SATAM

XAD 54 VALVES

Description – Installation – Commissioning – Spare parts

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This document consists of 10 pages, (including the flyleaf)

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In conformity with the European directive 94/9/CE-ATEX

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XAD 54 VALVE

SUMMARY

1. Description

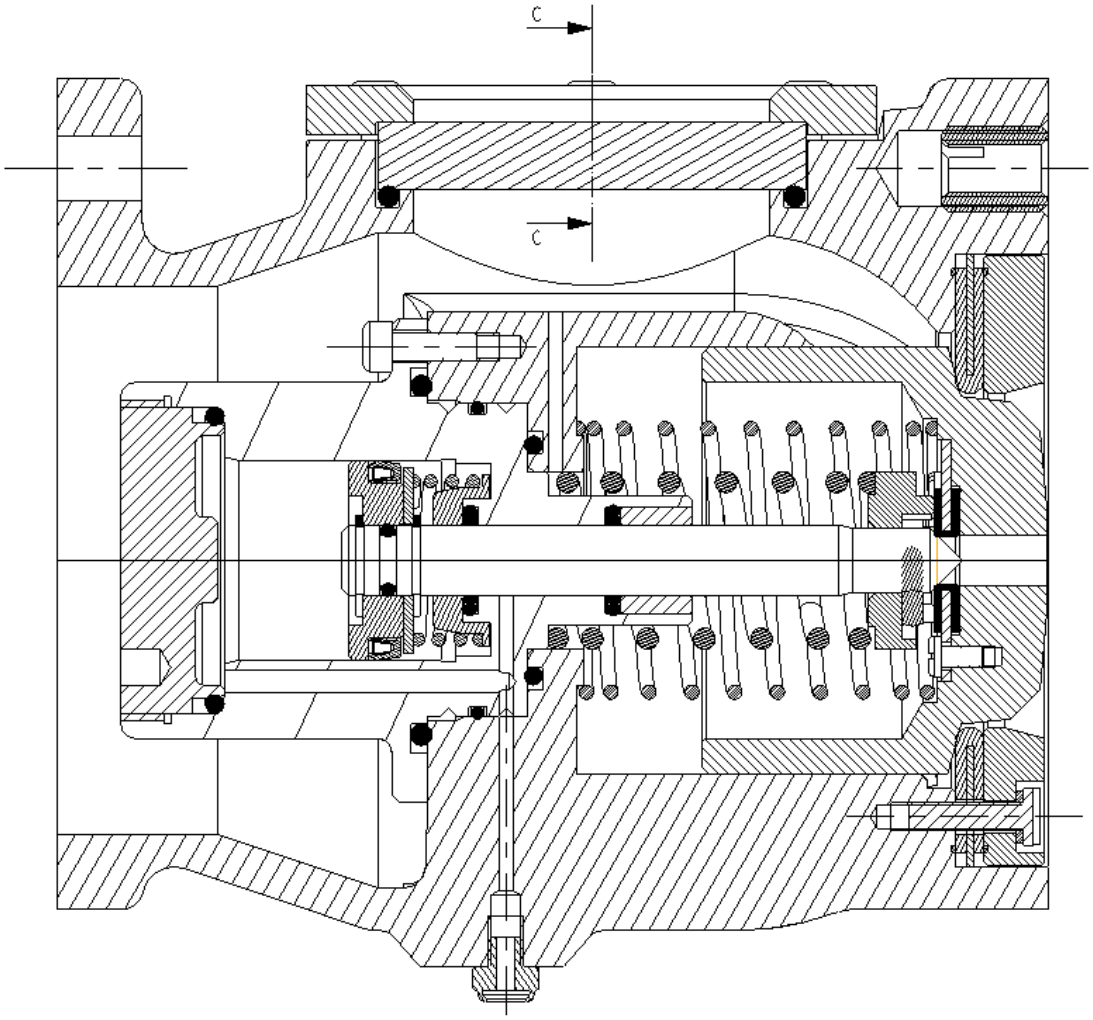
1.1. Operating principle

The XAD 54 valve is a pneumatically commanded dual-flowrate valve. On SATAM equipment it can be piloted by a mechanical pre-determination system linked to pneumatic dispensers. The XAD 54 valve can also be commanded by an electronic calculator such as SAPHIR, RUBIS, EQUALIS or other… linked to pneumatic solenoid valves. The 2 flowrates result from 2 different pneumatic pressures:

- one adjustable pressure for adjusting the low flowrate upon closing and opening.
- the network pressure to authorise the opening of the high flowrate valve.

