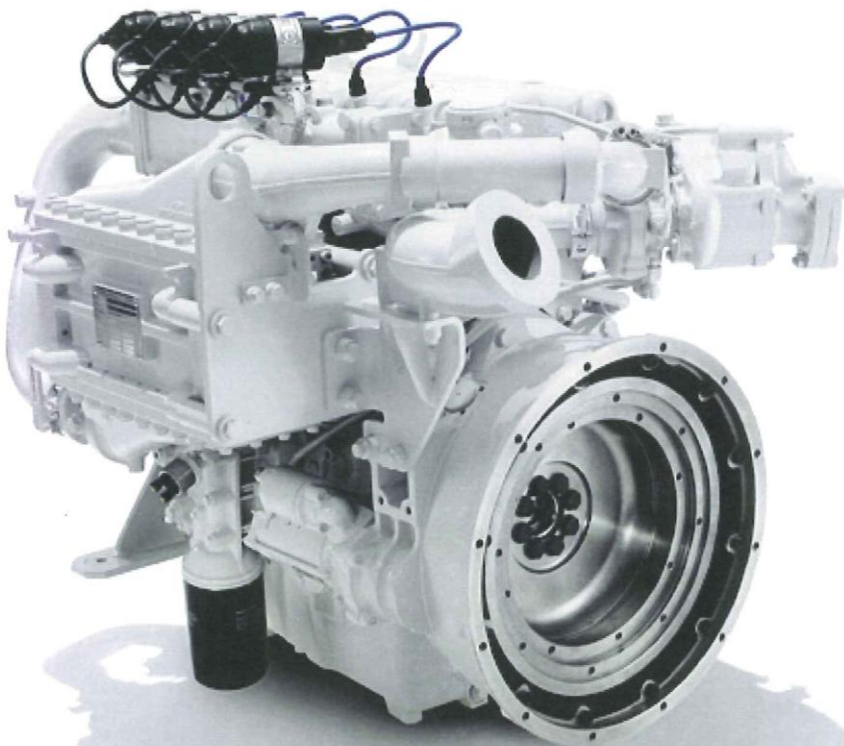


E0834 LE 302

New MAN gas engine for bio and natural gas.



Technical data

- 68 kW operating with natural and bio gas
- 4-cylinder gas engine with 4.6 l volume
- Turbolader and 2-stage mixture cooling
- Up to 91,5% overall efficiency
- Promoted by EEG¹ up to **24,43 Cent/kWh²**

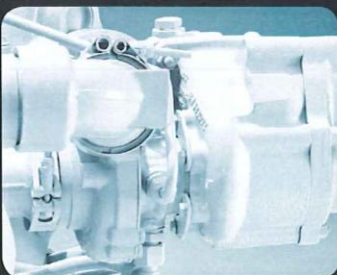
¹ German Renewable Energy Sources Act

² Used with bio gas + bonus for bio gas from slurry + bonus for renewable resources + CHP bonus

Used in medium CHP plants

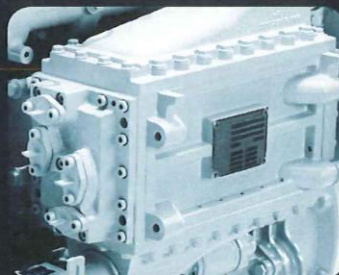
- Lifestock farms
- Agricultural businesses
- Swimming pools
- Sewage treatment plants
- Hotels and office buildings
- Further applications

