PVC INJECTOR

DESCRIPTION

A venturi can best be described as a piece of pipe, the diameter of which first decreases (inflow), then remains constant (throat) and then gradually increases again (outflow) to the original size. The flow rate of a flow can be determined from the pressure difference between the inflow and the throat and the ratio of the diameters of the pipe and the throat.

Using Bernoulli's law (see below), the speed is then determined. It follows from this formula that the pressure is lower when the fluid velocity is higher, because the total energy at the inflow is just as great as the total energy in the throat (energy is conserved). If a third opening is made in the middle of the venturi, in the throat, through which a second gas or liquid flow can enter, it is called an injector. The second inflow then occurs because a negative pressure is created in the part of the venturi where the diameter increases again and gas or liquid is therefore sucked in.

The best-known application of this principle can be found in the carburetor. Here, the air flow in the venturi sucks in the gasoline and mixes it into a flammable mixture. Of course, a liquid/liquid flow can also be mixed.

The horticultural application then becomes an injection system for fertilizers from the A and B containers. A shunt line is made from the pump's pressure line to the suction line. The venturi is placed in this pipe with a control valve behind it that is controlled via an EC measurement. 2 venturies are placed on a normal unit. The Van der Ende Groep injector is made of PVC. The adhesive connections are 25 mm and are attached to the venturi using screw connections. The couplings can possibly be provided with adhesive rings. The maximum pressure that can be put on this venturi is 10 bar.

More Information:

Versión: J2024-1

VENTURI PRINCIPE
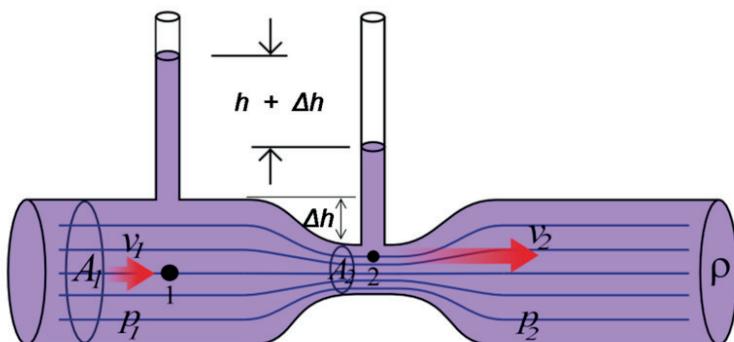
$$p_1 - p_2 = \frac{\rho}{2}(v_2^2 - v_1^2)$$

$p =$ pression

$\rho =$ dense heath

$v =$ velocity
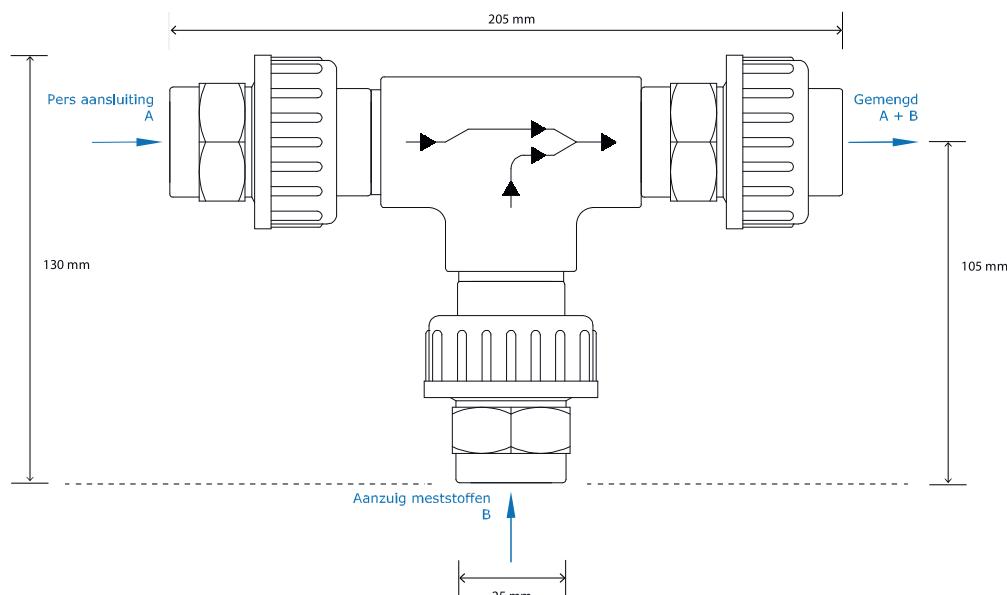
DIFFERENTRUNK OVER A / A+B mwk	CAPACITY INLET A L/min	CAPACITY INLET B L/min	VACUUM INLET B mwk
5	6,6	6,6	0,7
10	8,4	9,6	0,7
15	10,2	12,0	0,7
20	11,4	14,4	0,7
25	13,2	16,2	0,7
28	14,4	17,4	0,8

More Information:

Versión: J2024-1

SPECIFICATION		
ITEM	**DESCRIPTION**	**CAPACITY**
1	NOMINAL PRESSURE (H2O, 20ºC)	PN 10
2	SIZE	DN 10 - DN 80
3	BODY	-PVC-U -PP -PVDF
4	SEALING	-FPM -EPDM
5	CONNECTION	-DN 10 to DN 50: housing with union DIN 8063 -DN 65 to DN 80: housing with spigot

EQUIPMENT DESCRIPTION	
ITEM	**FEATURES**
1	Simple maintenace.
2	No moving parts.
3	Very low wear.
4	Low investment cost.
5	Very good mixing effect
6	High operating reliability
7	Low space requirement.

PRESSURE /TEMPERATURE DIAGRAM
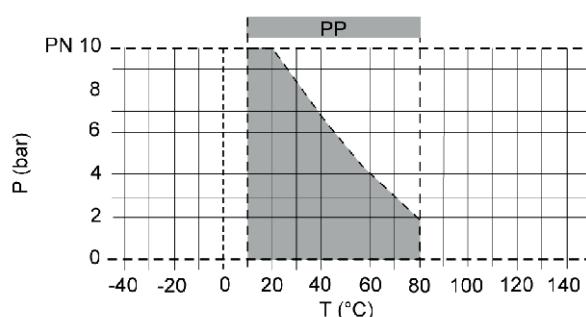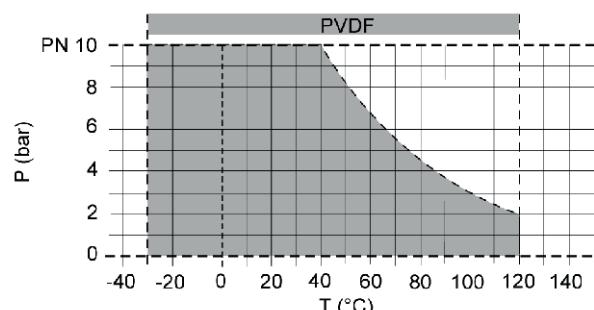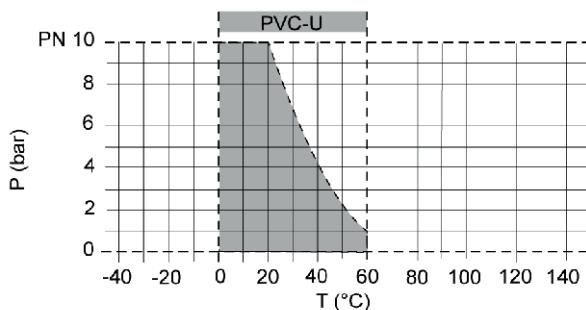
P = operating pressure
T = temperature
The pressure/temperature limits are applicable for the stated nominal pressures and a computed operating life factor of 25 years.These are standard values for harmless media DIN2403),to whichthe valve material is resistant.
For other media please refer to the ASV resistance guide.
The durability of wear parts depends on the operating conditions of the application.
For temperatures below 0°C (PP < +10°C) please specify the preciseoperating conditions of the application.
The rated pressure depends on the valve size and material.
For the corresponding rated pressure value of the valve, please referto the »Order table«.

