

AUTOMATIC PIG LAUNCHING



Production Optimization & Corrosion Mitigation
for High Frequency & Remote Pigging Applications



SPECIFICATIONS



Spec. 6D – 0225
Edmonton, AB, Canada

We are committed to product safety and quality. Argus Pig Valves conform to the following standards:

API

SPEC. 6D^{2,3}
SPEC. 6FA^{1,2}
STD. 607^{1,2}
STED. 598
SPEC. Q1

American Petroleum Institute

Specification for Pipeline Valves
Fire Test for Valves
Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats
Valve Inspection and Testing
Specification for Quality Programs for the Petroleum and Natural Gas Industry

ASME

B1.20.1
B16.5
B16.10
B16.34²
B31.3
Section VIII Div. 1³

American Society of Mechanical Engineers

Pipe threads, general purpose
Pipe flanges & flange fittings
Face-to-Face & End-to-End dimensions of Valves
Valves - Flanged, Threaded, and Welding End
Process Piping
Boiler and Pressure Vessel Code - Rules for Construction of Pressure Vessels

ISO

ISO 9001
ISO 15156
ISO 10497^{1,2}

International Organization for Standardization

Quality Management System
Materials for use in H₂S containing environments in oil & gas production
Testing of valves - fire type-testing

NACE

MR0175

National Association of Corrosion Engineers

Materials for use in H₂S containing environments in oil & gas production

CSA

Z245.12
Z245.15
Z662³

Canadian Standards Association

Steel Flanges
Steel Valves
Oil and Gas Pipeline Systems

1: Certification available for 6" - 12" 900 & 1500 ASME, 8" & Larger 300 & 600 ASME

2: Applies to Pig Valve only, not the Automatic Pig Launcher

3: Pig Valves with a "Right to Left" flow direction are not marked with the API Monogram; although they meet the design requirements of API 6D 24th Edition, Addendum 2, their closing direction is required to be counter-clockwise which does not meet the clockwise to close requirement specified in API 6D.

AUTOMATIC PIG LAUNCHING

The Argus automatic pig launcher allows for remote pigging operation for up to 11 launches. This system is ideally suited for remote well sites, limited access, offshore production platforms and environmentally sensitive locations.

CONSIDER THESE BENEFITS

1. Optimized production through effective liquids sweeping and debris removal
2. Reduced travel time and operator intervention resulting in lower operational costs
3. Remote pigging from the control room
4. Enhanced operator safety through reduced intervention
5. Reduced emissions by up to 91%
6. Reduce and prevent the formation of hydrates by effectively keeping moisture content in the pipeline at lower levels
7. Mitigate corrosion through frequent pigging
8. Maintain pipeline integrity
9. Small footprint and minimized weight for offshore applications
10. Pneumatic, onsite electric power supply, manually operated or self-contained solar actuation options



PRODUCTION OPTIMIZATION AND CORROSION MITIGATION

Flow rates and ultimately your bottom line are influenced by pipeline constrictions. Debris and extraneous fluid within the pipeline causes reduced flow and results in decreased production.

With increased pigging frequency comes successful debris removal and effective liquids sweeping allowing you to achieve lower pipeline pressures. This equates to more efficient flow rates and increased production.

