Release History



Version	Update list in 3.4
3.4.0	1. The structure attachment (I\H-beam, channel, and other sections) was added.
12.12.2022	2. The bend stanchion with structure section was added.
	The user interface for bend stanchion was changed to unify with the attachment UI.
	3. The axial nozzle for a conical head was added.
	The axial nozzle insertion on a conical head from the "Head" UI-branch is now
	carried out on a flat part, and the insertion from the III branch "Conical shall" is made on the conical part
	and the insertion from the O1-branch Conical shell is made on the conical part.
	4. The ability to set the global axes orientation (select the vertical axis, etc.) was added.
	5. The ability to set the weld size on the edge of the flat head was added.
	6. The average radius calculation of the design shell model was changed.
	Since version 3.4, the average radius is calculated taking into account corrosion,
	Which can lead to a slight increase stresses from internal overpressure.
	corrosion allowance and when he subtracted it from the thickness himself
	7. The ability to specify the weld size on the attachment (nozzle) edge was added.
	8. The option "Disable corrosion" for the load case under testing conditions was added.
	9. The orientation nozzle with "Offset" placement type for conical shells to be
	compatible with PASS/EQUIP was changed.
	The offset nozzle must be in the plane of the cross section of the base element now.
	10. The new finite element mesh generator was embedded.
	and reports
	12. The floating point number formats for different value categories (dimensions,
	stresses, stiffness, etc.) used in report generation were added.
	13. Spanish language was added to the program (user interface, reports, user manual).
	14. The error in the strength factors output when stress analysis calculating in
	accordance with GOST 34233.1-2017 was fixed.
	(fatigue damage calculation) was fixed
	16 The calculation of opening reinforcement as per GOST 34233 3-2017 for conical
	shell was corrected.
	The design radius in the junction region was clarified.
	17. The average radius calculation of the hemispherical head curvature in the junction
	region according to GOST 34233.3-2017 was corrected.
	18. The membrane stresses checking by allowable total membrane stresses (WRC
	19 The calculation according to WRC 537/297 was corrected taking into account the
	17. The calculation according to write 55/12/1 was confected, taking into account the

	design, operating conditions for one load case.
	20. The import from XML-file of PASS/EQUIP was fixed.
	21. The boundary conditions for the operating mode, taking into account thermal strains
	were corrected.
	22. The error of launching the material database dialog in Chinese was fixed.
	23. The error of flexibility factor calculation of the bend from torque was fixed.
	24. The RTF templates were fixed.
	25. The program manual was updated.
3.4.1	1. The errors of generation finite-element mesh were fixed.
07.02.2023	2. The report generation error for model without an attachment was fixed.
	3. The model creating of rectangular plate (wall) with a structure attachment was
	corrected.
	4. The duplication of design and operating load values in user interface for JB4732 was
	fixed.
	5. The definition of the inner diameter of a cylindrical shell in GOST 34233.3 was
	corrected for cases where the nozzle diameter coincides with the base element
	diameter.
3.4.2	1. The geometric model of nozzle junction with crotch was improved.
07.03.2023	2. The report generation errors for the structure attachment were fixed.
	3. The allowable loads definition was corrected in accordance with the status of the
	option to enable\disable the checking of general membrane stresses.
	4. The export (allowable loads, SIF, flexibilities) to PASS/START-PROF program for
	several load cases was fixed.
	5. The language switching of user interface was fixed when PASS/Nozzle-FEM is
	Called Iroll PASS/START-PROF.
	6. The errors of finite-element mesh generation were fixed.
2.4.2	7. The user interface errors were fixed.
3.4.3	1. The ability to set a code for calculating the flexibility factors, stress intensification
23.05.2023	Tactors was added. 2 The support for long file paths (more then 260 sharesters) was added
	2. The support for long the paths (more than 200 characters) was added. 3. The greation of a geometric model of an equal tee with specified thickness
	allowances was fixed
	A The construction of a geometric model with the elbow attachment was fixed when A
	is zero
	5 The check of insertion of the bend stanchion was fixed
	6 The check of insertion of the structure attachment with the rectangle reinforcing was
	fixed.
	7. The check of material properties for mount conditions as per GOST 34233.1-2017
	was fixed.
	8. The error in the output of the report for the calculation of conical heads as per GOST
	34233.2-2017 was fixed.