More Information:

Versión: J2024-1

DESIGN

Example 1:

The propulsion water pressure and/or
propulsion water quantity for:
- intake quantity of 900 l/h H2O
- counterpressure of 1 bar

According to the diagram:
- propulsion water pressure approx. 2.5 bar
- propulsion water quantity approx. 1.100 l/h

Example 2:

The intake quantity for:
- propulsion water pressure of 5 bar is required
- counterpressure of 1.5 bar

According to the diagram:
- intake quantity approx. 1.080 l/h

**Water-Jet Pump SP 820 DN 25, nozzle bore 4.0 mm
Intake medium water**
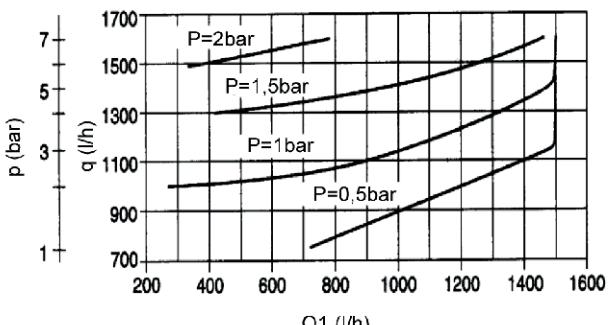
p = propulsion water pressure (bar)
q = propulsion water quantity (l/h)
P = counterpressure (bar)
Q1 = intake quantity (l/h) (water)

OPERATING NOTE

Safe operation of the valve can only be ensured if it is properly installed, operated, serviced or repaired by qualified personnel according to its intended use while observing the accident prevention regulations, safety regulations, relevant standards,directives/technical regulations or codes of practice such as e.g.DIN, DIN EN, DIN ISO and DVS*. *DVS = German Welding Society The intended use includes adhering to specified limit values for pressure and temperature, as well as checking the resistance. This requires all components coming into contact with the medium tobe "resistant" in ccordance with the ASV resistance guide. Ensure that the flow direction coincides with the direction of the arrow.
Provide a damping zone of at least 5 x DN upstream and down stream of the water-jet pump.
In order to meet the requirements of accuracy for mixing or dosing we recommend fitting suitable ASV throttle valves, ASV flowmetersand ASV diaphragm pressure gauge guards with pressure gauge.

WATER-JET PUMP SP 820, (d16 - d63)

BODY PVC-U

SIZE	d (mm)	16	20	25	32	40	50	63
PRESSURE RANGE	DN (mm)	10	15	20	25	32	40	50
	DN (inch)	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	PN (bar)	10	10	10	10	10	10	10

CONNECTION	SEALING	IDENT No.						
PVC-U	EPDM	54385	54386	54389	54387	54388	54390	54391
SOCKET END DIN ISO	WEIGHT	0,15 kg	0,20 kg	0,35 kg	0,45 kg	0,80 kg	1,30 kg	2,35 kg

BODY PP

SIZE	d (mm)	16	20	25	32	40	50	63
PRESSURE RANGE	DN (mm)	10	15	20	25	32	40	50
	DN (inch)	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	PN (bar)	10	10	10	10	10	10	10

CONNECTION	SEALING	IDENT No.						
PP	EPDM	61385	59679	57140	60123	59794	59698	61335
SOCKET END DIN ISO	WEIGHT	0,11 kg	0,15 kg	0,25 kg	0,32 kg	0,56 kg	0,91 kg	3,06 kg

BODY PVDF

SIZE	d (mm)	16	20	25	32	40	50	63
PRESSURE RANGE	DN (mm)	10	15	20	25	32	40	50
	DN (inch)	3/8	1/2	3/4	1	1 1/4	1 1/2	2
	PN (bar)	10	10	10	10	10	10	10

CONNECTION	SEALING	IDENT No.						
PVDF	FPM	60997	59800	67425	59464	54380	65591	67883
SOCKET END DIN ISO	WEIGHT	0,20 kg	0,26 kg	0,50 kg	0,59 kg	1,05 kg	1,70 kg	3,06 kg

More Information:

Versión: J2024-1
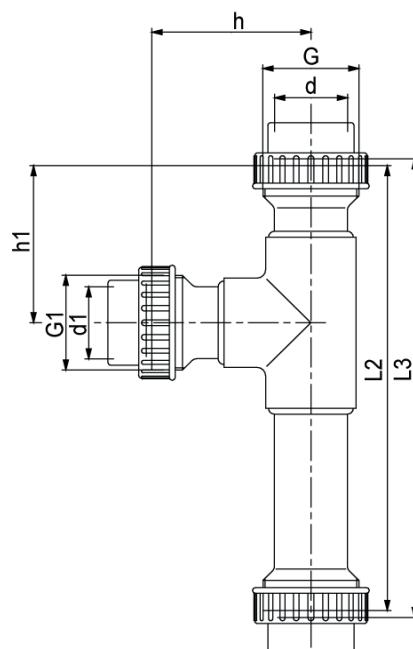
DIMENSIONS						
d (mm)	16	20	25	32	40	50	63
DN (mm)	10	15	20	25	32	40	50
DN (inch)	3/8	1/2	3/4	1	1 1/4	1 1/2	2

DIMENSIONS (mm)						
d1	16	16	16	32	40	50	63
G	3/4	1	1 1/4	1 1/2	2	2 1/4	2 3/4
G1	3/4	3/4	3/4	1 1/2	2	2 1/4	2 3/4
h	35	35	45	71	87	105	128
h1	40	40	45	71	87	105	128
L2	110	110	145	195	239	301	351
L3	116	116	151	201	245	307	357

More Information:

WATER-JET PUMP SP 820, (d75 - d90)

BODY PVC-U			
SIZE	d (mm)	75	90
PRESSURE RANGE	DN (mm)	65	80
	DN (inch)	2 1/2	3
	PN (bar)	10	10

CONNECTION	SEALING		
PVC-U	EPDM	64866	61352
SOCKET END DIN ISO	WEIGHT	2,40 kg	4,10 kg

BODY PP			
SIZE	d (mm)	75	90
PRESSURE RANGE	DN (mm)	65	80
	DN (inch)	2 1/2	3
	PN (bar)	10	10

CONNECTION	SEALING		
PP	EPDM	65948	65949
SOCKET END DIN ISO	WEIGHT	1,70 kg	2,90 kg

BODY PVDF			
SIZE	d (mm)	75	90
PRESSURE RANGE	DN (mm)	65	80
	DN (inch)	2 1/2	3
	PN (bar)	10	10

CONNECTION	SEALING		
PVDF	FPM	67884	65592
SOCKET END DIN ISO	WEIGHT	3,15 kg	5,35 kg

More Information:

Versión: J2024-1

WATER-JET PUMP SP 820, (d75 - d90)
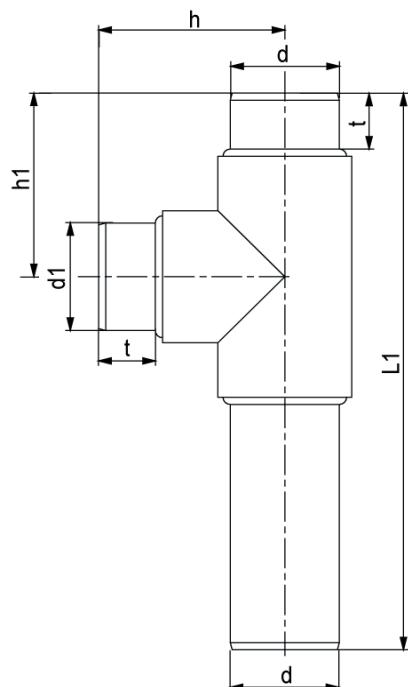
DIMENSIONS		
d (mm)	75	90
DN (mm)	65	80
DN (inch)	2 1/2	3