This valve acts as a "cut off " device, after distribution it insulates the counting part of the installation (filter-gas extractor + counter) on the upstream part (hose + nozzle).

Comments: *The "low flowrate" mode is essential at valve closure, it reduces the flowrate at the end of distribution. For metrological reasons, a flowrate decrease phase is required at the end of distribution to obtain the exact predetermined quality of fuel.*



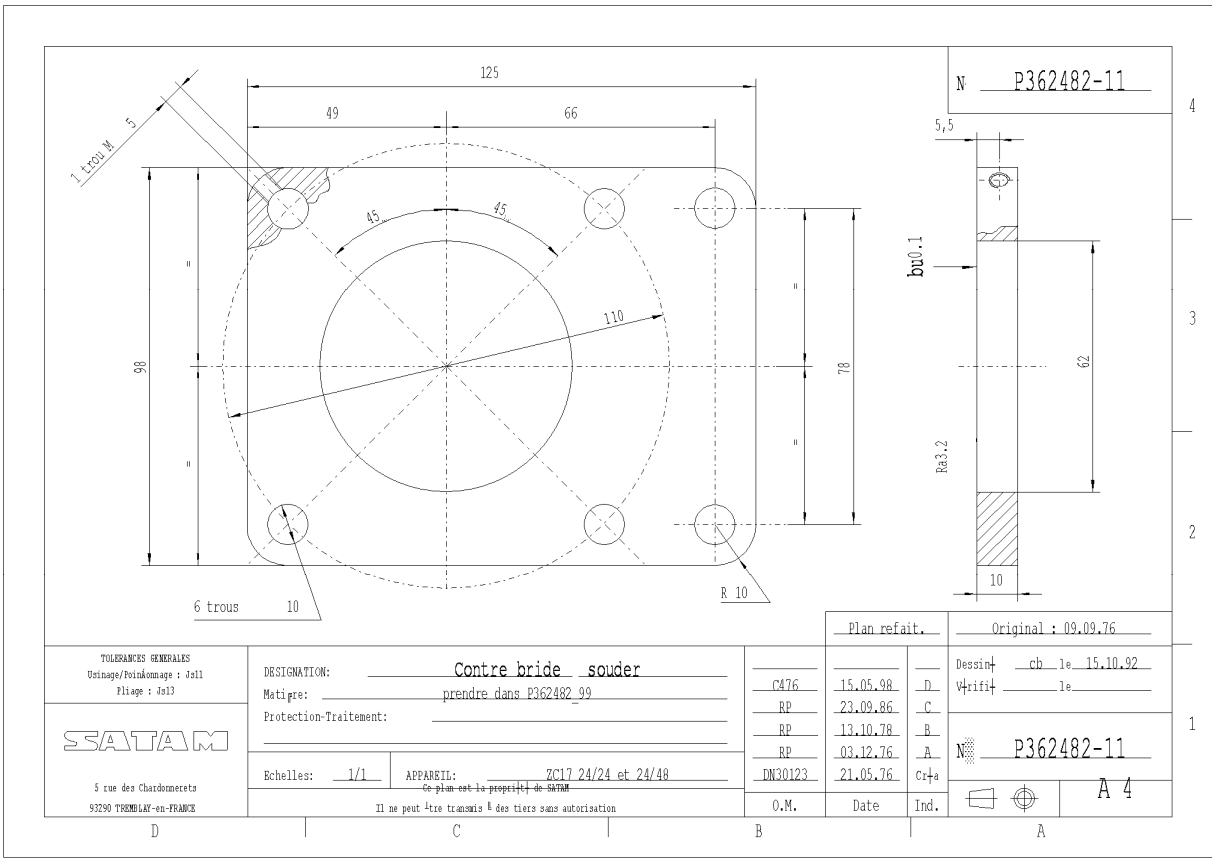
REP :Rep maîtresse
ECHELLE :3:2 TYPE :ASSEM NOM :515787 TAILLE :A1 FEUILLE1 SUR2

