FJ | Integral Supply

QUICK CLOSING VALVE SYSTEM



WWW.FERNANDEZJOVE.COM



INDEX

INTRODUCTION TO THE SYSTEM	4
QUICK-CLOSING VALVES Release Mechanism Straight Type Angle Type	6 8 9
REMOTE HYDRAULIC CONTROL Hydraulic Pump Unit Hydraulic Pump Unit Cabinet	10 10 11
REMOTE PNEUMATIC CONTROL Components Pneumatic Control Cabinet Air Accumulator	12 13 13 13
ELECTROPNEUMATIC CONTROL	14
Components Light Indication Remote Operation Button Stations PRIOR VAL Control System Emergency Power Supply Emergency Battery Line Break Detection System Audible Warning Cabinet Refrigeration	15 15 15 16 16 16 16 16
LIFECYCLE SUPPORT AND DOCUMENTATION	17
Project Documentation Identification and Labeling Traceability Marks	17 17 17
REFERENCES Valves Control Cabinets Accumulators	18 18 18 19



INTRODUCTION TO THE SYSTEM

vick closing valve system allows the instantaneous shutoff of fluid lines in case of emergency (such as leak or fire).

Our systems are composed by valves and control panels. The valves are installed in potential flammable liquid lines (fuel, oils, etc) or at the outlet of tanks, whereas the control panel is installed in a safe area.

GENERAL COMPOSITION OF THE SYSTEM:

Control panel (hydraulic, pneumatic or electro-pneumatic).

Quick closing valves



FJ offers the complete quick closing system, from the development of engineering starting with the project information, the manufacture of the control panels (hydraulic, pneumatic or electro-pneumatic) and the manufacture of SAVAL valves (Valves brand of the Fernández Jove group)

Engineering and System design.

Fabrication of panels and drive cabinets.

Fabrication of valves and pulse units of SAVAL brand.

All of this is complemented with logistic and technical documentation packages, as well as technical support during installation, commissioning, and life cycle.





uick-closing systems, as critical passive safety elements in both naval and industrial sectors, must guarantee their correct operation with total reliability in case of emergency.

FJ offers high-performing systems, designed for the most demanding settings, always manufactured with high-quality materials and with full traceability of both its components and production processes.



QUICK-CLOSING VALVES

FJ includes SAVAL brand valves in its quickclosing system, a company which belongs to Fernández Jove group, and which has been specialized in the manufacture of high-quality marine valves for more than 50 years.



Saval valves have been approved by the standards of Lloyd's Register, which certifies their design and guarantees their correct functioning under critical conditions.

The base of our valves is an integral metal seated, which ensures its durability and therefore, avoids short-term corrosion.

SAVAL Quick closing valves can be operated in three different forms by using the same release mechanism.



Hydraulic

Manual



RELEASE MECHANISM

he SAVAL release mechanism, attached by default to the quick-closing valve, offers two different closing methods: local (by actioning the small lever manually or with a cable) and remote (by means of a hydraulic, pneumatic or electro-pneumatic actuation system)

DN-10 / DN-100







CHARACTERISTICS OF THE VALVE

Size	DN	15 ·	- 150
Nominal Pressure (NP) (bar)	PN	16	10
Hydraulic pressure testing (kg/cm2)	Body	24	15
	Closure	17,6	11
Maximum allowable operating pressure	Up to 120°C	16	10
(kg/cm2)	Up to 225°C	14,3	8,9

Configurations	Straight Type / Angle Type			
Size	DN15 a DN150			
Design	Distance between flanges EN 558 Serie 1 (DIN 3202 F1) EN 13789 (DIN 3356 part 5/ UNE-EN ISO 4126-1			
Flanges	EN 1092 (DIN 2633 PN16)			
Flange options	Special drill according to ANSI standard (under request)			
Certifications	Type Approval according to Lloyd's Register norms			
Cylinder connector	SIMPLE UNION R1/8" BSP - Ø 8L			
Optional limit switch for visual signaling, etc.				

Optional: electromechanical limit switch for indication of closed valve (24VDC).





STRAIGHT TYPE

DRAWING







DIMENSIONS

DN	D(mm)	L (mm)	H Open (mm)	V(mm)	X (mm)	Y(mm)	Weight (Kg)
15	95	130	195	100	160	90	4
20	105	150	200	100	160	90	4
25	115	160	205	100	160	90	6
32	140	180	265	150	170	130	9
40	150	200	275	150	170	130	11
50	165	230	280	150	170	130	13
65	185	290	335	200	175	175	19
80	200	310	335	200	175	175	24
100	220	350	390	200	180	250	24
125	250	400	405	250	195	275	70
150*	285	480	470	300	195	290	95

MATERIALS

REF.	BODY	SEAT	DISK SEAT	BOLTING	HAND WHEEL
GI-402	Nod. Cast Iron (AISI316)	S.Steel (AISI420)	S.Steel (AlSI420)	Steel	H°F° o Al
GI-202	Steel (GS-C 25)	S.Steel (AISI420)	S.Steel (AISI420)	Steel	H°F° o Al
GI-606	S. Steel (AISI316)	S. Steel (AISI316)	S. Steel (AISI316)	S. Steel	H°F° o Al
GI-708	Bronze (RG-10)	Bronze (BrNiAl)	BrNiAl	Steel	H°F° o Al



ANGLE TYPE

DRAWING







DIMENSIONS

DN	D(mm)	L (mm)	H Open (mm)	V(mm)	X (mm)	Y(mm)	Weight (Kg)
15	95	90	201	100	160	95	5
20	105	95	210	100	160	95	5
25	115	100	201	100	160	95	7
32	140	105	246	150	170	95	10
40	150	115	242	150	170	95	12
50	165	125	242	150	170	95	14
65	185	145	286	200	175	125	20
80	200	155	286	200	175	125	25
100	220	175	307	200	180	185	35
125	250	200	375	250	195	200	80
150	285	225	400	300	195	215	82

MATERIALS

REF.	BODY	SEAT	DISK SEAT	BOLTING	HAND WHEEL
G I- 412	Nod. Cast Iron (GGG40.3)	S.Steel (AISI420)	S.Steel (AISI420)	Steel	H°F° o Al
GI-212	Steel (GS-C 25)	S.Steel (AISI420)	S.Steel (AISI420)	Steel	H°F° o Al
G I- 616	S. Steel (AISI316)	S. Steel (AlSI316)	S. Steel (AlSI316)	S. Steel	H°F° o Al
G I- 718	Bronze (RG-10)	Bronze (BrNiAl)	BrNiAl	Steel	H°F° o Al



REMOTE HYDRAULIC CONTROL

uick closing valves can be closed remotely by hydraulic pump unit station. When the lever is actuated, a plunger moves a fixed volume of incompressible fluid (hydraulic oil) which activates the release mechanism of the valves that are connected to the unit.





HYDRAULIC PUMP UNIT

offers pump units with one, two and up to three levers mounted on the same metal frame.

These pump units, as the valves, are manufactured by SAVAL | Marine Valves brand, of Fernández Jove group. The interconnection between the pump unit and the valves is created through a Ø8x1 mm pipe.

CHARACTERISTICS

- Pump volume: 56 cm³
- Design pressure: 4,5-5 bar
- Suitable for the releasing of:
 - 4 valves SAVAL GI: DN15 a DN100
 - 2 valves SAVAL GI: DN125 a DN150

Recommended oil: ISO VG32



n° pump units	Α	В	Kg
1	70	100	8
2	155	185	17
3	245	275	25



HYDRAULIC PUMP UNIT CABINET

ydraulic pump units can be supplied installed inside a metal cabinet; that way they are protected against environmental dirt or possible external manipulation.

These cabinets are supplied ready to be installed, including the necessary connections to the pipes.

FJ offers standard version cabinets with up to 5 pump units (other options under request).







DIMENSIONS

n° impulse units	A(mm)	B(mm)	C(mm)	D(mm)	Kg
1	680	270	215	455	14
2	700	500	200	685	39,5
3	700	500	200	685	47,5
4	700	500	200	685	56,5
5	800	600	200	785	70
* For other sizes or quanti	ties customize	ed solutions car	be provided.	Contact with	the sales

 For other sizes or quantities customized solutions can be provided. Contact with the sales department.



REMOTE PNEUMATIC

Provide a constraint of a cons

The main advantage of the pneumatic system is that it allows the closure of an unlimited number of valves from a single cabinet.





CHARACTERISTICS

As standard, FJ offers cabinets with up to 8 actuators, which allows up to 8 valve lines to be actuated independently.

The pneumatic actuation system consists, in its most basic version, on a control cabinet with all the actuation elements included inside. The cabinets are usually complemented with an air accumulator, which adds the capacity of closing the valves without air supply.

Characteristic or equipment	Included	Optional
Controlt cabinet	х	
Filters and elements for air control	x	
Manual push buttons	x	
Air accumulator		x



COMPONENTS

PNEUMATIC CONTROL CABINET

Our cabinets have been designed to include the different necessary elements to remotely control the valves.

- **Filter.** To ensure optimum air quality and constant actuation pressure. As standard, the normal working pressure for these systems is of 6-8 bar.
- Release mechanism to actuate the valves. Each actuator will be able to remotely release mechanism as many valves as necessary, depending on the design of the system.
- Identification of the line. Each line of valves or release mechanism is individually identified, based on its design information. This allows to be able to close only the valves that are necessary, keeping operational the rest of the services which have not been affected by the emergency.



AIR ACCUMULATOR

FJ designs the accumulator to adapt it to each specific case, studying the number of valves which need to be operated and the distance which goes from the panel to the valve.

The accumulator is designed to perform a minimum of two emergency drives in case the main compressed air supply is lost.

In exceptional cases, the accumulator can be installed inside the drive cabinet.

As standard, FJ offers accumulators of 5,10,15,20,25 and 50 L. More capacity accumulators are also available under request for special uses.





ELECTROPNEUMATIC CONTROL

The electropneumatic control system maintains the functionality of the pneumatic ones, but it adds electrical components to improve the functions of remote control and connectivity.

These equipments include solenoid valves in parallel with the manual push button, which makes possible to close the valves from another system or from keypads.





Characteristics or equipment	Included	Optional
Control cabinet	x	
Filters and elements to control the air	x	
Manual push buttons	x	
Electro valves for remote control	x	
Light indication of the condition of the valve		x
Keypads to command the valves		x
PLC with PRIOR VAL control system		x
Connection to other systems (IAS, SCADA, etc.)		x
Control screens		x
Emergency battery		x
Emergency power system		x
Line break detection system		x
Audible warning		x
Cooling tower for the cabinet		x
Air accumulator		x
Pressure switch		х



COMPONENTS

LIGHT INDICATION

To be able to view the position of the valves (open/ closed) from the control cabinet, it is possible to include pilot lights connected to the limit switches. Those pilots are installed in the front part of the cabinet or, exceptionally, in separate panels.

Moreover, optional indications can be added for the different emergencies of the systems (low pressure, power failures, etc.)

REMOTE OPERATION BUTTON STATIONS

The use of solenoid valves in FJ's control cabinet allows quick-closing valves to be remotely operated from button stations, located at a different point of the facility.

The size and number of button station would be established depending on each project.



PRIOR | VAL

CONTROL SYSTEM

FJ's electropneumatic drive cabinet can include a PLC and incorporate PRIORIVAL control system, developed by Fernández Jove.

Adding PRIORIVAL to the quick closing system enhances its use, as it can be monitored on a control screen or connected to other superior systems (such as IAS or SCADA), by using fieldbus or other options.

By doing this, the alarms could be displayed, check the situation of all the valves (open/closed) and activate them remotely.



For more information, get to know PRIOR | VAL control system







COMPONENTS

EMERGENCY POWER SUPPLY

FJ's electropneumatic system can include an emergency power that keeps it functioning even if the main power is not working.

This also allows the keypads, control equipment and other elements to remain operational.

EMERGENCY BATTERY

The system supports the inclusion of battery modules, which allows control elements to remain operational when both primary and secondary supplies are not working.

LINE BREAK DETECTION SYSTEM

If button stations are used, cable break detectors can be incorporated, which allows detecting connection failures and would always keep them operational. In case of a cable failure the system would make a visual/audible alarm to send warning to a higher system (IAS/SCADA).

AUDIBLE WARNING

Audible indications can be incorporated into FJ's control cabinet. This way, when an alarm which makes emergency shutdown is impossible to activate, such as a pressure drop on the system, an audible warning would be activated.

CABINET REFRIGERATION

If the system is expected to suffer high temperatures, a forced cooling object such as a ventilator or Vortex cooler could be included.





LIFECYCLE SUPPORT AND DOCUMENTATION

PROJECT DOCUMENTATION

FJ offers different project documentation packages, including technical, logistics and life cycle documentation.

Basic documentation:

- · Basic outlines and diagrams
- · 2D Drawings of valves and equipment
- · Conformity Report
- · User manuals

Optional documentation:

- · 3.1 certificate of SAVAL valves
- \cdot Certification of valves by Class Inspection under IACS rules.
- \cdot 3D Drawings of valves and actuators
- · Equipment test certificates
- · Maintenance manual

· List of recommended spare parts

Request FJ Sales department for more information about these issues.

IDENTIFICATION AND LABELING

As standard, FJ identifies and labels the components of the quick-release system, the actuators and valve lines, based on the information received for each project.

This makes possible to easily identify which valves to close and the system they belong to, to avoid unnecessary cuts in areas not affected by the emergency.

TRACEABILITY MARKS

The equipment and valves manufactured by FJ have a traceability mark which saves all the information of the production process.

Thanks to this, we guarantee that mentioned information during all the lifecycle of the projects and, due to that, we ensure that a better technical support would be provided in future maintenance tasks.





REFERENCES

VALVES



NOTES

Check the possible combinations of materials in the technical data sheets of the valve.

DRIVE CABINETS



NOTES

* Only valid for drive cabinets of type E or P

For other special options, get in contact with FJ's commercial department.



ACCUMULATORS



FJ | Integral Supply

FJ | Integral Supply

WWW. FERNANDEZJOVE.COM ventasfj@fjove.com

SAVAL | Marine valves

PRIOR | Control System



Central office P.E. Tanos-Viérnoles c/ La Espina, 44 39300 Torrelavega. Cantabria SPAIN