



PIG VALVES

NPS 6" – 20" Class 150 - 900

APPLICATION

Pig valves are designed for loading and receiving cleaning pigs and detecting tools at pipelines transporting:

- **natural gas;**
- **oil products.**

Operating temperature of the medium can vary from -15 °C to +100 °C (upon Customer's request it can be extended up to +200°C).

CONNECTION TO THE PIPELINE

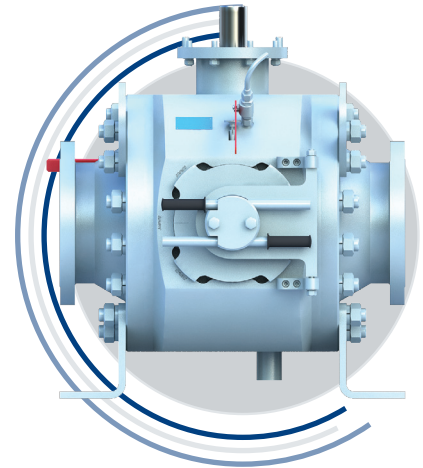
Installation position: at horizontal pipeline, actuator upwards.

Connection to the pipeline:

- **butt-welded;**
- **flanged.**

Pig valves can be supplied with pup pieces (separately from the valve as well as already welded to the valve).

Installation type: aboveground.



CLIMATIC CATEGORY

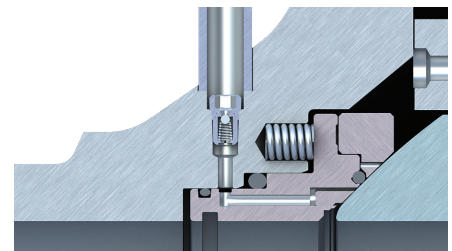
Climatic category:

- regions with temperate climate and ambient temperature from -40°C up to +40°C,
 - regions with cold climate and ambient temperature from -60°C up to +40°C,
 - regions with warm climate and ambient temperature from -10°C up to +50°C.
- Ball valves with another climatic category can be manufactured upon Customer's request.

TIGHTNESS CLASS

«A» (Zero-leakage) - without visible leakage.

Seal tightness is provided by pressing the seats to the ball by the medium pressure and springs.



Pig valve sealing

OPERATION

Pig valves can be operated by:

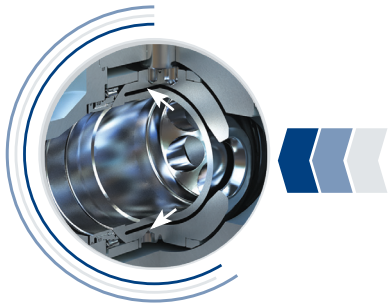
- **electric actuator;**
- **gear.**

Any international brand of actuator can be provided upon the Customer's request.



DESIGN FEATURES

BYPASS CAVITY



Pig valve ball has bypass cavity. It ensures working medium flow through ball valve in «closed» position (at the moment of loading or removing a pig). Bypass cross-section is about 25% from pipeline cross-section. Herewith medium pressure in the pipeline is not changed.

Ball valve can be supplied without bypass cavity in the ball upon Customers request.

TRUNNION MOUNTED BALL

Pig Valves are developed on the basis of PTPA High Performance Trunnion Mounted Ball Valves having the same design, features and high reliability.



SAFETY



Launching and receiving cameras are equipped with pressure relief valves to ensure safe operation of the Pig Valve.

DRAIN & VENT

Drain connections are installed at ball valves for removal of condensate fluid from the body.



GREASE INJECTION



Ball valves are equipped with grease injection system for supply of grease to stem and seat sealing. It allows to extend service life of the valve.

SPLIT-BODY DESIGN

Split-body design increases valve maintainability, allows to use it at aggressive working medium and conduct:

- ▶ components replacement;
- ▶ maintenance without dismantling.

PIG VALVES ADVANTAGES

Pig valves have the following advantages in comparison with traditional means of pipeline cleaning with the use of pigging systems:

- Significant reduction of installation area;
- High effectiveness in cleaning pipelines from impurities;
- Contraction of volume of preventive maintenance and required spare parts in the process of operation;
- Pig valves retain all design advantages of ball valves: size-conscious design, ease of installation, stable tightness index of shut-down element, capability of use at different types of medium;
- Different pig types can be used: needle, scraping, spherical;
- Simple way of installation at operating pipelines and fewer expenses for installation.