DIMENSIONS (mm)		
d1	75	90
h	115	149
h1	115	149
L1	338	465

More Information:

CHARACTERISTIC CURVES

SP 820, DN 10, NOZZLE BORE 1,5mm

Intake medium water
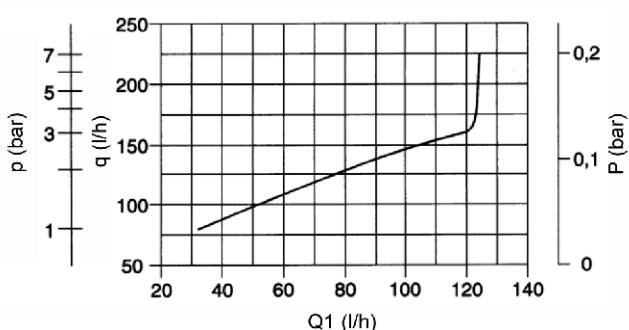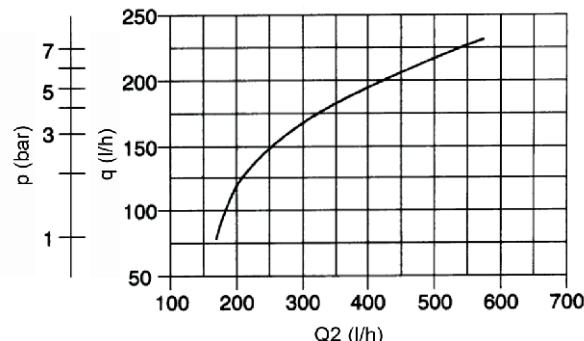
Intake medium air

SP 820, DN 10, NOZZLE BORE 2,0mm

Intake medium water
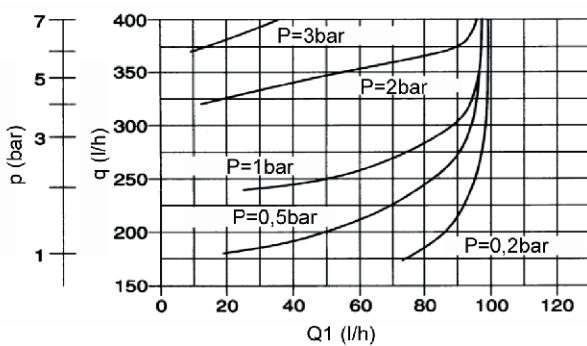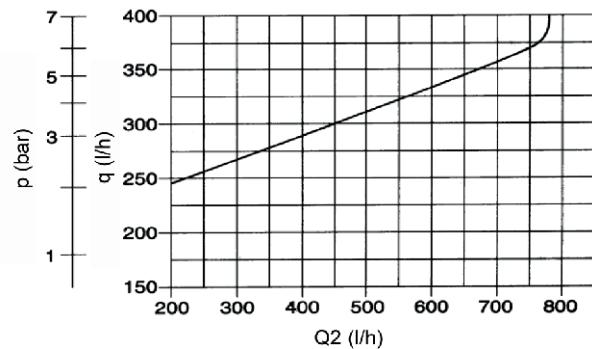

Intake medium air

SP 820, DN 15, NOZZLE BORE 2,0mm

Intake medium water
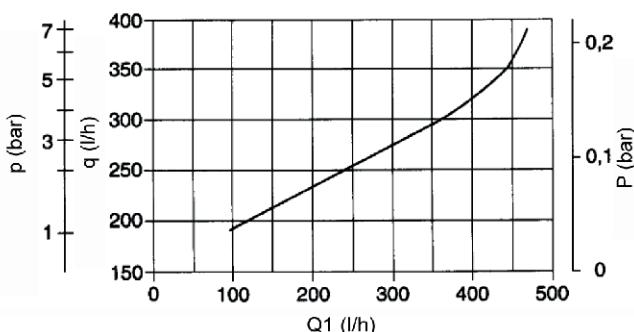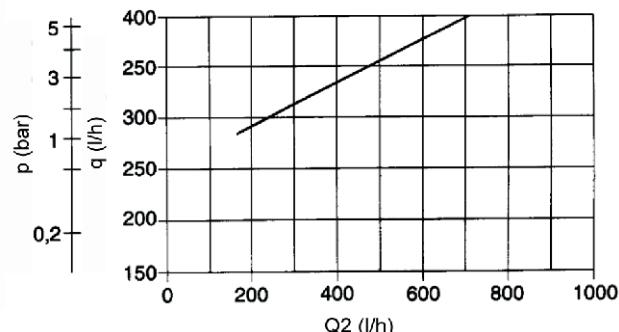
Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

Versión: J2024-1

CHARACTERISTIC CURVES

SP 820, DN 15, NOZZLE BORE 3,0mm

Intake medium water
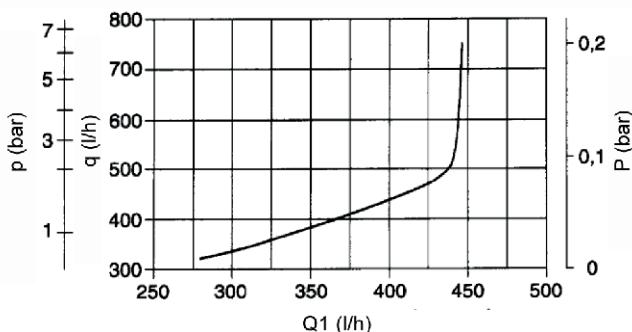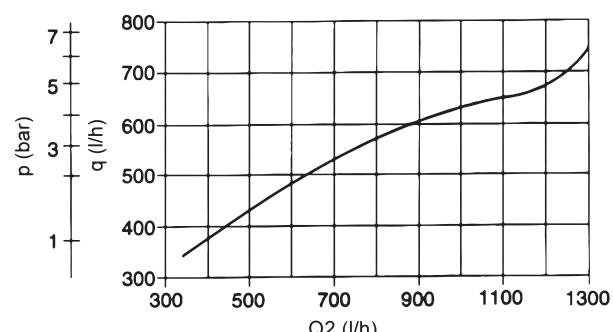
Intake medium air

SP 820, DN 15, NOZZLE BORE 4,0mm

Intake medium water
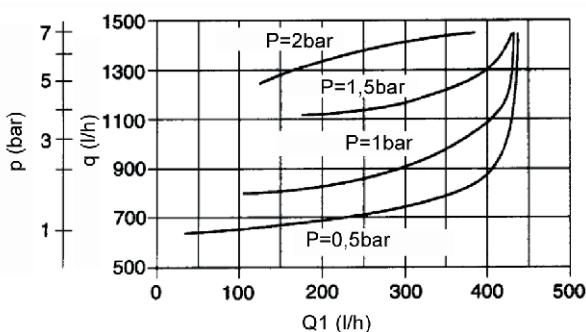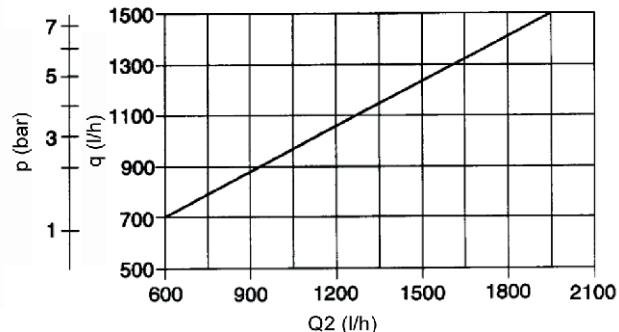

