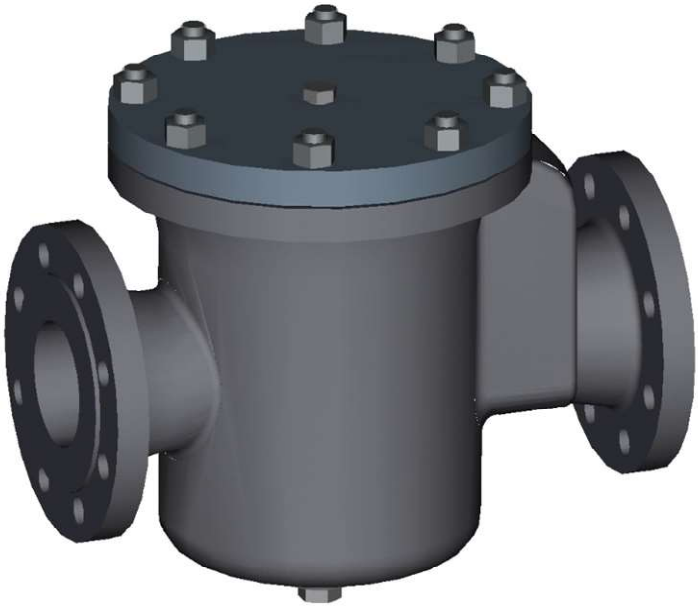
PHOENIX – Armaturenwerke GmbH

Manual for Strainer - Basket type
BA 122-SF

Edition 2023-08-00



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Declaration of conformity acc. to 2014/68/EU

The manufacturer	**PHOENIX Armaturenwerke GmbH 34471 Volkmarsen**
declares that the valves	**Strainer - Basket type** **Model 820**

1. are pressure bearing equipments within the meaning of the Pressure Equipment Directive 2014/68/EU and in conformity with the requirements of this directive,
   Note: strainer < DN 32 are not concerned by this directive
2. can only be used and operated under observance of the attached operation manual N° BA122-SF

Related standards:

DIN EN 16668	**Requirements and testing for metallic valves as pressure accessories** **Direction for pressure bearing body components** Body- and Bonnet Material acc. AD 2000 AD-A4 with Inspection Certificate 3.1 to DIN EN 10204
DIN EN 19	**Marking of metallic valves**

Description of type and technical features:

PHOENIX-type datasheets <820 >

NOTE: This manufacturer declaration is valid for all variants of types mentioned in the PHOENIX catalogue

Applied procedure for the rating of the conformity:

to Annex II of the Pressure Equipment Directive 2014/68/EU Module „H“

Name of the notified body:	*Identification N° of the notified body:*
LRQA Deutschland GmbH	**0525**

Modifications on strainers - basket type and/or components with consequences for the technical features of the strainer, of the <defined use> acc. to section 1 of the operation instruction and which will modifiy the valve essentially cancel these declarations.

According to the guidelines for the application of the Council`s general direction 2014/34/EU of 26.02.2014 for adapting legal regulations valid in the single member countries and dealing with appartuses and safety systems and their application in areas endangered by explosion, strainer do not have an integrated potential source of sparks as revealed by the danger of releasing sparks analysis. Due to this, strainer are not subject to the guidline mentioned above.

Volkmarsen, 30.08.2023

Gunter Wodara, CTO

0 Introduction

This instruction shall support the user for installation, operation, and maintenance of Strainer - basket type **820**.

 Attention	**The non observance** of the following attention and warning notes **might cause dangers** with the consequence that the manufacturer's guarantee becomes void. For questions in this regard contact the manufacturer, adresses see section 8.

1 Defined use

After their installation in a piping system (either between flanges or by welding) the use of the strainer – basket type **820** is exclusively defined as to catch and hold back solid contaminations of media within the admitted pressure and temperature limits. The safety instructions of section 2 <safety instructions> shall be observed.

The design document <Pressure-Temperature-Tables TDB3/1 to 3/5> (see section 8.1 <Information>) shows the admitted pressure-temperature-range for these strainer – basket type.

It is assumed that the safety instructions of section 2 <safety instructions> shall be observed.

