



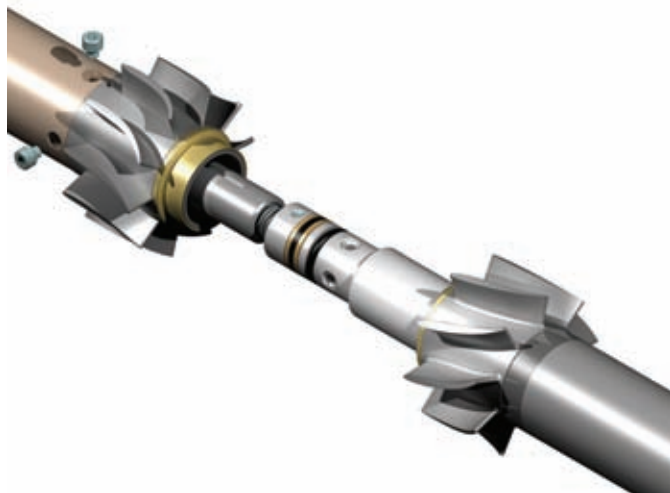
Moorfield Power & Generation Ltd.

MGen 1.75" (Moorfield Generator) Downhole Power Generating System

Part of the Moorfield Power & Generation Systems is the MGen 1.75" downhole generator providing a power solution to oil service companies and operators. The MGen provides an alternative solution to the current downhole power sources either lithium battery packs or cable from surface.

MGen employs a system where it extracts hydraulic power from fluid flow in the form of a rotating sleeve and converts it into electrical power. One key benefit of this system is that the tool does not incorporate any rotating seals for added reliability thus making for a robust design. The output power of the MGen can be delivered regulated or unregulated and used as direct replacement for current power sources or used as the main power source with battery backup for periods when there is no fluid flow present.

The MGen has the option of the output power on both the upper and lower connection with an additional twelve electrical connections from top to bottom. One of these connections can be used as an output from the tool to detect flow in the pipe. The flow sense is provided in the form of a 5v signal.



The MGen has been designed so that one of the key benefits is that all the mechanical parts are field maintainable or replaceable making for very low maintenance and running cost. As a knock on effect of this the rotor blade can easily be replaced with the minimal amount of tools and time required. The fluid bearings can also be replaced in the field with the minimal amount of tools and time and can be manufactured in a number of materials Polycrystalline Diamond Cutter (PDC), Tungsten Carbide (TC) or Ceramic fitted as standard

MGen 1.75" Tool Features

- Regulated power output (100 watts)
- 1.75" Tool Diameter
- No rotating seals
- 20,000 Psi pressure rating
- 150°C Operation
- 155°C Shutdown protection
- High flow rate shutdown protection