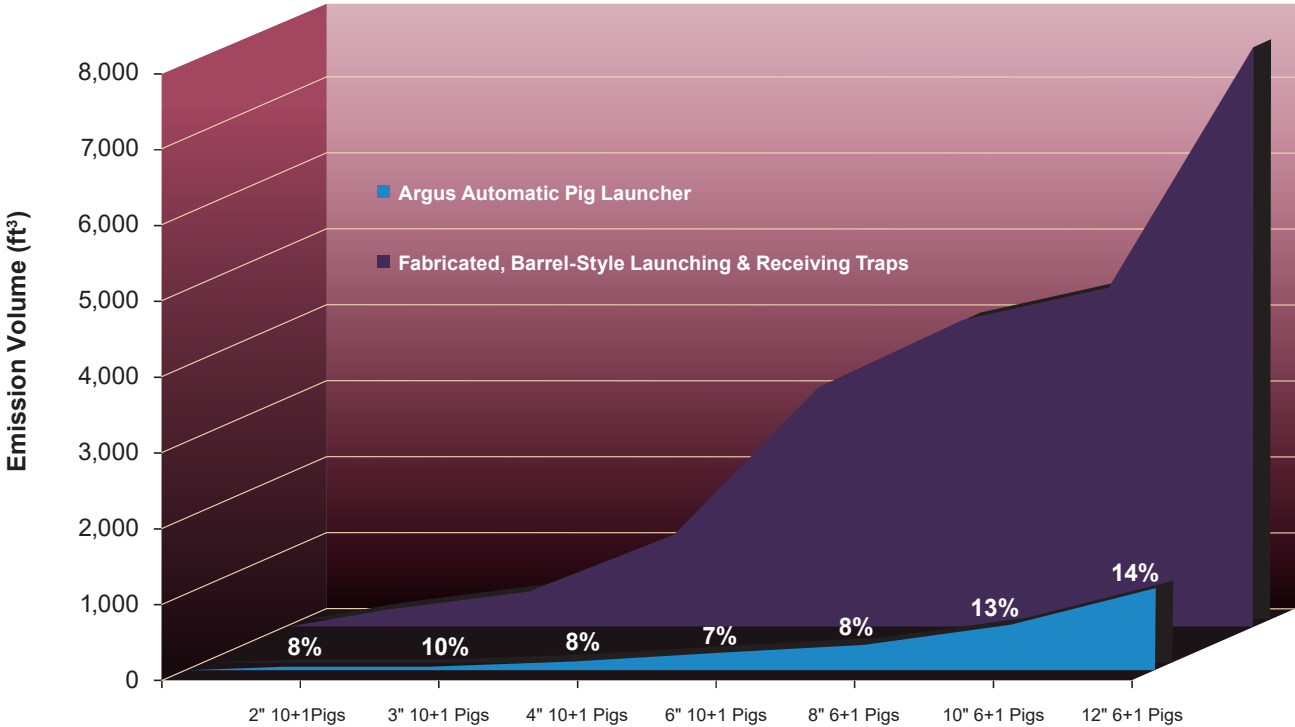


REDUCE EMISSIONS BY UP TO 91%

Compared to conventional barrel-style launching and receiving, the automatic pig launcher is clearly more efficient, saving you time and money.

GAS EMISSION COMPARISON

Argus Automatic Pig Launcher vs. Fabricated Barrel-Style Launching & Receiving Traps



*Comparison criteria based on one cycle of the Automatic Pig Launcher compared to equivalent number of cycles required by the Barrel Launcher as dictated by total number pigs. (Approximation uses the "ideal gas law", constant temperatures, and gas pressure @ 1480 psi).



SAFETY FEATURES

- 1 PRESSURE WARNING GROOVE**
Allows the media to easily communicate with the atmosphere, warning the operator prior to removal of the entry cap under pressure.
- 2 PRESSURE ALERT VALVE**
Ensure pressure relief prior to cap removal.
- 3 ENTRY CAP WRENCH**
Designed to fit over the entry cap lugs, thus eliminating impact and sparking hazards associated with entry cap.
- 4 ACTUATION LOCKOUT**
Prevents inadvertent opening of valve.



TRIM MATERIALS

STANDARD TRIM MATERIALS (6" 900 ASME & ABOVE)	
Body	ASTM A350-LF2, Class 1
End Connections	ASTM A350-LF2, Class 1
Ball	ASTM A350-LF2 c/w 0.001" High-Phosphorus ENC
Entry Cap	ASTM A350-LF2, Class 1
Trunnion Bearing Plate	A516-Gr. 70
Seat Springs	Inconel X-750
Seat Support	ASTM A350-LF2 c/w 0.001" ENC
Seat Insert	Devlon 'V'
Primary Seals	Highly Saturated Nitrile (HSN)
Bolting – Pressure Containing	ASTM A320 L7M/ASTM A194 L7M

Trim materials applicable to valve only

Note: Alternative trim materials available upon request.

