Operation- and Maintenance Manual Y- Strainer, Series 350

General

The following operation- and maintenance manual is valid for Y-Strainers, series 350. At correct assembly, maintenance and repair we guarantee a trouble- free function. If the operation- and maintenance manual is not followed correctly, the manufacturer is not responsible for the efficiency and safety of the valves.
The strainers must not be operated above the limits and rules indicated in the different documents (e.g. operation rules, purchase documents, datasheets). Operation above the indicated limitations can damage the strainers and finally destroy them.
The descriptions and rules indicated in this operation- and maintenance manual refer to standard types, but apply at the same time for special designs and related constructions.

This operation instruction does not consider:

- any possible accidents and interruptions which could arise by wrong assembly, operation or commissioning of the strainers.
- any safety rules in relation to the place where the strainer is installed.

The operator is responsible for the observation of the safety rules, also for the assembly staff.

The operation- and maintenance instructions for all other devices or parts of the plant linked to the strainers have to be considered and checked, but is not subject in this manual.
This operation- and maintenance manual contains important information for the correct installation, operation, maintenance and commissioning of the designated valves.
This has to be read by qualified personnel and considered prior installation and operation of the plant. Not only the general safety instructions must be observed, but also all other rules and regulations in the following chapters.

	A non- observance of this warning can cause injuries to persons and defects of the machines, e.g.: Injuries caused by leaking valves (e.g. cold/hot, toxic, media content…) Improper use of the product characteristics during operation can permanently disturb the strainers or even become unusable;

Remarks to the operation manual
The safety instructions of this operation manual act to avoid any accident or injuries to persons.

Dangers which can result if safety instructions are not observed

If the safety instructions are not observed, persons, environment and the valve itself can be damaged. Possibly the indemnity rights get lost.

The non-observance of the safety instructions can cause dangers, e.g.:

- Break down of important functions of the valve or the unit
- Failure of prescribed methods of commissioning and handling
- Danger to persons caused by electrical, mechanical and chemical impacts
- Damage to the environment caused by a leakage

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Working with safety consciousness

The safety instructions included in this document are following the national regulations for prevention of accidents. Further rules for the avoidance of accidents during operation as well as the compliance with work protection rules have to be considered and assured by the operator.

Safety instructions for the operator / user

Whenever some hot or cold valve parts could be touched, it may cause injuries.
It must be assured that the parts are constructed in a way that they are protected from contacts.
-The contact protection for moving parts (e.g. coupling) must not be taken during operation.
- Leakage (e.g. at stem, at gaskets) of dangerous medias (explosive, toxic, hot) has to be removed in a way that no danger to persons or environment is given. Trouble- shooting must be started and failure has to be solved.
- Injuries by electrical energy have to be excluded (please consider the details of this subject in the local guidelines for the power supply companies).

	**Valves for higher or lower temperatures (> 50 ° C or <0 ° C) are to be protected against unintended contact (e.g. isolation) or at least to be indicated clearly with a warning sign.**

Safety instructions for assembly, commissioning and maintenance

It must be secured that all assembly, commissioning and maintenance work is done by skilled staff under consideration of this operation- and maintenance manual.

Generally, any work at the strainer is only allowed if the valve is cooled down and pressure-less. Additionally the evaporation temperature of the media must be lower than the temperature of all wetted parts of the strainer.

	**The opening of the valve under pressure can be deadly!**

Generally, any kind of work at the valves can only be done during plant shut-down. Valves which get in touch with health injuring media have to be decontaminated. Immediately after the work is done, all safety and protection devices have to be put in place again. Prior putting the valve into operation again, the rules of the chapter "Start- up/ Commissioning" have to be considered and followed.

Re- assembly and source of spare parts

Any modification of the valves has to be accepted and agreed by the manufacturer. The use of original spare parts and accessories which are authorized by the manufacturer supports the function and safety. If any damage is caused by using other parts the indemnity and warranty can be refused.