Intake medium air

SP 820, DN 20, NOZZLE BORE 3,0mm

Intake medium water
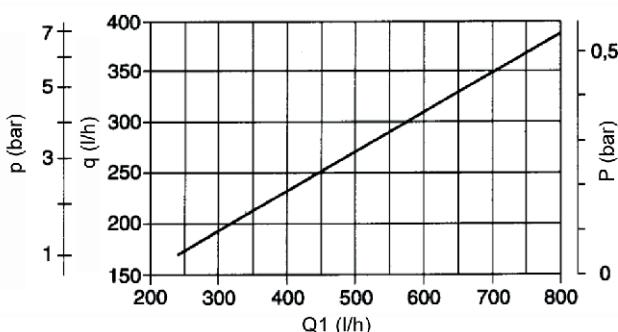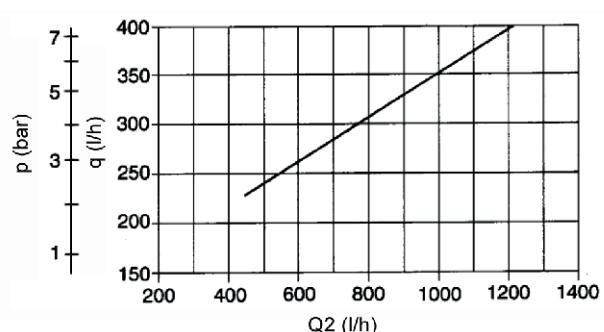
Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

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More Information:

Versión: J2024-1

SP 820, DN 20, NOZZLE BORE 4,5mm

Intake medium water
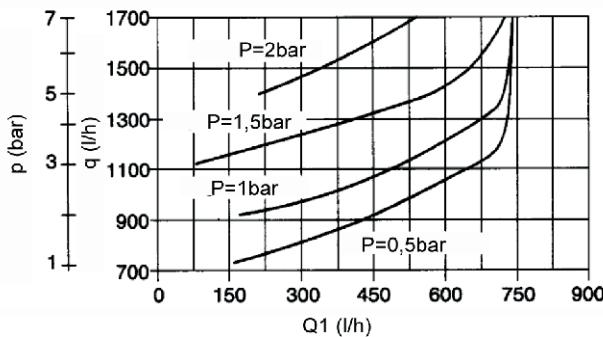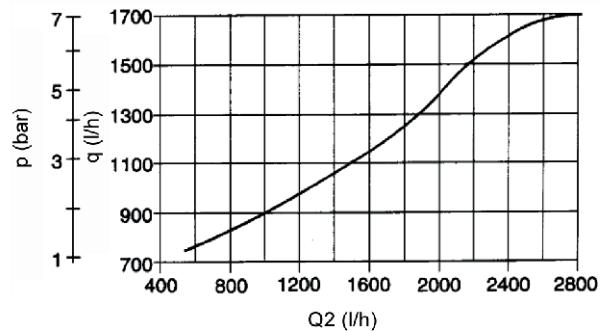
Intake medium air

SP 820, DN 20, NOZZLE BORE 6,0mm

Intake medium water
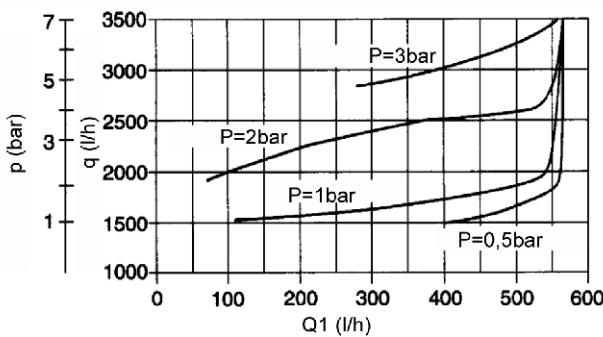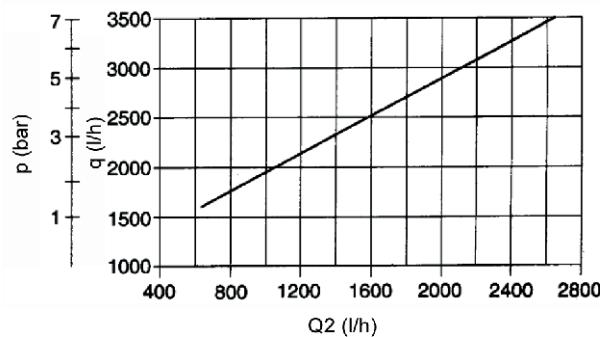
Intake medium air

SP 820, DN 25, NOZZLE BORE 2,5mm

Intake medium water
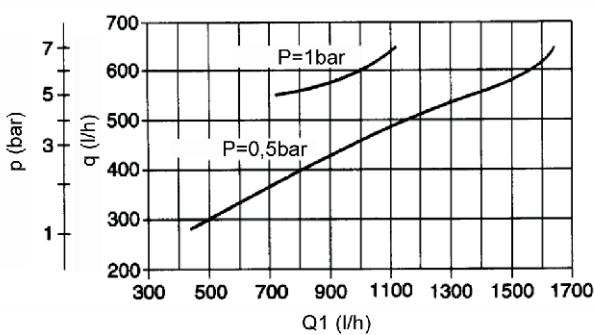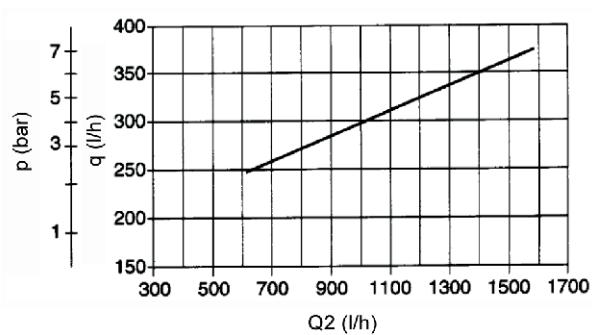
p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

Versión: J2024-1

CHARACTERISTIC CURVES

SP 820, DN 25, NOZZLE BORE 4,0mm

Intake medium water
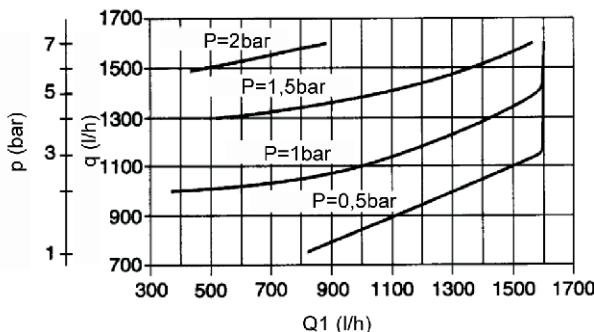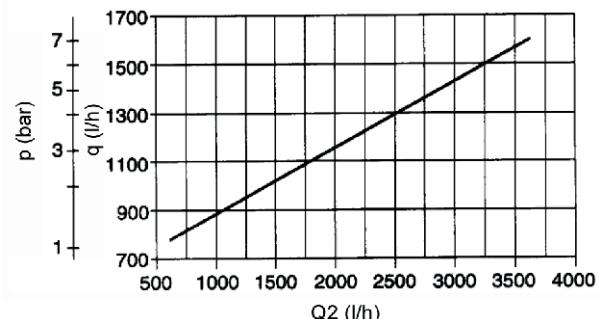
Intake medium air