OPERATION/ACTUATION OPTIONS

- Manual by lever for local hazardous locations
- Electric by power on site, 110, 220, 240, 480 VAC (3 phase), Class 1, Div. 1
- Electric by solar power with panels and batteries 12, 24 VDC (solar), Class 1, Div. 1
- Pneumatic Quarter Turn Actuation with clean and dry fuel gas, instrument quality air or nitrogen



OPERATING PROCEDURES

Steps 1-3

1. Close Pig Valve
2. For Pneumatic actuators install safety pin through actuator adaptor, preventing inadvertent opening of valve.

For electric actuators install padlock to prevent inadvertent tripping of actuator and opening of valve.
3. Relieve pressure in pig launcher by opening blow-down valve.



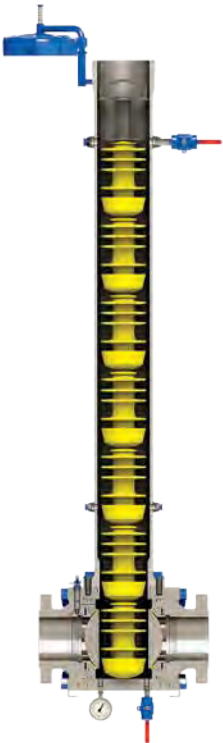
Step 4

4. Open the drain valve on the bottom of the Pig Valve to bleed residual liquids.



Step 7

7. Install pigs "nose down" into the launcher and reinstall pig weight on top of the pigs.



Step 8

8. Re-install cap and pressure alert valve stem on cap.



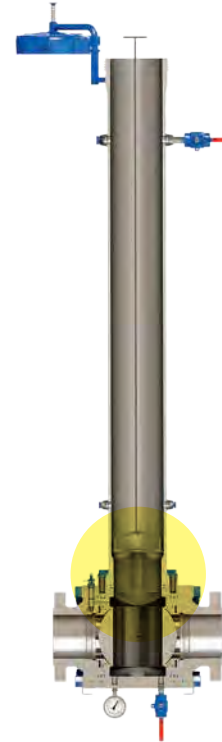
Step 5

5. Remove/open pressure alert valve stem on closure to verify that the launcher is fully depressurized.



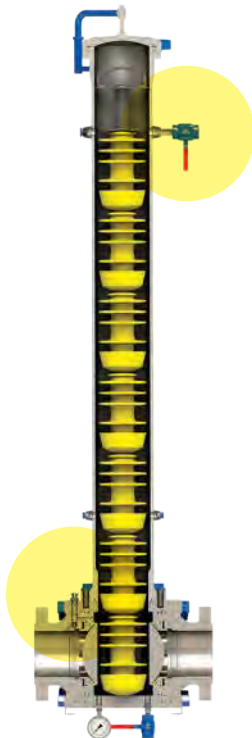
Step 6

6. Open the closure and remove the pig weight using the supplied pig weight retriever.



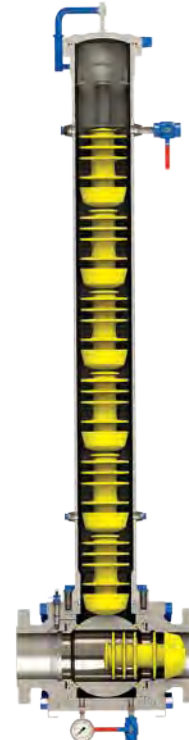
Steps 9-10

9. Close blow-down valve and drain valve. The spring return pressure equalization line should be closed.
10. Open pressure equalization line valve.



