



PIG-SIG® V

Scraper Passage Indicator



T.D. Williamson, Inc.

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Cross Indexing No: n/a

Supersedes: June 2008

■ Flag Indicator



■ Electrical Indicator



■ Flag/Electrical Indicator



Options

Available options are:

- Flag Indicator with Manual Reset;
- Electrical Indicator with Auto Reset;
- Flag/Electrical Indicator combined.
- Extended models, for installation on buried pipelines, are available in all configurations.
- Special materials and O-ring seals are available.
- Nipple can be furnished with flanged or threaded mounting.
- “Build your own” PIG-SIG V assembly from the charts on the pages of this product bulletin.

Description

TDW's PIG-SIG® V Scraper Passage Indicator is a device installed at prescribed intervals on pipelines to detect the passage of a pig or sphere. Most common passage indicators function by extending a unidirectional or bidirectional trigger into pipelines through a welded fitting or nipple that has been tapped. When a pig passes an indicator, the trigger is tripped which immediately activates a signaling mechanism. The PIG-SIG V indicator comes with a standard omnidirectional trigger that is easier to install and all but eliminates trigger breakage.

Signaling systems available with the PIG-SIG V include a flag indicator, an electrical indicator or a flag/electrical indicator. All are compatible with all standard THREAD-O-RING™ nipples previously sold by TDW and are interchangeable. This makes it possible to order the PIG-SIG V unit as an upgrade conversion kit without nipple, or as a new installation kit complete with nipple.

Features

Standard PIG-SIG V passage indicators are built to withstand the most brutal offshore/ onshore environments. Each PIG-SIG V indicator is weatherproof and corrosion-resistant. All components exposed to pipeline products are completely sealed to prevent leakage and are NACE compatible. Components exposed to the atmosphere are 316 stainless steel except the microswitch (on electrical models) which is aluminum with a protective powder coating. The flag indicator offers high visibility. Because the triggering toggle that extends into a pipe is omnidirectional, it does not require adjustments after it is set. This means the flag can be oriented to face any desired direction. The carbon steel nipple is manufactured from easily weldable material. PIG-SIG indicators can be installed on or removed from a pressured pipeline by using a TDW T-101 Tapping Machine and accessories.

Patent Pending in the United States and in foreign countries.

USA: 1-800-571-7447
England: (44) 1-793-603600



PIG-SIG® V Scraper Passage Indicators

04-XXXX -

Pipe Sizes

Pipe Sizes

3923 = 2 - 4-inch

3800 = 5-inch and Larger

Indicator Assembly

Indicator Option

0 = Flag with Manual Reset

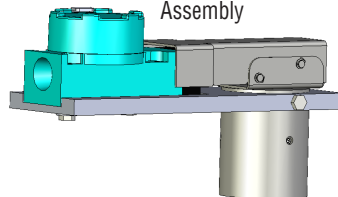
1 = Electrical with Auto Reset

2 = Flag/Electrical Combined

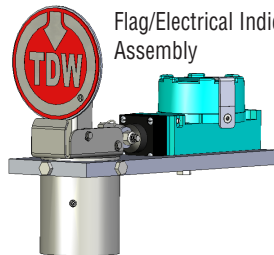
Flag Indicator Assembly



Electrical Indicator Assembly



Flag/Electrical Indicator Assembly



Shaft Assembly

Shaft Option

0 = Nonextended

1 = 12" Extension

2 = 24" Extension

3 = 36" Extension

4 = 48" Extension

5 = 60" Extension

6 = 72" Extension

7 = 84" Extension

8 = 96" Extension

9 = 108" Extension

Extended Indicator



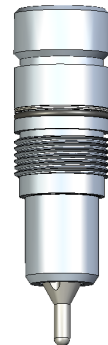
Plug Assembly

Plug Assembly Option

0 = 316 Stainless Steel Omnidirectional

1 = Naval Brass

Omnidirectional



Example: 04-3800-0100-51

is a PIG-SIG with a flag indicator, 12" extended shaft for 6" and larger pipe with .250" to .500" wall.