	9. The error in the calculation of the nozzle with weld-in ring as per GOST 34233.3-
	2017 was fixed.
	10. The error of finite element mesh generation was fixed when working in Windows 7.
	11. The errors of finite-element mesh generation were fixed.
3.4.4	1. The geometric model creation of a spherical unbeaded head was fixed.
08.08.2023	2. Methods for calculating flexibility factors and stress intensification factors were
	refined, taking into account various codes for calculating pipeline systems, including
	the axial stress intensification factor for a bend (elbow).
	3. The determination of allowable stresses for ASME.VIII.1,2 by one yield strength
	was allowed for temperatures at which creep and long strength do not occur.
	4. The robustness of building a finite element model was improved, which reduces the
	volatility of the calculation results during repeated runs.
	5. The errors of finite-element mesh generation were fixed.
3.4.5	1. The errors of the report output for some Windows build versions were fixed.

30.08.2023	2 The geometric model creation of a head without attachments was fixed
30.00.2023	2. The geometric model creation of a spherical unbeaded head with a pozzle was fixed
	5. The geometric model creation of a spherical under a doct a doct a house was fixed.
	4. The output error of the calculations as per GOST 34233.2,3 for the test and
	installation conditions was fixed.
	5. The errors of finite-element mesh generation were fixed.
3.4.6	1. The error of the data importing from PASS/START-PROF was fixed.
20.09.2023	2. The error of an attachment junction creation on the plane surface was fixed.
	3. The errors of finite-element mesh generation were fixed.
3.4.7	1. The error of blocking some program functions when opening from a file manager
07.11.2023	has been fixed.
	2. The errors of finite-element mesh generation have been fixed.
3.4.8	1. The error of the string loading of the language localization has been fixed, that
05.02.2024	occurred when generating reports.
	2. The errors of finite-element mesh generation have been fixed.

Version	Update list in 3.3
3.3.0	1. The fatigue assessment was added as per ASME BPVC.VIII.2-2019.
27.05.2021	 The calculation control options were extended as per ASME BPVC.VIII.2- 2019 and EN 13445-3.
	3. The capability to set design and operating loads was added as per ASME
	4 The canability to set cyclic loading and corrosive hydrogen sulphide medium for a
	single load case was added
	5. The capability to set the dead loads for automatic calculation of stress ranges was
	added.
	Load cases
	Append Add copy Delete Clear All
	Design and operating conditions Design conditions from cyclic loading WGT. DSG. OPE.
	O Hydraulic testing conditions Fx 0 0 kN
	Enable checking Pi+Pip+Q for design condition
	$\frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating condition} \qquad \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{\text{Linable checking } 0]+02+03} \text{ for operating checking } \frac{V_{\text{Linable checking } 0]+02+03}{V_{Linable checking $
	Number of loading cycles, N 11000 Options >> My 0 0 0 kN·m
	Smooth Bar Design Fatigue Curves Mz 0 0 0 kN·m
	For reinforcement area: Assessment of effective alternating equivalent stress: $S_{at2} = K_F K_e (P_{L2} + P_{b_2} + Q_2 + F_2) 2.0 = 89.735 MPa \le S_{a2} = 298.427 MPa.$ Fatigue strength conditions ARE SATISFIED
	Allowable number of cycles by Smooth Bar Fatigue Curve: $[N]_2(S_{alt2}) = 6.674 \cdot 10^5$. Fatigue damage assessment for specified number of cycles:
	$N/[N]_2 = 7777/6.674 \cdot 10^5 = 0.012 \le 1.0.$ Fatigue strength conditions ARE SATISFIED
	 6. The flexibility and SIF calculations were refined; the calculation is performed now at the ambient temperature, by default. 7. The capability to generate result tables (allowable loads, flexibilities and SIF) selected from extreme values and received for different temperatures was added. 8. The capability to set strength factors and fatigue strength reduction factor for any weld seam was added.
	Base weld leg size, Δ_s 8 mm K_{σ}
	Weld size on nozzle, $\Delta_n = 8 \mod 1,467 \gg @$
	Weld size of reinforcement, Δ _r 8 mm 1,355 >> @
	$\begin{array}{c c} Strength \ factor \ of \ nozzle \\ longitudinal \ weld, \end{array} \begin{array}{c c} \phi_n & 1 \end{array}$
	9. The spherical unbeaded head (cover) model was added.
	D D _{out}
	10. The additional postprocessor options were added (rotation around object centre,
	rotation in cylindrical CS and etc.).
