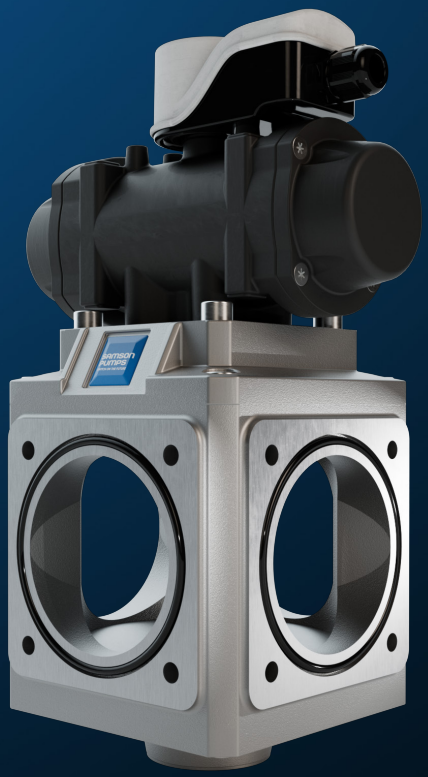
SAMSON PUMPS

4way valves for fish handling applications

INSTALLATION
OPERATION
MAINTENANCE



MODELS:
4”
5”

DOC9100C

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1 Introduction

1.1 Declaration of Conformity

SAMSON PUMPS
Switch on the future

Declaration of Conformity
Annex IIA

Samson Pumps A/S
Petersmindevej 21
DK-8800 Viborg

Hereby declares that the following products:

Ocean Master 4-way valve with pneumatic actuator & 2 positioning switch, 4" (DN100) & 5" (DN125)
Ocean Master 4-way valve only, 4" (DN100) & 5" (DN125)

Conforms to the following directive:

Machinery Directive 2006/42/EC

I hereby declare that the machine is in conformity with the following harmonized standard:

DS/EN ISO 12100:2011	Safety of machinery - General principles for design - Risk assessment and risk reduction

The standard above only applies to the extent that it is relevant for the purpose of the product.
The product must not be used before the complete system, which it must be incorporated in, has been conformity assessed and found to comply with all relevant health and safety requirements of 2006/42/EC and other relevant directives. The product must be included in the overall risk assessment.

Viborg, 28.03.2023

Jan S. Christiansen – Manager, Technical dept.

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1.2 Digital services

Samson Pumps offers a number of digital services to help our customers gain the best possible output from our products.

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Solution Finder

Buy

Product Center

Learn

How to build

1.3 Foreword

This user manual applies to standard valves.

4way valve 4” (DN100) with pneumatic actuator
4way valve 4” (DN100) only
4way valve 5” (DN125) with pneumatic actuator
4way valve 5” (DN125) only

1.4 Explanation of warning symbols

Important technical and safety instructions is showed by symbols. If instructions are not performed correctly, it may lead to personnel injury or incorrect function of the 4-way valve.

To be used with all safety instructions that must be followed. A failure to follow the instructions may result in injuries and/or incorrect machine operation

