



# PRESENTACION GASCAT











#### **Sobre GASCAT**

GASCAT es una empresa brasileña con más de 35 años de experiencia en desarrollo y fabricación de reguladores de presión para aplicaciones con gases (N2, O2, Air, NG ..), líder de ventas locales en el segmento de reguladores de presión, válvulas de cierre, presión parcial válvulas de alivio, estaciones reductoras de presión y medición para distribución de gas natural, línea completa para industria de gas natural como: filtros (cartucho, cesto, coalescente), recipientes a presión (ASME VIII DIV I), estaciones de medición, portones de la ciudad, calentadores indirectos, calentadores eléctricos, medidores rotativos y de turbina, etc.



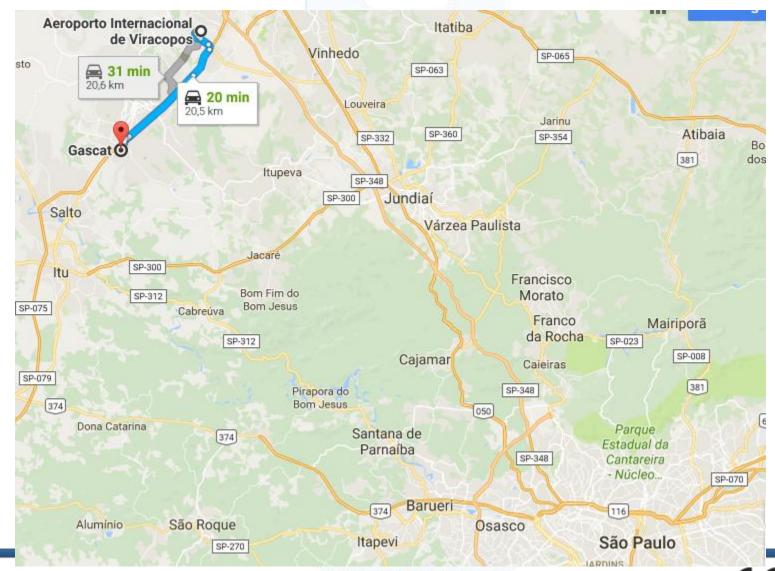








# Indaiatuba / SP













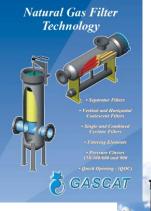
REGULADORES DE PRESIÓN / VÁLVULAS DE ALIVIO PARCIAL / VÁLVULAS DE APAGADO SLAM

Aproximadamente 300 unidades / mes



SKIDS DE MEDICIÓN Y REDUCCIÓN DE PRESIÓN PARA GN Y APLICACIONES "ESPECIALES"

Aproximadamente 20 unidades / mes



FILTROS (Cartucho / Canasta / Coalesente / Filtro combinado / Demister)

Aproximadamente 50 unidades / mes

Precalentadores

• Aproximadamente 200 unidades vendidas desde 2001





Equipments







 Partnership Companies (Gas Meters / PTZ / Electrical Heaters / BMS / Pressure and Vacuum Relief Vents / QOC / Filter Element)

















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# Líder comercial en Brasil con presencia en todo el mundo.











- WGC World Gas Conference Paris 2015
- Rio Oil and Gas 2016
- GAT (Gas Apparatus Technology) 2016
- OTC Houston (Offshore Technology Conference) 2015
- ADIPEC (Abu Dhabi International Petroleum Exhibition & Conference) 2015
- Power-Gen (Power Generation) 2015







ADIPEC - Abu Dhabi 2013





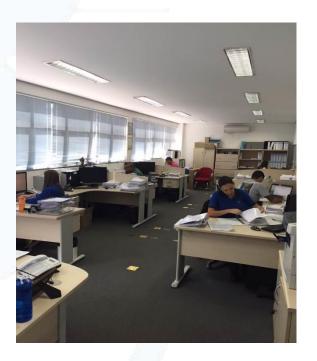




To give the best to the customers, GASCAT has divided the engineering department in two divisions, the <u>Regulators & Valves Division</u> and <u>Stations, Systems, Heaters and Filters</u>. These two departments have its own structure, in major part composed by engineers dedicated to develop and design specific equipment for each application.