	11. The capability to display the applied loads in the postprocessor was added.



3.3.2	1. The capability was added in the settings to select the initial or deformed model states
07.07.2021	for output in the report by default.
	2. The control button was added in HTML report to select picture with the initial or
	deformed model states.
	3. The error of the nozzle length checking when the calculating "In junction" was
	11Xed. 4 The import of weld fectors from BASS/EQUID XML file was fixed
	4. The import of weld factors from PASS/EQUIP ANL file was fixed.
	6 The error of transition from polar coordinate system to Cartesian coordinate system
	in the parameters of nozzle insertion was fixed
	7. The error of displaying user interface 3d images when the screen resolution is set to
	over 100% was fixed.
	8. The error of load component indexing in the report tables of the initial data was
	fixed.
	9. The error in calculating of allowable loads, SIF and stiffness was fixed, which led to
	the fact that the design operating conditions were not inherited.
	The error appeared when loads were not specified.
3.3.3	1. The calculation error for projects opened from archive files was fixed.
21.07.2021	2. The error of displaying messages from materials database dialog boxes was fixed.
3.3.4	1. The reversing of skirt support model along the vertical axis was fixed.
27.07.2021	2. The calculation error of skirt support model without transition segment and nozzle
	was fixed.
	3. The alignment of user material database dialog box was fixed.
225	1 1 'The way of tehnilon allowed a stragges from ID codes was added when model is
3.3.3	1. The use of tabular allowable stresses from JB codes was added when model is
31.08.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of metarial database dialog hav launch on Chinase language was fixed.
31.08.2021	 The use of tabular allowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for IB codes was fixed.
31.08.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/FOUIP XML
31.08.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed.
31.08.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating
31.08.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed.
31.08.2021 3.3.7	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was
31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed.
31.08.2021 31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected
31.08.2021 31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2).
31.08.2021 31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added.
31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST
31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from 3B codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed.
31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error in accounting for hydrostatic pressure when was fixed when calculating as per WRC 527/107/207 or GOST 34233.2, 3-2017
31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error in accounting for hydrostatic pressure when was fixed when calculating as per WRC 537/107/297 or GOST 34233.2, 3-2017.
3.3.3 31.08.2021 3.3.7 08.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error in accounting for hydrostatic pressure when was fixed when calculating as per WRC 537/107/297 or GOST 34233.2, 3-2017. The error of the generation running RTF-report was fixed.
3.3.3 31.08.2021 3.3.7 08.10.2021 3.3.8 28.10.2021	 The use of fabular anowable stresses from 3B codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error of the generation running RTF-report was fixed. The error of the generating for a model without attachment was fixed.
31.08.2021 31.08.2021 3.3.7 08.10.2021 3.3.8 28.10.2021	 The use of fability and wable stresses from JB codes was added when hidder is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error in accounting for hydrostatic pressure when was fixed when calculating as per WRC 537/107/297 or GOST 34233.2, 3-2017. The error of the generation running RTF-report was fixed. The error of report generating for a model without attachment was fixed. The table 5B (ASME BPVC.II.D) of program data base of titanium alloys was fixed.
3.3.3 31.08.2021 3.3.7 08.10.2021 3.3.8 28.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error of the generation running RTF-report was fixed. The error of the generating for a model without attachment was fixed. The table 5B (ASME BPVC.II.D) of program data base of titanium alloys was fixed.
31.08.2021 31.08.2021 3.3.7 08.10.2021 3.3.8 28.10.2021	 The use of tabular anowable stresses from JB codes was added when model is calculated as per ASME and GOST codes. The error of material database dialog box launch on Chinese language was fixed. The error of missing some templates for JB codes was fixed. The import error of model with adjacent element to nozzle from PASS/EQUIP XML was fixed. The output error of Mx1, Mx2, My1 and My2 in force units when calculating according to GOST 34233.3-2017 was fixed. The restriction on the limit number of cycles in the input data verification was removed. The fatigue strength assessment by the Smooth Bar Fatigue Curve was corrected (ASME BPVC.VIII.2). The output of fatigue damage factor in the report was added. The error of the calculation running as per WRC 537/107/297 or GOST 34233.2, 3-2017 was fixed. The error of the generation running RTF-report was fixed. The error of the generating for a model without attachment was fixed. The table 5B (ASME BPVC.II.D) of program data base of titanium alloys was fixed. The definition of allowable stresses as per GOST 34223.1 for materials from ASME

Version Update list in 3.2	
3.2.0.6 1. The error of modeling tank with low type reinforcement was fixed.	