PIG-SIG® V Scraper Passage Indicators

XXXX - Suffix *

O-Ring Material

Material Option

- 0 = Explosive Decompression & Extrusion Resistant Viton
- 1 = Buna-N (Low Temp)
- 2 = Neoprene
- 3 = EPDM
- 4 = Kalrez
- 5 = Buna

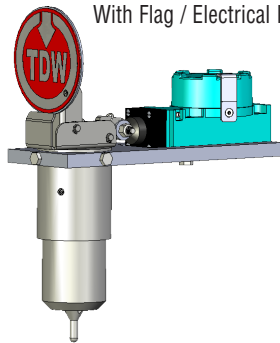
"SUFFIX" Pipe Size

Pipe Size	Pipe Wall Thickness	Nipple Length	Suffix
2	.125 to .188	4.517	-11
2	.189 to .375	4.392	-07
2.5	.125 to .188	4.461	-10
2.5	.189 to .375	4.336	-06
3	.062 to .125	4.544	-24
3	.125 to .188	4-419	-09
3	.189 to .375	4.294	-05
3	.376 to .562	4.107	-18
3.5	.125 to .188	4.369	-08
3.5	.189 to .375	4.271	-04
3.5	.563 to .750	3.896	-19
4	.125 to .188	4.379	-03
4	.189 to .375	4.254	-01
4	.376 to .562	4.067	-17
4	.400 to .587	4.042	-22
4	.563 to .750	3.879	-21
6" & Up	.250 to .500	4.000	-51
6" & Up	.501 to .750	3.750	-52
6" & Up	.751 to 1.000	3.500	-53
6" & Up	1.001 to 1.250	3.250	-54
6" & Up	1.251 to 1.500	3.000	-55
6" & Up	1.501 to 1.750	2.750	-56
6" & Up	.125 to .249	4.250	-64
4"	.189 to .375	4.125	-01
4"	.125 to .188	4.250	-03
5"	.189 to .375	4.125	-12
5"	.125 to .188	4.250	-13
5"	.563 to .750	3.750	-20
Less Nipple			-99

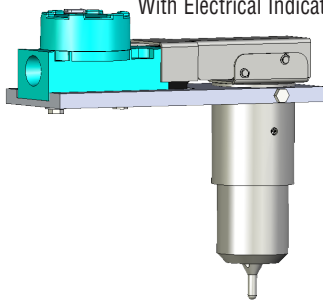
Final Assembly With Flag Indicator



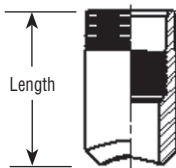
Final Assembly With Flag / Electrical Indicator



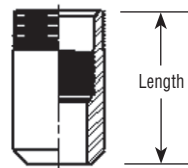
Final Assembly With Electrical Indicator



5" & Smaller Pipe



6" & Larger Pipe



THREAD-O-RING™ Nipple part number:
00-1023-0333-SUFFIX

* Please indicate if protection for environmentally harsh conditions is required.



PIG-SIG® V Scraper Passage Indicators

THREAD-O-RING™ Nipple Material

Size & Grade:	2 NPS XXS ASTM A 333 Grade 6 seamless steel pipe
Tensile Requirements:	35,000 psi SMYS - 60,000 psi SMTS
Impact Requirements:	13 ft-lbf min Avg 3 Specimens 10 ft-lbf min One Specimen Only Impact Temperature -50° F
Chemical Requirements:	Composition, % - Carbon 0.30 max, Manganese 0.29-1.06, Phosphorus 0.025 max, Sulfur 0.025 max, Silicon 0.10 min
Test Report:	Certified Test Reports furnished per ASTM A 530

Pressure Temperature Ratings Pressures are in pounds per square inch, gage (psig). Temperatures are in Fahrenheit.

Piping Code	B31.3	B31.4	B31.4	B31.8	B31.8	B31.8
Temp. °F		F=.72	F=.72	F=.60	F=.50	F=.40
-50	3159					
-20 to 250	3159	3743	3743	3120	2600	2080
300	3159		3620	3017	2514	2011
350	3159		3493	2911	2425	1940
400	3159		3369	2808	2340	1872
450	3072		3246	2246	1872	1497
500	2985					

Pressure Temperature Ratings Pressures are in bar. Temperatures are in Celsius.