2. Saftey instructions

2.1 General safety instructions

Strainers – basket type are subject to the same safety impositions which are valid for the piping system where the strainers shall be installed. The present instruction mentions only such kind of safety notes which must additionally be considered for strainers – basket type.

2.2 Safety instructions for the user

It is not within the responsibility of the manufacturer and must be safeguarded by the user of the strainer – basket type that

⇒ the strainer – basket type is only used as required by the "defined use" as described in section 1

 **Danger to life**	Strainers whose admitted pressure-temperature range (="Rating") is not sufficient for the operating conditions shall not be used. For materials or pressures or temperatures not indicated in the a.m. **<Pressure-Temperature-Tables TDB 3/1 to 3/5>** a release note from the manufacturer is mandatory. **The disregard of this ordinance can provoke danger to life and cause damages in the piping system.**
 **Danger**	***Protection against wrong use of the strainer – basket type:*** It must be absolutely assured that the selected materials of the wetted parts of the strainer are suitable for the handled media. The manufacturer is not responsible for damages of the Strainer caused by corrosive agents. **The disregard of this ordinance can provoke danger for the user and cause damages in the piping system.**

⇒ The strainer – basket type will be installed workmanlike in the piping system, especially such types of strainers which are fitted into the piping system by welding. The wall thickness of the strainer body shall be calculated in such a way that an additional load F_z within the usual order of magnitude **($F_z = \pi/4 \cdot DN^2 \cdot PS$ or PN)** is taken into account for such a workmanlike mounted piping system.

(PS = max. admitted design pressure at ambien temperature),

⇒ the strainer – basket type shall be fitted workmanlike with these systems,

⇒ inside this piping system the usual flow rates in continuous operation shall not be exceeded and exceptional operating conditions such as vibrations, water hammers and cavitation had been cleared with the manufacturer,

⇒ strainer – basket type used at operating temperatures >+50°C or <–20°C, are protected against contact as it is intended for the pertinent piping system,

⇒ Only qualifed staff is used for the operation and maintenance of equipment for pressure bearing piping systems.

2.3 Special risks

 **Danger to life**	Before the disassembling of the strainer – basket type out of the piping system and/or before the loosening of the bolts and nuts of the bonnet the **system shall be completely depressurised** to avoid an uncontrollable fugitive emission of the media.
 **Danger**	*Strainer – basket type which are not slowly operated in the starting up phase at service temperatures of >250°C:* Leakages might occure. See also section 6.1. <Starting-up phase>
 **Danger**	When a strainer – basket type shall be disassembled from the piping system there exists the risk that the media can flow out off the piping or the strainer. In case of liquids which are harmfull for the health or dangerous the piping system shall be completely drained before the strainer can be removed from the system. Caution of **residues coming out off or remaining in dead holes of the strainer - basket type or the piping system itself.**

2.4 Marking of the strainer – basket type

Each strainer is normally marked as follows:

For	Marking	Note
CE-Mark	**CE**	Corresponding to PED 2014/68/EU strainer shall be marked with the CE-mark only for sizes DN32 and more
CE-Ident N°	**0525**	Nominated body to EU Directive = LRQA Deutschland GmbH Register
Manufacturer	**PHOENIX (PAG)**	Logo for <PHOENIX Armaturenwerke GmbH>
Brand	**STRACK (SAG)**	Logo for <STRACK Armaturenwerke GmbH>
Manufacturer-N°	**e.g.:98898/22**	The first figures before the strike are the factory number, the last figures after the strike = item n° g.g. /02 = item 2 of the order
Date of manufacture	**e.g.: 05/22**	The first figures before the strike indicate the month of manufacture (05 = May), the figures after the strike = year of manufacture, e.g. (02 = 2002)
Valve type	**Type** (and numerical value)	e.g. Type 820, see Datasheet PHOENIX
Body material	**e.g.: 1.0619.01**	N° of material standard to EN 10027, Part 2
Size	**DN or NPS** (and numerical value)	Numerical value in mm, e.g. DN200 or NPS8
Design pressure	**PS or PN** (and numerical value)	Numerical value in [bar] at 20°C, e.g. PS40
	ANSI and Class (numerical value)	e.g. ANSI 150
Heat-/ Melt N°	**e.g.: 25652 or GHW**	Heat-/Melt N° of the foundry

3 Transport and Storage

Strainer – basket type shall be carefully treated, transported, and stored:

⇒ The strainer – basket type shall be stored with its protectecting packing and/or with its protecting caps on the inlet and outlet. Strainer with a weight of more than 10 kg shall be stored on pallets (or similar) and be transported in such a state (even on the transport to the installation point).