04.02.2021 2. The error of modeling tank lowest seam is fixed.	
3. The error of hydrostatic pressure applying to branch of support skirt was fix	ked.
4. The error of modeling flat oval nozzle with zero plane part was fixed (brand	ch of
support skirt).	
5. The calculation of general membrane stresses for nozzle reinforcement area	was
fixed.	
6. The allowable stresses calculation for general membrane stresses was fixed	(mesh
level factor is no longer taken into account).	
7. The allowable stress calculation as per JB 4732-1995 was fixed, when $R_{m,t}$	was used
instead $R_{m,20}$.	4 -
8. The bend stanchion inserting by I_d was fixed (that was corrected according).	10
9 The nozzle inserting by direction $(n - n - n)$ in bend (elbow) element was f	ved
3205 1 The opening/closing error the postprocessor window was fixed	Acu.
20 10 2020 2 The converting nozzle loads error was fixed when nzl file importing create	d in the
PASS/FOLIP Vessel	
3. The conversion error of values specified in a unit system other than SI was	fixed
when nzl-file importing.	
4. The designations in report tables were fixed when using loads specified in t	he WRC
coordinate system.	
5. The creating error of a model of an equal-pass tee was fixed with zero inter	nal part.
3.2.0.4 1. The error of report images creating with empty dimensions was fixed for so	me types
01.10.2020 of graphical adapters.	
2. The error of report images creating with empty dimensions was fixed for so	me types
of graphical adapters.	
3. The error of model with nozzle beading building was fixed when: $d \ge D d \le D$	
$u_{out} > D$, $u_{mid} < D_{mid}$. 4 The error of the report table of flexibility factors generating was fixed	
3203 1 The error of merging bottom area with convex areas for heads without cylin	udrical
25.06.2020 parts is fixed.	luiicui
3.2.0.2 1. The error of elements alignment procedure is fixed, that could lead to calcu	lation
17.06.2020 aborting.	
2. The error of junctures calculating of conical reducers and heads according t	o GOST
34233.3-2017 is fixed.	
3. The calculations of cylindrical parts of conical reducers and heads accordin	g to
GOST 34233.3-2017 are added.	
3.2.0.1 1. The error of the stress calculating from thermal strains for the cylindrical particular of the stress calculating from thermal strains for the cylindrical particular of the stress calculating from thermal strains for the cylindrical particular of the stress calculating from the stress calculating	urt of
05.06.2020 heads has been fixed.	
3.2.0.0 1. The model of the bend (elbow) was added.	
09.05.2020 2. The model of the bend support was added.	
5. The anowable loads, sufficess hexibility factors and SIF were added for bei	id leg allo
4 The model of the support conical skirt was added	
5 The model of the support skirt with an opening was added	
5. The model of the support skilt with an opening was added.	



Version	Update list in 3.1
3.1.0.1 05.03.2020	 The calculation of conical shell with knuckles as per GOST 34233.2-2017 was added. The still of the standard sta
	2. The setting of concentrated loads on the shell element was fixed (runhead pipe, conical reducer).
	3. The figures in part of the weld seam notations were fixed for help and reports with results.
	4. The creating of the nozzle model with beading and welded segment was fixed.
	5. The creating of the conical head with knuckles and a nozzle was fixed (the nozzle placement wasn't correctly defined).
	6. The safety work was fixed for the some modes of interconnection with the local dongle.
3.1.0.0	1. The model of torispherical head was added.
20.01.2020	2. The models of conical reducer and head with a knuckle\flare were added.
	3. The model of support skirt was added.
	 4. The calculations in testing and mounting conditions were added for all codes/rules. 5. The capability of axial direction (axis Z) of head and rectangle plate inverting was added. 6. The dialog boxes were added that simplify the weld factors setting as per GOST 34233.6-2017. 7. The reduced membrane stresses are now calculated with the shear stress for WRC 107(537)/297.