SP 820, DN 25, NOZZLE BORE 5,0mm

Intake medium water
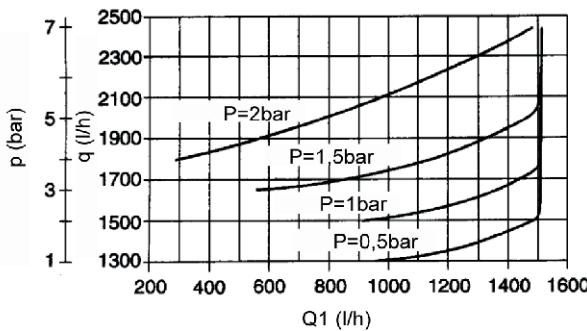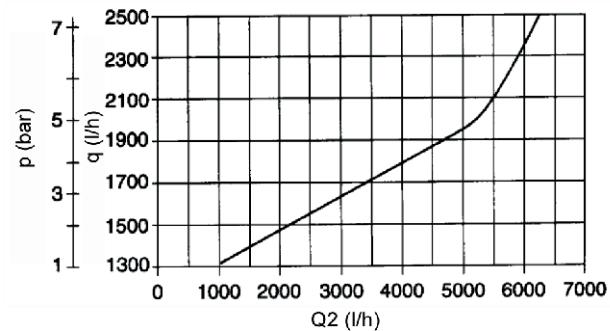

Intake medium air

SP 820, DN 32, NOZZLE BORE 3,0mm

Intake medium water
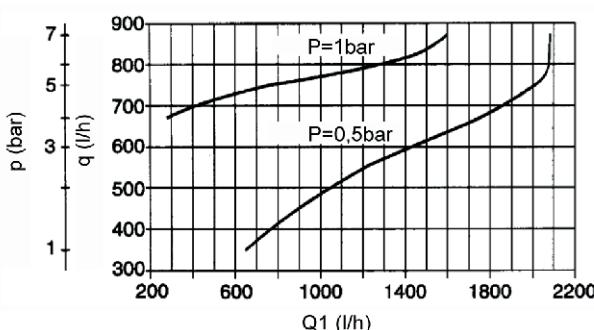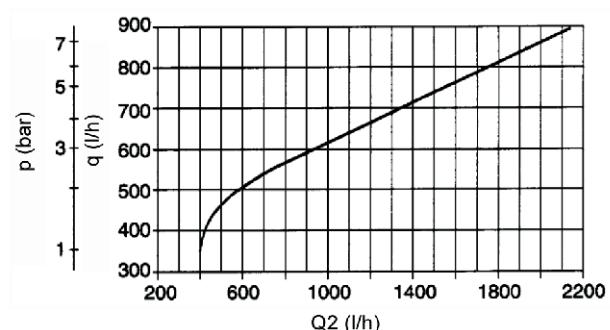
Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

Versión: J2024-1

CHARACTERISTIC CURVES

SP 820, DN 32, NOZZLE BORE 4,5mm

Intake medium water
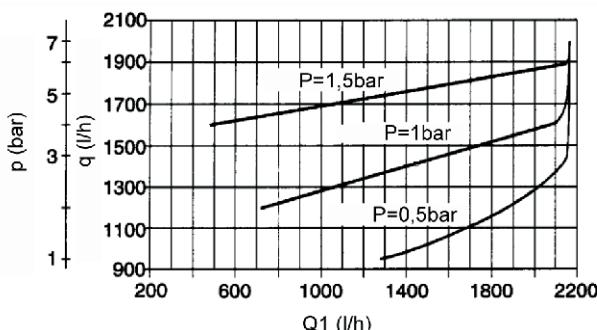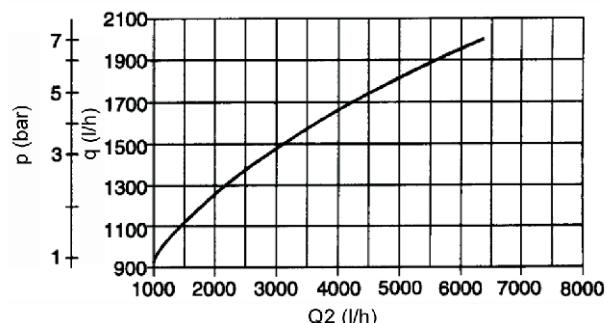
Intake medium air

SP 820, DN 32, NOZZLE BORE 6,0mm

Intake medium water
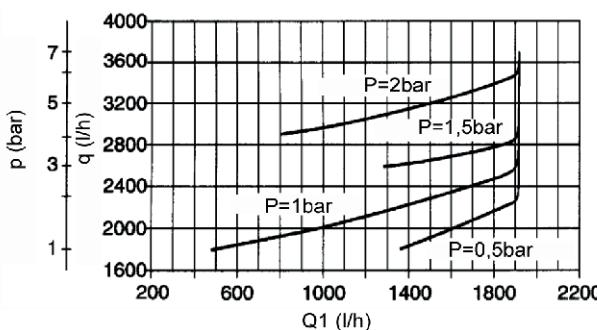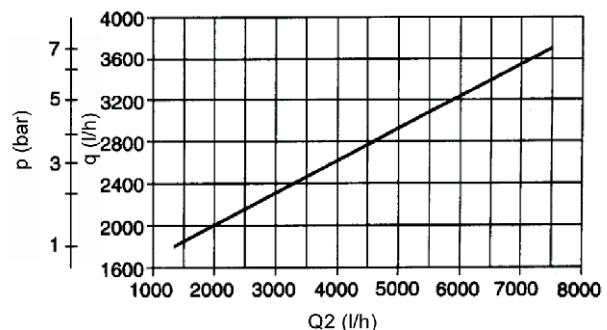

Intake medium air

SP 820, DN 40, NOZZLE BORE 3,5mm

Intake medium water
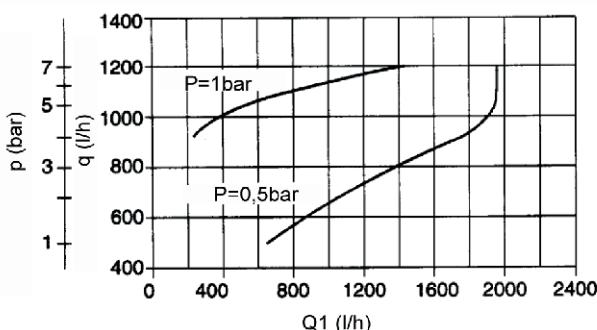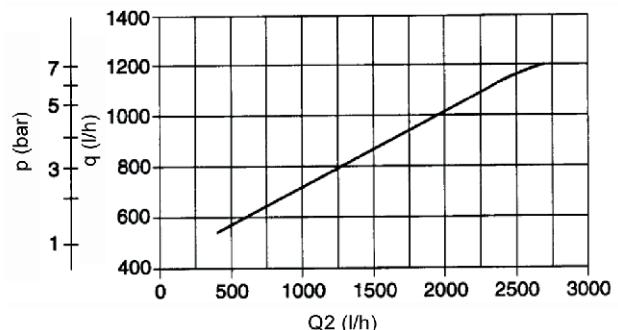
Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