Applicable range

The described strainers in this manual include the following versions:
Sizes: DN15 up to DN250 (1/2“ bis 10“)
Nominal pressure: PN16 and PN40
Note the type designation at the nameplate!

Intended usage

Strainers are protecting the following equipment parts and devices against pollution. The efficiency depends on the used mesh- size. The strainers consist of a Y-type body and a cover for the screen.

Inadmissible duty

Safe operation is only guaranteed if the valve is mounted and used under the general regulations of these operating rules. The technical limits are shown in the technical documentation and must not be exceeded. Additionally the limitations are mentioned below:

Operating conditions

Body material DIN 1.0619 /WCB	-30°C up to +300°C
Body material DIN 1.4408/1.4435 /CF8M	-196°C up to +400°C

It is important to note that the strainers made of body material of 1.0619 / WCB should not used with aggressive and corrosive medias.

Operation

Strainers do not need special operation rules. The screen has to be cleaned periodically. (refer to chapter „Maintenance“).

Commissioning

Strainers do not need special instructions for commissioning. Air bubbles in the body should be removed (venting).

Delivery

The strainers are delivered ready for operation.
Flanges are protected against mechanical damage with flange caps.
During transport, make sure that the valves retain their mechanical protection by the flange caps. The transport must take place with suitable transport boxes (e.g. wooden boxes). The strainers must be secured in the transport boxes against crushing and tilting. Otherwise the valves may be damaged.

WRONG

CORRECT

Aids for lifting and transport in the plant have to be installed always directly on the body of the valve. Preferably, the transport should be done in horizontal position.
Head protection is mandatory!

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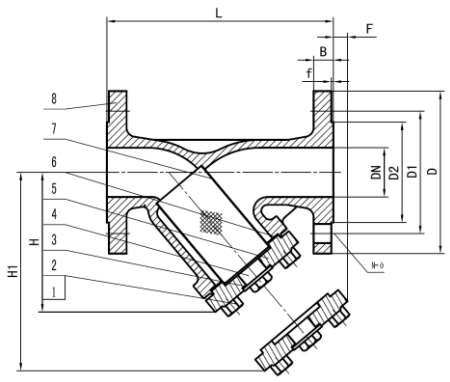
Description / Dimensions



Teile Nr. / Item	Bezeichnung Discription	Material / Material		
		Typ / Type 152.350 / 153.350 / 154.350 / 155.350	Typ / Type 393.350 / 395.350	Typ / Type 132.350 / 133.350 / 134.350 135.350
1	Mutter / Nut	A4-80	A4-80	YK (1.1138)
2	Gewindebolzen / Screwed bolt	A4-70	A4-70	G (1.7258)
3	Dichtung / sealing	Cu Alloy	1.4404	Cu Alloy
4	Entleerungs-schraube / screw	1.4401	1.4401	1.4006
5	Deckel / Cover	1.4408	1.4435	1.0619
6	Deckeldichtung / Coversealing	1.4401 + Graphite	1.4404 + Graphite	1.4301 + Graphite
7	Sieb / Screen	1.4401	1.4404	1.4301
8	Gehäuse / Body	1.4408	1.4435	1.0619

Measurement

PN	DN	D	D1	D2	L	H	H1	N	Φ	B	f
10	200	340	295	268	600	420	620	8	22	24	3
	250	395	350	320	730	495	720	12	22	26	3
16	65	185	145	122	290	170	255	4	18	18	3
	80	200	160	138	310	190	285	8	18	20	3
	100	220	180	158	350	225	325	8	18	20	3
	125	250	210	188	400	260	380	8	18	22	3
	150	285	240	212	480	320	490	8	22	22	3
	200	340	295	268	600	420	620	12	22	24	3
	250	405	355	320	730	495	720	12	26	26	3
25	200	360	310	278	600	420	620	12	26	30	3
	250	425	370	335	730	495	720	12	30	32	3
40	15	95	65	45	130	70	90	4	14	16	2
	20	105	75	58	150	80	110	4	14	18	2
	25	115	85	68	160	88	120	4	14	18	2
	32	140	100	78	180	100	135	4	18	18	2
	40	150	110	88	200	125	165	4	18	18	3
	50	165	125	102	230	140	195	4	18	20	3
	65	185	145	122	290	170	255	8	18	22	3
	80	200	160	138	310	190	285	8	18	24	3
	100	235	190	162	350	225	325	8	22	24	3
	125	270	220	188	400	260	380	8	26	26	3
	150	300	250	218	480	320	490	8	26	28	3
	200	375	320	285	600	420	620	12	30	34	3
	250	450	385	345	730	495	720	12	33	38	3