1.2. Technical data

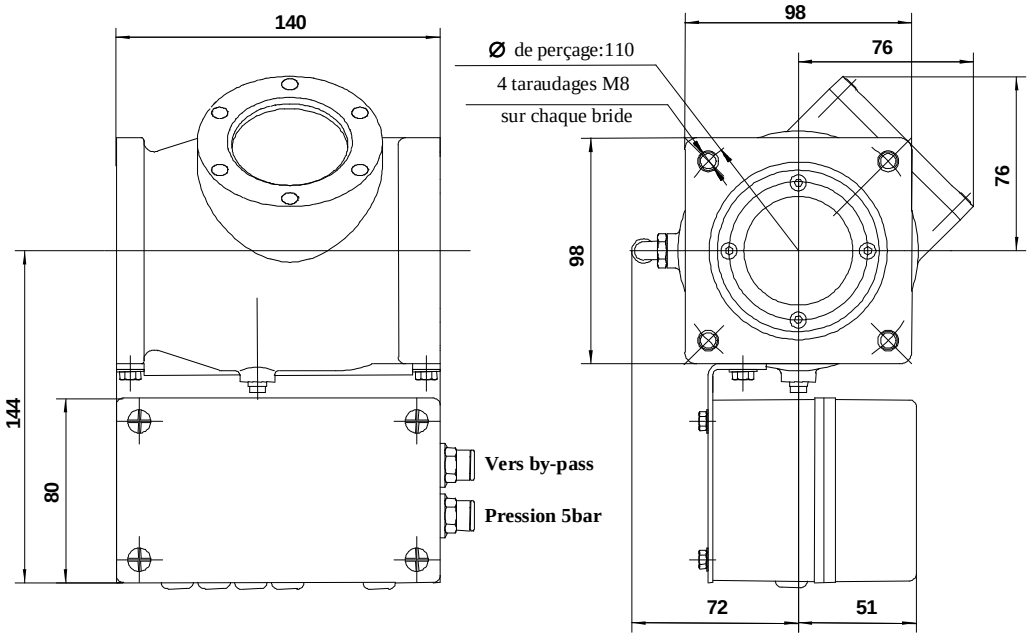
Input flange:	Square flange with 4 x Ø9 holes at 90° on Ø110
Output flange	Square flange with 4 x M8 tappings at 90° on Ø110
Diameter of hydraulic passage:	DN 50
Pneumatic service pressure:	
	• 1.5 bars < low flowrate mode < 4 bars • high flowrate mode = minimum 5 bars
Maximum hydraulic service pressure:	10 bars
Maximum hydraulic service flowrate:	50 m3/h
Operating temperature:	- 25℃ to +55℃
Directive ATEX 94/9/CE:	⟨Ɛx⟩ II 2 G C T4
Body Material:	AS7G aluminium alloy
Internal materials:	Aluminium, anodised aluminium, stainless steel, bronze
Joints material:	FKM, PTFE

Comments:

- *Valve closed in absence of pneumatic pressure*
- *Connection by welding flanges of SATAM type ref: 362482-11 (see drawing below)*

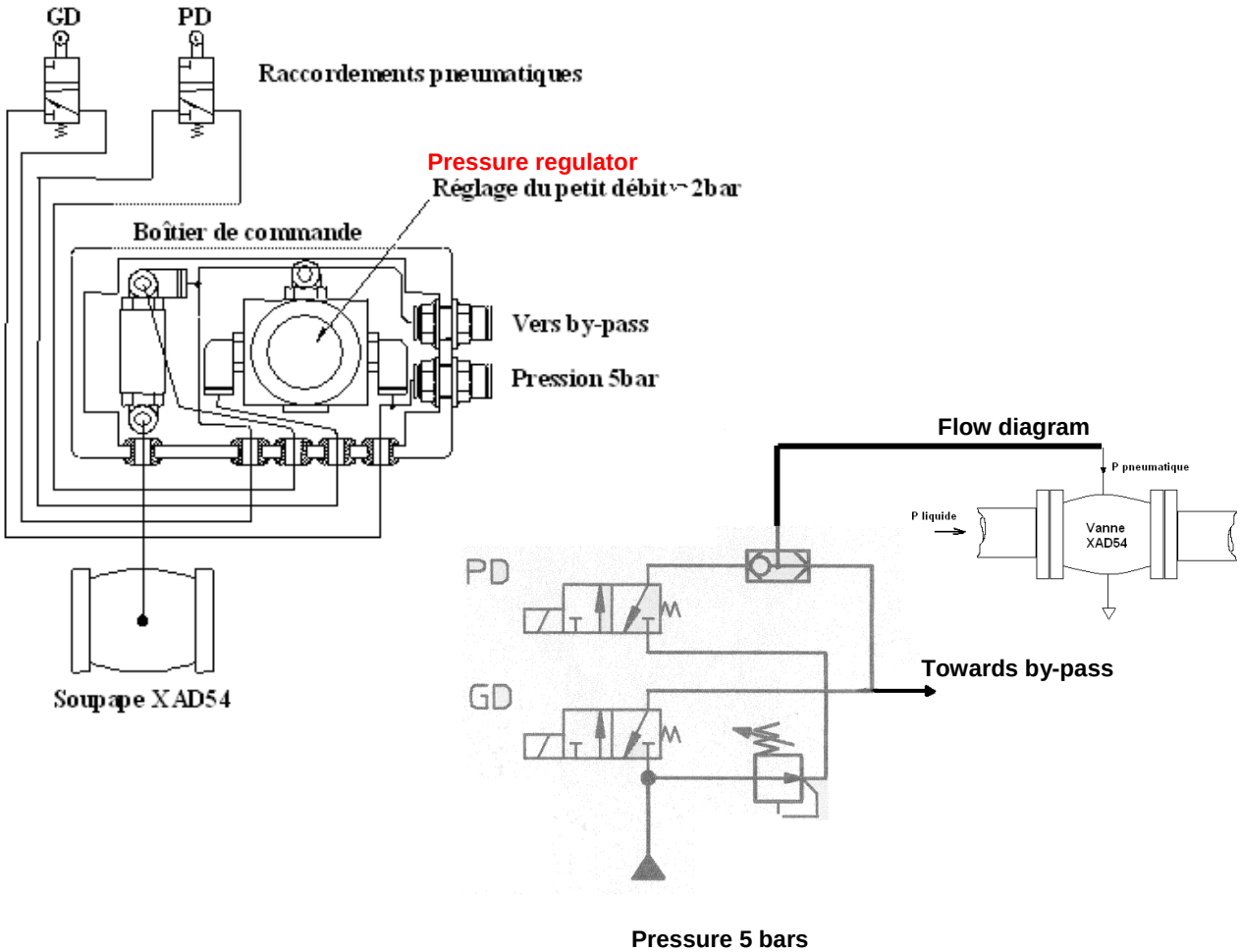


1.3. Dimensions & weights

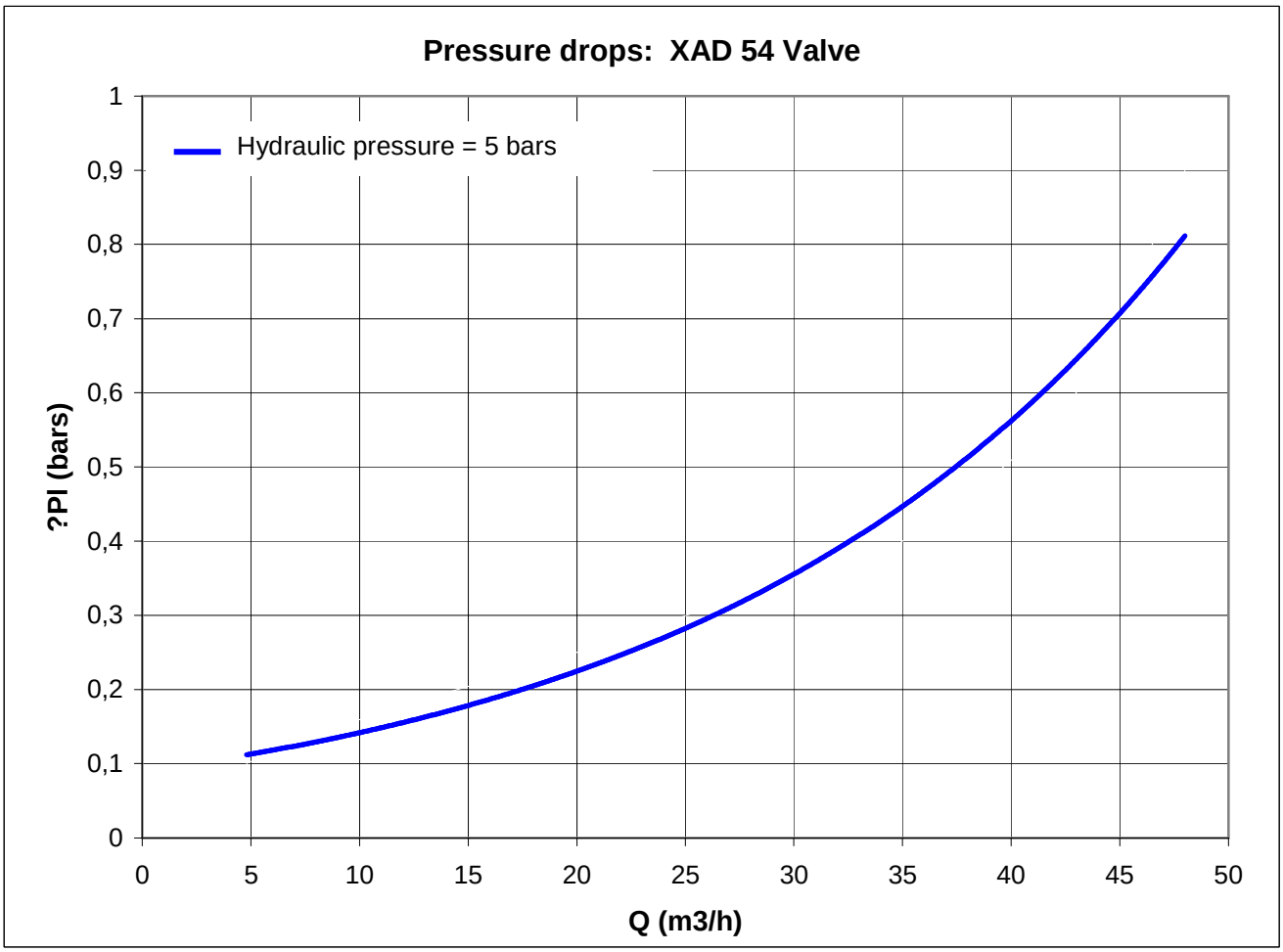


Weights = 2kgs (dry)

1.4. Pneumatic connection diagram



1.5. Performance: Pressure drops



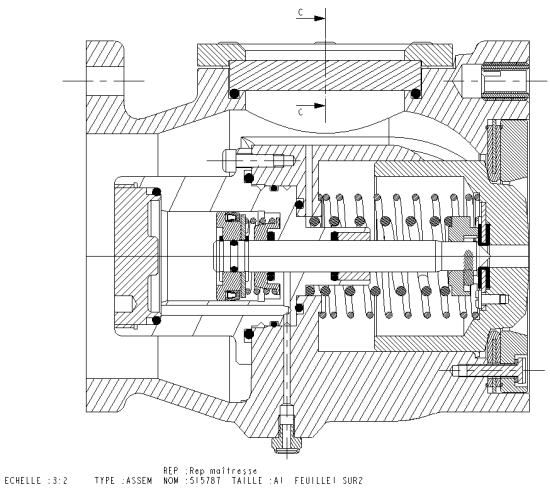
2. Installation – Commissioning

2.1. Reception

The equipment is placed in specifically designed packaging created for its transport with maximum safety.

If, however, a significant shock (which would most probably leave a mark on the outside of the packaging) is noted upon reception of the material, please take relevant action with regards the transporter immediately and notify SATAM.

2.2. Installation



When the valve is assembled on an assembly (e.g.: EMS), the welding counter-flanges are delivered with the equipment so that it can be connected to horizontal 2" piping (Ø 60.3)

When the valve is delivered alone, the welding counter-flanges will need to be supplied.

Connect the XAD 54 valve to the piping, respecting the flow direction for fluid,

- Input: flange side with 4 smooth holes
- Output: flange side with 4 tapped M8 holes

Connect the valve's pneumatic control box to the air network. The air network **MUST** be equipped with a conditioning system for compressed air. Minimum equipment: a filter, a pressure reducing valve and a lubricator.

When the valve is not delivered with its pneumatic box, cable the XAD 54 valve following the pneumatic connection diagram (see §1.5)

CAUTION: The pressure regulator **MUST** be fitted with a relief valve, effective setting range of 1 to 6 bars, setting sensitivity +/-1% of the maximum pressure

2.3. Commissioning

Once hydraulic and pneumatic connections are complete, you may proceed with valve commissioning.

In order for commissioning to be carried out under good conditions, it is particularly important:

- That products are clean and, in particular, are free of metal particles
- That hydraulic pipes are washed, rinsed and free of water
- That hydraulic pipes have been purged of air properly and are started up progressively
- To have a compressed air network exempt from impurities (e.g.: carbon deposit, rust, dust…) and equipped with a conditioning system for compressed air.

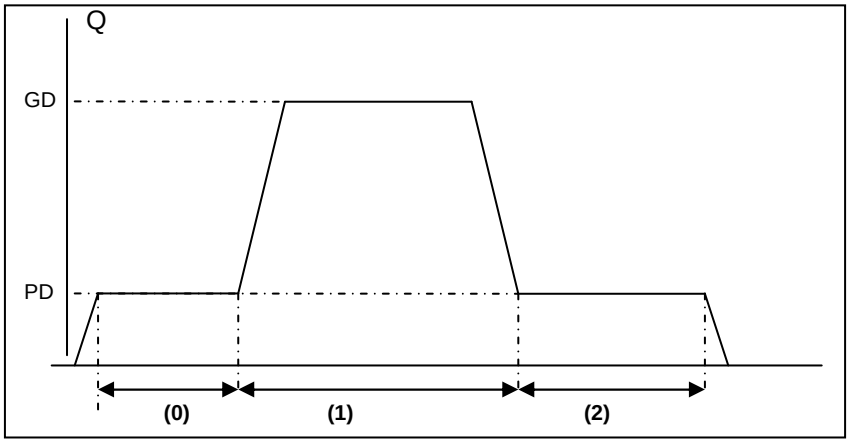
CAUTION: Do not exceed the maximum flowrate authorised by the valve.

2.4. Maintenance

- For good operation and to optimise the valve's life cycle, the valve's internal single-acting jack **must** be supplied in **lubricated** compressed air. Check the oil level in the compressed air network lubricator regularly.

3. Operations concerning settings

3.1. Dual-flowrate cycle



(0): Low opening flowrate (PDo)

(1): High Flowrate (GD)

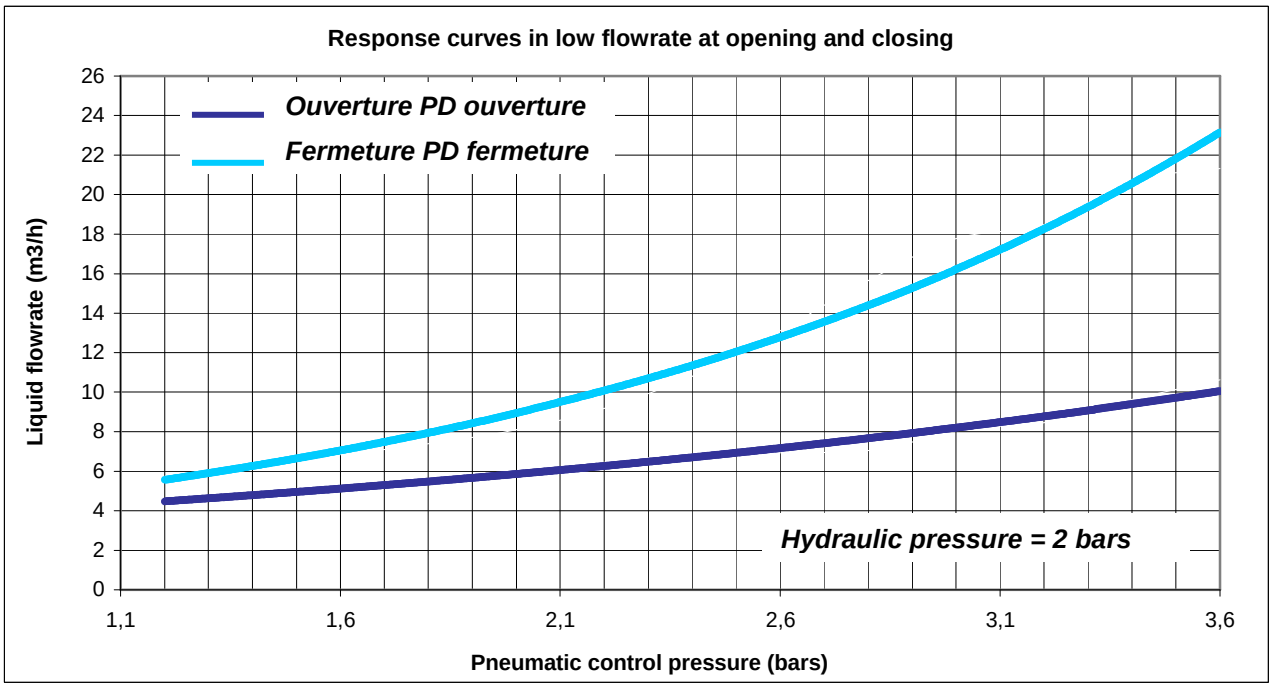
(2): Low closing flowrate (PDf)

The following diagram describes the operating cycle for the XAD 54 valve. After authorisation for opening, the valve will open at a low flowrate, then it will switch to a high flowrate for the delivery, then lastly it will switch back to a low flowrate prior to closing to obtain a quantity delivered close to the pre-determined quantity.

Comments: The low flowrate phase at opening can be considered as non-essential depending on applications.

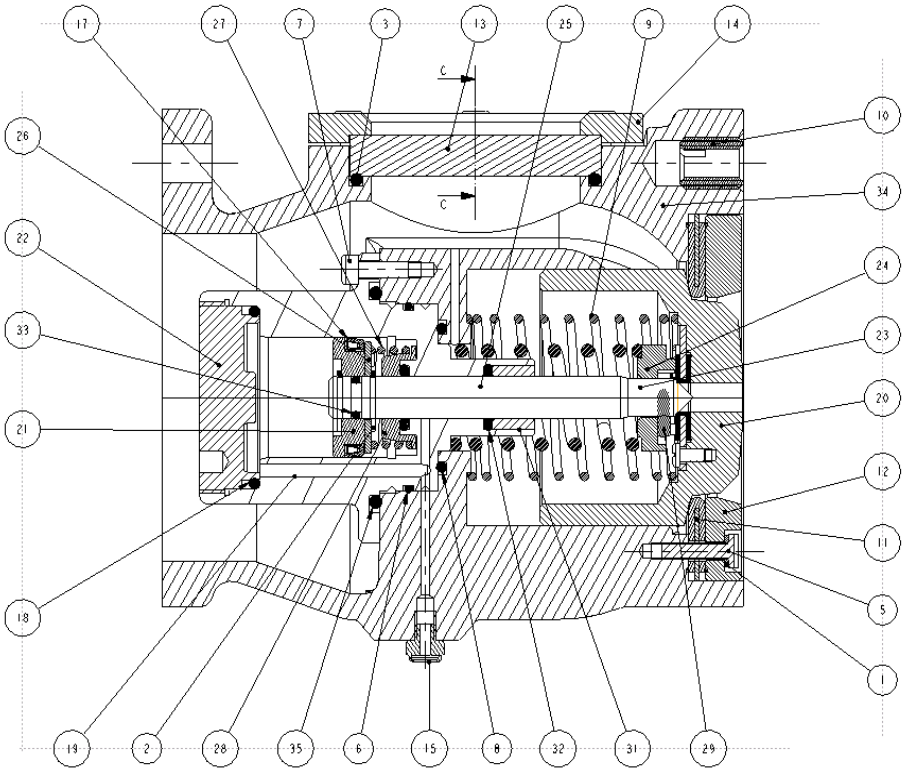
3.2. Setting the low flowrate

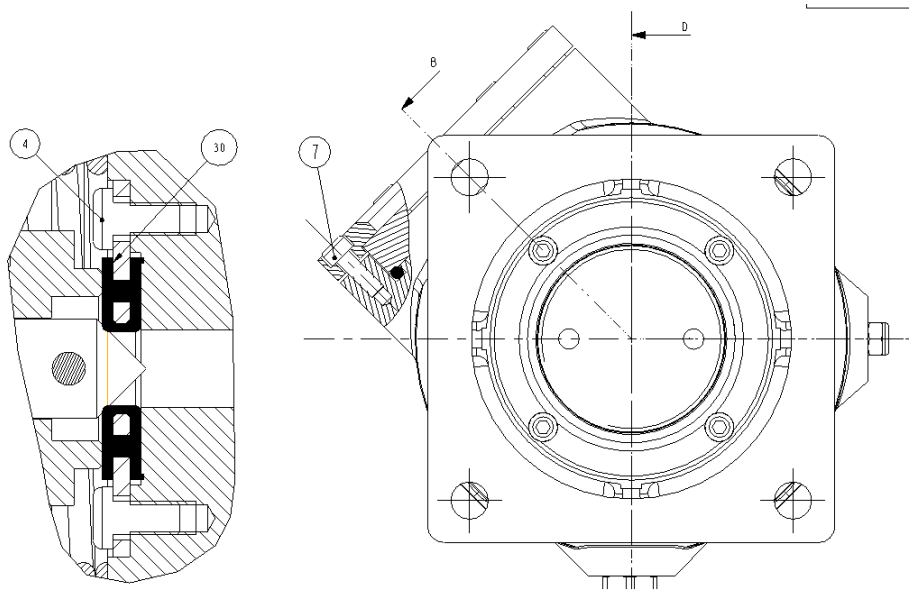
The opening and/or closing low flowrate phases can be set by means of a pressure regulator (see pneumatic connection diagram §1.5). The following graph shows the valve's flowrate response against the control pressure set using the regulator.



4. SPARE PARTS

4.1. Drawing





4.2. Nomenclature

4.2.1. XAD54 valve + Pneumatic box

Rep.	Reference	Quantity	Description
	511309		FULL XAD54 VALVE (+ PNEUMATIC KIT)

4.2.2. Pneumatic box

Rep.	Reference	Quantity	Description
	510923		XAD54 VALVE PNEUMATIC KIT

4.2.3. XAD54 valve

Rep.	Reference	Amount	Description
	515787		XAD54 VALVE (ALONE)