Steps 11-12

11. Disengage actuator lock out features.
12. When the closed signal is removed the valve rotates and the launcher will send the first pig that is located in the ball core of the pigging valve.



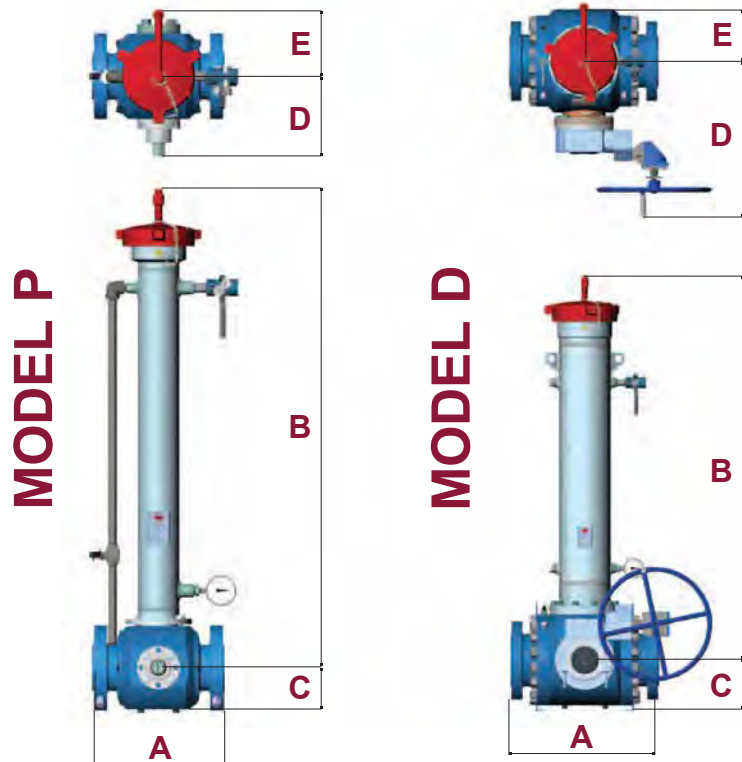
DIMENSIONS – 3" TO 20"

MODEL P 10+1 AUTOMATIC PIG LAUNCHERS														
SIZE AND PRESSURE RATING (ASME)	A (Overall Length)				B		C		D		E		Weight	
	RF		RTJ		IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
	IN	MM	IN	MM										
3"- 300	14.00	356	14.12	359	72.75	1850	4.75	121	8.38	213	6.18	157	310	141
3"- 600	14.00	356	14.12	359									310	141
4"- 300	16.00	406	16.50	419	94.56	2405	5.62	143	10.75	273	7.83	199	540	245
4"- 600	17.00	432	17.12	435									560	254
6"- 300	18.88	480	19.38	492	126.56	3215	7.12	181	12.12	308	9.20	234	1120	508
6"- 600	22.00	559	22.12	562									1200	544

MODEL D 6+1 AUTOMATIC PIG LAUNCHERS														
SIZE AND PRESSURE RATING (ASME)	A (Overall Length)				B		C		D		E		Weight	
	RF		RTJ		IN	MM	IN	MM	IN	MM	IN	MM	LB	KG
	IN	MM	IN	MM										
8"- 300	28.50	724	29.00	737	113.50	2885	10.67	271	32.70	831	12.00	305	2900	1315
8"- 600	31.20	792	31.32	796									3100	1406
10"- 300	35.36	898	35.86	911	113.90	3402	12.00	305	34.56	878	13.62	346	4400	1996
10"- 600	37.12	943	37.25	946									4600	2086
12"- 300	40.75	1035	41.25	1048	163.70	4159	14.17	360	38.88	988	15.66	398	7150	3243
12"- 600	42.06	1068	42.19	1071									7250	3289
16"- 600	54.00	1372	54.12	1375	182.90	4645	17.12	435	41.57	1056	19.55	497	11800	5352
20"-150	49.38	1254	-	-	TBD	TBD	19.43	494	47.63	1210	21.13	537	TBD	TBD