Turbocharging



Improved efficiency through compression of the air-gas mixture

Doublestage mixture cooling

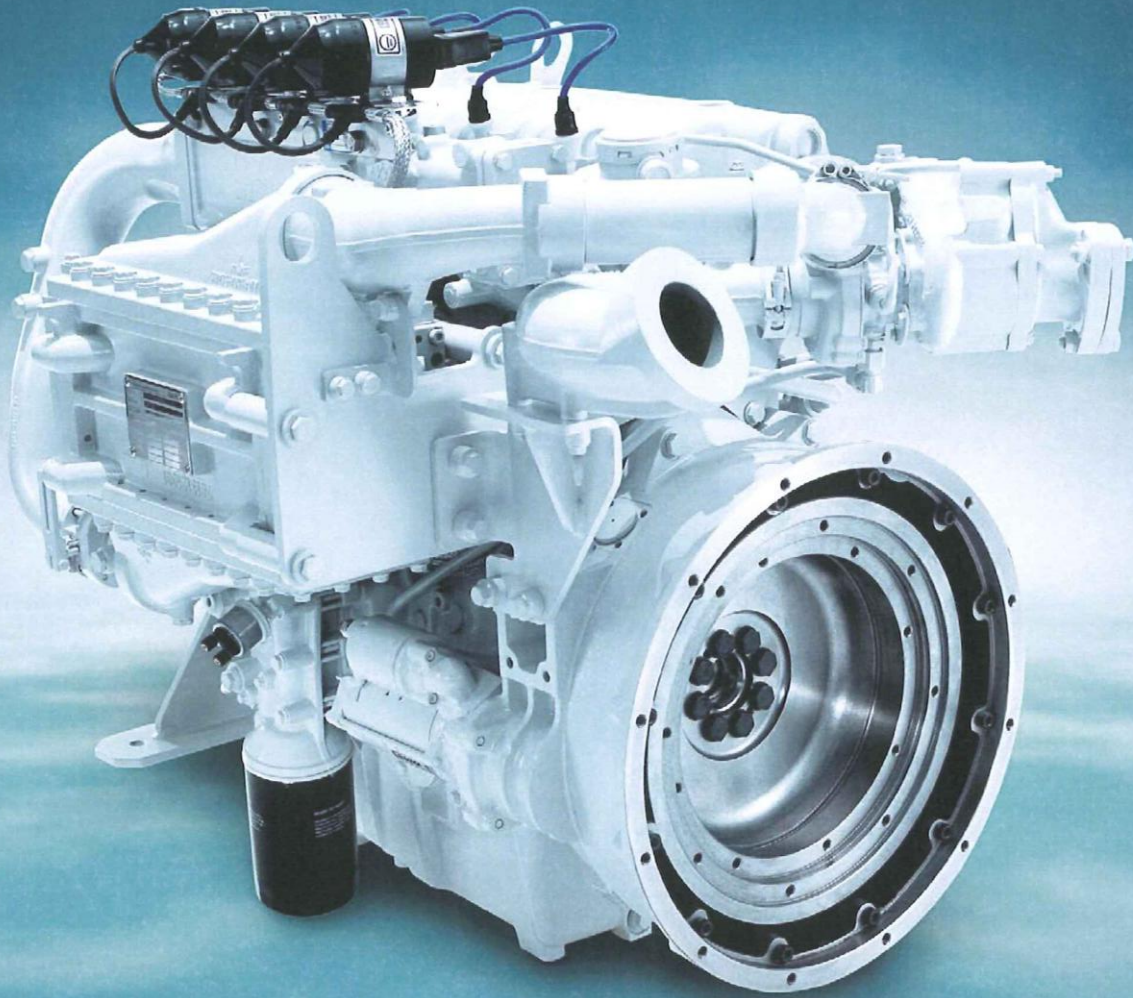


Improved efficiency through cooling of air-gas mixture

Spark plugs



Long service life through improved spark plugs



NEW: gas engine
with 68 kW

E0834

4-cylinder gas engine for CHP.

Powered by MAN.

MAN Nutzfahrzeuge Group





Efficient and Clean.

Producers and operators of cogeneration plants have stringent demands. Robust and compact engines have to work reliably round-the-clock. Economic operation is important for the lifetime of the complete plant. Economic means highly efficient use of resources and low running costs of the plant. Due to continuous development MAN engines always work highly efficiently, reliably and environmentally-friendly.

Engine Description E0834.

Characteristics E0834 E

| | |
|-----------------|--------------------------|
| Cylinder | 4-cylinder |
| Arrangement | In line |
| Operation mode | 4-stroke otto gas engine |
| Type of cooling | Watercooled |

Characteristics E0834 LE

| | |
|-----------------|---|
| Cylinder | 4-cylinder |
| Arrangement | In line |
| Operation mode | 4-stroke otto gas engine |
| Type of cooling | Watercooled |
| Charging | Exhaust turbocharger with heat insulated turbine housing, compressive oil lubricated bearing and watercooled bearing seat |
| Mixture cooling | Two-stage mixture cooling with high and low temperature circle |

| Dimensions E0834 | | E302 | E312 | LE302 |
|------------------|----|------|------|-------|
| A-Overall length | mm | 825 | 825 | 1055 |
| B-Overall width | mm | 740 | 740 | 809 |
| C-Overall height | mm | 940 | 940 | 866 |
| Weight (dry) | kg | 430 | 430 | 485 |

Customer Benefits

- High efficiency due to optimal combustion
- Reduced operating costs due to low fuel and oil consumption as well as long service life
- Low emissions to save the environment
- Compact design
- Sophisticated and well-tested technology ensures reliable operation and long lifetime

Technical Data E0834

| Operation mode | | COP with natural gas | | | | | COP with biogas |
|--|--------------------|----------------------|---------|---------------------|---------------|---------|--------------------|
| | | 1 500 (50 Hz) | | | 1 800 (60 Hz) | | 1 500 (50 Hz) |
| Type of engine | rpm | E302 | E312 | LE 302 ¹ | E302 | E312 | LE302 ¹ |
| Bore | mm | 108 | 108 | 108 | 108 | 108 | 108 |
| Stroke | mm | 125 | 125 | 125 | 125 | 125 | 125 |
| Displacement | l | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 | 4.6 |
| ISO standard rating | kW | 54 | 47 | 68 | 62 | 53 | 68 |
| Air ratio | λ | 1.0 | 1.0 | 1.6 | 1.0 | 1.0 | 1.4 |
| Coolant heat ¹ | kW | 46 | 39 | 55 | 51 | 44 | 54 |
| Exhaust heat up to 120°C ¹ | kW | 33 | 24 | 34 | 40 | 28 | 31 |
| Efficiency ¹ | | | | | | | |
| mechanical | % | 36.5 | 36.4 | 38.5 | 36.5 | 34.9 | 38.3 |
| thermal | % | 53.5 | 48.8 | 53.0 | 53.7 | 47.4 | 51.7 |
| total | % | 90.0 | 85.3 | 91.5 | 90.2 | 82.3 | 90.0 |
| Emissions ² NO _x | mg/Nm ³ | < 6 500 | < 5 000 | < 500 | < 7 000 | < 5 000 | < 500 |
| Combustion ³ | | st | st | m | st | st | m |

¹ At 100% load. ² Correlation 5% oxygen. ³ m=lean burn, st=stoichiometric. ⁴ data are published with reservation.
 Technical data are based on natural gas with calorific value 10 kWh/Nm³ and biogas with calorific value 6 kWh/Nm³

Definition of Application

Engines for COP (continuous power) are designed for 8 000 annual operation hours at a load factor of 100%. Usually, these engines are used in cogeneration plants.