1	25034	4	STEEL ROD. WZ 4 x 7.2 x1 GROWER
2	26326	2	CIRCLIPS EXT.D10 A5799-01
3	26555	1	T. JOINT 54 x3
4	26973	4	SCREW C M 3 - 6 AC
5	27172	4	SCREW CB M 4 - 16 AC
6	27271	1	T. JOINT 37.82x1.78 VITON
7	27442	10	SCREW Chc M 4 - 12 AC Cl.8.8 Zn
8	27625	1	T. JOINT 30 x2.5
9	362884	1	PISTON SPRING
10	363153	4	INSERT
11	363192	1	REINFORCED LINING .VITON DF150
12	363238	1	VALVE SEAT XAD39
13	510895	1	GAUGE
14	510896	1	GAUGE COVER
15	510904	1	SILENCER LEGRIS 0670.00.19
16	510905	1	BRACKET LEGRIS REF:3199.06.10
17	515763	1	PNEUMATIC PISTON JOINT Ø28
18	515777	1	T. JOINT 37.77x2.62 VITON
19	515778	1	PNEUMATIC JACK BODY
20	515779	1	HYDRAULIC PISTON
21	515780	1	PNEUMATIC PISTON
22	515781	1	CAP
23	515782	1	PUNCH AXIS
24	515783	1	MACHINE-FINISHED WASHER
25	515784	1	CLOSING SPRING
26	515785	1	SPRING BUFFER WASHER
27	515786	1	OPENING SPRING
28	515833	1	SPECIAL BEARING
29	515883	1	CYLINDRICAL PIN Ø3 - 18
30	515963	1	REINFORCED LINING VITON DF150
31	516027	1	BEARING 10/15/10 BP25
32	516028	2	JOINT S90 PTFE + FKM
33	507560-10	1	T. JT 6.4 x1.9 R5A EPICHLO
34	510893-10	1	XAD54 VALVE BODY
35	900050-042	1	T. JT 46X3 VITON 70SH
/	361144	4	PIN M 8- 23/14 N.J=17 STEEL