Versión: J2024-1

CHARACTERISTIC CURVES

SP 820, DN 40, NOZZLE BORE 5,5mm

Intake medium water
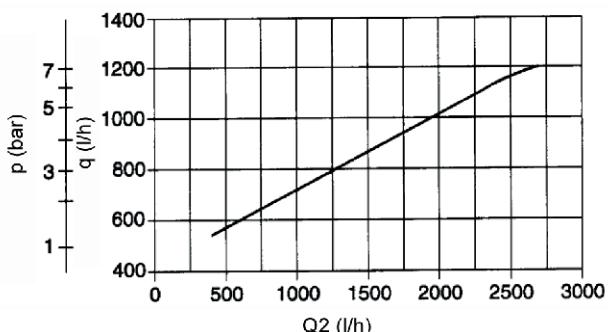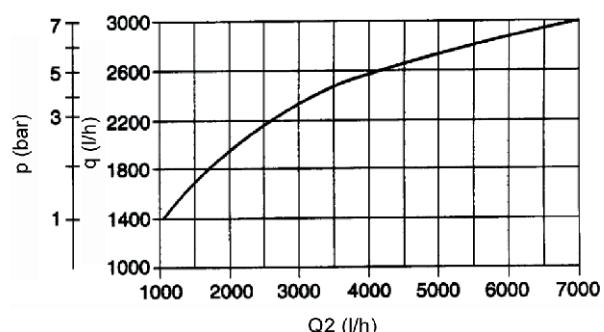
Intake medium air

SP 820, DN 40, NOZZLE BORE 7,5mm

Intake medium water
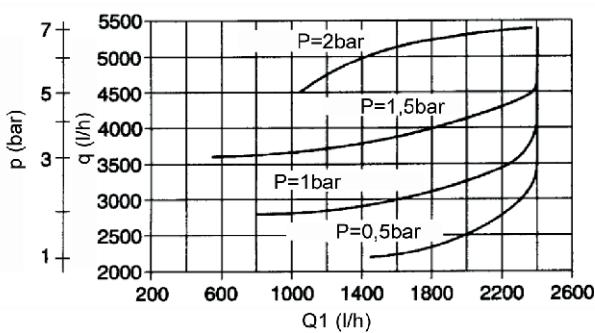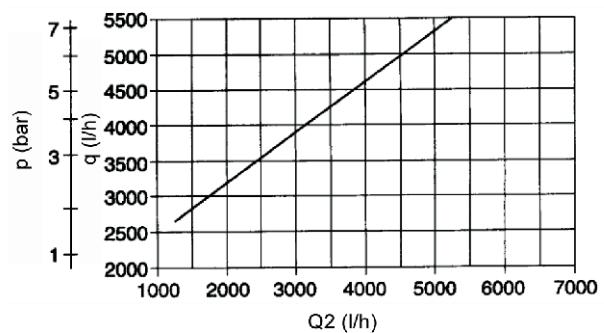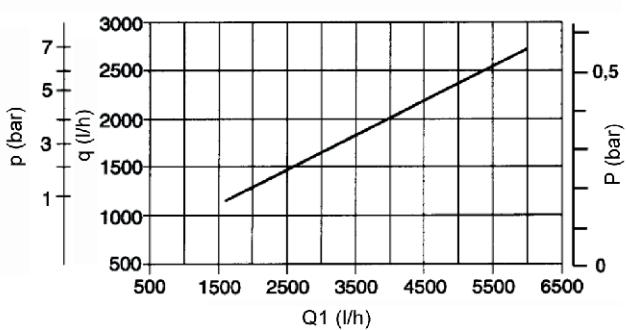
P=2bar
P=1,5bar
P=1bar
P=0,5bar

Intake medium air

SP 820, DN 50, NOZZLE BORE 5,0mm

Intake medium water

Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

Versión: J2024-1
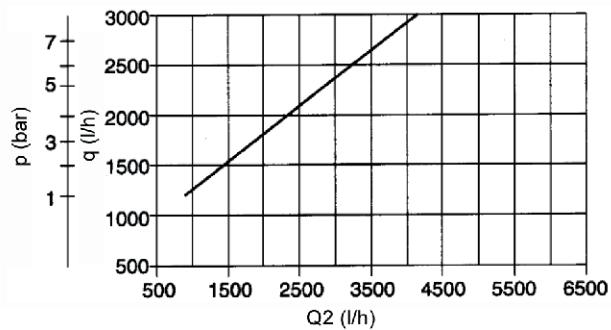
**CHARACTERISTIC CURVES**

SP 820, DN 50, NOZZLE BORE 7,0mm

Intake medium water
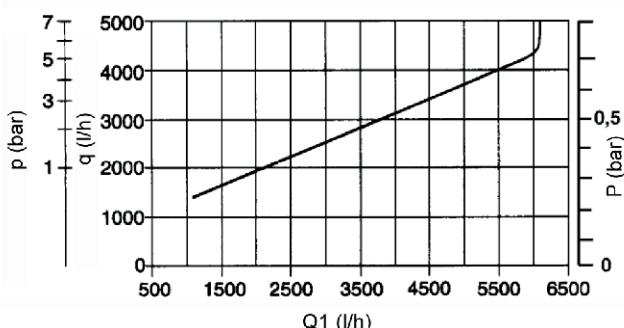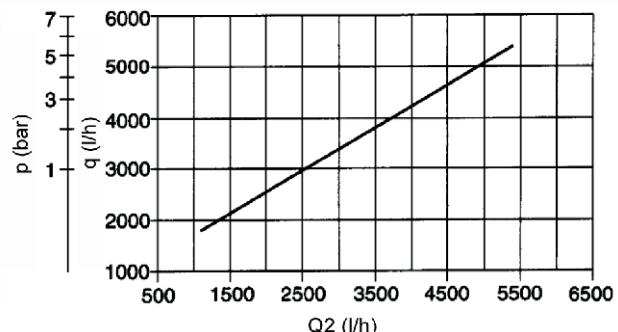
Intake medium air

SP 820, DN 50, NOZZLE BORE 9,0mm

Intake medium water
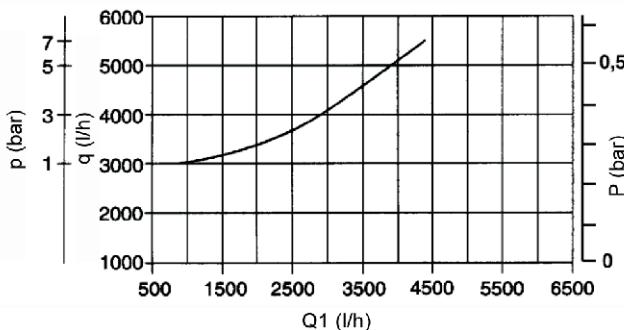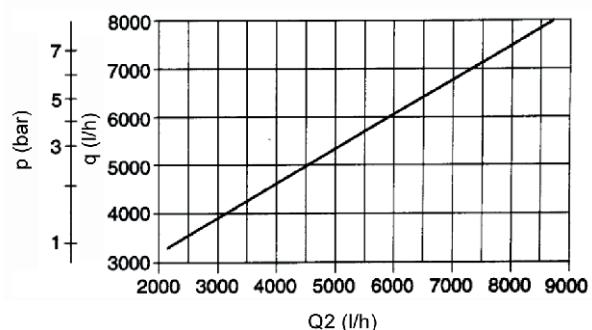
Intake medium air