Pressure Regulators Division



PRMS / Filters / Heaters Division



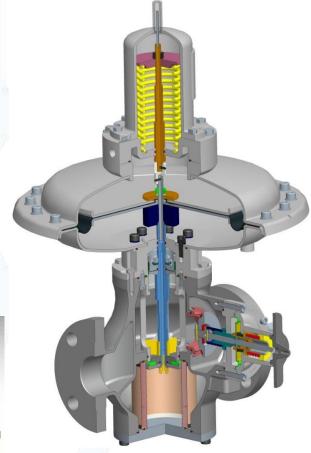


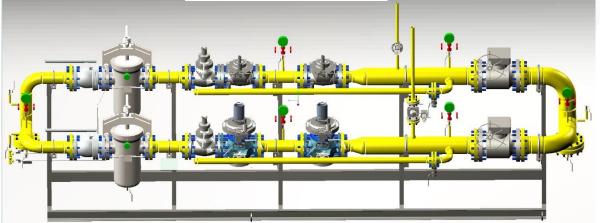




# EXAMPLES OF 3D DETAILS (pro engineer wildfire)















Warehouse...

Gascat has a very complete stock of valves bodies, elastomers and valve internals in Brazil, what allows to assembly and deliver the equipment with agility.

That's one of differential points, GASCAT can achieve better delivery times than its competitors.

"...just for comparison our standard delivery time for the major part of our pressure regulators is 4 – 6 weeks."











#### More about structure ...

# Hydrostatic test machine



All valve bodies are tested and checked by operators and inspectors, before production line or ware house.

Maximum Test Pressure: 400 Kgf/cm<sup>2</sup>g

# Medium flow test stations



After assembled 100% of valves are tested in Test Benches.

Size: ½" – 8"

Class rating: up to 900#

# Low flow test station



Test line of low pressure and low flow pressure regulators (commercial and residential regulators)

# Flow Laboratory



GASCAT has a calibration station for rotary and turbine meters certified by Brazilian local authority (INMETRO)

Size: 1" - 8"







# Open Assembling Area



GASCAT has a large open area prepared for assemblage of big equipment such as big water bath heaters and complete city gates.

# **Pipe Shop**



Covered area with welders, metal workers and mechanical assistants. All structure necessary to do all assembly of our stations and other products here, with total quality control in accordance with international standards

## **Overhead Cranes**



Two overhead cranes with capacity to 12 T each one, to make faster all movement inside the assembly area and pipe shop.

# Blasting and painting cabinets



A complete space to do metal blasting and painting in accordance with the international standards and sometimes with the specific customers standards.









# Stations Assembling Area



Covered area with pneumatic structure and tools and overhead cranes for assembly the pressure reduce and metering stations.

# **Valves Assembling Area**



Covered area with pneumatic structure and tools for pressure regulators, Partial Relief and Safety Slam Shut off valves assembly.











# Flow Laboratory

Metrology approved by INMETRO (Brazilian Metrology institute) MUT from 40mm to 200mm 0,5 to 2500 m³/h

Reference Master Meter tracked to VSL Laboratory / NMI (Netherlands Metrology Institute)













To attest the efficiency and accuracy of our equipment as the quality of our industrial and administrative process, GASCAT always attempt for a lot of international and national certifications in accordance with high level international standards as ISO, ASME, CE, DIN, ABNT, NR.



Many of our pressure regulators and slam shut valves are testes in DVGW laboratories, where technicians do all testes considering the principal of DIN EN 334 for the regulators and DIN EN 14382 for the slam shut valves attesting that our equipment are in accordance with the European standards and requirements.