	 8. The stress test as per equation (13) GOST 34233.1-2017 was fixed, when allowable stresses are set by limits of the creep and the long strength. 9. The proceeding of such selecting of model view use fixed for the concretion of model.
	9. The procedure of auto selecting of model view was fixed for the generation of report images.
	10. The program error was fixed when working with material properties that are set at negative temperatures.
	11. The setting of shell and nozzle loads was transferred in the single tab and the
	corresponding united dialog box.

Version	Update list in 3.0
3.0.0.3	1. The export to RTF-file for OS Windows 7 has been fixed.
13.11.2019	2. The error of the tee creation with equal run and branch parts has been fixed.
3.0.0.2	1. The calculations of allowable loads, stiffness and stress intensification factors were
1.11.2019	appended for shells in the models of tee and conical reducers.
	2. The discrepancies of export to RTF-file were fixed.
	3. The report discrepancies of coordinate system figures with the calculated results were fixed.
3.0.0.1	1. The barrel appending error has been fixed.
21.10.2019	2. The report export to RTF format has been fixed, in participle, the generation of
	tables with merged cells is updated.
	3. The error of measure unit $\langle kgf \cdot cm \rangle$ using has been fixed.
	4. The error of MS Word program running for RTF-report editing has been fixed.
	5. The output of the allowable loads of table 2 when set hydrostatic pressure has been
	fixed.
	6. The precalculation verification of physical and mechanical material properties has
	been fixed.
2000	7. The error of a project saving with unused materials has been fixed.
3.0.0.0	1. Ine new graphical user interface released.
08.10.2019	File Opense Catalation Hap) (a) (a) (b) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c
	properies Constitution Constit Constitution Constitution Constitution Constitut
	Conciliated States
	Orientarial accesses fronta accesses Software strength accesses fronta accesses Software strength accesses fronta accesses Software strength accesses fronta accesses The strength accesses fronta accesses Software strength accesses Software strengthaccesses Software strength accesses Software strength ac
	Card Sameter of the hops, Due 1000 mm (Sameter of the hops, Due 1000 mm (Sameter of the hops, Due 1000 mm (Jac L), L,
	Internal internal free mil, Dp. Doi: NVM Internal internal internal, Spc; 350:0071 NVM With thickmen, Spc; NVM NVM NVM Total advances, Go: NVM NVM NVM
	Length of shell, L 1000 mm Other delays Anis, As, 8 anno Cited edays Y-anis, V 1000 mm Cited edays Y-anis, V 1000 mm
	Singhi that of logistical q: 1 bb. Singhi that of the set of the s
	2. The capability to change the orientation of all shell types was appended.
	3. The capability to insert a nozzle on the conical reducers and heads was appended.
	4. The capability to calculate a shell without nozzle was appended.
	5. The vector type of nozzle placement setting was appended.
	6. The capability to set some load cases in single project was appended.
	7. The new system coordinates (pipe CS) was append to set shell and nozzle
	concentrated loads.
	8. The calculations as per WRC 537 was updated.
	9. The calculations as per GOST 342233.2,3-2017 was fixed.

Version	Update list in 2.16
2.16.0.2	1. The error has been fixed that occurred in some cases when the corrosive hydrogen
11.02.2019	sulphide medium was enabled.
	2. The errors of program GUI have been fixed, in particular: when for the nozzle with
	beading it was necessary to set the weld seam parameters; if the TANK flag for a
	cylindrical shell was before enabled then the model of tee (main pipe) was not
	Correctly created. The error of central nozzle insertion on the elliptical head has been fixed, that occurs
	5. The effor of central hozzle insertion on the emptical head has been fixed, that occurs sometimes in exceptions of floating point operations
	4 The error of distribution package has been fixed where the installation language ID
	was not recorded, after which the program could not load resources correctly.
	5. The report generation error has been fixed that occurred in the absence of all loads
	and that led to the program termination.
2.16.0.1	1. The error of stiffness calculation with the exclusion of beam stiffness has been fixed.
16.01.2019	This error could lead to mistakes of stiffness (from 10 to 25 percent) when the
	checkbox "Exclude the beam model" is enabled.