SP 820, DN 65, NOZZLE BORE 6,5mm

Intake medium water
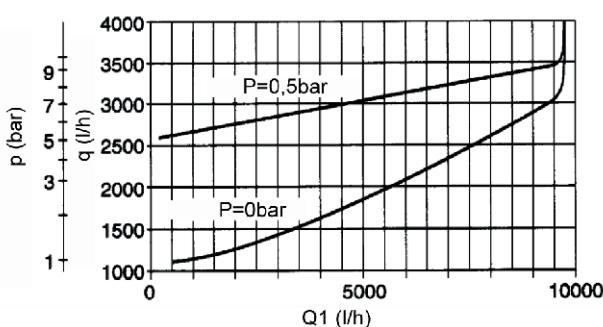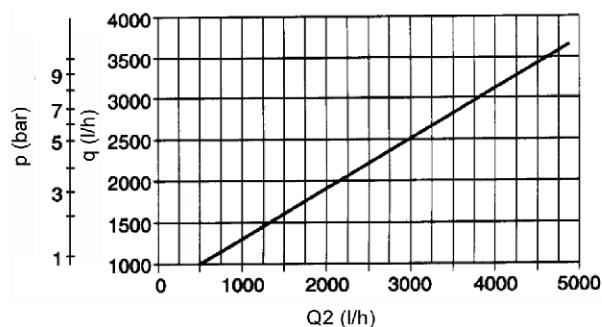
p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

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CHARACTERISTIC CURVES

SP 820, DN 65, NOZZLE BORE 9,0mm

Intake medium water
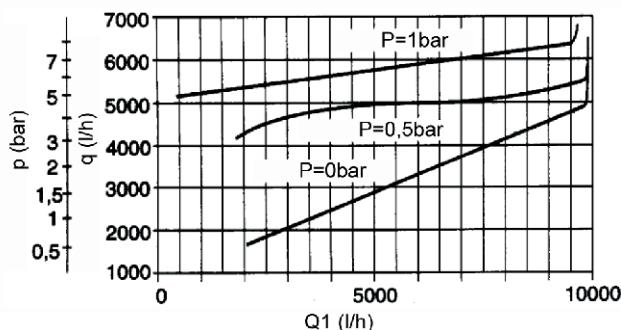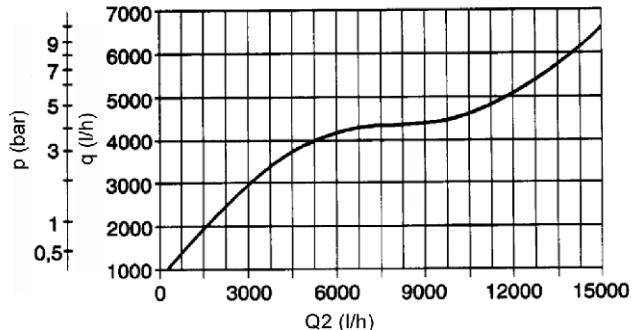
Intake medium air

SP 820, DN 65, NOZZLE BORE 11,5mm

Intake medium water
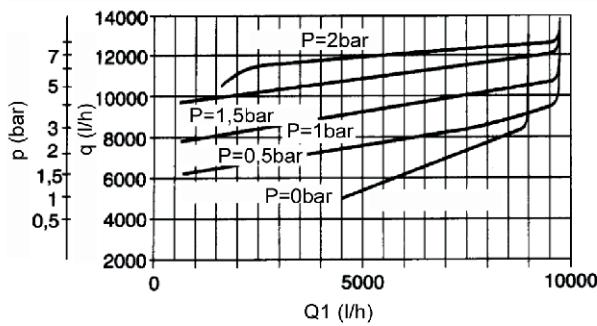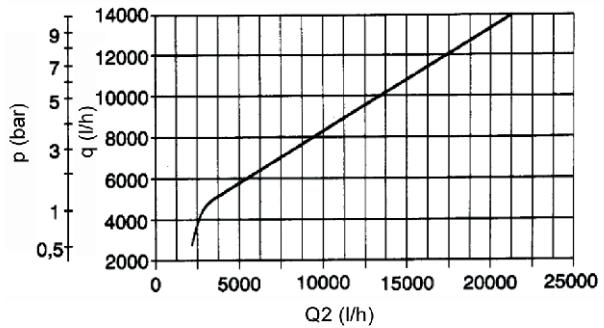
Intake medium air

SP 820, DN 80, NOZZLE BORE 8,0mm

Intake medium water
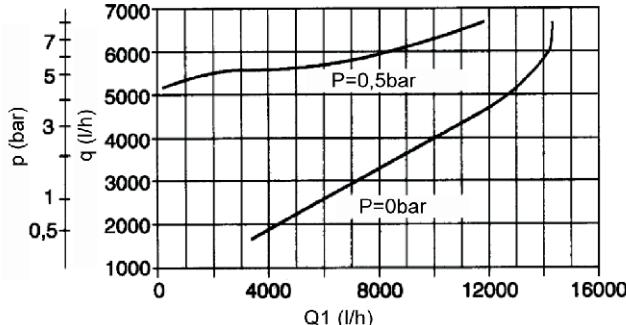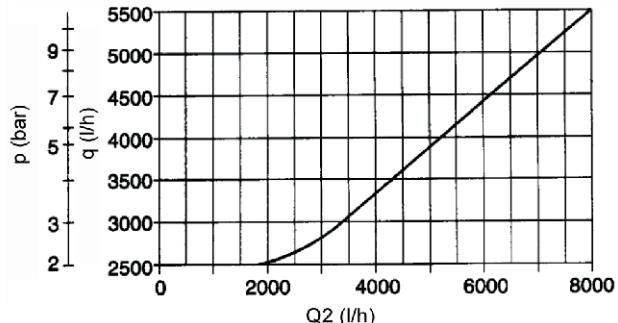
p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

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CHARACTERISTIC CURVES

SP 820, DN 80, NOZZLE BORE 11,0mm

Intake medium water
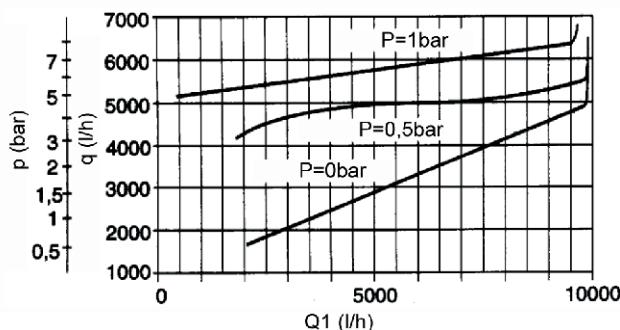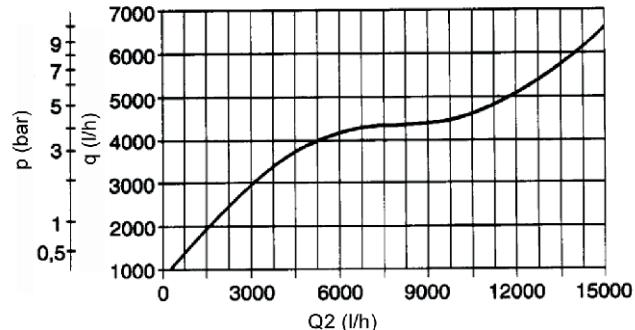

Intake medium air

SP 820, DN 80, NOZZLE BORE 14,0mm

Intake medium water
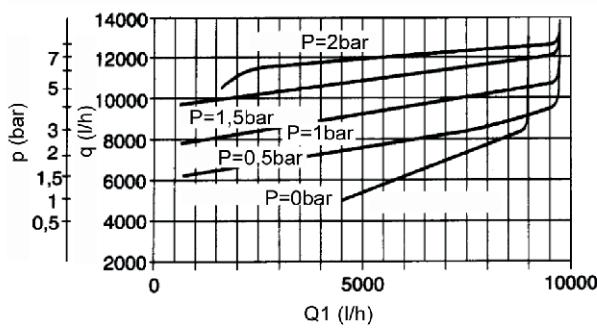
Intake medium air

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q1= intake quantity (l/h) (water)

p= propulsion water pressure (bar)
q= propulsion water quantity (l/h)
P= counterpressure (bar)
Q2= intake quantity (l/h) (air)

More Information:

Versión: J2024-1

ISII NITZAN
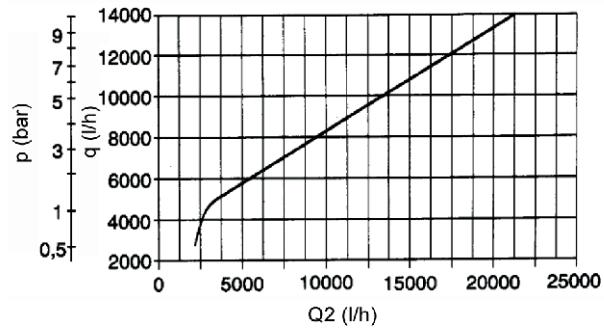
CHARACTERISTIC CURVES

MAXIMUM VACCUM ACHIEVED, DN 10

**Nozzle bore: 1,5; 2,0**
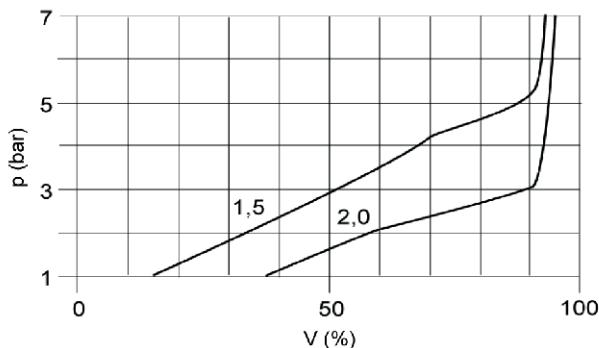
### MAXIMUM VACCUM ACHIEVED, DN 15

Nozzle bore: 2,0; 3,0; 4,0
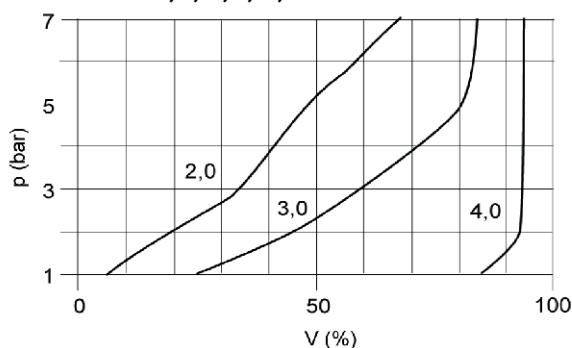
MAXIMUM VACCUM ACHIEVED, DN 20

Nozzle bore: 3,0; 4,5; 6,0
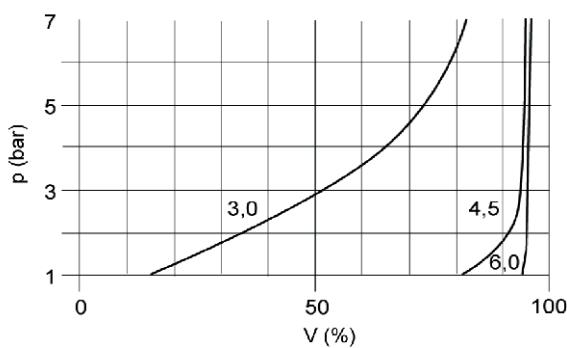
MAXIMUM VACCUM ACHIEVED, DN 25

Nozzle bore: 2,5; 4,0; 5,0
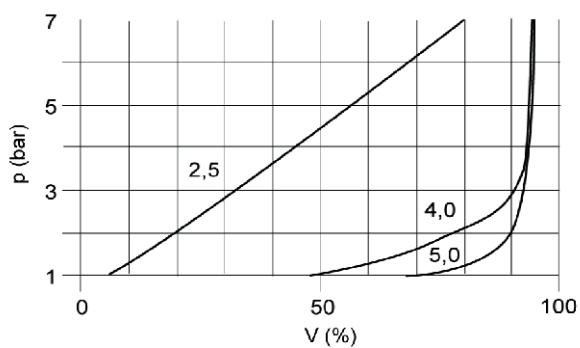
### MAXIMUM VACCUM ACHIEVED, DN 32

Nozzle bore: 3,0; 4,5; 6,0
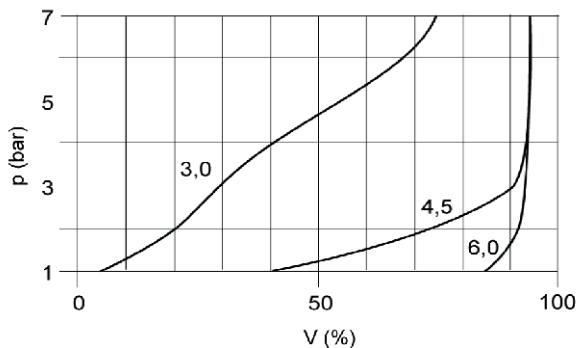
p= propulsion water pressure (bar)
V= vacuum (%)

### MAXIMUM VACCUM ACHIEVED, DN 40

Nozzle bore: 3,5; 5,5; 7,5
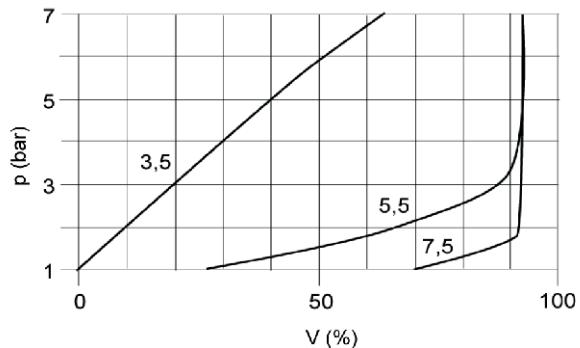
p= propulsion water pressure (bar)
V= vacuum (%)

More Information:

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CHARACTERISTIC CURVES

MAXIMUM VACCUM ACHIEVED, DN 50

Nozzle bore: 5,0; 7,0; 9,0
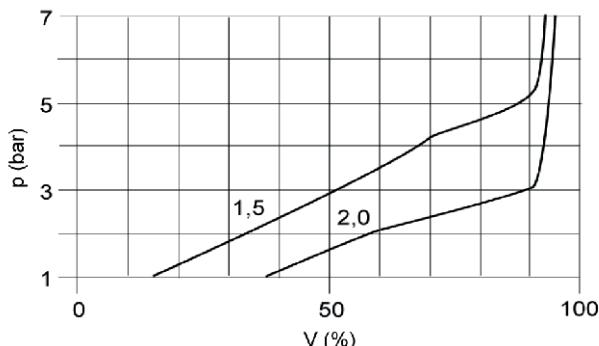
## MAXIMUM VACCUM ACHIEVED, DN 65

Nozzle bore: 6,5; 9,0; 11,5

p= propulsion water pressure (bar)
V= vacuum (%)
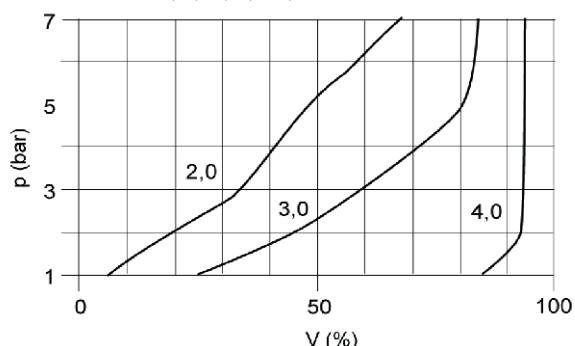
MAXIMUM VACCUM ACHIEVED, DN 80

Nozzle bore: 8,0;11,00; 14,0

p= propulsion water pressure (bar)
V= vacuum (%)

More Information: