

	<h2>HGS (INDIA) LIMITED</h2>	
<h3>SPECIFICATION SHEET - GStreamer-P - multi-level 3C borehole seismic array with pneumatic anchoring system</h3>		
<p>GStreamer-P was developed for VSP, downhole seismic logging, cross-hole seismic testing and tomography (CST) in open hole or cased wells up to 1000 m deep. The system can have 4 or 8 borehole 3C tools on a pneumoelectric cable line.</p> <p>Acquisition unit locking is provided by an anchoring arm driven by a pneumatic cylinder and can be used in dry or water-filled wells. The clamping force is almost independent of hydrostatic pressure. At 7 Bar the system provides a force of 30 kg, which corresponds to a 1:11 ratio relative to the probe weight, that correlates to the parameters of “oil & gas” VSP tools.</p> <p>Pneumatic anchoring has several advantages:</p> <ul style="list-style-type: none"> • The tool cannot get stuck in the well - a simple release of pressure guarantees folding of the spring-loaded anchor • The clamping force does not decrease when the soil subsides under the anchor – the pressure in the pneumatic cylinder works like a powerful spring • The design of the probe is as reliable as possible - there is nothing that can break in it • Simple simultaneous pressure control with any compressor <p>GStreamer-P has doubled geophones for each component with a natural frequency of 12 or 20 Hz. Upon request, tools can be equipped with lower frequency sensors, but this will slightly increase their dimensions. Registration is provided by any seismograph.</p> <p>The system can be equipped with a connector for reference land geophone to control source-seismograph synchronization and improve the accuracy of interval velocities calculation.</p>		



GStreamer-P with borehole source Shock of horizontally polarized shear wave (SH) is an advanced set of equipment for cross-hole seismic tomography survey in dry and water-filled wells with a distance up to 30 m between them. GeoSV source would be enough for cross-hole seismic testing in accordance with ASTM D4428 / D4428M. Borehole sources are operated by pulsed power supply Jack. The system can be delivered on a reel with a slip ring or a BGW / BGW light winches.



Main features:

- No limit on data sample rate
- Pneumatic anchoring system
- Simultaneous anchoring of all levels
- For open hole or cased wells up to 1000 m deep

The anchoring is not weakened when the soil subsides under the anchor



Delivery set:

- 4 or 8 tools multi-level 3C borehole array GStreamer-P
- Portable battery powered air compressor pump (up to 7 bar)

In addition to GStreamer-P the following items can be purchased:

- Reel for 12-channel GStreamer-P
- Reel for 24-channel GStreamer-P
- BGW or BGW light winch
- Air compressor pump (up to 15 bar)
- Energy source Jack with remote control JackPad
- Borehole sources of pressure P (Pulse) or shear SH-waves (SHock) and SV-waves (GeoSV)
- Borehole hydrophone array WellStreamer
- High-frequency seismographs Sigma 4+ or DAQlink 5
- Borehole inclinometer



Specifications:	
Model	GStreamer-P
Number of levels	4 or 8
Anchoring	pneumatic cylinder
Well casing type	any or open hole
Number of components	3
Geophones natural frequency	12 Hz or 4.5 / 20 Hz (on request)
Tool locking	simultaneous
Clamping force	1:11 at 7 atm.
Maximum tool diameter	58 mm
Well diameter range	65 - 150 mm and more with anchor extenders
Maximum operating pressure	>100 bar

Ordering Information	
Item Description	HGS Part No.
GStreamer-P - multi-level 3C borehole seismic array with pneumatic anchoring system	MK001574