COMPARISON

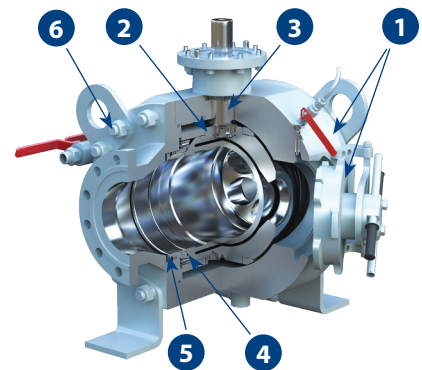
Installation of launching and receiving system	Installation of Pig Valves (for launching and receiving)
1. To define and prepare the area for installation.	1. To isolate the pipeline section where the pig valves are supposed to be installed.
2. To isolate the pipeline section where the system is supposed to be installed.	2. To clean the pipeline section, if required to install the bypass line.
3. To install the main line isolation valve on Scraper Launcher/Receiver Area, if there are none.	3. To install the pig valves at the pipeline.
4. To install the Scraper Launcher/Receiver Cameras on the prepared section in front of the isolation valve.	4. To adjust the valve along the pipeline axis and fix with supporting legs.
5. To connect Scraper Launcher/Receiver Cameras with main line; to adjust preliminary the cameras along the line axis.	
6. To install associated technological pipes near the Scraper Launcher/Receiver Cameras.	
7. To pressure up the Scraper Launcher/Receiver Cameras.	

Installation and maintenance of pig valves is more cost-effective comparing with traditional means of pipeline cleaning like pigging systems and do not require additional shut-off devices for bypass pipelines, valves, tees, flanges, as well as scope of welding operations.

MATERIAL SPECIFICATION

Main components are chosen individually in each specific case and depend on operation requirements and working medium characteristics (presence of aggressive components, temperature etc.). Main components can be changed in compliance with international safety standards and operational characteristics upon Customer's request.

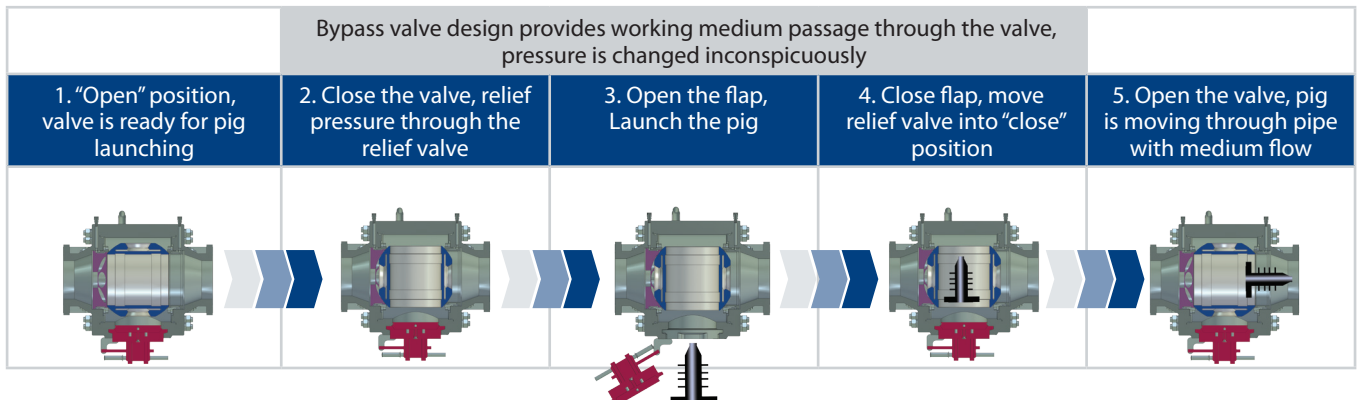
Nº	Component	Material
1	Body, bonnet, flap	ASTM A 350 LF2
2	Ball	ASTM A 350 LF2
3	Stem	A182 F316
4	Seats	ASTM A 350 LF2
5	Seat Ring insert	Polyurethane or Elastomer
6	Bolting	ASTM A320 L7M/ A194 8M



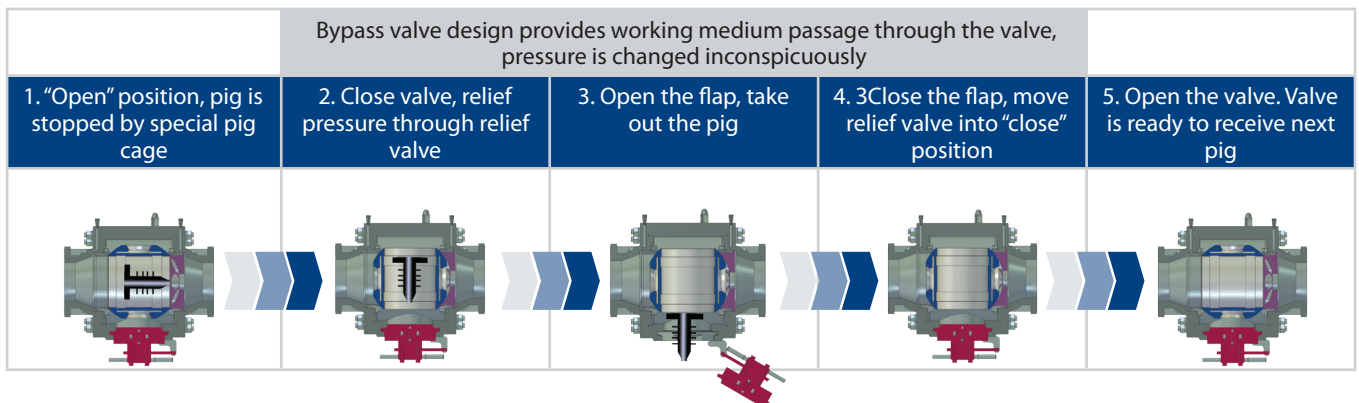


OPERATION

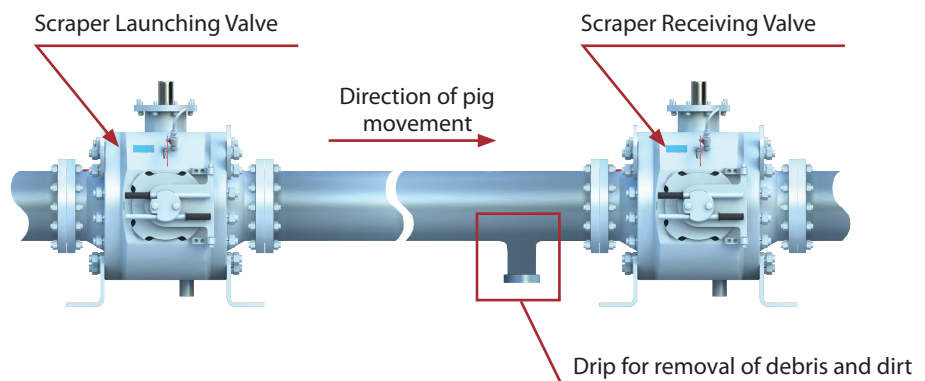
Scraper Launching



Scraper Receiving



INSTALLATION SCHEME

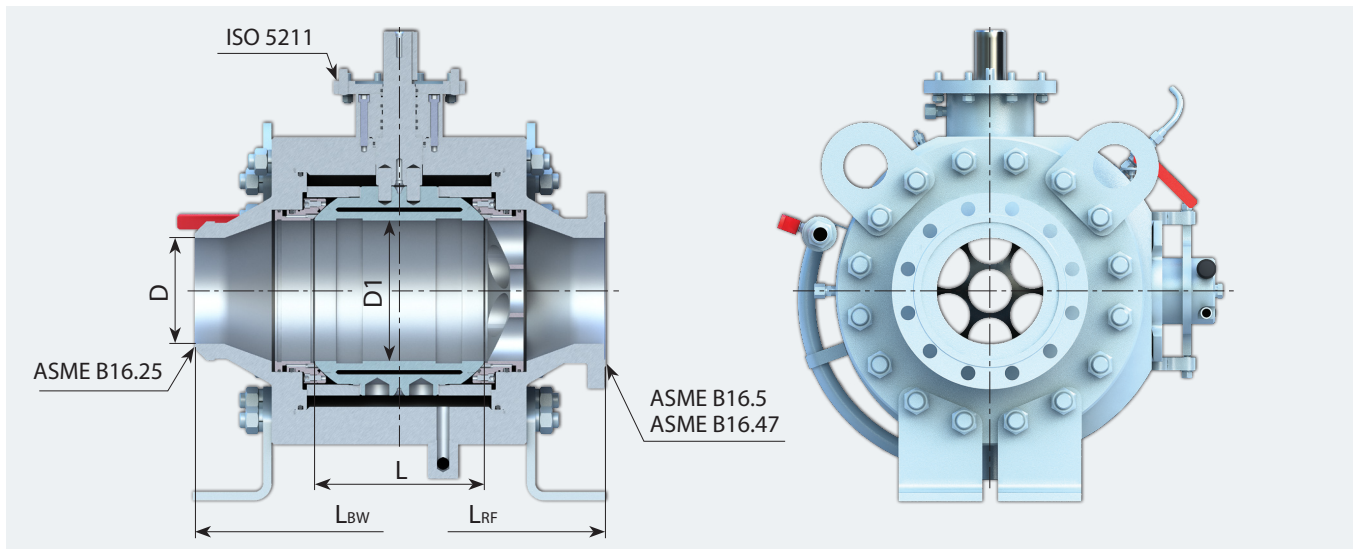


FIRE RESISTANCE

Fire-proof pig valves can be manufactured upon Customer's request. Fire resistance is achieved by using thermal expanded graphite.

MAIN DIMENSIONS

PIG VALVES PT39140 NPS 6"-16" Class 150-900



NPS	Series	Class	Dimensions, mm					Connection type according to ISO 5211	Weight*, kg
			D	D ₁	L	L _{BW}	L _{RF}		
6"	PT39140	150-600	150	185	261	813	660	F16	470
		800-900				889	737	F25	510
8"	PT39140	150-300	200	235	408	1016	794	F16	1170
		400				1092	889	F25	
		600						F30	
		800-900						F30	
10"	PT39140	150-300	240	320	386	1194	940	F25	1635
		400-600				1295	1041	F30	1735
		800-900						F35	1850
12"	PT39140	150-300	300	340	499	1372	1067	F25	1885
		400-600				1499	1194	F30	
		900						F35	
14"	PT39140	150-300	830	487	160	1194	1194	F35	1869
		400	866	487	180	1321	1321	F40	2615
		600-900	968	589	98	1143	1067	F30	2420
16"	PT39140	150-300	400	438	892	1778	1372	F25	2720
		400				1905	1499	F30	
		600-900						F35	

* The weight is indicated without the weight of actuator.
Beveling, type of connecting flange may be changed upon Customer's request.

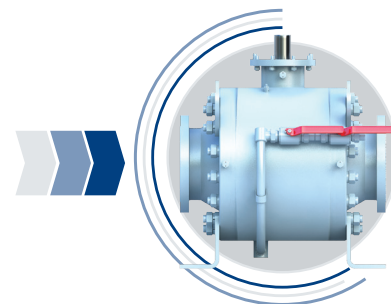
OPERATIONAL CHARACTERISTICS

Available operational modes:

- fully opened shut-off element;
- closed shut-off element.

Reliability factors:

- **service life** - 30 years;
- **warranty period** - 18 months from the day of putting into operation.



SCOPE OF SUPPLY



The package includes:

- Fully assembled pig valve according to specification;
- Quick wear parts kit, tools and accessories specified at the time of order;
- Electric actuator with operation manual and documentation;
- Supply documents package.

Following valve equipment is specified at the time of the order:

- Pig;
- Electric actuator / actuator of some specific manufacturer;
- Counter flanges, fasteners and gaskets;
- Adapter rings (pup pieces);
- Pig arrival indicator.