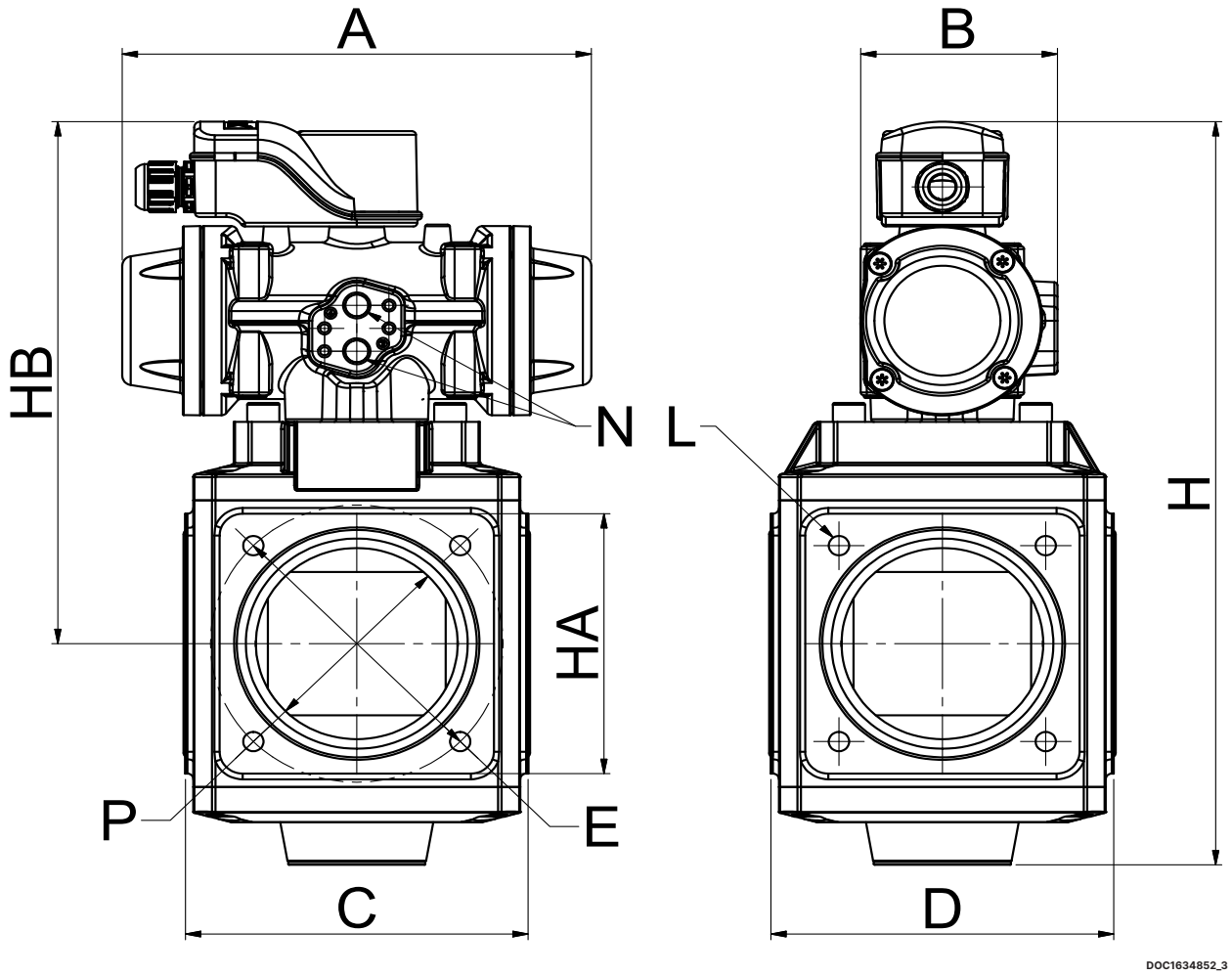
1.5 Field of application

Inlet of foreign objects can damage the 4way valve.

The 4way valve may only be used with media that are not aggressive to the valves materials. See section 2.6 for components and appertaining materials. Equipment protection level

