

MULTI-PIG LAUNCHER

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



ARGUS

Manufacturing Intelligent Solutions

SPECIFICATIONS



Spec. 6D – 0225
Edmonton, AB, Canada

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

API

SPEC. 6D^{1,2}

SPEC. 6FA^{2,3}

STD. 607^{2,3}

STD. 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. 1⁴

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

Pipe Threads, General Purpose

Pipe Flanges and Flange Fittings

Face-to-Face and 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^{2,3}

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Quality Management System

Materials for Use in H₂S Containing Environments in Oil and Gas Production

Testing of Valves - Fire Type Testing

NACE

MR0175

NATIONAL ASSOCIATION OF CORROSION ENGINEERS

Materials for Use in H₂S Containing Environments in Oil and Gas Production

CSA

Z245.12

Z245.15

Z662⁴

CANADIAN STANDARDS ASSOCIATION

Steel Flanges

Steel Valves

Oil and Gas Pipeline Systems

¹ Pig Ball Valves with a "Right to Left" flow direction are not marked with the API Monogram; although they meet the design requirements of API 6D 25th Edition, their closing direction is required to be counter-clockwise which does not meet the clockwise to close requirement specified in API 6D.

² Applies to Pig Valve only, not the Multi-Pig Launcher barrel.

³ Certification available for 6" 900 & 1500 ASME Class, 8"-12" 150-1500 ASME Class, 14" & Larger 150-600 ASME Class.

⁴ Applies only to Model "D" valves.

MULTI-PIG LAUNCHING

The Argus Multi-Pig Launcher allows remote pigging operation for up to 11 launches. This system is ideally suited for remote well sites, sites requiring frequent pigging, offshore production platforms, and where reducing emissions is required or of interest.

BENEFITS

1. Improve pipeline integrity while reducing OpEx.
2. Optimize production through effectual liquid sweeping and debris removal.
3. Reduce travel time and operator intervention costs.
4. Remote pigging from the control room.
5. Enhance operator safety through reduced intervention.
6. Reduce emissions by up to 97% compared to traditional launching methods.
7. Reduce and prevent the formation of hydrates by effectively keeping moisture content in the pipeline at lower levels.
8. Mitigate corrosion through frequent pigging.
9. Small footprint and minimized weight are ideal for offshore applications.
10. Actuation options include pneumatic, on-site electric power supply, manually operated, or self-contained solar.



PRODUCTION OPTIMIZATION & CORROSION MITIGATION

Pipeline constrictions influence flow rates and, ultimately, your bottom line as debris and extraneous fluid within the pipeline cause reduced flow and decreased production.

With increased pigging frequency comes successful debris removal and liquid sweeping, equating to more efficient flow rates and increased production.

MPL COST & EMISSIONS CALCULATOR

Enhance Your Pipelines Efficiency with a Simple Decision



Reliable Quality & Designs

- Vertically fed design
- Material traceability
- Quality certifications

Reduce GHG Emissions

- Ten fewer trips
- Ten fewer vents
- Less emissions per vent

Enhance Pipeline Integrity

- Increase pig frequency
- Extend infrastructure life
- Maintain schedules

Heighten Savings with Lower OpEx


- Lower labor costs
- Automate operations
- Reduce travel expenses

Increase Operator Safety

- Less frequent travel
- Less intervention
- Less risk

MULTI-PIG
LAUNCHER

Contact us for your personalized consultation:

 1.888.434.9451

 info@argusinnovates.com

SAFETY FEATURES



1	Pressure Alert Valve Must be opened before the entry cap will fully open and can audibly warn the operator of existing pressure.
2	Pressure Alert Groove Safety redundancy in the unlikely event the pressure alert valve malfunctions that will also audibly warn the operator.
3	Non-Impact Wrench and Entry Cap Eliminates hammering on the entry cap and the associated material failure and sparking hazards.
4	Lifting Lugs Allows for safe handling of the Argus Multi-Pig Launcher during installation and repair.
5	Entry Cap Alignment Arrows High visibility painted arrows and tactile drive pins line up when the entry cap is closed and properly tightened.
6	Flow Direction Labels High visibility stenciling minimizes potential confusion or misapplication during installation.
7	Entry Cap Orientation for Media Spillage Vertical orientation of the Argus Multi-Pig Launcher entry caps eliminates the threat of horizontal pressurized openings.
8	Actuation Lockout (Not Shown) Prevents inadvertent operation of the Argus Multi-Pig Launcher.