 **Attention**	*To protect the strainer - basket type against damages:* Ropes and belts shall only be fixed on the body/bonnet!

⇒ Before its installation, the strainer – basket type shall be normally stored in closed area and be protected against detrimental influences such as dirt and humidity.

⇒ In particular the end orifices of the strainer for the connection with the piping system shall not be damaged neither by mechanical nor other influences.

⇒ Strainer will be supplied shall be stored in this state.

4 Installation into the piping system

4.1. General

For the installation of strainer – basket type into a system the same instructions are valid as for the connection of pipes among themselves and similar piping components. When in a plant the piping and other equipment are isolated, this must also be applied to the built-in strainer – basket. In addition, the following instructions are valid for strainer – basket type. For the transport to the installation place please mind the information given in section 3 of this manual.

Danger to life	If strainer – basket valves are installed in insulated piping systems, or in the area of other isolated equipment, so they must also be isolate. In absence of insulation, strainer – basket can be damaged. In serious cases, the pressurized parts could be damaged.
Note	Acc. to their design strainer – basket type shall be installed as follows: -Flow direction in conformity with the arrow, -**Strainer – basket type bonnet** always directed **upwards**
Attention	*To avoid damages of strainer – basket type with weld ends:* During the welding of the strainer into the piping system the weld procedure shall be performed in such a way that the applied heat energy is limited and distorsions of the strainer body are avoided. Therefore, larger sizes shall be welded in alternating procedures once from one side and then from the other to avoid restraints in the strainer's body.

4.2 Working steps

⇒ Transport the strainer in its protecting packing to the installation site and unpack the strainer just before its immediate fitting into the system to ensure that the strainer is protected against each kind of contamination.

⇒ Inspect the strainer on possible transport damages. Damaged strainers shall not be installed.

⇒ Make sure that only strainer will be installed whose pressure rating, type and dimensions of connections correspond to the operating conditions. In this regard also see related marking of the strainer.

Danger to life	Strainer – basket type whose admitted pressure-/temperature rating is not sufficient for the operating conditions shall not be installed. This admitted range results in the marking and/or in the design document **<Pressure-Temperature-Tables TDB3/1 to 3/5>** see also section 1 <Defined use>. **Disregard of this precautionary measure can provoke danger to life for the user and damages in the piping system.**

⇒ The connections of the piping system shall be in strict alignment with the end connections of the strainer and shall have plane-parallel ends.

⇒ Before the installation the strainer and the corresponding pipe shall be carefully cleaned from dirt and contaminations, especially hard foreign particles shall be removed.

⇒ The flow direction of strainer is marked by an arrow.

Danger to life	Strainer – basket type shall not be installed against the marked flow direction. **Disregard of this precautionary measure can provoke danger to life for the user and damages in the piping system.**

For strainer with weld ends only:

⇒ The weld ends of the strainer shall be in true alignment and shall have parallel faces and must be of identic type and materials as the pipes – see type plate of the strainer. Opposite weld ends must fit to each other as far as diameters and weld joints are concerned.

⇒ Make sure by workmanlike welding that neither worth mentioning tensions will be produced in this piping section or on the strainer nor that the strainer body might get distorted due to unilateral heat introduction during the weld procedure. Only temperatures of <300°C, measured on the body wall, are admitted.

⇒ The weldings must be performed workmanlike.

⇒ Weld cables shall not be fixed on the strainer itself but exclusively on the pipings.

 **Attention**	**Disregard of these impositions can provoke distorsion of the strainer body.** A permanent distorsion of the strainer can signify that the strainer becomes unserviceable.

