

STOJAN VESSEL® SV-2

FOR BURNING RATE MEASUREMENT OF SOLID ROCKET PROPELLANTS IN A CLOSED VESSEL

The SV-2 (Stojan Vessel®) is designed for the time and cost saving determination of the burning rate vs. pressure dependencies of solid rocket propellants. A single shot is sufficient for plotting burning rates in the whole pressure range.

The measurement using Stojan Vessel is primarily based on the advanced procedure for the determination of the burning rate of solid rocket propellants. In comparison with the Strand Burner, Stojan Vessel is a simple and safe instrument based on the more advanced mathematical procedure for calculation of ballistic properties taken from a single shot only. This procedure was invented and developed by Dr. Petr Stojan and the measurement using his instrument became the standard testing method for rocket propellants in the Czech Republic.



APPLICATIONS

The SV-2 is used for research and development, for manufacturing quality control or in-service surveillance of both double-base and composite solid rocket propellants. The method can reveal with high sensitivity and reliability the following factors influencing ballistic behavior of the tested propellants:

- ▶ Influence of additives (moderators, catalysts, binders, oxidizers etc.)
- ▶ Dependence on initial temperature
- ▶ Prediction of unstable burning or explosion hazards after ageing tests



Measurement and remote control unit



Pressing tools

OPTIONAL ACCESSORIES

OZM Research can also supply all the equipment and procedures necessary for sample preparation and conditioning of both the SV-2 and the LTRM instruments (hydraulic press, pressing tools, molds for casting, cutting machines, cutting tools, temperature chambers, etc.). Laboratory sub-scale rocket motor available for validation of measurement.

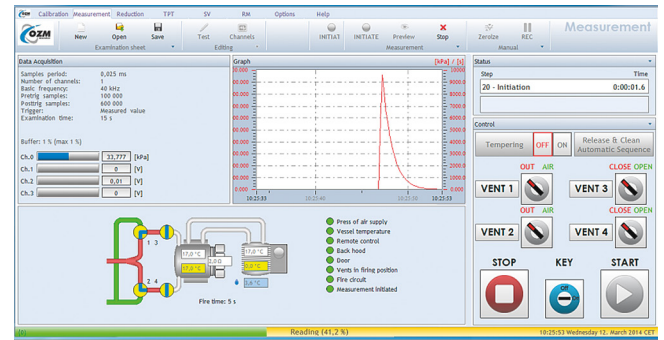


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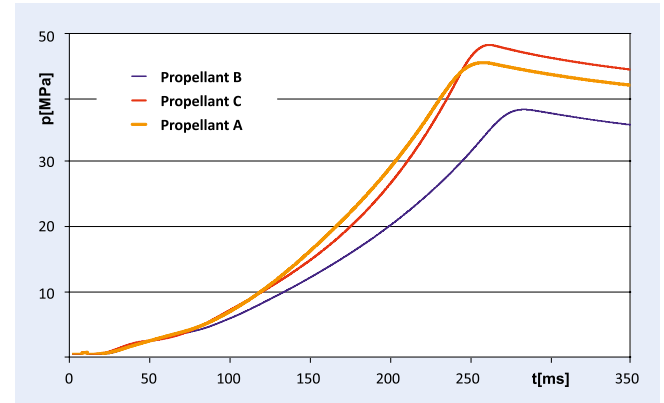
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ADVANTAGES & FEATURES

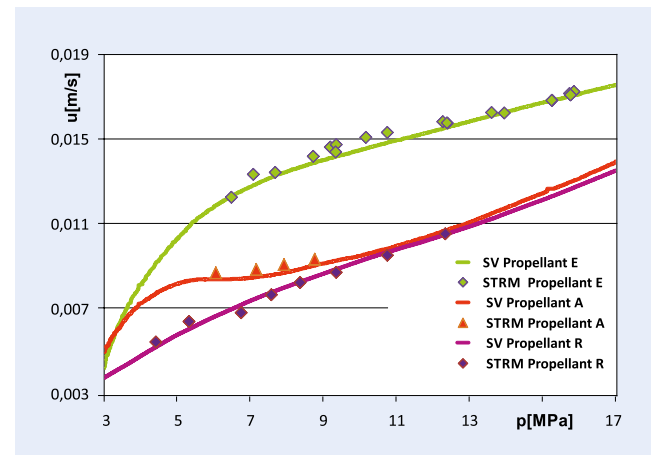
- ▶ Quick and safe operation, fully remote controlled
- ▶ Design of the stainless steel closed vessel allows for easy cleaning of composite propellants residues
- ▶ Working pressure up to 500 bar
- ▶ 750 bar proof pressure tested by burning solid propellants
- ▶ Compact mobile working trolley with in-built chiller



Measurement module with remote control section during data recording (after firing el. fuse-head)



Burning pressure (p) – time (t) dependencies measured using Stojan Vessel



Comparison of burning rate – pressure curves obtained by Stojan Vessel (line) and by Small-scale Testing Rocket Motor (points)



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