SIZE	PRESSURE CLASS	PIG CAPACITY
3 inch	300 and 600 ASME	11
4 inch	300 and 600 ASME	11
6 inch	300 and 600 ASME	7
8 inch	300 and 600 ASME	7
10 inch	300 and 600 ASME	7
12 inch	300 and 600 ASME	7
16 inch	300 and 600 ASME	7

Stairs and catwalks not provided
 Optional bi-directional pigging through 180 degree actuation
 Contact Argus for other sizes & pressure classes



ARGUS URETHANE PIGS

Cup and Disc Pigs



- Argus offers a full range of cup and disc urethane pigs that are also compatible with fiber reinforced pipelines.

Specialty Pigs



- Mag Pigs** supplied with rare earth magnets for non-intrusive pig signaling.
- Filming Pigs** for batch, corrosion inhibition programs.
- Low-Flow Pigs** with a two-cup design for pigging at low pressure differentials.

NOMINAL PIG SIZE	PIPE WALL THICKNESS		PIG LENGTH		COLOR	DUROMETER (SHORE 'A')
	in	(mm)	in	(mm)		
2 INCH	.154 - .188	(3.91 - 4.78)	4.50	(114.3)	Grey	60
					Yellow	70
					Blue	80
					Black	90
3 INCH	.109 - .125	(2.77 - 3.18)	5.75	(146.0)	Purple	60
					Green	70
					Red	80
					Orange	90
	.156 - .188	(3.96 to 4.78)	5.75	(146.0)	Grey	60
					Yellow	70
					Blue	80
					Black	90
4 INCH	.109 - .125	(2.77 - 3.18)	7.50	(190.5)	Purple	60
					Green	70
					Red	80
					Orange	90
	.156 - .188	(3.96 to 4.78)	7.50	(190.5)	Grey	60
					Yellow	70
					Blue	80
					Black	90
6 INCH	.109 - .125	(2.77 - 3.18)	10.50	(266.7)	Purple	60
					Green	70
					Red	80
					Orange	90
	.156 - .280	(3.96 - 7.11)	10.50	(266.7)	Grey	60
					Yellow	70
					Blue	80
					Black	90
8 INCH	.250 - .375	(6.35 - 9.53)	14.25	(362.0)	Grey	60
					Yellow	70
					Blue	80
					Black	90
10 INCH	.250 - .438	(6.35 - 11.13)	17.25	(438.2)	Grey	60
					Yellow	70
					Blue	80
					Black	90
12 INCH	.250 - .500	(6.35 - 12.70)	20.00	(508.0)	Grey	60
					Yellow	70
					Blue	80
14 INCH	.250 - .500	(6.35 - 12.70)	22.38	(568.5)	Black	90
					Grey	60
					Yellow	70
16 INCH	.500 - 1.125	(12.70 - 28.70)	24.63	(625.6)	Blue	80
					Black	90
					Yellow	70
20 INCH	.500 - 1.125	(12.70 - 28.70)	30.63	(778.0)	Grey	60
					Yellow	70
					Blue	80
					Black	90



APPLICATIONS



Colorado, USA
12 inch 600 ANSI, five pig capacity
Pneumatically actuated



Alberta, Canada
6 inch 600 ANSI, eleven pig capacity
Self-contained solar electrically actuated



Alberta, Canada
8 inch 600 ANSI, seven pig capacity
Pneumatically actuated



Alberta, Canada
6 inch 600 ANSI, seven pig capacity
Pneumatically actuated

QMS REGISTERED

Certificate of Registration

APIQR REGISTRATION NUMBER
0686

This certifies that the quality management system of

ARGUS MACHINE CO. LTD.
5820 - 97th Street NW
Edmonton, AB
Canada

has been assessed by the American Petroleum Institute Quality Registrar (APIQR) and found it to be in conformance with the following standard