	2. This error had no influence on other calculation types.
	3. The restriction of hydrostatic pressure setting for the heads has been removed.
	The misprints in the report templates have been fixed (in particular, calculation by
	4. The misprints in the report templates have been fixed (in particular, calculation by WRC 107(297) the misprint GOST 34233 X-2007)
2 16 0 0	1 New: calculation of thermal strains has been added, which allowed to analyze
28.12.2018	additional stresses arising from constrained temperature strains or action of different
2011212010	temperatures in the components.
	For more information, see Thermal strains.
	2. New shell type has been added - rectangle plate:
	$w_y = \frac{2}{2}$
	3. New: strength verification tests has been updated and revised for ASME
	DPVC.VIII.1-2017. A New: strength verification tests has been undated and revised for ASME
	BPVC VIII 2-2017
	5. New: strength verification tests has been updated and revised for EN 13445-3:2014
	(E) Issue 4 (2017-07).
	6. Strength verification tests has been updated and revised for ΓOCT 342233.1-2017.
	In particular, a verification test has been added for materials that work at
	temperatures in the range where creep and stress rupture govern the selection of
	stresses.
	 7. Strength verification tests has been revised for LOCT 342233.6-2017. 8. Strength verification tests has been revised for EOCT 242222 10 2017.
	 o. Suchgui verification tests has been revised for 1 OC1 542255.10-2017. 9 Calculation method for "On the edge" and "In junction" has been significantly.
	changed.
	For more information, see Calculated nozzle length

		Potente) Formel anna / Violenburghi
		10. 11. Calculation of elliptical heads with ratio $H/D \le 0.25$ has been allowed.
		12. The fillet radius for nozzle with beading sets now the radius of the middle surface (that is it is no longer recalculated)
		13. Verification of radius is now performed by condition: $r \ge 0.5min\{s,s1\}$.
		14. The bug of insertion of vertical nozzle has been fixed on the hemispherical head.
	Version	Update list in 2.15
	2.15.0.0 01.11.2018	2. The geometrical and finite element models of nozzle junctions was clarified.
	010102010	3. The error of conical shells parameterization with a large cone angle (large taper) is
		fixed.
	2.15.0.5	1. The parameter check of weld-in toroidal insertion for tilted nozzle is improved. 2. The error of tank model creation with low type reinforcement is fixed
	15.10.2018	 The error of flat head model creation with the central radial nozzle is fixed.
		4. The allowable load tables titles for calculations with low-cyclic loads is renamed by
		allowable load amplitudes.
	2.15.0.4 24.09.2018	1. The error of stiffness matrix invalid factorization at large mesh levels is fixed (error No803 in versions 2.14 and below)
	24.09.2010	 The bugs of conical shell modeling with large offsets is fixed.
		3. The bugs in GUI for the calculated schemes of the conical bottom and the reducer is
		fixed. 4 The misprints in the GUI when choosing the strength calculation under low cycle
		loads is fixed.
		5. The bug of creation of geometrical model of tilted nozzle with short length is fixed.
		6. The bug of average radius calculation on flat heads is fixed. 7. The bug in the CLU is fixed when the digits after the some ware lost (for a some
		Windows regional settings).
		8. The minimum allowable distance from the outer surface to the shell edge was
		reduced (condition was lighted).
		9. Now, instead of $d/2$, we use criterion $\min\{d/2; \sqrt{DS}\}$. 10. The incorrect output of allowable stress values for austenitic steels is fixed (in the
		calculations the correct values is used).
		11. The bug of mesh alignment in the extrapolation stress procedure is fixed when the
		12. The inaccuracy of result nozzle thickness calculation with inner part is fixed (in
		strength calculation addition cs1 was only applied).
	2.15.0.3	1. The visualization of the window zoom mode in the postprocessor is corrected.
	28.08.2018	2. The generation of the finite element framework in the postprocessor when changing display modes is corrected
		3. The formatting of reports for calculations under GOST 34233.2-2017 and
		GOST 34233.3-2017 is corrected.
		4. The error of reports generation on non-European versions of Windows 10 when choosing Russian language is fixed
		5. The blocking of the solution stage during the nozzle length testing is fixed.
		6. The verification of material properties at a given operating temperature is
		supplemented.
	2.15.0.2 20.08.2018	1. The error of running the solver when working with files located in a network folder is fixed.
1		

	2. The error of dongle access customizing is fixed.
	3. The error of postprocessor running for some cases of regional floating point number
	representation is fixed.