5 Pressure test of the piping section.

For the pressure test of strainer – basket type the same instructions are valid as imposed for the piping system. In addition, the following shall be considered:

⇒ Newly installed pipe system shall be carefully cleansed to flush off all foreign particles.

⇒ The test pressure “PT” of a **strainer – basket type** shall **not exceed the value 1,5x PN/PS** by virtue of the marking of the strainer**.**

6 Starting up/commissioning, normal operation and maintenance.

6.1 Starting up/Commissioning

During the “starting up phase” of a piping section it must be assured at temperatures of >100°C – especially when strainer of >DN 200 are involved - that the handled medium will be slowly fed-in. Otherwise, the strainer’s body gets distorted, and the strainer will leak.

6.2 Maintenance

Regular maintenance work is not required for strainer, however, during the inspection of the piping section no leakage shall appear neither on the flanged and/or screwed connections. In case of leakages and repairs please see section 2 – <Safety instructions> and section 7 <Failures>

7 Trouble shooting

During the remedy of failures section 2 <Safety instructions> shall be absolutely considered.

 **Danger**	*When a **strainer – basket type** is removed from systems conveying dangerous media and shall be carried away fromt he plant:* Then the strainer must be professionally decontaminated.

Kind of failures	Procedures for remedy	Note
Leakage on the flanges to the system or between body and bonnet	Tighten bolts and nuts. When the strainer is still leaking: Remove the strainer, always considering the notes in section 2.3 <Special risks> and ask for spare gaskets for the bonnet and correlated instructions at PHOENIX.	**Note 1:** Spare parts shall be ordered with all indications of the marking of the strainer. Only the orginal PHOENIX spare parts shall be used for repairs and replacements. **Note 2:** After removing of strainers from a pipeline if noticed that parts which are in contact with the media are not media resistant the material of these parts have to be changed.

8 Information

The mentioned <Datasheets>, <Design documents> Repair instructions and other information – also in other languages - you can ask for under

Info@phoenix-valvegroup.com oder http://www.phoenix-valvegroup.com

or at the following address:

PHOENIX Armaturenwerke GmbH

Am Stadtbruch 6
34471 Volkmarsen
Tel.: 05693-988-0
Fax.: 05693-988-140

8.1 Pressure – Temperature-Rating, Excerpt TDB 3/1 to 3/5

The requirements of DIN EN 12516 – 1 are principally fullfilled.

- **Low alloyed and not alloyed steels**

PN	DN-range	Admitted oper. pressure (bar) at oper. temperatures (°C)						
		-60*	-10	120	200	300	400	450
10	15-500	7,5	10	10	8	6	6	5
16	15-500	12	16	16	**15**	**12**	**9**	6
25	15-500	18,75	25	25	**23**	**18**	**14**	12
40	15-300	30	40	40	**38**	**30**	**24**	20
63	15-150	47,25	63	63	**55**	**41**	**35**	32
100	15-150	75	100	100	**85**	**62**	**53**	51
160	15-150	120	160	160	130	96	**84**	81

***** AD-W10, Load case II

- **Stainless steels**

PN	DN-range	Admitted oper. pressure (bar) at oper. temperatures (°C)					
		-196*	-10	120	200	300	400
10	15-500	10	10	10	8	6	6
16	15-500	16	16	16	**15**	**12**	**11**
25	15-500	25	25	25	**23**	**18**	**16**
40	15-300	40	40	40	**36**	**30**	**25**
63	15-150	63	63	63	50	**44**	**40**
100	15-150	100	100	100	80	**70**	**64**
160	15-150	160	160	160	130	**112**	**103**

***** not valid for SS 1.4581

- **Low temperature steels**

PN	DN-range	Admitted oper. pressure (bar) at oper. temperatures (°C)					
		-60*	-50	-10	120	200	300
10	15-500	10	10	10	10	8	6
16	15-500	16	16	16	16	**15**	**12**
25	15-500	25	25	25	25	**23**	**18**
40	15-300	40	40	40	40	**36**	**30**
63	15-150	63	63	63	63	**55**	**41**
100	15-150	100	100	100	100	**85**	**62**
160	15-150	160	160	160	160	130	96

***** 1.0488

For steels not mentioned in these tables the user shall contact the manufacturer/supplier of the strainer.