelines. All pressure sealing components remain below the extension module. Available in lengths 2' to 10'.

Check
out our
videos!



Series 67

*Visual Indication, Manual Reset
Can Be Serviced on Flowing, Pressurized Pipelines*



The Series 67 is a visual flag indicator with manual reset and comes standard with an isolation ball valve.

The Series 67 adds safety and servicing options to our existing line of intrusive pig passage indicators. Like other available models in the patented pigPRO™ Series, it reliably detects the precise location of a cleaning pig as it travels within the pipeline network. When a pig passes the intruding plunger, it activates the plunger and triggers a visual flag indicator, signaling the pig's location.

Incorporating a customized ball valve with an extended lower housing into the design of our Series 67 pigPRO™ allows for a safe and simple isolation of the pig passage indicator from pipeline pressure for inspection, maintenance or repair. Complete removal and re-installation on any pressurized line is easy using the Extraction Kit and does not require specialized hot tap professionals or equipment.

The extraction kit contains a pressure relief tool and a custom built extraction cap and jack tube specifically designed for the Series 67 pigPRO™. Other items include O-Rings, fasteners, lubricant and hex key wrenches. All of this is provided in a protective industrial case.



Extraction Kit sold separately

Features & Benefits:

The integral isolation feature of the Series 67 means the cost, time and safety concerns of de-pressurizing and draining a line are eliminated. Now the pig passage indicator can be isolated, removed, repaired and reinstalled while the pipeline is flowing and pressurized. Preventative maintenance, inspection or repair are easily accomplished without specialized equipment or crews.

Extension Pole:

Aluminum extensions can be attached to enable detection of the pigs passage on buried pipelines. All pressure sealing components, including the isolation ball valve, remain below the extension module. Available in lengths of 2' to 10'.

Check
out our
videos!



Series 67 Flanged

*Visual Indication, Manual Reset, Flanged Adapted
Can Be Serviced on Flowing, Pressurized Pipelines*

The Series 67 is a visual flag indicator with manual reset and comes standard with a flanged isolation valve.



The Series 67 adds safety and servicing options to our existing line of intrusive pig passage indicators. Like other available models in the patented pigPRO™ Series, it reliably detects the precise location of a cleaning pig as it travels within the pipeline network. When a pig passes the intruding plunger, it activates the plunger and triggers a visual flag indicator, signaling the pig's location.

Incorporating a customized flanged isolation valve with an extended lower housing into the design of our Series 67 pigPRO™ allows for a safe and simple isolation of the pig passage indicator from pipeline pressure for inspection, maintenance or repair. Complete removal and re-installation on any pressurized line is easy using the Extraction Kit and does not require specialized hot tap professionals or equipment.

The extraction kit contains a pressure relief tool and a custom built extraction cap and jack tube specifically designed for the Series 67 pigPRO™. Other items include O-Rings, fasteners, lubricant and hex key wrenches. All of this is provided in a protective industrial case.



Features & Benefits:

Extraction Kit sold separately

The integral isolation feature of the Series 67 means the cost, time and safety concerns of de-pressurizing and draining a line are eliminated. Now the pig passage indicator can be isolated, removed, repaired and reinstalled while the pipeline is flowing and pressurized. Preventative maintenance, inspection or repair are easily accomplished without specialized equipment or crews.

Includes a flanged isolation valve, extended lower housing with fluorocarbon O-Rings, and hemispherical plunger with a flag assembly.

Extension Pole:

Aluminum extensions can be attached to enable detection of the pigs passage on buried pipelines. All pressure sealing components, including the isolation ball valve, remain below the extension module. Available in lengths of 2' to 10'.

Check
out our
videos!



pigPRO™ Series 67 Extraction Kit



The Extraction Kit has the unique tools, fasteners, and soft goods to allow a technician to remove the Series 67 pigPRO™ and then reinstall it onto a pressurized pipeline.

The extraction kit contains custom built extraction cap and jack tube specifically designed for the Series 67 pigPRO™ and a pressure relief tool. It contains required soft goods (O-Rings) that are installed in the lower housing. The kit contains fasteners, lubricant and hex key wrenches as well as spare fasteners. It is provided in an industrial case so that all parts will be available when needed.

Item	Description	Qty
1	3/8" Hex Flat Socket Head Cap Screws	2
3	Jack Tube	1
18	Extraction Cap	1
20	Hex Bar	1
24	O-Ring 221 Viton®	2
30	3/8" Lock Washers	6
31	3/8" Socket Head Cap Screws	6
32	1/2" Hex Head Cap Screws	8
	Pressure Relief Tool (PRT)	1
	Lubriplate No. 105 White Lithium Grease	1
	Hex Key Wrench Size 1/8"	1
	Hex Key Wrench Size 7/32"	1
	Hex Key Wrench Size 5/16"	1

**Note that items 1 and 32 have a quantity of 2 designated as spare items.*

TECHNICIAN'S WRENCHES: To extract the lower housing assembly, the technician will need to turn the 1" hex bar. To do this a 24" breaker bar wrench with a 1" socket is recommended but several other wrenches will work including a large ratchet, flat wrench, crescent adjustable wrench etc.

Hex bolts that are included have a 3/4" head so a 3/4" flat wrench or small crescent adjustable wrench is needed. As these tools are readily available, these are not included in the extraction kit and must be supplied by the technician doing the work.

Flange Mount

Flange Mount models are designed to connect to existing flanged connections.

Available in ANSI Class 150, 300, 600 or 900/1500 flanges.



Extension Pole

Aluminum extensions can be attached to enable detection of the pig's passage on buried pipelines.

All pressure sealing components remain below the extension module.

Available in lengths 2 to 10'.

Extension poles can be used with any Apache pigPRO™



CD52 Bandit



Features & Benefits:

The CD52 Bandit provides quick and easy non-intrusive pig passage detection of any pig and transmitter moving between 0.1 and 20 meters per second. Non-intrusive means less maintenance and corrosion, and no possibilities of pipeline leaks.

Quick and Easy Installation: No hot-tapping required. The CD52 Bandit can be installed in minutes by any field technician.

Sensing means of the CD52 Bandit consist of a set of patented, non-intrusive proprietary noise-canceling antennas invented by CDI specifically for pig passage detection. This antenna system gives the Bandit its ability to reject nearby magnetic noise and halt costly false-positive triggering. A small, safe, permanent magnet or active transmitter installed on a pig is all it takes to put the Bandit to work!

Remote Signaling of a passage is easy with built-in flashing LCD visual display and dry-contact relays. These normally-open or normally-closed relays may be used in conjunction with existing SCADA systems to integrate the CD52 Bandit into a pipeline control and signalling network. An optional array of four high-luminosity LEDs can be seen over distances as great as 100 meters (328 feet).

Options Available:

- Sunshade helps protect the Bandit from intense sunlight by reducing overall temperature inside, thus prolonging the life of the electronic components. 316 stainless steel construction guarantees long life in a harsh pipeline environment.
- Heater system recommended for operation below -22°F (-30°C).
- LineStat satellite radio for transmitting passage time, date, and GPS location via email or SMS message.
- Remote Indicator System provides passage indication up to 328 ft (100 meters).

CD52 Bandit - Full Stainless



Features & Benefits:

The CD52 family of products provide quick and easy non-intrusive pig passage detection of any pig moving between 0.01 and 20 meters per second. Non-intrusive means less maintenance and corrosion, and no possibilities of pipeline leaks.

Sensing means of the CD52-316SS consist of a set of patented, non-intrusive proprietary noise-canceling antennas invented specifically for pig passage detection. This antenna system gives the CD52-316SS its ability to reject nearby magnetic noise and halt costly false-positive triggering.

Field proven - We have been manufacturing our patented CD52 family of pig signalers for a decade. With thousands of systems installed around the globe, the CD52 family has a reliable performance record in burning deserts, frozen tundras, and every environment in between. Many of our customers are large oil and gas producers who rely upon the CD52 family of equipment to set valves, control pump stations, and communicate with SCADA systems.

Remote signaling of a passage is easy with a built-in flashing LCD visual display and dry-contact relays. These normally-open or normally-closed relays may be used in conjunction with existing SCADA systems to integrate the CD52-316SS into a pipeline control and signaling network.

Options Available:

- Sun Shade - Protection from intense sunlight.
- Heater System - Recommended for operation below -22°F (-30°C).
- Stainless Steel Tags - Tags engraved with customer information.
- Remote Indicator System (RIS) - Provides visual passage indication up to 328ft (100m).
- LineStat satellite radio for transmitting passage time, date, and GPS location via email or SMS message.



Stainless Steel Sun Shade

CD52 Bandit - Portable



Features & Benefits:

The CD52 Portable Bandit offers the added flexibility of quick takedown and relocation wherever/whenever a temporary signaler is needed.

Suspend Mode - A simple pushbutton temporarily suspends Portable Bandit operation for removal and repositioning.

Compact & Light - At only 13 in. [330 mm] tall, 21 lb. [9.5 kg], and a lower CG than the Bandit, the Portable Bandit is easily picked up and secured in its own low-profile carrying case for transport to the next job site.

Non-intrusive pig passage detection of any pig and transmitter moving between 0.01 and 20 meters per second means less maintenance and corrosion, and no possibilities of pipeline leaks.

Sensing Means of the CD52 Portable Bandit consist of a set of patented, non-intrusive proprietary noise-canceling antennas invented by CDI specifically for pig passage detection. This antenna system gives the Bandit its ability to reject nearby magnetic noise and halt costly false-positive triggering. A small, safe, permanent magnet or active transmitter installed on a pig is all it takes to put the Bandit to work!

Options Available:

- Sunshade helps protect the Portable Bandit from intense sunlight by reducing overall temperature inside, thus prolonging the life of the electronic components. The 316 stainless steel construction guarantees long life in a harsh pipeline environment.
- Stainless steel antenna & mounting plate.
- Pelican™ case.