



H Series compressors

High-speed reciprocating compressors for natural gas applications

Our H Series compressors (formerly models HPD, HPDD, HPSS, HPDS) are designed to run continuously for extended periods of time while unattended. These high-speed units forgive non-reversals through unique wrist-pin needle bearing design. GE's comprehensive line-up of double-acting and stepped cylinders offer maximum staging flexibility. A workhorse in field gas applications, the H Series can also provide up to 6,000 psig for CNG vehicle refueling. The compact, packager-friendly design features a "through shaft" fan adapter that allows the cooler to be driven by the pump end of the compressor, shortening overall skid size, and simplifying the piping design.

Performance features

Type

Horizontal balanced opposed, one, two or four throws with double acting and/or stepped cylinder sets to provide up to four stages of compression.

Frame

Heavy-wall, one-piece alloy iron casting with reinforcing ribs. Removable alloy iron crosshead guides are surrounded by large cooling passages.

Crankshaft

Forged-steel design has integral counterweights and force-lubricated tri-metal sleeve type main bearings.

Cylinders

A wide-range of gas-cooled cylinder options is available. Cylinder arrangements include double-acting, tandem, and stepped-piston designs. Non-lube designs are available for special applications. Cylinders are available with MAWP up to 6,000 psig.

Compressor valves

Steel valve seats and guards; MTX or HTCX valve plates are standard. Valve springs, lifts and plates can be tailored to meet your performance conditions.

Piston/piston rods

Hard anodized aluminum alloy or cast iron pistons. Weight is precisely controlled during manufacturing to eliminate the need to match parts in the field. Carbon-filled Teflon piston rings are standard for most applications. Piston rods are 4140 steel with rolled threads. Full-floating vented sealing and wiper packing.

Connecting rods

Ductile iron with precision insert type bearings on crank end and roller bearings on pin end.

Crossheads

One-piece ductile iron crossheads have babbitted faces, cast iron crosshead guides and steel crosshead pin.

Compressor lubrication

Gear type lube oil pump is driven by the crankshaft. Lubrication system includes a non-bypassing, spin-on lube oil filter, oil pump relief valve and thermostat.

Packing and cylinder lubrication

Integral single-pump force-feed lubricator contains a block distribution system, a cycle indicator and a no-flow shutdown switch. Stainless steel tubing includes plated fittings piped to the cylinders and packing. Lubrication feed rate is fully adjustable.

Standard testing

Compressor mechanical test run, hydrostatic test of all cylinders and post-test inspection meet GE's high standards.

Standard accessories

Specialized tools, where applicable, are included in the toolbox.

Optional items

Variable-volume clearance pockets, CSA or XP no-flow switches and vibration switches, export boxing, immersion oil heaters, flywheels, drive couplings, oil coolers and fan drives.

| Throw configurations | | | |
|----------------------------|--------------|--------------|---------------|
| Compressor throws | 1 | 2 | 4 |
| Max. BHP (kW) | 100 (75) | 200 (149) | 400 (298) |
| Frame weight lbs (kg) dry* | 1,050 (476) | 1,050 (476) | 2,350 (1,066) |
| Frame length inches (cm)* | 26.3 (66.8) | 26.3 (66.8) | 57.6 (146.3) |
| Frame width inches (cm)* | 49.5 (125.7) | 49.5 (125.7) | 49.5 (125.7) |
| Frame height inches (cm) | 28.9 (73.4) | 28.9 (73.4) | 25 (63.5) |

| Stroke configuration | |
|------------------------|------------|
| Stroke inches (mm) | 3.0 (76.2) |
| Max. rated speed (rpm) | 1,800 |

* without cylinders

| Heavy-duty running gear | | |
|---------------------------|----------------|----------|
| Rod load - tension | 10,000 lbs-f | 44.48 kN |
| Rod load - compression | 10,000 lbs-f | 44.48 kN |
| Combined rod load | 20,000 lbs-f | 88.96 kN |
| Piston rod diameter | 1.125 inches | 28.6 mm |
| Crankshaft material | Forged Steel | |
| Connecting rod material | Ductile Iron | |
| Crankpin bearing diameter | 3.25 inches | 82.6 mm |
| Crankpin bearing width | 1.5 inches | 38.1 mm |
| Main bearing diameter | 3.0 inches | 76.2 mm |
| Main bearing width | 1.875 inches | 47.6 mm |
| Connecting rod pin | Roller bearing | |

| | Cylinders for the H Series | | | | MAWP PSIG | Cylinder cooling | Material | Flange dia inch | Flange rating PSIG | Valves | VVCP | | |
|---------------|----------------------------|------------------------|------|------|--------------|---------------------|----------|--------------------|-----------------------|--------|------|-----|---|
| | Series | Cylinder bore - inches | | | | | | | | | | | |
| Double acting | H30 | 2.50 | 3 | | 1,440 | Gas | D.I. | 1.5 | 1,500 | 4 | No | | |
| | H30 | 2.50 | 3 | | 1,250 | Gas | D.I. | 1.5 | 600 | 4 | No | | |
| | H90 | 3.50 | | | 1,725 | Gas | D.I. | 2 | 1,500 | 4 | Yes | | |
| | H30 | 3.50 | 4 | | 1,250 | Gas | D.I. | 3 | 600 | 4 | Yes | a | |
| | H30 | 4.50 | 5 | | 1,250 | Gas | D.I. | 3 | 600 | 4 | Yes | a | |
| | H30 | 5.50 | | | 1,000 | Gas | D.I. | 3 | 600 | 4 | Yes | a | |
| | H30 | 6 | 6.50 | | 500 | Gas | D.I. | 4 | 300 | 4 | Yes | b | |
| | H30 | 7.50 | 8 | | 500 | Gas | D.I. | 4 | 300 | 8 | Yes | b | |
| | H30 | 8 | 9 | | 300 | Gas | D.I. | 4 | 300 | 8 | Yes | b | |
| Stepped | Crank end single acting | H30 | 2.50 | 3 | | 1,250 | Gas | C.I. | 1.5 | 600 | 2 | No | c |
| | | H30 | 3.50 | 4 | 5 | 1,250 | Gas | C.I. | 1.5 | 600 | 2 | No | c |
| | Head and single acting | H30 | 4 | 5 | | 1,250 | Gas | D.I. | 1.5 | 600 | 2 | Yes | d |
| | | H30 | 5.50 | | | 750 | Gas | D.I. | 1.5 | 600 | 2 | Yes | d |
| | | H30 | 6.50 | 7.50 | | 500 | Gas | D.I. | 3 | 300 | 4 | Yes | e |
| | H30 | 8 | | | 300 | Gas | D.I. | 3 | 300 | 4 | Yes | e | |
| Tandem (CNG) | SACE | H30 | 2.50 | 3 | | 3,500 | Gas | F.S. | 1 | 6,000 | 2 | No | |
| | | H30 | 2.50 | 3 | | 2,500 | Gas | D.I. | 1.5 | 1,500 | 2 | No | |
| | | H30 | 3.50 | 4 | | 3,500 | Gas | F.S. | 2 | 6,000 | 2 | No | |
| | SAHE | H30 | 1.25 | 1.50 | | 6,000 | Gas | F.S. | 1 | 6,000 | 1 | No | |
| | | H30 | 1.75 | 2 | | 6,000 | Gas | F.S. | 1.25 | 6,000 | 1 | No | |

L = Nitrided Liner - field replaceable
NL = No Liner

D.I. = Ductile Iron
F.S. = Forged steel
C.I. = Cast Iron

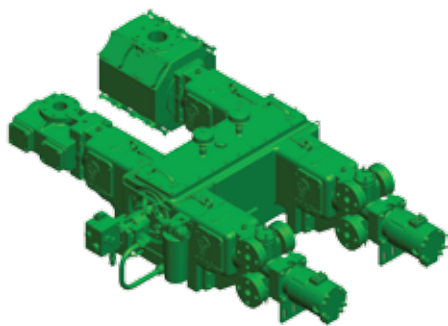
SAHE = Tandem cylinder - Single Acting Head End
SACE = Tandem cylinder - Single Acting Crank End

a, b, c, etc. Designates cylinders having identical XYZ flange dimensions to assist interchangeability and package piping standardization
(1) The 1.25" piston can be trimmed to add 14% or 25% additional clearance
(2) The 1.50" piston can be trimmed to add 10% or 20% additional clearance

Designed for flexibility

- The H Series is backed by 100 years of GE compressor design experience
- Part of a complete line of reciprocating compressors featuring advanced technology and work-proven designs
- Many cylinders have identical X, Y, and Z flange locations, allowing packages to be reconfigured without any changes to the piping and bottles
- Over 18,000 GE high-speed reciprocating compressors have been built to date

All GE high-speed reciprocating compressors are packaged, serviced and maintained by a worldwide network of authorized packagers and distributors.



Operating benefits

- Compressor is easily reconfigured to meet your changing requirements
- Reduces lifecycle cost and increases production
- Reduces required inventory of machinery and spare parts
- Higher efficiency, lower fuel or electricity consumption
- Lower cost of reconfiguration
- Greater utilization of driver power over a wide-range of conditions

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