

## Why choose the HE-S

**HE-S** ... world's most powerful high speed reciprocating compressor line designed according to API618 standards. Requires fewer compressors for the same duty, delivering the highest reliability at lower operating costs.

**HE-S** ... the first reciprocating compressor frame in the 9-10 MW natural gas segment capable of direct coupling with large gas engines.

## Global Services for Installation, Support and Maintenance

- Full installation services
- Expert maintenance
- Remote Monitoring & Diagnostics (RM&D)  
The patented GE Oil & Gas GENyus diagnostic system is able to detect deviations in compressor behavior to increase safety during operation and to optimize maintenance programs.
- Contractual Service Agreements (CSAs)

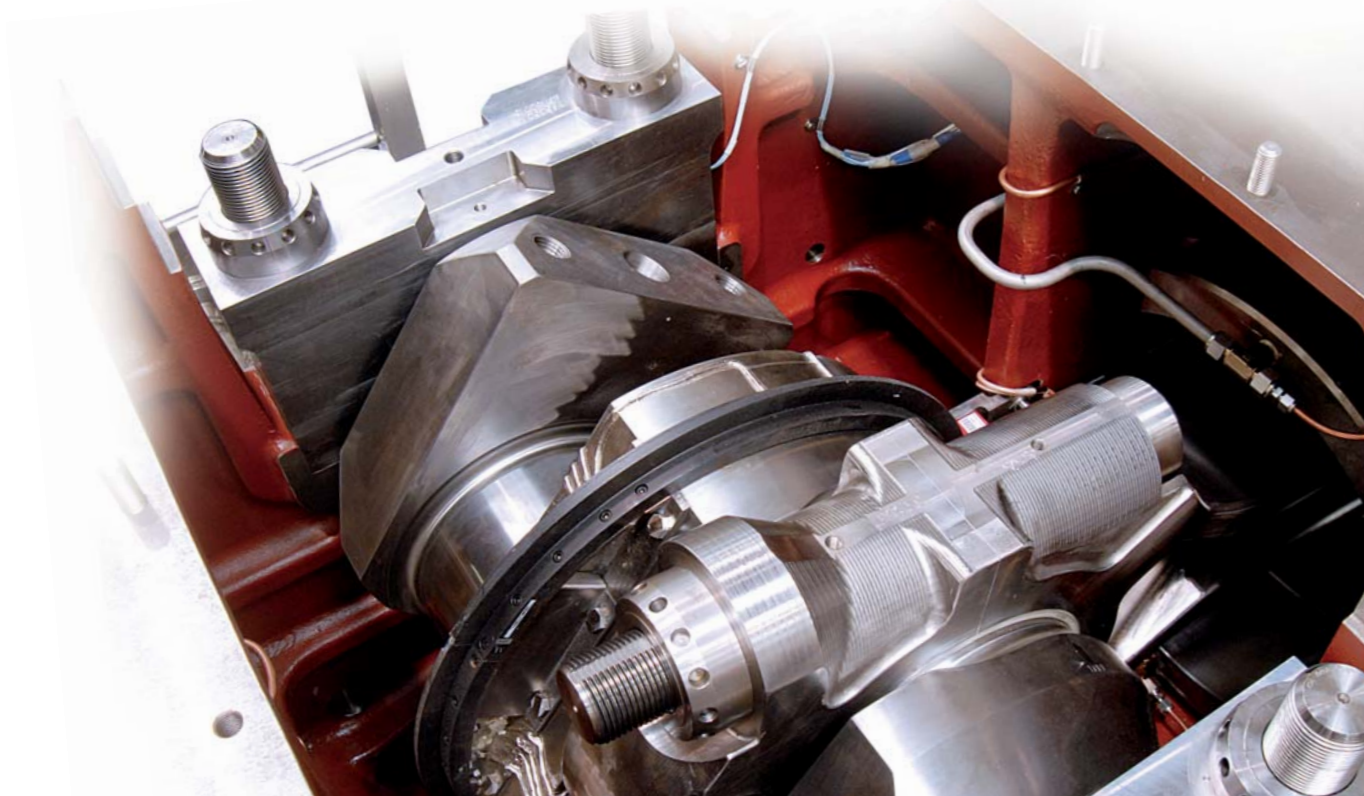
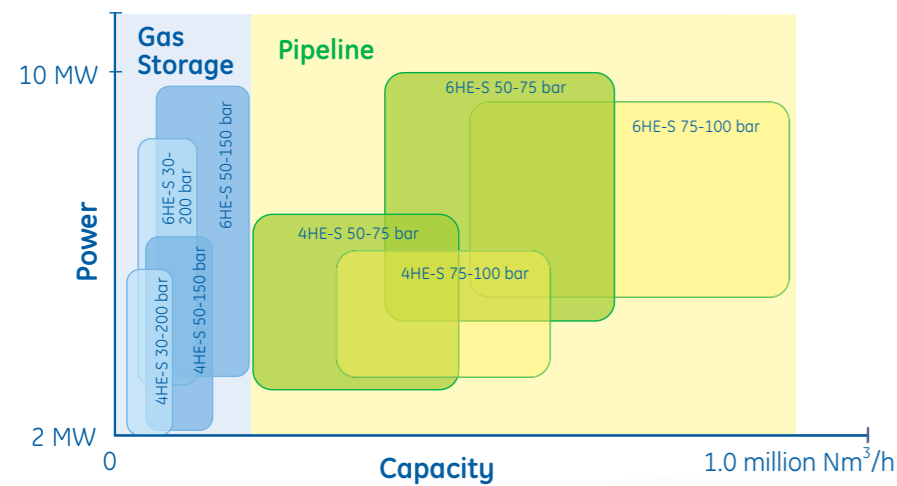
A highly skilled staff of local engineers and technicians provides on-site technical support for installation, commissioning, overhaul, repair, and maintenance. This team is supported by our headquarter experts, service shops, technical assistants and project managers.

### GE Oil & Gas

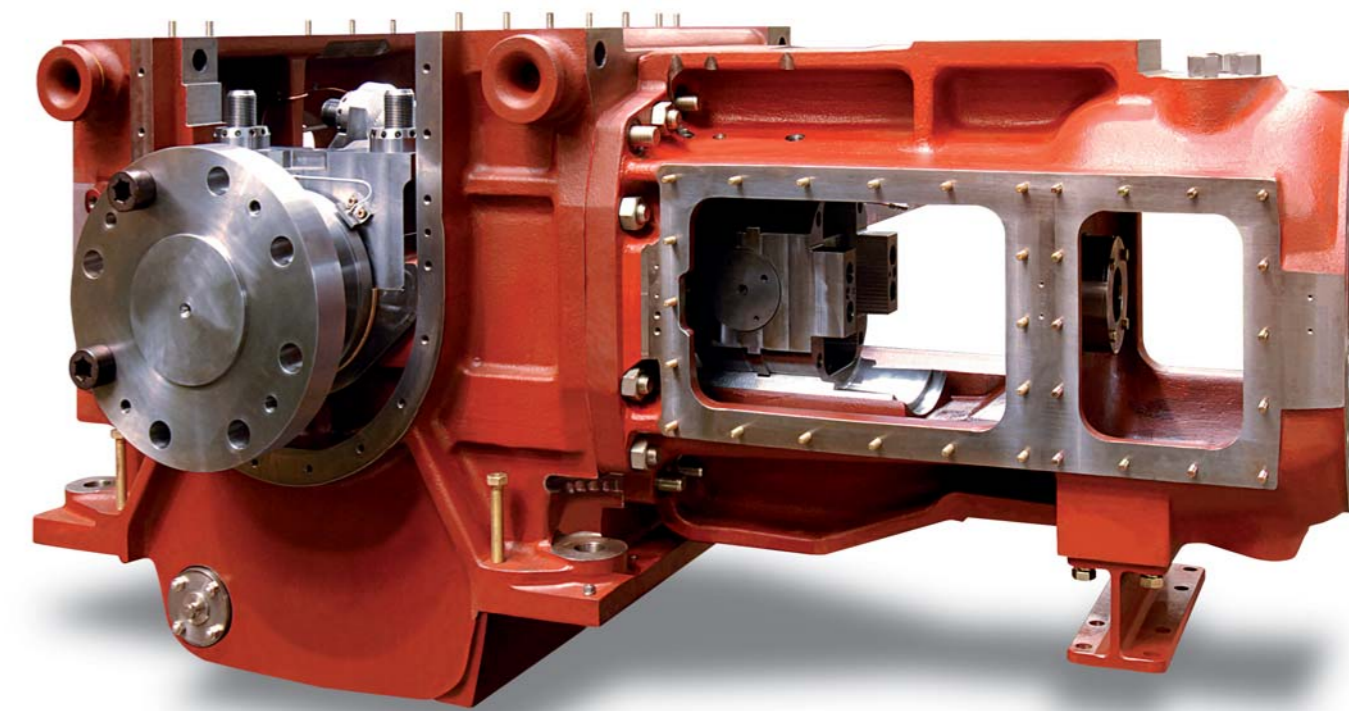
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## HE-S Range for Gas Storage and Pipeline



## GE Oil & Gas



## HE-S Reciprocating Compressor

The broadest capabilities in the medium frame range covering both low and high speed applications



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## Introducing the HE-S ... an evolution of the existing HE Reciprocating Compressor

With more than a century of experience in reciprocating compressor technology, GE Oil & Gas has one of the most complete lines of advanced and proven API618 machines.

The success of our current generation of process compressors is the result of constant technical innovation that draws on the global resources and unmatched experience of GE. Backed by the GE Oil & Gas engineering team and a dedicated staff of Global Services experts, our reciprocating compressor product line guarantees customers an unmatched and integrated approach along the entire plant life cycle from design through to operation and maintenance of the machinery. The result is the highest level of performance, reliability and availability in the industry.

Testifying to our ongoing commitment to help customers achieve greater levels of performance and productivity, we have updated the proven GE Oil & Gas HE line, applying referenced design features to achieve the highest capabilities in the medium frame range for both gas engine and electric motor driven applications.

**The HE-S, an evolution of a heavy duty machine with high speed characteristics.**

### Product Features

- 500 kN (112,000 lbf) max crosshead pin load
- 6 m/s (1,180 fpm) max average piston speed
- 750 rpm max
- 16,200 kW (21,700 HP) nominal max power at full speed (6 throws)
- 2-4-6 throws available

### Applications

- Pipeline
- Storage
- Re-injection
- Refinery

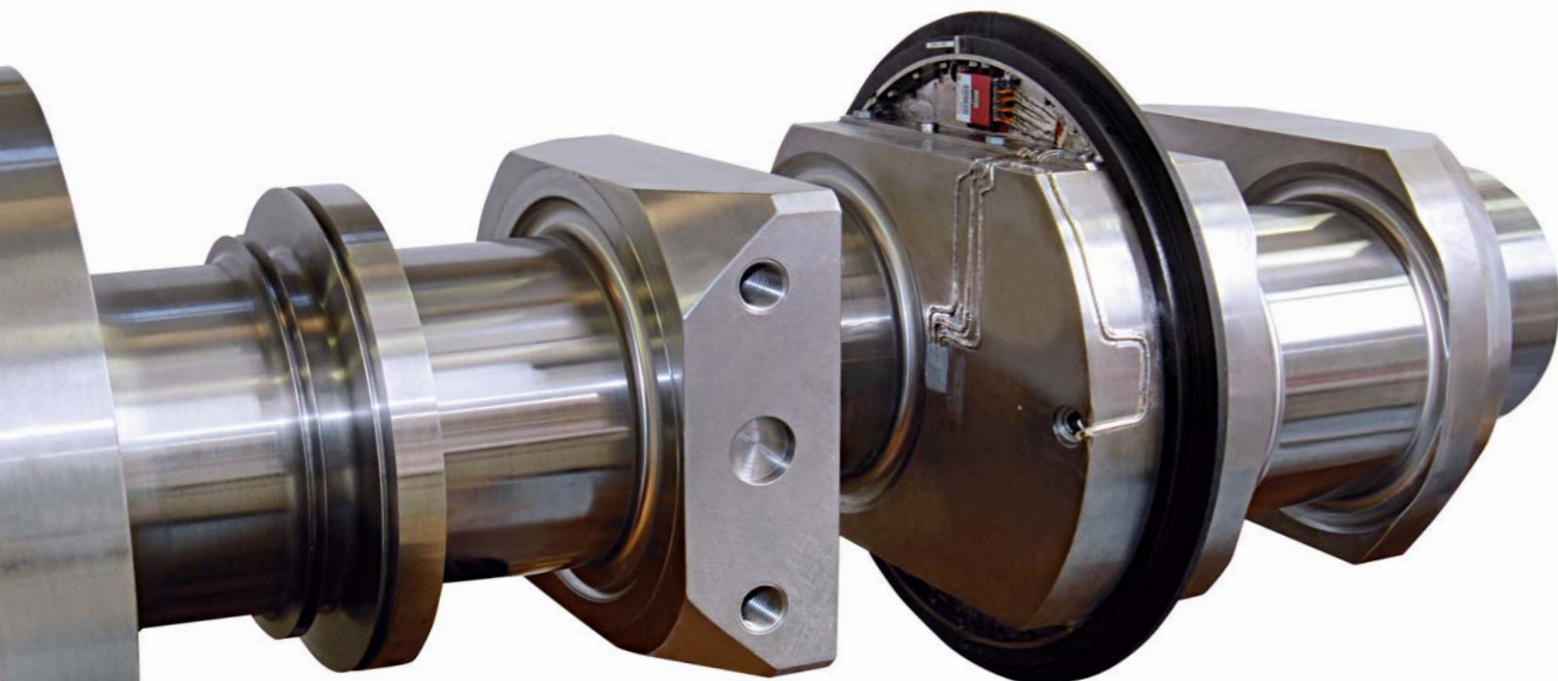
The HE-S represents an addition to our portfolio of reciprocating compressor products, which is designed to address specific compression needs in all segments of the oil and gas industry.

### A Unique Entry into the Reciprocating Compressor Market

- The only reciprocating compressor capable of 750 rpm gas engine direct drive at 9MW and above
- Suitable for both slow and high speed API618 and API11P applications
- An ideal solution for API618 service allowing moderate speed

### Complete Product Support

- Fully validated design
- All units tested before shipment
- 24x7 support available anywhere
- Localized training



## GE Oil & Gas API618 Product Range

Frame Size	# Throws	Max Power per throw * [kW]	Piston Rod Diameter [mm]	Stroke [mm]	Max Speed [rpm]
OA	1	435	48	220	800
OC	1	700	57	300	650
HA	2-4	500	48	180	1000
HB	2-6	625	57	210-230	800
HD	2-8	1,300	75	240-280	700
HE	2-10	2,150	90	290-330	600
HF	2-10	2,850	110	320-360	470
HG	2-10	3,600	130	320-360-400	450
HM	2-6	600	57	135-150	1200
SHM	2-6	1,100	65	135-150	1200
SHMB	2-4	1,100	65	135-150	1200

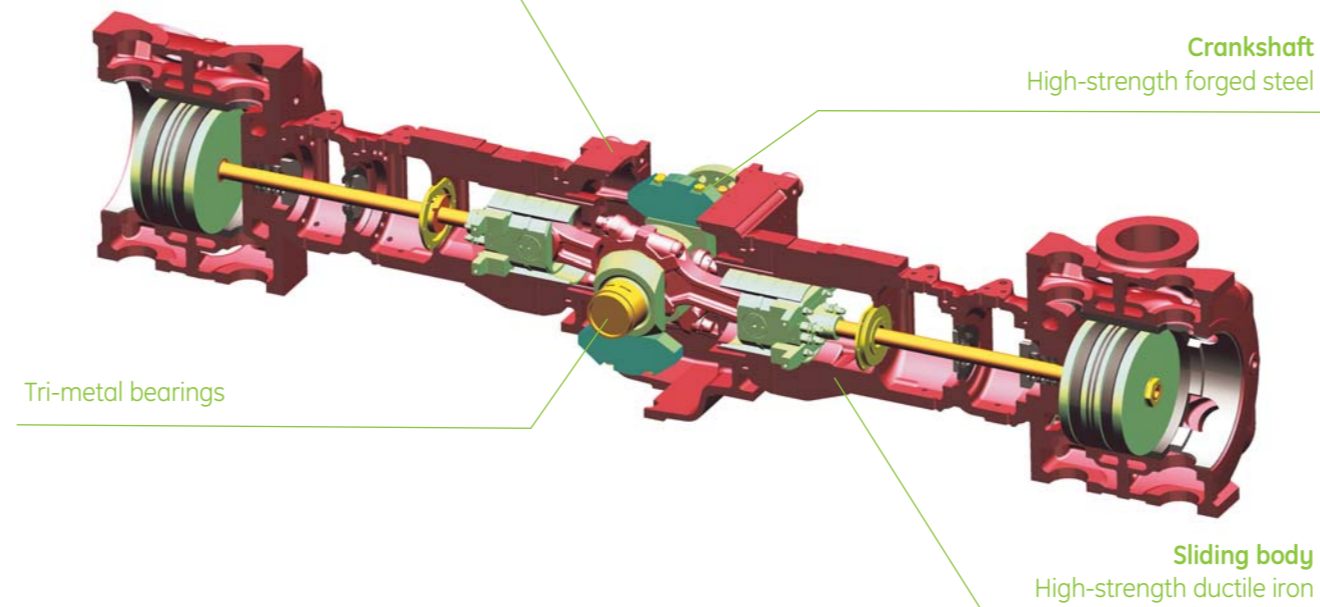
<b>HE-S</b>	<b>2-6</b>	<b>2,700</b>	<b>90</b>	<b>200-240 290-330</b>	<b>800 600</b>
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\* At max speed

## Incorporating more than 100 years of GE Oil & Gas experience

### Crankcase

High-strength ductile iron

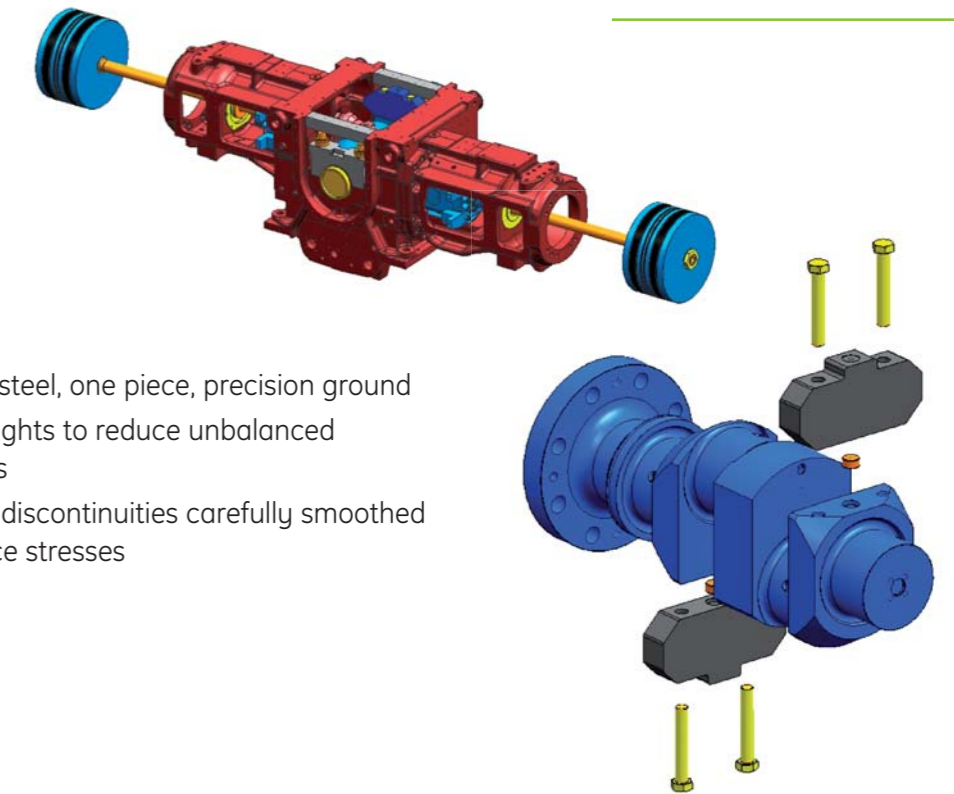


## Superior Design for Advanced Performance

### Crankcase and Sliding Body

- Heavily ribbed high-strength ductile iron
- High stiffness to maintain correct alignment of all moving and stationary parts
- Ductile iron crosshead guides with external ribbing
- Steel space bars for stiffening
- Designed for maintainability

Overall Dimensions	2 throws [mm]	4 throws [mm]	6 throws [mm]
Length	1,495	3,045	4,595
Height	1,510	1,510	1,510
Width, cylinders excluded	3,760	3,760	3,760
Shaft center line	1,200	1,200	1,200



### Crankshaft

- High strength forged steel, one piece, precision ground
- Bolted-on counterweights to reduce unbalanced rotating inertial forces
- Lube oil holes and all discontinuities carefully smoothed and polished to reduce stresses

### Bearings

- Tri-metal main and connecting rod bearings
- No geometrical discontinuity in the highest loaded area
- Mounted with split line in vertical position
- Big-end bearings identical to journal bearings for spare optimization

### Crosshead

- Fully machined forged steel body
- Piston rod hydraulically connected to flange
- Four hydraulically tensioned bolts connect the flange to crosshead pin
- Crosshead body always under full compression