	4. The error of calculation running for newly created projects is fixed.
	5. The system of requests to the user when saving and calculation running is modified.
	6. Bugs of handling related GUI elements is fixed.
	7. The presentation of calculation results is fixed.
	8. The error of creating edge elements on the nozzle short inner part is fixed.
	9. The inaccuracy in the geometric model construction of elliptical heads on the areas
	of sharp curvature changes is fixed.
	10. The maccuracy in the geometric model construction of the conical transition and bottom with the left exlindrical insertion is fixed
	11. The inaccurracy in the peremetric model of the conical shall with a "small" height is
	fixed
2 15 0 1	1 The limiting temperature is introduced when corresive medium is actived in
2.15.0.1	accordance with GOST 3/233 10-2017
00.00.2010	2 The calculation of allowable stresses for nozzle with pad was modified
	3. The critical error in the design model of conical reducer and head is fixed
	4. Flaws related to the materials database is fixed.
	5. Flaws in the installation program associated with the installation of Microsoft Visual
	C++ 2015 Redistributable is fixed.
	6. Edge artifacts on short fittings is fixed.
	7. Flaws in creating a geometric model of an tee with equal run and branch parts is
	fixed.
	8. The critical error in the stress extrapolation procedure on short fittings was fixed
	which caused the solution abort.
	9. The text formatting in reports is corrected.
2 15 0 0	10. The incorrect output of allowable stresses for JB 4/32-1995-EN is fixed.
2.15.0.0	1. Version 2.15 is installed only on 64-bit versions of windows.
27.07.2018	2. The finite-element solver was translated on a 04-bit architecture and this is anowed to escape from memory restrictions (1.5Gb) for 32 bit Windows versions
	3 The calculation method of allowable loads was corrected and refined
	4. The calculation method of stiffness and flexibility factors was corrected and
	refined.
	5. The calculation method of stress intensification factors (SIF) was corrected and
	refined.
	6. The procedure of stress extrapolation at the weld toe was added, which allows to
	more accurately estimate peak stresses, improve the convergence of stress values at
	different mesh quality levels.
	Mesh Quality: Mesh Quality
	Cauda Maah
	Crude Mesh
	/. For conical shell was added the possibility of specifying the end offset (as for
	eccentrical reducers):
	Offset along X-axis, X0: 0 mm
	Offset along Y-axis, Y0: 200 mm
	8. Load of hydrostatic pressure load was add for cylindrical and conical shell: Design overpressure, p
	Internal External MPa
	Add hydrostatic
	pressure
	Filling neight: 2000 mm
	Density of medium: 1000 kg/m3



	Legend adjustment ×
	Appearance of distribution model
	Rainbowi
	⊖ Gradient
	Цвета шкалы Image: Transparent legend background Image: Number of value graduations
	Color of legend
	Color of legend trame
	Цвета модели
	Element edges/meshing Qk
	Element in initial state
	Element in deformed state
	Seam in deformed state
	Seam in painted mode
Version	Update list in 2.14
2.14.0.7	Fixed error that occurs when using materials of EN 13445-3 when calculating to EN
02.04.2018	13445-3.
	Fixed some typos in the GUI.
2.14.0.5	Restrictions was removed on the use of alloys from non-ferrous metals.
29.12.2017	The database of materials was extended.
2.14.0.4	The calculating method of material characteristics was refined.
27.11.2017	The output of allowable stresses in the source data for some ASME-materials was
	fixed.
2.14.0.3	Fixed the error for inserting a nozzle into elliptical bottoms for a private subtask.
10.05.2017	
2.14.0.2	The algorithm for generating a finite element grid on elliptical bottoms is optimized.
10.05.2017	Fixed errors translating into Chinese language.
2.14.0.0	Postprocessor module (3D interactive model) was developed. It helps to visualize the
17.03.2017	results of calculation. Materials database was filled by machanical monorties of materials from CD 150.2
	2011 (Ching)
Version	Lindate list in 2 13
	Added strength calculation under low cyclic loads as per i 7 GOST P 52857.6 2007
2.13.0.0	Added strength calculation to low cycle strengthy
00.12.2010	Corrected safety factor for austenitic chrome-nickel steels as per GOST R 52857 1-
	2007
	Strength calculation of V apparatus group working in corrosive hydrogen sulphide
	environment (GOST R 52857.10-2007).