CERT

# Zertifikat über ein EG-Qualitätssicherungssystem certificate for a EC quality assurance system

SD-0085CL0229

Registriernummer

Anwendungsbereich field of application

EG-Druckgeräterichtlinie (97/23/EG)

Pressure Equipment Directive

Zertifikatinhaber owner of certificate

GASCAT Indústria e Comércio Ltda

Rodovia SP 73, 1141, Bairro Pimenta, BR- 13347-390 Indaiatuba/SP











**CUSTOMER: ZENNERGY INTERNATIONAL** 

**UNIT: AGGREKO POWER PLANT** 

**LOCATION: MOZAMBIQUE** 

#### **DESCRIPTION:**

Two Pressure reduction station with two streams, the first composed by four pressure regulators assembled on active monitor system model **URANO GASCAT 900#.** two SSV model GIPS-H-FC GASCAT 900# and partial relief valves model Domus relief GASCAT.

Natural Gas for a 140 MW Power Plant, providing energy to East Africa and region.

#### **Operate conditions**

Fluid: Natural Gas

Inlet pressure: 110,0 bar Outlet pressure: 5,0 bar Flow: 60.000 SCMH













**CUSTOMER: RAAK** 

**UNIT: ADM PLANT** 

**LOCATION: NETHERLANDS** 

#### **DESCRIPTION:**

Pressure reduction station with two streams, and three stages of reduction, the first composed by two pressure regulators assembled on slam slam regulator system model URANO GASCAT 300# and two SSV model GIPS-H-FC GASCAT 300#.

Natural Gas for energy and steam generation.

# **Operate conditions**

Fluid: Natural Gas

Inlet pressure: 50,0 bar Outlet pressure: 22,0 bar

Flow: 15.000 SCMH









**CUSTOMER: PETROBRAS** 

UNIT: NATURAL GAS "RING" OF RIO DE

**JANEIRO** 

#### **DESCRIPTION:**

Indirect Heater skid composed by three heaters, with thermal capacity of 2.100.000 kcal/h

This station was constructed to allow PETROBRAS connect 3 different gas pipelines, increasing the offer of natural gas for Rio de Janeiro gas distributor.

# **Operate conditions**

Fluid: Natural Gas

Inlet pressure: 70.0 - 100.0 bar Outlet pressure: 20.0 - 65.0 bar

Flow: 6.500.000 SCMD









**CUSTOMER: PETROBRAS** 

UNIT: CITY GATE MACAE MERCHANT - THERMAL

**PLANT** 

#### **DESCRIPTION:**

Pressure reduction station with two streams, composed by two combined filters (cyclone + cartridge) four pressure regulators assembled on active monitor system model ARGOS GASCAT, two SSV model GIPS-H-FC GASCAT and partial relief valves model ARGOS relief GASCAT.

Natural Gas for a 720 MW thermal plant - El Paso

#### **Operate conditions**

Fluid: Natural Gas

Inlet pressure: 80.0 - 100.0 bar Outlet pressure: 65.0 - 69.0 bar

Flow: 10.500.000 SCMD











CUSTOMER: SULGAS – GAS DISTRIBUTOR (SOUTH REGION BRAZIL)

**UNIT: COMPACT BURIED GAS STATION** 

#### **DESCRIPTION:**

Compact buried gas station model HATHOR GASCAT composed by two cartridges, with filter, SSV and PRV each one.

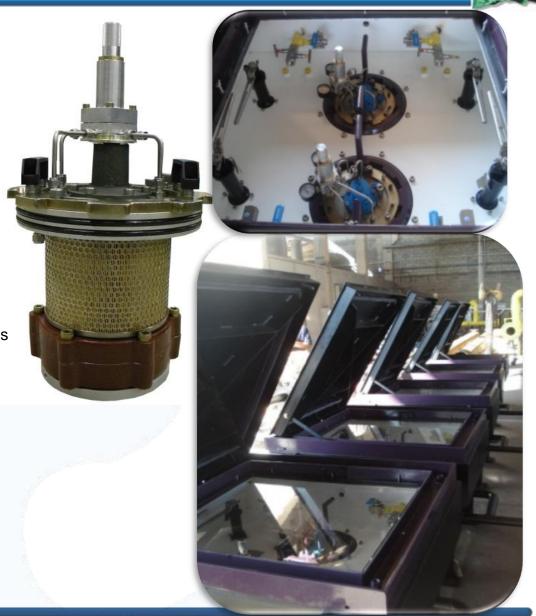
Natural Gas for first stage residential area, very compact and fast maintenance, the ideal station for gas distribution on areas where space is a problem.

