

# AUTOMATIC PIG LAUNCHING

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<sup>1,2</sup>

SPEC. 6FA<sup>2,3</sup>

STD. 607<sup>2,3</sup>

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

B16.34<sup>2</sup>

B31.3

Section VIII Div. 1<sup>4</sup>

## 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<sup>2,3</sup>

## INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

Quality Management System

Materials for Use in H<sub>2</sub>S Containing Environments in Oil and Gas Production

Testing of Valves - Fire Type Testing

## NACE

MR0175

## NATIONAL ASSOCIATION OF CORROSION ENGINEERS

Materials for Use in H<sub>2</sub>S Containing Environments in Oil and Gas Production

## CSA

Z245.12

Z245.15

Z662<sup>4</sup>

## CANADIAN STANDARDS ASSOCIATION

Steel Flanges

Steel Valves

Oil and Gas Pipeline Systems

<sup>1</sup> 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 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.

<sup>2</sup> Applies to Pig Valve only, not the Automatic Pig Launcher barrel.

<sup>3</sup> Certification available for 6" - 12" 900 & 1500 ASME, 8" & Larger 300 & 600 ASME.

<sup>4</sup> Applies only to Model "D" valves.

# 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 where reducing emissions is required or of interest.

## CONSIDER THESE BENEFITS

1. Optimize production through effective liquids sweeping and debris removal.
2. Reduce travel time and operator intervention resulting in lower operational costs.
3. Remote pigging from the control room.
4. Enhance operator safety through reduced intervention.
5. Reduce emissions by up to 92% compared to traditional launching method.
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. Actuation options include pneumatic, onsite electric power supply, manually operated, or self-contained solar.



# 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.

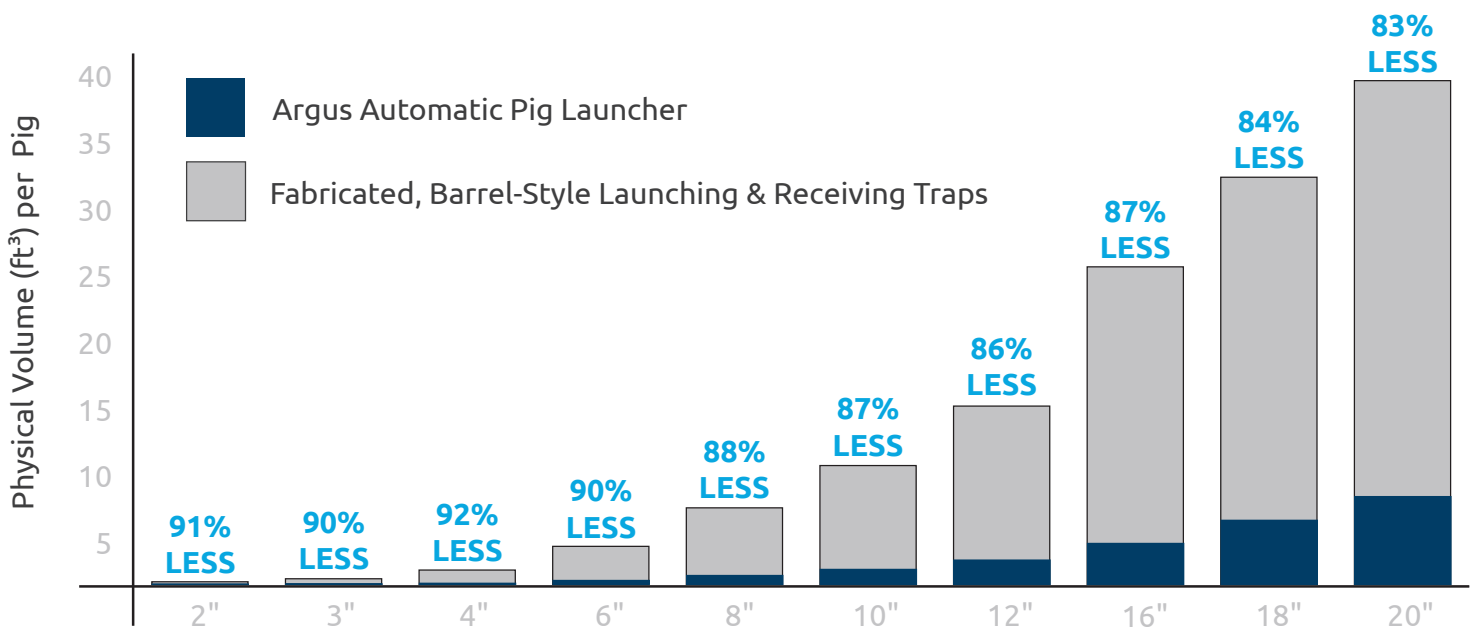
With increased pigging frequency comes successful debris removal and effective liquids sweeping allowing you to achieve lower pipeline pressures. This equates to more efficient flow rates and increased production.

## REDUCE EMISSIONS UP TO 92%

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

### Emissions Comparison

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



# SAFETY FEATURES



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

# TRIM MATERIALS

## STANDARD TRIM MATERIALS FOR 6" 900 ASME & ABOVE

|                                      |  |
|--------------------------------------|--|
| <b>Body</b>                          | ASTM A350-LF2, Class 1                       |
| <b>End Connections</b>               | ASTM A350-LF2, Class 2                       |
| <b>Ball</b>                          | ASTM A350-LF2 c/w 0.001" High-Phosphorus ENC |
| <b>Entry Cap</b>                     | ASTM A350-LF2, Class 1                       |
| <b>Trunnion</b>                      | A516-Gr. 70                                  |
| <b>Seat Springs</b>                  | Inconel X-750                                |
| <b>Seat Support</b>                  | ASTM A350-LF2 c/w 0.001" ENC                 |
| <b>Seat Insert</b>                   | Devlon 'V'                                   |
| <b>Primary Seals</b>                 | Highly Saturated Nitrile (HSN)               |
| <b>Bolting - Pressure Containing</b> | ASTM A320 L7M / ASTM A194 L7M                |

Trim materials applicable to valve only.

Note: Alternative trim materials available upon request.

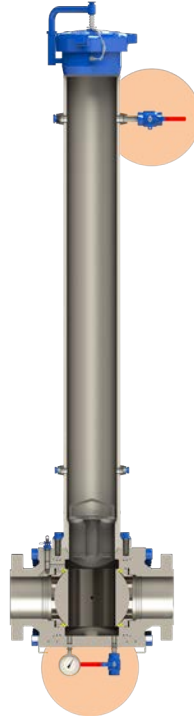
## OPERATION / ACTUATION OPTIONS

- 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 on 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.



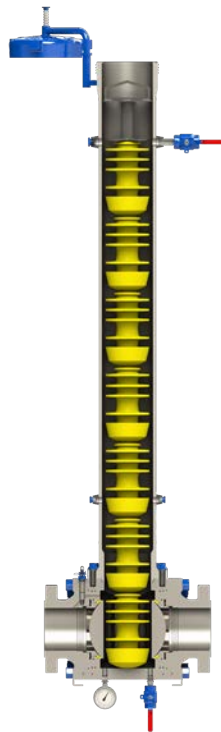
## Step 4

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



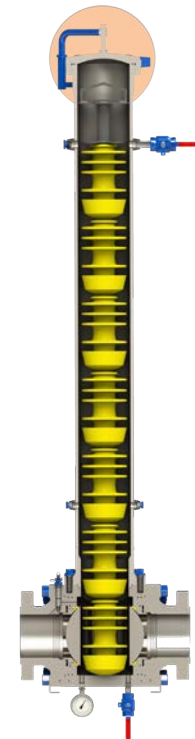
## Step 7

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



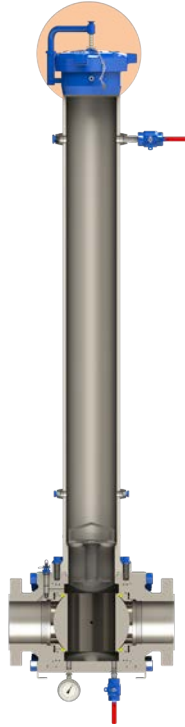
## Step 8

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



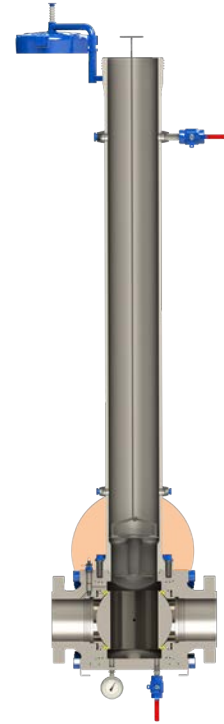
### Step 5

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



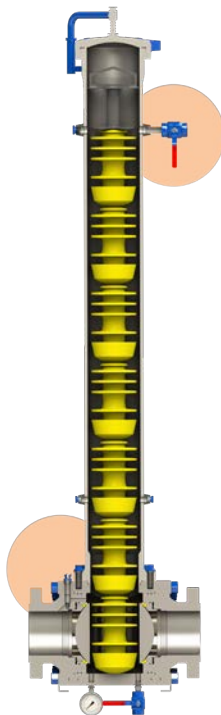
### Step 6

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



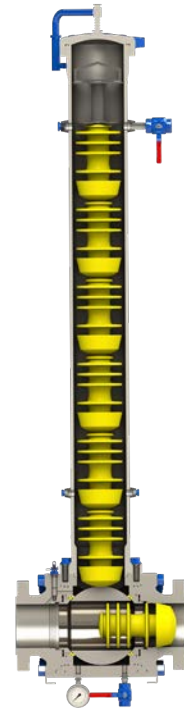
### Step 9-10

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



### Step 11-12

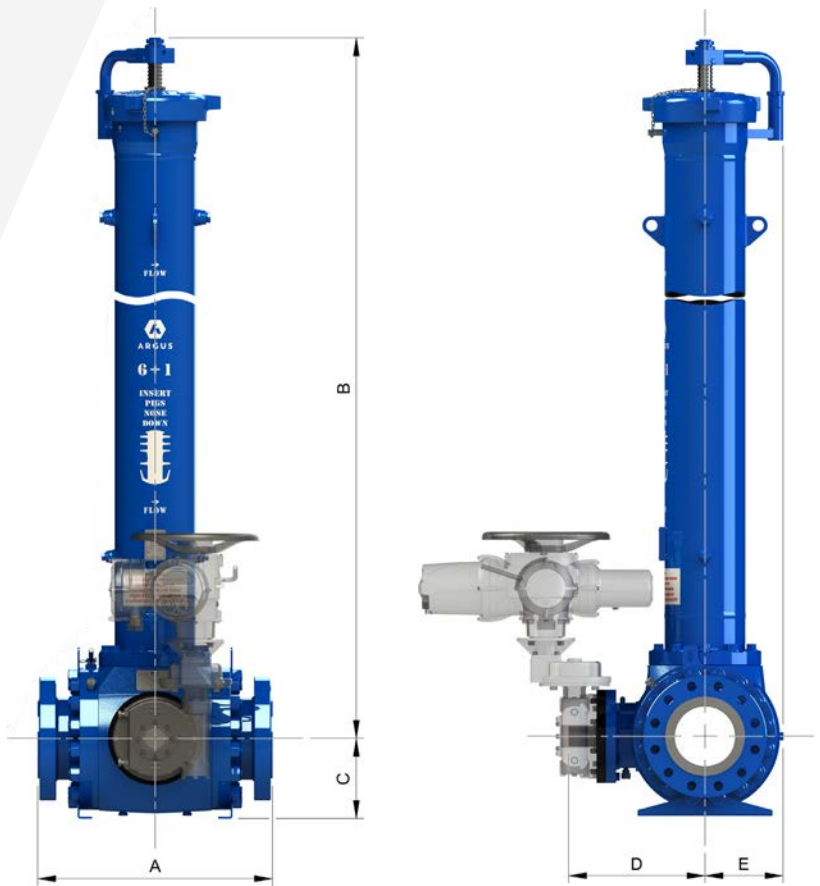
11. Disengage actuator lock out features.
12. When the signal to the actuator is removed the valve rotates and the launcher will send the first pig located in the ball core of the pigging valve.



# DIMENSIONS

## 3" TO 20"

| SIZE    | PRESSURE CLASS           | PIG CAPACITY |
|---------|--------------------------|--------------|
| 3 inch  | 150, 300 & 600 ASME      | 11           |
| 4 inch  | 150, 300 & 600 ASME      | 11           |
| 6 inch  | 150, 300, 600 & 900 ASME | 11           |
| 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            |



MPL shown with 480 VAC three-phase actuation

### 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  | lbs    | kg  |
|                                 | in                 | mm  | in    | mm  |        |      |      |     |       |     |      |     |        |     |
| 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 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  | lbs    | kg   |
|                                 | in                                    | mm   | in    | mm   |        |      |       |     |       |     |       |     |        |      |
| 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 |        |      |       |     | 19.55 | 497 |       |     | 11800  | 5352 |
| 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" - 300 / 600                 | Contact Argus for Dimensional Details |      |       |      |        |      |       |     |       |     |       |     |        |      |

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.



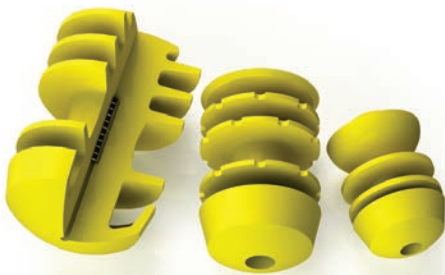
# ARGUS URETHANE PIGS

## 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                    |             |       |       |        |    |

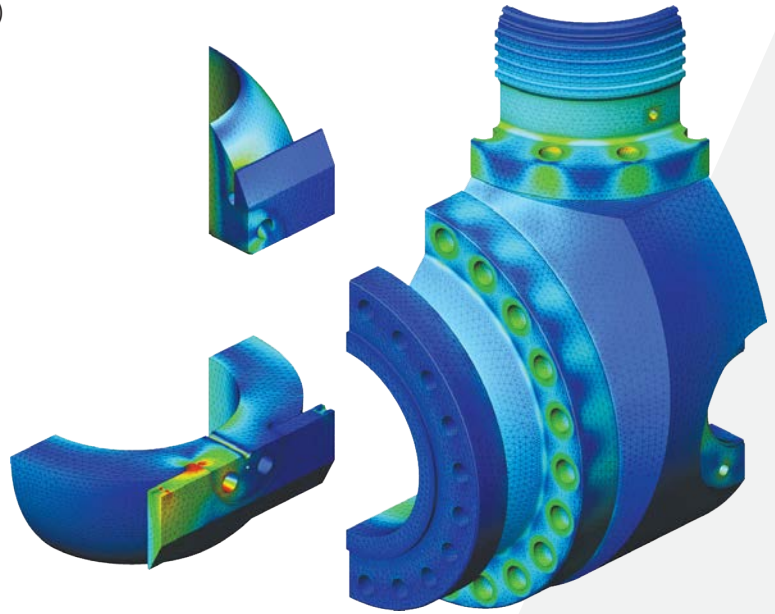
# COMPLEX ANALYSIS

Argus Engineering leverages finite element analysis (FEA) in the design of Argus Pig Ball Valves.

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 Automated Pig Launchers.



## 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** 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 Specification Q1

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

**Design, Manufacture and Assembly of Pigging 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

*Ann C. P. [Signature]*  
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 Programs for the Petroleum, Petrochemical and Natural Gas Industry, and the requirements of the Registration Agreement. Registration is maintained and regularly monitored through annual full system audits. This certificate has been issued from API offices located at 200 Massachusetts Avenue, N.W. Suite 1100, Washington, DC 20001-5571, 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/compositelist](http://www.api.org/compositelist).

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**API 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 Pigging 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**

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**Registered Since:** SEPTEMBER 20, 2011

*Ann C. P. [Signature]*  
Vice President of Global Industry Services

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Accredited to standards of the International Accreditation Forum (IAF) and the International Register for Promotion and Maintenance of Registration (IRPM) Management System

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# 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  
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**Effective Date:** SEPTEMBER 20, 2020  
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*Ann C. P. [Signature]*  
Vice President of Global Industry Services

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