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Storage

The connections must be covered to prevent the penetration of dirt and dust (preferably with the delivered flange caps). The strainers have to be stored dry and well ventilated. For long-term storage, the strainers must be checked and cleaned periodically. Machined surfaces must be protected by appropriate aids against corrosion.
The strainers must be protected against influences of weather and environment.

Corrosion protection
Carbon steel valves
Valves made of un- alloyed or low- alloyed cast steel are coated with a primer and a 2-components epoxy resin coating. The minimum film thickness is 50 µm. The trim parts as well as the inner surfaces are free of paint and coated with a temporary corrosion protection (e.g. oil) only. Machined flange facings have to be protected against outside influences with flange caps.

Stainless steel valves
Valves made of stainless steel will be delivered without any coating.

Mounting and maintenance

General mounting instructions

	**Prior mounting/revision, all affected devices, machines and/or plant parts must be shut- off. If needed, disconnect the devices, machines and/or plant parts. Check the real shut- off prior the work starts!**

Put warning signs in place in order to avoid unintended commissioning of the devices, machines and/or plant parts.
For the installation in horizontal steam pipes the Strainer should be installed side lying with the screen body for preventing water pockets.
Valves for oxygen applications are additionally marked with "free of oil and grease, and suitable for oxygen". It is necessary to provide sufficient space for a screen replacement.

Installation in the pipe, mounting with Flange connection

1. Prior installation, the pipe must be cleaned;
2. If necessary, strainers must be cleaned from dirt and dust;
3. During installation in the pipeline, flanges of the pipeline must be exactly parallel to flange connections of the strainer. In addition the direction-arrow must show into flow direction. The strainer must be installed with cover shown downward (exception steam pipes, see chapter « General mounting instructions »).
4. Flange connection screws are tightened with a torque spanner (Torques acc. EN921-934 Or ISO4732, 4032, 4017…) Tighten the screws in a crosswise sequence.
5. Please consider that the strainer is mounted in a released condition;
6. At standard installation (horizontal pipeline) the cover for the screen replacement shows downward. If the strainer is installed in a vertical pipeline with flow direction from bottom up cover shows up acc. to the direction- arrow. In this case, the dirt particles are not collected, but hold off.

	**The flange sealings are to be centered correctly.** **Please use allowed materials for the screws and nuts only.** **For a correct flange connection, please use all the flange holes for the assembly.**

	**The permitted pressure must not be exceeded!** **For a new installation or even after a maintenance all pipes have to be flushed and cleaned. Dirt, welding beads and other dirt particles could result in a malfunction, but at least result in a less powerful strainer.**

Installation in the pipe, mounting with welded connection

1. All installation instructions for mounting with flange connections are also applicable for welded connections.
2. The welding of the connections with the pipeline connections must comply with the applicable guidelines.
3. The safety requirements of the welding process depend on the place and situation of the welding location.
4. The welding process has to be carried out according the valid accident and fire protection guidelines.
5. Prior welding, we recommend to open the cover and remove the screen.
6. The Flow direction have to be checked.
7. Please use a new cover sealing for the assembly of the strainer. After assembly the strainer has to be checked and tested for tightness.
8. Prior final mounting in the pipeline strainer has to be cooled down.

Dismantling the cover

		The valve must be cooled down and pressure- less! Opening the valve under pressure can be deadly! Head protection and protection glasses are mandatory!