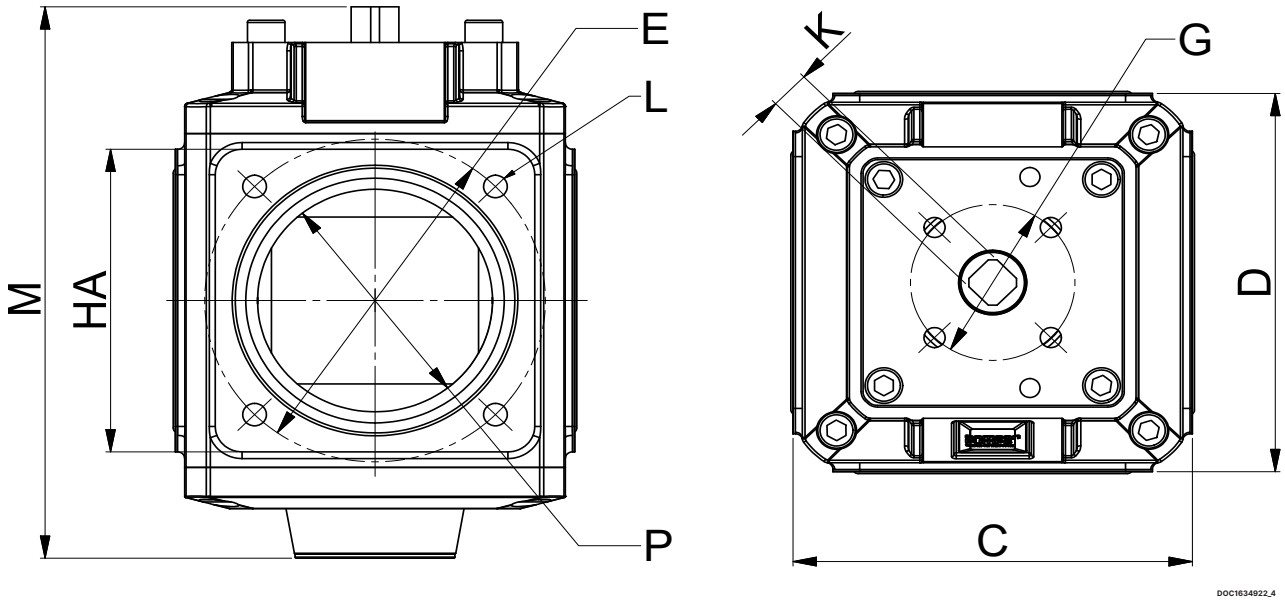
2 Technical data

2.1 Dimensions with pneumatic actuator and 2 positioning switch



Model	Pipe system	A	B	C	D	E	G	H	HA	HB	K	L	M	N	P	Weight [Kg]
DN100	4”	233	98	170	170	145	70	384	136	268	17	M12	248	¼BSPP	100	24
DN125	5”	315	122	216	216	150	70	453	185	312	22	M12	288	¼BSPP	125	42

2.2 Dimensions - 4way valve only



Model	Pipe system	C	D	E	G	HA	K	L	M	P	Weight [Kg]
DN100	4”	170	170	145	70	136	17	M12	248	100	26
DN125	5”	216	216	150	70	185	22	M12	288	125	46

2.3 Specifications

A failure to meet these specifications may result in damage to the 4way valve

Description	Min	Max
Ambient temperature, operation	-20°C	40°C
Ambient temperature, storage	-20°C	60°C
Working pressure	Full vacuum	3 bar(g)
Test pressure	Full vacuum	16 bar(g)
Pneumatic pressure	6 bar(g)	8 bar(g)

2.4 Operating the 4way valve

The 4way valve may not used if damaged

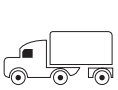
The 4way valve must be inspected for damages upon delivery. If the 4way valve is damaged, it may not be used and the damage must be reported to the dealer.

2.5 Storage

After operation, the 4way valve can be stored without further action.

2.6 Handling and transport

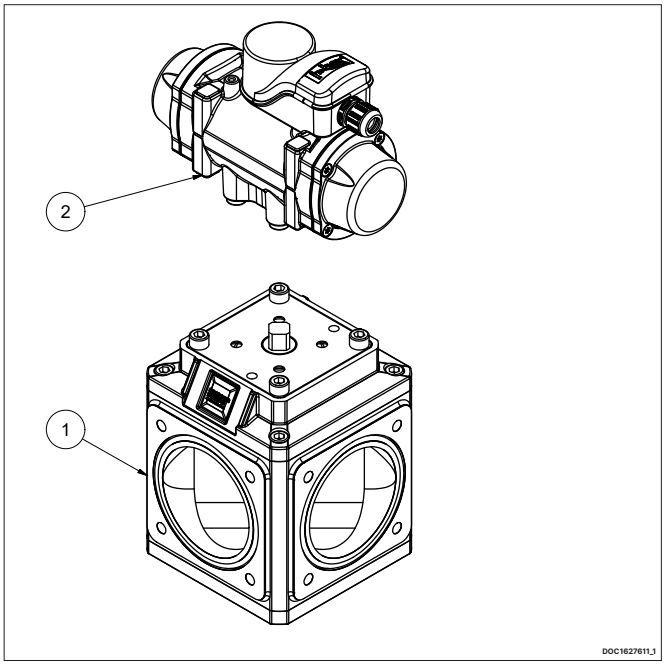
The 4way valve can be transported in the following ways:

Handling & transport	
Road	
Sea	
Air	 DOC11093A

2.7 Materials

The 4way valve is composed by two main components:

- Pneumatic operated Pos.1 & Pos.2
- Manually operated Pos.1 only

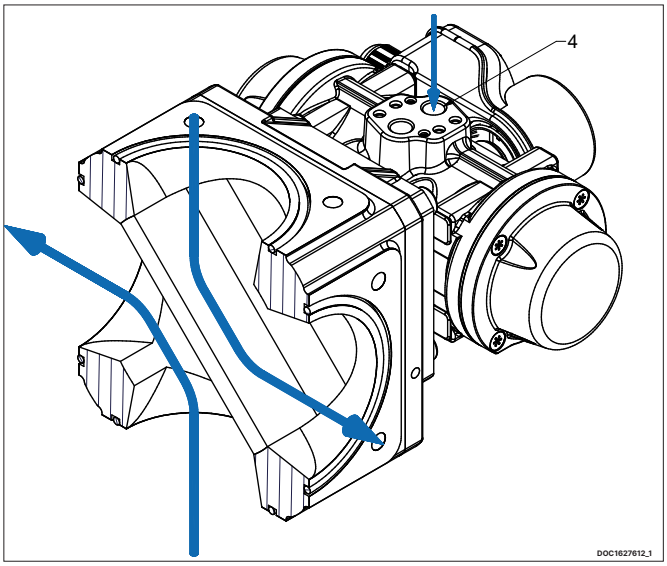


Term	Pos	Material
4way valve	1	Duplex-hardened stainless steel
Actuator	2	Plastic

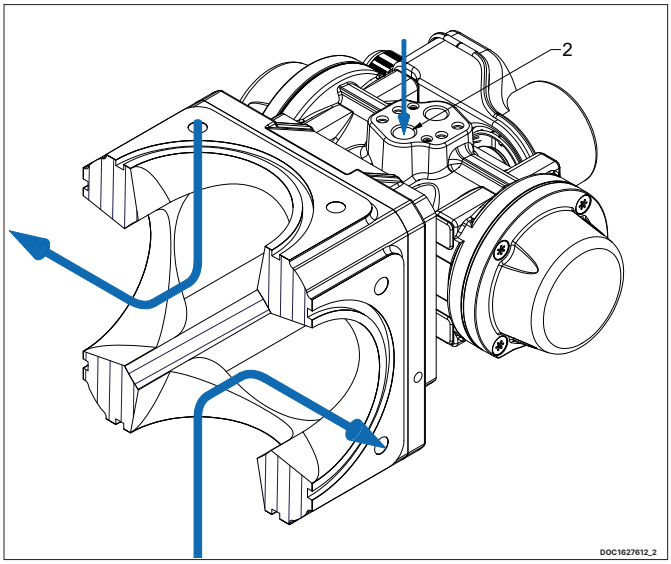
3 Installation

3.1 Positions - Pneumatic actuator

By connecting compressed air to connection 4 on the 4way valve. See below.

