# NEW METHODS TO PROVIDE AND CONTROL CLEANLINESS OF POWER PLANTS INNER CAVITIES

JOINT STOCK CORPORATION
SHIPBUILDING & SHIPREPAIR
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# PORTABLE STAND PURPOSED FOR FLUSHING, WATER TREATING AND TESTING OF COLD WATER SYSTEMS

Cleanliness of inner cavities of articles and systems during manufacturing, testing, assembly and repair is one of the most important factors for long and safe operation of ship power plants, including nuclear power plants (SNPP).

Final stage of inner cavities purification upon assembly completion is hydrodynamic flushing in closed circuit. For this purpose SSTC creates stands for flushing.

Intensification of flushing procedure allows to decrease operation time of the same, saving material and technical resources.

**SSTC is currently developing new equipment for flushing procedure intensification.**

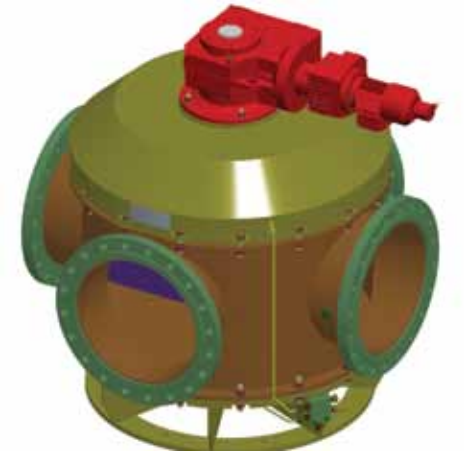
Flushing direction changing unit provides accelerated change of circulation direction to intensify articles flushing.

SPECIFICATIONS

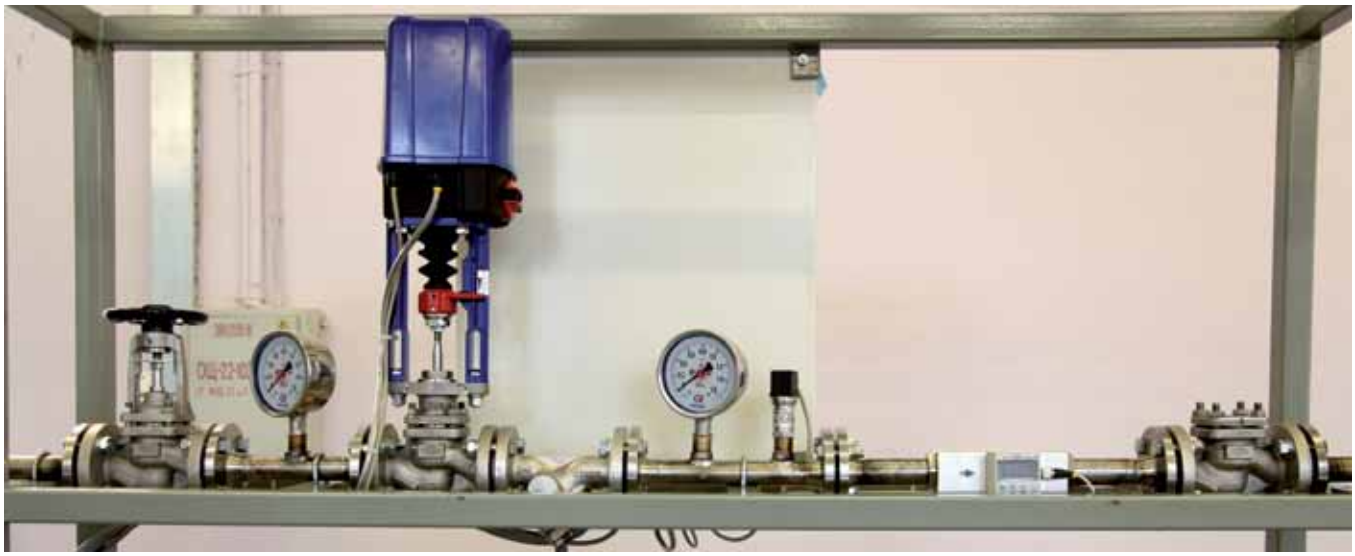
| | |
|---|---|
| Flushing water consumption, $m^3$/hour | up to 450 |
| Pressure, $kgf/cm^2$ | up to 12.5 |
| Dimensions, m | 7 x 3 x 4 |
| Dry weight, ton | 22 |
| Power consumption, kW | up to 450 |
| Test pressure, MPa | up to 28 |
| Water consumption on water treating filters, $m^3$/hour | 15 |
| Operation mode | manual, semiautomatic |
| Filtration degree, micron | 50 |

SPECIFICATIONS
OF FLUSHING DIRECTION CHANGING UNIT

| | |
|---|---|
| Flushing water consumption, $m^3$/hour | up to 2000 |
| Weight, ton | 2.9 |
| Input (output) flanges, DN | 450 |
| Minimum direction change rate (two reverses), min | to 1 |
| Maximum working pressure during flushing, MPa | not more than 1.26 |
| Dimensions, m | 1.3 x 1.43 x 1.4 |



Bubbling equipment provides application of compressed air together with flushing water for intensified pipelines flushing.



Units for pulsation and barbotage of flushing water are additional devices for flushing stands, strictly required when manufacturing complicated marine engineering articles, assembly of systems, and can be used as well when flushing systems with standard pumps.

In accordance with results of pulsation unit trials, average increase of decontamination rate equals to:

- on initial stage of flushing — 2 times;
- on final stage of flushing — 3.5 times.

In accordance with results of barbotage unit trials, increase of decontamination rate equals to:

- on initial stage of flushing — by 17–37%;
- on final stage of flushing — up to 3–5 times.

It was estimated, that flushing water and power consumption of barbotage unit can be reduced down to 50%.

BUBBLING EQUIPMENT SPECIFICATIONS (W/O COMPRESSOR AND RECEIVER)

| | |
|---|---|
| Maximum flushing water consumption, $m^3$/hour | up to 200 |
| Pneumatic module weight, tons | 0.1 |
| Pipeline maximum diameter, DN | not more than 150 |
| Maximum working pressure, $kfg/cm^2$ | not more than 8 |
| Dimensions, m | 1.9 x 0.5 x 1.9 |

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