Piping Code	B31.3	B31.4	B31.4	B31.8	B31.8	B31.8
Temp. °C		F=.72	F=.72	F=.60	F=.50	F=.40
-46	218					
-29 to 116	218	258	258	215	179	143
149	218		250	208	173	139
177	218		241	201	167	134
204	218		232	194	161	129
262	212		224	155	129	103
260	206					

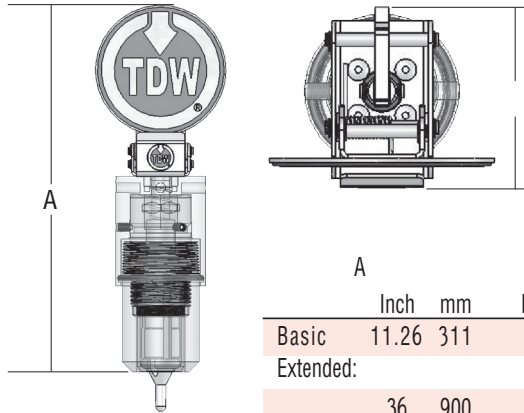
Pressures do not include allowance for corrosion. O-Ring material selection must be suitable for service fluids and temperature requirements.

Due to magnet degradation the temperature for the plug assembly is limited to 200° F (93° C)



PIG-SIG® V Scraper Passage Indicators

Flag Indicator with Manual Reset



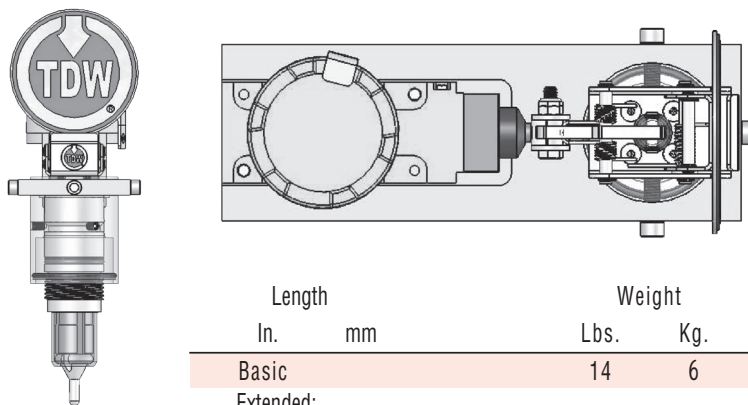
The basic indicator includes:
2" (50 mm) THREAD-O-RING™ nipple, plug
assembly and indicator assembly.

The extended indicator includes the same items
as well as an extended length indicator assembly.

	A		Weight		Lbs.	Kg.	Part Number
	Inch	mm	Inch	mm			
Basic	11.26	311			9	4	04-3800-0000
Extended:							
	36	900			20	9.0	04-3800-0300
	48	1200			25	11.5	04-3800-0400
	60	1500			29	13.0	04-3800-0500
	72	1800			34	15.5	04-3800-0600
	84	2000			39	18.0	04-3800-0700
	96	2500			44	20.5	04-3800-0800

Consult the factory for larger sizes.

Flag Indicator with Manual Reset - Electrical Indicator with Auto Reset Combined



The basic indicator includes: 2" (50 mm)
THREAD-O-RING nipple, plug assembly and
flag/electrical indicator assembly. The electrical
indicator consists of a weather proof, explosion-
proof, ATEX Certified microswitch (LSX, double
pole, double throw).

The extended indicator includes the same items
as well as an extended length indicator assembly.

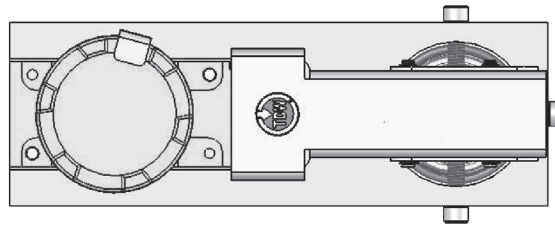
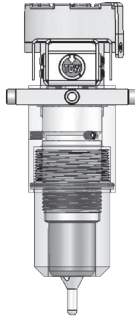
	Length		Weight		Part Number
	In.	mm	Lbs.	Kg.	
Basic			14	6	04-3800-2000
Extended:					
	36	900	25	11.0	04-3800-2300
	48	1200	30	14.0	04-3800-2400
	60	1500	35	16.0	04-3800-2500
	72	1800	40	18.0	04-3800-2600
	84	2000	45	20.0	04-3800-2700
	96	2500	50	23.0	04-3800-2800

Consult the factory for larger sizes.