## **Operate conditions**

Fluid: Natural Gas

Inlet pressure: 10.0 - 19.0 bar Outlet pressure: 4.8 - 5.0 bar

Flow: 31.200 SCMD









#### SPECIFIC KNOWLEDGE



**UNIT: COMPACT BURIED GAS STATION** 

#### **DESCRIPTION:**

Compact buried gas station mounted into a HDPE box, composed by one stream with one SSV model GIPSH-FC GASCAT, one PCV model ARGOS WA and one Y Type filter.

Natural Gas for first stage residential area, very compact and fast maintenance, the ideal station for gas distribution on areas where space is a problem.

#### **Operate conditions**

Fluid: Natural Gas Inlet pressure: 7,5 – 20,0 bar Outlet pressure: 0,35 - 1,6 bar

Flow: 7.200 SCMD







CUSTOMER: SERGAS – GAS DISTRIBUTOR SERGIPE STATE (NORTH EAST BRAZIL)

**UNIT: FAFEN METERING STATION** 

**DESCRIPTION:** two measuring stations with ultrasonic meters accordance with technical guidelines the recommendations of AGA 9 and flow conditioners NEW 50E. First ones installed with certification and technical approval from OIML R137 with Accuracy class 0.5

## **Operate conditions**

Fluid: Natural Gas

Maximum Operating pressure: 51 bar





# GASCAT

#### **SPECIFIC KNOWLEDGE**



Gascat manufactured 22 City Gates for TBG; Brazil – Bolivia Natural Gas Pipeline during 1997 to 2001













**PROTEU** (Carbon Steel or Brass)



**BRISE N** (SSV incorporated) (SSV incorporated) **DVGW-CE** 



JR-070



GA-302-8 (SSV incorporated)



(SSV incorporated)

**DVGW-CE** 





JR CH (Carbon Steel or Brass)



**URANO DVGW-CE** 



**HORUS** 



PI

**DVGW-CE** 



**ARGOS** 













ARGOS W.A.

DVGW-CE



DOMUS w/ PILOT (High Pressure)



CELTIC N
(Blanketing System)



**ARGOS RELIEF** 



**CH Relief** 



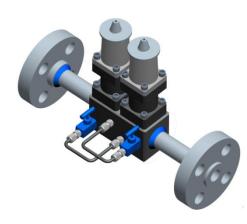
SSV GIPS-FC (Fail Close Actuator)



SSV GIPS-L (Low Pressure)



SSV KN-FC



SSV TWIN-FC (Double Blocking)

**DVGW-CE** 







## Self Operated GASCAT models: Modelos GASCAT auto operados:



Brise







**Tellus** 







Junior CH







GA-302-8







P-251N & P-431N







Ares











## Pilot Operated GASCAT models: Modelos GASCAT piloto operados:











## TRANSPORT/ DISTRIBUTION



**URANO** 

**DVGW-CE** 



**HORUS** 











# **URANO**

Regulador de pressão piloto operado para aplicações com alto diferencial de pressão e alta vazão especialmente para sistemas de transmissão e distribuição de gás natural. Corpo em aço carbono fundido.

- Diâmetros: 2" a 8" (Classe ANSI 150 a 900)
- Faixa de Regulagem: 1 a 80 bar

Pilot operated pressure regulating valve for applications with high differential pressure and high flow specially transmission and distribution systems of Natural Gas. Body material in cast carbon steel.

- Diameters: 2" to 8" (ANSI Class 150 to 900)
- Outlet Pressure Range: 1 to 80 bar





**AXIAL** 









#### **DISTRIBUTION**



**ARGOS** 



ΡI

**DVGW-CE** 



**URANO** 











# **ARGOS**

Regulador de pressão piloto operado para aplicações com gases combustíveis e não corrosivos em geral. Ideal para distribuidoras de gás natural. Corpo em aço carbono fundido.

