



Air- Cooled, HA Series

# Well thought out Diesel Engines

**kirloskar**  
Oil Engines

# A Rich Tradition of Engineering Excellence

The Kirloskar Legacy stands for a tradition of excellence for more than a century now. A personification of patronizing values and visionary goals, the name 'Kirloskar' is engraved on numerous nation-building milestones. Today, the Kirloskar Group, with a turnover exceeding USD 1.6 billion, stands as an enormous industrial conglomerate.

Incorporated in 1946, Kirloskar Oil Engines Limited (KOEL) is the flagship company of the Kirloskar group. We have four state-of-the-art manufacturing units in India that offer world-class service. The company has a sizable presence in international markets, with offices in the USA, UAE, South Africa, Kenya and representatives in Indonesia, Vietnam and Nigeria. KOEL also has a strong distribution network throughout the Middle East and Africa.

Today KOEL is an acknowledged leader in the

manufacturing of diesel engines, agricultural pumpsets, power tillers and generating sets. The company currently ranks among the leading manufacturers of diesel engines, which are manufactured and sold under Kirloskar Brand. Kirloskar engines cover a power envelop span ranging from 4hp to 1250 hp and from 2,400 hp to 11,000 hp, in air-cooled and liquid cooled, naturally aspirated, turbo and turbo-after-cooled versions.

KOEL manufactures over 2,25,000 engines annually, which are used in over 100 different applications. These applications are found in sectors such as agriculture, power generation, construction, material handling, earth-moving, mining, offshore, fluid handling and agro-industrial market segments that include defence and marine applications. KOEL exports to over 60 countries worldwide.

## Air-cooled Diesel Engines. Engineered to Economise.

Maximum economy and reliability combined with air cooling are the features of these diesel engines.

The power units are produced to meet the high precision and quality standards symbolized by the name Kirloskar.

A strictly modular design ensures component standardisation which solves many spare part supply problems. Being air-cooled, the HA Series engines work efficiently under different climatic conditions and are easy to maintain.



### Standard Features

- Pre and micro fuel filters
- Lube oil cooler
- Fuel lift pump
- Lube oil filter
- Engine stop lever(hand operated)
- Engine supports suitable for rigid mounting
- Torsional vibration damper on crank pulley (for HA694/HA694TC engine only)as applicable
- Automatic belt tension unit
- Mechanical/electrical engine shut down system in case of 'V' belt failure

Kirloskar HA Series engines act as prime movers in a host of critical and demanding applications such as:

- Water Pumps
- Compactors
- Mining locomotives
- Drill rigs
- Load Haul Dumpers (LHD)
- Sugarcane/wood handlers
- Transit mixers
- Mining utility vehicles

### Salient Features Designed to Outperform



Various industrial applications



Continuous Piston cooled



Auto-belt tensioning system



In-line gear driven



20% lower fuel consumption



Full flow block type lube oil



Ability specific application requirement



No external lube oil piping



Covered all maintenance points





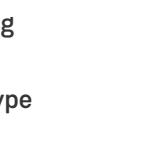
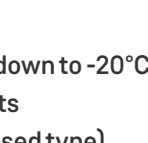


Turbo charged versions



Provision for engine-mounted belt

## Power Ratings As per IS:10002/BS: 5514/DIN 6271/ISO 3046 ISO STD: Power (continuous rating)

| Engine    | rpm  | kW    | bhp    | torque |       |   |
|-----------|------|-------|--------|--------|-------|---|
|           |      |       |        | Nm     | kgm   |   |
| HA 294    | 1500 | 14    | 20     | 89     | 9.1   |    |
|           | 1800 | 16.9  | 23     | 90     | 9.15  |   |
|           | 2000 | 18.4  | 25     | 87     | 8.95  |   |
|           | 2300 | 20.2  | 27.5   | 84     | 8.55  |   |
| HA 394    | 1500 | 23.60 | 32.00  | 150    | 15.30 |    |
|           | 1800 | 28    | 38     | 148    | 15.10 |   |
|           | 2000 | 30.2  | 41.00  | 144    | 14.70 |   |
|           | 2300 | 34.60 | 47.00  | 143    | 14.60 |   |
| HA 494    | 1500 | 31.60 | 43.00  | 201    | 20.50 |    |
|           | 1800 | 38.20 | 52.00  | 203    | 20.70 |   |
|           | 2300 | 46.40 | 66.00  | 192    | 19.60 |   |
|           | 2500 | 52.20 | 70     | *      | *     |   |
| HA 494 TC | 1500 | 41.00 | 56.00  | 262    | 26.70 |  |
|           | 1800 | 48.00 | 65.00  | 253    | 25.80 |   |
|           | 2000 | 51.50 | 70.00  | 245    | 25.00 |   |
| HA 694    | 1500 | 47.80 | 65.00  | 304    | 31.00 |  |
|           | 1800 | 57.54 | 78.00  | 304    | 31.00 |   |
|           | 2000 | 62.60 | 85.00  | 298    | 30.40 |   |
|           | 2300 | 69.90 | 95.00  | 290    | 29.60 |   |
| HA 694 TC | 1500 | 61.00 | 83.00  | 387    | 39.50 |  |
|           | 1800 | 72.00 | 98.00  | 380    | 38.80 |   |
|           | 2000 | 76.00 | 103.00 | 365    | 37.20 |   |
|           | 2300 | 81.00 | 110.00 | 340    | 34.70 |   |

## Optional Features

- Engine control panel consisting of start push button, lube oil pressure gauge and ammeter
- Industrial type silencer suitable for remote mounting
- Spark arrestor type exhaust silencer
- Expansion bellow
- Exhaust manifold-cum-silencer for HA294/HA394/HA494/HA694 engine only (to replace separate manifold and exhaust silencer)
- Dry type air cleaner with evacuator valve and restriction indicator (pre-cleaner available on demand)
- Lock nut type speed adjusting unit on fuel pump
- Engine supports
- Hand starting arrangement at gear end on HA294, HA 394 and HA494 only (this requires extra heavy flywheel which can be accommodated only in SAE-1, flywheel housing)
- Provision for gear-driven hydraulic pump
- Gear-driven compressor
- Automatic engine shut-down arrangement in case of low lube oil pressure, high cylinder head temperature, V-belt failure and engine overspeed (details on request)
- Hot air outlet ducting and fresh air intake ducting\*
- Holset type flexible coupling with following
  - unfinished bore flanges
  - Engine model unfinished bore/coupling type
    - HA294/394 22 mm dia
    - HA494/494TC/30 mm dia
    - 694HA/694TC
  - Raised oil filling and raised dipstick arrangement
  - Special lube oil sumps to suit high inclinations \*
  - Flywheel housing (SAE4, 3,2 and 1)
  - 12V/24V electrical starting system
  - Cold starting aid for engine starting -5°C down to -20°C\*
  - Mud filter and water separator instruments
  - Low lube oil pressure switch (normally closed type)
  - V-belt failure switch
  - High cylinder head temperature switch
  - Engine over speed switch (12V/24V)
  - 12V/24V stop solenoid (in lieu of mechanical shutdown)
  - Electrical hour meter and tachometer
  - Lube oil temperature gauge with sensor
  - Note: Selection depends on application, rpm and torque to be transmitted.

## Brief Specifications

| Models  | HA 294   | HA 394 | HA 494 | HA 694 | HA 494 TC  | HA 694 TC |
|---|--|--------|--------|--------|--|-----------|
| Engine Description  | Vertical air-cooled, compression ignition, four-stroke cycle, naturally aspirated diesel engines |        |        |        | Vertical air-cooled, compression ignition, four-stroke cycle, turbo-charged diesel engines |           |
| Bore x Stroke (mm)  | 100 x 120  |        |        |        |  |           |
| Displacement (cc)   | 1884   | 2826   | 3768   | 5652   | 3768   | 5652      |
| Compression Ratio   | 17:1   |        |        |        |  |           |
| Direction of Rotation                                       | Counter-clockwise (looking at the flywheel end)  |        |        |        |  |           |
| Speed - Max Operating (rpm)                                 | 2300   | 2300   | 2500   | 2300   | 2000   | 2300      |
| Min. Operating (rpm)  | 1500   |        |        |        |  |           |
| Low Idling (rpm)  | 650  |        |        |        |  |           |
| Dry Weight Without Flywheel (kg)                            | 243  | 300    | 338    | 430    | 338  | 448       |
| Weight of Standard Flywheel for Industrial Application (kg) | 41   | 41     | 39     | 39     | 39   | 39        |

Note: Please consult with KOEL's International Business office to choose an engine that best suits your requirement.

## Overall Dimensions and Installation Drawings

| Engine Model | A    | B   | C*  | D*  | X   | X1  |
|--------------|------|-----|-----|-----|-----|-----|
| HA 294       | 678  | 704 | 872 | 301 | 342 | 455 |
| HA 394       | 808  | 704 | 868 | 297 | 272 | 585 |
| HA 494       | 938  | 704 | 868 | 297 | 602 | 715 |
| HA 694       | 1277 | 704 | 922 | 300 | 869 | 982 |
| HA 494 TC    | 938  | 704 | 868 | 297 | 602 | 715 |
| HA 694 TC    | 1145 | 760 | 878 | 300 | 869 | 982 |

\*All dimensions are in mm. The dimensions may vary with alternations depending on applications.

## Global Presence

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