The strainer must be cleaned prior dismantling the cover in case of application with dangerous media (e.g. toxic, caustic)
Loosen the cover by using a spanner
Remove carefully the cover, the cover sealing and the screen.

Assembly the cover

1. Prior assembly of the cover, the valve body has to be cooled down
2. Use a new cover sealing!
3. Put the screen into the body in a released condition and put the cover on it.
4. It is important that the cover sealing is centered correctly and free of any kind of dirt.
5. Subsequently, please tighten the screws in a crosswise sequence acc. to the applicable technical guidelines.
6. Please check the tightness of the strainer.

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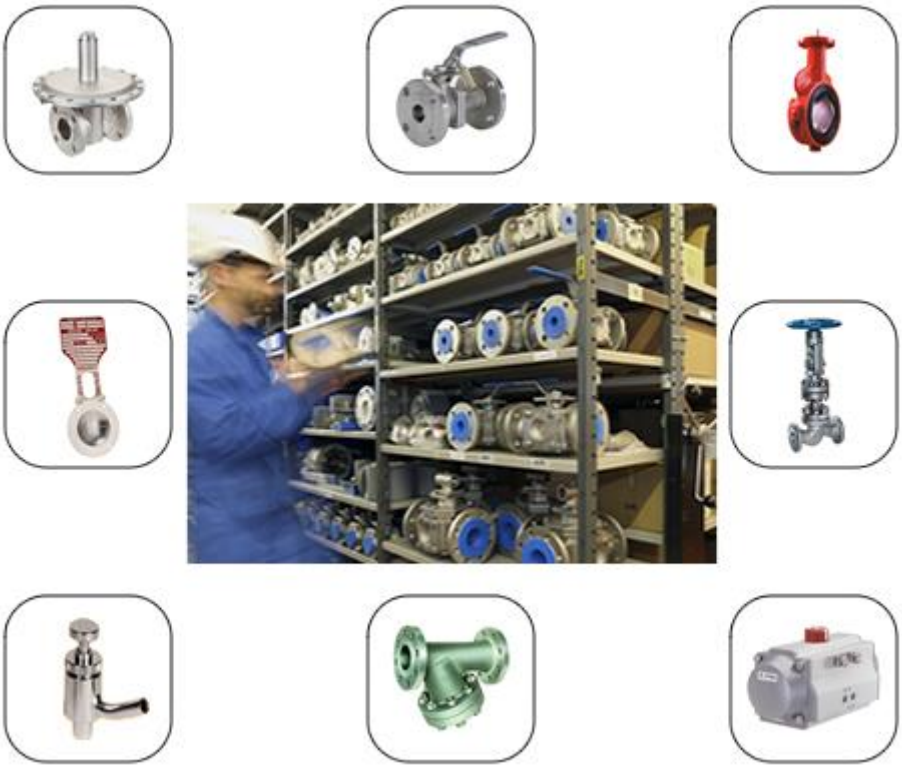
Maintenance (Cleaning of the screen)

1. If the screen is dirty, it must be cleaned;
2. Prior disassembly of the strainer, a replacement sealing must be available;
3. Remove the cover by loosen the cover screws and take out the screen;
4. Screen has to be cleaned (with cleanser);
5. After cleaning, the screen can be dried with compressed air;
6. The cleaning interval depends on the degree of pollution within the pipeline.
7. Please check the screen and the cover sealing on any damages prior assembly;
8. If necessary, damaged parts have to be replaced;
9. At assembly, put the new cover sealing into the body.
   Take care that the cover sealing is clean and has no damage;
10. Screen must be installed in a released condition. Put the cover on the body
11. Please tighten the screws and nuts till the tightness is achieved.
    Please consider the common rules and guidelines of pipe- engineering (e.g. torques)
11. Please tighten the screws and nuts acc. to the torques acc. EN 921-934
    or ISO4732, 4032, 4017…)
12. Please check tightness on the final assembled strainer

Warranty

Our general terms and conditions are valid.
If these are not available, it can be requested at Zuercher Technik AG
or downloaded from www.zuercher.com



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