- Diâmetros: 1" a 4" (Classe ANSI 150 a 300)
- Faixa de Regulagem: 0,7 a 63,5 bar

Pilot operated pressure regulating valve for applications with fuel gases and non-corrosive gases. Ideal for Natural Gas Distributors. Body material in cast carbon steel.

- Diameters: 1" to 4" (ANSI Class 150 to 300)
- Outlet Pressure Range: 0.7 to 63.5 bar



Regulador de pressão piloto operado para aplicações industriais diversas. Possui alta capacidade de vazão. Corpo em aço carbono fundido.

- Diâmetros: 1" a 4" (Classe ANSI 150 e 300 outras sob consulta)
- Faixa de Regulagem: 0,7 a 40 bar

Pilot operated pressure regulating valve for industrial applications. It has high flow capacity. Body material

- in cast carbon steel.
  - Diameters: 1" to 4" (ANSI Class 150 and 300 others under consult)
  - Outlet Pressure Range: 0.7 to 40 bar









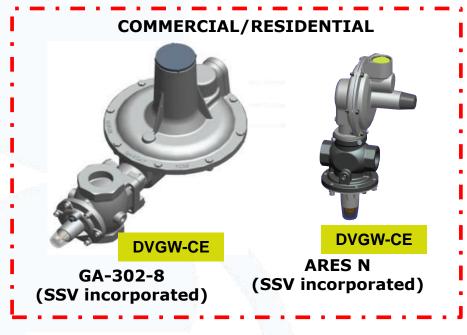


# **COMBUSTION**



BRISE N/ PLUS (SSV incorporated)

**DVGW-CE** 









#### MAIN KNOWLEDGE





# BRISE N + SSV

Regulador de pressão auto operado para baixa pressão de saída e alta capacidade de vazão. Solução perfeita para sistemas de combustão que exigem alta velocidade de resposta..Corpo em ferro nodular. Versão com válvula de bloqueio incorporada opcional.

• Diâmetros: 1" e 2" (Rosca NPTF)

1" a 3" (Flange Classe ANSI 150)

Faixa de Regulagem: 0,02 a 1,2 bar

Pressure regulating valve self operated with slam shut valve incorporated (optional) for low outlet pressure and with high flow capacity. Perfect solution for combustion systems where is necessary quick response. Body in ductile iron.

• Diameters: 1'' to 3'' (Thread NPT F for 1'' and 2''-Flanged ANSI Class 150 for 1'' to

Outlet Pressure Range: 0.02 to 1.2 bar



# **BRISE PLUS**

3'')

Regulador de pressão piloto operado com excelente precisão de regulagem da pressão de saída e alta

capacidade de vazão. Ideal para estações de regulagem de pressão de gás natural e sistemas de combustão de alta vazão. Corpo em ferro nodular.

• Diâmetros: 1" e 2" (Rosca NPTF)

1" a 3" (Flange Classe ANSI 150)

Pressure regulating valve pilot operated with excellent outlet pressure accuracy and high flow capacity.

Ideal for pressure regulating stations for natural gas and combustion systems of high flow capacity.

Body material in ductile iron.











## GA-302-8 + G-10

2")

Regulador de pressão auto operado para sistemas de combustão de média vazão. Corpo em ferro nodular. Versão com válvula de bloqueio incorporada opcional.

- Diâmetros: 1.1/2" e 2" (Rosca NPT para 1.1/2" e 2" Flange Classe ANSI 150 para 2")
- · Faixa de Regulagem: 8 a 455 mbar

Pressure regulating valve self operated with slam shut valve incorporated (optional) for combustion

systems of medium flow. Body material in ductile iron.

- Diameters: 1.1/2" and 2" (Thread NPT for 1.1/2" and 2"-Flanged ANSI Class 150 for
  - Outlet Pressure Range: 8 to 455 mbar



# **ARES N + G-10**

Regulador de pressão auto operado para sistemas de combustão de baixa vazão. Ideal para fabricantes de queimadores. Corpo em ferro nodular. Versão com válvula bloqueio de incorporada opcional

- Diâmetro: 1" (Rosca NPT Fêmea)
- Faixa de Regulagem: 5 a 240 mbar

Self operated pressure regulating valve with slam shut valve incorporated (optional) for combustion

systems of low flow. It is ideal for burner manufacturers. Body material in ductile iron.