TRIM MATERIALS

STANDARD TRIM MATERIALS FOR 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	A516-Gr. 70
Seat Springs	Inconel X-750
Seat Support	ASTM A350-LF2, Class 1 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 or gear operator.
- Electric by power on site, 110 & 220 (single phase VAC), 240 & 480 (three phase VAC), 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

Step 1-3

1. Close pig valve.
2. For Pneumatic actuators install safety pin through actuator adapter, 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 drain residual liquids.



Step 5

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



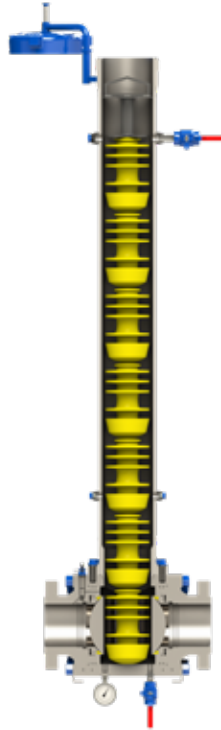
Step 6

6. Open the entry cap and remove the pig weight using the supplied pig weight retriever.



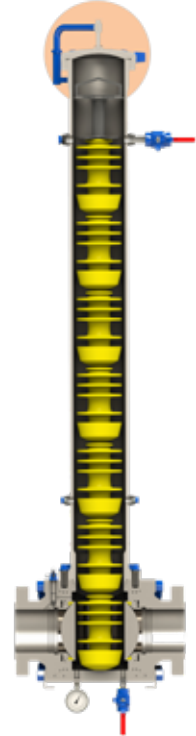
Step 7

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



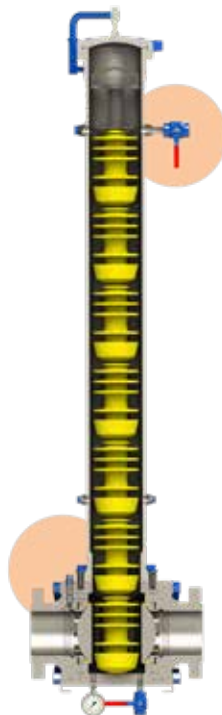
Step 8

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



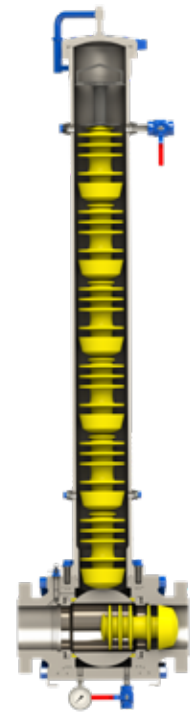
Step 9-10

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



Step 11-12

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



DIMENSIONS

2" TO 20"

SIZE	PRESSURE CLASS	PIG CAPACITY
2 inch	150, 300 & 600 ASME	11
3 inch	150, 300 & 600 ASME	11
4 inch	150, 300 & 600 ASME	11
6 inch	150, 300 & 600 ASME	11
	900 ASME	7
8 inch	150, 300 & 600 ASME	7
10 inch	150, 300 & 600 ASME	7
12 inch	150, 300 & 600 ASME	7
16 inch	150, 300 & 600 ASME	7
14 inch	150, 300 & 600 ASME	7
18 inch	150 ASME	7
20 inch	150, 300 & 600 ASME	7

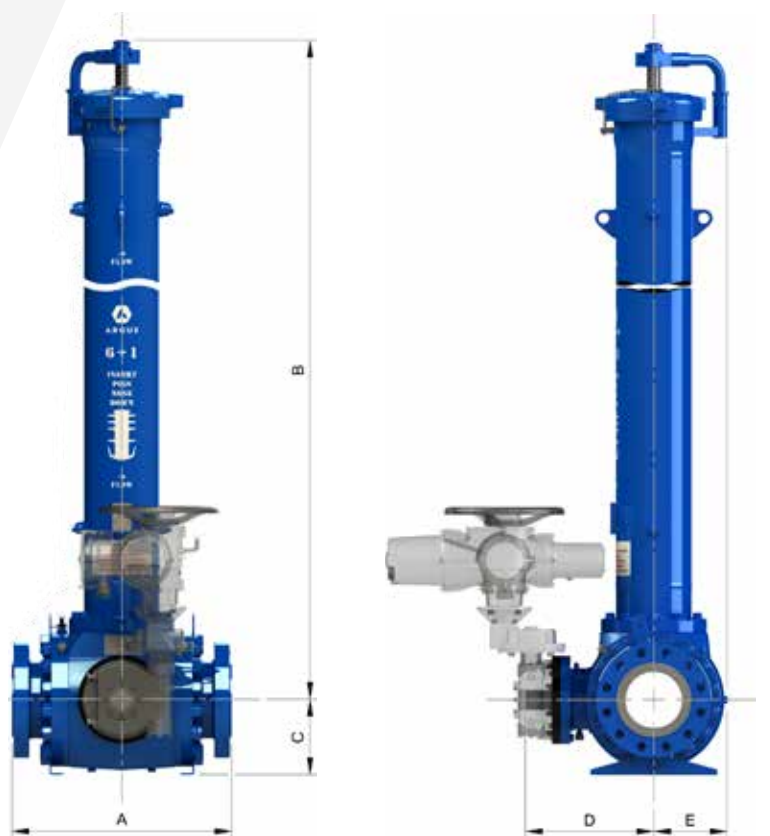


Image shown with 480 VAC three-phase actuation

MODEL P 10+1 MULTI-PIG LAUNCHER

SIZE AND PRESSURE RATING (ASME)	A (FACE TO FACE LENGTH)				B		C		D ¹		E		WEIGHT	
	RF		RTJ		in	mm	in	mm	in	mm	in	mm	lbs	kg
	in	mm	in	mm										
2" - 150 / 300 / 600	Contact Argus for Dimensional Details													
3" - 300 / 600	14.00	356	14.12	359	72.75	1850	4.75	121	8.38	213	6.18	157	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 MULTI-PIG LAUNCHER

SIZE AND PRESSURE RATING (ASME)	A (FACE TO FACE LENGTH)				B		C		D ¹		E		WEIGHT	
	RF		RTJ		in	mm	in	mm	in	mm	in	mm	lbs	kg
	in	mm	in	mm										
6" - 900	29.00	737	29.12	740	86.78	2205	8.79	224	15.47	393	8.75	223	1778	807
8" - 300	28.50	724	29.00	737	113.53	2884	10.67	271	18.75	477	11.09	282	2900	1315
8" - 600	31.20	792	31.32	796									3100	1406
10" - 300	35.36	898	35.86	911	113.34	3387	12.00	305	20.57	522	13.22	336	4400	1996
10" - 600	37.12	943	37.25	946									4600	2086
12" - 300	40.75	1035	41.25	1048	165.99	4216	14.17	360	26.94	684	15.66	398	7100	3221
12" - 600	42.06	1068	42.19	1071									7300	3311
14" - 150 / 300 / 600	Contact Argus for Dimensional Details													
16" - 150	47.62	1210	-	-	182.90	4646	17.74	451	28.06	713	18.23	463	10450	4740
16" - 300	54.00	1372	54.50	1384					30.04	763			11620	5271
16" - 600	54.00	1372	54.12	1375					4645	17.12			435	19.55
18" - 150	48.50	1232	-	-	204.54	5195	17.82	453	30.04	763	16.67	423	9000	4082
20" - 150	49.38	1254			225.66	5732	19.43	494	31.95	812	18.77	477	9700	4400
20" - 150 / 300 / 600	Contact Argus for Dimensional Details													

¹ Dimension "D" is shown to the end of the stem.

Face-to-face length does not meet API Spec. 6D, ASME B16.10, or CSA Z245.15.

Numerous actuation options available - manual, electric, and pneumatic.

Contact Argus for dimensional details for specific actuation or additional sizes/pressure classes.

Note: Design specifications subject to change without notice.

ARGUS URETHANE PIGS

Cup and Disc Pigs



Argus offers a full range of cup and disc urethane pigs that are also compatible with steel alternative 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 - 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
					Black	90
14 INCH	.250 - .500	6.35 - 12.70	22.38	568.5	Grey	60
					Yellow	70
					Blue	80
					Black	90
16 INCH	.250 - .563	6.35 - 14.30	24.63	625.6	Grey	60
					Yellow	70
					Blue	80
					Black	90
18 INCH	.281 - .625	7.14 - 15.88	27.63	701.8	Grey	60
					Yellow	70
					Blue	80
					Black	90
20 INCH	.250 - .625	6.35 - 15.88	30.63	778.0	Grey	60
					Yellow	70
					Blue	80
					Black	90

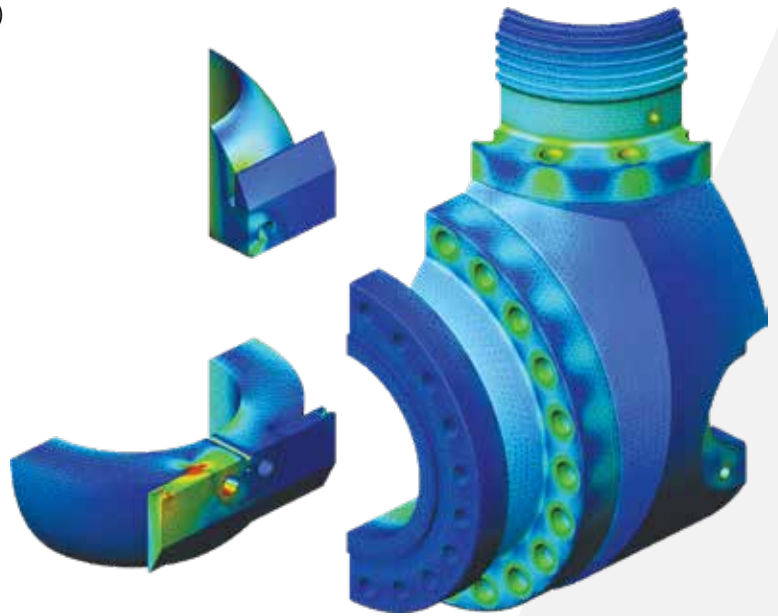
COMPLEX ANALYSIS

Argus Engineering leverages finite element analysis (FEA) in the design of our products.

This computational method allows for a comprehensive assessment of components under load. Compared to only using traditional analysis techniques, this method of analysis also provides greater insight into how these components function as an assembly.

Our expertise in this approach offers a number of unique benefits to the customer:

- Confidence for all applications, with stringent compliance to industry standards.
- More reliable, standardized, and predictable operation characteristics.
- Optimized geometry - reducing mass and cost of materials - while providing unmatched safety of the Argus Pig Ball Valve and Argus Multi-Pig Launcher.



APPLICATIONS



Colorado, USA
12 inch 600 ASME, five pig capacity.
Pneumatically actuated.



North Dakota, USA
16 inch 600 ASME, seven pig capacity.
Electrically actuated.

API American Petroleum Institute

REGISTRATION NO. Q1-0424

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 Spec Q1, 9th Edition

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

Design, Manufacture and Assembly of Piggung 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: SEPTEMBER 20, 2023
Expiration Date: SEPTEMBER 20, 2026
Registered Since: DECEMBER 18, 2006

 *Anchal Liddar*
Senior Vice President of Global Industry Services

This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of API Spec Q1, Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry, and the requirements of the Registrar's Agreement. Registrants are required to undergo a recertification through annual full system audits. This certificate has been issued from API's offices located at 200 Massachusetts Avenue, 900 Suite 1100, Washington, DC 20002-4242, U.S.A. It is the property of API and must be returned upon request. To verify the authenticity of this certificate, go to www.api.org/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 Piggung 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: SEPTEMBER 20, 2023
Expiration Date: SEPTEMBER 20, 2026
Registered Since: SEPTEMBER 20, 2011

 *Anchal Liddar*
Senior Vice President of Global Industry Services

This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of APIQR® Registration Program and the requirements of the Registrar's Agreement. Registrants are required to undergo a recertification through annual full system audits. This certificate has been issued from APIQR's offices located at 200 Massachusetts Avenue, 900 Suite 1100, Washington, DC 20002-4242, U.S.A. It is the property of APIQR and must be returned upon request. To verify the authenticity of this certificate, 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.

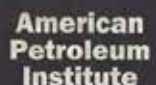

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **6D-0225**

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, 2023
Expiration Date: SEPTEMBER 20, 2026

  *Anchal Liddar*
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