MGen 1.75" Key Benefits

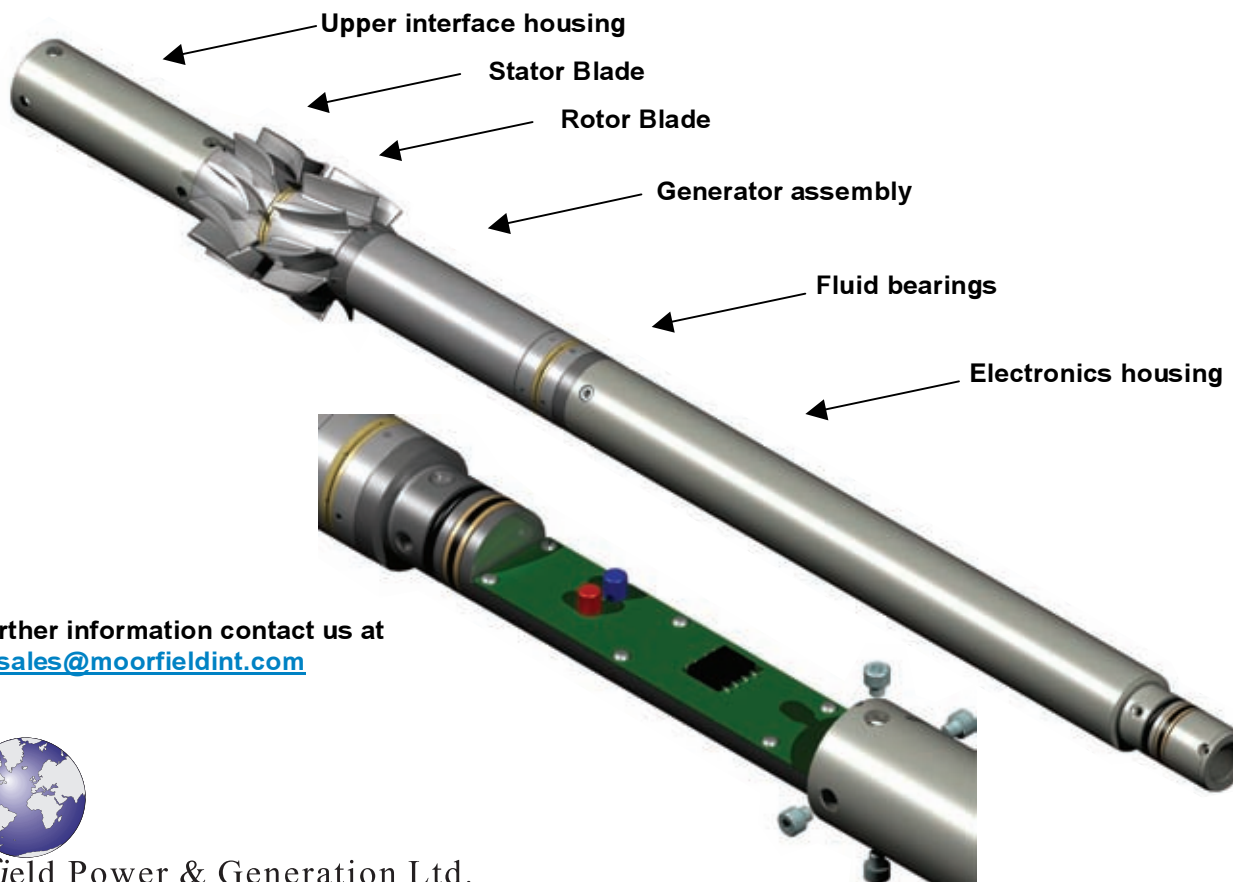
- High power output (100 watts)
- Compact Design
- Low maintenance cost
- Field serviceable
- One tool for multiple hole sizes
- Extend life of current downhole systems
- Minimal integration cost into current systems

MGen 1.75" Generator

Nominal pipe ID	2 13/16 in (71.44 mm)	3 1/2 in (88.90 mm)	3 3/4 in (95.25 mm)
Nominal tool OD	1 3/4 in (44.45 mm)	1 3/4 in (44.45 mm)	1 3/4 in (44.45 mm)
Blade OD	2 3/4 in (69.85 mm)	3 1/2 in (88.90 mm)	3 3/4 in (95.25 mm)
Length	3.0 ft (0.9 m)	3.0 ft (0.9 m)	3.0 ft (0.9 m)
Power output	100 watts	100 watts	100 watts
Voltage output	+/-15-30 volts **	+/-15-30 volts **	+/-15-30 volts **
Standard temp rating	302°F (150°C)	302°F (150°C)	302°F (150°C)
Standard working pressure	20,000 psi (1375 bar)	20,000 psi (1375 bar)	20,000 psi (1375 bar)
Maximum flow rate	350 US gpm * (1325 l/min) *	700 US gpm * (2650 l/min) *	900 US gpm * (3407 l/min) *
Minimum flow rate	100 US gpm * (378 l/min) *	200 US gpm * (757 l/min) *	300 US gpm * (1136 l/min) *
Maximum sand content	1% by volume	1% by volume	1% by volume
Maximum LCM	5/32 in (4 mm) solids	7/32 in (5.5 mm) solids	9/32 in (7 mm) solids
Typical pressure drop across tool	40 psi (2.75 bar)	30 psi (2.06 bar)	25 psi (1.72 bar)

* All flow rates to be defined by customer.

** Voltage determined by customer.



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