- Diameter: 1" (Thread NPT Female)
- Outlet Pressure Range: 5 to 240 mbar









# JR070 + SSV



Regulador de pressão auto operado com válvula de bloqueio incorporada para aplicações industriais diversas. Corpo em ferro nodular.

- Diâmetro: 1" (Rosca NPT Fou Flange Classe ANSI 150 outros diâmetros sob consulta)
- Faixa de Regulagem: 0,3 a 12 bar

Self operated pressure regulating valve with slam shut valve incorporated for industrial applications.

Body material in ductile iron.

- Diameter: 1'' (Thread NPT Female or Flanged ANSI Class 150 other diameters under consult.)
  - Outlet Pressure Range: 0.3 to 12 bar









# AIR GASES/ LPG



JR CH (Carbon Steel or Brass)



PROTEU (Carbon Steel or Brass)



DOMUS w/ PILOT (High Pressure)



DVGW-CE

**ARGOS W.A.** 



PΙ

**DVGW-CE** 











# JR CH

Regulador de pressão auto operado de construção simples, projeto compacto e robusto. Corpo em Aço Carbono, Aço Inox e Bronze.

- Diâmetros: 3/4" e 1" (Rosca NPTF ou Flange Classe ANSI 150 e 300)
- Faixa de Regulagem: 0,3 a 12 bar

Self operated pressure regulating valve with simple construction, compact and robust design.

Body materials in Carbon Steel, Stainless Steel and Brass.

- Diameters: 3/4" and 1" (Thread NPT Female Flanged ANSI Class 150 and 300)
- Outlet Pressure Range: 0.3 to 12 bar



# ARGOS W.A.

Regulador de pressão piloto operado de fluxo axial para sistemas de distribuição de gás natural e outros gases não corrosivos. Projeto compacto e alta capacidade de vazão. Corpo em aço carbono fundido.

- Diâmetros: 1"a 4" (Classe ANSI 150 e 300 outras sob consulta)
- Faixa de Regulagem: 0,1 a 2,5 bar (Piloto G50 para baixa pressão) e 1,5 a 40 bar (Piloto G42 duplo diafragma para média pressão)

Axial Flow pilot operated pressure regulating valve for Natural Gas Distribution and other non corrosive gases. Compact design and high flow capacity. Body material in cast carbon steel.

- Diameters: 1"to 4" (ANSI Class 150 to 300-others under consult)
- Outlet pressurerange: 0.1 to 2.5 bar (Pilot G50 for low press CERTIFICADO DVGW-CE

1.5 to 40 bar (Pilot G42 with double diaphraam











# PROTEU - N251 / N431

Regulador de pressão auto operado para aplicações diversas tais como distribuição de GLP e Gás Natural, redes de Nitrogênio e Hidrogênio. Possui alta capacidade de vazão e projeto "top entry". Corpo em aço carbono fundido.

- Diâmetros: 1" e 2" (Classe ANSI 150 e 300) opção com rosca NPT F para 1".
- Faixa de Regulagem: 0,5 a 12 bar

Pressure regulating valve self operated for several applications such as LPG and Natural Gas Distribution, Nitrogen and Hydrogen pipelines. It has high flow capacity and top entry design. Body material in cast carbon steel.

- Diameters: 1" and 2" (ANSI Class 150 and 300) Option with Thread NPT for 1"
- Outlet Pressure Range: 0.5 to 12 bar



# PROTEU FORJADO - N251 / N431

Regulador de pressão auto operado para utilização especialmente com oxigênio. Possui alta capacidade de vazão e projeto "top entry". Corpo em latão forjado.

- Diâmetros: 1" e 2" (Classe ANSI 150 e 300). Opção com Rosca NPTF para 1".
- Faixa de Regulagem: 0,5 a 12 bar

Pressure regulating valve self operated with forged brass body material for utilization especially with

oxygen gas. It has high flow capacity and top entry design.