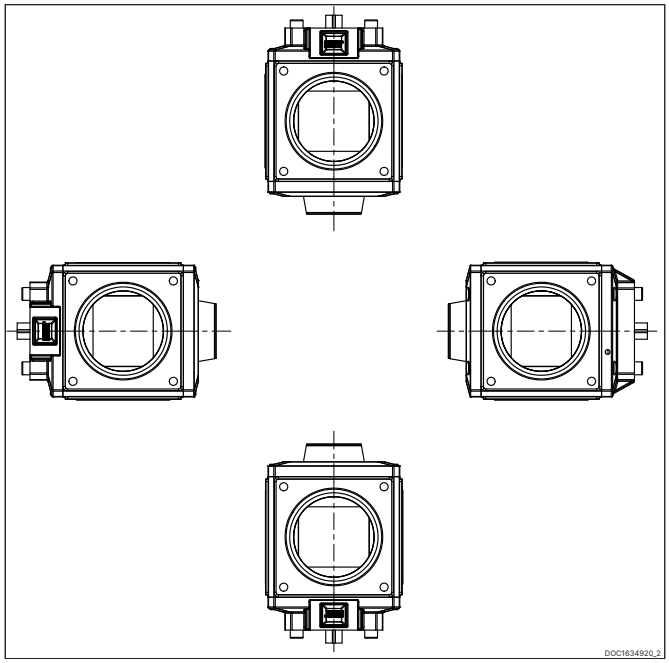


By connecting compressed air to connection 2 on the 4way valve. See below.



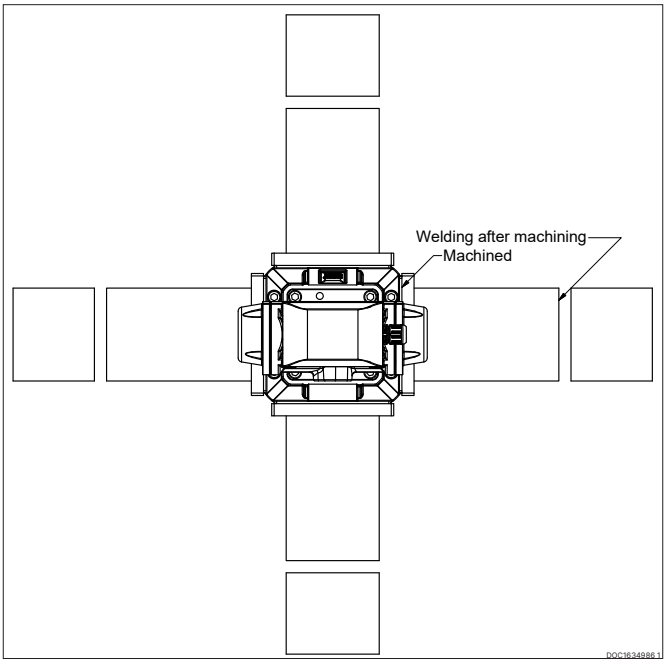
3.2 Placing the 4way valve

All horizontal and vertical positions are allowed.



3.3 Flange connections

Deflection on the flanges from the welding process can affect the tolerances inside the valve and block the cones free rotation. Therefore its important to use machined flanges or alternatively use maximum 8 mm flanges. See below illustration.



3.4 Securing the 4way valve

- Gaskets to be handeled with highest degree of caution.
- Gasket and sealing surfaces must be cleaned before assembly and without damage.
- If the tolerance for securing the 4way valve is not observed, there is a risk of damage and of potential explosion.
- Be aware of static electricity, the 4way valve must be grounded if necessary.
- Read Chapter 3.7

The 4way valve must be installed on a stable foundation, which must be level and stable, so that the 4way valve is not twisted or exposed to a ±0.1 mm profile distortion.
Bolts must be tightened in accordance with supplier's instructions.
Ensure that the flow direction is correct before assembly.
The 4way valve's end stop can only be used as a stop when operating with manual handle bar. When activated with a cylinder, the cylinder's own end stop must be used.

4 Service, maintenance & inspection intervals

A failure to meet these specifications may result in damage to the 4way valve

Only qualified personnel may carry out repairs.

Repairs must be carried out according to manufacturer recommendations.

During repair or disassembly, check that the flow direction remains unchanged.
For repair of the actuator, see accompanying supplier instructions.

Section	Operation	Interval
4.1	Visually inspect for leakage	Weekly
4.2	Inspection and cleaning (if necessary)	Monthly

4.1 Inspecting for leakage

The 4way valve and pipe system around, must be inspected for leakage once a week. The inspection must be performed when the 4way valve is both operating and idle. Any leaks must be repaired before operation may continue.

4.2 Inspection and cleaning

The pipe connections of 4way valves must be inspected at least once a month, and any contaminants must be removed. The 4way valve must always run easily and effortlessly, otherwise it must be cleaned.

4.3 Marking and identification

The 4way valve is equipped with an Serial No. as shown below.