ISO 9001:2015

The scope of this registration and the approved quality management system applies to the

Design, Manufacture and Assembly of Piggings Systems, Pressure Switches, Wiring Harnesses, Cementing Equipment and Valves; Manufacture of Couplings, Oilfield Connectors and Drill Stem Subs; Provision of General Machining and Threading Services

APIQR approves the organization's justification for excluding

No Exclusions Identified as Applicable

Effective Date: **AUGUST 26, 2020**
Expiration Date: **SEPTEMBER 20, 2023**
Registered Since: **SEPTEMBER 20, 2011**

Helen O. Pflieger
Vice President of Global Industry Services

The certificate is valid for general product lines. The registered organization must continually use all equipment of APIQR registration. Changes and/or replacement of the equipment registered is acceptable as long as the equipment is replaced with equivalent or better quality equipment. The organization must maintain the equipment in accordance with the manufacturer's instructions. The certificate is not valid for equipment that is not registered with APIQR. For more information, please contact the American Petroleum Institute Quality Registrar at 1-800-368-5898. For a complete list of APIQR registration fees, go to www.apiqr.com.

APIQR QUALITY REGISTRAR

REGISTRATION NO. Q1-0424

API

Certificate of Registration

The American Petroleum Institute certifies that the quality management system of

ARGUS MACHINE CO. LTD.
5820 - 97th Street NW
Edmonton, AB
Canada

has been assessed by the American Petroleum Institute and found to be in conformance with the following

API Specification Q1

The scope of this registration and the approved quality management system applies to the

Design, Manufacture and Assembly of Piggings Systems, Pressure Switches, Wiring Harnesses, Cementing Equipment and Valves; Manufacture of Couplings, Oilfield Connectors and Drill Stem Subs; Provision of General Machining and Threading Services

API approves the organization's justification for excluding

No Exclusions Identified as Applicable

Effective Date: **AUGUST 26, 2020**
Expiration Date: **SEPTEMBER 20, 2023**
Registered Since: **DECEMBER 18, 2006**

Helen O. Pflieger
Vice President of Global Industry Services

Q1
API Spec Q1
Registered

The certificate is valid for the product lines listed. The registered organization must continually use all equipment of APIQR registration. Changes and/or replacement of the equipment registered is acceptable as long as the equipment is replaced with equivalent or better quality equipment. The organization must maintain the equipment in accordance with the manufacturer's instructions. The certificate is not valid for equipment that is not registered with APIQR. For more information, please contact the American Petroleum Institute Quality Registrar at 1-800-368-5898. For a complete list of APIQR registration fees, go to www.apiqr.com.

Certificate of Authority to use the Official API Monogram

License Number: 6D-0225 ORIGINAL

The American Petroleum Institute hereby grants to

ARGUS MACHINE CO. LTD.
5820 - 97th Street NW
Edmonton, AB
Canada

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled **API Spec Q1** and **API-6D** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **6D-0225**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: **Ball Valves**

QMS Exclusions: **No Exclusions Identified as Applicable**

Effective Date: **SEPTEMBER 20, 2020**
Expiration Date: **SEPTEMBER 20, 2023**

Helen O. Pflieger
Vice President of Global Industry Services

To verify the authenticity of this license, go to www.api.org/compositelid.

American Petroleum Institute

API-6D-11-0001

SINCE 1958

ARGUS MACHINE CO. LTD.

1.780.434.9451

info@argusmachine.com



Alberta Canada, 6" 600 ANSI, eleven pig capacity,
self-contained solar electric actuation



argusmachine.com

© Copyright 2021 Argus Machine Co. Ltd.
Design Specifications Subject to Change Without Prior Notice

ARGUS GROUP OF COMPANIES
Calgary • Edmonton • Houston • Nisku