	Fixed flat head description in report.
Version	Update list in 2.12
2.12.0.1	Weld seam mesh was refined and elements along nozzle were overridden.
05.07.2016	Materials database working faster.
	"Delta" was removed for nontransition nozzles with pads.
	Wall's angle calculation for conical shell added to program interface.
	Tilted nozzle's location was corrected.
	User template report's path is saved on exit.
2.12.0.0	Nozzle location limit for bottoms/heads are expanded.
14.03.2016	Calculation of conical transitions and heads clarified due to refined mesh.
	Chinese language is allowable for working.
	Added calculation of the stress intensification factors.
	Added calculation of the flexibility factors.
Version	Update list in 2.11
2.11.0.1	Fixed encoding bug in the Html report.
28.05.2015	
2.11.0.0	Stiffness calculation in junction for all model configurations.
22.05.2015	Strength estimation as per ASME VIII div.1.

	Strength analysis of conical transition and heads working in corrosive hydrogen
	sulphide environment (GOST R 52857.10-2007).
	Added criterion for ASME VIII div.1,2: "Protection against local failure" $(- + - + - < 4[-1])$
	$(0_1 + 0_2 + 0_3 \ge 4_0)$. Materials database was filled by mechanical properties of materials from tables 1A 1B
	(ASME II Part D (Metric))
Version	Update list in 2.10
2.10.0.0	Strength analysis of conical transition and heads.
25.09.2014	Strength estimation as per JB 4732-1995.
	Materials database was added by mechanical properties of materials from JB 4732-
	1995, GB 713-2008 and TU 14-3D-55-2001 Standards.
Version	Update list in 2.9
2.9.0.0	Strength estimation as per ASME VIII Div. 2 2010 and EN 13445-3:2002 E.
02.12.2013	Analysis of barrel nozzles. Stiffness estimation in junction place, as well as on the adre of pozzle
	Materials database was added by mechanical properties of main materials from EN
	Standards.
	Materials database was added by "Maximum allowable stresses" (table 5(A, B)) from
	ASME Sect. II, Part D for estimation by Sect.VIII, Div.2.
Version	Update list in 2.8
2.8.0.4	Fixed bug of saving update settings;
14.06.2013	Materials database was added by mechanical properties from PNAE G-7-002-86, OST
2.0.0.0	26-01-858-94, STO 00220227-006-2010, GOST R 54522-2011.
2.8.0.0	New FE-model for estimation of strength and stiffness of nozzles connections into the
20.07.2012	Analysis of trunnion connections
	Implementation of a new material database, which includes both Russian and ASME
	material properties.
	Automatic software version update system is introduced.
Version	Update list in 2.7
2.7.0.0	Added converter for making RTF reports, using one of default templates.
09.08.2011	Head's straight flange mesh became a fine structure.
Version	Update list in 2.6
2.6.0.0	Straight flange and cylindrical shell was added to head model.
14.10.2010	Undata list in 25
2 5 0 0	Added standards for strength estimation: GOST R 52857 1-2007 and GOST R
01.02.2010	52857 10-2007 (corrosive hydrogen sulphide environment)
01:02:2010	Reduced minimal limit distance from nozzle's wall to shell's edge.
	Number and longitudinal length of shell's elements are optimized.
	Loads to tilted branch can be applying as in the main pipe coordinate system and in the
	branch;
*7 *	Added the ability to configure the number of stress contours (from 3 to 30).
Version	Update list in 2.4
2.4.0.0	Added models of radial and tilted branch connections. Loads applying points are on
21.07.2009	the main pipe and on the branch
	Tables are free from pictures, what is good usable for MS Office.
	Reduced minimal limit distance from nozzle's wall to shell's edge.
	Deformed model picture in auto scale added to the report.
Version	Update list in 2.3
2.3.0.0	Added nozzle calculation, including allowable loads and stiffnesses, for both global
20.01.2009	and local coordinate system.
x	Realized calculations of junctions of both horizontal and vertical shells.
Version	Update list in 2.2

2.2.0.0 13.11.2007	Improved user interface and fixed bug with wrong nozzle location in the conical shell.
Version	Update list in 2.1
2.1.0.1 27.06.2007	Fixed some minor bugs in dongle working.
2.1.0.0 29.11.2006	The first commercial version of the program, which replaced program "Nozzle".