- Diameters: 1" and 2" (ANSI Class 150 and 300) Option with Thread NPTF for 1"
- Outlet Pressure Range: 0.5 to 12 bar













Regulador de pressão para aplicações com alta pressão de entrada (até 300 bar) e excelente precisão

de regulagem da pressão de saída. Comumente instalados em cabeça de poço e pontos de entrega (City-Gates) onde o consumo inicial é baixo. Corpo em aço carbono ou inoxidável laminado.

- Diâmetro: 1" (Classe ANSI 150 a 1500 ou Rosca NPTF)
- · Faixa de Regulagem: 0,5 a 63,5 bar

Pressure Regulating valve for applications with high inlet pressure (up to 300 bar) and excellent outel presure accuracy. Usually installed in wellhead and City Gates when initial consuption is low. Body Material in Carbon Steel or Stainless Steel.

Diameter: 1" (Flanged ANSI Class 150 to 2500)

Outlet Pressure Range: 0,5 to 63.5 bar









# GASCAT Slam shut valve models: Modelos GASCAT de válvulas de bloqueio automático:













# GIPS-FC (H & PH)

Válvula de bloqueio automático por aumento de pressão, com atuador tipo falha fecha que interrompe o fluxo de gás em caso de queda da pressão monitorada. Corpo em aço carbono.

- Diâmetros: 1" a 12" (classe ANSI 150 a 600 outras sob consulta)
- Faixa de bloqueio por aumento de pressão: 0,5 a 70 bar
- (\*) Também disponível na versão para bloqueio somente por queda de pressão (modelo GDPS).

Automatic slam shut valve for increase in pressure, with fail close actuator that interrupts the process gas flow in case of decrease of monitored pressure. Body material in cast carbon steel.

- Diameters: 1'' to 12''(pressure ANSI Class 150 to 600 others under consult)
- Over spring range: 0.5 to 70 bar
- \* Its also available version for blocking only for decrease in pressure (model GDPS).





## KN - FC

Válvula de bloqueio automático por aumento de pressão equipada com atuador falha fecha. Projeto extremamente compacto ideal para instalações em áreas urbanas com pouco espaço disponível, como estações de regulagem de pressão em caixa enterrada. Corpo em aço carbono fundido.

- Diâmetros: 1" a 4" conexão entre flanges (Classe ANSI 150 e 300)
- Faixa de Regulagem: 0,5 a 40 bar

Automatic slam shut valve for increase in pressure supplied with fail close actuator. Construction with design extremely compact; its ideal for installation in residential areas with few available space, pressure regulating stations in buried boxes etc. Body in cast carbon steel.

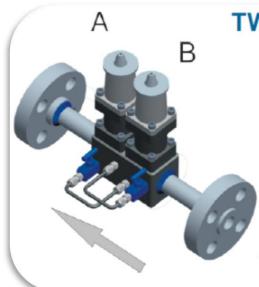
- Diameters: 1" to 4" flangeless (ANSI Class 150 and 300)
- Set Pressure Range: 0.5 to 40 bar











# TWIN - FC

Válvula de bloqueio automático por aumento de pressão com duplo atuador em série. O ajuste de pressão do atuador B é ligeiramente superior que a pressão do atuador A, assim, em caso de falha do atuador com ajuste inferior o outro atuador bloqueará o fluxo de gás. Construção robusta para pressão de operação de até 250 bar. Corpo em aço inoxidável fundido.

- Diâmetro: 1" (Classe ANSI 150 a 1500)
- Faixa de Regulagem: 0.5 a 70 bar

Automatic double slam shut valve for increase in pressure supplied with two actuators in series. The set pressure of actuator B is quite higher than actuator A, then, in case of A actuator fail the other one will block and interrupt the process gas flow. Body construction in Stainless Steel with robust design allowing the application with high working pressure up to 250 bar.

- Diameter: 1" (ANSI Class 150 to 1500)
- Set Pressure Range: 0.5 to 70 bar