PIG-SIG® V Scraper Passage Indicators

Electrical Indicator with Auto Reset



The basic indicator includes: 2" (50 mm) THREAD-O-RING nipple, plug assembly and electrical indicator assembly. The electrical indicator consists of a weather proof, explosion-proof, ATEX Certified microswitch (LSX, double pole, double throw).

The extended indicator includes the same items as well as an extended length indicator assembly.

Length		Weight		Part Number
In.	mm	Lbs.	Kg.	
Basic		14	6	04-3800-1000
Extended:				
36	900	25	11.0	04-3800-1300
48	1200	30	14.0	04-3800-1400
60	1500	35	16.0	04-3800-1500
72	1800	40	18.0	04-3800-1600
84	2000	45	20.0	04-3800-1700
96	2500	50	23.0	04-3800-1800

Consult the factory for larger sizes.



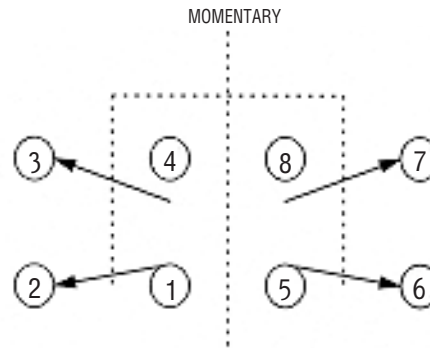
PIG-SIG® V Scraper Passage Indicators

MICRO SWITCH® Electrical Diagram

Electrical specifications:

- Double-Pole
- 2 N.O., 2 N.C.
- 3/4 in. conduit

Note: When a Flag Indicator is used in combination with the electrical switch, the switch will open or close when the flag is reset.



Electrical Indicator Switch Specifications

MICRO SWITCH™ weather-sealed explosion-proof switch BX4CL for use either indoors or outdoors in hazardous atmospheres.

Temperature Range: -40° F (-40° C) to 185° F (85° C).

Housing Materials: Aluminum and Zinc.

Seals: Fluorosilicone.

NEMA Standards: 1, 3, 4, 4X, 6, 7, 9 and 13.

UL listed (File No. E61730) and CSA certified (File No. LR57327): Class I, Div. 1, Groups B, C, and D (listings covered in Division 1 are also covered in the same groups in Division 2). Class II, Div. 1, Groups E, F and G. (IEC standards: EExd IICT6, IP67)

Electrical Ratings: 10 amps continuous carry. Circuits on any one pole must be the same polarity.

AC Volts - Pilot Duty: 600 VAC, 720VA

Circuitry	VAC	Amps at 0.35 Power Factor	
		Make	Break
Double-Pole Double-Throw	120	30	3
	240	15	1.5
	480	7.5	0.75
	600	6	0.60

DC Volts - Pilot Duty: 240 VDC, 30 watts

Circuitry	VDC	Make and Break Amps	
		Inductive	Resistive
Double-Pole Double-Throw	24	10	10
	120	0.25	0.8
	240	0.15	0.4

MICRO SWITCH is a Registered Trademark of Honeywell Division Technology



PIG-SIG® V Scraper Passage Indicators

Recommended Spare Parts List

Component	Quantity/Assembly	Quantity/Spares*	Part Number
O-ring, Plug	1	1	00-8440-0003-00
Backup Ring	1	1	00-1586-0066-00
O-ring, Cap (Weather Seal Only)	1	1	00-8144-0001-00
Set Screw	3	3	00-8176-0001-00
1-inch Hex Plug Holder*	1	1	00-8138-0000-00
1-inch Hex Bit*	1	1	00-8235-0001-00

*If PIG-SIG® V is to be installed or removed under pressure with a T-101 Drilling Machine a new Plug Holder is required. If PIG-SIG V is to be installed or removed with no pressure in the pipeline a 1-inch hex bit is required.